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Welcome

This is the Amazon EC2 API Reference. It provides descriptions, syntax, and usage examples for each of the actions and data types for Amazon EC2 and Amazon Virtual Private Cloud (Amazon VPC).

The topic for each action shows the Query API request parameters and the XML response. You can also view the XML request elements in the WSDL.

Alternatively, you can use one of the AWS SDKs to access an API that's tailored to the programming language or platform that you're using. For more information, see AWS SDKs.

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We have deprecated the SOAP API for Amazon EC2. For more information, see SOAP Requests (p. 762).

To learn more about Amazon EC2 and Amazon VPC, see the following resources:

- Amazon EC2 product page
- Amazon EC2 User Guide for Linux Instances
- Amazon VPC User Guide
- Amazon EC2 Command Line Reference
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AcceptReservedInstancesExchangeQuote

Accepts the Convertible Reserved Instance exchange quote described in the GetReservedInstancesExchangeQuote (p. 399) call.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

ReservedInstanceId.N
The IDs of the Convertible Reserved Instances to exchange for other Convertible Reserved Instances of the same or higher value.
Type: array of Strings
Required: Yes

TargetConfiguration.N
The configurations of the Convertible Reserved Instance offerings that you are purchasing in this exchange.
Type: array of TargetConfigurationRequest (p. 720) objects
Required: No

Response Elements

The following elements are returned by the service.

exchangeId
The ID of the successful exchange.
Type: String

requestId
The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
AcceptVpcPeeringConnection

Accept a VPC peering connection request. To accept a request, the VPC peering connection must be in the pending-acceptance state, and you must be the owner of the peer VPC. Use the DescribeVpcPeeringConnections request to view your outstanding VPC peering connection requests.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **DryRun**
  - Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
  - Type: Boolean
  - Required: No

- **VpcPeeringConnectionId**
  - The ID of the VPC peering connection.
  - Type: String
  - Required: No

Response Elements

The following elements are returned by the service.

- **requestId**
  - The ID of the request.
  - Type: String

- **vpcPeeringConnection**
  - Information about the VPC peering connection.
  - Type: VpcPeeringConnection (p. 742) object

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example accepts the specified VPC peering connection request.

Sample Request

```
https://ec2.amazonaws.com/?Action=AcceptVpcPeeringConnection
&VpcPeeringConnectionId=pcx-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<AcceptVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
```

API Version 2016-09-15
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<vpcPeeringConnection>
    <vpcPeeringConnectionId>pcx-1a2b3c4d</vpcPeeringConnectionId>
    <requesterVpcInfo>
        <ownerId>123456789012</ownerId>
        <vpcId>vpc-1a2b3c4d</vpcId>
        <cidrBlock>10.0.0.0/28</cidrBlock>
    </requesterVpcInfo>
    <accepterVpcInfo>
        <ownerId>777888899999</ownerId>
        <vpcId>vpc-111aaa22</vpcId>
        <cidrBlock>10.0.1.0/28</cidrBlock>
        <peeringOptions>
            <allowEgressFromLocalClassicLinkToRemoteVpc>false</allowEgressFromLocalClassicLinkToRemoteVpc>
            <allowEgressFromLocalVpcToRemoteClassicLink>false</allowEgressFromLocalVpcToRemoteClassicLink>
        </peeringOptions>
    </accepterVpcInfo>
    <status>
        <code>active</code>
        <message>Active</message>
    </status>
    <tagSet/>
</vpcPeeringConnection>
</AcceptVpcPeeringConnectionResponse>
AllocateAddress

Acquires an Elastic IP address. An Elastic IP address is for use either in the EC2-Classic platform or in a VPC. For more information, see Elastic IP Addresses in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Domain
Set to vpc to allocate the address for use with instances in a VPC. Default: The address is for use with instances in EC2-Classic.
Type: String
Valid Values: vpc | standard
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Response Elements

The following elements are returned by the service.

allocationId
[EC2-VPC] The ID that AWS assigns to represent the allocation of the Elastic IP address for use with instances in a VPC.
Type: String

domain
Indicates whether this Elastic IP address is for use with instances in EC2-Classic (standard) or instances in a VPC (vpc).
Type: String
Valid Values: vpc | standard

publicIp
The Elastic IP address.
Type: String

requestId
The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example for EC2-Classic
This example request allocates an Elastic IP address for use with instances in EC2-Classic.
Sample Request

https://ec2.amazonaws.com/?Action=AllocateAddress &AUTHPARAMS

Sample Response

<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <publicIp>192.0.2.1</publicIp>
  <domain>standard</domain>
</AllocateAddressResponse>

Example for EC2-VPC

This example request allocates an Elastic IP address for use with instances in a VPC.

Sample Request

https://ec2.amazonaws.com/?Action=AllocateAddress
Domain=vpc &AUTHPARAMS

Sample Response

<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <publicIp>198.51.100.1</publicIp>
  <domain>vpc</domain>
  <allocationId>eipalloc-5723d13e</allocationId>
</AllocateAddressResponse>
AllocateHosts

Allocates a Dedicated Host to your account. At minimum you need to specify the instance size type, Availability Zone, and quantity of hosts you want to allocate.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AutoPlacement

This is enabled by default. This property allows instances to be automatically placed onto available Dedicated Hosts, when you are launching instances without specifying a host ID.

Default: Enabled
Type: String
Valid Values: on | off
Required: No

AvailabilityZone

The Availability Zone for the Dedicated Hosts.
Type: String
Required: Yes

ClientToken

Unique, case-sensitive identifier you provide to ensure idempotency of the request. For more information, see How to Ensure Idempotency in the Amazon Elastic Compute Cloud User Guide.
Type: String
Required: No

InstanceType

Specify the instance type that you want your Dedicated Hosts to be configured for. When you specify the instance type, that is the only instance type that you can launch onto that host.
Type: String
Required: Yes

Quantity

The number of Dedicated Hosts you want to allocate to your account with these parameters.
Type: Integer
Required: Yes

Response Elements

The following elements are returned by the service.

hostIdSet

The ID of the allocated Dedicated Host. This is used when you want to launch an instance onto a specific host.
Type: array of Strings

requestId

The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Examples

Example
This example allocates a Dedicated Host to your account, on to which you can launch m3.medium instances.

Sample Request

https://ec2.amazonaws.com/?Action=AllocateHosts
&AvailabilityZone=us-east-1b
&InstanceType=m3.medium
&Quantity=1
&AUTHPARAMS

Sample Response

<AllocateHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <hostIdSet>
    <item>h-00548908djds</item>
  </hostIdSet>
</AllocateHostsResponse>

Example
This example allocates a Dedicated Host to your account with auto-placement off.

Sample Request

https://ec2.amazonaws.com/?Action=AllocateHosts
&AvailabilityZone=us-east-1b
&InstanceType=m3.medium
&Quantity=1
&AutoPlacement=off
&AUTHPARAMS

Sample Response

<AllocateHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <hostIdSet>
    <item>h-00548908djds</item>
  </hostIdSet>
</AllocateHostsResponse>
AssignPrivateIpAddressAddresses

Assigns one or more secondary private IP addresses to the specified network interface. You can specify one or more specific secondary IP addresses, or you can specify the number of secondary IP addresses to be automatically assigned within the subnet’s CIDR block range. The number of secondary IP addresses that you can assign to an instance varies by instance type. For information about instance types, see Instance Types in the Amazon Elastic Compute Cloud User Guide. For more information about Elastic IP addresses, see Elastic IP Addresses in the Amazon Elastic Compute Cloud User Guide.

AssignPrivateIpAddressAddresses is available only in EC2-VPC.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AllowReassignment
Indicates whether to allow an IP address that is already assigned to another network interface or instance to be reassigned to the specified network interface.
Type: Boolean
Required: No

NetworkInterfaceId
The ID of the network interface.
Type: String
Required: Yes

PrivateIpAddress.N
One or more IP addresses to be assigned as a secondary private IP address to the network interface. You can't specify this parameter when also specifying a number of secondary IP addresses.
If you don't specify an IP address, Amazon EC2 automatically selects an IP address within the subnet range.
Type: array of Strings
Required: No

SecondaryPrivateIpAddressCount
The number of secondary IP addresses to assign to the network interface. You can't specify this parameter when also specifying private IP addresses.
Type: Integer
Required: No

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Examples

Example 1
This example assigns two secondary private IP addresses (10.0.2.1 and 10.0.2.11) to the specified network interface.

Sample Request

https://ec2.amazonaws.com/?Action=AssignPrivateIpAddresses
&NetworkInterfaceId=eni-d83388b1
&PrivateIpAddress.1=10.0.2.1
&PrivateIpAddress.2=10.0.2.11
&AUTHPARAMS

Sample Response

  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssignPrivateIpAddresses>

Example 2
This example assigns two secondary private IP addresses to the specified network interface. Amazon EC2 automatically assigns these IP addresses from the available IP addresses within the subnet's CIDR block range.

Sample Request

https://ec2.amazonaws.com/?Action=AssignPrivateIpAddresses
&NetworkInterfaceId=eni-d83388b1
&SecondaryPrivateIpAddressCount=2
&AUTHPARAMS

Sample Response

  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssignPrivateIpAddresses>
AssociateAddress

Associates an Elastic IP address with an instance or a network interface.

An Elastic IP address is for use in either the EC2-Classic platform or in a VPC. For more information, see Elastic IP Addresses in the Amazon Elastic Compute Cloud User Guide.

[EC2-Classic, VPC in an EC2-VPC-only account] If the Elastic IP address is already associated with a different instance, it is disassociated from that instance and associated with the specified instance.

[VPC in an EC2-Classic account] If you don’t specify a private IP address, the Elastic IP address is associated with the primary IP address. If the Elastic IP address is already associated with a different instance or a network interface, you get an error unless you allow reassociation.

Important
This is an idempotent operation. If you perform the operation more than once, Amazon EC2 doesn’t return an error, and you may be charged for each time the Elastic IP address is remapped to the same instance. For more information, see the Elastic IP Addresses section of Amazon EC2 Pricing.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AllocationId
[EC2-VPC] The allocation ID. This is required for EC2-VPC.
Type: String
Required: No

AllowReassociation
[EC2-VPC] For a VPC in an EC2-Classic account, specify true to allow an Elastic IP address that is already associated with an instance or network interface to be reassociated with the specified instance or network interface. Otherwise, the operation fails. In a VPC in an EC2-VPC-only account, reassociation is automatic, therefore you can specify false to ensure the operation fails if the Elastic IP address is already associated with another resource.
Type: Boolean
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

InstanceId
The ID of the instance. This is required for EC2-Classic. For EC2-VPC, you can specify either the instance ID or the network interface ID, but not both. The operation fails if you specify an instance ID unless exactly one network interface is attached.
Type: String
Required: No

NetworkInterfaceId
[EC2-VPC] The ID of the network interface. If the instance has more than one network interface, you must specify a network interface ID.
Type: String
Required: No
PrivateIpAddress

[EC2-VPC] The primary or secondary private IP address to associate with the Elastic IP address. If no private IP address is specified, the Elastic IP address is associated with the primary private IP address.
Type: String
Required: No

PublicIp

The Elastic IP address. This is required for EC2-Classic.
Type: String
Required: No

Response Elements

The following elements are returned by the service.

associationId

[EC2-VPC] The ID that represents the association of the Elastic IP address with an instance.
Type: String

requestId

The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example for EC2-Classic

This example request associates an Elastic IP address with an instance in EC2-Classic.

Sample Request

https://ec2.amazonaws.com/?Action=AssociateAddress
&InstanceId=i-1234567890abcdef0
&PublicIp=192.0.2.1
&AUTHPARAMS

Sample Response

<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssociateAddressResponse>

Example for EC2-VPC

This example request associates a Elastic IP address with an instance in a VPC. The AllowReassignment parameter allows the Elastic IP address to be associated with the specified instance even if it's already associated with a different instance or a network interface.
Sample Request

```plaintext
https://ec2.amazonaws.com/?Action=AssociateAddress
&InstanceId=i-0598c7d356eba48d7
&AllocationId=eipalloc-5723d13e
&AllowReassignment=true
&AUTHPARAMS
```

Sample Response

```xml
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <associationId>eipassoc-fc5ca095</associationId>
</AssociateAddressResponse>
```
AssociateDhcpOptions

Associates a set of DHCP options (that you’ve previously created) with the specified VPC, or associates no DHCP options with the VPC.

After you associate the options with the VPC, any existing instances and all new instances that you launch in that VPC use the options. You don’t need to restart or relaunch the instances. They automatically pick up the changes within a few hours, depending on how frequently the instance renews its DHCP lease. You can explicitly renew the lease using the operating system on the instance. For more information, see DHCP Options Sets in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DhcpOptionsId

The ID of the DHCP options set, or default to associate no DHCP options with the VPC.

Type: String

Required: Yes

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

VpcId

The ID of the VPC.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

Type: String

return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1

This example associates the DHCP options with the ID dopt-7a8b9c2d with the VPC with the ID vpc-1a2b3c4d.
Sample Request

https://ec2.amazonaws.com/?Action=AssociateDhcpOptions&DtoptionsId=dopt-7a8b9c2d&VpcId=vpc-1a2b3c4d&AUTHPARAMS

Sample Response

<?xml version="1.0" encoding="UTF-8"?>
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</AssociateDhcpOptionsResponse>

Example 2

This example changes the VPC with the ID vpc-1a2b3c4d to have no associated DHCP options set.

Sample Request

https://ec2.amazonaws.com/?Action=AssociateDhcpOptions&DhcpOptionsId=default&VpcId=vpc-1a2b3c4d&AUTHPARAMS

Sample Response

<?xml version="1.0" encoding="UTF-8"?>
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</AssociateDhcpOptionsResponse>
AssociateRouteTable

Associates a subnet with a route table. The subnet and route table must be in the same VPC. This association causes traffic originating from the subnet to be routed according to the routes in the route table. The action returns an association ID, which you need in order to disassociate the route table from the subnet later. A route table can be associated with multiple subnets.

For more information about route tables, see Route Tables in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

- **Type:** Boolean
- **Required:** No

**RouteTableId**

The ID of the route table.

- **Type:** String
- **Required:** Yes

**SubnetId**

The ID of the subnet.

- **Type:** String
- **Required:** Yes

Response Elements

The following elements are returned by the service.

**associationId**

The route table association ID (needed to disassociate the route table).

- **Type:** String

**requestId**

The ID of the request.

- **Type:** String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

**Example**

This example associates a route table with the ID rtb-e4ad488d with a subnet with the ID subnet-15ad487c.

**Sample Request**

https://ec2.amazonaws.com/?Action=AssociateRouteTable
Sample Response

```xml
<AssociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/"
    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <associationId>rtbassoc-f8ad4891</associationId>
</AssociateRouteTableResponse>
```
AttachClassicLinkVpc

Links an EC2-Classic instance to a ClassicLink-enabled VPC through one or more of the VPC's security groups. You cannot link an EC2-Classic instance to more than one VPC at a time. You can only link an instance that's in the running state. An instance is automatically unlinked from a VPC when it's stopped - you can link it to the VPC again when you restart it.

After you've linked an instance, you cannot change the VPC security groups that are associated with it. To change the security groups, you must first unlink the instance, and then link it again.

Linking your instance to a VPC is sometimes referred to as attaching your instance.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **DryRun**
  
  Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is **DryRunOperation**. Otherwise, it is **UnauthorizedOperation**.
  
  **Type:** Boolean
  
  **Required:** No

- **InstanceId**
  
  The ID of an EC2-Classic instance to link to the ClassicLink-enabled VPC.
  
  **Type:** String
  
  **Required:** Yes

- **SecurityGroupId.N**
  
  The ID of one or more of the VPC's security groups. You cannot specify security groups from a different VPC.
  
  **Type:** array of Strings
  
  **Required:** Yes

- **VpcId**
  
  The ID of a ClassicLink-enabled VPC.
  
  **Type:** String
  
  **Required:** Yes

Response Elements

The following elements are returned by the service.

- **requestId**
  
  The ID of the request.
  
  **Type:** String

- **return**
  
  Returns true if the request succeeds; otherwise, it returns an error.
  
  **Type:** Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Examples

Example
This example links instance i-1234567890abcdef0 to VPC vpc-88888888 through the VPC's security group sg-12312312.

Sample Request

https://ec2.amazonaws.com/?Action=AttachClassicLinkVpc
&VpcId=vpc-88888888
&InstanceId=i-1234567890abcdef0
&GroupId.1=sg-12312312
&AUTHPARAMS

Sample Response

<AttachClassicLinkVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AttachClassicLinkVpcResponse>

Example
This example links instance i-1234567890abcdef0 to VPC vpc-88888888 through the VPC's security groups sg-12312312 and sg-44455566.

Sample Request

https://ec2.amazonaws.com/?Action=AttachClassicLinkVpc
&VpcId=vpc-88888888
&InstanceId=i-1234567890abcdef0
&GroupId.1=sg-12312312
&GroupId.2=sg-44455566
&AUTHPARAMS
AttachInternetGateway

Attaches an Internet gateway to a VPC, enabling connectivity between the Internet and the VPC. For more information about your VPC and Internet gateway, see the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is **DryRunOperation**. Otherwise, it is **UnauthorizedOperation**.

Type: Boolean
Required: No

**InternetGatewayId**

The ID of the Internet gateway.

Type: String
Required: Yes

**VpcId**

The ID of the VPC.

Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

**Example**

This example attaches the Internet gateway with the ID **igw-ead4883** to the VPC with the ID **vpc-1lad4878**.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=AttachInternetGateway
&InternetGatewayId=igw-ead4883
&VpcId=vpc-1lad4878
```
Sample Response

```xml
<AttachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AttachInternetGatewayResponse>
```
AttachNetworkInterface

Attaches a network interface to an instance.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters](p. 773).

**DeviceIndex**
- The index of the device for the network interface attachment.
- Type: Integer
- Required: Yes

**DryRun**
- Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.
- Type: Boolean
- Required: No

**InstanceId**
- The ID of the instance.
- Type: String
- Required: Yes

**NetworkInterfaceId**
- The ID of the network interface.
- Type: String
- Required: Yes

**Response Elements**

The following elements are returned by the service.

**attachmentId**
- The ID of the network interface attachment.
- Type: String

**requestId**
- The ID of the request.
- Type: String

**Errors**

For information about the errors that are common to all actions, see [Common Client Errors](p. 793).

**Example**

**Sample Request**

```
https://ec2.amazonaws.com/?Action=AttachNetworkInterface
&DeviceIndex=1
```
&InstanceId=i-1234567890abcdef0
&NetworkInterfaceId=eni-ffda3197
&AUTHPARAMS

Sample Response

```xml
    <requestId>ace8cd1e-e685-4e44-90fb-92014d907212</requestId>
    <attachmentId>eni-attach-d94b09b0</attachmentId>
</AttachNetworkInterfaceResponse>
```
AttachVolume

Attaches an EBS volume to a running or stopped instance and exposes it to the instance with the specified device name.

Encrypted EBS volumes may only be attached to instances that support Amazon EBS encryption. For more information, see Amazon EBS Encryption in the Amazon Elastic Compute Cloud User Guide.

For a list of supported device names, see Attaching an EBS Volume to an Instance. Any device names that aren't reserved for instance store volumes can be used for EBS volumes. For more information, see Amazon EC2 Instance Store in the Amazon Elastic Compute Cloud User Guide.

If a volume has an AWS Marketplace product code:

- The volume can be attached only to a stopped instance.
- AWS Marketplace product codes are copied from the volume to the instance.
- You must be subscribed to the product.
- The instance type and operating system of the instance must support the product. For example, you can't detach a volume from a Windows instance and attach it to a Linux instance.

For an overview of the AWS Marketplace, see Introducing AWS Marketplace.

For more information about EBS volumes, see Attaching Amazon EBS Volumes in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**Device**

The device name to expose to the instance (for example, /dev/sdh or xvdh).

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

**VolumeId**

The ID of the EBS volume. The volume and instance must be within the same Availability Zone.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

**attachTime**

The time stamp when the attachment initiated.

Type: Timestamp
**deleteOnTermination**
Indicates whether the EBS volume is deleted on instance termination.
Type: Boolean

**device**
The device name.
Type: String

**instanceId**
The ID of the instance.
Type: String

**requestId**
The ID of the request.
Type: String

**status**
The attachment state of the volume.
Type: String
Valid Values: attaching | attached | detaching | detached

**volumeId**
The ID of the volume.
Type: String

**Errors**
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

**Example**

**Example 1**
This example request attaches the volume with the ID `vol-1234567890abcdef0` to the instance with the ID `i-1234567890abcdef0` and exposes it as `/dev/sdh`.

**Sample Request**
```
https://ec2.amazonaws.com/?Action=AttachVolume
&VolumeId=vol-1234567890abcdef0
&InstanceId=i-1234567890abcdef0
&Device=/dev/sdh
&AUTHPARAMS
```

**Sample Response**
```
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1234567890abcdef0</volumeId>
  <instanceId>i-1234567890abcdef0</instanceId>
  <device>/dev/sdh</device>
  <status>attaching</status>
  <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</AttachVolumeResponse>
```
AttachVpnGateway

Attaches a virtual private gateway to a VPC. For more information, see Adding a Hardware Virtual Private Gateway to Your VPC in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

VpcId

The ID of the VPC.

Type: String

Required: Yes

VpnGatewayId

The ID of the virtual private gateway.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

attachment

Information about the attachment.

Type: VpcAttachment (p. 739) object

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example attaches the virtual private gateway with the ID vgw-8db04f81 to the VPC with the ID vpc-1a2b3c4d.

Sample Request

https://ec2.amazonaws.com/?Action=AttachVpnGateway
&VpnGatewayId=vgw-8db04f81
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
Sample Response

```xml
<AttachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <attachment>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <state>attaching</state>
  </attachment>
</AttachVpnGatewayResponse>
```
AuthorizeSecurityGroupEgress

[EC2-VPC only] Adds one or more egress rules to a security group for use with a VPC. Specifically, this action permits instances to send traffic to one or more destination CIDR IP address ranges, or to one or more destination security groups for the same VPC. This action doesn't apply to security groups for use in EC2-Classic. For more information, see Security Groups for Your VPC in the Amazon Virtual Private Cloud User Guide.

**Important**

You can have up to 50 rules per security group (covering both ingress and egress rules).

Each rule consists of the protocol (for example, TCP), plus either a CIDR range or a source group. For the TCP and UDP protocols, you must also specify the destination port or port range. For the ICMP protocol, you must also specify the ICMP type and code. You can use -1 for the type or code to mean all types or all codes.

Rule changes are propagated to affected instances as quickly as possible. However, a small delay might occur.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **CidrIp**
  - The CIDR IP address range. We recommend that you specify the CIDR range in a set of IP permissions instead.
  - Type: String
  - Required: No

- **DryRun**
  - Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
  - Type: Boolean
  - Required: No

- **FromPort**
  - The start of port range for the TCP and UDP protocols, or an ICMP type number. We recommend that you specify the port range in a set of IP permissions instead.
  - Type: Integer
  - Required: No

- **GroupId**
  - The ID of the security group.
  - Type: String
  - Required: Yes

- **IpPermissions.N**
  - A set of IP permissions. You can't specify a destination security group and a CIDR IP address range.
  - Type: array of IpPermission (p. 612) objects
  - Required: No

- **IpProtocol**
  - The IP protocol name or number. We recommend that you specify the protocol in a set of IP permissions instead.
  - Type: String
  - Required: No
Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

**Example 1**

This example request grants your security group with the ID `sg-1a2b3c4d` access to the `192.0.2.0/24` and `198.51.100.0/24` address ranges on TCP port 80.

**Sample Request**

```
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=192.0.2.0/24
&IpPermissions.1.IpRanges.2.CidrIp=198.51.100.0/24

&AUTHPARAMS
```

**Sample Response**

```
```

---

**SourceSecurityGroupName**

The name of a destination security group. To authorize outbound access to a destination security group, we recommend that you use a set of IP permissions instead.

Type: String

Required: No

**SourceSecurityGroupOwnerId**

The AWS account number for a destination security group. To authorize outbound access to a destination security group, we recommend that you use a set of IP permissions instead.

Type: String

Required: No

**ToPort**

The end of port range for the TCP and UDP protocols, or an ICMP type number. We recommend that you specify the port range in a set of IP permissions instead.

Type: Integer

Required: No
Example 2
This example request grants egress access from the security group with the ID sg-1a2b3c4d to the security group with the ID sg-9a8d7f5c on TCP port 1433.

Sample Request

&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=1433
&IpPermissions.1.ToPort=1433
&IpPermissions.1.Groups.1.GroupId=sg-9a8d7f5c
&AUTHPARAMS

Sample Response

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</AuthorizeSecurityGroupEgressResponse>
AuthorizeSecurityGroupIngress

Adds one or more ingress rules to a security group.

Important
EC2-Classic: You can have up to 100 rules per group.
EC2-VPC: You can have up to 50 rules per group (covering both ingress and egress rules).

Rule changes are propagated to instances within the security group as quickly as possible. However, a small delay might occur.

[EC2-Classic] This action gives one or more CIDR IP address ranges permission to access a security group in your account, or gives one or more security groups (called the source groups) permission to access a security group for your account. A source group can be for your own AWS account, or another.

[EC2-VPC] This action gives one or more CIDR IP address ranges permission to access a security group in your VPC, or gives one or more other security groups (called the source groups) permission to access a security group for your VPC. The security groups must all be for the same VPC.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

CidrIp
The CIDR IP address range. You can't specify this parameter when specifying a source security group.
Type: String
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

FromPort
The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, use -1 to specify all ICMP types.
Type: Integer
Required: No

GroupId
The ID of the security group. Required for a nondefault VPC.
Type: String
Required: No

GroupName
[EC2-Classic, default VPC] The name of the security group.
Type: String
Required: No

IpPermissions.N
A set of IP permissions. Can be used to specify multiple rules in a single command.
Type: array of IpPermission (p. 612) objects
Required: No

IpProtocol
The IP protocol name (tcp, udp, icmp) or number (see Protocol Numbers). (VPC only) Use -1 to specify all traffic. If you specify -1, traffic on all ports is allowed, regardless of any ports you specify.
SourceSecurityGroupName

[EC2-Classic, default VPC] The name of the source security group. You can't specify this parameter in combination with the following parameters: the CIDR IP address range, the start of the port range, the IP protocol, and the end of the port range. Creates rules that grant full ICMP, UDP, and TCP access. To create a rule with a specific IP protocol and port range, use a set of IP permissions instead. For EC2-VPC, the source security group must be in the same VPC.

SourceSecurityGroupOwnerId

[EC2-Classic] The AWS account number for the source security group, if the source security group is in a different account. You can't specify this parameter in combination with the following parameters: the CIDR IP address range, the IP protocol, the start of the port range, and the end of the port range. Creates rules that grant full ICMP, UDP, and TCP access. To create a rule with a specific IP protocol and port range, use a set of IP permissions instead.

ToPort

The end of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, use -1 to specify all ICMP codes for the ICMP type.

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

return

Is true if the request succeeds, and an error otherwise.

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1

[EC2-Classic] This example request grants TCP port 80 access from the 192.0.2.0/24 and 198.51.100.0/24 address ranges to the security group in EC2-Classic named websrv.

Sample Request

https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupName=websrv
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
Example 2
[EC2-Classic, default VPC] This example request grants full ICMP, UDP, and TCP access from a
source group called webserver1 (in AWS account 123456789012) to a security group in your account
with the ID sg-1a2b3c4d. For EC2-VPC, the group owner ID parameter is not required, and the source
security group must be in the same VPC. For an example of granting access to specific protocols and
ports, see example 3.

Sample Request

https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
GroupId=sg-1a2b3c4d
&SourceSecurityGroupOwnerId=123456789012
&SourceSecurityGroupName=webserver1

Example 3
[EC2-Classic, default VPC] This example request grants TCP port 80 access from the source group
named OtherAccountGroup (in AWS account 123456789012) to the security group named websrv.
For EC2-VPC, the user ID parameter is not required, and the source security group must be in the
same VPC.

Sample Request

https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupName=websrv
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.Groups.1.GroupName=OtherAccountGroup
&IpPermissions.1.Groups.1.UserId=123456789012

Example 4
[EC2-VPC] This example request grants TCP port 80 access from the source group sg-2a2b3c4d
to the security group sg-1a2b3c4d. In EC2-VPC, you must use the security group IDs in a request,
not the security group names. The source security group must be in the same VPC or in a peer VPC
(requires a VPC peering connection).

Sample Request

https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.Groups.1.GroupId=sg-2a2b3c4d
&AUTHPARAMS
Example 5

[EC2-Classic, default VPC] This example request grants your local system the ability to use SSH (port 22) to connect to any instance in the security group named default. For a nondefault VPC, use the GroupId parameter instead.

Sample Request

https://ec2.amazonaws.com/
?Action=AuthorizeSecurityGroupIngress
&GroupName=default
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=22
&IpPermissions.1.ToPort=22
&IpPermissions.1.IpRanges.1.CidrIp=your-local-system's-public-ip-address/32
&AUTHPARAMS

Example 6

[EC2-Classic, default VPC] This example request grants your local system the ability to use Remote Desktop (port 3389) to connect to any instance in the security group named default. For a nondefault VPC, use the GroupId parameter instead.

Sample Request

https://ec2.amazonaws.com/
?Action=AuthorizeSecurityGroupIngress
&GroupName=default
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=3389
&IpPermissions.1.ToPort=3389
&IpPermissions.1.IpRanges.1.CidrIp=your-local-system's-public-ip-address/32
BundleInstance

Bundles an Amazon instance store-backed Windows instance. During bundling, only the root device volume (C:\) is bundled. Data on other instance store volumes is not preserved.

**Note**
This action is not applicable for Linux/Unix instances or Windows instances that are backed by Amazon EBS.

For more information, see Creating an Instance Store-Backed Windows AMI.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **DryRun**
  Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response isDryRunOperation. Otherwise, it is UnauthorizedOperation.
  Type: Boolean
  Required: No

- **InstanceId**
  The ID of the instance to bundle.
  Type: String
  Default: None
  Required: Yes
  Type: String
  Required: Yes

- **Storage**
  The bucket in which to store the AMI. You can specify a bucket that you already own or a new bucket that Amazon EC2 creates on your behalf. If you specify a bucket that belongs to someone else, Amazon EC2 returns an error.
  Type: Storage (p. 715) object
  Required: Yes

**Response Elements**

The following elements are returned by the service.

- **bundleInstanceTask**
  Information about the bundle task.
  Type: BundleTask (p. 535) object

- **requestId**
  The ID of the request.
  Type: String

**Errors**

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

Example
This example request bundles the specified instance.
Before you specify a value for your access key ID, review and follow the guidance in Best Practices for Managing AWS Access Keys.

Sample Request

```xml
https://ec2.amazonaws.com/?Action=BundleInstance
&InstanceId=i-1234567890abcdef0
&Storage.S3.AWSAccessKeyId='AKIAIOSFODNN7EXAMPLE'
&Storage.S3.Bucket=myawsbucket
&Storage.S3.Prefix=winami
&Storage.S3.UploadPolicy=eyJleHBpcmF0aW9uIjogIjIwMDgtMDgtMzBUMDg6NDk6MD
1aIiwiY29uZGl0aW9ucyI6IiwiY29uZGl0aW9ucyI6IiwiY29uZGl0aW9ucyI6Iiwi
RRZXkiLCAibXktbmb3V3LW1tYWh1I10seyJhY2wiOiAiZWMyLWJlbmRsd29yZ2VF
&Storage.S3.UploadPolicySignature=fh5tuyyQQD8W4COEthj3n1GNEXAMPLE
&AUTHPARAMS
```

Sample Response

```xml
<BundleInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-49ad-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTask>
    <instanceId>i-1234567890abcdef0</instanceId>
    <bundleId>bun-c1a540a8</bundleId>
    <state>bundling</state>
    <startTime>2008-10-07T11:41:50.000Z</startTime>
    <updateTime>2008-10-07T11:51:50.000Z</updateTime>
    <progress>70%</progress>
    <storage>
      <S3>
        <bucket>myawsbucket</bucket>
        <prefix>winami</prefix>
      </S3>
    </storage>
  </bundleInstanceTask>
</BundleInstanceResponse>
```
CancelBundleTask
Cancels a bundling operation for an instance store-backed Windows instance.

Request Parameters
The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**BundleId**
The ID of the bundle task.
Type: String
Required: Yes

**DryRun**
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Response Elements
The following elements are returned by the service.

**bundleInstanceTask**
Information about the bundle task.
Type: BundleTask (p. 535) object

**requestId**
The ID of the request.
Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example
This example request cancels the specified bundle task.

Sample Request

```
https://ec2.amazonaws.com/?Action=CancelBundleTask
&BundleId=bun-cla322b9
&AUTHPARAMS
```

Sample Response

```
<CancelBundleTaskResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTask>
    <instanceId>i-1234567890abcdef0</instanceId>
  </bundleInstanceTask>
</CancelBundleTaskResponse>
```
<bundleId>bun-cla322b9</bundleId>
<state>canceling</state>
<startTime>2008-10-07T11:41:50.000Z</startTime>
<updateTime>2008-10-07T11:51:50.000Z</updateTime>
<progress>20%</progress>
<storage>
  <S3>
    <bucket>myawsbucket</bucket>
    <prefix>my-new-image</prefix>
  </S3>
</storage>
</bundleInstanceTask>
</CancelBundleTaskResponse>
CancelConversionTask

Cancels an active conversion task. The task can be the import of an instance or volume. The action removes all artifacts of the conversion, including a partially uploaded volume or instance. If the conversion is complete or is in the process of transferring the final disk image, the command fails and returns an exception.

For more information, see Importing a Virtual Machine Using the Amazon EC2 CLI.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

ConversionTaskId
The ID of the conversion task.
Type: String
Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

ReasonMessage
The reason for canceling the conversion task.
Type: String
Required: No

Response Elements

The following elements are returned by the service.

RequestId
The ID of the request.
Type: String

Return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example request cancels the conversion task with the ID import-i-fh95npoc.

Sample Request

https://ec2.amazonaws.com/?Action=CancelConversionTask
&ConversionTaskId=import-i-fh95npoc
Sample Response

```xml
<CancelConversionTaskResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/"
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CancelConversionTaskResponse>
```
CancelExportTask

Cancels an active export task. The request removes all artifacts of the export, including any partially-
created Amazon S3 objects. If the export task is complete or is in the process of transferring the final
disk image, the command fails and returns an error.

Request Parameters

For more information about required and optional parameters that are common to all actions, see
Common Query Parameters (p. 773).

ExportTaskId

The ID of the export task. This is the ID returned by CreateInstanceExportTask.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

Type: String

return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example request cancels the export task with the ID export-i-1234wxyz.

Sample Request

https://ec2.amazonaws.com/?Action=CancelExportTask
&exportTaskId=export-i-1234wxyz
&AUTHPARAMS

Sample Response

<CANCELExportTask xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</CANCELExportTask>
CancelImportTask

Cancels an in-process import virtual machine or import snapshot task.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

CancelReason

The reason for canceling the task.
Type: String
Required: No

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

ImportTaskId

The ID of the import image or import snapshot task to be canceled.
Type: String
Required: No

Response Elements

The following elements are returned by the service.

importTaskId

The ID of the task being canceled.
Type: String

previousState

The current state of the task being canceled.
Type: String

requestId

The ID of the request.
Type: String

state

The current state of the task being canceled.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
CancelReservedInstancesListing

Cancels the specified Reserved Instance listing in the Reserved Instance Marketplace. For more information, see Reserved Instance Marketplace in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

ReservedInstancesListingId
  The ID of the Reserved Instance listing.
  Type: String
  Required: Yes

Response Elements

The following elements are returned by the service.

requestId
  The ID of the request.
  Type: String

reservedInstancesListingsSet
  The Reserved Instance listing.
  Type: array of ReservedInstances Listing (p. 662) objects

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example request cancels a Reserved Instance listing in the Reserved Instance Marketplace. The response shows that the status is cancelled.

Sample Request

https://ec2.amazonaws.com/?Action=CancelReservedInstancesListing&ReservedInstancesListingId=3ebe97b5-f273-43b6-a204-7a18cEXAMPLE&AUTHPARAMS

Sample Response

<CancelReservedInstancesListingResponse>
  <requestId>bec2cf62-98ef-434a-8a15-886fexample</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>3ebe97b5-f273-43b6-a204-7a18cEXAMPLE</reservedInstancesListingId>
    </item>
  </reservedInstancesListingsSet>
  <createDate>2012-07-12T16:55:28.000Z</createDate>
</CancelReservedInstancesListingResponse>
<updateDate>2012-07-12T16:55:28.000Z</updateDate>
<status>cancelled</status>
<statusMessage>CANCELLED</statusMessage>
<instanceCounts>
  <item>
    <state>Available</state>
    <instanceCount>0</instanceCount>
  </item>
  <item>
    <state>Sold</state>
    <instanceCount>0</instanceCount>
  </item>
  <item>
    <state>Cancelled</state>
    <instanceCount>1</instanceCount>
  </item>
  <item>
    <state>Pending</state>
    <instanceCount>0</instanceCount>
  </item>
</instanceCounts>
<priceSchedules>
  <item>
    <term>5</term>
    <price>166.64</price>
    <currencyCode>USD</currencyCode>
    <active>false</active>
  </item>
  <item>
    <term>4</term>
    <price>133.32</price>
    <currencyCode>USD</currencyCode>
    <active>false</active>
  </item>
  <item>
    <term>3</term>
    <price>99.99</price>
    <currencyCode>USD</currencyCode>
    <active>false</active>
  </item>
  <item>
    <term>2</term>
    <price>66.66</price>
    <currencyCode>USD</currencyCode>
    <active>false</active>
  </item>
  <item>
    <term>1</term>
    <price>33.33</price>
    <currencyCode>USD</currencyCode>
    <active>false</active>
  </item>
</priceSchedules>
<tagSet/>
<clientToken>XqJIt1342112125076</clientToken>
CancelSpotFleetRequests

Cancels the specified Spot fleet requests.

After you cancel a Spot fleet request, the Spot fleet launches no new Spot instances. You must specify whether the Spot fleet should also terminate its Spot instances. If you terminate the instances, the Spot fleet request enters the cancelled_terminating state. Otherwise, the Spot fleet request enters the cancelled_running state and the instances continue to run until they are interrupted or you terminate them manually.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
 Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
 Type: Boolean
 Required: No

SpotFleetRequestId.N
 The IDs of the Spot fleet requests.
 Type: array of Strings
 Required: Yes

TerminateInstances
 Indicates whether to terminate instances for a Spot fleet request if it is canceled successfully.
 Type: Boolean
 Required: Yes

Response Elements

The following elements are returned by the service.

requestId
 The ID of the request.
 Type: String

successfulFleetRequestSet
 Information about the Spot fleet requests that are successfully canceled.
 Type: array of CancelSpotFleetRequestsSuccessItem (p. 540) objects

unsuccessfulFleetRequestSet
 Information about the Spot fleet requests that are not successfully canceled.
 Type: array of CancelSpotFleetRequestsErrorItem (p. 539) objects

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example cancels Spot fleet request sfr-123f8fc2-cb31-425e-abcd-example2710 and terminates all instances that were launched by the request.
Sample Request

https://ec2.amazonaws.com/?Action=CancelSpotFleetRequests&SpotFleetRequestId.1=sfr-123f8fc2-cb31-425e-abcd-example2710&TerminateInstances=true&AUTHPARAMS

Sample Response

```xml
    requestId=e12d2fe5-6503-4b4b-911c-example</requestId>
    <unsuccessfulFleetRequestSet/>
    <successfulFleetRequestSet>
        <item>
            <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</spotFleetRequestId>
            <currentSpotFleetRequestState>cancelled_terminating</currentSpotFleetRequestState>
            <previousSpotFleetRequestState>active</previousSpotFleetRequestState>
        </item>
    </successfulFleetRequestSet>
</CancelSpotFleetRequestsResponse>
```
CancelSpotInstanceRequests

Cancels one or more Spot instance requests. Spot instances are instances that Amazon EC2 starts on your behalf when the bid price that you specify exceeds the current Spot price. Amazon EC2 periodically sets the Spot price based on available Spot instance capacity and current Spot instance requests. For more information, see Spot Instance Requests in the Amazon Elastic Compute Cloud User Guide.

**Important**
Canceling a Spot instance request does not terminate running Spot instances associated with the request.

**Request Parameters**
The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

**SpotInstanceRequestId.N**
One or more Spot instance request IDs.

Type: array of Strings
Required: Yes

**Response Elements**
The following elements are returned by the service.

**requestId**
The ID of the request.

Type: String

**spotInstanceRequestSet**
One or more Spot instance requests.

Type: array of CancelledSpotInstanceRequest (p. 537) objects

**Errors**
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

**Example**

**Example**
This example cancels the specified Spot instance request.

**Sample Request**

https://ec2.amazonaws.com/?Action=CancelSpotInstanceRequests
&SpotInstanceRequestId.1=sir-1a2b3c4d
&AUTHPARAMS
Sample Response

```xml
<CancelSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <state>cancelled</state>
    </item>
  </spotInstanceRequestSet>
</CancelSpotInstanceRequestsResponse>
```
ConfirmProductInstance

Determines whether a product code is associated with an instance. This action can only be used by
the owner of the product code. It is useful when a product code owner needs to verify whether another
user's instance is eligible for support.

Request Parameters

The following parameters are for this specific action. For more information about required and optional
parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the
request, and provides an error response. If you have the required permissions, the error response
is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

InstanceId
The ID of the instance.
Type: String
Required: Yes

ProductCode
The product code. This must be a product code that you own.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

ownerId
The AWS account ID of the instance owner. This is only present if the product code is attached to
the instance.
Type: String

requestId
The ID of the request.
Type: String

return
The return value of the request. Returns true if the specified product code is owned by the
requester and associated with the specified instance.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example determines whether the specified product code is associated with the specified instance.
Sample Request

https://ec2.amazonaws.com/?Action=ConfirmProductInstance
&ProductCode=774F4FF8
&InstanceId=i-1234567890abcdef0
&AUTHPARAMS

Sample Response

  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <ownerId>111122223333</ownerId>
</ConfirmProductInstanceResponse>
CopyImage

Initiates the copy of an AMI from the specified source region to the current region. You specify the destination region by using its endpoint when making the request. For more information, see Copying AMIs in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

ClientToken
Unique, case-sensitive identifier you provide to ensure idempotency of the request. For more information, see How to Ensure Idempotency in the Amazon Elastic Compute Cloud User Guide.
Type: String
Required: No
Description
A description for the new AMI in the destination region.
Type: String
Required: No
DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No
Encrypted
Specifies whether the destination snapshots of the copied image should be encrypted. The default CMK for EBS is used unless a non-default AWS Key Management Service (AWS KMS) CMK is specified with KmsKeyId. For more information, see Amazon EBS Encryption in the Amazon Elastic Compute Cloud User Guide.
Type: Boolean
Required: No
KmsKeyId
The full ARN of the AWS Key Management Service (AWS KMS) CMK to use when encrypting the snapshots of an image during a copy operation. This parameter is only required if you want to use a non-default CMK; if this parameter is not specified, the default CMK for EBS is used. The ARN contains the arn:aws:kms namespace, followed by the region of the CMK, the AWS account ID of the CMK owner, the key namespace, and then the CMK ID. For example, arn:aws:kms:us-east-1:012345678910:key/abcd1234-a123-456a-a12b-a123b4cd56ef. The specified CMK must exist in the region that the snapshot is being copied to. If a KmsKeyId is specified, the Encrypted flag must also be set.
Type: String
Required: No
Name
The name of the new AMI in the destination region.
Type: String
Required: Yes
SourceImageId
The ID of the AMI to copy.
Type: String
Required: Yes
SourceRegion
The name of the region that contains the AMI to copy.
Type: String
Required: Yes

Response Elements
The following elements are returned by the service.

imageId
The ID of the new AMI.
Type: String

requestId
The ID of the request.
Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example
This example request copies the AMI in us-west-2 with the ID ami-1a2b3c4d, naming the new AMI My-Standard-AMI.

Sample Request
https://ec2.amazonaws.com/?Action=CopyImage
&SourceRegion=us-west-2
&SourceImageId=ami-1a2b3c4d
&Name=My-Standard-AMI
&Description=This%20is%20the%20new%20version%20of%20My-Standard-AMI
&ClientToken=550e8400-e29b-41d4-a716-446655440000
&amp;AUTHPARAMS

Sample Response

   <requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
   <imageId>ami-4d3c2b1a</imageId>
</CopyImageResponse>
CopySnapshot

Copies a point-in-time snapshot of an EBS volume and stores it in Amazon S3. You can copy the snapshot within the same region or from one region to another. You can use the snapshot to create EBS volumes or Amazon Machine Images (AMIs). The snapshot is copied to the regional endpoint that you send the HTTP request to.

Copies of encrypted EBS snapshots remain encrypted. Copies of unencrypted snapshots remain unencrypted, unless the Encrypted flag is specified during the snapshot copy operation. By default, encrypted snapshot copies use the default AWS Key Management Service (AWS KMS) customer master key (CMK); however, you can specify a non-default CMK with the KmsKeyId parameter.

Note
To copy an encrypted snapshot that has been shared from another account, you must have permissions for the CMK used to encrypt the snapshot.

Note
Snapshots created by the CopySnapshot action have an arbitrary volume ID that should not be used for any purpose.

For more information, see Copying an Amazon EBS Snapshot in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Description
A description for the EBS snapshot.
Type: String
Required: No

DestinationRegion
The destination region to use in the PresignedUrl parameter of a snapshot copy operation. This parameter is only valid for specifying the destination region in a PresignedUrl parameter, where it is required.

Note
CopySnapshot sends the snapshot copy to the regional endpoint that you send the HTTP request to, such as ec2.us-east-1.amazonaws.com (in the AWS CLI, this is specified with the --region parameter or the default region in your AWS configuration file).

Type: String
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

Encrypted
Specifies whether the destination snapshot should be encrypted. You can encrypt a copy of an unencrypted snapshot using this flag, but you cannot use it to create an unencrypted copy from an encrypted snapshot. Your default CMK for EBS is used unless a non-default AWS Key Management Service (AWS KMS) CMK is specified with KmsKeyId. For more information, see Amazon EBS Encryption in the Amazon Elastic Compute Cloud User Guide.

Type: Boolean
Required: No
KmsKeyId
The full ARN of the AWS Key Management Service (AWS KMS) CMK to use when creating
the snapshot copy. This parameter is only required if you want to use a non-default CMK;
if this parameter is not specified, the default CMK for EBS is used. The ARN contains the
arn:aws:kms namespace, followed by the region of the CMK, the AWS account ID of the
CMK owner, the key namespace, and then the CMK ID. For example, arn:aws:kms:us-
east-1:012345678910:key/abcd1234-a123-456a-a12b-a123b4cd56ef. The specified CMK must
exist in the region that the snapshot is being copied to. If a KmsKeyId is specified, the Encrypted
flag must also be set.
Type: String
Required: No

PresignedUrl
The pre-signed URL that facilitates copying an encrypted snapshot. This parameter is only
required when copying an encrypted snapshot with the Amazon EC2 Query API; it is available
as an optional parameter in all other cases. The PresignedUrl should use the snapshot source
endpoint, the CopySnapshot action, and include the SourceRegion, SourceSnapshotId, and
DestinationRegion parameters. The PresignedUrl must be signed using AWS Signature
Version 4. Because EBS snapshots are stored in Amazon S3, the signing algorithm for this
parameter uses the same logic that is described in Authenticating Requests by Using Query
Parameters (AWS Signature Version 4) in the Amazon Simple Storage Service API Reference. An
invalid or improperly signed PresignedUrl will cause the copy operation to fail asynchronously,
and the snapshot will move to an error state.
Type: String
Required: No

SourceRegion
The ID of the region that contains the snapshot to be copied.
Type: String
Required: Yes

SourceSnapshotId
The ID of the EBS snapshot to copy.
Type: String
Required: Yes

Response Elements
The following elements are returned by the service.

requestId
The ID of the request.
Type: String

snapshotId
The ID of the new snapshot.
Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

This example request copies the snapshot in the us-west-1 region with the ID snap-1234567890abcdef0.

Sample Request

```
https://ec2.amazonaws.com/?Action=CopySnapshot
&SourceRegion=us-west-1
&SourceSnapshotId=snap-1234567890abcdef0
&Description=My_snapshot
&AUTHPARAMS
```

Sample Response

```
<CopySnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
  <snapshotId>snap-1234567890abcdef1</snapshotId>
</CopySnapshotResponse>
```
CreateCustomerGateway

Provides information to AWS about your VPN customer gateway device. The customer gateway is the appliance at your end of the VPN connection. (The device on the AWS side of the VPN connection is the virtual private gateway.) You must provide the Internet-routable IP address of the customer gateway's external interface. The IP address must be static and may be behind a device performing network address translation (NAT).

For devices that use Border Gateway Protocol (BGP), you can also provide the device's BGP Autonomous System Number (ASN). You can use an existing ASN assigned to your network. If you don't have an ASN already, you can use a private ASN (in the 64512 - 65534 range).

**Note**

Amazon EC2 supports all 2-byte ASN numbers in the range of 1 - 65534, with the exception of 7224, which is reserved in the us-east-1 region, and 9059, which is reserved in the eu-west-1 region.

For more information about VPN customer gateways, see Adding a Hardware Virtual Private Gateway to Your VPC in the Amazon Virtual Private Cloud User Guide.

**Important**

You cannot create more than one customer gateway with the same VPN type, IP address, and BGP ASN parameter values. If you run an identical request more than one time, the first request creates the customer gateway, and subsequent requests return information about the existing customer gateway. The subsequent requests do not create new customer gateway resources.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**BgpAsn**

For devices that support BGP, the customer gateway's BGP ASN.

Default: 65000

Type: Integer

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

**IpAddress**

The Internet-routable IP address for the customer gateway's outside interface. The address must be static.

Type: String

Required: Yes

**Type**

The type of VPN connection that this customer gateway supports (ipsec.1).

Type: String

Valid Values: ipsec.1

Required: Yes

**Response Elements**

The following elements are returned by the service.
customerGateway
   Information about the customer gateway.
   Type: CustomerGateway (p. 547) object

requestId
   The ID of the request.
   Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example passes information to AWS about the customer gateway with the IP address 12.1.2.3 and BGP ASN 65534.

Sample Request

https://ec2.amazonaws.com/?Action=CreateCustomerGateway
&Type=ipsec.1
&IpAddress=12.1.2.3
&BgpAsn=65534
&AUTHPARAMS

Sample Response

<CreateCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/*">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <customerGateway>
      <customerGatewayId>cgw-b4dc3961</customerGatewayId>
      <state>pending</state>
      <type>ipsec.1</type>
      <IpAddress>12.1.2.3</IpAddress>
      <bgpAsn>65534</bgpAsn>
      <tagSet/>
   </customerGateway>
</CreateCustomerGatewayResponse>
CreateDhcpOptions

Creates a set of DHCP options for your VPC. After creating the set, you must associate it with the VPC, causing all existing and new instances that you launch in the VPC to use this set of DHCP options. The following are the individual DHCP options you can specify. For more information about the options, see RFC 2132.

- **domain-name-servers** - The IP addresses of up to four domain name servers, or AmazonProvidedDNS. The default DHCP option set specifies AmazonProvidedDNS. If specifying more than one domain name server, specify the IP addresses in a single parameter, separated by commas. If you want your instance to receive a custom DNS hostname as specified in domain-name, you must set domain-name-servers to a custom DNS server.

- **domain-name** - If you're using AmazonProvidedDNS in "us-east-1", specify "ec2.internal". If you're using AmazonProvidedDNS in another region, specify "region.compute.internal" (for example, "ap-northeast-1.compute.internal"). Otherwise, specify a domain name (for example, "MyCompany.com"). This value is used to complete unqualified DNS hostnames. **Important**: Some Linux operating systems accept multiple domain names separated by spaces. However, Windows and other Linux operating systems treat the value as a single domain, which results in unexpected behavior. If your DHCP options set is associated with a VPC that has instances with multiple operating systems, specify only one domain name.

- **ntp-servers** - The IP addresses of up to four Network Time Protocol (NTP) servers.

- **netbios-name-servers** - The IP addresses of up to four NetBIOS name servers.

- **netbios-node-type** - The NetBIOS node type (1, 2, 4, or 8). We recommend that you specify 2 (broadcast and multicast are not currently supported). For more information about these node types, see RFC 2132.

Your VPC automatically starts out with a set of DHCP options that includes only a DNS server that we provide (AmazonProvidedDNS). If you create a set of options, and if your VPC has an Internet gateway, make sure to set the domain-name-servers option either to AmazonProvidedDNS or to a domain name server of your choice. For more information about DHCP options, see DHCP Options Sets in the Amazon Virtual Private Cloud User Guide.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DhcpConfiguration.N**

A DHCP configuration option.

- Type: array of NewDhcpConfiguration (p. 633) objects
- Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

- Type: Boolean
- Required: No

**Response Elements**

The following elements are returned by the service.

**dhcpOptions**

A set of DHCP options.
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example
This example creates a set of DHCP options with a domain name example.com and two DNS servers (10.2.5.1 and 10.2.5.2). The DNS servers' IP addresses are specified in a single parameter, separated by commas, to preserve the order in which they are specified.

Sample Request

https://ec2.amazonaws.com/?Action=CreateDhcpOptions
&DhcpConfiguration.1.Key=domain-name
&DhcpConfiguration.1.Value.1=example.com
&DhcpConfiguration.2.Key=domain-name-servers
&DhcpConfiguration.2.Value.1=10.2.5.1,10.2.5.2
&AUTHPARAMS

Sample Response

<CreateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <dhcpOptions>
    <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
    <dhcpConfigurationSet>
      <item>
        <key>domain-name</key>
        <valueSet>
          <item>
            <value>example.com</value>
          </item>
        </valueSet>
      </item>
      <item>
        <key>domain-name-servers</key>
        <valueSet>
          <item>
            <value>10.2.5.1</value>
          </item>
          <item>
            <value>10.2.5.2</value>
          </item>
        </valueSet>
      </item>
    </dhcpConfigurationSet>
    <tagSet/>
  </dhcpOptions>
</CreateDhcpOptionsResponse>
</CreateDhcpOptionsResponse>
CreateFlowLogs

Creates one or more flow logs to capture IP traffic for a specific network interface, subnet, or VPC. Flow logs are delivered to a specified log group in Amazon CloudWatch Logs. If you specify a VPC or subnet in the request, a log stream is created in CloudWatch Logs for each network interface in the subnet or VPC. Log streams can include information about accepted and rejected traffic to a network interface. You can view the data in your log streams using Amazon CloudWatch Logs.

In your request, you must also specify an IAM role that has permission to publish logs to CloudWatch Logs.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**ClientToken**
- Unique, case-sensitive identifier you provide to ensure the idempotency of the request. For more information, see How to Ensure Idempotency.
  - Type: String
  - Required: No

**DeliverLogsPermissionArn**
- The ARN for the IAM role that's used to post flow logs to a CloudWatch Logs log group.
  - Type: String
  - Required: Yes

**LogGroupName**
- The name of the CloudWatch log group.
  - Type: String
  - Required: Yes

**ResourceId.N**
- One or more subnet, network interface, or VPC IDs.
  - Constraints: Maximum of 1000 resources
  - Type: array of Strings
  - Required: Yes

**ResourceType**
- The type of resource on which to create the flow log.
  - Type: String
  - Valid Values: VPC | Subnet | NetworkInterface
  - Required: Yes

**TrafficType**
- The type of traffic to log.
  - Type: String
  - Valid Values: ACCEPT | REJECT | ALL
  - Required: Yes

Response Elements

The following elements are returned by the service.

**clientToken**
- Unique, case-sensitive identifier you provide to ensure the idempotency of the request.
  - Type: String
flowLogIdSet
  The IDs of the flow logs.
  Type: array of Strings

requestId
  The ID of the request.
  Type: String

unsuccessful
  Information about the flow logs that could not be created successfully.
  Type: array of UnsuccessfulItem objects

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example
This example creates a flow log that captures all rejected traffic for network interface eni-aa22bb33. The flow logs are delivered to a log group in CloudWatch Logs called my-flow-logs in account 123456789101, using the IAM role publishFlowLogs.

Sample Request
https://ec2.amazonaws.com/?Action=CreateFlowLogs
&ResourceType=NetworkInterface
&TrafficType=REJECT
&ResourceId.1=eni-aa22bb33
&DeliverLogsPermissionArn=arn:aws:iam::123456789101:role/publishFlowLogs
&LogGroupName=my-flow-logs
&AUTHPARAMS

Sample Response

  <requestId>2d96dae3-504b-4fc4-bf50-266EXAMPLE</requestId>
  <unsuccessful/>
  <flowLogIdSet>
    <item>fl-1a2b3c4d</item>
  </flowLogIdSet>
</CreateFlowLogsResponse>
CreateImage

Creates an Amazon EBS-backed AMI from an Amazon EBS-backed instance that is either running or stopped.

If you customized your instance with instance store volumes or EBS volumes in addition to the root device volume, the new AMI contains block device mapping information for those volumes. When you launch an instance from this new AMI, the instance automatically launches with those additional volumes.

For more information, see Creating Amazon EBS-Backed Linux AMIs in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

BlockDeviceMapping.N

Information about one or more block device mappings.

Type: array of BlockDeviceMapping (p. 534) objects

Required: No

Description

A description for the new image.

Type: String

Required: No

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

InstanceId

The ID of the instance.

Type: String

Required: Yes

Name

A name for the new image.

Constraints: 3-128 alphanumeric characters, parentheses (()), square brackets ([]), spaces ( ), periods (.), slashes (/), dashes (-), single quotes (‘), at-signs (@), or underscores(_)

Type: String

Required: Yes

NoReboot

By default, Amazon EC2 attempts to shut down and reboot the instance before creating the image. If the 'No Reboot' option is set, Amazon EC2 doesn't shut down the instance before creating the image. When this option is used, file system integrity on the created image can't be guaranteed.

Type: Boolean

Required: No

Response Elements

The following elements are returned by the service.

imageId

The ID of the new AMI.
Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example

This example request creates an AMI from the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateImage
&Description=Standard+Web+Server+v1.0
&InstanceId=i-1234567890abcdef0
&Name=standard-web-server-v1.0
&AUTHPARAMS
```

Sample Response

```
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-4fa54026</imageId>
</CreateImageResponse>
```

Example

This example request creates an AMI from the specified instance, and sets the NoReboot parameter to true (the instance is not rebooted before the image is created).

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateImage
&Description=Standard+Web+Server+v1.0
&InstanceId=i-1234567890abcdef0
&Name=standard-web-server-v1.0
&NoReboot=true
&AUTHPARAMS
```

Sample Response

```
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-4fa54026</imageId>
</CreateImageResponse>
```
CreateInstanceExportTask

Exports a running or stopped instance to an S3 bucket. For information about the supported operating systems, image formats, and known limitations for the types of instances you can export, see Exporting an Instance as a VM Using VM Import/Export in the VM Import/Export User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Description

A description for the conversion task or the resource being exported. The maximum length is 255 bytes.
Type: String
Required: No

ExportToS3

The format and location for an instance export task.
Type: ExportToS3TaskSpecification (p. 560) object
Required: No

InstanceId

The ID of the instance.
Type: String
Required: Yes

TargetEnvironment

The target virtualization environment.
Type: String
Valid Values: citrix | vmware | microsoft
Required: No

Response Elements

The following elements are returned by the service.

exportTask

Information about the instance export task.
Type: ExportTask (p. 558) object

requestId

The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example request creates an Export VM task that makes a Windows instance available as an OVA.
Sample Request

https://ec2.amazonaws.com/?Action=CreateInstanceExportTask
&Description=Example%20for%20docs
&InstanceId=i-1234567890abcdef0
&TargetEnvironment=VMWare
&ExportToS3.DiskImageFormat=VMDK
&ExportToS3.ContainerFormat=OVA
&ExportToS3.S3bucket=my-bucket-for-exported-vm
&ExportToS3.S3prefix=my-exports/
&AUTHPARAMS

Sample Response

<CreateInstanceExportTaskResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <exportTask>
    <exportTaskId>export-i-1234wxyz</exportTaskId>
    <description>Example for docs</description>
    <state>active</state>
    <statusMessage>Running</statusMessage>
    <instanceExport>
      <instanceId>i-1234567890abcdef0</instanceId>
      <targetEnvironment>VMWare</targetEnvironment>
    </instanceExport>
    <exportToS3>
      <diskImageFormat>VMDK</diskImageFormat>
      <containerFormat>OVA</containerFormat>
      <s3Bucket>my-bucket-for-exported-vm</s3Bucket>
      <s3Key>my-exports/ export-i-1234wxyz.ova</s3Key>
    </exportToS3>
  </exportTask>
</CreateInstanceExportTaskResponse>
CreateInternetGateway

Creates an Internet gateway for use with a VPC. After creating the Internet gateway, you attach it to a VPC using AttachInternetGateway (p. 32).
For more information about your VPC and Internet gateway, see the Amazon Virtual Private Cloud User Guide.

Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Response Elements

The following elements are returned by the service.

internetGateway

Information about the Internet gateway.
Type: InternetGateway (p. 610) object

requestId

The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example creates an Internet gateway.

Sample Request

https://ec2.amazonaws.com/?Action=CreateInternetGateway
&AUTHPARAMS

Sample Response

<CreateInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <internetGateway>
    <internetGatewayId>igw-eaad4883</internetGatewayId>
    <attachmentSet/>
    <tagSet/>
</CreateInternetGatewayResponse>
<internetGateway/>
</CreateInternetGatewayResponse>
CreateKeyPair

Creates a 2048-bit RSA key pair with the specified name. Amazon EC2 stores the public key and displays the private key for you to save to a file. The private key is returned as an unencrypted PEM encoded PKCS#8 private key. If a key with the specified name already exists, Amazon EC2 returns an error.

You can have up to five thousand key pairs per region.

The key pair returned to you is available only in the region in which you create it. To create a key pair that is available in all regions, use ImportKeyPair (p. 408).

For more information about key pairs, see Key Pairs in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

KeyName
A unique name for the key pair.
Constraints: Up to 255 ASCII characters
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

keyFingerprint
The SHA-1 digest of the DER encoded private key.
Type: String

keyMaterial
An unencrypted PEM encoded RSA private key.
Type: String

keyName
The name of the key pair.
Type: String

requestId
The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Examples

Example

This example request creates a key pair named my-key-pair.

Sample Request

https://ec2.amazonaws.com/?Action=CreateKeyPair
&KeyName=my-key-pair
&AUTHPARAMS

Sample Response

<!-- Begin RSA PRIVATE KEY -->
MIICiTCCAfICCQ6m7oRw0X0jANBkgkhkiG9w0BAQUFADBCCiDELMAkGA1UEBhMC
VVMyCzAJBgNVBAsTC0lBTSBDb25zI3MwIAYDVQQDEwZBbWF6b24xFDASBgNVBAs
TC0lBTSBDb25zI3MwIAYDVQQDEwZBbWF6b24xFDASBgNVBAsTC0lBTSBDb25zI3

-----BEGIN RSA PRIVATE KEY-----
MIICiTCCAfICCQ6m7oRw0X0jANBkgkhkiG9w0BAQUFADBCCiDELMAkGA1UEBhMC
VVMyCzAJBgNVBAsTC0lBTSBDb25zI3MwIAYDVQQDEwZBbWF6b24xFDASBgNVBAs
TC0lBTSBDb25zI3MwIAYDVQQDEwZBbWF6b24xFDASBgNVBAsTC0lBTSBDb25zI3

-----END RSA PRIVATE KEY-----

Saving the File

Create a file named my-key-pair.pem and paste the entire key from the response into this file. Keep this file in a safe place; it is required to decrypt login information when you connect to an instance that you launched using this key pair. If you're using an SSH client on a Linux computer to connect to your instance, use the following command to set the permissions of your private key file so that only you can read it.

Sample Request

chmod 400 my-key-pair.pem
CreateNatGateway

Creates a NAT gateway in the specified subnet. A NAT gateway can be used to enable instances in a private subnet to connect to the Internet. This action creates a network interface in the specified subnet with a private IP address from the IP address range of the subnet. For more information, see NAT Gateways in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AllocationId</td>
<td>String</td>
<td>Yes</td>
<td>The allocation ID of an Elastic IP address to associate with the NAT gateway. If the Elastic IP address is associated with another resource, you must first disassociate it.</td>
</tr>
<tr>
<td>ClientToken</td>
<td>String</td>
<td>No</td>
<td>Unique, case-sensitive identifier you provide to ensure the idempotency of the request. For more information, see How to Ensure Idempotency.</td>
</tr>
<tr>
<td>SubnetId</td>
<td>String</td>
<td>Yes</td>
<td>The subnet in which to create the NAT gateway.</td>
</tr>
</tbody>
</table>

Response Elements

The following elements are returned by the service.

<table>
<thead>
<tr>
<th>Element</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clientToken</td>
<td>String</td>
<td>Unique, case-sensitive identifier to ensure the idempotency of the request.</td>
</tr>
<tr>
<td>natGateway</td>
<td>NatGateway</td>
<td>Information about the NAT gateway.</td>
</tr>
<tr>
<td>requestId</td>
<td>String</td>
<td>The ID of the request.</td>
</tr>
</tbody>
</table>

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example creates a NAT gateway in subnet subnet-1a2b3c4d and associates the Elastic IP address (with the allocation ID eipalloc-37fc1a52) to the NAT gateway.
Sample Request

https://ec2.amazonaws.com/?Action=CreateNatGateway
&SubnetId=subnet-1a2b3c4d
&AllocationId=eipalloc-37fc1a52
&AUTHPARAMS

Sample Response

  <requestId>1b74dc5c-bcda-403f-867d-example</requestId>
  <natGateway>
    <subnetId>subnet-1a2b3c4d</subnetId>
    <natGatewayAddressSet>
      <item>
        <allocationId>eipalloc-37fc1a52</allocationId>
      </item>
    </natGatewayAddressSet>
    <createTime>2015-11-25T14:00:55.416Z</createTime>
    <vpcId>vpc-4e20d42b</vpcId>
    <natGatewayId>nat-04e77a5e9c34432f9</natGatewayId>
    <state>pending</state>
  </natGateway>
</CreateNatGatewayResponse>
CreateNetworkAcl

Creates a network ACL in a VPC. Network ACLs provide an optional layer of security (in addition to security groups) for the instances in your VPC.

For more information about network ACLs, see Network ACLs in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

**VpcId**
The ID of the VPC.

Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

**networkAcl**
Information about the network ACL.

Type: NetworkAcl (p. 624) object

**requestId**
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example creates a network ACL in the specified VPC. The response includes a default entry for egress, and another for ingress, each with a very high rule number. These are the last entries we process to decide whether traffic is allowed in or out of an associated subnet. If the traffic doesn't match any rules with a lower rule number, then these default entries ultimately deny the traffic.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkAcl
&VpcId=vpc-11ad4878
&AUTHPARAMS
```
Sample Response

```xml
<CreateNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <networkAcl>
    <networkAclId>acl-5fb85d36</networkAclId>
    <vpcId>vpc-11ad4878</vpcId>
    <default>false</default>
    <entrySet>
      <item>
        <ruleNumber>32767</ruleNumber>
        <protocol>all</protocol>
        <ruleAction>deny</ruleAction>
        <egress>true</egress>
        <cidrBlock>0.0.0.0/0</cidrBlock>
      </item>
      <item>
        <ruleNumber>32767</ruleNumber>
        <protocol>all</protocol>
        <ruleAction>deny</ruleAction>
        <egress>false</egress>
        <cidrBlock>0.0.0.0/0</cidrBlock>
      </item>
    </entrySet>
    <associationSet/>
    <tagSet/>
  </networkAcl>
</CreateNetworkAclResponse>
```
CreateNetworkAclEntry

Creates an entry (a rule) in a network ACL with the specified rule number. Each network ACL has a set of numbered ingress rules and a separate set of numbered egress rules. When determining whether a packet should be allowed in or out of a subnet associated with the ACL, we process the entries in the ACL according to the rule numbers, in ascending order. Each network ACL has a set of ingress rules and a separate set of egress rules.

We recommend that you leave room between the rule numbers (for example, 100, 110, 120, ...), and not number them one right after the other (for example, 101, 102, 103, ...). This makes it easier to add a rule between existing ones without having to renumber the rules.

After you add an entry, you can't modify it; you must either replace it, or create an entry and delete the old one.

For more information about network ACLs, see Network ACLs in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

CidrBlock
The network range to allow or deny, in CIDR notation (for example 172.16.0.0/24).
Type: String
Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Egress
Indicates whether this is an egress rule (rule is applied to traffic leaving the subnet).
Type: Boolean
Required: Yes

Icmp
ICMP protocol: The ICMP type and code. Required if specifying ICMP for the protocol.
Type: IcmpTypeCode (p. 573) object
Required: No

NetworkAclId
The ID of the network ACL.
Type: String
Required: Yes

PortRange
TCP or UDP protocols: The range of ports the rule applies to.
Type: PortRange (p. 638) object
Required: No

Protocol
The protocol. A value of -1 means all protocols.
Type: String
Required: Yes

RuleAction
Indicates whether to allow or deny the traffic that matches the rule.
Response Elements

The following elements are returned by the service.

`requestId`
- The ID of the request.
  Type: String

`return`
- Is `true` if the request succeeds, and an error otherwise.
  Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example creates an entry with rule number 110 in the network ACL with the ID acl-2cb85d45. The rule allows ingress traffic from anywhere (0.0.0.0/0) on UDP port 53 into any associated subnet.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=110
&Protocol=udp
&RuleAction=allow
&Egress=false
&CidrBlock=0.0.0.0/0
&PortRange.From=53
&PortRange.To=53

<AUTHPARAMS
```

Sample Response

```
<CreateNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CreateNetworkAclEntryResponse>
```
CreateNetworkInterface

Creates a network interface in the specified subnet.
For more information about network interfaces, see Elastic Network Interfaces in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Description
A description for the network interface.
Type: String
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

PrivateIpAddress
The primary private IP address of the network interface. If you don't specify an IP address, Amazon EC2 selects one for you from the subnet range. If you specify an IP address, you cannot indicate any IP addresses specified in privateIpAddresses as primary (only one IP address can be designated as primary).
Type: String
Required: No

PrivateIpAddresses.N
One or more private IP addresses.
Type: array of PrivateIpAddressSpecification (p. 644) objects
Required: No

SecondaryPrivateIpAddressCount
The number of secondary private IP addresses to assign to a network interface. When you specify a number of secondary IP addresses, Amazon EC2 selects these IP addresses within the subnet range. You can't specify this option and specify more than one private IP address using privateIpAddresses.
The number of IP addresses you can assign to a network interface varies by instance type. For more information, see Private IP Addresses Per ENI Per Instance Type in the Amazon Elastic Compute Cloud User Guide.
Type: Integer
Required: No

SecurityGroupId.N
The IDs of one or more security groups.
Type: array of Strings
Required: No

SubnetId
The ID of the subnet to associate with the network interface.
Type: String
Required: Yes
Response Elements
The following elements are returned by the service.

networkInterface
Information about the network interface.
Type: NetworkInterface (p. 627) object

requestId
The ID of the request.
Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example creates a network interface in the specified subnet with a primary IP address that is automatically selected by Amazon EC2.

Sample Request

https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&SubnetId=subnet-b2a249da
&AUTHPARAMS

Sample Response

  <requestId>8dbe591e-5a22-48cb-b948-dd0aadd55adf</requestId>
  <networkInterface>
    <networkInterfaceId>eni-cfca76a6</networkInterfaceId>
    <subnetId>subnet-b2a249da</subnetId>
    <vpcId>vpc-c31dafaa</vpcId>
    <availabilityZone>ap-southeast-1b</availabilityZone>
    <description/>
    <ownerId>251839141158</ownerId>
    <requesterManaged>false</requesterManaged>
    <status>available</status>
    <macAddress>02:74:b0:72:9a:51</macAddress>
    <privateIpAddressesSet>
      <item>
        <privateIpAddress>10.0.2.157</privateIpAddress>
      </item>
    </privateIpAddressesSet>
    <groupId>sg-1a2b3c4d</groupId>
    <groupName>default</groupName>
  </networkInterface>
</CreateNetworkInterfaceResponse>
Example 2
This example creates a network interface in the specified subnet with a primary IP address of 10.0.2.140 and four secondary private IP addresses that are automatically selected by Amazon EC2.

Sample Request

https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&PrivateIpAddresses.1.Primary=true
&PrivateIpAddresses.1.PrivateIpAddress=10.0.2.140
&SecondaryPrivateIpAddressCount=4
&SubnetId=subnet-a61dafcf
&AUTHPARAMS

Sample Response

<requestId>bd78c839-0895-4fac-a17f-98b559b6b630</requestId>
<networkInterface>
   <networkInterfaceId>eni-1bcb7772</networkInterfaceId>
   <subnetId>subnet-a61dafcf</subnetId>
   <vpcId>vpc-c31dafaa</vpcId>
   <availabilityZone>ap-southeast-1b</availabilityZone>
   <description/>
   <ownerId>251839141158</ownerId>
   <requesterManaged>false</requesterManaged>
   <status>pending</status>
   <macAddress>02:74:b0:70:7f:1a</macAddress>
   <privateIpAddress>10.0.2.140</privateIpAddress>
   <sourceDestCheck>true</sourceDestCheck>
   <groupSet>
      <item>
         <groupId>sg-1a2b3c4d</groupId>
         <groupName>default</groupName>
      </item>
      </groupSet>
   <tagSet/>
   <privateIpAddressesSet>
      <item>
         <privateIpAddress>10.0.2.140</privateIpAddress>
         <primary>true</primary>
      </item>
      <item>
         <privateIpAddress>10.0.2.172</privateIpAddress>
         <primary>false</primary>
      </item>
      <item>
         <privateIpAddress>10.0.2.169</privateIpAddress>
         <primary>false</primary>
      </item>
   </privateIpAddressesSet>
</networkInterface>
</CreateNetworkInterfaceResponse>
Example 3
This example creates a network interface with a primary private IP address of 10.0.2.130 and two secondary IP addresses of 10.0.2.132 and 10.0.2.133.

Sample Request

https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&PrivateIpAddresses.1.Primary=true
&PrivateIpAddresses.1.PrivateIpAddress=10.0.2.130
&PrivateIpAddresses.2.Primary=false
&PrivateIpAddresses.2.PrivateIpAddress=10.0.2.132
&PrivateIpAddresses.3.Primary=false
&PrivateIpAddresses.3.PrivateIpAddress=10.0.2.133
&SubnetId=subnet-a61dafcf
&AUTHPARAMS

Sample Response

  <requestId>a9565f4c-f928-4113-859b-905886d11658"/>
  <networkInterface>
    <networkInterfaceId>eni-41c47828</networkInterfaceId>
    <subnetId>subnet-a61dafcf</subnetId>
    <vpcId>vpc-c31dafaa</vpcId>
    <availabilityZone>ap-southeast-1b</availabilityZone>
    <description/>
    <ownerId>251839141158</ownerId>
    <requesterManaged>false</requesterManaged>
    <status>pending</status>
    <macAddress>02:74:b0:78:bf:ab</macAddress>
    <privateIpAddress>10.0.2.130</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-188d9f74</groupId>
        <groupName>default</groupName>
      </item>
    </groupSet>
    <tagSet/>
    <privateIpAddressesSet>
      <item>
        <privateIpAddress>10.0.2.130</privateIpAddress>
      </item>
    </privateIpAddressesSet>
  </networkInterface>
</CreateNetworkInterfaceResponse>
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Examples

<primary>true</primary>
</item>
<item>
<privateIpAddress>10.0.2.133</privateIpAddress>
<primary>false</primary>
</item>
<item>
<privateIpAddress>10.0.2.132</privateIpAddress>
<primary>false</primary>
</item>
</privateIpAddressesSet>
</networkInterface>
</CreateNetworkInterfaceResponse>

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CreatePlacementGroup

Creating a placement group that you launch cluster instances into. You must give the group a name that's unique within the scope of your account.

For more information about placement groups and cluster instances, see Cluster Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **DryRun**
  - Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.
  - Type: Boolean
  - Required: No
- **GroupName**
  - A name for the placement group.
  - Constraints: Up to 255 ASCII characters
  - Type: String
  - Required: Yes
- **Strategy**
  - The placement strategy.
  - Type: String
  - Valid Values: `cluster`
  - Required: Yes

Response Elements

The following elements are returned by the service.

- **requestId**
  - The ID of the request.
  - Type: String
- **return**
  - Is `true` if the request succeeds, and an error otherwise.
  - Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example creates a placement group named `XYZ-cluster`.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreatePlacementGroup
```
&GroupName=XYZ-cluster
&Strategy=cluster
&AUTHPARAMS

Sample Response

<CreatePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <return>true</return>
</CreatePlacementGroupResponse>
CreateReservedInstancesListing

Creates a listing for Amazon EC2 Standard Reserved Instances to be sold in the Reserved Instance Marketplace. You can submit one Standard Reserved Instance listing at a time. To get a list of your Standard Reserved Instances, you can use the DescribeReservedInstances (p. 271) operation.

The Reserved Instance Marketplace matches sellers who want to resell Standard Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

To sell your Standard Reserved Instances, you must first register as a seller in the Reserved Instance Marketplace. After completing the registration process, you can create a Reserved Instance Marketplace listing of some or all of your Standard Reserved Instances, and specify the upfront price to receive for them. Your Standard Reserved Instance listings then become available for purchase. To view the details of your Standard Reserved Instance listing, you can use the DescribeReservedInstancesListings (p. 274) operation.

For more information, see Reserved Instance Marketplace in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

ClientToken

Unique, case-sensitive identifier you provide to ensure idempotency of your listings. This helps avoid duplicate listings. For more information, see Ensuring Idempotency.

Type: String
Required: Yes

InstanceCount

The number of instances that are a part of a Reserved Instance account to be listed in the Reserved Instance Marketplace. This number should be less than or equal to the instance count associated with the Reserved Instance ID specified in this call.

Type: Integer
Required: Yes

PriceSchedules.N

A list specifying the price of the Standard Reserved Instance for each month remaining in the Reserved Instance term.

Type: array of PriceScheduleSpecification (p. 642) objects
Required: Yes

ReservedInstancesId

The ID of the active Standard Reserved Instance.

Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

Type: String

reservedInstancesListingsSet

Information about the Standard Reserved Instance listing.
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example
This example creates a Reserved Instance Marketplace listing from the specified Standard Reserved Instance, which has 11 months remaining in its term. In this example, we set the upfront price at $2.50, and the price drops over the course of the 11-month term if the instance is still not sold.

Sample Request

https://ec2.amazonaws.com/?Action=CreateReservedInstancesListing
&ClientToken=myIdempToken1
&InstanceCount=1
&PriceSchedules.1.Price=2.5
&PriceSchedules.1.Term=11
&PriceSchedules.2.Price=2.0
&PriceSchedules.2.Term=8
&PriceSchedules.3.Price=1.5
&PriceSchedules.3.Term=5
&PriceSchedules.4.Price=0.7
&PriceSchedules.4.Term=3
&PriceSchedules.5.Price=0.1
&PriceSchedules.5.Term=1
&ReservedInstancesId=e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE
&AUTHPARAMS

Sample Response

<CreateReservedInstancesListingResponse>
  <requestId>a42481af-335a-4e9e-b291-bd18dexample</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>5ec28771-05ff-4b9b-aa31-9e57dEXAMPLE</reservedInstancesListingId>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
      <createDate>2012-07-17T11:09:449Z</createDate>
      <updateDate>2012-07-17T11:09:468Z</updateDate>
      <status>active</status>
      <statusMessage>ACTIVE</statusMessage>
      <instanceCounts>
        <item>
          <state>Available</state>
          <instanceCount>1</instanceCount>
        </item>
        <item>
          <state>Sold</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Cancelled</state>
        </item>
  </reservedInstancesListingsSet>
</CreateReservedInstancesListingResponse>
<instanceCount>0</instanceCount>
</item>
</item>
<state>Pending</state>
<instanceCount>0</instanceCount>
</item>
</instanceCounts>
<priceSchedules>
    <item>
        <term>11</term>
        <price>2.5</price>
        <currencyCode>USD</currencyCode>
        <active>true</active>
    </item>
    <item>
        <term>10</term>
        <price>2.5</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>9</term>
        <price>2.5</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>8</term>
        <price>2.0</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>7</term>
        <price>2.0</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>6</term>
        <price>2.0</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>5</term>
        <price>1.5</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>4</term>
        <price>1.5</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>3</term>
        <price>0.7</price>
    </item>
</priceSchedules>
<currencyCode>USD</currencyCode>
<active>false</active>
</item>
</priceSchedules>
<tagSet>
<clientToken>myIdempToken1</clientToken>
</item>
</reservedInstancesListingsSet>
</CreateReservedInstancesListingResponse>
CreateRoute

Creates a route in a route table within a VPC.

You must specify one of the following targets: Internet gateway or virtual private gateway, NAT instance, NAT gateway, VPC peering connection, or network interface.

When determining how to route traffic, we use the route with the most specific match. For example, let’s say the traffic is destined for 192.0.2.3, and the route table includes the following two routes:

- 192.0.2.0/24 (goes to some target A)
- 192.0.2.0/28 (goes to some target B)

Both routes apply to the traffic destined for 192.0.2.3. However, the second route in the list covers a smaller number of IP addresses and is therefore more specific, so we use that route to determine where to target the traffic.

For more information about route tables, see Route Tables in the Amazon Virtual Private Cloud User Guide.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **DestinationCidrBlock**
  - The CIDR address block used for the destination match. Routing decisions are based on the most specific match.
  - Type: String
  - Required: Yes

- **DryRun**
  - Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
  - Type: Boolean
  - Required: No

- **GatewayId**
  - The ID of an Internet gateway or virtual private gateway attached to your VPC.
  - Type: String
  - Required: No

- **InstanceId**
  - The ID of a NAT instance in your VPC. The operation fails if you specify an instance ID unless exactly one network interface is attached.
  - Type: String
  - Required: No

- **NatGatewayId**
  - The ID of a NAT gateway.
  - Type: String
  - Required: No

- **NetworkInterfaceId**
  - The ID of a network interface.
  - Type: String
  - Required: No

- **RouteTableId**
  - The ID of the route table for the route.
Response Elements

The following elements are returned by the service.

**requestId**
- The ID of the request.
- Type: String

**return**
- Returns `true` if the request succeeds; otherwise, it returns an error.
- Type: Boolean

Errors

For information about the errors that are common to all actions, see [Common Client Errors](#) (p. 793).

Examples

**Example 1**
This example creates a route in the route table with the ID `rtb-e4ad488d`. The route matches all traffic (`0.0.0.0/0`) and routes it to the Internet gateway with the ID `igw-eaad4883`.

**Sample Request**

```plaintext
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-e4ad488d
&DestinationCidrBlock=0.0.0.0/0
&GatewayId=igw-eaad4883
&AUTHPARAMS
```

**Example 2**
This example creates a route in the route table with the ID `rtb-g8ff4ea2`. The route sends all traffic (`0.0.0.0/0`) to the NAT instance with the ID `i-1234567890abcdef0`.

**Sample Request**

```plaintext
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-g8ff4ea2
&DestinationCidrBlock=0.0.0.0/0
&InstanceId=i-1234567890abcdef0
&AUTHPARAMS
```

**Example 3**
This example command creates a route in route table `rtb-g8ff4ea2`. The route matches traffic for the CIDR block `10.0.0.0/16` and routes it to VPC peering connection, `pcx-111aaa22`. This route enables traffic to be directed to the other peered VPC in the VPC peering connection.
Sample Request

https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-g8ff4ea2
&DestinationCidrBlock=10.0.0.0/16
&vpcPeeringConnectionId=pcx-111aaa22
&AUTHPARMS
CreateRouteTable

Creates a route table for the specified VPC. After you create a route table, you can add routes and associate the table with a subnet.

For more information about route tables, see Route Tables in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

**VpcId**
The ID of the VPC.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

**requestId**
The ID of the request.
Type: String

**routeTable**
Information about the route table.
Type: RouteTable (p. 669) object

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example creates a route table for the VPC with the ID vpc-11ad4878. By default, every route table includes a local route that enables traffic to flow within the VPC. The following response shows that route.

Sample Request

https://ec2.amazonaws.com/?Action=CreateRouteTable
&VpcId=vpc-11ad4878
&AUTHPARAMS
Sample Response

```xml
<CreateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <routeTable>
    <routeTableId>rtb-f9ad4890</routeTableId>
    <vpcId>vpc-11ad4878</vpcId>
    <routeSet>
      <item>
        <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
        <gatewayId>local</gatewayId>
        <state>active</state>
      </item>
    </routeSet>
    <associationSet/>
    <tagSet/>
  </routeTable>
</CreateRouteTableResponse>
```
CreateSecurityGroup

Creates a security group.

A security group is for use with instances either in the EC2-Classic platform or in a specific VPC. For more information, see Amazon EC2 Security Groups in the Amazon Elastic Compute Cloud User Guide and Security Groups for Your VPC in the Amazon Virtual Private Cloud User Guide.

**Important**

EC2-Classic: You can have up to 500 security groups.

EC2-VPC: You can create up to 500 security groups per VPC.

When you create a security group, you specify a friendly name of your choice. You can have a security group for use in EC2-Classic with the same name as a security group for use in a VPC. However, you can't have two security groups for use in EC2-Classic with the same name or two security groups for use in a VPC with the same name.

You have a default security group for use in EC2-Classic and a default security group for use in your VPC. If you don't specify a security group when you launch an instance, the instance is launched into the appropriate default security group. A default security group includes a default rule that grants instances unrestricted network access to each other.

You can add or remove rules from your security groups using AuthorizeSecurityGroupIngress (p. 43), AuthorizeSecurityGroupEgress (p. 40), RevokeSecurityGroupIngress (p. 497), and RevokeSecurityGroupEgress (p. 494).

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

_Type: Boolean_

_Required: No_

**GroupDescription**

A description for the security group. This is informational only.

_Constraints: Up to 255 characters in length

_Constraints for EC2-Classic: ASCII characters

_Constraints for EC2-VPC: a-z, A-Z, 0-9, spaces, and ._-:/()#,@\[\]+=&;{}!$_

_Type: String_

_Required: Yes_

**GroupName**

The name of the security group.

_Constraints: Up to 255 characters in length

_Constraints for EC2-Classic: ASCII characters

_Constraints for EC2-VPC: a-z, A-Z, 0-9, spaces, and ._-:/()#,@\[\]+=&;{}!$_

_Type: String_

_Required: Yes_

**VpcId**

[EC2-VPC] The ID of the VPC. Required for EC2-VPC.

_Type: String_

_Required: No_
Response Elements
The following elements are returned by the service.

**groupId**
The ID of the security group.
Type: String

**requestId**
The ID of the request.
Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

**Example for EC2-Classic**
This example creates a security group named *websrv* for EC2-Classic.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=CreateSecurityGroup
&GroupName=websrv
&GroupDescription=Web Servers
&AUTHPARAMS
```

**Sample Response**

```
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <groupId>sg-1a2b3c4d</groupId>
</CreateSecurityGroupResponse>
```

**Example for EC2-VPC**
This example creates a security group named *WebServerSG* for the specified VPC.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=CreateSecurityGroup
&GroupName=WebServerSG
&GroupDescription=Web Servers
&VpcId=vpc-3325caf2
&AUTHPARAMS
```

**Sample Response**

```
```

<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
<groupId>sg-0a42d66a</groupId>
</CreateSecurityGroupResponse>
CreateSnapshot

Creates a snapshot of an EBS volume and stores it in Amazon S3. You can use snapshots for backups, to make copies of EBS volumes, and to save data before shutting down an instance. When a snapshot is created, any AWS Marketplace product codes that are associated with the source volume are propagated to the snapshot.

You can take a snapshot of an attached volume that is in use. However, snapshots only capture data that has been written to your EBS volume at the time the snapshot command is issued; this may exclude any data that has been cached by any applications or the operating system. If you can pause any file systems on the volume long enough to take a snapshot, your snapshot should be complete. However, if you cannot pause all file writes to the volume, you should unmount the volume from within the instance, issue the snapshot command, and then remount the volume to ensure a consistent and complete snapshot. You may remount and use your volume while the snapshot status is pending.

To create a snapshot for EBS volumes that serve as root devices, you should stop the instance before taking the snapshot.

Snapshots that are taken from encrypted volumes are automatically encrypted. Volumes that are created from encrypted snapshots are also automatically encrypted. Your encrypted volumes and any associated snapshots always remain protected.

For more information, see Amazon Elastic Block Store and Amazon EBS Encryption in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**Description**

A description for the snapshot.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

**VolumeId**

The ID of the EBS volume.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

**dataEncryptionKeyId**

The data encryption key identifier for the snapshot. This value is a unique identifier that corresponds to the data encryption key that was used to encrypt the original volume or snapshot copy. Because data encryption keys are inherited by volumes created from snapshots, and vice versa, if snapshots share the same data encryption key identifier, then they belong to the same volume/snapshot lineage. This parameter is only returned by the DescribeSnapshots (p. 304) API operation.

Type: String
description
The description for the snapshot.
Type: String

crypted
Indicates whether the snapshot is encrypted.
Type: Boolean

kmsKeyId
The full ARN of the AWS Key Management Service (AWS KMS) customer master key (CMK) that
was used to protect the volume encryption key for the parent volume.
Type: String

ownerAlias
Value from an Amazon-maintained list (amazon | aws-marketplace | microsoft) of snapshot
owners. Not to be confused with the user-configured AWS account alias, which is set from the IAM
console.
Type: String

ownerId
The AWS account ID of the EBS snapshot owner.
Type: String

progress
The progress of the snapshot, as a percentage.
Type: String

requestId
The ID of the request.
Type: String

snapshotId
The ID of the snapshot. Each snapshot receives a unique identifier when it is created.
Type: String

startTime
The time stamp when the snapshot was initiated.
Type: Timestamp

status
The snapshot state.
Type: String
Valid Values: pending | completed | error

statusMessage
Encrypted Amazon EBS snapshots are copied asynchronously. If a snapshot copy operation
fails (for example, if the proper AWS Key Management Service (AWS KMS) permissions are not
obtained) this field displays error state details to help you diagnose why the error occurred. This
parameter is only returned by the DescribeSnapshots (p. 304) API operation.
Type: String

tagSet
Any tags assigned to the snapshot.
Type: array of Tag (p. 717) objects

volumeId
The ID of the volume that was used to create the snapshot. Snapshots created by the
CopySnapshot (p. 65) action have an arbitrary volume ID that should not be used for any purpose.
Type: String

volumeSize
The size of the volume, in GiB.
Type: Integer
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example
This example creates a snapshot of the volume with the ID vol-1234567890abcdef0.

Sample Request
https://ec2.amazonaws.com/?Action=CreateSnapshot
&VolumeId=vol-1234567890abcdef0
&Description=Daily+Backup

Sample Response
<CreateSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotId>snap-1234567890abcdef0</snapshotId>
  <volumeId>vol-1234567890abcdef0</volumeId>
  <status>pending</status>
  <startTime>YYYY-MM-DDTHH:MM:SS.000Z</startTime>
  <progress>60%</progress>
  <ownerId>111122223333</ownerId>
  <volumeSize>30</volumeSize>
  <description>Daily Backup</description>
</CreateSnapshotResponse>
CreateSpotDatafeedSubscription

Creates a data feed for Spot instances, enabling you to view Spot instance usage logs. You can create one data feed per AWS account. For more information, see Spot Instance Data Feed in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**Bucket**

The Amazon S3 bucket in which to store the Spot instance data feed.

- Type: String
- Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

- Type: Boolean
- Required: No

**Prefix**

A prefix for the data feed file names.

- Type: String
- Required: No

Response Elements

The following elements are returned by the service.

**requestId**

- The ID of the request.
- Type: String

**spotDatafeedSubscription**

- The Spot instance data feed subscription.
- Type: SpotDatafeedSubscription (p. 698) object

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example creates a Spot instance data feed for the account.

Sample Request

https://ec2.amazonaws.com/?Action=CreateSpotDatafeedSubscription
&Bucket=my-s3-bucket
&AUTHPARAMS
Sample Response

```xml
<CreateSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>123456789012</ownerId>
    <bucket>my-s3-bucket</bucket>
    <prefix>spotdata_</prefix>
    <state>Active</state>
  </spotDatafeedSubscription>
</CreateSpotDatafeedSubscriptionResponse>
```
CreateSubnet

Creates a subnet in an existing VPC.

When you create each subnet, you provide the VPC ID and the CIDR block you want for the subnet. After you create a subnet, you can't change its CIDR block. The subnet's CIDR block can be the same as the VPC's CIDR block (assuming you want only a single subnet in the VPC), or a subset of the VPC's CIDR block. If you create more than one subnet in a VPC, the subnets' CIDR blocks must not overlap. The smallest subnet (and VPC) you can create uses a /28 netmask (16 IP addresses), and the largest uses a /16 netmask (65,536 IP addresses).

Important
AWS reserves both the first four and the last IP address in each subnet's CIDR block. They're not available for use.

If you add more than one subnet to a VPC, they're set up in a star topology with a logical router in the middle.

If you launch an instance in a VPC using an Amazon EBS-backed AMI, the IP address doesn't change if you stop and restart the instance (unlike a similar instance launched outside a VPC, which gets a new IP address when restarted). It's therefore possible to have a subnet with no running instances (they're all stopped), but no remaining IP addresses available.

For more information about subnets, see Your VPC and Subnets in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AvailabilityZone
The Availability Zone for the subnet.
Default: AWS selects one for you. If you create more than one subnet in your VPC, we may not necessarily select a different zone for each subnet.
Type: String
Required: No

CidrBlock
The network range for the subnet, in CIDR notation. For example, 10.0.0.0/24.
Type: String
Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

VpcId
The ID of the VPC.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

subnet

Information about the subnet.
Type: Subnet (p. 716) object

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example creates a subnet with CIDR block 10.0.1.0/24 in the VPC with the ID vpc-1a2b3c4d.

Sample Request

https://ec2.amazonaws.com/?Action=CreateSubnet
&VpcId=vpc-1a2b3c4d
&CidrBlock=10.0.1.0/24
&AUTHPARAMS

Sample Response

<CreateSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <subnet>
    <subnetId>subnet-9d4a7b6c</subnetId>
    <state>pending</state>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <cidrBlock>10.0.1.0/24</cidrBlock>
    <availableIpAddressCount>251</availableIpAddressCount>
    <availabilityZone>us-east-1a</availabilityZone>
    <tagSet/>
  </subnet>
</CreateSubnetResponse>
CreateTags

Adds or overwrites one or more tags for the specified Amazon EC2 resource or resources. Each resource can have a maximum of 50 tags. Each tag consists of a key and optional value. Tag keys must be unique per resource.

For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide. For more information about creating IAM policies that control users’ access to resources based on tags, see Supported Resource-Level Permissions for Amazon EC2 API Actions in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

ResourceId.N

The IDs of one or more resources to tag. For example, ami-1a2b3c4d.

Type: array of Strings
Required: Yes

Tag.N

One or more tags. The value parameter is required, but if you don't want the tag to have a value, specify the parameter with no value, and we set the value to an empty string.

Type: array of Tag (p. 717) objects
Required: Yes

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

Type: String

return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example request adds (or overwrites) two tags for an AMI and an instance. One of the tags is just a key (webserver), with no value (we set the value to an empty string). The other tag consists of a key (stack) and value (Production).
Sample Request

https://ec2.amazonaws.com/?Action=CreateTags
&ResourceId.1=ami-1a2b3c4d
&ResourceId.2=i-1234567890abcdef0
&Tag.1.Key=webserver
&Tag.1.Value=
&Tag.2.Key=stack
&Tag.2.Value=Production
&AUTHPARAMS

Sample Response

<CreateTagsResponse
xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</CreateTagsResponse>
CreateVolume

Creates an EBS volume that can be attached to an instance in the same Availability Zone. The volume is created in the regional endpoint that you send the HTTP request to. For more information see Regions and Endpoints.

You can create a new empty volume or restore a volume from an EBS snapshot. Any AWS Marketplace product codes from the snapshot are propagated to the volume.

You can create encrypted volumes with the Encrypted parameter. Encrypted volumes may only be attached to instances that support Amazon EBS encryption. Volumes that are created from encrypted snapshots are also automatically encrypted. For more information, see Amazon EBS Encryption in the Amazon Elastic Compute Cloud User Guide.

For more information, see Creating or Restoring an Amazon EBS Volume in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AvailabilityZone
The Availability Zone in which to create the volume. Use DescribeAvailabilityZones (p. 189) to list the Availability Zones that are currently available to you.
Type: String
Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Encrypted
Specifies whether the volume should be encrypted. Encrypted Amazon EBS volumes may only be attached to instances that support Amazon EBS encryption. Volumes that are created from encrypted snapshots are automatically encrypted. There is no way to create an encrypted volume from an unencrypted snapshot or vice versa. If your AMI uses encrypted volumes, you can only launch it on supported instance types. For more information, see Amazon EBS Encryption in the Amazon Elastic Compute Cloud User Guide.
Type: Boolean
Required: No

Iops
Only valid for Provisioned IOPS SSD volumes. The number of I/O operations per second (IOPS) to provision for the volume, with a maximum ratio of 50 IOPS/GiB.
Constraint: Range is 100 to 20000 for Provisioned IOPS SSD volumes
Type: Integer
Required: No

KmsKeyId
The full ARN of the AWS Key Management Service (AWS KMS) customer master key (CMK) to use when creating the encrypted volume. This parameter is only required if you want to use a non-default CMK; if this parameter is not specified, the default CMK for EBS is used. The ARN contains the arn:aws:kms: namespace, followed by the region of the CMK, the AWS account ID of the CMK owner, the key namespace, and then the CMK ID. For example, arn:aws:kms:us-east-1:012345678910:key/abcd1234-a123-456a-a12b-a123b4cd56ef. If a KmsKeyId is specified, the Encrypted flag must also be set.
Response Elements

The following elements are returned by the service.

attachmentSet
   Information about the volume attachments.
   Type: array of VolumeAttachment (p. 731) objects

availabilityZone
   The Availability Zone for the volume.
   Type: String

createTime
   The time stamp when volume creation was initiated.
   Type: Timestamp

encrypted
   Indicates whether the volume will be encrypted.
   Type: Boolean

iops
   The number of I/O operations per second (IOPS) that the volume supports. For Provisioned IOPS SSD volumes, this represents the number of IOPS that are provisioned for the volume. For General Purpose SSD volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting. For more information on General Purpose SSD baseline performance, I/O credits, and bursting, see Amazon EBS Volume Types in the Amazon Elastic Compute Cloud User Guide.
   Constraint: Range is 100-20000 IOPS for io1 volumes and 100-10000 IOPS for gp2 volumes.
   Condition: This parameter is required for requests to create io1 volumes; it is not used in requests to create gp2, st1, scl, or standard volumes.
   Type: Integer
**kmsKeyId**
The full ARN of the AWS Key Management Service (AWS KMS) customer master key (CMK) that was used to protect the volume encryption key for the volume.
Type: String

**requestId**
The ID of the request.
Type: String

**size**
The size of the volume, in GiBs.
Type: Integer

**snapshotId**
The snapshot from which the volume was created, if applicable.
Type: String

**status**
The volume state.
Type: String
Valid Values: creating | available | in-use | deleting | deleted | error

**tagSet**
Any tags assigned to the volume.
Type: array of Tag (p. 717) objects

**volumeId**
The ID of the volume.
Type: String

**volumeType**
The volume type. This can be gp2 for General Purpose SSD, io1 for Provisioned IOPS SSD, st1 for Throughput Optimized HDD, scl for Cold HDD, or standard for Magnetic volumes.
Type: String
Valid Values: standard | io1 | gp2 | scl | st1

**Errors**
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

**Example**

**Example**
This example request creates an 80 GiB encrypted volume in the Availability Zone us-east-1a.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=CreateVolume
&Size=80
&AvailabilityZone=us-east-1a
&Encrypted=1
&AUTHPARAMS
```

**Sample Response**

```
<CreateVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
</CreateVolumeResponse>
```
<volumeId>vol-1234567890abcdef0</volumeId>
<size>80</size>
<snapshotId/>
<availabilityZone>us-east-1a</availabilityZone>
<status>creating</status>
<createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
<volumeType>standard</volumeType>
<encrypted>true</encrypted>
</CreateVolumeResponse>
CreateVpc

Creates a VPC with the specified CIDR block.
The smallest VPC you can create uses a /28 netmask (16 IP addresses), and the largest uses a /16 netmask (65,536 IP addresses). To help you decide how big to make your VPC, see Your VPC and Subnets in the Amazon Virtual Private Cloud User Guide.

By default, each instance you launch in the VPC has the default DHCP options, which includes only a default DNS server that we provide (AmazonProvidedDNS). For more information about DHCP options, see DHCP Options Sets in the Amazon Virtual Private Cloud User Guide.

You can specify the instance tenancy value for the VPC when you create it. You can't change this value for the VPC after you create it. For more information, see Dedicated Instances in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

CidrBlock

The network range for the VPC, in CIDR notation. For example, 10.0.0.0/16.
Type: String
Required: Yes

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

InstanceTenancy

The tenancy options for instances launched into the VPC. For default, instances are launched with shared tenancy by default. You can launch instances with any tenancy into a shared tenancy VPC. For dedicated, instances are launched as dedicated tenancy instances by default. You can only launch instances with a tenancy of dedicated or host into a dedicated tenancy VPC.

Important: The host value cannot be used with this parameter. Use the default or dedicated values only.
Default: default
Type: String
Valid Values: default | dedicated | host
Required: No

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.
Type: String

vpc

Information about the VPC.
Type: Vpc (p. 738) object
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example creates a VPC with the CIDR block 10.0.0.0/16.

Sample Request

https://ec2.amazonaws.com/?Action=CreateVpc
&CidrBlock=10.0.0.0/16
&AUTHPARAMS

Sample Response

<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpc>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <state>pending</state>
    <cidrBlock>10.0.0.0/16</cidrBlock>
    <dhcpOptionsId>dopt-1a2b3c4d2</dhcpOptionsId>
    <instanceTenancy>default</instanceTenancy>
    <tagSet/>
  </vpc>
</CreateVpcResponse>

Example 2
This example creates a VPC with the dedicated tenancy option.

Sample Request

https://ec2.amazonaws.com/?Action=CreateVpc
&CidrBlock=10.32.0.0/16
&InstanceTenancy=dedicated
&AUTHPARAMS

Sample Response

<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>a9e49797-a74f-4f68-b302-a134a51fd054</requestId>
  <vpc>
    <vpcId>vpc-11a63c78</vpcId>
    <state>pending</state>
    <cidrBlock>10.32.0.0/16</cidrBlock>
    <dhcpOptionsId>dopt-1a2b3c4d2</dhcpOptionsId>
    <instanceTenancy>dedicated</instanceTenancy>
  </vpc>
</CreateVpcResponse>
CreateVpcEndpoint

Creates a VPC endpoint for a specified AWS service. An endpoint enables you to create a private connection between your VPC and another AWS service in your account. You can specify an endpoint policy to attach to the endpoint that will control access to the service from your VPC. You can also specify the VPC route tables that use the endpoint. Currently, only endpoints to Amazon S3 are supported.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**ClientToken**
- Unique, case-sensitive identifier you provide to ensure the idempotency of the request. For more information, see How to Ensure Idempotency.
- Type: String
- Required: No

**DryRun**
- Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
- Type: Boolean
- Required: No

**PolicyDocument**
- A policy to attach to the endpoint that controls access to the service. The policy must be in valid JSON format. If this parameter is not specified, we attach a default policy that allows full access to the service.
- Type: String
- Required: No

**RouteTableId.N**
- One or more route table IDs.
- Type: array of Strings
- Required: No

**ServiceName**
- The AWS service name, in the form com.amazonaws.region.service. To get a list of available services, use the DescribeVpcEndpointServices (p. 353) request.
- Type: String
- Required: Yes

**VpcId**
- The ID of the VPC in which the endpoint will be used.
- Type: String
- Required: Yes

Response Elements

The following elements are returned by the service.

**clientToken**
- Unique, case-sensitive identifier you provide to ensure the idempotency of the request.
- Type: String

**requestId**
- The ID of the request.
Type: String

**vpcEndpoint**

Information about the endpoint.

Type: VpcEndpoint (p. 741) object

---

## Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

---

## Example

### Example

The example creates an endpoint between vpc-1a2b3c4d and Amazon S3 in us-east-1, and associates route table rtb-11aa22bb with the endpoint.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcEndpoint
&VpcId=vpc-1a2b3c4d
&ServiceName=com.amazonaws.us-east-1.s3
&RouteTableId.1=rtb-11aa22bb
&AUTHPARAMS
```

### Sample Response

```
<CreateVpcEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <vpcEndpoint>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <state>available</state>
    <routeTableIdSet>
      <item>rtb-11aa22bb</item>
    </routeTableIdSet>
    <vpcEndpointId>vpce-abc12345</vpcEndpointId>
    <creationTimestamp>2015-02-20T16:46:40Z</creationTimestamp>
    <policyDocument>"Version":"2008-10-17","Statement":
    </policyDocument>
    <serviceName>com.amazonaws.us-west-1.s3</serviceName>
  </vpcEndpoint>
  <requestId>4b373100-473a-46a0-9006-example</requestId>
</CreateVpcEndpointResponse>
```
CreateVpcPeeringConnection

Requests a VPC peering connection between two VPCs: a requester VPC that you own and a peer VPC with which to create the connection. The peer VPC can belong to another AWS account. The requester VPC and peer VPC cannot have overlapping CIDR blocks. The owner of the peer VPC must accept the peering request to activate the peering connection. The VPC peering connection request expires after 7 days, after which it cannot be accepted or rejected. A CreateVpcPeeringConnection request between VPCs with overlapping CIDR blocks results in the VPC peering connection having a status of failed.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **DryRun**
  Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is **DryRunOperation**. Otherwise, it is **UnauthorizedOperation**.
  - Type: Boolean
  - Required: No

- **PeerOwnerId**
  The AWS account ID of the owner of the peer VPC.
  - Default: Your AWS account ID
  - Type: String
  - Required: No

- **PeerVpcId**
  The ID of the VPC with which you are creating the VPC peering connection.
  - Type: String
  - Required: No

- **VpcId**
  The ID of the requester VPC.
  - Type: String
  - Required: No

Response Elements

The following elements are returned by the service.

- **requestId**
  The ID of the request.
  - Type: String

- **vpcPeeringConnection**
  Information about the VPC peering connection.
  - Type: VpcPeeringConnection (p. 742) object

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Examples

Example 1
This example requests a peering connection between your VPC (vpc-1a2b3c4d), and a VPC (vpc-alb2c3d4) that belongs to AWS account 123456789012.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcPeeringConnection
&VpcId=vpc-1a2b3c4d
&PeerVpcId=vpc-alb2c3d4
&PeerOwnerId=123456789012
&AUTHPARAMS
```

Sample Response

```
<CreateVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcPeeringConnection>
    <vpcPeeringConnectionId>pcx-73a5401a</vpcPeeringConnectionId>
    <requesterVpcInfo>
      <ownerId>777788889999</ownerId>
      <vpcId>vpc-vpc-1a2b3c4d</vpcId>
      <cidrBlock>10.0.0.0/28</cidrBlock>
      <peeringOptions>
        <allowEgressFromLocalClassicLinkToRemoteVpc>false</allowEgressFromLocalClassicLinkToRemoteVpc>
        <allowEgressFromLocalVpcToRemoteClassicLink>false</allowEgressFromLocalVpcToRemoteClassicLink>
      </peeringOptions>
    </requesterVpcInfo>
    <accepterVpcInfo>
      <ownerId>123456789012</ownerId>
      <vpcId>vpc-a1b2c3d4</vpcId>
    </accepterVpcInfo>
    <status>
      <code>initiating-request</code>
      <message>Initiating Request to 123456789012</message>
    </status>
    <expirationTime>2014-02-18T14:37:25.000Z</expirationTime>
    <tagSet/>
  </vpcPeeringConnection>
</CreateVpcPeeringConnectionResponse>
```

Example 2
This example requests a peering connection between your VPCs vpc-1a2b3c4d and vpc-11l22233.

Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcPeeringConnection
&VpcId=vpc-1a2b3c4d
&PeerVpcId=vpc-11l22233
&AUTHPARAMS
```
CreateVpnConnection

Creates a VPN connection between an existing virtual private gateway and a VPN customer gateway. The only supported connection type is ipsec.1.

The response includes information that you need to give to your network administrator to configure your customer gateway.

Important

We strongly recommend that you use HTTPS when calling this operation because the response contains sensitive cryptographic information for configuring your customer gateway.

If you decide to shut down your VPN connection for any reason and later create a new VPN connection, you must reconfigure your customer gateway with the new information returned from this call.

This is an idempotent operation. If you perform the operation more than once, Amazon EC2 doesn't return an error.

For more information about VPN connections, see Adding a Hardware Virtual Private Gateway to Your VPC in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

CustomerGatewayId

The ID of the customer gateway.

Type: String
Required: Yes

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response isDryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

Options

Indicates whether the VPN connection requires static routes. If you are creating a VPN connection for a device that does not support BGP, you must specify true.

Default: false

Type: VpnConnectionOptionsSpecification (p. 749) object
Required: No

Type

The type of VPN connection (ipsec.1).

Type: String
Required: Yes

VpnGatewayId

The ID of the virtual private gateway.

Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example creates a VPN connection between the virtual private gateway with the ID vgw-8db04f81 and the customer gateway with the ID cgw-b4dc3961. The response includes configuration information for the customer gateway. Because it's a long set of information, we haven't included the complete response here. To see an example of the configuration information, see the Amazon Virtual Private Cloud Network Administrator Guide.

Sample Request

https://ec2.amazonaws.com/?Action=CreateVpnConnection&Type=ipsec.1&CustomerGatewayId=cgw-b4dc3961&VpnGatewayId=vgw-8db04f81

Sample Response

```xml
<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnConnection>
    <vpnConnectionId>vpn-44a8938f</vpnConnectionId>
    <state>pending</state>
    <customerGatewayConfiguration>
      ...Customer gateway configuration data in escaped XML format...
    </customerGatewayConfiguration>
    <type>ipsec.1</type>
    <customerGatewayId>cgw-b4dc3961</customerGatewayId>
    <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
    <tagSet/>
  </vpnConnection>
</CreateVpnConnectionResponse>
```

Example 2
This example creates a VPN connection with the static routes option between the virtual private gateway with the ID vgw-8db04f81, and the customer gateway with the ID cgw-b4dc3961, for a device that does not support the Border Gateway Protocol (BGP). The response includes configuration information for the VPN connection's customer gateway. Because it's a long set of information, we haven't included the complete response here.

Sample Request

https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.l
&CustomerGatewayId=cgw-b4dc3961
&VpnGatewayId=vgw-8db04f81
&Options.StaticRoutesOnly=true
&AUTHPARAMS

Sample Response

<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>5cc7891f-1f3b-4fc4-a626-bdea8f63ff5a</requestId>
  <vpnConnection>
    <vpnConnectionId>vpn-83ad48ea</vpnConnectionId>
    <state>pending</state>
    <customerGatewayConfiguration>
      ...Customer gateway configuration data in escaped XML format...
    </customerGatewayConfiguration>
    <customerGatewayId>cgw-63ae4b0a</customerGatewayId>
    <vpnGatewayId>vgw-4ea04527</vpnGatewayId>
    <options>
      <staticRoutesOnly>true</staticRoutesOnly>
    </options>
    <routes/>
  </vpnConnection>
</CreateVpnConnectionResponse>
CreateVpnConnectionRoute

Creates a static route associated with a VPN connection between an existing virtual private gateway and a VPN customer gateway. The static route allows traffic to be routed from the virtual private gateway to the VPN customer gateway.

For more information about VPN connections, see Adding a Hardware Virtual Private Gateway to Your VPC in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DestinationCidrBlock**

The CIDR block associated with the local subnet of the customer network.

- **Type:** String
- **Required:** Yes

**VpnConnectionId**

The ID of the VPN connection.

- **Type:** String
- **Required:** Yes

Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

- **Type:** String

**return**

*true* if the request succeeds, and an error otherwise.

- **Type:** Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

**Example**

This example creates a static route to the VPN connection for the VPN connection with the ID *vpn-83ad48ea* to the destination CIDR block *11.12.0.0/16*. Note that when using the Query API the "/" is denoted as "%2F".

**Sample Request**

```
https://ec2.amazonaws.com/?Action=CreateVpnConnectionRoute
&DestinationCidrBlock=11.12.0.0%2F16
&VpnConnectionId=vpn-83ad48ea
&AUTHPARAMS
```
Sample Response

```xml
<CreateVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</CreateVpnConnectionRouteResponse>
```
CreateVpnGateway

Creates a virtual private gateway. A virtual private gateway is the endpoint on the VPC side of your
VPN connection. You can create a virtual private gateway before creating the VPC itself.
For more information about virtual private gateways, see Adding a Hardware Virtual Private Gateway to
Your VPC in the Amazon Virtual Private Cloud User Guide.

Request Parameters
The following parameters are for this specific action. For more information about required and optional
parameters that are common to all actions, see Common Query Parameters (p. 773).

AvailabilityZone
The Availability Zone for the virtual private gateway.
Type: String
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the
request, and provides an error response. If you have the required permissions, the error response
is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Type
The type of VPN connection this virtual private gateway supports.
Type: String
Valid Values: ipsec.1
Required: Yes

Response Elements
The following elements are returned by the service.

requestId
The ID of the request.
Type: String

vpnGateway
Information about the virtual private gateway.
Type: VpnGateway (p. 750) object

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example
This example creates a virtual private gateway.

Sample Request

https://ec2.amazonaws.com/?Action=CreateVpnGateway
&Type=ipsec.1
Sample Response

```xml
<CreateVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnGateway>
    <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
    <state>pending</state>
    <type>ipsec.1</type>
    <availabilityZone>us-east-1a</availabilityZone>
    <attachments/>
    <tagSet/>
  </vpnGateway>
</CreateVpnGatewayResponse>
```
DeleteCustomerGateway

Deletes the specified customer gateway. You must delete the VPN connection before you can delete
the customer gateway.

Request Parameters
The following parameters are for this specific action. For more information about required and optional
parameters that are common to all actions, see Common Query Parameters (p. 773).

CustomerGatewayId
  The ID of the customer gateway.
  Type: String
  Required: Yes

DryRun
  Checks whether you have the required permissions for the action, without actually making the
  request, and provides an error response. If you have the required permissions, the error response
  is DryRunOperation. Otherwise, it is UnauthorizedOperation.
  Type: Boolean
  Required: No

Response Elements
The following elements are returned by the service.

requestId
  The ID of the request.
  Type: String

return
  Is true if the request succeeds, and an error otherwise.
  Type: Boolean

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example
This example deletes the specified customer gateway.

Sample Request

https://ec2.amazonaws.com/?Action=DeleteCustomerGateway
&CustomerGatewayId=cgw-b4dc3961
&AUTHPARAMS

Sample Response

<DeleteCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
</DeleteCustomerGatewayResponse>
<return>true</return>
</DeleteCustomerGatewayResponse>
DeleteDhcpOptions

Deletes the specified set of DHCP options. You must disassociate the set of DHCP options before you can delete it. You can disassociate the set of DHCP options by associating either a new set of options or the default set of options with the VPC.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DhcpOptionsId

The ID of the DHCP options set.

Type: String

Required: Yes

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

Type: String

return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example deletes the specified set of DHCP options.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteDhcpOptions
&DhcpOptionsId=dopt-7a8b9c2d
&AUTHPARAMS
```

Sample Response

```
<DeleteDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
</DeleteDhcpOptionsResponse>
```
<return>true</return>
</DeleteDhcpOptionsResponse>
DeleteFlowLogs

Deletes one or more flow logs.

Request Parameters
For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

FlowLogId.N
One or more flow log IDs.
Type: array of Strings
Required: Yes

Response Elements
The following elements are returned by the service.

requestId
The ID of the request.
Type: String

unsuccessful
Information about the flow logs that could not be deleted successfully.
Type: array of UnsuccessfulItem (p. 722) objects

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example
This examples deletes flow log fl-1a2b3c4d.

Sample Request
https://ec2.amazonaws.com/?Action=DeleteFlowLogs
&FlowLogId.1=fl-1a2b3c4d
&AUTHPARAMS

Sample Response
  <requestId>c5c4f51f-f4e9-42bc-8700-EXAMPLE</requestId>
  <unsuccessful/>
</DeleteFlowLogsResponse>
DeleteInternetGateway

Deletes the specified Internet gateway. You must detach the Internet gateway from the VPC before you can delete it.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

InternetGatewayId

The ID of the Internet gateway.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

Type: String

turn

Is true if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example deletes the specified Internet gateway.

Sample Request

https://ec2.amazonaws.com/?Action=DeleteInternetGateway
&InternetGatewayId=igw-eaad4883
&AUTHPARAMS

Sample Response

<DeleteInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
</DeleteInternetGatewayResponse>
<return>true</return>
</DeleteInternetGatewayResponse>
DeleteKeyPair

Deletes the specified key pair, by removing the public key from Amazon EC2.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is **DryRunOperation**. Otherwise, it is **UnauthorizedOperation**.

Type: Boolean

Required: No

**KeyName**

The name of the key pair.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example request deletes the key pair named **my-key-pair**.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteKeyPair
&KeyName=my-key-pair
&AUTHPARAMS
```

Sample Response

```
<DeleteKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15"/>
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</DeleteKeyPairResponse>
```
DeleteNatGateway

Deletes the specified NAT gateway. Deleting a NAT gateway disassociates its Elastic IP address, but does not release the address from your account. Deleting a NAT gateway does not delete any NAT gateway routes in your route tables.

Request Parameters
For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

NatGatewayId
   The ID of the NAT gateway.
   Type: String
   Required: Yes

Response Elements
The following elements are returned by the service.

natGatewayId
   The ID of the NAT gateway.
   Type: String
requestId
   The ID of the request.
   Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example
This example deletes NAT gateway nat-04ae55e711cec5680.

Sample Request

https://ec2.amazonaws.com/?Action=DeleteNatGateway
&NatGatewayId=nat-04ae55e711cec5680
&AUTHPARAMS

Sample Response

   <requestId>741fc8ab-6ebe-452b-b92b-example</requestId>
   <natGatewayId>nat-04ae55e711cec5680</natGatewayId>
</DeleteNatGatewayResponse>
DeleteNetworkAcl

Deletes the specified network ACL. You can't delete the ACL if it's associated with any subnets. You can't delete the default network ACL.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

- Type: Boolean
- Required: No

**NetworkAclId**

The ID of the network ACL.

- Type: String
- Required: Yes

Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

- Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

- Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

**Example**

This example deletes the specified network ACL.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DeleteNetworkAcl
&NetworkAclId=acl-2cb85d45

AUTHPARAMS
```

**Sample Response**

```
<DeleteNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4ea9-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteNetworkAclResponse>
```
</DeleteNetworkAclResponse>
DeleteNetworkAclEntry

Deletes the specified ingress or egress entry (rule) from the specified network ACL.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

- Type: Boolean
- Required: No

**Egress**
Indicates whether the rule is an egress rule.

- Type: Boolean
- Required: Yes

**NetworkAclId**
The ID of the network ACL.

- Type: String
- Required: Yes

**RuleNumber**
The rule number of the entry to delete.

- Type: Integer
- Required: Yes

Response Elements

The following elements are returned by the service.

**requestId**
The ID of the request.

- Type: String

**return**
Is true if the request succeeds, and an error otherwise.

- Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

**Example**
This example deletes ingress rule number 100 from the specified network ACL.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DeleteNetworkAclEntry
&NetworkAclId=acl-2cb85d45
```
&RuleNumber=100
&AUTHPARMS

Sample Response

<DeleteNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/"
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</DeleteNetworkAclEntryResponse>
DeleteNetworkInterface

Deletes the specified network interface. You must detach the network interface before you can delete it.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

NetworkInterfaceId
The ID of the network interface.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example deletes the specified network interface.

Sample Request

https://ec2.amazonaws.com/?Action=DeleteNetworkInterface
&NetworkInterfaceId=eni-ffda3197
&AUTHPARAMS

Sample Response

  <requestId>elc6d73b-edaa-4e62-9909-6611404e1739</requestId>
<return>true</return>
</DeleteNetworkInterfaceResponse>
DeletePlacementGroup

Deletes the specified placement group. You must terminate all instances in the placement group before you can delete the placement group. For more information about placement groups and cluster instances, see Cluster Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

GroupName
The name of the placement group.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example
This example deletes the placement group named XYZ-cluster.

Sample Request

https://ec2.amazonaws.com/?Action=DeletePlacementGroup
&GroupName=XYZ-cluster
&AUTHPARAMS

Sample Response

<requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
<return>true</return>
</DeletePlacementGroupResponse>
DeleteRoute

Deletes the specified route from the specified route table.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DestinationCidrBlock

The CIDR range for the route. The value you specify must match the CIDR for the route exactly.

Type: String

Required: Yes

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

RouteTableId

The ID of the route table.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

Type: String

return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example deletes the route with destination CIDR 172.16.1.0/24 from the specified route table.

Sample Request

https://ec2.amazonaws.com/?Action=DeleteRoute
&RouteTableId=rtb-e4ad488d
&DestinationCidrBlock=172.16.1.0/24
&AUTHPARMS
Sample Response

<DeleteRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteRouteResponse>
DeleteRouteTable

Deletes the specified route table. You must disassociate the route table from any subnets before you can delete it. You can't delete the main route table.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**
- Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is **DryRunOperation**. Otherwise, it is **UnauthorizedOperation**.
- Type: Boolean
- Required: No

**RouteTableId**
- The ID of the route table.
- Type: String
- Required: Yes

Response Elements

The following elements are returned by the service.

**requestId**
- The ID of the request.
- Type: String

**return**
- Is true if the request succeeds, and an error otherwise.
- Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example deletes the specified route table.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteRouteTable
&RouteTableId=rtb-e4ad488d
&AUTHPARAMS
```

Sample Response

```
<DeleteRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteRouteTableResponse>
```
DeleteSecurityGroup

Deletes a security group.

If you attempt to delete a security group that is associated with an instance, or is referenced by another security group, the operation fails with InvalidGroup.InUse in EC2-Classic or DependencyViolation in EC2-VPC.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

GroupId
The ID of the security group. Required for a nondefault VPC.
Type: String
Required: No

GroupName
[EC2-Classic, default VPC] The name of the security group. You can specify either the security group name or the security group ID.
Type: String
Required: No

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example for EC2-Classic

This example deletes the specified security group for EC2-Classic.

Sample Request

https://ec2.amazonaws.com/?Action=DeleteSecurityGroup
&GroupName=websrv
Sample Response

```xml
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSecurityGroupResponse>
```

Example for EC2-VPC

This example deletes the specified security group for EC2-VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSecurityGroup
&GroupId=sg-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```xml
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSecurityGroupResponse>
```
DeleteSnapshot

Deletes the specified snapshot.

When you make periodic snapshots of a volume, the snapshots are incremental, and only the blocks on the device that have changed since your last snapshot are saved in the new snapshot. When you delete a snapshot, only the data not needed for any other snapshot is removed. So regardless of which prior snapshots have been deleted, all active snapshots will have access to all the information needed to restore the volume.

You cannot delete a snapshot of the root device of an EBS volume used by a registered AMI. You must first de-register the AMI before you can delete the snapshot.

For more information, see Deleting an Amazon EBS Snapshot in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

SnapshotId

The ID of the EBS snapshot.

Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

RequestId

The ID of the request.

Type: String

return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example request deletes the snapshot with the ID snap-1234567890abcdef0.

Sample Request

https://ec2.amazonaws.com/?Action=DeleteSnapshot
&SnapShotId.1=snap-1234567890abcdef0
&AUTHPARAMS

Sample Response

```xml
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSnapshotResponse>
```
DeleteSpotDatafeedSubscription

Deletes the data feed for Spot instances.

**Request Parameters**

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters (p. 773)](https://docs.aws.amazon.com/AWSEC2/latest/APIReference/AmznPromoteBestPractices.html).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Response Elements**

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

**Errors**

For information about the errors that are common to all actions, see [Common Client Errors (p. 793)](https://docs.aws.amazon.com/AWSEC2/latest/APIReference/AmznPromoteBestPractices.html).

**Example**

This example request deletes the data feed for the AWS account.

**Sample Request**

```bash
https://ec2.amazonaws.com/?Action=DeleteSpotDatafeedSubscription
&AUTHPARAMS
```

**Sample Response**

```xml
<DeleteSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSpotDatafeedSubscriptionResponse>
```
DeleteSubnet

Deletes the specified subnet. You must terminate all running instances in the subnet before you can delete the subnet.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is **DryRunOperation**. Otherwise, it is **UnauthorizedOperation**.

Type: Boolean

Required: No

**SubnetId**

The ID of the subnet.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example deletes the specified subnet.

Sample Request

https://ec2.amazonaws.com/?Action=DeleteSubnet
&SubnetId=subnet-9d4a7b6c
&AUTHPARAMS

Sample Response

<DeleteSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
</DeleteSubnetResponse>
<return>true</return>
</DeleteSubnetResponse>
DeleteTags

Deletes the specified set of tags from the specified set of resources. This call is designed to follow a DescribeTags request.

For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **DryRun**
  - **Checks whether you have the required permissions for the action, without actually making the request, and provides an error response.**
  - **If you have the required permissions, the error response is** DryRunOperation. **Otherwise, it is** UnauthorizedOperation.
  - **Type:** Boolean
  - **Required:** No

- **ResourceId.N**
  - **The ID of the resource. For example, ami-1a2b3c4d. You can specify more than one resource ID.**
  - **Type:** array of Strings
  - **Required:** Yes

- **Tag.N**
  - **One or more tags to delete. If you omit the value parameter, we delete the tag regardless of its value. If you specify this parameter with an empty string as the value, we delete the key only if its value is an empty string.**
  - **Type:** array of Tag (p. 717) objects
  - **Required:** No

Response Elements

The following elements are returned by the service.

- **requestId**
  - **The ID of the request.**
  - **Type:** String

- **return**
  - **Is true if the request succeeds, and an error otherwise.**
  - **Type:** Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

**Example**

This example deletes the tags for the AMI with the ID ami-1a2b3c4d. First, get a list of the tags by using the DescribeTags request, then delete them.

**Sample Request**

https://ec2.amazonaws.com/?Action=DeleteTags
Example
This example deletes the stack and webserver tags for two particular instances.

Sample Request

https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-1234567890abcdef0
&ResourceId.2=i-0598c7d356eba48d7
&Tag.1.Key=stack
&Tag.2.Key=webserver
&AUTHPARAMS

Example
You can specify a tag key without a corresponding tag value to delete the tag regardless of its value. This example request deletes all tags that have a key of Purpose, regardless of the tag value.

Sample Request

https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-0598c7d356eba48d7
&Tag.1.Key=Purpose
&AUTHPARAMS

Example
When you create a tag, you can set the tag value to the empty string. Correspondingly, you can delete only tags that have a specific key and whose value is the empty string. This example request deletes all tags for the specified instance where the key is Purpose and the tag value is the empty string.

Sample Request

https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-1234567890abcdef0
&Tag.1.Key=Purpose
&Tag.2.Value=
&AUTHPARAMS
DeleteVolume

Deletes the specified EBS volume. The volume must be in the available state (not attached to an instance).

**Note**
The volume may remain in the deleting state for several minutes.

For more information, see Deleting an Amazon EBS Volume in the Amazon Elastic Compute Cloud User Guide.

**Request Parameters**
The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

**VolumeId**
The ID of the volume.
Type: String
Required: Yes

**Response Elements**
The following elements are returned by the service.

**requestId**
The ID of the request.
Type: String

**return**
Is true if the request succeeds, and an error otherwise.
Type: Boolean

**Errors**
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

**Example**

This example request deletes the volume with the ID `vol-1234567890abcdef0`.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DeleteVolume
&VolumeId=vol-1234567890abcdef0
&AUTHPARAMS
```
Sample Response

```xml
    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <return>true</return>
</DeleteVolumeResponse>
```
DeleteVpc

Deletes the specified VPC. You must detach or delete all gateways and resources that are associated with the VPC before you can delete it. For example, you must terminate all instances running in the VPC, delete all security groups associated with the VPC (except the default one), delete all route tables associated with the VPC (except the default one), and so on.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**
- Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is **DryRunOperation**. Otherwise, it is **UnauthorizedOperation**.
- Type: Boolean
- Required: No

**VpcId**
- The ID of the VPC.
- Type: String
- Required: Yes

Response Elements

The following elements are returned by the service.

**requestId**
- The ID of the request.
- Type: String

**return**
- Is true if the request succeeds, and an error otherwise.
- Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example deletes the specified VPC.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpc
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
<DeleteVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
```
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<return>true</return>
</DeleteVpcResponse>
DeleteVpcEndpoints

Deletes one or more specified VPC endpoints. Deleting the endpoint also deletes the endpoint routes in the route tables that were associated with the endpoint.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

VpcEndpointId.N
One or more endpoint IDs.
Type: array of Strings
Required: Yes

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

unsuccessful
Information about the endpoints that were not successfully deleted.
Type: array of UnsuccessfulItem (p. 722) objects

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example deletes endpoint vpce-aa2bb33.

Sample Request

https://ec2.amazonaws.com/?Action=DeleteVpcEndpoints
&VpcEndpointId.1=vpce-aa2bb33
&AUTHPARAMS

Sample Response

  <unsuccessful/>
  <requestId>b59c2643-789a-4bf7-aac4-example</requestId>
</DeleteVpcEndpointsResponse>
</DeleteVpcEndpointsResponse>
DeleteVpcPeeringConnection

Deletes a VPC peering connection. Either the owner of the requester VPC or the owner of the peer VPC can delete the VPC peering connection if it's in the active state. The owner of the requester VPC can delete a VPC peering connection in the pending-acceptance state.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **DryRun**
  - Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
  - Type: Boolean
  - Required: No

- **VpcPeeringConnectionId**
  - The ID of the VPC peering connection.
  - Type: String
  - Required: Yes

Response Elements

The following elements are returned by the service.

- **requestId**
  - The ID of the request.
  - Type: String

- **return**
  - Returns true if the request succeeds; otherwise, it returns an error.
  - Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example deletes the specified VPC peering connection.

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpcPeeringConnection
&vpcPeeringConnectionId=pcx-1a2b3c4d
&AUTHPARAMS
```

Sample Response

```
```

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Example

<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<return>true</return>
</DeleteVpcPeeringConnectionResponse>
DeleteVpnConnection

Deletes the specified VPN connection.

If you're deleting the VPC and its associated components, we recommend that you detach the virtual private gateway from the VPC and delete the VPC before deleting the VPN connection. If you believe that the tunnel credentials for your VPN connection have been compromised, you can delete the VPN connection and create a new one that has new keys, without needing to delete the VPC or virtual private gateway. If you create a new VPN connection, you must reconfigure the customer gateway using the new configuration information returned with the new VPN connection ID.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

- Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
- Type: Boolean
- Required: No

VpnConnectionId

- The ID of the VPN connection.
- Type: String
- Required: Yes

Response Elements

The following elements are returned by the service.

requestId

- The ID of the request.
- Type: String

return

- Is true if the request succeeds, and an error otherwise.
- Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example deletes the specified VPN connection.

Sample Request

https://ec2.amazonaws.com/?Action=DeleteVpnConnection
&VpnConnectionId=vpn-44a8938f
&AUTHPARAMS
Sample Response

```xml
<DeleteVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpnConnectionResponse>
```
DeleteVpnConnectionRoute

Deletes the specified static route associated with a VPN connection between an existing virtual private gateway and a VPN customer gateway. The static route allows traffic to be routed from the virtual private gateway to the VPN customer gateway.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **DestinationCidrBlock**
  - The CIDR block associated with the local subnet of the customer network.
  - Type: String
  - Required: Yes

- **VpnConnectionId**
  - The ID of the VPN connection.
  - Type: String
  - Required: Yes

Response Elements

The following elements are returned by the service.

- **requestId**
  - The ID of the request.
  - Type: String

- **return**
  - Is true if the request succeeds, and an error otherwise.
  - Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example deletes a static route to the destination CIDR block 11.12.0.0/16 associated with the VPN connection with the ID vpn-83ad48ea. Note that when using the Query API, the "/" is denoted as "%2F".

Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpnConnectionRoute
&DestinationCidrBlock=11.12.0.0%2F16
&VpnConnectionId=vpn-83ad48ea
&AUTHPARAMS
```

Sample Response

```
<DeleteVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
```

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<requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
<return>true</return>
</DeleteVpnConnectionRouteResponse>
DeleteVpnGateway

Deletes the specified virtual private gateway. We recommend that before you delete a virtual private gateway, you detach it from the VPC and delete the VPN connection. Note that you don’t need to delete the virtual private gateway if you plan to delete and recreate the VPN connection between your VPC and your network.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **DryRun**
  Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
  - Type: Boolean
  - Required: No

- **VpnGatewayId**
  The ID of the virtual private gateway.
  - Type: String
  - Required: Yes

Response Elements

The following elements are returned by the service.

- **requestId**
  The ID of the request.
  - Type: String

- **return**
  Is true if the request succeeds, and an error otherwise.
  - Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example deletes the specified virtual private gateway.

Sample Request

https://ec2.amazonaws.com/?Action=DeleteVpnGateway
&vpnGatewayId=vgw-8db04f81
&AUTHPARAMS

Sample Response

<DeleteVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/"/>
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<return>true</return>
</DeleteVpnGatewayResponse>
DeregisterImage

Deregisters the specified AMI. After you deregister an AMI, it can't be used to launch new instances.
This command does not delete the AMI.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

ImageId
The ID of the AMI.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example
This example request deregisters the specified AMI.

Sample Request

https://ec2.amazonaws.com/?Action=DeregisterImage
&ImageId=ami-4fa54026
&AUTHPARAMS

Sample Response

<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</DeregisterImageResponse>
DescribeAccountAttributes

Describes attributes of your AWS account. The following are the supported account attributes:

- **supported-platforms**: Indicates whether your account can launch instances into EC2-Classic and EC2-VPC, or only into EC2-VPC.
- **default-vpc**: The ID of the default VPC for your account, or none.
- **max-instances**: The maximum number of On-Demand instances that you can run.
- **vpc-max-security-groups-per-interface**: The maximum number of security groups that you can assign to a network interface.
- **max-elastic-ips**: The maximum number of Elastic IP addresses that you can allocate for use with EC2-Classic.
- **vpc-max-elastic-ips**: The maximum number of Elastic IP addresses that you can allocate for use with EC2-VPC.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **AttributeName.N**: One or more account attribute names.
  - Type: array of Strings
  - Valid Values: supported-platforms | default-vpc
  - Required: No

- **DryRun**: Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
  - Type: Boolean
  - Required: No

Response Elements

The following elements are returned by the service.

- **accountAttributeSet**: Information about one or more account attributes.
  - Type: array of AccountAttribute (p. 524) objects

- **requestId**: The ID of the request.
  - Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example

This example describes your account attributes. The response is for an account that supports EC2-Classic and EC2-VPC.
Sample Request

https://ec2.amazonaws.com/?Action=DescribeAccountAttributes
&AUTHPARAMS

Sample Response

<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
    <item>
      <attributeName>vpc-max-security-groups-per-interface</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>5</attributeValue>
        </item>
      </attributeValueSet>
    </item>
    <item>
      <attributeName>max-instances</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>20</attributeValue>
        </item>
      </attributeValueSet>
    </item>
    <item>
      <attributeName>supported-platforms</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>EC2</attributeValue>
        </item>
        <item>
          <attributeValue>VPC</attributeValue>
        </item>
      </attributeValueSet>
    </item>
    <item>
      <attributeName>default-vpc</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>none</attributeValue>
        </item>
      </attributeValueSet>
    </item>
    <item>
      <attributeName>max-elastic-ips</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>5</attributeValue>
        </item>
      </attributeValueSet>
    </item>
    <item>
      <attributeName>vpc-max-elastic-ips</attributeName>
    </item>
  </accountAttributeSet>
</DescribeAccountAttributesResponse>
Example 2

This example describes the ID of your default VPC. The first response is for an account that supports only EC2-VPC. The second response if for an account that supports both EC2-Classic and EC2-VPC.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeAccountAttributes
&AttributeName.1=default-vpc
&AUTHPARAMS

Sample Response

<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
    <item>
      <attributeName>default-vpc</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>none</attributeValue>
        </item>
      </attributeValueSet>
    </item>
  </accountAttributeSet>
</DescribeAccountAttributesResponse>
DescribeAddresses

Describes one or more of your Elastic IP addresses.
An Elastic IP address is for use in either the EC2-Classic platform or in a VPC. For more information, see Elastic IP Addresses in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AllocationId.N
[EC2-VPC] One or more allocation IDs.
Default: Describes all your Elastic IP addresses.
Type: array of Strings
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Filter.N
One or more filters. Filter names and values are case-sensitive.
- allocation-id - [EC2-VPC] The allocation ID for the address.
- association-id - [EC2-VPC] The association ID for the address.
- domain - Indicates whether the address is for use in EC2-Classic (standard) or in a VPC (vpc).
- instance-id - The ID of the instance the address is associated with, if any.
- network-interface-id - [EC2-VPC] The ID of the network interface that the address is associated with, if any.
- network-interface-owner-id - The AWS account ID of the owner.
- private-ip-address - [EC2-VPC] The private IP address associated with the Elastic IP address.
- public-ip - The Elastic IP address.
Type: array of Filter (p. 561) objects
Required: No

PublicIp.N
[EC2-Classic] One or more Elastic IP addresses.
Default: Describes all your Elastic IP addresses.
Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.

addressesSet
Information about one or more Elastic IP addresses.
Type: array of Address (p. 527) objects

requestId
The ID of the request.
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example for EC2-Classic
This example request describes two specific Elastic IP addresses allocated to your account. Both addresses were created for instances in EC2-Classic, so you must specify them using their IP addresses. The address 192.0.2.1 is assigned to instance i-1234567890abcdef0, and 198.51.100.2 isn’t assigned to an instance.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeAddresses
&PublicIp.1=192.0.2.1
&PublicIp.2=198.51.100.2
&AUTHPARAMS

Sample Response

<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <addressesSet>
    <item>
      <publicIp>192.0.2.1</publicIp>
      <domain>standard</domain>
      <instanceId>i-1234567890abcdef0</instanceId>
    </item>
    <item>
      <publicIp>198.51.100.2</publicIp>
      <domain>standard</domain>
      <instanceId/>
    </item>
  </addressesSet>
</DescribeAddressesResponse>

Example 1 for EC2-VPC
This example request describes a specific Elastic IP address allocated to your account. This address was created for instances in EC2-VPC, so you must use the allocation ID to specify the address.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeAddresses
&AllocationId.1=eipalloc-08229861
&AUTHPARAMS

Sample Response

<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
Example 2 for EC2-VPC
This example describes your Elastic IP addresses for EC2-VPC only.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeAddresses
&Filter.1.Name=domain
&Filter.1.Value.1=vpc
&AUTHPARAMS
DescribeAvailabilityZones

Describes one or more of the Availability Zones that are available to you. The results include zones only for the region you’re currently using. If there is an event impacting an Availability Zone, you can use this request to view the state and any provided message for that Availability Zone.
For more information, see Regions and Availability Zones in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Filter.N
One or more filters.

- message - Information about the Availability Zone.
- region-name - The name of the region for the Availability Zone (for example, us-east-1).
- state - The state of the Availability Zone (available | information | impaired | unavailable).
- zone-name - The name of the Availability Zone (for example, us-east-1a).
Type: array of Filter (p. 561) objects
Required: No

ZoneName.N
The names of one or more Availability Zones.
Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.

availabilityZoneInfo
Information about one or more Availability Zones.
Type: array of AvailabilityZone (p. 530) objects

requestId
The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

Example
This example request describes the Availability Zones that are available to you. The response includes Availability Zones only for the current region.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeAvailabilityZones

Sample Response

<DescribeAvailabilityZonesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <availabilityZoneInfo>
    <item>
      <zoneName>us-east-1a</zoneName>
      <zoneState>available</zoneState>
      <regionName>us-east-1</regionName>
      <messageSet/>
    </item>
    <item>
      <zoneName>us-east-1b</zoneName>
      <zoneState>available</zoneState>
      <regionName>us-east-1</regionName>
      <messageSet/>
    </item>
    <item>
      <zoneName>us-east-1c</zoneName>
      <zoneState>available</zoneState>
      <regionName>us-east-1</regionName>
      <messageSet/>
    </item>
    <item>
      <zoneName>us-east-1d</zoneName>
      <zoneState>available</zoneState>
      <regionName>us-east-1</regionName>
      <messageSet/>
    </item>
  </availabilityZoneInfo>
</DescribeAvailabilityZonesResponse>
DescribeBundleTasks
Describes one or more of your bundling tasks.

Note
Completed bundle tasks are listed for only a limited time. If your bundle task is no longer in the list, you can still register an AMI from it. Just use RegisterImage with the Amazon S3 bucket name and image manifest name you provided to the bundle task.

Request Parameters
The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

BundleId.N
One or more bundle task IDs.
Default: Describes all your bundle tasks.
Type: array of Strings
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Filter.N
One or more filters.
- bundle-id - The ID of the bundle task.
- error-code - If the task failed, the error code returned.
- error-message - If the task failed, the error message returned.
- instance-id - The ID of the instance.
- progress - The level of task completion, as a percentage (for example, 20%).
- s3-bucket - The Amazon S3 bucket to store the AMI.
- s3-prefix - The beginning of the AMI name.
- start-time - The time the task started (for example, 2013-09-15T17:15:20.000Z).
- state - The state of the task (pending | waiting-for-shutdown | bundling | storing | cancelling | complete | failed).
- update-time - The time of the most recent update for the task.
Type: array of Filter (p. 561) objects
Required: No

Response Elements
The following elements are returned by the service.

bundleInstanceTasksSet
Information about one or more bundle tasks.
Type: array of BundleTask (p. 535) objects

requestId
The ID of the request.
Type: String
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example describes the status of the specified bundle task.

Sample Request

```text
https://ec2.amazonaws.com/?Action=DescribeBundleTasks
&bundleId.1=bun-c1a540a8
&AUTHPARAMS
```

Sample Response

```xml
<DescribeBundleTasksResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTasksSet>
    <item>
      <instanceId>i-1234567890abcdef0</instanceId>
      <bundleId>bun-c1a540a8</bundleId>
      <state>cancelling</state>
      <startTime>2008-10-07T11:41:50.000Z</startTime>
      <updateTime>2008-10-07T11:51:50.000Z</updateTime>
      <storage>
        <S3>
          <bucket>myawsbucket</bucket>
          <prefix>winami</prefix>
        </S3>
      </storage>
      <progress>20%</progress>
    </item>
  </bundleInstanceTasksSet>
</DescribeBundleTasksResponse>
```

Example 2
This example filters the response to include only bundle tasks whose state is either complete or failed, and in addition are targeted for the Amazon S3 bucket named myawsbucket.

Sample Request

```text
https://ec2.amazonaws.com/?Action=DescribeBundleTasks
&Filter.1.Name=s3-bucket
&Filter.1.Value.1=myawsbucket
&Filter.2.Name=state
&Filter.2.Name.1=complete
&Filter.2.Name.2=failed
&AUTHPARAMS
```
DescribeClassicLinkInstances

Describes one or more of your linked EC2-Classic instances. This request only returns information about EC2-Classic instances linked to a VPC through ClassicLink; you cannot use this request to return information about other instances.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

Filter.N

One or more filters.

- group-id: The ID of a VPC security group that's associated with the instance.
- instance-id: The ID of the instance.
- tag:[key]=value: The key/value combination of a tag assigned to the resource.
- tag-key: The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the tag:[key]=value filter.
- tag-value: The value of a tag assigned to the resource. This filter is independent of the tag-key filter.
- vpc-id: The ID of the VPC that the instance is linked to.

Type: array of Filter (p. 561) objects
Required: No

InstanceId.N

One or more instance IDs. Must be instances linked to a VPC through ClassicLink.

Type: array of Strings
Required: No

MaxResults

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned NextToken value. This value can be between 5 and 1000; if MaxResults is given a value larger than 1000, only 1000 results are returned. You cannot specify this parameter and the instance IDs parameter in the same request.

Constraint: If the value is greater than 1000, we return only 1000 items.

Type: Integer
Required: No

NextToken

The token to retrieve the next page of results.

Type: String
Required: No
Response Elements

The following elements are returned by the service.

**instancesSet**
Information about one or more linked EC2-Classic instances.
Type: array of ClassicLinkInstance (p. 542) objects

**nextToken**
The token to use to retrieve the next page of results. This value is null when there are no more results to return.
Type: String

**requestId**
The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

**Example**
This example lists all of your linked EC2-Classic instances.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeClassicLinkInstances
&AUTHPARAMS

Sample Response

```xml
<DescribeClassicLinkInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-1234567890abcdef0</instanceId>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <groupSet>
        <item>
          <groupId>sg-a1a1a1a1</groupId>
        </item>
      </groupSet>
      <tagSet/>
    </item>
  </instancesSet>
</DescribeClassicLinkInstancesResponse>
```

**Example**
This example lists all linked EC2-Classic instances, and filters the response to include only instances that are linked to VPC vpc-1a2b3c4d.
Sample Request

https://ec2.amazonaws.com/?Action=DescribeClassicLinkInstances
&Filter.1.Name=vpc-id
&Filter.1.Value.1=vpc-1a2b3c4d
&AUTHPARAMS
DescribeConversionTasks

Describes one or more of your conversion tasks. For more information, see the VM Import/Export User Guide.
For information about the import manifest referenced by this API action, see VM Import Manifest.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

ConversionTaskId.N
One or more conversion task IDs.
Type: array of Strings
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Response Elements

The following elements are returned by the service.

conversionTasks
Information about the conversion tasks.
Type: array of ConversionTask (p. 544) objects

requestId
The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example
This example describes all your conversion tasks.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeConversionTasks
&AUTHPARAMS

Sample Response

<DescribeConversionTasksResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <conversionTasks>
  
  </conversionTasks>
</DescribeConversionTasksResponse>
<item>
  <conversionTask>
    <conversionTaskId>import-i-fh95npoc</conversionTaskId>
    <expirationTime>2010-12-22T12:01Z</expirationTime>
    <importVolume>
      <bytesConverted>1000</bytesConverted>
      <availabilityZone>us-east-1a</availabilityZone>
      <description/>
      <image>
        <format>VDMK</format>
        <size>128696320</size>
        <importManifestUrl>
          https://s3.amazonaws.com/myawsbucket/a3a5e1b6-590d-43cc-97cl-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snej01T7tLoR7KExtEXAMPLE%3D
        </importManifestUrl>
      </image>
      <volume>
        <size>8</size>
        <id>vol-1234567890abcdef0</id>
      </volume>
    </importVolume>
    <state>active</state>
    <statusMessage/>
  </conversionTask>
</item>
</conversionTasks>
</DescribeConversionTasksResponse>
**DescribeCustomerGateways**

Describes one or more of your VPN customer gateways.

For more information about VPN customer gateways, see Adding a Hardware Virtual Private Gateway to Your VPC in the Amazon Virtual Private Cloud User Guide.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**CustomerGatewayId.N**

One or more customer gateway IDs.

Default: Describes all your customer gateways.

Type: array of Strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- **bgp-asn** - The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).

- **customer-gateway-id** - The ID of the customer gateway.

- **ip-address** - The IP address of the customer gateway's Internet-routable external interface.

- **state** - The state of the customer gateway (pending | available | deleting | deleted).

- **type** - The type of customer gateway. Currently, the only supported type is ipsec.1.

- **tag**:key=value - The key/value combination of a tag assigned to the resource.

- **tag-key** - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the tag: key=value filter.

- **tag-value** - The value of a tag assigned to the resource. This filter is independent of the tag-key filter.

Type: array of Filter (p. 561) objects

Required: No

**Response Elements**

The following elements are returned by the service.

**customerGatewaySet**

Information about one or more customer gateways.

Type: array of CustomerGateway (p. 547) objects

**requestId**

The ID of the request.

Type: String
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example request describes the specified customer gateway.

Sample Request

```plaintext
https://ec2.amazonaws.com/?Action=DescribeCustomerGateways
&CustomerGatewayId.1=cgw-b4dc3961
&AUTHPARAMS
```

Sample Response

```xml
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <customerGatewaySet>
    <item>
      <customerGatewayId>cgw-b4dc3961</customerGatewayId>
      <state>available</state>
      <type>ipsec.1</type>
      <ipAddress>12.1.2.3</ipAddress>
      <bgpAsn>65534</bgpAsn>
      <tagSet/>
    </item>
  </customerGatewaySet>
</DescribeCustomerGatewaysResponse>
```

Example 2
This example request uses filters to describe any customer gateway you own whose IP address is 12.1.2.3, and whose state is either pending or available.

Sample Request

```plaintext
https://ec2.amazonaws.com/?Action=DescribeCustomerGateways
&Filter.1.Name=ip-address
&Filter.1.Value.1=12.1.2.3
&Filter.2.Name=state
&Filter.2.Value.1=pending
&Filter.2.Value.2=available
&AUTHPARAMS
```
DescribeDhcpOptions

Describes one or more of your DHCP options sets.
For more information about DHCP options sets, see DHCP Options Sets in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DhcpOptionsId.N
The IDs of one or more DHCP options sets.
Default: Describes all your DHCP options sets.
Type: array of Strings
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Filter.N
One or more filters.
- dhcp-options-id - The ID of a set of DHCP options.
- key - The key for one of the options (for example, domain-name).
- value - The value for one of the options.
- tag: key=value - The key/value combination of a tag assigned to the resource.
- tag-key - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the tag: key=value filter.
- tag-value - The value of a tag assigned to the resource. This filter is independent of the tag-key filter.
Type: array of Filter (p. 561) objects
Required: No

Response Elements

The following elements are returned by the service.

dhcpOptionsSet
Information about one or more DHCP options sets.
Type: array of DhcpOptions (p. 549) objects

requestId
The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Examples

Example 1
This example describes the specified DHCP options set.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeDhcpOptions
&DhcpOptionsId.1=dopt-7a8b9c2d
&AUTHPARAMS

Sample Response


Example 2
This example uses filters to describe any DHCP options set that includes a domain-name option whose value includes the string example.
Sample Request

https://ec2.amazonaws.com/?Action=DescribeDhcpOptions
&Filter.1.Name=key
&Filter.1.Value.1=domain-name
&Filter.2.Name=value
&Filter.2.Value.1=*example*
&AUTHPARAMS
DescribeExportTasks

Describes one or more of your export tasks.

Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

ExportTaskId.N

One or more export task IDs.
Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.

exportTaskSet

Information about the export tasks.
Type: array of ExportTask (p. 558) objects

requestId

The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example describes a single export task.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeExportTasks
&exportTaskId.1=export-i-1234wxyz
&AUTHPARAMS

Sample Response

<?xml version="1.0" encoding="UTF-8"?>
<DescribeExportTasksResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <exportTaskSet>
    <item>
      <exportTaskId>export-i-1234wxyz</exportTaskId>
      <description>Example for docs</description>
      <state>active</state>
      <statusMessage>Running</statusMessage>
      <instanceExport>
        <instanceId>i-12345678</instanceId>
    </item>
  </exportTaskSet>
</DescribeExportTasksResponse>
<targetEnvironment>VMWare</targetEnvironment>
</instanceExport>
<exportToS3>
  <diskImageFormat>VMDK</diskImageFormat>
  <containerFormat>OVA</containerFormat>
  <s3Bucket>my-bucket-for-exported-vm</s3Bucket>
  <s3Key>my-exports/export-i-1234wxyz.ova</s3Key>
</exportToS3>
</item>
</exportTaskSet>
</DescribeExportTasksResponse>
DescribeFlowLogs

Describes one or more flow logs. To view the information in your flow logs (the log streams for the network interfaces), you must use the CloudWatch Logs console or the CloudWatch Logs API.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Filter.N
One or more filters.

- `deliver-log-status` - The status of the logs delivery (SUCCESS | FAILED).
- `flow-log-id` - The ID of the flow log.
- `log-group-name` - The name of the log group.
- `resource-id` - The ID of the VPC, subnet, or network interface.
- `traffic-type` - The type of traffic (ACCEPT | REJECT | ALL)

Type: array of Filter (p. 561) objects
Required: No

FlowLogId.N
One or more flow log IDs.

Type: array of Strings
Required: No

MaxResults
The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1000; if `MaxResults` is given a value larger than 1000, only 1000 results are returned. You cannot specify this parameter and the flow log IDs parameter in the same request.

Type: Integer
Required: No

NextToken
The token to retrieve the next page of results.

Type: String
Required: No

Response Elements

The following elements are returned by the service.

flowLogSet
Information about the flow logs.

Type: array of FlowLog (p. 562) objects

nextToken
The token to use to retrieve the next page of results. This value is null when there are no more results to return.

Type: String

requestId
The ID of the request.

Type: String
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example
This example describes all of your flow logs.

Sample Request
```
https://ec2.amazonaws.com/?Action=DescribeFlowLogs
&AUTHPARAMS
```

Sample Response
```
  <requestId>3cb46f23-099e-4bf0-891c-EXAMPLE</requestId>
  <flowLogSet>
    <item>
      <deliverLogsErrorMessage>Access error</deliverLogsErrorMessage>
      <resourceId>vpc-1a2b3c4d</resourceId>
      <deliverLogsPermissionArn>arn:aws:iam::123456789101:role/flowlogsrole</deliverLogsPermissionArn>
      <flowLogStatus>ACTIVE</flowLogStatus>
      <creationTime>2015-05-19T08:48:59Z</creationTime>
      <logGroupName>FlowLogsForSubnetA</logGroupName>
      <trafficType>ALL</trafficType>
      <flowLogId>fl-ab12cd34</flowLogId>
    </item>
    <item>
      <resourceId>vpc-112bbcc</resourceId>
      <deliverLogsPermissionArn>arn:aws:iam::123456789101:role/flowlogsrole</deliverLogsPermissionArn>
      <flowLogStatus>ACTIVE</flowLogStatus>
      <logGroupName>FlowLogsForSubnetB</logGroupName>
      <trafficType>ALL</trafficType>
      <flowLogId>fl-123abc45</flowLogId>
    </item>
  </flowLogSet>
</DescribeFlowLogsResponse>
```
DescribeHostReservationOfferings

Describes the Dedicated Host Reservations that are available to purchase. The results describe all the Dedicated Host Reservation offerings, including offerings that may not match the instance family and region of your Dedicated Hosts. When purchasing an offering, ensure that the instance family and region of the offering matches that of the Dedicated Host/s it will be associated with. For an overview of supported instance types, see Dedicated Hosts Overview in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Filter.N
One or more filters.
- instance-family - The instance family of the offering (e.g., m4).
- payment-option - The payment option (No Upfront | Partial Upfront | All Upfront).

Type: array of Filter (p. 561) objects
Required: No

MaxDuration
This is the maximum duration of the reservation you'd like to purchase, specified in seconds. Reservations are available in one-year and three-year terms. The number of seconds specified must be the number of seconds in a year (365x24x60x60) times one of the supported durations (1 or 3). For example, specify 94608000 for three years.

Type: Integer
Required: No

MaxResults
The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned nextToken value. This value can be between 5 and 500; if maxResults is given a larger value than 500, you will receive an error.

Type: Integer
Required: No

MinDuration
This is the minimum duration of the reservation you'd like to purchase, specified in seconds. Reservations are available in one-year and three-year terms. The number of seconds specified must be the number of seconds in a year (365x24x60x60) times one of the supported durations (1 or 3). For example, specify 31536000 for one year.

Type: Integer
Required: No

NextToken
The token to use to retrieve the next page of results.

Type: String
Required: No

OfferingId
The ID of the reservation offering.

Type: String
Required: No

Response Elements

The following elements are returned by the service.
nextToken
The token to use to retrieve the next page of results. This value is null when there are no more results to return.
Type: String

offeringSet
Information about the offerings.
Type: array of HostOffering (p. 567) objects

requestId
The ID of the request.
Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example describes the all the Dedicated Host Reservation offerings.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeHostReservationOfferings

Sample Response

<DescribeHostReservationOfferingsResult xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
<requestId>d4904fd9-84c3-4ea5-gtyk-a9cc3EXAMPLE</requestId>
<offeringSet>
  <item>
    <duration>94608000</duration>
    <upfrontPrice>28396.000</upfrontPrice>
    <paymentOption>AllUpfront</paymentOption>
    <instanceFamily>m4</instanceFamily>
    <offeringId>hro-0875903788203856fg</offeringId>
    <hourlyPrice>0.000</hourlyPrice>
  </item>
  <item>
    <duration>31536000</duration>
    <upfrontPrice>13603.000</upfrontPrice>
    <paymentOption>AllUpfront</paymentOption>
    <instanceFamily>r3</instanceFamily>
    <offeringId>hro-08ddfitlb8990hhkmp</offeringId>
    <hourlyPrice>0.000</hourlyPrice>
  </item>
  <item>
    <duration>94608000</duration>
    <upfrontPrice>57382.000</upfrontPrice>
    <paymentOption>PartialUpfront</paymentOption>
    <instanceFamily>x1</instanceFamily>
    <offeringId>hro-0875903788207657fg</offeringId>
    <hourlyPrice>2.183</hourlyPrice>
  </item>
</offeringSet>
</DescribeHostReservationOfferingsResult>
Example 2
This example describes the all the Dedicated Host Reservation offerings with a maximum duration of 3 years that are available to purchase.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeHostReservationOfferings
&MaxDuration=94608000
&AUTHPARAMS

Sample Response

<DescribeHostReservationOfferingsResult xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>d4905678-84c3-4ea5-gtyk-a9cc3EXAMPLE</requestId>
  <offeringSet>
    <item>
      <duration>31536000</duration>
      <upfrontPrice>4879.000</upfrontPrice>
      <paymentOption>PartialUpfront</paymentOption>
      <instanceFamily>c3</instanceFamily>
      <offeringId>hro-789090378203856fg</offeringId>
      <hourlyPrice>0.557</hourlyPrice>
    </item>
    <item>
      <duration>94608000</duration>
      <upfrontPrice>18892.000</upfrontPrice>
      <paymentOption>AllUpfront</paymentOption>
      <instanceFamily>c4</instanceFamily>
      <offeringId>hro-109290378203856fg</offeringId>
      <hourlyPrice>0.000</hourlyPrice>
    </item>
  </offeringSet>
</DescribeHostReservationOfferingsResult>
DescribeHostReservations

Describes Dedicated Host Reservations which are associated with Dedicated Hosts in your account.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Filter.N

One or more filters.
- instance-family - The instance family (e.g., m4).
- payment-option - The payment option (No Upfront | Partial Upfront | All Upfront).
- state - The state of the reservation (payment-pending | payment-failed | active | retired).
Type: array of Filter (p. 561) objects
Required: No

HostReservationIdSet.N

One or more host reservation IDs.
Type: array of Strings
Required: No

MaxResults

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned nextToken value. This value can be between 5 and 500; if maxResults is given a larger value than 500, you will receive an error.
Type: Integer
Required: No

NextToken

The token to use to retrieve the next page of results.
Type: String
Required: No

Response Elements

The following elements are returned by the service.

hostReservationSet
Details about the reservation's configuration.
Type: array of HostReservation (p. 569) objects

nextToken
The token to use to retrieve the next page of results. This value is null when there are no more results to return.
Type: String

requestId
The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

This example describes the all the Dedicated Host Reservations in your account.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeHostReservations

Sample Response

<?xml version="1.0" encoding="UTF-8"?>
<DescribeHostReservationsResult xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>d4904fd9-84c3-4ea5-gtyk-a9983EXAMPLE</requestId>
  <hostReservationSet>
    <item>
      <upfrontPrice>0.000</upfrontPrice>
      <count>2</count>
      <start>2016-08-01T15:43:15Z</start>
      <instanceFamily>m4</instanceFamily>
      <offeringId>hro-0875903778903856fg</offeringId>
      <duration>31536000</duration>
      <paymentOption>NoUpfront</paymentOption>
      <end>2017-08-01T15:43:15Z</end>
      <hostReservationId>hr-0875903778903856fg</hostReservationId>
      <state>active</state>
      <hourlyPrice>1.990</hourlyPrice>
      <hostIdSet>
        <item>h-0897086hfkttn</item>
        <item>h-0891346hytrtn</item>
      </hostIdSet>
    </item>
  </hostReservationSet>
</DescribeHostReservationsResult>
DescribeHosts

Describes one or more of your Dedicated Hosts.
The results describe only the Dedicated Hosts in the region you're currently using. All listed instances consume capacity on your Dedicated Host. Dedicated Hosts that have recently been released will be listed with the state released.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Filter.N
One or more filters.
• instance-type - The instance type size that the Dedicated Host is configured to support.
• auto-placement - Whether auto-placement is enabled or disabled (on | off).
• host-reservation-id - The ID of the reservation assigned to this host.
• client-token - The idempotency token you provided when you launched the instance
• state - The allocation state of the Dedicated Host (available | under-assessment | permanent-failure | released | released-permanent-failure).
• availability-zone - The Availability Zone of the host.
Type: array of Filter (p. 561) objects
Required: No

HostId.N
The IDs of the Dedicated Hosts. The IDs are used for targeted instance launches.
Type: array of Strings
Required: No

MaxResults
The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned nextState value. This value can be between 5 and 500; if maxResults is given a larger value than 500, you will receive an error. You cannot specify this parameter and the host IDs parameter in the same request.
Type: Integer
Required: No

NextToken
The token to retrieve the next page of results.
Type: String
Required: No

Response Elements

The following elements are returned by the service.

hostSet
Information about the Dedicated Hosts.
Type: array of Host (p. 565) objects

nextToken
The token to use to retrieve the next page of results. This value is null when there are no more results to return.
Type: String

requestId
The ID of the request.
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example
This example describes the Dedicated Hosts in your account.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeHosts

Sample Response

<DescribeHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <hostSet>
    <item>
      <availableCapacity>
        <availableVCpus>1</availableVCpus>
        <availableInstanceCapacity>
          <item>
            <availableCapacity>32</availableCapacity>
            <totalCapacity>32</totalCapacity>
            <instanceType>m3.medium</instanceType>
          </item>
        </availableInstanceCapacity>
      </availableCapacity>
      <instances/>
      <autoPlacement>off</autoPlacement>
    </item>
  </hostSet>
  <hostId>h-00548908djdsgfs</hostId>
  <state>available</state>
  <hostProperties>
    <totalVCpus>1</totalVCpus>
    <cores>20</cores>
    <sockets>2</sockets>
    <instanceType>m3.medium</instanceType>
  </hostProperties>
  <availabilityZone>us-east-1b</availabilityZone>
</DescribeHostsResponse>

Example
This example describes a released Dedicated Host in your account using the state filter to show only hosts with a state of released.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeHosts
&Filter.1.Name=state
&Filter.1.Value=released
&AUTHPARAMS

## Sample Response

```xml
<DescribeHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9983EXAMPLE</requestId>
  <hostSet>
    <item>
      <instances/>
      <autoPlacement>on</autoPlacement>
      <hostId>h-00548908djdsqfs</hostId>
      <state>released</state>
      <hostProperties>
        <totalVCpus>1</totalVCpus>
        <cores>20</cores>
        <sockets>2</sockets>
        <instanceType>m3.medium</instanceType>
      </hostProperties>
      <availabilityZone>us-east-1b</availabilityZone>
    </item>
  </hostSet>
</DescribeHostsResponse>
```
DescribeIdentityIdFormat

Describes the ID format settings for resources for the specified IAM user, IAM role, or root user. For example, you can view the resource types that are enabled for longer IDs. This request only returns information about resource types whose ID formats can be modified; it does not return information about other resource types. For more information, see Resource IDs in the Amazon Elastic Compute Cloud User Guide.

The following resource types support longer IDs: instance | reservation | snapshot | volume.

These settings apply to the principal specified in the request. They do not apply to the principal that makes the request.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

PrincipalArn

The ARN of the principal, which can be an IAM role, IAM user, or the root user.

Type: String

Required: Yes

Resource

The type of resource: instance | reservation | snapshot | volume

Type: String

Required: No

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

Type: String

statusSet

Information about the ID format for the resources.

Type: array of IdFormat objects

Errors

For information about the errors that are common to all actions, see Common Client Errors.

Example

Example

This example describes the ID format for the IAM role ‘EC2Role’.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeIdentityIdFormat
&PrincipalArn=arn:aws:iam::123456789012:role/EC2Role
&AUTHPARAMS
Sample Response

```xml
<DescribeIdentityIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <statuses>
    <item>
      <resource>instance</resource>
      <useLongIds>true</useLongIds>
      <deadline>2016-11-01T21:34:34.000Z</deadline>
    </item>
    <item>
      <resource>reservation</resource>
      <useLongIds>false</useLongIds>
      <deadline>2016-11-01T21:34:34.000Z</deadline>
    </item>
    <item>
      <resource>volume</resource>
      <useLongIds>false</useLongIds>
      <deadline>2016-11-01T21:34:34.000Z</deadline>
    </item>
    <item>
      <resource>snapshot</resource>
      <useLongIds>false</useLongIds>
      <deadline>2016-11-01T21:34:34.000Z</deadline>
    </item>
  </statuses>
</DescribeIdentityIdFormatResponse>
```
DescribeIdFormat

Describes the ID format settings for your resources on a per-region basis, for example, to view which resource types are enabled for longer IDs. This request only returns information about resource types whose ID formats can be modified; it does not return information about other resource types. The following resource types support longer IDs: instance | reservation | snapshot | volume.

These settings apply to the IAM user who makes the request; they do not apply to the entire AWS account. By default, an IAM user defaults to the same settings as the root user, unless they explicitly override the settings by running the ModifyIdFormat (p. 418) command. Resources created with longer IDs are visible to all IAM users, regardless of these settings and provided that they have permission to use the relevant Describe command for the resource type.

Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Resource

The type of resource: instance | reservation | snapshot | volume

Type: String

Required: No

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

Type: String

statusSet

Information about the ID format for the resource.

Type: array of IdFormat (p. 574) objects

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example describes the ID format for all resources that support longer IDs.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeIdFormat

Sample Response

<DescribeIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
 <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
 <statuses>
<item>
  <resource>instance</resource>
  <useLongIds>true</useLongIds>
  <deadline>2016-11-01T21:34:34.000Z</deadline>
</item>

</item>

<item>
  <resource>reservation</resource>
  <useLongIds>false</useLongIds>
  <deadline>2016-11-01T21:34:34.000Z</deadline>
</item>

<item>
  <resource>volume</resource>
  <useLongIds>false</useLongIds>
  <deadline>2016-11-01T21:34:34.000Z</deadline>
</item>

<item>
  <resource>snapshot</resource>
  <useLongIds>false</useLongIds>
  <deadline>2016-11-01T21:34:34.000Z</deadline>
</item>

</statuses>
</DescribeIdFormatResponse>
DescribeImageAttribute

Describes the specified attribute of the specified AMI. You can specify only one attribute at a time.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Attribute

- **Attribute**: The AMI attribute.
  
  **Note**: Depending on your account privileges, the blockDeviceMapping attribute may return a Client.AuthFailure error. If this happens, use DescribeImages (p. 222) to get information about the block device mapping for the AMI.

  - **Type**: String
  - **Valid Values**: description | kernel | ramdisk | launchPermission | productCodes | blockDeviceMapping | sriovNetSupport
  - **Required**: Yes

DryRun

- **DryRun**: Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

  - **Type**: Boolean
  - **Required**: No

ImageId

- **ImageId**: The ID of the AMI.

  - **Type**: String
  - **Required**: Yes

Response Elements

The following elements are returned by the service.

- **blockDeviceMapping**: One or more block device mapping entries.

  - **Type**: array of BlockDeviceMapping (p. 534) objects

- **description**: A description for the AMI.

  - **Type**: AttributeValue (p. 529) object

- **imageId**: The ID of the AMI.

  - **Type**: String

- **kernel**: The kernel ID.

  - **Type**: AttributeValue (p. 529) object

- **launchPermission**: One or more launch permissions.

  - **Type**: array of LaunchPermission (p. 615) objects

- **productCodes**: One or more product codes.

  - **Type**: array of ProductCode (p. 645) objects
ramdisk
  The RAM disk ID.
  Type: AttributeValue (p. 529) object
requestId
  The ID of the request.
  Type: String
sriovNetSupport
  Indicates whether enhanced networking with the Intel 82599 Virtual Function interface is enabled.
  Type: AttributeValue (p. 529) object

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example lists the launch permissions for the specified AMI.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeImageAttribute
&ImageId=ami-61a54008
&Attribute=launchPermission
&AUTHPARAMS

Sample Response

<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-61a54008</imageId>
  <launchPermission>
    <item>
      <group>all</group>
    </item>
    <item>
      <userId>495219933132</userId>
    </item>
  </launchPermission>
</DescribeImageAttributeResponse>

Example 2
This example lists the product codes for the specified AMI.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeImageAttribute
&ImageId=ami-2bb65342
&Attribute=productCodes
&AUTHPARAMS
Sample Response

<?xml version="1.0" encoding="UTF-8"?>
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-2bb65342</imageId>
  <productCodes>
    <item>
      <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
      <type>marketplace</type>
    </item>
  </productCodes>
</DescribeImageAttributeResponse>
DescribeImages

Describles one or more of the images (AMIs, AKIs, and ARIs) available to you. Images available to you include public images, private images that you own, and private images owned by other AWS accounts but for which you have explicit launch permissions.

**Note**

Deregistered images are included in the returned results for an unspecified interval after deregistration.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

**ExecutableBy.N**

Scopes the images by users with explicit launch permissions. Specify an AWS account ID, self (the sender of the request), or all (public AMIs).

Type: array of Strings

Required: No

**Filter.N**

One or more filters.

- architecture - The image architecture (i386 | x86_64).
- block-device-mapping.delete-on-termination - A Boolean value that indicates whether the Amazon EBS volume is deleted on instance termination.
- block-device-mapping.device-name - The device name for the EBS volume (for example, /dev/sdh).
- block-device-mapping.snapshot-id - The ID of the snapshot used for the EBS volume.
- block-device-mapping.volume-size - The volume size of the EBS volume, in GiB.
- block-device-mapping.volume-type - The volume type of the EBS volume (gp2 | io1 | st1 | scl | standard).
- description - The description of the image (provided during image creation).
- ena-support - A Boolean that indicates whether enhanced networking with ENA is enabled.
- hypervisor - The hypervisor type (ovm | xen).
- image-id - The ID of the image.
- image-type - The image type (machine | kernel | ramdisk).
- is-public - A Boolean that indicates whether the image is public.
- kernel-id - The kernel ID.
- manifest-location - The location of the image manifest.
- name - The name of the AMI (provided during image creation).
- owner-alias - String value from an Amazon-maintained list (amazon | aws-marketplace | microsoft) of snapshot owners. Not to be confused with the user-configured AWS account alias, which is set from the IAM console.
- owner-id - The AWS account ID of the image owner.
- platform - The platform. To only list Windows-based AMIs, use windows.
- product-code - The product code.
• **product-code.type** - The type of the **product code** (devpay | marketplace).
• **ramdisk-id** - The RAM disk ID.
• **root-device-name** - The name of the root device volume (for example, /dev/sda1).
• **root-device-type** - The type of the root device volume (ebs | instance-store).
• **state** - The state of the **image** (available | pending | failed).
• **state-reason-code** - The reason code for the state change.
• **state-reason-message** - The message for the state change.
• **tag**: **key=value** - The key/value combination of a tag assigned to the resource.
• **tag-key** - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the **tag**: **key=value** filter.
• **tag-value** - The value of a tag assigned to the resource. This filter is independent of the **tag-key** filter.
• **virtualization-type** - The **virtualization type** (paravirtual | hvm).

**Type**: array of Filter (p. 561) objects

**Required**: No

**ImageId.N**

One or more image IDs.

Default: Describes all images available to you.

**Type**: array of Strings

**Required**: No

**Owner.N**

Filters the images by the owner. Specify an AWS account ID, self (owner is the sender of the request), or an AWS owner alias (valid values are amazon | aws-marketplace | microsoft). Omitting this option returns all images for which you have launch permissions, regardless of ownership.

**Type**: array of Strings

**Required**: No

---

**Response Elements**

The following elements are returned by the service.

**imagesSet**

Information about one or more images.

**Type**: array of Image (p. 575) objects

**requestId**

The ID of the request.

**Type**: String

---

**Errors**

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

---

**Examples**

**Example 1**

This example describes the specified AMI.
Sample Request

https://ec2.amazonaws.com/?Action=DescribeImages
&ImageId.1=ami-be3adfd7
&AUTHPARAMS

Sample Response

<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>amazon/getting-started</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>123456789012</imageOwnerId>
      <isPublic>true</isPublic>
      <architecture>i386</architecture>
      <imageType>machine</imageType>
      <kernelId>aki-1a2b3c4d</kernelId>
      <ramdiskId>ari-1a2b3c4d</ramdiskId>
      <imageOwnerAlias>amazon</imageOwnerAlias>
      <name>getting-started</name>
      <description>Image Description</description>
      <rootDeviceType>ebs</rootDeviceType>
      <rootDeviceName>/dev/sda</rootDeviceName>
      <blockDeviceMapping>
        <item>
          <deviceName>/dev/sda1</deviceName>
          <ebs>
            <snapshotId>snap-1234567890abcdef0</snapshotId>
            <volumeSize>15</volumeSize>
            <deleteOnTermination>false</deleteOnTermination>
            <volumeType>standard</volumeType>
          </ebs>
        </item>
      </blockDeviceMapping>
      <virtualizationType>paravirtual</virtualizationType>
      <tagSet/>
      <hypervisor>xen</hypervisor>
    </item>
  </imagesSet>
</DescribeImagesResponse>

Example 2

This example filters the response to include only public Windows images with an x86_64 architecture.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeImages
&Filter.1.Name=is-public
&Filter.1.Value.1=true
&Filter.2.Name=architecture
&Filter.2.Value.1=x86_64
&Filter.3.Name=platform
&Filter.3.Value.1=windows
Sample Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>ec2-public-windows-images/Server2003r2-x86_64-Win-v1.07.manifest.xml</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>123456789012</imageOwnerId>
      <isPublic>true</isPublic>
      <architecture>x86_64</architecture>
      <imageType>machine</imageType>
      <platform>windows</platform>
      <imageOwnerAlias>amazon</imageOwnerAlias>
      <rootDeviceType>instance-store</rootDeviceType>
      <blockDeviceMapping/>
      <virtualizationType>hvm</virtualizationType>
      <tagSet/>
      <hypervisor>xen</hypervisor>
    </item>
    ...
  </imagesSet>
</DescribeImagesResponse>
```

Example 3
This example returns the results to display images where the owner is aws-marketplace.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeImages
&Owner.1=aws-marketplace
&AUTHPARAMS

Sample Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>4a4a27a2-2e7c-475d-b35b-ca822EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>aws-marketplace/example-marketplace-amzn-ami.1</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>123456789012</imageOwnerId>
      <isPublic>true</isPublic>
      <productCodes>
        <item>
          <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
          <type>marketplace</type>
        </item>
      </productCodes>
    </item>
    ...
  </imagesSet>
</DescribeImagesResponse>
```
<architecture>i386</architecture>
<imageType>machine</imageType>
<kernelId>aki-la2b3c4d</kernelId>
<imageOwnerAlias>aws-marketplace</imageOwnerAlias>
<name>example-marketplace-amzn-ami.l</name>
<description>Amazon Linux AMI i386 EBS</description>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sdal</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sdal</deviceName>
    <ebs>
      <snapshotId>snap-1234567890abcdef0</snapshotId>
      <volumeSize>8</volumeSize>
      <deleteOnTermination>true</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping>
<virtualizationType>paravirtual</virtualizationType>
<hypervisor>xen</hypervisor>
...
DescribeImportImageTasks

Displays details about an import virtual machine or import snapshot tasks that are already created.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Filters.N
Filter tasks using the task-state filter and one of the following values: active, completed, deleting, deleted.
Type: array of Filter (p. 561) objects
Required: No

ImportTaskId.N
A list of import image task IDs.
Type: array of Strings
Required: No

MaxResults
The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned NextToken value.
Type: Integer
Required: No

NextToken
A token that indicates the next page of results.
Type: String
Required: No

Response Elements

The following elements are returned by the service.

importImageTaskSet
A list of zero or more import image tasks that are currently active or were completed or canceled in the previous 7 days.
Type: array of ImportImageTask (p. 579) objects

nextToken
The token to use to get the next page of results. This value is null when there are no more results to return.
Type: String

requestId
The ID of the request.
Type: String
Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
DescribeImportSnapshotTasks

Describes your import snapshot tasks.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: `Boolean`
Required: No

**Filters.N**
One or more filters.
Type: `array of Filter (p. 561)` objects
Required: No

**ImportTaskId.N**
A list of import snapshot task IDs.
Type: `array of Strings`
Required: No

**MaxResults**
The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value.
Type: `Integer`
Required: No

**NextToken**
A token that indicates the next page of results.
Type: `String`
Required: No

Response Elements

The following elements are returned by the service.

**importSnapshotTaskSet**
A list of zero or more import snapshot tasks that are currently active or were completed or canceled in the previous 7 days.
Type: `array of ImportSnapshotTask (p. 585)` objects

**nextToken**
The token to use to get the next page of results. This value is `null` when there are no more results to return.
Type: `String`

**requestId**
The ID of the request.
Type: `String`

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
DescribeInstanceAttribute

Describes the specified attribute of the specified instance. You can specify only one attribute at a time. Valid attribute values are: instanceType | kernel | ramdisk | userData | disableApiTermination | instanceInitiatedShutdownBehavior | rootDeviceName | blockDeviceMapping | productCodes | sourceDestCheck | groupSet | ebsOptimized | sriovNetSupport

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**Attribute**

The instance attribute.

**Note:** The enaSupport attribute is not supported at this time.

**Type:** String

**Valid Values:** instanceType | kernel | ramdisk | userData | disableApiTermination | instanceInitiatedShutdownBehavior | rootDeviceName | blockDeviceMapping | productCodes | sourceDestCheck | groupSet | ebsOptimized | sriovNetSupport | enaSupport

**Required:** Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

**Type:** Boolean

**Required:** No

**InstanceId**

The ID of the instance.

**Type:** String

**Required:** Yes

**Response Elements**

The following elements are returned by the service.

**blockDeviceMapping**

The block device mapping of the instance.

**Type:** array of InstanceBlockDeviceMapping (p. 591) objects

**disableApiTermination**

If the value is true, you can’t terminate the instance through the Amazon EC2 console, CLI, or API; otherwise, you can.

**Type:** AttributeBooleanValue (p. 528) object

**ebsOptimized**

Indicates whether the instance is optimized for EBS I/O.

**Type:** AttributeBooleanValue (p. 528) object

**enaSupport**

Indicates whether enhanced networking with ENA is enabled.

**Type:** AttributeBooleanValue (p. 528) object

**groupSet**

The security groups associated with the instance.

**Type:** array of GroupIdentifier (p. 563) objects
instanceId
   The ID of the instance.
   Type: String

instanceInitiatedShutdownBehavior
   Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).
   Type: AttributeValue (p. 529) object

instanceType
   The instance type.
   Type: AttributeValue (p. 529) object

kernel
   The kernel ID.
   Type: AttributeValue (p. 529) object

productCodes
   A list of product codes.
   Type: array of ProductCode (p. 645) objects

ramdisk
   The RAM disk ID.
   Type: AttributeValue (p. 529) object

requestId
   The ID of the request.
   Type: String

rootDeviceName
   The name of the root device (for example, /dev/sdal or /dev/xvda).
   Type: AttributeValue (p. 529) object

sourceDestCheck
   Indicates whether source/destination checking is enabled. A value of true means checking is enabled, and false means checking is disabled. This value must be false for a NAT instance to perform NAT.
   Type: AttributeBooleanValue (p. 528) object

sriovNetSupport
   Indicates whether enhanced networking with the Intel 82599 Virtual Function interface is enabled.
   Type: AttributeValue (p. 529) object

userData
   The user data.
   Type: AttributeValue (p. 529) object

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example lists the instance type of the specified instance.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-1234567890abcdef0
Example 2
This example lists the current value of the `InstanceInitiatedShutdownBehavior` attribute for the specified instance.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-1234567890abcdef0
&Attribute=instanceInitiatedShutdownBehavior
&AUTHPARAMS

Sample Response

<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-1234567890abcdef0</instanceId>
  <instanceInitiatedShutdownBehavior>
    <value>stop</value>
  </instanceInitiatedShutdownBehavior>
</DescribeInstanceAttributeResponse>

Example 3
This example lists the current value of the `DisableApiTermination` attribute for the specified instance.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-1234567890abcdef0
&Attribute=disableApiTermination
&AUTHPARAMS

Sample Response

<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
</DescribeInstanceAttributeResponse>
<instanceId>i-1234567890abcdef0</instanceId>
<disableApiTermination>
  <value>false</value>
</disableApiTermination>
</DescribeInstanceAttributeResponse>
DescribeInstances

Describes one or more of your instances.

If you specify one or more instance IDs, Amazon EC2 returns information for those instances. If you do not specify instance IDs, Amazon EC2 returns information for all relevant instances. If you specify an instance ID that is not valid, an error is returned. If you specify an instance that you do not own, it is not included in the returned results.

Recently terminated instances might appear in the returned results. This interval is usually less than one hour.

If you describe instances in the rare case where an Availability Zone is experiencing a service disruption and you specify instance IDs that are in the affected zone, or do not specify any instance IDs at all, the call fails. If you describe instances and specify only instance IDs that are in an unaffected zone, the call works normally.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

Filter.N

One or more filters.

- affinity - The affinity setting for an instance running on a Dedicated Host (default | host).
- architecture - The instance architecture (i386 | x86_64).
- availability-zone - The Availability Zone of the instance.
- block-device-mapping.attach-time - The attach time for an EBS volume mapped to the instance, for example, 2010-09-15T17:15:20.000Z.
- block-device-mapping.delete-on-termination - A Boolean that indicates whether the EBS volume is deleted on instance termination.
- block-device-mapping.device-name - The device name for the EBS volume (for example, /dev/sdh or xvdh).
- block-device-mapping.status - The status for the EBS volume (attaching | attached | detaching | detached).
- block-device-mapping.volume-id - The volume ID of the EBS volume.
- client-token - The idempotency token you provided when you launched the instance.
- dns-name - The public DNS name of the instance.
- group-id - The ID of the security group for the instance. EC2-Classic only.
- group-name - The name of the security group for the instance. EC2-Classic only.
- host-id - The ID of the Dedicated Host on which the instance is running, if applicable.
- hypervisor - The hypervisor type of the instance (ovm | xen).
- iam-instance-profile.arn - The instance profile associated with the instance. Specified as an ARN.
- image-id - The ID of the image used to launch the instance.
- instance-id - The ID of the instance.
- instance-lifecycle - Indicates whether this is a Spot Instance or a Scheduled Instance (spot | scheduled).
• instance-state-code - The state of the instance, as a 16-bit unsigned integer. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented. The valid values are: 0 (pending), 16 (running), 32 (shutting-down), 48 (terminated), 64 (stopping), and 80 (stopped).
• instance-state-name - The state of the instance (pending | running | shutting-down | terminated | stopping | stopped).
• instance-type - The type of instance (for example, t2.micro).
• instance.group-id - The ID of the security group for the instance.
• instance.group-name - The name of the security group for the instance.
• ip-address - The public IP address of the instance.
• kernel-id - The kernel ID.
• key-name - The name of the key pair used when the instance was launched.
• launch-index - When launching multiple instances, this is the index for the instance in the launch group (for example, 0, 1, 2, and so on).
• launch-time - The time when the instance was launched.
• monitoring-state - Indicates whether detailed monitoring is enabled (disabled | enabled).
• owner-id - The AWS account ID of the instance owner.
• placement-group-name - The name of the placement group for the instance.
• platform - The platform. Use windows if you have Windows instances; otherwise, leave blank.
• private-dns-name - The private DNS name of the instance.
• private-ip-address - The private IP address of the instance.
• product-code - The product code associated with the AMI used to launch the instance.
• product-code.type - The type of product code (devpay | marketplace).
• ramdisk-id - The RAM disk ID.
• reason - The reason for the current state of the instance (for example, shows "User Initiated [date]" when you stop or terminate the instance). Similar to the state-reason-code filter.
• requester-id - The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on).
• reservation-id - The ID of the instance's reservation. A reservation ID is created any time you launch an instance. A reservation ID has a one-to-one relationship with an instance launch request, but can be associated with more than one instance if you launch multiple instances using the same launch request. For example, if you launch one instance, you'll get one reservation ID. If you launch ten instances using the same launch request, you'll also get one reservation ID.
• root-device-name - The name of the root device for the instance (for example, /dev/sdal or /dev/xvda).
• root-device-type - The type of root device that the instance uses (ebs | instance-store).
• source-dest-check - Indicates whether the instance performs source/destination checking. A value of true means that checking is enabled, and false means checking is disabled. The value must be false for the instance to perform network address translation (NAT) in your VPC.
• spot-instance-request-id - The ID of the Spot instance request.
• state-reason-code - The reason code for the state change.
• state-reason-message - A message that describes the state change.
• subnet-id - The ID of the subnet for the instance.
• tag: key=value - The key/value combination of a tag assigned to the resource, where tag: key is the tag's key.
• tag-key - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-
value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the tag: key=value filter.

- **tag-value** - The value of a tag assigned to the resource. This filter is independent of the tag-key filter.
- **tenancy** - The tenancy of an instance (dedicated | default | host).
- **virtualization-type** - The virtualization type of the instance (paravirtual | hvm).
- **vpc-id** - The ID of the VPC that the instance is running in.
- **network-interface.description** - The description of the network interface.
- **network-interface.subnet-id** - The ID of the subnet for the network interface.
- **network-interface.vpc-id** - The ID of the VPC for the network interface.
- **network-interface.network-interface-id** - The ID of the network interface.
- **network-interface.owner-id** - The ID of the owner of the network interface.
- **network-interface.availability-zone** - The Availability Zone for the network interface.
- **network-interface.requester-id** - The requester ID for the network interface.
- **network-interface.requester-managed** - Indicates whether the network interface is being managed by AWS.
- **network-interface.status** - The status of the network interface (available | in-use).
- **network-interface.mac-address** - The MAC address of the network interface.
- **network-interface.private-dns-name** - The private DNS name of the network interface.
- **network-interface.source-dest-check** - Whether the network interface performs source/destination checking. A value of true means checking is enabled, and false means checking is disabled. The value must be false for the network interface to perform network address translation (NAT) in your VPC.
- **network-interface.group-id** - The ID of a security group associated with the network interface.
- **network-interface.group-name** - The name of a security group associated with the network interface.
- **network-interface.attachment.attachment-id** - The ID of the interface attachment.
- **network-interface.attachment.instance-id** - The ID of the instance to which the network interface is attached.
- **network-interface.attachment.instance-owner-id** - The owner ID of the instance to which the network interface is attached.
- **network-interface.addresses.private-ip-address** - The private IP address associated with the network interface.
- **network-interface.attachment.device-index** - The device index to which the network interface is attached.
- **network-interface.attachment.status** - The status of the attachment (attaching | attached | detaching | detached).
- **network-interface.attachment.attach-time** - The time that the network interface was attached to an instance.
- **network-interface.attachment.delete-on-termination** - Specifies whether the attachment is deleted when an instance is terminated.
- **network-interface.addresses.primary** - Specifies whether the IP address of the network interface is the primary private IP address.
- **network-interface.addresses.association.public-ip** - The ID of the association of an Elastic IP address with a network interface.
- **network-interface.addresses.association.ip-owner-id** - The owner ID of the private IP address associated with the network interface.
• association.public-ip - The address of the Elastic IP address bound to the network interface.
• association.ip-owner-id - The owner of the Elastic IP address associated with the network interface.
• association.allocation-id - The allocation ID returned when you allocated the Elastic IP address for your network interface.
• association.association-id - The association ID returned when the network interface was associated with an IP address.

Type: array of Filter (p. 561) objects
Required: No

InstanceId.N
One or more instance IDs.
Default: Describes all your instances.
Type: array of Strings
Required: No

MaxResults
The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned NextToken value. This value can be between 5 and 1000. You cannot specify this parameter and the instance IDs parameter or tag filters in the same call.
Type: Integer
Required: No

NextToken
The token to request the next page of results.
Type: String
Required: No

Response Elements
The following elements are returned by the service.

nextToken
The token to use to retrieve the next page of results. This value is null when there are no more results to return.
Type: String

requestId
The ID of the request.
Type: String

reservationSet
Zero or more reservations.
Type: array of Reservation (p. 654) objects

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example describes all instances owned by your AWS account. The example response shows information for one instance in a VPC.
Sample Request

https://ec2.amazonaws.com/?Action=DescribeInstances
&AUTHPARAMS

Sample Response

<DescribeInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>8f7724cf-496f-496e-8fe3-example</requestId>
  <reservationSet>
    <item>
      <reservationId>r-1234567890abcdef0</reservationId>
      <ownerId>123456789012</ownerId>
    </item>
    <instancesSet>
      <item>
        <instanceId>i-1234567890abcdef0</instanceId>
        <imageId>ami-bff32ccc</imageId>
        <instanceState>
          <code>16</code>
          <name>running</name>
        </instanceState>
        <privateDnsName>ip-192-168-1-88.eu-west-1.compute.internal</privateDnsName>
        <dnsName>ec2-54-194-252-215.eu-west-1.compute.amazonaws.com</dnsName>
        <keyName>my_keypair</keyName>
        <amiLaunchIndex>0</amiLaunchIndex>
        <instanceType>t2.micro</instanceType>
        <launchTime>2015-12-22T10:44:05.000Z</launchTime>
        <placement>
          <availabilityZone>eu-west-1c</availabilityZone>
          <groupName/></placement>
        <monitoring>
          <state>disabled</state>
        </monitoring>
        <subnetId>subnet-56f5f633</subnetId>
        <vpcId>vpc-11112222</vpcId>
        <privateIpAddress>192.168.1.88</privateIpAddress>
        <ipAddress>54.194.252.215</ipAddress>
        <sourceDestCheck>true</sourceDestCheck>
        <groupSet>
          <item>
            <groupId>sg-e4076980</groupId>
            <groupName>SecurityGroup1</groupName>
          </item>
        </groupSet>
        <architecture>x86_64</architecture>
        <rootDeviceType>ebs</rootDeviceType>
        <rootDeviceName>/dev/xvda</rootDeviceName>
        <blockDeviceMapping>
          <item>
          </item>
        </blockDeviceMapping>
      </item>
    </instancesSet>
  </reservationSet>
</DescribeInstancesResponse>
<deviceName>/dev/xvda</deviceName>
<ebs>
    <volumeId>vol-1234567890abcdef0</volumeId>
    <status>attached</status>
    <attachTime>2015-12-22T10:49:00Z</attachTime>
<deleteOnTermination>true</deleteOnTermination>
</ebs>
</blockDeviceMapping>

<virtualizationType>hvm</virtualizationType>
<clientToken>xMcwGl4507example</clientToken>
<tagSet>
    <item>
        <key>Name</key>
        <value>Server_1</value>
    </item>
</tagSet>
<hypervisor>xen</hypervisor>

<networkInterfaceSet>
    <item>
        <networkInterfaceId>eni-551ba033</networkInterfaceId>
        <subnetId>subnet-56f5f633</subnetId>
        <vpcId>vpc-11112222</vpcId>
        <description>Primary network interface</description>
        <ownerId>123456789012</ownerId>
        <status>in-use</status>
        <macAddress>02:dd:2c:5e:01:69</macAddress>
        <privateIpAddress>192.168.1.88</privateIpAddress>
        <privateDnsName>ip-192-168-1-88.eu-west-1.compute.internal</privateDnsName>
        <sourceDestCheck>true</sourceDestCheck>
        <groupSet>
            <item>
                <groupId>sg-e4076980</groupId>
                <groupName>SecurityGroup1</groupName>
            </item>
        </groupSet>
        <attachment>
            <attachmentId>eni-attach-39697adc</attachmentId>
            <deviceIndex>0</deviceIndex>
            <status>attached</status>
            <attachTime>2015-12-22T10:44:05.000Z</attachTime>
<deleteOnTermination>true</deleteOnTermination>
        </attachment>
    </item>
</networkInterfaceSet>

<association>
    <publicIp>54.194.252.215</publicIp>
    <publicDnsName>ec2-54-194-252-215.eu-west-1.compute.amazonaws.com</publicDnsName>
    <ipOwnerId>amazon</ipOwnerId>
</association>

Example 2
This example describes only the instances that have the m1.small or m1.large instance type and an attached Amazon EBS volume that will be deleted on termination.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=instance-type
&Filter.1.Value.1=m1.small
&Filter.1.Value.2=m1.large
&Filter.2.Name=block-device-mapping.status
&Filter.2.Value.1=attached
&Filter.3.Name=block-device-mapping.delete-on-termination
&Filter.3.Value.1=true
&AUTHPARAMS

Example 3
This example describes all instances that are running in a VPC.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=vpc-id
&Filter.1.Value.1=*  
&AUTHPARAMS

Example 4
This example describes any instances that have a tag with the key Owner, regardless of the value of the tag.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeInstances

Example
This example lists only the instances that have a tag with the key Owners and the value DbAdmin.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=tag:Owner
&Filter.1.Name=tag:Owner
&Filter.1.Value.1=DbAdmin
&AUTHPARAMS
DescribeInstanceStatus

Describes the status of one or more instances. By default, only running instances are described, unless specified otherwise.

Instance status includes the following components:

- **Status checks** - Amazon EC2 performs status checks on running EC2 instances to identify hardware and software issues. For more information, see Status Checks for Your Instances and Troubleshooting Instances with Failed Status Checks in the Amazon Elastic Compute Cloud User Guide.

- **Scheduled events** - Amazon EC2 can schedule events (such as reboot, stop, or terminate) for your instances related to hardware issues, software updates, or system maintenance. For more information, see Scheduled Events for Your Instances in the Amazon Elastic Compute Cloud User Guide.

- **Instance state** - You can manage your instances from the moment you launch them through their termination. For more information, see Instance Lifecycle in the Amazon Elastic Compute Cloud User Guide.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

**Filter.N**

One or more filters.

- **availability-zone** - The Availability Zone of the instance.
- **event.code** - The code for the scheduled event (instance-reboot | system-reboot | system-maintenance | instance-retirement | instance-stop).
- **event.description** - A description of the event.
- **event.not-after** - The latest end time for the scheduled event (for example, 2014-09-15T17:15:20.0002).
- **event.not-before** - The earliest start time for the scheduled event (for example, 2014-09-15T17:15:20.0002).
- **instance-state-code** - The code for the instance state, as a 16-bit unsigned integer. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented. The valid values are 0 (pending), 16 (running), 32 (shutting-down), 48 (terminated), 64 (stopping), and 80 (stopped).
- **instance-state-name** - The state of the instance (pending | running | shutting-down | terminated | stopping | stopped).
- **instance-status.reachability** - Filters on instance status where the name is reachability (passed | failed | initializing | insufficient-data).
- **instance-status.status** - The status of the instance (ok | impaired | initializing | insufficient-data | not-applicable).
- **system-status.reachability** - Filters on system status where the name is reachability (passed | failed | initializing | insufficient-data).
• system-status.status - The system status of the instance (ok | impaired | initializing | insufficient-data | not-applicable).
  Type: array of Filter (p. 561) objects
  Required: No

IncludeAllInstances
  When true, includes the health status for all instances. When false, includes the health status
  for running instances only.
  Default: false
  Type: Boolean
  Required: No

InstanceId.N
  One or more instance IDs.
  Default: Describes all your instances.
  Constraints: Maximum 100 explicitly specified instance IDs.
  Type: array of Strings
  Required: No

MaxResults
  The maximum number of results to return in a single call. To retrieve the remaining results, make
  another call with the returned NextToken value. This value can be between 5 and 1000. You
  cannot specify this parameter and the instance IDs parameter in the same call.
  Type: Integer
  Required: No

NextToken
  The token to retrieve the next page of results.
  Type: String
  Required: No

Response Elements
The following elements are returned by the service.

instanceStatusSet
  One or more instance status descriptions.
  Type: array of InstanceStatus (p. 606) objects

nextToken
  The token to use to retrieve the next page of results. This value is null when there are no more
  results to return.
  Type: String

requestId
  The ID of the request.
  Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example returns instance status descriptions for all running instances.
Sample Request

https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&AUTHPARAMS

Example 2
This example returns instance status descriptions for the specified instances.

Sample Request

https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eba48d7
&AUTHPARAMS

Example 3
This example returns instance status descriptions for all instances specified by supported
DescribeInstanceStatus filters.

Sample Request

https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&Filter.1.Name=system-status.reachability
&Filter.1.Value.failed
&AUTHPARAMS

Sample Response

<DescribeInstanceStatusResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>3be1508e-c444-4fef-89cc-0b1223c4f02fEXAMPLE</requestId>
  <instanceStatusSet>
    <item>
      <instanceId>i-1234567890abcdef0</instanceId>
      <availabilityZone>us-east-1d</availabilityZone>
      <instanceState>
        <code>16</code>
        <name>running</name>
      </instanceState>
      <systemStatus>
        <status>impaired</status>
        <details>
          <item>
            <name>reachability</name>
            <status>failed</status>
            <impairedSince>YYYY-MM-DDTHH:MM:SS.000Z</impairedSince>
          </item>
        </details>
      </systemStatus>
    </item>
    <item>
      <!-- More details... -->
    </item>
  </instanceStatusSet>
</DescribeInstanceStatusResponse>
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Examples

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<name>running</name>
</instanceState>
<systemStatus>
  <status>ok</status>
  <details>
    <item>
      <name>reachability</name>
      <status>passed</status>
    </item>
  </details>
</systemStatus>
<instanceStatus>
  <status>ok</status>
  <details>
    <item>
      <name>reachability</name>
      <status>passed</status>
    </item>
  </details>
</instanceStatus>
</item>
</instanceStatusSet>
</DescribeInstanceStatusResponse>
DescribeInternetGateways

Describes one or more of your Internet gateways.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

**Filter.N**
One or more filters.

- **attachment.state** - The current state of the attachment between the gateway and the VPC (available). Present only if a VPC is attached.
- **attachment.vpc-id** - The ID of an attached VPC.
- **internet-gateway-id** - The ID of the Internet gateway.
- **tag**:key=value - The key/value combination of a tag assigned to the resource.
- **tag-key** - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the tag: key=value filter.
- **tag-value** - The value of a tag assigned to the resource. This filter is independent of the tag-key filter.

Type: array of Filter (p. 561) objects
Required: No

**InternetGatewayId.N**
One or more Internet gateway IDs.
Default: Describes all your Internet gateways.
Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.

**internetGatewaySet**
Information about one or more Internet gateways.
Type: array of InternetGateway (p. 610) objects

**requestId**
The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

This example describes all your Internet gateways.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeInternetGateways
&AUTHPARAMS

Sample Response

<DescribeInternetGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/"
    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <internetGatewaySet>
        <item>
            <internetGatewayId>igw-eaad4883EXAMPLE</internetGatewayId>
            <attachmentSet>
                <item>
                    <vpcId>vpc-11ad4878</vpcId>
                    <state>available</state>
                </item>
            </attachmentSet>
            <tagSet/>
        </item>
    </internetGatewaySet>
</DescribeInternetGatewaysResponse>
DescribeKeyPairs

Describes one or more of your key pairs.
For more information about key pairs, see Key Pairs in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Filter.N
One or more filters.
• fingerprint - The fingerprint of the key pair.
• key-name - The name of the key pair.
Type: array of Filter (p. 561) objects
Required: No

KeyName.N
One or more key pair names.
Default: Describes all your key pairs.
Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.

keySet
Information about one or more key pairs.
Type: array of KeyPairInfo (p. 614) objects

requestId
The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example
This example describes the keypair with name my-key-pair.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&KeyName.1=my-key-pair
&AUTHPARAMS

Sample Response

```xml
<DescribeKeyPairsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <keySet>
    <item>
      <keyName>my-key-pair</keyName>
    </item>
  </keySet>
</DescribeKeyPairsResponse>
```

Example

This example filters the response to include only key pairs whose names include the string `Dave`.

Sample Request

```xml
https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&Filter.1.Name=key-name
&Filter.1.Value.1=*Dave*
&AUTHPARAMS
```
DescribeMovingAddresses

Describes your Elastic IP addresses that are being moved to the EC2-VPC platform, or that are being restored to the EC2-Classic platform. This request does not return information about any other Elastic IP addresses in your account.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Filter.N
One or more filters.
• moving-status - The status of the Elastic IP address (MovingToVpc | RestoringToClassic).
Type: array of Filter (p. 561) objects
Required: No

MaxResults
The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned NextToken value. This value can be between 5 and 1000; if MaxResults is given a value outside of this range, an error is returned.
Default: If no value is provided, the default is 1000.
Type: Integer
Required: No

NextToken
The token to use to retrieve the next page of results.
Type: String
Required: No

PublicIp.N
One or more Elastic IP addresses.
Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.

movingAddressStatusSet
The status for each Elastic IP address.
Type: array of MovingAddressStatus (p. 620) objects

nextToken
The token to use to retrieve the next page of results. This value is null when there are no more results to return.
Type: String

requestId
The ID of the request.
Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example
This example describes all your moving Elastic IP addresses.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeMovingAddresses &AUTHPARAMS

Sample Response

<DescribeMovingAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/"
  <requestId>127c36e6-6781-469f-89c1-EXAMPLE</requestId>
  <movingAddressStatusSet>
    <item>
      <publicIp>198.18.125.129</publicIp>
      <moveStatus>MovingToVpc</moveStatus>
    </item>
  </movingAddressStatusSet>
</DescribeMovingAddressesResponse>
DescribeNatGateways

Describes one or more of the your NAT gateways.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Filter.N

One or more filters.

- nat-gateway-id - The ID of the NAT gateway.
- state - The state of the NAT gateway (pending|failed|available|deleting|deleted).
- subnet-id - The ID of the subnet in which the NAT gateway resides.
- vpc-id - The ID of the VPC in which the NAT gateway resides.

Type: array of Filter (p. 561) objects

Required: No

MaxResults

The maximum number of items to return for this request. The request returns a token that you can specify in a subsequent call to get the next set of results.

Constraint: If the value specified is greater than 1000, we return only 1000 items.

Type: Integer

Required: No

NatGatewayId.N

One or more NAT gateway IDs.

Type: array of Strings

Required: No

NextToken

The token to retrieve the next page of results.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

natGatewaySet

Information about the NAT gateways.

Type: array of NatGateway (p. 621) objects

nextToken

The token to use to retrieve the next page of results. This value is null when there are no more results to return.

Type: String

requestId

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

Example
This example describes all of your NAT gateways.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeNatGateways
&AUTHPARAMS

Sample Response

  <requestId>bfed02c6-dae9-47c0-86a2-example</requestId>
  <natGatewaySet>
    <item>
      <subnetId>subnet-1a2a3a4a</subnetId>
      <natGatewayAddressSet>
        <item>
          <networkInterfaceId>eni-00e37850</networkInterfaceId>
          <publicIp>198.18.125.129</publicIp>
          <allocationId>eipalloc-37fca1a52</allocationId>
          <privateIp>10.0.2.147</privateIp>
        </item>
      </natGatewayAddressSet>
      <createTime>2015-11-25T14:00:55.416Z</createTime>
      <vpcId>vpc-4e20d42b</vpcId>
      <natGatewayId>nat-04e77a5e9c34432f9</natGatewayId>
      <state>available</state>
    </item>
  </natGatewaySet>
</DescribeNatGatewaysResponse>
DescribeNetworkAcls

Describe one or more of your network ACLs. For more information about network ACLs, see Network ACLs in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
- Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
  - Type: Boolean
  - Required: No

Filter
- One or more filters.
  - association.association-id - The ID of an association ID for the ACL.
  - association.network-acl-id - The ID of the network ACL involved in the association.
  - association.subnet-id - The ID of the subnet involved in the association.
  - default - Indicates whether the ACL is the default network ACL for the VPC.
  - entry.cidr - The CIDR range specified in the entry.
  - entry.egress - Indicates whether the entry applies to egress traffic.
  - entry.icmp.code - The ICMP code specified in the entry, if any.
  - entry.icmp.type - The ICMP type specified in the entry, if any.
  - entry.port-range.from - The start of the port range specified in the entry.
  - entry.port-range.to - The end of the port range specified in the entry.
  - entry.protocol - The protocol specified in the entry (tcp | udp | icmp or a protocol number).
  - entry.rule-action - Allows or denies the matching traffic (allow | deny).
  - entry.rule-number - The number of an entry (in other words, rule) in the ACL’s set of entries.
  - network-acl-id - The ID of the network ACL.
  - tag: key=value - The key/value combination of a tag assigned to the resource.
  - tag-key - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag’s value is), and the tag value X (regardless of what the tag’s key is). If you want to list only resources where Purpose is X, see the tag: key=value filter.
  - tag-value - The value of a tag assigned to the resource. This filter is independent of the tag-key filter.
  - vpc-id - The ID of the VPC for the network ACL.
  - Type: array of Filter (p. 561) objects
  - Required: No

NetworkAclid
- One or more network ACL IDs.
  - Default: Describes all your network ACLs.
  - Type: array of Strings
  - Required: No
Response Elements
The following elements are returned by the service.

networkAclSet
Information about one or more network ACLs.
Type: array of NetworkAcl (p. 624) objects

requestId
The ID of the request.
Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Sample Request

https://ec2.amazonaws.com/?Action=DescribeNetworkAcls
&AUTHPARAMS

Sample Response

<DescribeNetworkAclsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <networkAclSet>
    <item>
      <networkAclId>acl-5566953c</networkAclId>
      <vpcId>vpc-5266953b</vpcId>
      <default>true</default>
      <entrySet>
        <item>
          <ruleNumber>100</ruleNumber>
          <protocol>all</protocol>
          <ruleAction>allow</ruleAction>
          <egress>true</egress>
          <cidrBlock>0.0.0.0/0</cidrBlock>
        </item>
        <item>
          <ruleNumber>32767</ruleNumber>
          <protocol>all</protocol>
          <ruleAction>deny</ruleAction>
          <egress>true</egress>
          <cidrBlock>0.0.0.0/0</cidrBlock>
        </item>
        <item>
          <ruleNumber>100</ruleNumber>
          <protocol>all</protocol>
          <ruleAction>allow</ruleAction>
          <egress>false</egress>
        </item>
      </entrySet>
    </item>
  </networkAclSet>
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
</DescribeNetworkAclsResponse>
<item>
  <ruleNumber>32767</ruleNumber>
  <protocol>all</protocol>
  <ruleAction>deny</ruleAction>
  <egress>false</egress>
  <cidrBlock>0.0.0.0/0</cidrBlock>
</item>
</entrySet>
<associationSet/>
<tagSet/>
</item>

<item>
  <networkAclId>acl-5d659634</networkAclId>
  <vpcId>vpc-5266953b</vpcId>
  <default>false</default>
  <entrySet>
    <item>
      <ruleNumber>110</ruleNumber>
      <protocol>6</protocol>
      <ruleAction>allow</ruleAction>
      <egress>true</egress>
      <cidrBlock>0.0.0.0/0</cidrBlock>
      <portRange>
        <from>49152</from>
        <to>65535</to>
      </portRange>
    </item>
    <item>
      <ruleNumber>32767</ruleNumber>
      <protocol>all</protocol>
      <ruleAction>deny</ruleAction>
      <egress>true</egress>
      <cidrBlock>0.0.0.0/0</cidrBlock>
    </item>
    <item>
      <ruleNumber>110</ruleNumber>
      <protocol>6</protocol>
      <ruleAction>allow</ruleAction>
      <egress>false</egress>
      <cidrBlock>0.0.0.0/0</cidrBlock>
      <portRange>
        <from>80</from>
        <to>80</to>
      </portRange>
    </item>
    <item>
      <ruleNumber>120</ruleNumber>
      <protocol>6</protocol>
      <ruleAction>allow</ruleAction>
      <egress>false</egress>
      <cidrBlock>0.0.0.0/0</cidrBlock>
      <portRange>
        <from>443</from>
        <to>443</to>
      </portRange>
    </item>
  </entrySet>
</item>
<item>
  <networkAclAssociationId>aclassoc-5c659635</networkAclAssociationId>
  <networkAclId>acl-5d659634</networkAclId>
  <subnetId>subnet-ff66959f</subnetId>
</item>

<item>
  <networkAclAssociationId>aclassoc-c26596ab</networkAclAssociationId>
  <networkAclId>acl-5d659634</networkAclId>
  <subnetId>subnet-f0669599</subnetId>
</item>

</associationSet>

<tagSet/>

</item>

</networkAclSet>

</DescribeNetworkAclsResponse>
DescribeNetworkInterfaceAttribute

Describes a network interface attribute. You can specify only one attribute at a time.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Attribute

The attribute of the network interface.
Type: String
Valid Values: description | groupSet | sourceDestCheck | attachment
Required: No

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

NetworkInterfaceId

The ID of the network interface.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

attachment

The attachment (if any) of the network interface.
Type: NetworkInterfaceAttachment (p. 630) object
description

The description of the network interface.
Type: AttributeValue (p. 529) object
groupSet

The security groups associated with the network interface.
Type: array of GroupIdentifier (p. 563) objects

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

Example
This example describes the `sourceDestCheck` attribute of the specified network interface.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfaceAttribute
&NetworkInterfaceId=eni-686ea200
&Attribute=sourceDestCheck

AUTHPARAMS

```

Sample Response

```
  <requestId>7a20c6b2-d71c-45fb-bba7-37306850544b</requestId>
  <networkInterfaceId>eni-686ea200</networkInterfaceId>
  <sourceDestCheck>
    <value>true</value>
  </sourceDestCheck>
</DescribeNetworkInterfaceAttributeResponse>
```
DescribeNetworkInterfaces

Describes one or more of your network interfaces.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

Filter.N

One or more filters.

- addresses.private-ip-address - The private IP addresses associated with the network interface.
- addresses.primary - Whether the private IP address is the primary IP address associated with the network interface.
- addresses.association.public-ip - The association ID returned when the network interface was associated with the Elastic IP address.
- addresses.association.owner-id - The owner ID of the addresses associated with the network interface.
- association.association-id - The association ID returned when the network interface was associated with an IP address.
- association.allocation-id - The allocation ID returned when you allocated the Elastic IP address for your network interface.
- association.ip-owner-id - The owner of the Elastic IP address associated with the network interface.
- association.public-ip - The address of the Elastic IP address bound to the network interface.
- association.public-dns-name - The public DNS name for the network interface.
- attachment.attachment-id - The ID of the interface attachment.
- attachment.attach.time - The time that the network interface was attached to an instance.
- attachment.delete-on-termination - Indicates whether the attachment is deleted when an instance is terminated.
- attachment.device-index - The device index to which the network interface is attached.
- attachment.instance-id - The ID of the instance to which the network interface is attached.
- attachment.instance-owner-id - The owner ID of the instance to which the network interface is attached.
- attachment.nat-gateway-id - The ID of the NAT gateway to which the network interface is attached.
- attachment.status - The status of the attachment (attaching | attached | detaching | detached).
- availability-zone - The Availability Zone of the network interface.
- description - The description of the network interface.
- group-id - The ID of a security group associated with the network interface.
Response Elements

The following elements are returned by the service.

**networkInterfaceSet**
Information about one or more network interfaces.
Type: array of NetworkInterface (p. 627) objects

**requestId**
The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

This example describes all your network interfaces.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeNetworkInterfaces

Sample Response

<DescribeNetworkInterfacesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/"
  requestId(fc45294c-006b-457b-bab9-012f5b3b0e40"
  networkInterfaceSet>
    <item>
      <networkInterfaceId>eni-0f62d866</networkInterfaceId>
      <subnetId>subnet-c53c87ac</subnetId>
      <vpcId>vpc-cc3c87a5</vpcId>
      <availabilityZone>api-southeast-1b</availabilityZone>
      <description/>
      <ownerId>053230519467</ownerId>
      <requesterManaged>false</requesterManaged>
      <status>in-use</status>
      <macAddress>02:81:60:cb:27:37</macAddress>
      <privateIpAddress>10.0.0.146</privateIpAddress>
      <sourceDestCheck>true</sourceDestCheck>
      <groupSet>
        <item>
          <groupId>sg-3f4b5653</groupId>
          <groupName>default</groupName>
        </item>
      </groupSet>
      <attachment>
        <attachmentId>eni-attach-6537fc0c</attachmentId>
        <instanceId>i-1234567890abcdef0</instanceId>
        <instanceOwnerId>053230519467</instanceOwnerId>
        <deviceIndex>0</deviceIndex>
        <status>attached</status>
        <attachTime>2012-07-01T21:45:27.000Z</attachTime>
        <deleteOnTermination>true</deleteOnTermination>
      </attachment>
      <tagSet/>
      <privateIpAddressesSet>
        <item>
          <privateIpAddress>10.0.0.146</privateIpAddress>
          <primary>true</primary>
        </item>
        <item>
          <privateIpAddress>10.0.0.148</privateIpAddress>
          <primary>false</primary>
        </item>
        <item>
          <privateIpAddress>10.0.0.150</privateIpAddress>
          <primary>false</primary>
        </item>
      </privateIpAddressesSet>
    </item>
  </networkInterfaceSet>
</DescribeNetworkInterfacesResponse>
<item>
  <privateIpAddressesSet>
  </privateIpAddressesSet>
</item>

<item>
  <networkInterfaceId>eni-a66ed5cf</networkInterfaceId>
  <subnetId>subnet-cd8a35a4</subnetId>
  <vpcId>vpc-f28a359b</vpcId>
  <availabilityZone>ap-southeast-1b</availabilityZone>
  <description>Primary network interface</description>
  <ownerId>053230519467</ownerId>
  <requesterManaged>false</requesterManaged>
  <status>in-use</status>
  <macAddress>02:78:d7:00:8a:1e</macAddress>
  <privateIpAddress>10.0.1.233</privateIpAddress>
  <sourceDestCheck>true</sourceDestCheck>
  <groupSet>
    <item>
      <groupId>sg-a2a0b2ce</groupId>
      <groupName>quick-start-1</groupName>
    </item>
  </groupSet>
  <attachment>
    <attachmentId>eni-attach-a99c57c0</attachmentId>
    <instanceId>i-0598c7d356eba48d7</instanceId>
    <instanceOwnerId>053230519467</instanceOwnerId>
    <deviceIndex>0</deviceIndex>
    <status>attached</status>
    <attachTime>2012-06-27T20:08:44.000Z</attachTime>
    <deleteOnTermination>true</deleteOnTermination>
  </attachment>
  <tagSet/>
  <privateIpAddressesSet>
    <item>
      <privateIpAddress>10.0.1.233</privateIpAddress>
      <primary>true</primary>
    </item>
    <item>
      <privateIpAddress>10.0.1.20</privateIpAddress>
      <primary>false</primary>
    </item>
  </privateIpAddressesSet>
</item>

</networkInterfaceSet>
</DescribeNetworkInterfacesResponse>
DescribePlacementGroups

Describes one or more of your placement groups. For more information about placement groups and cluster instances, see Cluster Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is **DryRunOperation**. Otherwise, it is **UnauthorizedOperation**.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `group-name` - The name of the placement group.
- `state` - The state of the placement group (pending | available | deleting | deleted).
- `strategy` - The strategy of the placement group (cluster).

Type: array of Filter (p. 561) objects

Required: No

**GroupName.N**

One or more placement group names.

Default: Describes all your placement groups, or only those otherwise specified.

Type: array of Strings

Required: No

Response Elements

The following elements are returned by the service.

**placementGroupSet**

One or more placement groups.

Type: array of PlacementGroup (p. 637) objects

**requestId**

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

**Example**

This example describes the placement group named XYZ-cluster.

**Sample Request**

https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&&GroupName.1=XYZ-cluster
&&AUTHPARAMS

Sample Response

  <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
  <placementGroupSet>
    <item>
      <groupName>XYZ-cluster</groupName>
      <strategy>cluster</strategy>
      <state>available</state>
    </item>
  </placementGroupSet>
</DescribePlacementGroupsResponse>

Example

This example filters the response to include only placement groups that include the string Project in the name.

Sample Request

https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&Filter.1.Name=group-name
&Filter.1.Value=*Project*
&&AUTHPARAMS

Sample Response

  <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
  <placementGroupSet>
    <item>
      <groupName>Project-cluster</groupName>
      <strategy>cluster</strategy>
      <state>available</state>
    </item>
  </placementGroupSet>
</DescribePlacementGroupsResponse>
DescribePrefixLists

Describes available AWS services in a prefix list format, which includes the prefix list name and prefix list ID of the service and the IP address range for the service. A prefix list ID is required for creating an outbound security group rule that allows traffic from a VPC to access an AWS service through a VPC endpoint.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Filter.N
One or more filters.
- prefix-list-id: The ID of a prefix list.
- prefix-list-name: The name of a prefix list.
Type: array of Filter (p. 561) objects
Required: No

MaxResults
The maximum number of items to return for this request. The request returns a token that you can specify in a subsequent call to get the next set of results.
Constraint: If the value specified is greater than 1000, we return only 1000 items.
Type: Integer
Required: No

NextToken
The token for the next set of items to return. (You received this token from a prior call.)
Type: String
Required: No

PrefixListId.N
One or more prefix list IDs.
Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.

nextToken
The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.
Type: String

prefixListSet
All available prefix lists.
Type: array of PrefixList (p. 639) objects

requestId
The ID of the request.
Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example
This example lists all available AWS prefix lists.

Sample Request

https://ec2.amazonaws.com/?Action=DescribePrefixLists
&AUTHPARAMS

Sample Response

  <prefixListSet>
    <item>
      <prefixListName>com.amazonaws.us-west-2.s3</prefixListName>
      <prefixListId>pl-12345678</prefixListId>
      <cidrSet>
        <item>54.123.456.7/19</item>
      </cidrSet>
    </item>
  </prefixListSet>
  <requestId>614db4d4-ac7b-4cb6-853e-example</requestId>
</DescribePrefixListsResponse>
DescribeRegions

Describes one or more regions that are currently available to you. For a list of the regions supported by Amazon EC2, see Regions and Endpoints.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

**Filter.N**
One or more filters.

- **endpoint** - The endpoint of the region (for example, ec2.us-east-1.amazonaws.com).
- **region-name** - The name of the region (for example, us-east-1).

Type: array of Filter (p. 561) objects
Required: No

**RegionName.N**
The names of one or more regions.

Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.

**regionInfo**
Information about one or more regions.

Type: array of Region (p. 651) objects

**requestId**
The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

**Example 1**
This example displays information about all regions.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DescribeRegions
&AUTHPARAMS
```
Example 2
This example displays information about the specified regions only.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeRegions
&RegionName.1=us-east-1
&RegionName.2=eu-west-1
&AUTHPARAMS

Sample Response

<DescribeRegionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <regionInfo>
    <item>
      <regionName>us-east-1</regionName>
      <regionEndpoint>ec2.us-east-1.amazonaws.com</regionEndpoint>
    </item>
    <item>
      <regionName>eu-west-1</regionName>
      <regionEndpoint>ec2.eu-west-1.amazonaws.com</regionEndpoint>
    </item>
  </regionInfo>
</DescribeRegionsResponse>
DescribeReservedInstances

Describes one or more of the Reserved Instances that you purchased.
For more information about Reserved Instances, see Reserved Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

**Filter.N**

One or more filters.

- **availability-zone** - The Availability Zone where the Reserved Instance can be used.
- **duration** - The duration of the Reserved Instance (one year or three years), in seconds (31536000 | 94608000).
- **end** - The time when the Reserved Instance expires (for example, 2015-08-07T11:54:42.000Z).
- **fixed-price** - The purchase price of the Reserved Instance (for example, 9800.0).
- **instance-type** - The instance type that is covered by the reservation.
- **scope** - The scope of the Reserved Instance (Region or Availability Zone).
- **product-description** - The Reserved Instance product platform description. Instances that include (Amazon VPC) in the product platform description will only be displayed to EC2-Classic account holders and are for use with Amazon VPC (Linux/UNIX | Linux/UNIX (Amazon VPC) | SUSE Linux | SUSE Linux (Amazon VPC) | Red Hat Enterprise Linux | Red Hat Enterprise Linux (Amazon VPC) | Windows | Windows (Amazon VPC) | Windows with SQL Server Standard | Windows with SQL Server Standard (Amazon VPC) | Windows with SQL Server Web | Windows with SQL Server Web (Amazon VPC) | Windows with SQL Server Enterprise | Windows with SQL Server Enterprise (Amazon VPC)).
- **reserved-instances-id** - The ID of the Reserved Instance.
- **start** - The time at which the Reserved Instance purchase request was placed (for example, 2014-08-07T11:54:42.000Z).
- **state** - The state of the Reserved Instance (payment-pending | active | payment-failed | retired).
- **tag: key=value** - The key/value combination of a tag assigned to the resource.
- **tag-key** - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the tag: key=value filter.
- **tag-value** - The value of a tag assigned to the resource. This filter is independent of the tag-key filter.
- **usage-price** - The usage price of the Reserved Instance, per hour (for example, 0.84).

Type: array of Filter (p. 561) objects
Required: No

**OfferingClass**

Describes whether the Reserved Instance is Standard or Convertible.
Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

reservedInstancesSet
A list of Reserved Instances.
Type: array of ReservedInstances (p. 658) objects

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example
This example describes Reserved Instances owned by your account.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeReservedInstances
&AUTHPARAMS

Sample Response

<DescribeReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesSet>
    ...
    <item>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
  </reservedInstancesSet>
</DescribeReservedInstancesResponse>
Example

This example filters the response to include only one-year, m1.small Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with a VPC, set the product description to Linux/UNIX (Amazon VPC).

Sample Request

https://ec2.amazonaws.com/?Action=DescribeReservedInstances
&Filter.1.Name=duration
&Filter.1.Value.1=31536000
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
&Filter.3.Name=product-description
&Filter.3.Value.1=Linux%2FUNIX
&AUTHPARAMS
DescribeReservedInstancesListings

Describes your account's Reserved Instance listings in the Reserved Instance Marketplace. The Reserved Instance Marketplace matches sellers who want to resell Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

As a seller, you choose to list some or all of your Reserved Instances, and you specify the upfront price to receive for them. Your Reserved Instances are then listed in the Reserved Instance Marketplace and are available for purchase.

As a buyer, you specify the configuration of the Reserved Instance to purchase, and the Marketplace matches what you're searching for with what's available. The Marketplace first sells the lowest priced Reserved Instances to you, and continues to sell available Reserved Instance listings to you until your demand is met. You are charged based on the total price of all of the listings that you purchase.

For more information, see Reserved Instance Marketplace in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Filter.N
One or more filters.

- reserved-instances-id - The ID of the Reserved Instances.
- reserved-instances-listing-id - The ID of the Reserved Instances listing.
- status - The status of the Reserved Instance listing (pending | active | cancelled | closed).
- status-message - The reason for the status.

Type: array of Filter (p. 561) objects

ReservedInstancesId
One or more Reserved Instance IDs.

Type: String

ReservedInstancesListingId
One or more Reserved Instance listing IDs.

Type: String

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.

Type: String

reservedInstancesListingsSet
Information about the Reserved Instance listing.

Type: array of ReservedInstancesListing (p. 662) objects
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example
This example shows all the listings associated with your account.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeReservedInstancesListings&AUTHPARAMS

Sample Response

<DescribeReservedInstancesListingsResponse>
  <requestId>cec5c904-8f3a-4de5-8f5a-ff7f9EXAMPLE</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>253dfbf9-c335-4808-b956-d942cEXAMPLE</reservedInstancesListingId>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
      <createDate>2012-07-06T19:35:29.000Z</createDate>
      <updateDate>2012-07-06T19:35:30.000Z</updateDate>
      <status>active</status>
      <statusMessage>ACTIVE</statusMessage>
      <instanceCounts>
        <item>
          <state>Available</state>
          <instanceCount>20</instanceCount>
        </item>
        <item>
          <state>Sold</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Cancelled</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Pending</state>
          <instanceCount>0</instanceCount>
        </item>
      </instanceCounts>
      <priceSchedules>
        <item>
          <term>8</term>
          <price>480.0</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
        <item>
          <term>7</term>
          <price>420.0</price>
        </item>
      </priceSchedules>
    </item>
  </reservedInstancesListingsSet>
</DescribeReservedInstancesListingsResponse>
<currencyCode>USD</currencyCode>
<active>false</active>
</item>

<item>
<term>6</term>
<price>360.0</price>
<currencyCode>USD</currencyCode>
<active>true</active>
</item>

<item>
<term>5</term>
<price>300.0</price>
<currencyCode>USD</currencyCode>
<active>false</active>
</item>

<item>
<term>4</term>
<price>240.0</price>
<currencyCode>USD</currencyCode>
<active>false</active>
</item>

<item>
<term>3</term>
<price>180.0</price>
<currencyCode>USD</currencyCode>
<active>false</active>
</item>

<item>
<term>2</term>
<price>120.0</price>
<currencyCode>USD</currencyCode>
<active>false</active>
</item>

<item>
<term>1</term>
<price>60.0</price>
<currencyCode>USD</currencyCode>
<active>false</active>
</item>

</priceSchedules>
<tagSet/>
</item>
</reservedInstancesListingsSet>
</DescribeReservedInstancesListingsResponse>
DescribeReservedInstancesModifications

Describes the modifications made to your Reserved Instances. If no parameter is specified, information about all your Reserved Instances modification requests is returned. If a modification ID is specified, only information about the specific modification is returned.

For more information, see Modifying Reserved Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Filter.N

One or more filters.

- client-token - The idempotency token for the modification request.
- create-date - The time when the modification request was created.
- effective-date - The time when the modification becomes effective.
- modification-result.reserved-instances-id - The ID for the Reserved Instances created as part of the modification request. This ID is only available when the status of the modification is fulfilled.
- modification-result.target-configuration.availability-zone - The Availability Zone for the new Reserved Instances.
- modification-result.target-configuration.instance-count - The number of new Reserved Instances.
- modification-result.target-configuration.instance-type - The instance type of the new Reserved Instances.
- modification-result.target-configuration.platform - The network platform of the new Reserved Instances (EC2-Classic | EC2-VPC).
- reserved-instances-id - The ID of the Reserved Instances modified.
- reserved-instances-modification-id - The ID of the modification request.
- status - The status of the Reserved Instances modification request (processing | fulfilled | failed).
- status-message - The reason for the status.
- update-date - The time when the modification request was last updated.

Type: array of Filter (p. 561) objects

Required: No

NextToken

The token to retrieve the next page of results.

Type: String

Required: No

ReservedInstancesModificationId.N

IDs for the submitted modification request.

Type: array of Strings

Required: No

Response Elements

The following elements are returned by the service.
nextToken
The token to use to retrieve the next page of results. This value is null when there are no more results to return.
Type: String

requestId
The ID of the request.
Type: String

reservedInstancesModificationsSet
The Reserved Instance modification information.
Type: array of ReservedInstancesModification (p. 663) objects

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
Sample Request

https://ec2.amazonaws.com/?Action=DescribeReservedInstancesModifications
&AUTHPARAMS

Example 2
This example filters the response to include only Reserved Instances modification requests with status processing.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeReservedInstancesModifications
&Filter.1.Name=status
&Filter.1.Value.1=processing
&AUTHPARAMS
DescribeReservedInstancesOfferings

Describes Reserved Instance offerings that are available for purchase. With Reserved Instances, you purchase the right to launch instances for a period of time. During that time period, you do not receive insufficient capacity errors, and you pay a lower usage rate than the rate charged for On-Demand instances for the actual time used.

If you have listed your own Reserved Instances for sale in the Reserved Instance Marketplace, they will be excluded from these results. This is to ensure that you do not purchase your own Reserved Instances.

For more information, see Reserved Instance Marketplace in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AvailabilityZone

The Availability Zone in which the Reserved Instance can be used.

- Type: String
- Required: No

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

- Type: Boolean
- Required: No

Filter.N

One or more filters.

- availability-zone - The Availability Zone where the Reserved Instance can be used.
- duration - The duration of the Reserved Instance (for example, one year or three years), in seconds (31536000 | 94608000).
- fixed-price - The purchase price of the Reserved Instance (for example, 9800.0).
- instance-type - The instance type that is covered by the reservation.
- marketplace - Set to true to show only Reserved Instance Marketplace offerings. When this filter is not used, which is the default behavior, all offerings from both AWS and the Reserved Instance Marketplace are listed.
- product-description - The Reserved Instance product platform description. Instances that include (Amazon VPC) in the product platform description will only be displayed to EC2-Classic account holders and are for use with Amazon VPC, (Linux/UNIX | Linux/UNIX (Amazon VPC) | SUSE Linux | SUSE Linux (Amazon VPC) | Red Hat Enterprise Linux | Red Hat Enterprise Linux (Amazon VPC) | Windows | Windows (Amazon VPC) | Windows with SQL Server Standard | Windows with SQL Server Standard (Amazon VPC) | Windows with SQL Server Web | Windows with SQL Server Web (Amazon VPC) | Windows with SQL Server Enterprise | Windows with SQL Server Enterprise (Amazon VPC))
- reserved-instances-offering-id - The Reserved Instances offering ID.
- scope - The scope of the Reserved Instance (Availability Zone or Region).
- usage-price - The usage price of the Reserved Instance, per hour (for example, 0.84).

- Type: array of Filter (p. 561) objects
- Required: No

IncludeMarketplace

Include Reserved Instance Marketplace offerings in the response.
Type: Boolean
Required: No

**InstanceTenancy**
The tenancy of the instances covered by the reservation. A Reserved Instance with a tenancy of 
dedicated is applied to instances that run in a VPC on single-tenant hardware (i.e., Dedicated 
Instances).
Default: default
Type: String
Valid Values: default | dedicated | host
Required: No

**InstanceType**
The instance type that the reservation will cover (for example, m1.small). For more information, 
see Instance Types in the Amazon Elastic Compute Cloud User Guide.
Type: String
Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large 
| m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large |
m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge 
| m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge |
| cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge 
| i1.16xlarge | i1.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge |
i2.8xlarge | hi1.4xlarge | hs1.xlarge | c1.medium | c1.xlarge | c3.large 
| c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge 
| c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge |
g2.2xlarge | g2.8xlarge | cg1.4xlarge | p2.xlarge | p2.8xlarge |
p2.16xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge
Required: No

**MaxDuration**
The maximum duration (in seconds) to filter when searching for offerings.
Default: 94608000 (3 years)
Type: Long
Required: No

**MaxInstanceCount**
The maximum number of instances to filter when searching for offerings.
Default: 20
Type: Integer
Required: No

**MaxResults**
The maximum number of results to return for the request in a single page. The remaining results 
of the initial request can be seen by sending another request with the returned NextToken value.
The maximum is 100.
Default: 100
Type: Integer
Required: No

**MinDuration**
The minimum duration (in seconds) to filter when searching for offerings.
Default: 2592000 (1 month)
Type: Long
Required: No

**NextToken**
The token to retrieve the next page of results.
Type: String
Required: No

OfferingClass
The offering class of the Reserved Instance. Can be standard or convertible.
Type: String
Valid Values: standard | convertible
Required: No

OfferingType
The Reserved Instance offering type. If you are using tools that predate the 2011-11-01 API version, you only have access to the Medium Utilization Reserved Instance offering type.
Type: String
Valid Values: Heavy Utilization | Medium Utilization | Light Utilization | No Upfront | Partial Upfront | All Upfront
Required: No

ProductDescription
The Reserved Instance product platform description. Instances that include (Amazon VPC) in the description are for use with Amazon VPC.
Type: String
Valid Values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)
Required: No

ReservedInstancesOfferingIds.N
One or more Reserved Instances offering IDs.
Type: array of Strings
Required: No

Response Elements
The following elements are returned by the service.

nextToken
The token to use to retrieve the next page of results. This value is null when there are no more results to return.
Type: String

requestId
The ID of the request.
Type: String

reservedInstancesOfferingsSet
A list of Reserved Instances offerings.
Type: array of ReservedInstancesOffering (p. 665) objects

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example Describing Reserved Instance Marketplace Offerings Only
This example requests a list of Linux/UNIX, No Upfront Reserved Instances that are available through the Reserved Instance Marketplace only. When using the Query API, all strings must be URL-encoded.
Sample Request

https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.1.Name=marketplace
&Filter.1.Value.1=true
&IncludeMarketplace=true
&OfferingType=No+Upfront
&ProductDescription=Linux%2FUNIX
&Version=2016-09-15
&AUTHPARAMS

Sample Response

<DescribeReservedInstancesOfferingsResponse>
  <requestId>cec5c904-8f3a-4de5-8f5a-ff7f9EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>253dfbf9-c335-4808-b956-d942cEXAMPLE</reservedInstancesOfferingId>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
      <createDate>2012-07-06T19:35:29.000Z</createDate>
      <updateDate>2012-07-06T19:35:30.000Z</updateDate>
      <status>active</status>
      <statusMessage>ACTIVE</statusMessage>
      <instanceCounts>
        <item>
          <state>Available</state>
          <instanceCount>20</instanceCount>
        </item>
        <item>
          <state>Sold</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Cancelled</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Pending</state>
          <instanceCount>0</instanceCount>
        </item>
      </instanceCounts>
      <priceSchedules>
        <item>
          <term>8</term>
          <price>480.0</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
      </priceSchedules>
    </item>
  </reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>a6ce8269-7b8c-42cd-a7f5-0841cEXAMPLE</reservedInstancesOfferingId>
      <instanceType>m3.xlarge</instanceType>
      <availabilityZone>us-east-1e</availabilityZone>
      <tags/>
      <clientToken>myclienttoken1</clientToken>
    </item>
  </reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
Example Describing AWS Offerings Only

This example lists AWS offerings only.
Sample Request

http://ec2.amazonaws.com/doc/2016-09-15/?
Action=DescribeReservedInstancesOfferings
&IncludeMarketplace=false
&AUTHPARAMS

Sample Response

<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>2bc7dafa-dafd-4257-b6tf-c0814EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>a6ce8269-7b8c-42cd-a6y5-0841cEXAMPLE</reservedInstancesOfferingId>
      <instanceType>c1.medium</instanceType>
      <availabilityZone>us-east-1e</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>631.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Partial Upfront</offeringType>
      <recurringCharges>
        <item>
          <frequency>Hourly</frequency>
          <amount>0.28</amount>
        </item>
      </recurringCharges>
      <marketplace>false</marketplace>
      <pricingDetailsSet/>
      <offeringClass>convertible</offeringClass>
      <scope>Availability Zone</scope>
    </item>
    <item>
      <reservedInstancesOfferingId>2bc7dafa-rafd-6t7y-bdf9-c0814EXAMPLE</reservedInstancesOfferingId>
      <instanceType>c1.medium</instanceType>
      <availabilityZone>us-east-1b</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>631.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Partial Upfront</offeringType>
      <recurringCharges>
        <item>
          <frequency>Hourly</frequency>
          <amount>0.88</amount>
        </item>
      </recurringCharges>
      <marketplace>false</marketplace>
      <pricingDetailsSet/>
      <offeringClass>convertible</offeringClass>
      <scope>Availability Zone</scope>
    </item>
  </reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
Example Using Tokens to Manage Results

You can use pagination support to query the results sequentially and in parts. Specify the maximum number of results that are returned in the response. Then, each paginated response contains a token that can be provided as input to a subsequent DescribeReservedInstancesOfferings call to fetch the next page. (Make sure that you use URL encoding for the token value.)

Sample Request

https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&MaxResults=5
&AUTHPARAMS

Sample Response

<DescribeReservedInstancesOfferingsResponse>
  <requestId>d072f652-cc57-458c-89e0-e6c02EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    ... 
    <item>
      <reservedInstancesOfferingId>649fd0c8-7846-46b8-8f84-a6400EXAMPLE</reservedInstancesOfferingId>
      <instanceType>c1.medium</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>9460800</duration>
      <fixedPrice>631.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Partial Upfront</offeringType>
      <recurringCharges>
        <item>
          <frequency>Hourly</frequency>
          <amount>0.028</amount>
        </item>
      </recurringCharges>
      <marketplace>false</marketplace>
      <pricingDetailsSet/>
      <offeringClass>standard</offeringClass>
    </item>
    ... 
  </reservedInstancesOfferingsSet>
  <nextToken>h/C8YKPQBHEjW8xKz1827/Zzyb0VqskkJRo3TqhFYeE=</nextToken>
</DescribeReservedInstancesOfferingsResponse>

<DescribeReservedInstancesOfferingsResponse>
  <requestId>h/87YKPBHEjW8xKz1827/Fzyb0VqskkJRo3TqhFYeE=</requestId>
  <reservedInstancesOfferingsSet>
    ... 
    <item>
      <reservedInstancesOfferingId>h/8FC8YKPQBHEjW8xKz1827%2Fzzyb0VqskkJRo3TqhFYeE%3D</reservedInstancesOfferingId>
      <instanceType>c1.medium</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>9460800</duration>
      <fixedPrice>631.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Partial Upfront</offeringType>
      <recurringCharges>
        <item>
          <frequency>Hourly</frequency>
          <amount>0.028</amount>
        </item>
      </recurringCharges>
      <marketplace>false</marketplace>
      <pricingDetailsSet/>
      <offeringClass>standard</offeringClass>
    </item>
    ... 
  </reservedInstancesOfferingsSet>
  <nextToken>h/C8YKPQBHEjW8xKz1827/Zzyb0VqskkJRo3TqhFYeE=</nextToken>
</DescribeReservedInstancesOfferingsResponse>
Example Using Filters

This example filters the response to include only one-year, *m1.small* or *m1.large* Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with a VPC, set the product description to *Linux/UNIX (Amazon VPC)*.

Sample Request

```plaintext
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.1.Name=duration
&Filter.1.Value.1=31536000
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
&Filter.2.Value.2=m1.large
&Filter.3.Name=product-description
&Filter.3.Value.1=Linux%2FUNIX
&AUTHPARAMS
```
DescribeRouteTables

Describes one or more of your route tables.

Each subnet in your VPC must be associated with a route table. If a subnet is not explicitly associated
with any route table, it is implicitly associated with the main route table. This command does not return
the subnet ID for implicit associations.

For more information about route tables, see Route Tables in the Amazon Virtual Private Cloud User
Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional
parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the
request, and provides an error response. If you have the required permissions, the error response is
DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

Filter.N

One or more filters.

- association.route-table-association-id - The ID of an association ID for the route
table.
- association.route-table-id - The ID of the route table involved in the association.
- association.subnet-id - The ID of the subnet involved in the association.
- association.main - Indicates whether the route table is the main route table for the VPC
(true | false).
- route-table-id - The ID of the route table.
- route.destination-cidr-block - The CIDR range specified in a route in the table.
- route.destination-prefix-list-id - The ID (prefix) of the AWS service specified in a
route in the table.
- route.gateway-id - The ID of a gateway specified in a route in the table.
- route.instance-id - The ID of an instance specified in a route in the table.
- route.nat-gateway-id - The ID of a NAT gateway.
- route.origin - Describes how the route was created. CreateRouteTable indicates that the
route was automatically created when the route table was created; CreateRoute indicates that
the route was manually added to the route table; EnableVgwRoutePropagation indicates that
the route was propagated by route propagation.
- route.state - The state of a route in the route table (active | blackhole). The blackhole
state indicates that the route's target isn't available (for example, the specified gateway isn't
attached to the VPC, the specified NAT instance has been terminated, and so on).
- route.vpc-peering-connection-id - The ID of a VPC peering connection specified in a
route in the table.
- tag: key=value - The key/value combination of a tag assigned to the resource.
- tag-key - The key of a tag assigned to the resource. This filter is independent of the tag-
value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-
value=X", you get any resources assigned both the tag key Purpose (regardless of what the
tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only
resources where Purpose is X, see the tag: key=value filter.
- tag-value - The value of a tag assigned to the resource. This filter is independent of the tag-
key filter.
• **vpc-id** - The ID of the VPC for the route table.
  Type: array of Filter (p. 561) objects
  Required: No

**RouteTableId.N**
One or more route table IDs.
Default: Describes all your route tables.
Type: array of Strings
Required: No

## Response Elements
The following elements are returned by the service.

**requestId**
The ID of the request.
Type: String

**routeTableSet**
Information about one or more route tables.
Type: array of RouteTable (p. 669) objects

## Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

## Example

### Example
This example describes all your route tables. The first route table in the returned list is the VPC's main route table. Its association ID represents the association between the table and the VPC.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeRouteTables
&AUTHPARAMS
```

### Sample Response

```
<DescribeRouteTablesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/"
    requestId=6f570b0b-9c18-4b07-bdec-73740dcf861a"
    routeTableSet>
    <item>
        <routeTableId>rtb-13ad487a</routeTableId>
        <vpcId>vpc-11ad4878</vpcId>
        <routeSet>
            <item>
                <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
                <gatewayId>local</gatewayId>
                <state>active</state>
                <origin>CreateRouteTable</origin>
            </item>
        </routeSet>
    </item>
</DescribeRouteTablesResponse>
```
<associationSet>
  <item>
    <routeTableAssociationId>rtbassoc-12ad487b</routeTableAssociationId>
    <routeTableId>rtb-13ad487a</routeTableId>
    <main>true</main>
  </item>
</associationSet>
<tagSet/>

<associationSet>
  <item>
    <routeTableAssociationId>rtbassoc-faad4893</routeTableAssociationId>
    <routeTableId>rtb-f9ad4890</routeTableId>
    <subnetId>subnet-15ad487c</subnetId>
  </item>
</associationSet>
<tagSet/>

<routeTableSet>
  <item>
    <routeTableId>rtb-f9ad4890</routeTableId>
    <vpcId>vpc-11ad4878</vpcId>
    <routeSet>
      <item>
        <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
        <gatewayId>local</gatewayId>
        <state>active</state>
        <origin>CreateRouteTable</origin>
      </item>
      <item>
        <destinationCidrBlock>0.0.0.0/0</destinationCidrBlock>
        <gatewayId>igw-eaad4883</gatewayId>
        <state>active</state>
      </item>
    </routeSet>
  </item>
</routeTableSet>
<tagSet/>

</DescribeRouteTablesResponse>
DescribeScheduledInstanceAvailability

Finds available schedules that meet the specified criteria.

You can search for an available schedule no more than 3 months in advance. You must meet the minimum required duration of 1,200 hours per year. For example, the minimum daily schedule is 4 hours, the minimum weekly schedule is 24 hours, and the minimum monthly schedule is 100 hours.

After you find a schedule that meets your needs, call PurchaseScheduledInstances (p. 455) to purchase Scheduled Instances with that schedule.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

Filter.N
One or more filters.

- availability-zone - The Availability Zone (for example, us-west-2a).
- instance-type - The instance type (for example, c4.large).
- network-platform - The network platform (EC2-Classic or EC2-VPC).
- platform - The platform (Linux/UNIX or Windows).

Type: array of Filter (p. 561) objects
Required: No

FirstSlotStartTimeRange
The time period for the first schedule to start.

Type: SlotDateTimeRangeRequest (p. 691) object
Required: Yes

MaxResults
The maximum number of results to return in a single call. This value can be between 5 and 300. The default value is 300. To retrieve the remaining results, make another call with the returned NextToken value.

Type: Integer
Required: No

MaxSlotDurationInHours
The maximum available duration, in hours. This value must be greater than MinSlotDurationInHours and less than 1,720.

Type: Integer
Required: No

MinSlotDurationInHours
The minimum available duration, in hours. The minimum required duration is 1,200 hours per year. For example, the minimum daily schedule is 4 hours, the minimum weekly schedule is 24 hours, and the minimum monthly schedule is 100 hours.

Type: Integer
Required: No

NextToken
The token for the next set of results.

Type: String
Response Elements
The following elements are returned by the service.

nextToken
   The token required to retrieve the next set of results. This value is null when there are no more results to return.
   Type: String

requestId
   The ID of the request.
   Type: String

scheduledInstanceAvailabilitySet
   Information about the available Scheduled Instances.
   Type: array of ScheduledInstanceAvailability (p. 675) objects

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).
DescribeScheduledInstances

Describes one or more of your Scheduled Instances.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- availability-zone - The Availability Zone (for example, us-west-2a).
- instance-type - The instance type (for example, c4.large).
- network-platform - The network platform (EC2-Classic or EC2-VPC).
- platform - The platform (Linux/UNIX or Windows).

Type: array of Filter (p. 561) objects

Required: No

**MaxResults**

The maximum number of results to return in a single call. This value can be between 5 and 300. The default value is 100. To retrieve the remaining results, make another call with the returned NextToken value.

Type: Integer

Required: No

**NextToken**

The token for the next set of results.

Type: String

Required: No

**ScheduledInstanceId.N**

One or more Scheduled Instance IDs.

Type: array of Strings

Required: No

**SlotStartTimeRange**

The time period for the first schedule to start.

Type: SlotStartTimeRangeRequest (p. 692) object

Required: No

Response Elements

The following elements are returned by the service.

**nextToken**

The token required to retrieve the next set of results. This value is null when there are no more results to return.

Type: String

**requestId**

The ID of the request.
Type: String

scheduledInstanceSet
Information about the Scheduled Instances.
Type: array of ScheduledInstance (p. 673) objects

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).
DescribeSecurityGroupReferences

[EC2-VPC only] Describes the VPCs on the other side of a VPC peering connection that are referencing the security groups you've specified in this request.

Request Parameters
The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

GroupId.N
One or more security group IDs in your account.
Type: array of Strings
Required: Yes

Response Elements
The following elements are returned by the service.

requestId
The ID of the request.
Type: String

securityGroupReferenceSet
Information about the VPCs with the referencing security groups.
Type: array of SecurityGroupReference (p. 690) objects

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example describes the security group references for sg-11aa22bb. The response indicates that this security group is referenced by a security group in VPC vpc-1a2b3c4d.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeSecurityGroupReferences&GroupId.1=sg-11aa22bb

Sample Response

Example 2
This example describes the security group references for sg-11aa22bb and sg-1111aaaa.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeSecurityGroupReferences
&GroupId.1=sg-11aa22bb
&GroupId.2=sg-1111aaaa
&AUTHPARAMS

Sample Response

  <requestId>d1835dca-61c1-459d-99cb-example</requestId>
  <securityGroupReferenceSet>
    <item>
      <referencingVpcId>vpc-81326ae4</referencingVpcId>
      <vpcPeeringConnectionId>pcx-b04deed9</vpcPeeringConnectionId>
      <groupId>sg-11aa22bb</groupId>
    </item>
    <item>
      <referencingVpcId>vpc-la2b3c4d</referencingVpcId>
      <vpcPeeringConnectionId>pcx-aabbcddd</vpcPeeringConnectionId>
      <groupId>sg-1111aaaa</groupId>
    </item>
  </securityGroupReferenceSet>
</DescribeSecurityGroupReferencesResponse>
DescribeSecurityGroups

Describes one or more of your security groups.
A security group is for use with instances either in the EC2-Classic platform or in a specific VPC. For more information, see Amazon EC2 Security Groups in the Amazon Elastic Compute Cloud User Guide and Security Groups for Your VPC in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Filter.N
One or more filters. If using multiple filters for rules, the results include security groups for which any combination of rules - not necessarily a single rule - match all filters.
- description - The description of the security group.
- egress.ip-permission.prefix-list-id - The ID (prefix) of the AWS service to which the security group allows access.
- group-id - The ID of the security group.
- group-name - The name of the security group.
- ip-permission.cidr - A CIDR range that has been granted permission.
- ip-permission.from-port - The start of port range for the TCP and UDP protocols, or an ICMP type number.
- ip-permission.group-id - The ID of a security group that has been granted permission.
- ip-permission.group-name - The name of a security group that has been granted permission.
- ip-permission.protocol - The IP protocol for the permission (tcp | udp | icmp or a protocol number).
- ip-permission.to-port - The end of port range for the TCP and UDP protocols, or an ICMP code.
- ip-permission.user-id - The ID of an AWS account that has been granted permission.
- owner-id - The AWS account ID of the owner of the security group.
- tag-key - The key of a tag assigned to the security group.
- tag-value - The value of a tag assigned to the security group.
- vpc-id - The ID of the VPC specified when the security group was created.
Type: array of Filter (p. 561) objects
Required: No

GroupId.N
One or more security group IDs. Required for security groups in a nondefault VPC.
Default: Describes all your security groups.
Type: array of Strings
Required: No

GroupName.N
[EC2-Classic and default VPC only] One or more security group names. You can specify either the security group name or the security group ID. For security groups in a nondefault VPC, use the group-name filter to describe security groups by name.
Response Elements
The following elements are returned by the service.

**requestId**
The ID of the request.
Type: String

**securityGroupInfo**
Information about one or more security groups.
Type: array of SecurityGroup objects

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

**Example 1**
This example returns information about a security group named WebServers. Note that the
GroupName parameter returns information about security groups in EC2-Classic or a default VPC only.
If no security groups are found in either platform, an exception is returned, regardless of whether you
have a security group with the specified name in a nondefault VPC.

Sample Request

```
&GroupName.1=WebServers
&AUTHPARAMS
```

Sample Response

```
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <securityGroupInfo>
    <item>
      <ownerId>123456789012</ownerId>
      <groupId>sg-1a2b3c4d</groupId>
      <groupName>WebServers</groupName>
      <groupDescription>Web Servers</groupDescription>
      <vpcId>vpc-614cc409</vpcId>
      <ipPermissions>
        <item>
          <ipProtocol>-1</ipProtocol>
          <groups>
            <item>
              <userId>123456789012</userId>
              <groupId>sg-af8661c0</groupId>
            </item>
          </groups>
        </item>
      </ipPermissions>
    </item>
  </securityGroupInfo>
</DescribeSecurityGroupsResponse>
```
Example 2

[EC2-VPC] This example describes security group sg-1a2b3c4d. The response indicates that this security group references another security group. The referenced group can be in a different VPC if used through a VPC peering connection. If the referenced security group or the VPC peering connection is deleted, the rule becomes stale but is not automatically removed from the security group.

Sample Request

&GroupId.1=sg-1a2b3c4d
&AUTHPARAMS

Sample Response

  requestId=edb7c570-be05-4192-bd1b-example
  <securityGroupInfo>
    <item>
      <ownerId>123456789012</ownerId>
      <groupId>sg-la2b3c4d</groupId>
      <groupName>MySecurityGroup</groupName>
      <groupDescription>MySecurityGroup</groupDescription>
    </item>
  </securityGroupInfo>
</DescribeSecurityGroupsResponse>
Example 3

This example describes all security groups that grant access over port 22 and that grant access from instances associated with app_server_group or database_group.

Sample Request

&Filter.1.Name=ip-permission.protocol
&Filter.1.Value.1=tcp
&Filter.2.Name=ip-permission.from-port
&Filter.2.Value.1=22
&Filter.3.Name=ip-permission.to-port
&Filter.3.Value.1=22
&Filter.4.Name=ip-permission.group-name
&Filter.4.Value.1=app_server_group
&Filter.4.Value.2=database_group
&AUTHPARAMS
DescribeSnapshotAttribute

Describes the specified attribute of the specified snapshot. You can specify only one attribute at a time. For more information about EBS snapshots, see Amazon EBS Snapshots in the Amazon Elastic Compute Cloud User Guide.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**Attribute**

The snapshot attribute you would like to view.

Type: String

Valid Values: productCodes | createVolumePermission

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

**SnapshotId**

The ID of the EBS snapshot.

Type: String

Required: Yes

**Response Elements**

The following elements are returned by the service.

**createVolumePermission**

A list of permissions for creating volumes from the snapshot.

Type: array of CreateVolumePermission (p. 545) objects

**productCodes**

A list of product codes.

Type: array of ProductCode (p. 645) objects

**requestId**

The ID of the request.

Type: String

**snapshotId**

The ID of the EBS snapshot.

Type: String

**Errors**

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

**Example**

**Example**

This example describes permissions for a snapshot with the ID of snap-1234567890abcdef0.
Sample Request

https://ec2.amazonaws.com/?Action=DescribeSnapshotAttribute
&SnapshotId=snap-1234567890abcdef0
&Attribute=createVolumePermission
&AUTHPARAMS

Sample Response

<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotId>snap-1234567890abcdef0</snapshotId>
  <createVolumePermission>
    <item>
      <group>all</group>
    </item>
  </createVolumePermission>
</DescribeSnapshotAttributeResponse>
DescribeSnapshots

Describes one or more of the EBS snapshots available to you. Available snapshots include public snapshots available for any AWS account to launch, private snapshots that you own, and private snapshots owned by another AWS account but for which you've been given explicit create volume permissions.

The create volume permissions fall into the following categories:

- **public**: The owner of the snapshot granted create volume permissions for the snapshot to the **all** group. All AWS accounts have create volume permissions for these snapshots.
- **explicit**: The owner of the snapshot granted create volume permissions to a specific AWS account.
- **implicit**: An AWS account has implicit create volume permissions for all snapshots it owns.

The list of snapshots returned can be modified by specifying snapshot IDs, snapshot owners, or AWS accounts with create volume permissions. If no options are specified, Amazon EC2 returns all snapshots for which you have create volume permissions.

If you specify one or more snapshot IDs, only snapshots that have the specified IDs are returned. If you specify an invalid snapshot ID, an error is returned. If you specify a snapshot ID for which you do not have access, it is not included in the returned results.

If you specify one or more snapshot owners using the **OwnerIds** option, only snapshots from the specified owners and for which you have access are returned. The results can include the AWS account IDs of the specified owners, **amazon** for snapshots owned by Amazon, or **self** for snapshots that you own.

If you specify a list of restorable users, only snapshots with create snapshot permissions for those users are returned. You can specify AWS account IDs (if you own the snapshots), **self** for snapshots for which you own or have explicit permissions, or **all** for public snapshots.

If you are describing a long list of snapshots, you can paginate the output to make the list more manageable. The **MaxResults** parameter sets the maximum number of results returned in a single page. If the list of results exceeds your **MaxResults** value, then that number of results is returned along with a **NextToken** value that can be passed to a subsequent **DescribeSnapshots** request to retrieve the remaining results.

For more information about EBS snapshots, see Amazon EBS Snapshots in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is **DryRunOperation**. Otherwise, it is **UnauthorizedOperation**.

- **Type**: Boolean
- **Required**: No

**Filter**

One or more filters.

- **description** - A description of the snapshot.
- **owner-alias** - Value from an Amazon-maintained list (amazon | aws-marketplace | microsoft) of snapshot owners. Not to be confused with the user-configured AWS account alias, which is set from the IAM console.
- **owner-id** - The ID of the AWS account that owns the snapshot.
- **progress** - The progress of the snapshot, as a percentage (for example, 80%).

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Response Elements

The following elements are returned by the service.

- **snapshot-id** - The snapshot ID.
- **startTime** - The time stamp when the snapshot was initiated.
- **status** - The status of the snapshot (pending | completed | error).
- **tag:**key=value - The key/value combination of a tag assigned to the resource.
- **tag:**key - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the tag: key=value filter.
- **tag:**value - The value of a tag assigned to the resource. This filter is independent of the tag-key filter.
- **volume-id** - The ID of the volume the snapshot is for.
- **volume-size** - The size of the volume, in GiB.

Type: array of Filter (p. 561) objects  
Required: No

**MaxResults**  
The maximum number of snapshot results returned by DescribeSnapshots in paginated output. When this parameter is used, DescribeSnapshots only returns MaxResults results in a single page along with a NextToken response element. The remaining results of the initial request can be seen by sending another DescribeSnapshots request with the returned NextToken value. This value can be between 5 and 1000; if MaxResults is given a value larger than 1000, only 1000 results are returned. If this parameter is not used, then DescribeSnapshots returns all results. You cannot specify this parameter and the snapshot IDs parameter in the same request.  
Type: Integer  
Required: No

**NextToken**  
The NextToken value returned from a previous paginated DescribeSnapshots request where MaxResults was used and the results exceeded the value of that parameter. Pagination continues from the end of the previous results that returned the NextToken value. This value is null when there are no more results to return.  
Type: String  
Required: No

**Owner.N**  
Returns the snapshots owned by the specified owner. Multiple owners can be specified.  
Type: array of Strings  
Required: No

**RestorableBy.N**  
One or more AWS accounts IDs that can create volumes from the snapshot.  
Type: array of Strings  
Required: No

**SnapshotId.N**  
One or more snapshot IDs.  
Default: Describes snapshots for which you have launch permissions.  
Type: array of Strings  
Required: No
nextToken
The NextToken value to include in a future DescribeSnapshots request. When the results of a DescribeSnapshots request exceed MaxResults, this value can be used to retrieve the next page of results. This value is null when there are no more results to return.
Type: String

requestId
The ID of the request.
Type: String

snapshotSet
Information about the snapshots.
Type: array of Snapshot (p. 693) objects

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example
This example describes a snapshot with an ID of snap-1234567890abcdef0.

Sample Request
https://ec2.amazonaws.com/?Action=DescribeSnapshots
&SnapshotId=snap-1234567890abcdef0
&AUTHPARAMS

Sample Response

Example
This example filters the response to include only snapshots with the pending status, and that are also tagged with a value that includes the string db_.

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Sample Request

https://ec2.amazonaws.com/?Action=DescribeSnapshots
&Filter.1.Name=status
&Filter.1.Value.1=pending
&Filter.2.Name=tag-value
&Filter.2.Value.1=*db_*
&AUTHPARAMS

Sample Response

<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotSet>
    <item>
      <snapshotId>snap-1234567890abcdef0</snapshotId>
      <volumeId>vol-1234567890abcdef0</volumeId>
      <status>pending</status>
      <startTime>YYYY-MM-DDTHH:MM:SS.SSSZ</startTime>
      <progress>30%</progress>
      <ownerId>111122223333</ownerId>
      <volumeSize>15</volumeSize>
      <description>Daily Backup</description>
      <tagSet>
        <item>
          <key>Purpose</key>
          <value>demo_db_14_backup</value>
        </item>
      </tagSet>
      <encrypted>true</encrypted>
      <kmsKeyId>arn:aws:kms:us-east-1:123456789012:key/6876fblb-example</kmsKeyId>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
DescribeSpotDatafeedSubscription

Describes the data feed for Spot instances. For more information, see Spot Instance Data Feed in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

spotDatafeedSubscription
The Spot instance data feed subscription.
Type: SpotDatafeedSubscription (p. 698) object

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Sample Request

https://ec2.amazonaws.com/?Action=DescribeSpotDatafeedSubscription

Sample Response

<DescribeSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>123456789012</ownerId>
    <bucket>my-s3-bucket</bucket>
    <prefix>spotdata_</prefix>
    <state>Active</state>
  </spotDatafeedSubscription>
</DescribeSpotDatafeedSubscriptionResponse>
</DescribeSpotDatafeedSubscriptionResponse>
DescribeSpotFleetInstances
Describes the running instances for the specified Spot fleet.

Request Parameters
The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

MaxResults
The maximum number of results to return in a single call. Specify a value between 1 and 1000. The default value is 1000. To retrieve the remaining results, make another call with the returned NextToken value.
Type: Integer
Required: No

NextToken
The token for the next set of results.
Type: String
Required: No

SpotFleetRequestId
The ID of the Spot fleet request.
Type: String
Required: Yes

Response Elements
The following elements are returned by the service.

activeInstanceSet
The running instances. Note that this list is refreshed periodically and might be out of date.
Type: array of ActiveInstance (p. 526) objects

NextToken
The token required to retrieve the next set of results. This value is null when there are no more results to return.
Type: String

RequestId
The ID of the request.
Type: String

SpotFleetRequestId
The ID of the Spot fleet request.
Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

This example describes the running instances for Spot fleet request sfr-123f8fc2-cb31-425e-abcd-example2710.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeSpotFleetInstances
&SpotFleetRequestId=sfr-123f8fc2-cb31-425e-abcd-example2710
&AUTHPARAMS

Sample Response

<DescribeSpotFleetInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>cfb09950-45e2-472d-a6a9-example</requestId>
  <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</spotFleetRequestId>
  <activeInstanceSet>
    <item>
      <instanceId>i-1234567890abcdef0</instanceId>
      <spotInstanceRequestId>sir-1a1a1a1a</spotInstanceRequestId>
      <instanceType>m3.medium</instanceType>
    </item>
    <item>
      <instanceId>i-1234567890abcdef1</instanceId>
      <spotInstanceRequestId>sir-2b2b2b2b</spotInstanceRequestId>
      <instanceType>m3.medium</instanceType>
    </item>
    <item>
      <instanceId>i-1234567890abcdef2</instanceId>
      <spotInstanceRequestId>sir-3c3c3c3c</spotInstanceRequestId>
      <instanceType>m3.medium</instanceType>
    </item>
    <item>
      <instanceId>i-1234567890abcdef3</instanceId>
      <spotInstanceRequestId>sir-4d4d4d4d</spotInstanceRequestId>
      <instanceType>m3.medium</instanceType>
    </item>
    <item>
      <instanceId>i-1234567890abcdef4</instanceId>
      <spotInstanceRequestId>sir-5e5e5e5e</spotInstanceRequestId>
      <instanceType>m3.medium</instanceType>
    </item>
  </activeInstanceSet>
</DescribeSpotFleetInstancesResponse>
DescribeSpotFleetRequestHistory

Describes the events for the specified Spot fleet request during the specified time.
Spot fleet events are delayed by up to 30 seconds before they can be described. This ensures that you
can query by the last evaluated time and not miss a recorded event.

Request Parameters

The following parameters are for this specific action. For more information about required and optional
parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**
Checks whether you have the required permissions for the action, without actually making the
request, and provides an error response. If you have the required permissions, the error response
is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

**EventType**
The type of events to describe. By default, all events are described.
Type: String
Valid Values: instanceChange | fleetRequestChange | error
Required: No

**MaxResults**
The maximum number of results to return in a single call. Specify a value between 1 and 1000.
The default value is 1000. To retrieve the remaining results, make another call with the returned
NextToken value.
Type: Integer
Required: No

**NextToken**
The token for the next set of results.
Type: String
Required: No

**SpotFleetRequestId**
The ID of the Spot fleet request.
Type: String
Required: Yes

**StartTime**
The starting date and time for the events, in UTC format (for example,
Type: Timestamp
Required: Yes

Response Elements

The following elements are returned by the service.

**historyRecordSet**
Information about the events in the history of the Spot fleet request.
Type: array of HistoryRecord (p. 564) objects

**lastEvaluatedTime**
The last date and time for the events, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ).
All records up to this time were retrieved.
If `nextToken` indicates that there are more results, this value is not present.

Type: Timestamp

`nextToken`

The token required to retrieve the next set of results. This value is `null` when there are no more results to return.

Type: String

`requestId`

The ID of the request.

Type: String

`spotFleetRequestId`

The ID of the Spot fleet request.

Type: String

`startTime`

The starting date and time for the events, in UTC format (for example, `YYYY-MM-DDTHH:MM:SSZ`).

Type: Timestamp

### Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

### Example

This example describes the events for Spot fleet request `sfr-123f8fc2-cb31-425e-abcd-example2710` from the specified start time.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotFleetRequestHistory
&SpotFleetRequestId=sfr-123f8fc2-cb31-425e-abcd-example2710
&StartTime=2015-07-01T12:00:00Z
&AUTHPARAMS
```

#### Sample Response

```
<DescribeSpotFleetRequestHistoryResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>30be3aaf-afd2-408c-b62b-example</requestId>
  <lastEvaluatedTime>2015-07-01T13:29:40+0000</lastEvaluatedTime>
  <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</spotFleetRequestId>
  <startTime>2015-07-01T12:00:00Z</startTime>
  <historyRecordSet>
    <item>
      <eventInformation>
        <eventSubType>submitted</eventSubType>
      </eventInformation>
      <eventType>fleetRequestChange</eventType>
      <timestamp>2015-07-01T13:10:10.219Z</timestamp>
    </item>
    <item>
      <eventInformation>
        <eventSubType>submitted</eventSubType>
      </eventInformation>
      <eventType>fleetRequestChange</eventType>
      <timestamp>2015-07-01T13:10:219Z</timestamp>
    </item>
  </historyRecordSet>
</DescribeSpotFleetRequestHistoryResponse>
```
<eventInformation>
  <eventSubType>active</eventSubType>
</eventInformation>
<eventType>fleetRequestChange</eventType>
<timestamp>2015-07-01T13:10:11.624Z</timestamp>
</item>
<item>
  <eventInformation>
    <eventDescription>m3.medium, ami-1ecae776, Linux/UNIX (Amazon VPC); old price: 0.0153, new price: 0.0153</eventDescription>
    <eventSubType>price_update</eventSubType>
  </eventInformation>
  <eventType>fleetRequestChange</eventType>
</item>
<item>
  <eventInformation>
    <instanceId>i-1234567890abcdef0</instanceId>
    <eventSubType>launched</eventSubType>
  </eventInformation>
  <eventType>instanceChange</eventType>
</item>
<item>
  <eventInformation>
    <instanceId>i-1234567890abcdef1</instanceId>
    <eventSubType>launched</eventSubType>
  </eventInformation>
  <eventType>instanceChange</eventType>
</item>
<item>
  <eventInformation>
    <instanceId>i-1234567890abcdef2</instanceId>
    <eventSubType>launched</eventSubType>
  </eventInformation>
  <eventType>instanceChange</eventType>
  <timestamp>2015-07-01T13:20:57.773Z</timestamp>
</item>
<item>
  <eventInformation>
    <instanceId>i-1234567890abcdef3</instanceId>
    <eventSubType>launched</eventSubType>
  </eventInformation>
  <eventType>instanceChange</eventType>
</item>
<item>
  <eventInformation>
    <instanceId>i-1234567890abcdef4</instanceId>
    <eventSubType>launched</eventSubType>
  </eventInformation>
  <eventType>instanceChange</eventType>
</item>
</historyRecordSet>
</DescribeSpotFleetRequestHistoryResponse>
DescribeSpotFleetRequests

Describes your Spot fleet requests.
Spot fleet requests are deleted 48 hours after they are canceled and their instances are terminated.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

MaxResults
The maximum number of results to return in a single call. Specify a value between 1 and 1000. The default value is 1000. To retrieve the remaining results, make another call with the returned NextToken value.
Type: Integer
Required: No

NextToken
The token for the next set of results.
Type: String
Required: No

SpotFleetRequestsId.N
The IDs of the Spot fleet requests.
Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.

nextToken
The token required to retrieve the next set of results. This value is null when there are no more results to return.
Type: String

requestId
The ID of the request.
Type: String

spotFleetRequestConfigSet
Information about the configuration of your Spot fleet.
Type: array of SpotFleetRequestConfig (p. 703) objects

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
This example describes all of your Spot fleet requests.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeSpotFleetRequests

Sample Response

<DescribeSpotFleetRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>4d68a6cc-8f2e-4be1-b425-example</requestId>
  <spotFleetRequestConfigSet>
    <item>
      <spotFleetRequestId>sfr-12345678-cb31-425e-8c23-example2710</spotFleetRequestId>
      <spotFleetRequestState>cancelled</spotFleetRequestState>
      <spotFleetRequestConfig>
        <spotPrice>0.0153</spotPrice>
        <targetCapacity>20</targetCapacity>
        <iamFleetRole>arn:aws:iam::123456789011:role/spot-fleet-role</iamFleetRole>
        <launchSpecifications>
          <item>
            <subnetId>subnet-1a2b3c4d</subnetId>
            <ebsOptimized>false</ebsOptimized>
            <imageId>ami-1ecae776</imageId>
            <instanceType>m4.xlarge</instanceType>
          </item>
          <item>
            <subnetId>subnet-1a2b3c4d</subnetId>
            <ebsOptimized>false</ebsOptimized>
            <imageId>ami-1ecae776</imageId>
            <instanceType>m3.medium</instanceType>
          </item>
        </launchSpecifications>
      </spotFleetRequestConfig>
    </item>
    <item>
      <spotFleetRequestId>sfr-abcdefgh-e71f-450d-880d-examplec127</spotFleetRequestId>
      <spotFleetRequestState>active</spotFleetRequestState>
      <spotFleetRequestConfig>
        <spotPrice>0.0153</spotPrice>
        <targetCapacity>5</targetCapacity>
        <iamFleetRole>arn:aws:iam::123456789011:role/spot-fleet-role</iamFleetRole>
        <launchSpecifications>
          <item>
            <subnetId>subnet-1a2b3c4d</subnetId>
            <ebsOptimized>false</ebsOptimized>
            <imageId>ami-1ecae776</imageId>
            <instanceType>m4.large</instanceType>
          </item>
        </launchSpecifications>
      </spotFleetRequestConfig>
    </item>
  </spotFleetRequestConfigSet>
</DescribeSpotFleetRequestsResponse>
</item>
</item>

<subnetId>subnet-abc123ab</subnetId>
<ebsOptimized>false</ebsOptimized>
<imageId>ami-leca2776</imageId>
<instanceType>m3.medium</instanceType>
</item>
</launchSpecifications>
</spotFleetRequestConfig>
</item>
</spotFleetRequestConfigSet>
</DescribeSpotFleetRequestsResponse>
DescribeSpotInstanceRequests

Describes the Spot instance requests that belong to your account. Spot instances are instances that Amazon EC2 launches when the bid price that you specify exceeds the current Spot price. Amazon EC2 periodically sets the Spot price based on available Spot instance capacity and current Spot instance requests. For more information, see Spot Instance Requests in the Amazon Elastic Compute Cloud User Guide.

You can use DescribeSpotInstanceRequests to find a running Spot instance by examining the response. If the status of the Spot instance is fulfilled, the instance ID appears in the response and contains the identifier of the instance. Alternatively, you can use DescribeInstances (p. 234) with a filter to look for instances where the instance lifecycle is spot.

Spot instance requests are deleted 4 hours after they are canceled and their instances are terminated.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

**Filter.N**
One or more filters.

- **availability-zone-group** - The Availability Zone group.
- **create-time** - The time stamp when the Spot instance request was created.
- **fault-code** - The fault code related to the request.
- **fault-message** - The fault message related to the request.
- **instance-id** - The ID of the instance that fulfilled the request.
- **launch-group** - The Spot instance launch group.
- **launch.block-device-mapping.delete-on-termination** - Indicates whether the Amazon EBS volume is deleted on instance termination.
- **launch.block-device-mapping.device-name** - The device name for the Amazon EBS volume (for example, /dev/sdh).
- **launch.block-device-mapping.snapshot-id** - The ID of the snapshot used for the Amazon EBS volume.
- **launch.block-device-mapping.volume-size** - The size of the Amazon EBS volume, in GiB.
- **launch.block-device-mapping.volume-type** - The type of the Amazon EBS volume: gp2 for General Purpose SSD, io1 for Provisioned IOPS SSD, st1 for Throughput Optimized HDD, sc1 for Cold HDD, or standard for Magnetic.
- **launch.group-id** - The security group for the instance.
- **launch.image-id** - The ID of the AMI.
- **launch.instance-type** - The type of instance (for example, m3.medium).
- **launch.kernel-id** - The kernel ID.
- **launch.key-name** - The name of the key pair the instance launched with.
- **launch.monitoring-enabled** - Whether monitoring is enabled for the Spot instance.
- **launch.ramdisk-id** - The RAM disk ID.
- **network-interface.network-interface-id** - The ID of the network interface.
Response Elements

The following elements are returned by the service.

**requestId**
- The ID of the request.
  
  Type: String

**SpotInstanceRequestId.N**
- One or more Spot instance request IDs.
  
  Type: array of Strings

  Required: No
spotInstanceRequestSet

One or more Spot instance requests.
Type: array of SpotInstanceRequest (p. 706) objects

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example for DescribeSpotInstanceRequests

This example returns information about current Spot instance requests. In the response, if the status of the Spot instance is fulfilled, the instance ID appears in the response and contains the identifier of the instance.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeSpotInstanceRequests

Sample Response

<DescribeSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <spotPrice>0.09</spotPrice>
      <type>one-time</type>
      <state>active</state>
      <status>
        <code>fulfilled</code>
        <updateTime>YYYY-MM-DDTHH:MM:SS.000Z</updateTime>
        <message>Your Spot request is fulfilled.</message>
      </status>
      <launchSpecification>
        <imageId>ami-1a2b3c4d</imageId>
        <keyName>my-key-pair</keyName>
        <groupSet>
          <item>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>websrv</groupName>
          </item>
        </groupSet>
        <instanceType>m3.medium</instanceType>
        <monitoring>
          <enabled>false</enabled>
        </monitoring>
        <ebsOptimized>false</ebsOptimized>
      </launchSpecification>
      <instanceId>i-1234567890abcdef0</instanceId>
      <createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
      <productDescription>Linux/UNIX</productDescription>
      <launchedAvailabilityZone>us-west-2a</launchedAvailabilityZone>
    </item>
  </spotInstanceRequestSet>
</DescribeSpotInstanceRequestsResponse>

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Example for DescribeSpotInstanceRequests
This example describes all persistent Spot instance requests that have resulted in the launch of at least one instance, that has been fulfilled in the us-west-2a Availability Zone, and that also has monitoring enabled.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeSpotInstanceRequests
&Filter.1.Name=type
&Filter.1.Value.1=persistent
&Filter.2.Name=instance-type
&Filter.2.Value.1=m3.medium
&Filter.3.Name=monitoring-enabled
&Filter.3.Value.1=true
&Filter.4.Name=launched-availability-zone
&Filter.4.Value.1=us-west-2a
&AUTHPARAMS

Example for DescribeInstances
Alternatively, you can use DescribeInstances (p. 234) and use a filter to look for instances where instance lifecycle contains spot.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=instance-lifecycle
&Filter.1.Value.1=spot
&AUTHPARAMS
DescribeSpotPriceHistory

Describes the Spot price history. For more information, see Spot Instance Pricing History in the Amazon Elastic Compute Cloud User Guide.

When you specify a start and end time, this operation returns the prices of the instance types within the time range that you specified and the time when the price changed. The price is valid within the time period that you specified; the response merely indicates the last time that the price changed.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AvailabilityZone
Filters the results by the specified Availability Zone.
Type: String
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

EndTime
The date and time, up to the current date, from which to stop retrieving the price history data, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ).
Type: Timestamp
Required: No

Filter.N
One or more filters.
- availability-zone - The Availability Zone for which prices should be returned.
- instance-type - The type of instance (for example, m3.medium).
- product-description - The product description for the Spot price (Linux/UNIX | SUSE Linux | Windows | Linux/UNIX (Amazon VPC) | SUSE Linux (Amazon VPC) | Windows (Amazon VPC)).
- spot-price - The Spot price. The value must match exactly (or use wildcards; greater than or less than comparison is not supported).
- timestamp - The timestamp of the Spot price history, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ). You can use wildcards (*) and (?). Greater than or less than comparison is not supported.
Type: array of Filter (p. 561) objects
Required: No

InstanceType.N
Filters the results by the specified instance types.
Type: array of Strings
Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | x1.16xlarge | x1.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large

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Response Elements

The following elements are returned by the service.

nextToken
The token required to retrieve the next set of results. This value is null when there are no more results to return.
  Type: String

requestId
The ID of the request.
  Type: String

spotPriceHistorySet
The historical Spot prices.
  Type: array of SpotPrice (p. 711) objects

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example
This example gets Spot price history for the first day in November 2016 for the specified Availability Zone.
Sample Request

https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&StartTime=2016-11-01T00:00:00.000Z
&EndTime=2016-11-01T23:59:59.000Z
&AvailabilityZone=us-west-2a
&AUTHPARAMS

Sample Response

<DescribeSpotPriceHistoryResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotPriceHistorySet>
    <item>
      <instanceType>m3.medium</instanceType>
      <productDescription>Linux/UNIX</productDescription>
      <spotPrice>0.287</spotPrice>
      <timestamp>2016-11-01T20:56:05.000Z</timestamp>
      <availabilityZone>us-west-2a</availabilityZone>
    </item>
    <item>
      <instanceType>m3.medium</instanceType>
      <productDescription>Windows</productDescription>
      <spotPrice>0.033</spotPrice>
      <timestamp>2016-11-01T22:33:47.000Z</timestamp>
      <availabilityZone>us-west-2a</availabilityZone>
    </item>
  </spotPriceHistorySet>
  <nextToken/>
</DescribeSpotPriceHistoryResponse>

Example with Filters
This example uses filters to get the same results as the previous example.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&Filter.1.Name=timestamp
&Filter.1.Value.1=2016-11-01*
&Filter.2.Name=availability-zone
&Filter.2.Value.1=us-west-2a
&AUTHPARAMS
DescribeStaleSecurityGroups

[EC2-VPC only] Describes the stale security group rules for security groups in a specified VPC. Rules are stale when they reference a deleted security group in a peer VPC, or a security group in a peer VPC for which the VPC peering connection has been deleted.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

MaxResults
The maximum number of items to return for this request. The request returns a token that you can specify in a subsequent call to get the next set of results.
Type: Integer
Required: No

NextToken
The token for the next set of items to return. (You received this token from a prior call.)
Type: String
Required: No

VpcId
The ID of the VPC.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

nextToken
The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.
Type: String

requestId
The ID of the request.
Type: String

staleSecurityGroupSet
Information about the stale security groups.
Type: array of StaleSecurityGroup (p. 713) objects

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

This example describes stale security group rules for vpc-11223344. The response shows that sg-5fa68d3a in your account has a stale ingress SSH rule that references sg-279ab042 in the peer VPC, and sg-fe6fba9a in your account has a stale egress SSH rule that references sg-ef6fba8b in the peer VPC.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeStaleSecurityGroups
&VpcId=vpc-11223344
&AUTHPARAMS

Sample Response

  <requestId>ece1f9a0-b201-4eec-b74b-example</requestId>
  <staleSecurityGroupSet>
    <item>
      <staleIpPermissionsEgress>
        <item>
          <fromPort>22</fromPort>
          <toPort>22</toPort>
          <groups>
            <item>
              <vpcId>vpc-7a20e51f</vpcId>
              <groupId>sg-ef6fba8b</groupId>
              <vpcPeeringConnectionId>pcx-b04deed9</vpcPeeringConnectionId>
              <peeringStatus>active</peeringStatus>
            </item>
          </groups>
          <ipProtocol>tcp</ipProtocol>
        </item>
      </staleIpPermissionsEgress>
      <groupName>Sg-1</groupName>
      <vpcId>vpc-11223344</vpcId>
      <groupId>sg-fe6fba9a</groupId>
      <description>Sg-1 for peering</description>
      <staleIpPermissions/>
    </item>
    <item>
      <staleIpPermissionsEgress/>
      <groupName>Sg-2</groupName>
      <vpcId>vpc-11223344</vpcId>
      <groupId>sg-5fa68d3a</groupId>
      <description>Sg-2 for peering</description>
      <staleIpPermissions>
        <item>
          <fromPort>22</fromPort>
          <toPort>22</toPort>
          <groups>
            <item>
              <vpcId>vpc-7a20e51f</vpcId>
            </item>
          </groups>
          <ipProtocol>tcp</ipProtocol>
        </item>
      </staleIpPermissions>
    </item>
  </staleSecurityGroupSet>
</DescribeStaleSecurityGroupsResponse>

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<groupId>sg-279ab042</groupId>
<vpcPeeringConnectionId>pcx-b04deed9</vpcPeeringConnectionId>
<peeringStatus>active</peeringStatus>
</item>
</groups>
</staleIpPermissions>
</item>
</staleSecurityGroupSet>
</DescribeStaleSecurityGroupsResponse>
DescribeSubnets

Describes one or more of your subnets.

For more information about subnets, see Your VPC and Subnets in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

Filter.N

One or more filters.

- availabilityZone - The Availability Zone for the subnet. You can also use availability-zone as the filter name.
- available-ip-address-count - The number of IP addresses in the subnet that are available.
- cidrBlock - The CIDR block of the subnet. The CIDR block you specify must exactly match the subnet's CIDR block for information to be returned for the subnet. You can also use cidr or cidr-block as the filter names.
- defaultForAz - Indicates whether this is the default subnet for the Availability Zone. You can also use default-for-az as the filter name.
- state - The state of the subnet (pending | available).
- subnet-id - The ID of the subnet.
- tag:key=value - The key/value combination of a tag assigned to the resource.
- tag-key - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the tag:key=value filter.
- tag-value - The value of a tag assigned to the resource. This filter is independent of the tag-key filter.
- vpc-id - The ID of the VPC for the subnet.

Type: array of Filter (p. 561) objects

Required: No

SubnetId.N

One or more subnet IDs.

Default: Describes all your subnets.

Type: array of Strings

Required: No

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example describes the subnets with the IDs subnet-9d4a7b6c and subnet-6e7f829e.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeSubnets
&SubnetId.1=subnet-9d4a7b6c
&SubnetId.2=subnet-6e7f829e

Sample Response

<DescribeSubnetsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <subnetSet>
    <item>
      <subnetId>subnet-9d4a7b6c</subnetId>
      <state>available</state>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <cidrBlock>10.0.1.0/24</cidrBlock>
      <availableIpAddressCount>251</availableIpAddressCount>
      <availabilityZone>us-east-1a</availabilityZone>
      <defaultForAz>false</defaultForAz>
      <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
      <tagSet/>
    </item>
    <item>
      <subnetId>subnet-6e7f829e</subnetId>
      <state>available</state>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <cidrBlock>10.0.0.0/24</cidrBlock>
      <availableIpAddressCount>251</availableIpAddressCount>
      <availabilityZone>us-east-1a</availabilityZone>
      <defaultForAz>false</defaultForAz>
      <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
      <tagSet/>
    </item>
  </subnetSet>
</DescribeSubnetsResponse>

Example 2
This example uses filters to describe any subnet you own that is in the VPC with the ID vpc-1a2b3c4d or vpc-6e7f8a92, and whose state is available.
Sample Request

https://ec2.amazonaws.com/?Action=DescribeSubnets
&Filter.1.Name=vpc-id
&Filter.1.Value.1=vpc-1a2b3c4d
&Filter.1.Value.2=vpc-6e7f8a92
&Filter.2.Name=state
&Filter.2.Value.1=available
&AUTHPARAMS
DescribeTags

Describes one or more of the tags for your EC2 resources.
For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

Filter.N

One or more filters.

- **key** - The tag key.
- **resource-id** - The resource ID.
- **value** - The tag value.

Type: array of Filter (p. 561) objects
Required: No

MaxResults

The maximum number of results to return in a single call. This value can be between 5 and 1000. To retrieve the remaining results, make another call with the returned NextToken value.

Type: Integer
Required: No

NextToken

The token to retrieve the next page of results.

Type: String
Required: No

Response Elements

The following elements are returned by the service.

- **nextToken**
  The token to use to retrieve the next page of results. This value is null when there are no more results to return.
  Type: String

- **requestId**
  The ID of the request.
  Type: String

- **tagSet**
  A list of tags.
  Type: array of TagDescription (p. 718) objects
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example
This example describes all the tags in your account.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeTags
&AUTHPARAMS

Sample Response

```xml
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>ami-1a2b3c4d</resourceId>
      <resourceType>image</resourceType>
      <key>webserver</key>
      <value/>
    </item>
    <item>
      <resourceId>ami-1a2b3c4d</resourceId>
      <resourceType>image</resourceType>
      <key>stack</key>
      <value>Production</value>
    </item>
    <item>
      <resourceId>i-1234567890abcdef0</resourceId>
      <resourceType>instance</resourceType>
      <key>webserver</key>
      <value/>
    </item>
    <item>
      <resourceId>i-1234567890abcdef0</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Production</value>
    </item>
    <item>
      <resourceId>i-0598c7d356eba48d7</resourceId>
      <resourceType>instance</resourceType>
      <key>database_server</key>
      <value/>
    </item>
    <item>
      <resourceId>i-0598c7d356eba48d7</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Test</value>
    </item>
  </tagSet>
</DescribeTagsResponse>
```
Example
This example describes only the tags for the AMI with ID ami-1a2b3c4d.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-id
&Filter.1.Value.1=ami-1a2b3c4d
&AUTHPARAMS

Sample Response

<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>ami-1a2b3c4d</resourceId>
      <resourceType>image</resourceType>
      <key>webserver</key>
      <value/>
    </item>
    <item>
      <resourceId>ami-1a2b3c4d</resourceId>
      <resourceType>image</resourceType>
      <key>stack</key>
      <value>Production</value>
    </item>
  </tagSet>
</DescribeTagsResponse>

Example
This example describes the tags for all your instances.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&AUTHPARAMS

Sample Response

<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>i-0598c7d356eba48d7</resourceId>
      <resourceType>instance</resourceType>
      <key>webserver</key>
      <value/>
    </item>
  </tagSet>
</DescribeTagsResponse>
Example

This example describes the tags for all your instances tagged with the key `webserver`. Note that you can use wildcards with filters, so you could specify the value as `?ebserver` to find tags with the key `webserver` or `Webserver`.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=key
&Filter.1.Value.1=webserver
&AUTHPARAMS
```

Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>i-1234567890abcdef0</resourceId>
      <resourceType>instance</resourceType>
      <key>webserver</key>
      <value/>
    </item>
  </tagSet>
</DescribeTagsResponse>
```

Example

This example describes the tags for all your instances tagged with either `stack=Test` or `stack=Production`.

Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
```

&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&Filter.2.Name=key
&Filter.2.Value.1=stack
&Filter.3.Name=value
&Filter.3.Value.1=Test
&Filter.3.Value.2=Production

Sample Response

<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>i-1234567890abcdef0</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Production</value>
    </item>
    <item>
      <resourceId>i-0598c7d356ba48d7</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Test</value>
    </item>
  </tagSet>
</DescribeTagsResponse>

Example
This example describes the tags for all your instances tagged with Purpose=[empty string].

Sample Request

https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&Filter.2.Name=key
&Filter.2.Value.1=Purpose
&Filter.3.Name=value
&Filter.3.Value.1= &AUTHPARAMS
DescribeVolumeAttribute

Describes the specified attribute of the specified volume. You can specify only one attribute at a time. For more information about EBS volumes, see Amazon EBS Volumes in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**Attribute**

The instance attribute.

Type: String

Valid Values: autoEnableIO | productCodes

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

**VolumeId**

The ID of the volume.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

**autoEnableIO**

The state of autoEnableIO attribute.

Type: AttributeBooleanValue (p. 528) object

**productCodes**

A list of product codes.

Type: array of ProductCode (p. 645) objects

**requestId**

The ID of the request.

Type: String

**volumeId**

The ID of the volume.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

**Example**

This example describes the autoEnableIO attribute of the volume vol-1234567890abcdef0.
Sample Request

https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=autoEnableIO
&VolumeId=vol-1234567890abcdef0
&AUTHPARAMS

Sample Response

  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
>
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMP</requestId>
  <volumeId>vol-1234567890abcdef0</volumeId>
  <autoEnableIO>
    <value>true</value>
  </autoEnableIO>
</DescribeVolumeAttributeResponse>

Example

This example describes the productCodes attribute of the volume vol-1234567890abcdef0.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=productCodes
&VolumeId=vol-1234567890abcdef0
&AUTHPARAMS

Sample Response

  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
>
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMP</requestId>
  <volumeId>vol-1234567890abcdef0</volumeId>
  <productCodes>
    <item>
      <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
      <type>marketplace</type>
    </item>
  </productCodes>
</DescribeVolumeAttributeResponse>
DescribeVolumes

Describes the specified EBS volumes.
If you are describing a long list of volumes, you can paginate the output to make the list more manageable. The MaxResults parameter sets the maximum number of results returned in a single page. If the list of results exceeds your MaxResults value, then that number of results is returned along with a NextToken value that can be passed to a subsequent DescribeVolumes request to retrieve the remaining results.
For more information about EBS volumes, see Amazon EBS Volumes in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Filter.N
One or more filters.
• attachment.attach-time - The time stamp when the attachment initiated.
• attachment.delete-on-termination - Whether the volume is deleted on instance termination.
• attachment.device - The device name that is exposed to the instance (for example, /dev/sda1).
• attachment.instance-id - The ID of the instance the volume is attached to.
• attachment.status - The attachment state (attaching | attached | detaching | detached).
• availability-zone - The Availability Zone in which the volume was created.
• create-time - The time stamp when the volume was created.
• encrypted - The encryption status of the volume.
• size - The size of the volume, in GiB.
• snapshot-id - The snapshot from which the volume was created.
• status - The status of the volume (creating | available | in-use | deleting | deleted | error).
• tag: key=value - The key/value combination of a tag assigned to the resource.
• tag-key - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the tag: key=value filter.
• tag-value - The value of a tag assigned to the resource. This filter is independent of the tag-key filter.
• volume-id - The volume ID.
• volume-type - The Amazon EBS volume type. This can be gp2 for General Purpose SSD, io1 for Provisioned IOPS SSD, st1 for Throughput Optimized HDD, scl for Cold HDD, or standard for Magnetic volumes.
Type: array of Filter (p. 561) objects
Required: No

MaxResults
The maximum number of volume results returned by DescribeVolumes in paginated output. When this parameter is used, DescribeVolumes only returns MaxResults results in a single page along with a NextToken response element. The remaining results of the initial request can be seen by sending another DescribeVolumes request with the returned NextToken value. This value can be between 5 and 1000; if MaxResults is given a value larger than 1000, only 1000 results are returned. If this parameter is not used, then DescribeVolumes returns all results. You cannot specify this parameter and the volume IDs parameter in the same request.
Type: Integer
Required: No

NextToken
The NextToken value returned from a previous paginated DescribeVolumes request where MaxResults was used and the results exceeded the value of that parameter. Pagination continues from the end of the previous results that returned the NextToken value. This value is null when there are no more results to return.
Type: String
Required: No

VolumeId.N
One or more volume IDs.
Type: array of Strings
Required: No

Response Elements
The following elements are returned by the service.

nextToken
The NextToken value to include in a future DescribeVolumes request. When the results of a DescribeVolumes request exceed MaxResults, this value can be used to retrieve the next page of results. This value is null when there are no more results to return.
Type: String

requestId
The ID of the request.
Type: String

volumeSet
Information about the volumes.
Type: array of Volume (p. 729) objects

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Sample Request
https://ec2.amazonaws.com/?Action=DescribeVolumes
Sample Response

```xml
<DescribeVolumesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeSet>
    <item>
      <volumeId>vol-1234567890abcdef0</volumeId>
      <size>80</size>
      <snapshotId/>
      <availabilityZone>us-east-1a</availabilityZone>
      <status>in-use</status>
      <createTime>YYYY-MM-DDTHH:MM:SS.SSSZ</createTime>
      <attachmentSet>
        <item>
          <volumeId>vol-1234567890abcdef0</volumeId>
          <instanceId>i-1234567890abcdef0</instanceId>
          <device>/dev/sdh</device>
          <status>attached</status>
          <attachTime>YYYY-MM-DDTHH:MM:SS.SSSZ</attachTime>
          <deleteOnTermination>false</deleteOnTermination>
        </item>
      </attachmentSet>
      <volumeType>standard</volumeType>
      <encrypted>true</encrypted>
    </item>
  </volumeSet>
</DescribeVolumesResponse>
```
DescribeVolumeStatus

Describes the status of the specified volumes. Volume status provides the result of the checks performed on your volumes to determine events that can impair the performance of your volumes. The performance of a volume can be affected if an issue occurs on the volume's underlying host. If the volume's underlying host experiences a power outage or system issue, after the system is restored, there could be data inconsistencies on the volume. Volume events notify you if this occurs. Volume actions notify you if any action needs to be taken in response to the event.

The DescribeVolumeStatus operation provides the following information about the specified volumes:

Status: Reflects the current status of the volume. The possible values are ok, impaired, warning, or insufficient-data. If all checks pass, the overall status of the volume is ok. If the check fails, the overall status is impaired. If the status is insufficient-data, then the checks may still be taking place on your volume at the time. We recommend that you retry the request. For more information on volume status, see Monitoring the Status of Your Volumes.

Events: Reflect the cause of a volume status and may require you to take action. For example, if your volume returns an impaired status, then the volume event might be potential-data-inconsistency. This means that your volume has been affected by an issue with the underlying host, has all I/O operations disabled, and may have inconsistent data.

Actions: Reflect the actions you may have to take in response to an event. For example, if the status of the volume is impaired and the volume event shows potential-data-inconsistency, then the action shows enable-volume-io. This means that you may want to enable the I/O operations for the volume by calling the EnableVolumeIO (p. 386) action and then check the volume for data consistency.

Note
Volume status is based on the volume status checks, and does not reflect the volume state. Therefore, volume status does not indicate volumes in the error state (for example, when a volume is incapable of accepting I/O.)

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

Filter.N
One or more filters.

• action.code - The action code for the event (for example, enable-volume-io).
• action.description - A description of the action.
• action.event-id - The event ID associated with the action.
• availability-zone - The Availability Zone of the instance.
• event.description - A description of the event.
• event.event-id - The event ID.
• event.not-after - The latest end time for the event.
• event.not-before - The earliest start time for the event.
• volume-status.details-name - The cause for volume-status.status (io-enabled | io-performance).
• volume-status.status - The status of the volume (ok | impaired | warning | insufficient-data).
Type: array of Filter (p. 561) objects
Required: No

MaxResults
The maximum number of volume results returned by DescribeVolumeStatus in paginated output. When this parameter is used, the request only returns MaxResults results in a single page along with a NextToken response element. The remaining results of the initial request can be seen by sending another request with the returned NextToken value. This value can be between 5 and 1000; if MaxResults is given a value larger than 1000, only 1000 results are returned. If this parameter is not used, then DescribeVolumeStatus returns all results. You cannot specify this parameter and the volume IDs parameter in the same request.
Type: Integer
Required: No

NextToken
The NextToken value to include in a future DescribeVolumeStatus request. When the results of the request exceed MaxResults, this value can be used to retrieve the next page of results. This value is null when there are no more results to return.
Type: String
Required: No

VolumeId.N
One or more volume IDs.
Default: Describes all your volumes.
Type: array of Strings
Required: No

Response Elements
The following elements are returned by the service.

nextToken
The token to use to retrieve the next page of results. This value is null when there are no more results to return.
Type: String

requestId
The ID of the request.
Type: String

volumeStatusSet
A list of volumes.
Type: array of VolumeStatusItem (p. 737) objects

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Examples

Example
This example describes the status of all the volumes associated with your account.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeVolumeStatus
&AUTHPARAMS

Sample Response

<DescribeVolumeStatus xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeStatusSet>
    <item>
      <volumeId>vol-1234567890abcdef0</volumeId>
      <availabilityZone>us-east-1d</availabilityZone>
      <volumeStatus>
        <status>ok</status>
        <details>
          <item>
            <title>io-enabled</title>
            <status>passed</status>
          </item>
        </details>
      </volumeStatus>
    </item>
    <item>
      <volumeId>vol-1234567890abcdef1</volumeId>
      <availabilityZone>us-east-1d</availabilityZone>
      <volumeStatus>
        <status>impaired</status>
        <details>
          <item>
            <title>io-enabled</title>
            <status>failed</status>
          </item>
        </details>
      </volumeStatus>
    </item>
  </volumeStatusSet>
  <eventsSet>
    <item>
      <eventId>evol-61a54008</eventId>
      <eventType>potential-data-inconsistency</eventType>
      <description>THIS IS AN EXAMPLE</description>
      <notBefore>2011-12-01T14:00:00.000Z</notBefore>
      <notAfter>2011-12-01T15:00:00.000Z</notAfter>
    </item>
  </eventsSet>
  <actionsSet>
    <item>
      <code>enable-volume-io</code>
      <eventId> evol-61a54008</eventId>
      <eventType>potential-data-inconsistency</eventType>
      <description>THIS IS AN EXAMPLE</description>
    </item>
  </actionsSet>
</DescribeVolumeStatus>
<actionsSet>
  </item>
  </volumeStatusSet>
</DescribeVolumesStatusResponse>

Example

This example describes all the volumes in the us-east-1d Availability Zone with failed io-enabled status.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeVolumeStatus
&Filter.1.Name=availability-zone
&Filter.1.Value.1=us-east-1d
&Filter.2.Name=volume-status.details-name
&Filter.2.Value.1=io-enabled
&Filter.3.Name=volume-status.details-status
&Filter.3.Value.1=failed
&AUTHPARAMS
DescribeVpcAttribute

Describes the specified attribute of the specified VPC. You can specify only one attribute at a time.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**Attribute**

The VPC attribute.
- Type: String
- Valid Values: enableDnsSupport | enableDnsHostnames
- Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
- Type: Boolean
- Required: No

**VpcId**

The ID of the VPC.
- Type: String
- Required: Yes

**Response Elements**

The following elements are returned by the service.

**enableDnsHostnames**

Indicates whether the instances launched in the VPC get DNS hostnames. If this attribute is true, instances in the VPC get DNS hostnames; otherwise, they do not.
- Type: AttributeBooleanValue (p. 528) object

**enableDnsSupport**

Indicates whether DNS resolution is enabled for the VPC. If this attribute is true, the Amazon DNS server resolves DNS hostnames for your instances to their corresponding IP addresses; otherwise, it does not.
- Type: AttributeBooleanValue (p. 528) object

**requestId**

The ID of the request.
- Type: String

**vpcId**

The ID of the VPC.
- Type: String

**Errors**

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Examples

Example 1
This example describes the `enableDnsSupport` attribute of the specified VPC. The sample response indicates that DNS resolution is supported.

Sample Request

```plaintext
https://ec2.amazonaws.com/?Action=DescribeVpcAttribute
&VpcId=vpc-1a2b3c4d
&Attribute=enableDnsSupport
&AUTHPARAMS
```

Sample Response

```xml
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcId>vpc-1a2b3c4d</vpcId>
  <enableDnsSupport>
    <value>true</value>
  </enableDnsSupport>
</DescribeVpcAttributeResponse>
```

Example 2
This request describes the `enableDnsHostnames` attribute of the specified VPC. The sample response indicates that DNS hostnames are supported.

Sample Request

```plaintext
https://ec2.amazonaws.com/?Action=DescribeVpcAttribute
&VpcId=vpc-1a2b3c4d
&Attribute=enableDnsHostnames
&AUTHPARAMS
```

Sample Response

```xml
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcId>vpc-1a2b3c4d</vpcId>
  <enableDnsHostnames>
    <value>true</value>
  </enableDnsHostnames>
</DescribeVpcAttributeResponse>
```
DescribeVpcClassicLink

Describes the ClassicLink status of one or more VPCs.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

Filter.N

One or more filters.

- is-classic-link-enabled - Whether the VPC is enabled for ClassicLink (true | false).
- tag: key=value - The key/value combination of a tag assigned to the resource.
- tag-key - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the tag: key=value filter.
- tag-value - The value of a tag assigned to the resource. This filter is independent of the tag-key filter.

Type: array of Filter (p. 561) objects
Required: No

VpcId.N

One or more VPCs for which you want to describe the ClassicLink status.

Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

Type: String

vpcSet

The ClassicLink status of one or more VPCs.

Type: array of VpcClassicLink (p. 740) objects

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example lists the ClassicLink status of vpc-88888888.
Sample Request

https://ec2.amazonaws.com/?Action=DescribeVpcClassicLink
&VpcId.1=vpc-88888888
&AUTHPARAMS

Sample Response

<DescribeVpcClassicLinkResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <vpcSet>
    <item>
      <vpcId>vpc-0441b461</vpcId>
      <classicLinkEnabled>true</classicLinkEnabled>
      <tagSet/>
    </item>
  </vpcSet>
</DescribeVpcClassicLinkResponse>
DescribeVpcClassicLinkDnsSupport

Describes the ClassicLink DNS support status of one or more VPCs. If enabled, the DNS hostname of a linked EC2-Classic instance resolves to its private IP address when addressed from an instance in the VPC to which it's linked. Similarly, the DNS hostname of an instance in a VPC resolves to its private IP address when addressed from a linked EC2-Classic instance. For more information about ClassicLink, see ClassicLink in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

MaxResults

The maximum number of items to return for this request. The request returns a token that you can specify in a subsequent call to get the next set of results.
Type: Integer
Required: No

NextToken

The token for the next set of items to return. (You received this token from a prior call.)
Type: String
Required: No

VpcIds.N

One or more VPC IDs.
Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.

nextToken

The token to use when requesting the next set of items.
Type: String

requestId

The ID of the request.
Type: String

vpcs

Information about the ClassicLink DNS support status of the VPCs.
Type: array of ClassicLinkDnsSupport (p. 541) objects

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example

This example describes the ClassicLink DNS support status of all of your VPCs.
Sample Request

https://ec2.amazonaws.com/?Action=DescribeVpcClassicLinkDnsSupport
&AUTHPARAMS

Sample Response

  <requestId>14eea823-b88b-472a-9225-5f6a54ab1a5c</requestId>
  <vpcs>
    <item>
      <classicLinkDnsSupported>true</classicLinkDnsSupported>
      <vpcId>vpc-wxy987wz</vpcId>
    </item>
    <item>
      <classicLinkDnsSupported>false</classicLinkDnsSupported>
      <vpcId>vpc-123abc12</vpcId>
    </item>
  </vpcs>
</DescribeVpcClassicLinkDnsSupportResponse>

Example
This example describes the ClassicLink DNS support status of vpc-1a2b3c4d.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeVpcClassicLinkDnsSupport
&VpcId.1=vpc-1a2b3c4d
&AUTHPARAMS
DescribeVpcEndpoints

Describes one or more of your VPC endpoints.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Filter.N
One or more filters.
- service-name: The name of the AWS service.
- vpc-id: The ID of the VPC in which the endpoint resides.
- vpc-endpoint-id: The ID of the endpoint.
- vpc-endpoint-state: The state of the endpoint. (pending | available | deleting | deleted)
Type: array of Filter (p. 561) objects
Required: No

MaxResults
The maximum number of items to return for this request. The request returns a token that you can specify in a subsequent call to get the next set of results.
Constraint: If the value is greater than 1000, we return only 1000 items.
Type: Integer
Required: No

NextToken
The token for the next set of items to return. (You received this token from a prior call.)
Type: String
Required: No

VpcEndpointId.N
One or more endpoint IDs.
Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.

nextToken
The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.
Type: String

requestId
The ID of the request.
Type: String

vpcEndpointSet
Information about the endpoints.
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Errors

Type: array of VpcEndpoint (p. 741) objects

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example
Example
This example describes all of your endpoints.

Sample Request
https://ec2.amazonaws.com/?Action=DescribeVpcEndpoints
&AUTHPARAMS

Sample Response
<DescribeVpcEndpointsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-09-15/">
<vpcEndpointSet>
<item>
<vpcId>vpc-1a2b3c4d</vpcId>
<state>available</state>
<routeTableIdSet>
<item>rtb-123abc12</item>
<item>rtb-abc123ab</item>
</routeTableIdSet>
<vpcEndpointId>vpce-abc12345</vpcEndpointId>
<creationTimestamp>2015-02-20T15:30:56Z</creationTimestamp>
<policyDocument>{"Version":"2012-10-17","Statement":
[{"Sid":"","Effect":"Deny","Principal":"*","Action":"*","Resource":"*"}]}</
policyDocument>
<serviceName>com.amazonaws.us-west-1.s3</serviceName>
</item>
</vpcEndpointSet>
<requestId>176371a7-3307-4516-95eb-example</requestId>
</DescribeVpcEndpointsResponse>

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DescribeVpcEndpointServices

Describes all supported AWS services that can be specified when creating a VPC endpoint.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

MaxResults

The maximum number of items to return for this request. The request returns a token that you can specify in a subsequent call to get the next set of results.

Constraint: If the value is greater than 1000, we return only 1000 items.

Type: Integer
Required: No

NextToken

The token for the next set of items to return. (You received this token from a prior call.)

Type: String
Required: No

Response Elements

The following elements are returned by the service.

nextToken

The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.

Type: String

requestId

The ID of the request.

Type: String

serviceNameSet

A list of supported AWS services.

Type: array of Strings

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example describes all available endpoint services.
Sample Request

https://ec2.amazonaws.com/?Action=DescribeVpcEndpointServices
&AUTHPARAMS

Sample Response

<DescribeVpcEndpointServicesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/"
   serviceNameSet>
   <item>com.amazonaws.us-west-2.s3</item>
</serviceNameSet>
   <requestId>8f7c135a-ceab-4106-b6d5-example</requestId>
</DescribeVpcEndpointServicesResponse>
DescribeVpcPeeringConnections

Describes one or more of your VPC peering connections.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Check whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Filter.N
One or more filters.
- accepter-vpc-info.cidr-block - The CIDR block of the peer VPC.
- accepter-vpc-info.owner-id - The AWS account ID of the owner of the peer VPC.
- accepter-vpc-info.vpc-id - The ID of the peer VPC.
- expiration-time - The expiration date and time for the VPC peering connection.
- requester-vpc-info.cidr-block - The CIDR block of the requester's VPC.
- requester-vpc-info.owner-id - The AWS account ID of the owner of the requester VPC.
- requester-vpc-info.vpc-id - The ID of the requester VPC.
- status-code - The status of the VPC peering connection (pending-acceptance | failed | expired | provisioning | active | deleted | rejected).
- status-message - A message that provides more information about the status of the VPC peering connection, if applicable.
- tag: key=value - The key/value combination of a tag assigned to the resource.
- tag-key - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the tag: key=value filter.
- tag-value - The value of a tag assigned to the resource. This filter is independent of the tag-key filter.
- vpc-peering-connection-id - The ID of the VPC peering connection.
Type: array of Filter (p. 561) objects
Required: No

VpcPeeringConnectionId.N
One or more VPC peering connection IDs.
Default: Describes all your VPC peering connections.
Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples
Example 1
This example describes all of your VPC peering connections.

Sample Request
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&AUTHPARAMS

Sample Response

```xml
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcPeeringConnectionSet>
    <item>
      <vpcPeeringConnectionId>pcx-111aaa22</vpcPeeringConnectionId>
      <requesterVpcInfo>
        <ownerId>77788889999</ownerId>
        <vpcId>vpc-1a2b3c4d</vpcId>
        <cidrBlock>172.31.0.0/16</cidrBlock>
      </requesterVpcInfo>
      <accepterVpcInfo>
        <ownerId>123456789012</ownerId>
        <vpcId>vpc-aa22cc33</vpcId>
        <cidrBlock>10.0.0.0/16</cidrBlock>
        <peeringOptions>
          <allowEgressFromLocalClassicLinkToRemoteVpc>false</allowEgressFromLocalClassicLinkToRemoteVpc>
          <allowEgressFromLocalVpcToRemoteClassicLink>true</allowEgressFromLocalVpcToRemoteClassicLink>
          <allowDnsResolutionFromRemoteVpc>false</allowDnsResolutionFromRemoteVpc>
        </peeringOptions>
      </accepterVpcInfo>
      <status>
        <code>active</code>
        <message>Active</message>
      </status>
      <tagSet/>
    </item>
  </vpcPeeringConnectionSet>
</DescribeVpcPeeringConnectionsResponse>
```
Example 2
This example describes all of your VPC peering connections that are in the pending-acceptance state.

Sample Request
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=status-code
&Filter.1.Value=pending-acceptance

Example 3
This example describes all of your VPC peering connections that have the tag Name=Finance or Name=Accounts.

Sample Request
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=tag:Name
&Filter.1.Value.1=Finance
&Filter.1.Value.2=Accounts

Example 4
This example describes all of the VPC peering connections for your specified VPC, vpc-1a2b3c4d.

Sample Request
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=requester-vpc-info.vpc-id
&Filter.1.Value=vpc-1a2b3c4d

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DescribeVpcs

Describes one or more of your VPCS.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

Filter.N

One or more filters.

- **cidr** - The CIDR block of the VPC. The CIDR block you specify must exactly match the VPC's CIDR block for information to be returned for the VPC. Must contain the slash followed by one or two digits (for example, /28).
- **dhcp-options-id** - The ID of a set of DHCP options.
- **isDefault** - Indicates whether the VPC is the default VPC.
- **state** - The state of the VPC (pending | available).
- **tag: key=value** - The key/value combination of a tag assigned to the resource.
- **tag-key** - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the tag: key=value filter.
- **tag-value** - The value of a tag assigned to the resource. This filter is independent of the tag-key filter.
- **vpc-id** - The ID of the VPC.

Type: array of Filter (p. 561) objects
Required: No

VpcId.N

One or more VPC IDs.
Default: Describes all your VPCs.
Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.
Type: String

**vpcSet**

Information about one or more VPCs.
Type: array of Vpc (p. 738) objects
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example describes the specified VPC.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeVpcs
&VpcId.1=vpc-1a2b3c4d
&AUTHPARAMS

Sample Response

<DescribeVpcsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcSet>
    <item>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <state>available</state>
      <cidrBlock>10.0.0.0/23</cidrBlock>
      <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
      <instanceTenancy>default</instanceTenancy>
      <isDefault>false</isDefault>
      <tagSet/>
    </item>
  </vpcSet>
</DescribeVpcsResponse>

Example 2
This example uses filters to describe any VPC you own that uses the set of DHCP options with the ID dopt-7a8b9c2d or dopt-2b2a3d3c and whose state is available.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeVpcs
&Filter.1.Name=dhcp-options-id
&Filter.1.Value.1=dopt-7a8b9c2d
&Filter.1.Value.2=dopt-2b2a3d3c
&Filter.2.Name=state
&Filter.2.Value.1=available
&AUTHPARAMS
DescribeVpnConnections

Describes one or more of your VPN connections.
For more information about VPN connections, see Adding a Hardware Virtual Private Gateway to Your VPC in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Filter.N

One or more filters.

• customer-gateway-configuration - The configuration information for the customer gateway.
• customer-gateway-id - The ID of a customer gateway associated with the VPN connection.
• state - The state of the VPN connection (pending | available | deleting | deleted).
• option.static-routes-only - Indicates whether the connection has static routes only. Used for devices that do not support Border Gateway Protocol (BGP).
• route.destination-cidr-block - The destination CIDR block. This corresponds to the subnet used in a customer data center.
• bgp-asn - The BGP Autonomous System Number (ASN) associated with a BGP device.
• tag: key=value - The key/value combination of a tag assigned to the resource.
• tag-key - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the tag: value filter.
• tag-value - The value of a tag assigned to the resource. This filter is independent of the tag-key filter.
• type - The type of VPN connection. Currently the only supported type is ipsec.1.
• vpn-connection-id - The ID of the VPN connection.
• vpn-gateway-id - The ID of a virtual private gateway associated with the VPN connection.

Type: array of Filter (p. 561) objects
Required: No

VpnConnectionId.N

One or more VPN connection IDs.
Default: Describes your VPN connections.
Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.
Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1

This example describes the specified VPN connection. The response includes the customer gateway configuration information. Because it's a long set of information, we haven't displayed it here. To see an example of the configuration information, see the Amazon Virtual Private Cloud Network Administrator Guide.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeVpnConnections
&VpnConnectionId.1=vpn-44a8938f
&AUTHPARAMS

Sample Response

<DescribeVpnConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnConnectionSet>
    <item>
      <vpnConnectionId>vpn-44a8938f</vpnConnectionId>
      <state>available</state>
      <customerGatewayConfiguration>
        ...Customer gateway configuration data in escaped XML format...
      </customerGatewayConfiguration>
      <type>ipsec.1</type>
      <customerGatewayId>cgw-b4dc3961</customerGatewayId>
      <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
      <tagSet/>
    </item>
  </vpnConnectionSet>
</DescribeVpnConnectionsResponse>

Example 2

This example describes any VPN connection you own that is associated with the customer gateway with ID cgw-b4dc3961, and whose state is either pending or available.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeVpnConnections

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&Filter.1.Name=customer-gateway-id
&Filter.1.Value.1=cgw-b4dc3961
&Filter.2.Name=state
&Filter.2.Value.1=pending
&Filter.2.Value.2=available
&AUTHPARAMS
DescribeVpnGateways

Describes one or more of your virtual private gateways.
For more information about virtual private gateways, see Adding an IPsec Hardware VPN to Your VPC in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

**Filter.N**
One or more filters.
- **attachment.state** - The current state of the attachment between the gateway and the VPC (attaching | attached | detaching | detached).
- **attachment.vpc-id** - The ID of an attached VPC.
- **availability-zone** - The Availability Zone for the virtual private gateway (if applicable).
- **state** - The state of the virtual private gateway (pending | available | deleting | deleted).
- **tag: key=value** - The key/value combination of a tag assigned to the resource.
- **tag-key** - The key of a tag assigned to the resource. This filter is independent of the tag-value filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the **tag: key=value** filter.
- **tag-value** - The value of a tag assigned to the resource. This filter is independent of the tag-key filter.
- **type** - The type of virtual private gateway. Currently the only supported type is ipsec.1.
- **vpn-gateway-id** - The ID of the virtual private gateway.

Required: No

**VpnGatewayId.N**
One or more virtual private gateway IDs.
Default: Describes all your virtual private gateways.
Type: array of Strings
Required: No

Response Elements

The following elements are returned by the service.

**requestId**
The ID of the request.
Type: String

**vpnGatewaySet**
Information about one or more virtual private gateways.
Type: array of VpnGateway (p. 750) objects

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example describes the specified virtual private gateway.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&VpnGatewayId.1=vgw-8db04f81
&AUTHPARAMS

Sample Response

<?xml version="1.0" encoding="UTF-8"?>
<DescribeVpnGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnGatewaySet>
    <item>
      <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
      <state>available</state>
      <type>ipsec.1</type>
      <availabilityZone>us-east-1a</availabilityZone>
      <attachments>
        <item>
          <vpcId>vpc-1a2b3c4d</vpcId>
          <state>attached</state>
        </item>
      </attachments>
      <tagSet/>
    </item>
  </vpnGatewaySet>
</DescribeVpnGatewaysResponse>

Example 2
This example uses filters to describe any virtual private gateway you own whose state is either pending or available.

Sample Request

https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&Filter.1.Name=state
&Filter.1.Value.1=pending
&Filter.1.Value.2=available
&AUTHPARAMS
DetachClassicLinkVpc

Unlinks (detaches) a linked EC2-Classic instance from a VPC. After the instance has been unlinked, the VPC security groups are no longer associated with it. An instance is automatically unlinked from a VPC when it's stopped.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **Request Parameters**
  - **DryRun**: Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is **DryRunOperation**. Otherwise, it is **UnauthorizedOperation**.
    - **Type**: Boolean
    - **Required**: No
  - **InstanceId**: The ID of the instance to unlink from the VPC.
    - **Type**: String
    - **Required**: Yes
  - **VpcId**: The ID of the VPC to which the instance is linked.
    - **Type**: String
    - **Required**: Yes

Response Elements

The following elements are returned by the service.

- **requestId**: The ID of the request.
  - **Type**: String
- **return**: Returns true if the request succeeds; otherwise, it returns an error.
  - **Type**: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

**Example**

This example unlinks instance i-0598c7d356eba48d7 from VPC vpc-8888888.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DetachClassicLinkVpc
&VpcId=vpc-8888888
&InstanceId=i-0598c7d356eba48d7
&AUTHPARAMS
```
Sample Response

```xml
    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <return>true</return>
</DetachClassicLinkVpcResponse>
```
DetachInternetGateway

Detaches an Internet gateway from a VPC, disabling connectivity between the Internet and the VPC. The VPC must not contain any running instances with Elastic IP addresses.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is *DryRunOperation*. Otherwise, it is *UnauthorizedOperation*.

- **Type**: Boolean
- **Required**: No

**InternetGatewayId**

The ID of the Internet gateway.

- **Type**: String
- **Required**: Yes

**VpcId**

The ID of the VPC.

- **Type**: String
- **Required**: Yes

Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

- **Type**: String

**return**

Is true if the request succeeds, and an error otherwise.

- **Type**: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

**Example**

The example detaches the specified Internet gateway from the specified VPC.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DetachInternetGateway
&InternetGatewayId=igw-eaad4883
&VpcId=vpc-l1ad4878
&AUTHPARAMS
```
Sample Response

```xml
<DetachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/"
  requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DetachInternetGatewayResponse>
```
DetachNetworkInterface

Detaches a network interface from an instance.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AttachmentId

The ID of the attachment.
Type: String
Required: Yes

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Force

Specifies whether to force a detachment.
Type: Boolean
Required: No

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.
Type: String

return

Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example detaches the specified elastic network interface (ENI).

Sample Request

https://ec2.amazonaws.com/?Action=DetachNetworkInterface
&AttachmentId=eni-attach-d94b09b0
&AUTHPARAMS
Sample Response

```xml
  <requestId>ce540707-0635-46bc-97da-33a8a362a0e8</requestId>
  <return>true</return>
</DetachNetworkInterfaceResponse>
```
DetachVolume

Detaches an EBS volume from an instance. Make sure to unmount any file systems on the device within your operating system before detaching the volume. Failure to do so can result in the volume becoming stuck in the busy state while detaching. If this happens, detachment can be delayed indefinitely until you unmount the volume, force detachment, reboot the instance, or all three. If an EBS volume is the root device of an instance, it can’t be detached while the instance is running. To detach the root volume, stop the instance first.

When a volume with an AWS Marketplace product code is detached from an instance, the product code is no longer associated with the instance.

For more information, see Detaching an Amazon EBS Volume in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Device
The device name.
Type: String
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Force
Forces detachment if the previous detachment attempt did not occur cleanly (for example, logging into an instance, unmounting the volume, and detaching normally). This option can lead to data loss or a corrupted file system. Use this option only as a last resort to detach a volume from a failed instance. The instance won’t have an opportunity to flush file system caches or file system metadata. If you use this option, you must perform file system check and repair procedures.
Type: Boolean
Required: No

InstanceId
The ID of the instance.
Type: String
Required: No

VolumeId
The ID of the volume.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

attachTime
The time stamp when the attachment initiated.
Type: Timestamp
deleteOnTermination
    Indicates whether the EBS volume is deleted on instance termination.
    Type: Boolean

device
    The device name.
    Type: String

instanceId
    The ID of the instance.
    Type: String

requestId
    The ID of the request.
    Type: String

status
    The attachment state of the volume.
    Type: String
    Valid Values: attaching | attached | detaching | detached

volumeId
    The ID of the volume.
    Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example
This example detaches volume vol-1234567890abcdef0.

Sample Request

https://ec2.amazonaws.com/?Action=DetachVolume
&VolumeId=vol-1234567890abcdef0
&AUTHPARAMS

Sample Response

    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <volumeId>vol-1234567890abcdef0</volumeId>
    <instanceId>i-1234567890abcdef0</instanceId>
    <device>/dev/sdh</device>
    <status>detaching</status>
    <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</DetachVolumeResponse>
DetachVpnGateway

Detaches a virtual private gateway from a VPC. You do this if you're planning to turn off the VPC and not use it anymore. You can confirm a virtual private gateway has been completely detached from a VPC by describing the virtual private gateway (any attachments to the virtual private gateway are also described).

You must wait for the attachment's state to switch to detached before you can delete the VPC or attach a different VPC to the virtual private gateway.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

VpcId
The ID of the VPC.
Type: String
Required: Yes

VpnGatewayId
The ID of the virtual private gateway.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example
This example detaches the specified virtual private gateway from the specified VPC.

Sample Request

https://ec2.amazonaws.com/?Action=DetachVpnGateway
&VpnGatewayId=vgw-8db04f81
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS

Sample Response

```xml
<DetachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DetachVpnGatewayResponse>
```
DisableVgwRoutePropagation

Disables a virtual private gateway (VGW) from propagating routes to a specified route table of a VPC.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

GatewayId
  The ID of the virtual private gateway.
  Type: String
  Required: Yes

RouteTableId
  The ID of the route table.
  Type: String
  Required: Yes

Response Elements

The following elements are returned by the service.

requestId
  The ID of the request.
  Type: String

return
  Is true if the request succeeds, and an error otherwise.
  Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example disables the virtual private gateway `vgw-d8e09e8a` from automatically propagating routes to the route table with ID `rtb-c98a35a0`.

Sample Request

https://ec2.amazonaws.com/?Action=DisableVgwRoutePropagationResponse
&RouteTableID=rtb-c98a35a0
&GatewayId=vgw-d8e09e8a
&AUTHPARAMS

Sample Response

<DisableVgwRoutePropagationResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</DisableVgwRoutePropagationResponse>
</DisableVgwRoutePropagationResponse>
DisableVpcClassicLink

Disables ClassicLink for a VPC. You cannot disable ClassicLink for a VPC that has EC2-Classic instances linked to it.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

VpcId

The ID of the VPC.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.
Type: String

return

Returns true if the request succeeds; otherwise, it returns an error.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example disables ClassicLink for vpc-8888888.

Sample Request

https://ec2.amazonaws.com/?Action=DisableVpcClassicLink
&VpcId=vpc-8888888
&AUTHPARAMS

Sample Response

<DisableVpcClassicLinkResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
</DisableVpcClassicLinkResponse>
<return>true</return>
</DisableVpcClassicLinkResponse>
DisableVpcClassicLinkDnsSupport

Disables ClassicLink DNS support for a VPC. If disabled, DNS hostnames resolve to public IP addresses when addressed between a linked EC2-Classic instance and instances in the VPC to which it's linked. For more information about ClassicLink, see ClassicLink in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

VpcId
The ID of the VPC.
Type: String
Required: No

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String
return
Returns true if the request succeeds; otherwise, it returns an error.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example
This example disables ClassicLink DNS support for vpc-888888.

Sample Request

https://ec2.amazonaws.com/?Action=DisableVpcClassicLinkDnsSupport
&VpcId=vpc-8888888
&AUTHPARAMS

Sample Response

  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DisableVpcClassicLinkDnsSupportResponse>
DisassociateAddress

Disassociates an Elastic IP address from the instance or network interface it's associated with. An Elastic IP address is for use in either the EC2-Classic platform or in a VPC. For more information, see Elastic IP Addresses in the Amazon Elastic Compute Cloud User Guide. This is an idempotent operation. If you perform the operation more than once, Amazon EC2 doesn't return an error.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AssociationId

[EC2-VPC] The association ID. Required for EC2-VPC.
Type: String
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

PublicIp

Type: String
Required: No

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example for EC2-Classic
This example disassociates the specified Elastic IP address from the instance in EC2-Classic to which it is associated.

Sample Request

https://ec2.amazonaws.com/?Action=DisassociateAddress
Example for EC2-VPC
This example disassociates the specified Elastic IP address from the instance in a VPC to which it is associated.

Sample Request

https://ec2.amazonaws.com/?Action=DisassociateAddress
&AssociationId=eipassoc-aa7486c3
&AUTHPARAMS
DisassociateRouteTable

Disassociates a subnet from a route table.
After you perform this action, the subnet no longer uses the routes in the route table. Instead, it uses
the routes in the VPC's main route table. For more information about route tables, see Route Tables in
the Amazon Virtual Private Cloud User Guide.

Request Parameters
The following parameters are for this specific action. For more information about required and optional
parameters that are common to all actions, see Common Query Parameters (p. 773).

AssociationId
The association ID representing the current association between the route table and subnet.
Type: String
Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the
request, and provides an error response. If you have the required permissions, the error response
is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

Response Elements
The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example
This example disassociates the specified route table from the subnet it's associated to.

Sample Request

https://ec2.amazonaws.com/?Action=DisassociateRouteTable
&AssociationId=rtbassoc-fdad4894
&AUTHPARAMS

Sample Response

<DisassociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/"/>
Example

```xml
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</DisassociateRouteTableResponse>
```
EnableVgwRoutePropagation

Enables a virtual private gateway (VGW) to propagate routes to the specified route table of a VPC.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**GatewayId**
- The ID of the virtual private gateway.
- Type: String
- Required: Yes

**RouteTableId**
- The ID of the route table.
- Type: String
- Required: Yes

Response Elements

The following elements are returned by the service.

**requestId**
- The ID of the request.
- Type: String

**return**
- Is true if the request succeeds, and an error otherwise.
- Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example enables the specified virtual private gateway to propagate routes automatically to the route table with the ID `rtb-c98a35a0`.

Sample Request

```
https://ec2.amazonaws.com/?Action=EnableVgwRoutePropagation
&RouteTableID=rtb-c98a35a0
&GatewayId=vgw-d8e09e8a
&AUTHPARAMS
```

Sample Response

```
<EnableVgwRoutePropagation xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</EnableVgwRoutePropagation>
```
EnableVolumeIO

Enables I/O operations for a volume that had I/O operations disabled because the data on the volume was potentially inconsistent.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

*Type: Boolean*
*Required: No*

**VolumeId**

The ID of the volume.

*Type: String*
*Required: Yes*

Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

*Type: String*

**return**

Is `true` if the request succeeds, and an error otherwise.

*Type: Boolean*

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

**Example**

This example enables the I/O operations of the volume vol-8888888.

**Sample Request**

```url
https://ec2.amazonaws.com/?Action=EnableVolumeIO
&VolumeId= vol-8888888
&AUTHPARAMS
```

**Sample Response**

```xml

  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
```

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</EnableVolumeIOResponse>
EnableVpcClassicLink

Enables a VPC for ClassicLink. You can then link EC2-Classic instances to your ClassicLink-enabled VPC to allow communication over private IP addresses. You cannot enable your VPC for ClassicLink if any of your VPC's route tables have existing routes for address ranges within the 10.0.0.0/8 IP address range, excluding local routes for VPCs in the 10.0.0.0/16 and 10.1.0.0/16 IP address ranges. For more information, see ClassicLink in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

VpcId

The ID of the VPC.

Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

Type: String

return

Returns true if the request succeeds; otherwise, it returns an error.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example enables vpc-8888888 for ClassicLink.

Sample Request

https://ec2.amazonaws.com/?Action=EnableVpcClassicLink
&VpcId=vpc-8888888
&AUTHPARAMS
Sample Response

<EnableVpcClassicLinkResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/"
  requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</EnableVpcClassicLinkResponse>
EnableVpcClassicLinkDnsSupport

Enables a VPC to support DNS hostname resolution for ClassicLink. If enabled, the DNS hostname of a linked EC2-Classic instance resolves to its private IP address when addressed from an instance in the VPC to which it's linked. Similarly, the DNS hostname of an instance in a VPC resolves to its private IP address when addressed from a linked EC2-Classic instance. For more information about ClassicLink, see ClassicLink in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

VpcId
   The ID of the VPC.
   Type: String
   Required: No

Response Elements

The following elements are returned by the service.

requestId
   The ID of the request.
   Type: String

return
   Returns true if the request succeeds; otherwise, it returns an error.
   Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example enables vpc-8888888 for ClassicLink DNS support.

Sample Request

https://ec2.amazonaws.com/?Action=EnableVpcClassicLinkDnsSupport
&VpcId=vpc-8888888
&AUTHPARAMS

Sample Response

   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</EnableVpcClassicLinkDnsSupportResponse>
GetConsoleOutput

Gets the console output for the specified instance. Instances do not have a physical monitor through which you can view their console output. They also lack physical controls that allow you to power up, reboot, or shut them down. To allow these actions, we provide them through the Amazon EC2 API and command line interface.

Instance console output is buffered and posted shortly after instance boot, reboot, and termination. Amazon EC2 preserves the most recent 64 KB output which is available for at least one hour after the most recent post.

For Linux instances, the instance console output displays the exact console output that would normally be displayed on a physical monitor attached to a computer. This output is buffered because the instance produces it and then posts it to a store where the instance's owner can retrieve it.

For Windows instances, the instance console output includes output from the EC2Config service.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

InstanceId
The ID of the instance.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

InstanceId
The ID of the instance.
Type: String

Output
The console output, Base64-encoded. If using a command line tool, the tool decodes the output for you.
Type: String

RequestId
The ID of the request.
Type: String

Timestamp
The time the output was last updated.
Type: Timestamp

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

Example
This example retrieves the console output for the specified instance.

Sample Request

https://ec2.amazonaws.com/?Action=GetConsoleOutput
&InstanceId=i-1234567890abcdef0
&AUTHPARAMS

Sample Response

  <requestId>59dbff89-35bd-4ec9-99ed-be587EXAMPLE</RequestId>  
  <instanceId>i-1234567890abcdef0</instanceId>  
  <timestamp>2010-10-14T01:12:41.000Z</timestamp>  
  <output>TGludXggdmVyc2lvbiAyLjYuMTYteGVuY29tYSB0byBGb29yZSBDaXJvcnReIHRvbyBkYXRzIGlkIHRoaXMgbGluaXRzIHRoaXMgMjAxIHN0cmluZw==</output>  
</GetConsoleOutputResponse>
GetConsoleScreenshot

Retrieve a JPG-format screenshot of a running instance to help with troubleshooting.
The returned content is Base64-encoded.

Request Parameters

The following parameters are for this specific action. For more information about required and optional
parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the
request, and provides an error response. If you have the required permissions, the error response
is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

InstanceId
The ID of the instance.
Type: String
Required: Yes

WakeUp
When set to true, acts as keystroke input and wakes up an instance that's in standby or "sleep"
mode.
Type: Boolean
Required: No

Response Elements

The following elements are returned by the service.

imageData
The data that comprises the image.
Type: String

instanceId
The ID of the instance.
Type: String

requestId
The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example returns the image data of a successful request.

Sample Request

https://ec2.amazonaws.com/?Action=GetConsoleScreenshot
&InstanceId=i-0598c7d356eba48d7
&AUTHPARAMS

Sample Response

```xml
<GetConsoleScreenshot xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagedata>997987/8kgj49ikjhewkwwe0008084EXAMPLE</imagedata>
  <instanceId>i-765950</instanceId>
</GetConsoleScreenshotResponse>
```
GetHostReservationPurchasePreview

Preview a reservation purchase with configurations that match those of your Dedicated Host. You must have active Dedicated Hosts in your account before you purchase a reservation. This is a preview of the PurchaseHostReservation (p. 451) action and does not result in the offering being purchased.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

HostIdSet.N
The ID/s of the Dedicated Host/s that the reservation will be associated with.
Type: array of Strings
Required: Yes

OfferingId
The offering ID of the reservation.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

currencyCode
The currency in which the totalUpfrontPrice and totalHourlyPrice amounts are specified. At this time, the only supported currency is USD.
Type: String
Valid Values: USD

purchase
The purchase information of the Dedicated Host Reservation and the Dedicated Hosts associated with it.
Type: array of Purchase (p. 648) objects

requestId
The ID of the request.
Type: String

totalHourlyPrice
The potential total hourly price of the reservation per hour.
Type: String

totalUpfrontPrice
The potential total upfront price. This is billed immediately.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example is a preview of the reservation that will be purchased.
Sample Request

https://ec2.amazonaws.com/?Action=GetHostReservationPurchasePreview
&OfferingId=hro-0eb351dgqt849c2d
&HostIdSet=h-0fgr9dd0ec0a1cd
&AUTHPARAMS

Sample Response

<GetHostReservationPurchasePreviewResult xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>d4904fd9-84c3-4967-gtyk-a9938EXAMPLE</requestId>
  <purchase>
    <item>
      <duration>31536000</duration>
      <upfrontPrice>7453.000</upfrontPrice>
      <paymentOption>PartialUpfront</paymentOption>
      <instanceFamily>m4</instanceFamily>
      <hourlyPrice>0.850</hourlyPrice>
      <hostIdSet>
        <item>h-0fgr9dd0ec0a1cd</item>
      </hostIdSet>
    </item>
  </purchase>
  <totalHourlyPrice>0.850</totalHourlyPrice>
  <totalUpfrontPrice>7453.000</totalUpfrontPrice>
</GetHostReservationPurchasePreviewResult>
GetPasswordData

Retrieves the encrypted administrator password for an instance running Windows. The Windows password is generated at boot if the EC2Config service plugin, Ec2SetPassword, is enabled. This usually only happens the first time an AMI is launched, and then Ec2SetPassword is automatically disabled. The password is not generated for rebundled AMIs unless Ec2SetPassword is enabled before bundling.

The password is encrypted using the key pair that you specified when you launched the instance. You must provide the corresponding key pair file.

Password generation and encryption takes a few moments. We recommend that you wait up to 15 minutes after launching an instance before trying to retrieve the generated password.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

**InstanceId**

The ID of the Windows instance.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

**InstanceId**

The ID of the Windows instance.

Type: String

**passwordData**

The password of the instance.

Type: String

**requestId**

The ID of the request.

Type: String

**timestamp**

The time the data was last updated.

Type: Timestamp

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

Example
This example returns the encrypted version of the administrator password for the specified instance.

Sample Request

https://ec2.amazonaws.com/?Action=GetPasswordData
&InstanceId=i-1234567890abcdef0
&AUTHPARAMS

Sample Response

<GetPasswordDataResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-1234567890abcdef0</instanceId>
  <timestamp>2009-10-24 15:00:00</timestamp>
  <passwordData>TGludXggdmVyc2lvbiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hbWF6b25zYSkgKGdj</passwordData>
</GetPasswordDataResponse>
GetReservedInstancesExchangeQuote

Returns details about the values and term of your specified Convertible Reserved Instances. When a target configuration is specified, it returns information about whether the exchange is valid and can be performed.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

**ReservedInstanceId.N**
The IDs of the Convertible Reserved Instances to exchange.
Type: array of Strings
Required: Yes

**TargetConfiguration.N**
The configuration requirements of the Convertible Reserved Instances to exchange for your current Convertible Reserved Instances.
Type: array of TargetConfigurationRequest (p. 720) objects
Required: No

Response Elements

The following elements are returned by the service.

**currencyCode**
The currency of the transaction.
Type: String

**isValidExchange**
If true, the exchange is valid. If false, the exchange cannot be completed.
Type: Boolean

**outputReservedInstancesWillExpireAt**
The new end date of the reservation term.
Type: Timestamp

**paymentDue**
The total true upfront charge for the exchange.
Type: String

**requestId**
The ID of the request.
Type: String

**reservedInstanceValueRollup**
The cost associated with the Reserved Instance.
Type: ReservationValue (p. 655) object

**reservedInstanceValueSet**
The configuration of your Convertible Reserved Instances.
Type: array of ReservedInstanceReservationValue (p. 657) objects
targetConfigurationValueRollup
The cost associated with the Reserved Instance.
Type: ReservationValue (p. 655) object

targetConfigurationValueSet
The values of the target Convertible Reserved Instances.
Type: array of TargetReservationValue (p. 721) objects

validationFailureReason
Describes the reason why the exchange cannot be completed.
Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example describes the output of requesting whether a potential exchange is valid.

Sample Request

https://ec2.amazonaws.com/?Action=GetReservedInstancesExchangeQuote
&ReservedInstanceId=649fd0c8-7768-46b8-8f84-a6400EXAMPLE
&TargetConfiguration.N.1.OfferingId=24167194-6541-4041-9e31-bc7c5984aa53
&AUTHPARAMS

Sample Response

<GetReservedInstancesExchangeQuoteResponse>
  <requestId>d072f652-cc57-458c-89e0-e6c02EXAMPLE</requestId>
  <outputReservedInstancesWillExpireAt>2019-05-17T12:32:53Z</outputReservedInstancesWillExpireAt>
  <reservedInstanceValueSet>
    <item>
      <reservedInstanceId>649fd0c8-7768-46b8-8f84-a6400EXAMPLE</reservedInstanceId>
      <reservationValue>
        <remainingTotalValue>98.048402</remainingTotalValue>
        <hourlyPrice>0.018000</hourlyPrice>
        <remainingUpfrontValue>631.0</remainingUpfrontValue>
      </reservationValue>
    </item>
  </reservedInstanceValueSet>
  <targetConfigurationValueSet>
    <isValidExchange>false</isValidExchange>
    <paymentDue>-448.416438</paymentDue>
    <targetConfigurationValueRollup>
      <remainingTotalValue>0</remainingTotalValue>
      <hourlyPrice>0</hourlyPrice>
      <remainingUpfrontValue>0</remainingUpfrontValue>
    </targetConfigurationValueRollup>
    <reservedInstanceValueRollup>
      <remainingTotalValue>873.504438</remainingTotalValue>
    </reservedInstanceValueRollup>
  </targetConfigurationValueSet>
</GetReservedInstancesExchangeQuoteResponse>
<hourlyPrice>0.018000</hourlyPrice>
<remainingUpfrontValue>448.416438</remainingUpfrontValue>
</reservedInstanceValueRollup>
<currencyCode>USD</currencyCode>
<validationFailureReason>The target configuration value is less than the input</validationFailureReason>
</GetReservedInstancesExchangeQuoteResponse>
ImportImage

Import single or multi-volume disk images or EBS snapshots into an Amazon Machine Image (AMI). For more information, see Importing a VM as an Image Using VM Import/Export in the VM Import/Export User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Architecture

The architecture of the virtual machine.

Valid values: i386 | x86_64

Type: String

Required: No

ClientData

The client-specific data.

Type: ClientData (p. 543) object

Required: No

ClientToken

The token to enable idempotency for VM import requests.

Type: String

Required: No

Description

A description string for the import image task.

Type: String

Required: No

DiskContainer.N

Information about the disk containers.

Type: array of ImageDiskContainer (p. 578) objects

Required: No

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

Hypervisor

The target hypervisor platform.

Valid values: xen

Type: String

Required: No

LicenseType

The license type to be used for the Amazon Machine Image (AMI) after importing.

Note: You may only use BYOL if you have existing licenses with rights to use these licenses in a third party cloud like AWS. For more information, see Prerequisites in the VM Import/Export User Guide.

Valid values: AWS | BYOL

Type: String

Required: No
Platform
The operating system of the virtual machine.
Valid values: Windows | Linux
Type: String
Required: No

RoleName
The name of the role to use when not using the default role, 'vmimport'.
Type: String
Required: No

Response Elements
The following elements are returned by the service.

architecture
The architecture of the virtual machine.
Type: String
description
A description of the import task.
Type: String
hypervisor
The target hypervisor of the import task.
Type: String
imageId
The ID of the Amazon Machine Image (AMI) created by the import task.
Type: String
importTaskId
The task ID of the import image task.
Type: String
licenseType
The license type of the virtual machine.
Type: String
platform
The operating system of the virtual machine.
Type: String
progress
The progress of the task.
Type: String
requestId
The ID of the request.
Type: String
snapshotDetailSet
Information about the snapshots.
Type: array of SnapshotDetail (p. 695) objects
status
A brief status of the task.
Type: String
statusMessage
A detailed status message of the import task.
Type: String
Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
ImportInstance

Creates an import instance task using metadata from the specified disk image. ImportInstance only supports single-volume VMs. To import multi-volume VMs, use ImportImage (p. 402). For more information, see Importing a Virtual Machine Using the Amazon EC2 CLI. For information about the import manifest referenced by this API action, see VM Import Manifest.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Description

A description for the instance being imported.
Type: String
Required: No

DiskImage.N

The disk image.
Type: array of DiskImage (p. 550) objects
Required: No

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

LaunchSpecification

The launch specification.
Type: ImportInstanceLaunchSpecification (p. 581) object
Required: No

Platform

The instance operating system.
Type: String
Valid Values: Windows
Required: Yes

Response Elements

The following elements are returned by the service.

conversionTask

Information about the conversion task.
Type: ConversionTask (p. 544) object

requestId

The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
This example creates an import instance task that migrates a Windows Server 2008 SP2 (32-bit) VM into the AWS us-east-1 region.

Sample Request

```xml
https://ec2.amazonaws.com/?Action=ImportInstance
&LaunchSpecification.Architecture=x86_64
&LaunchSpecification.InstanceType=m1.xlarge
&DiskImage.1.Image.Format=VMDK
&DiskImage.1.Image.Bytes=1179593728
&DiskImage.1.Image.ImportManifestUrl=https://s3.amazonaws.com/myawsbucket/a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snj01T1T7tLoU7R7KeXtEXAMPLE%3D
&DiskImage.1.Volume.Size=12
&Platform=Windows
&AUTHPARAMS
```

Sample Response

```xml
<ImportInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
<conversionTask>
<conversionTaskId>import-i-ffvko9js</conversionTaskId>
<expirationTime>2010-12-22T12:01Z</expirationTime>
<importInstance>
<volumes>
  <item>
    <bytesConverted>0</bytesConverted>
    <availabilityZone>us-east-1a</availabilityZone>
    <image>
      <format>VMDK</format>
      <size>1179593728</size>
      <importManifestUrl>
https://s3.amazonaws.com/myawsbucket/a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snj01T1T7tLoU7R7KeXtEXAMPLE%3D
      </importManifestUrl>
      <description/>
    </image>
    <volume>
      <size>12</size>
      <id>vol-1234567890abcdef0</id>
    </volume>
  </item>
</volumes>
<instanceId>i-1234567890abcdef0</instanceId>
<description/>
</importInstance>
</conversionTask>
</ImportInstanceResponse>
```
ImportKeyPair

Imports the public key from an RSA key pair that you created with a third-party tool. Compare this with CreateKeyPair (p. 81), in which AWS creates the key pair and gives the keys to you (AWS keeps a copy of the public key). With ImportKeyPair, you create the key pair and give AWS just the public key. The private key is never transferred between you and AWS.

For more information about key pairs, see Key Pairs in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

KeyName
A unique name for the key pair.
Type: String
Required: Yes

PublicKeyMaterial
The public key. For API calls, the text must be base64-encoded. For command line tools, base64 encoding is performed for you.
Type: Base64-encoded binary data
Required: Yes

Response Elements

The following elements are returned by the service.

keyFingerprint
The MD5 public key fingerprint as specified in section 4 of RFC 4716.
Type: String

keyName
The key pair name you provided.
Type: String

requestId
The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example
This example imports the public key named my-key-pair.
Sample Request

https://ec2.amazonaws.com/?Action=ImportKeyPair
&KeyName=my-key-pair
&PublicKeyMaterial=MIICiTCCAfICCQ6m70Rw0uX0iANBgkqhkiG9w0BAQUFADBBiDELMAkGA1UEBhMC
VVMxCaJBgNVBAgTALdBMRARwDgYDVQQHEwTZWFOgdGx1MQ8wDQYDVQQKEw2BbWF6
b24xFDASBGNVBAstC01BTSBdB25zb2x1MRiWEAYDVQQDEw1U2X0Q21sYWMxHsdAd
BgkqhkiG9w0BCQEWQG5vb251GQFtYXpvbi5jby20WbhcNMTEwNDI1MjA0NTIzWhcN
MTIwNDI0MjA0NTIzWhcNjBCiDELMAkGA1UEBhMC
VVMxCaJBgNVBAgTALdBMRARwDgYDVQQHEwTZWFOgdGx1MQ8wDQYDVQQKEw2BbWF6
b24xFDASBGNVBAstC01BTSBdB25zb2x1MRiWEAYDVQQDEw1U2X0Q21sYWMxHsdAd
BgkqhkiG9w0BCQEWQG5vb251GQFtYXpvbi5jby20WbhcNMTEwNDI1MjA0NTIzWhcN
MTIwNDI0MjA0NTIzWhcNjBCiDELMAkGA1UEBhMC
VVMxCaJBgNVBAgTALdBMRARwDgYDVQQHEwTZWFOgdGx1MQ8wDQYDVQQKEw2BbWF6
b24xFDASBGNVBAstC01BTSBdB25zb2x1MRiWEAYDVQQDEw1U2X0Q21sYWMxHsdAd

Sample Response

<ImportKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLEx</requestId>
  <keyName>my-key-pair</keyName>
</ImportKeyPairResponse>
ImportSnapshot
Imports a disk into an EBS snapshot.

Request Parameters
The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

ClientData
The client-specific data.
Type: ClientData (p. 543) object
Required: No

ClientToken
Token to enable idempotency for VM import requests.
Type: String
Required: No

Description
The description string for the import snapshot task.
Type: String
Required: No

DiskContainer
Information about the disk container.
Type: SnapshotDiskContainer (p. 696) object
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

RoleName
The name of the role to use when not using the default role, 'vmimport'.
Type: String
Required: No

Response Elements
The following elements are returned by the service.

description
A description of the import snapshot task.
Type: String

importTaskId
The ID of the import snapshot task.
Type: String

requestId
The ID of the request.
Type: String

snapshotTaskDetail
Information about the import snapshot task.
Type: SnapshotTaskDetail (p. 697) object

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).
ImportVolume

Creates an import volume task using metadata from the specified disk image. For more information, see Importing Disks to Amazon EBS. For information about the import manifest referenced by this API action, see VM Import Manifest.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**AvailabilityZone**
- The Availability Zone for the resulting EBS volume.
- Type: String
- Required: Yes

**Description**
- A description of the volume.
- Type: String
- Required: No

**DryRun**
- Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
- Type: Boolean
- Required: No

**Image**
- The disk image.
- Type: DiskImageDetail (p. 552) object
- Required: Yes

**Volume**
- The volume size.
- Type: VolumeDetail (p. 732) object
- Required: Yes

Response Elements

The following elements are returned by the service.

**conversionTask**
- Information about the conversion task.
- Type: ConversionTask (p. 544) object

**requestId**
- The ID of the request.
- Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

This example creates an import volume task that migrates a Windows Server 2008 SP2 (32-bit) volume into the AWS us-east-1 region.

Sample Request

```
https://ec2.amazonaws.com/?Action=ImportVolume
&AvailabilityZone=us-east-1c
&Image.Format=VMDK
&Image.Bytes=128696320
&Image.ImportManifestUrl=https://s3.amazonaws.com/myawsbucket/
a3a5elb6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=snej0ITl70uR7KExtEXAMPLE%3D
&VolumeSize=8
&AUTHPARAMS>
```

Sample Response

```
  <conversionTask>
    <conversionTaskId>import-i-fh95npoc</conversionTaskId>
    <expirationTime>2010-12-22T12:01Z</expirationTime>
    <importVolume>
      <bytesConverted>0</bytesConverted>
      <availabilityZone>us-east-1c</availabilityZone>
      <description/>
      <image>
        <format>VDMK</format>
        <size>128696320</size>
        <importManifestUrl>
          https://s3.amazonaws.com/myawsbucket/
a3a5elb6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=snej0ITl70uR7KExtEXAMPLE%3D
        </importManifestUrl>
      </image>
      <checksum>ccb1b0536a4a70e86016b85229b5c6b10b14a4eb</checksum>
    </importVolume>
    <volume>
      <size>8</size>
      <id>vol-1234567890abcdef0</id>
    </volume>
  </importVolume>
  <state>active</state>
  <statusMessage/>
</conversionTask>
</ImportVolumeResponse>
```
ModifyHosts

Modify the auto-placement setting of a Dedicated Host. When auto-placement is enabled, AWS will place instances that you launch with a tenancy of host, but without targeting a specific host ID, onto any available Dedicated Host in your account which has auto-placement enabled. When auto-placement is disabled, you need to provide a host ID if you want the instance to launch onto a specific host. If no host ID is provided, the instance will be launched onto a suitable host which has auto-placement enabled.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**AutoPlacement**

Specify whether to enable or disable auto-placement.

- **Type**: String
- **Valid Values**: on | off
- **Required**: Yes

**HostId.N**

The host IDs of the Dedicated Hosts you want to modify.

- **Type**: array of Strings
- **Required**: Yes

Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

- **Type**: String

**successful**

The IDs of the Dedicated Hosts that were successfully modified.

- **Type**: array of Strings

**unsuccessful**

The IDs of the Dedicated Hosts that could not be modified. Check whether the setting you requested can be used.

- **Type**: array of UnsuccessfulItem (p. 722) objects

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

**Example**

This example enables the auto-placement setting on a Dedicated Host.

**Sample Request**

```text
https://ec2.amazonaws.com/?Action=ModifyHosts
&AutoPlacement=on
```
&HostId=h-00548908djdsgfs

Sample Response

```xml
<ModifyHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>d490fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <unsuccessful/>
  <successful>
    <item>h-00548908djdsgfs</item>
  </successful>
</ModifyHostsResponse>
```
ModifyIdentityIdFormat

Modifies the ID format of a resource for a specified IAM user, IAM role, or the root user for an account; or all IAM users, IAM roles, and the root user for an account. You can specify that resources should receive longer IDs (17-character IDs) when they are created.

The following resource types support longer IDs: instance | reservation | snapshot | volume. For more information, see Resource IDs in the Amazon Elastic Compute Cloud User Guide.

This setting applies to the principal specified in the request; it does not apply to the principal that makes the request.

Resources created with longer IDs are visible to all IAM roles and users, regardless of these settings and provided that they have permission to use the relevant Describe command for the resource type.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

PrincipalArn

The ARN of the principal, which can be an IAM user, IAM role, or the root user. Specify all to modify the ID format for all IAM users, IAM roles, and the root user of the account.

Type: String
Required: Yes

Resource

The type of resource: instance | reservation | snapshot | volume

Type: String
Required: Yes

UseLongIds

Indicates whether the resource should use longer IDs (17-character IDs)

Type: Boolean
Required: Yes

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

Type: String

return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example sets the UseLongIds parameter to true for instances launched by the IAM role 'EC2Role'. Instances launched by the IAM role receive longer IDs.
Sample Request

https://ec2.amazonaws.com/?Action=ModifyIdentityFormat
&Resource=instance
&UseLongIds=true
&PrincipalArn=arn:aws:iam::123456789012:role/EC2Role
&AUTHPARAMS

Sample Response

<ModifyIdentityIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>92c1af09-cb4c-410e-8a96-example</requestId>
  <return>true</return>
</ModifyIdentityIdFormatResponse>
ModifyIdFormat

Modifies the ID format for the specified resource on a per-region basis. You can specify that resources should receive longer IDs (17-character IDs) when they are created. The following resource types support longer IDs: instance | reservation | snapshot | volume.

This setting applies to the IAM user who makes the request; it does not apply to the entire AWS account. By default, an IAM user defaults to the same settings as the root user. If you're using this action as the root user, then these settings apply to the entire account, unless an IAM user explicitly overrides these settings for themselves. For more information, see Resource IDs in the Amazon Elastic Compute Cloud User Guide.

Resources created with longer IDs are visible to all IAM roles and users, regardless of these settings and provided that they have permission to use the relevant Describe command for the resource type.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**Resource**

- **Type**: String
- **Required**: Yes

**UseLongIds**

- **Type**: Boolean
- **Required**: Yes

Response Elements

The following elements are returned by the service.

**requestId**

- **Type**: String

**return**

- **Type**: Boolean
  - Is true if the request succeeds, and an error otherwise.

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

**Example**

This example sets the UseLongIds parameter to true for instances, so that instances you launch receive longer IDs.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=ModifyIdFormat
&Resource=instance
&UseLongIds=true
```
Sample Response

```xml
<ModifyIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
   <requestId>92c1af09-cb4c-410e-8a96-example</requestId>
   <return>true</return>
</ModifyIdFormatResponse>
```
ModifyImageAttribute

Modifies the specified attribute of the specified AMI. You can specify only one attribute at a time.

Note
AWS Marketplace product codes cannot be modified. Images with an AWS Marketplace product code cannot be made public.

Note
The SriovNetSupport enhanced networking attribute cannot be changed using this command. Instead, enable SriovNetSupport on an instance and create an AMI from the instance. This will result in an image with SriovNetSupport enabled.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Attribute
The name of the attribute to modify.
Type: String
Required: No

Description
A description for the AMI.
Type: AttributeValue (p. 529) object
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

ImageId
The ID of the AMI.
Type: String
Required: Yes

LaunchPermission
A launch permission modification.
Type: LaunchPermissionModifications (p. 616) object
Required: No

OperationType
The operation type.
Type: String
Valid Values: add | remove
Required: No

ProductCode.N
One or more product codes. After you add a product code to an AMI, it can’t be removed. This is only valid when modifying the productCodes attribute.
Type: array of Strings
Required: No

UserGroup.N
One or more user groups. This is only valid when modifying the launchPermission attribute.
Response Elements

The following elements are returned by the service.

**requestId**
- The ID of the request.
- Type: String

**return**
- Is true if the request succeeds, and an error otherwise.
- Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

**Example 1**
This example makes the AMI public (for example, so any AWS account can use it).

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Add.1.Group=all
&AUTHPARAMS
```

Sample Response

```
<ModifyImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyImageAttributeResponse>
```

**Example 2**
This example makes the AMI private (for example, so that only you as the owner can use it).
Sample Request

https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Remove.1.Group=all
&AUTHPARAMS

Example 3
This example grants launch permission to the AWS account with ID 11122223333.

Sample Request

https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Add.1.UserId=11122223333
&AUTHPARAMS

Example 4
This example adds the 774F4FF8 product code to the ami-61a54008 AMI.

Sample Request

https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&ProductCode.1=774F4FF8
&AUTHPARAMS

Example 5
This example changes the description of the AMI to New Description.

Sample Request

https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&Description.Value=New Description
&AUTHPARAMS
ModifyInstanceAttribute

Modifies the specified attribute of the specified instance. You can specify only one attribute at a time. To modify some attributes, the instance must be stopped. For more information, see Modifying Attributes of a Stopped Instance in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**Attribute**

The name of the attribute.

Type: String

- **Valid Values:** instanceType | kernel | ramdisk | userData | disableApiTermination | instanceInitiatedShutdownBehavior | rootDeviceName | blockDeviceMapping | productCodes | sourceDestCheck | groupSet | ebsOptimized | sriovNetSupport | enaSupport

Required: No

**BlockDeviceMapping.N**

Modifies the DeleteOnTermination attribute for volumes that are currently attached. The volume must be owned by the caller. If no value is specified for DeleteOnTermination, the default is `true` and the volume is deleted when the instance is terminated.

To add instance store volumes to an Amazon EBS-backed instance, you must add them when you launch the instance. For more information, see Updating the Block Device Mapping when Launching an Instance in the Amazon Elastic Compute Cloud User Guide.

Type: array of InstanceBlockDeviceMappingSpecification (p. 592) objects

Required: No

**DisableApiTermination**

If the value is `true`, you can't terminate the instance using the Amazon EC2 console, CLI, or API; otherwise, you can. You cannot use this paramater for Spot Instances.

Type: AttributeBooleanValue (p. 528) object

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EbsOptimized**

Specifies whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: AttributeBooleanValue (p. 528) object

Required: No

**EnaSupport**

Set to `true` to enable enhanced networking with ENA for the instance. This option is supported only for HVM instances. Specifying this option with a PV instance can make it unreachable.

Type: AttributeBooleanValue (p. 528) object

Required: No
**Request Parameters**

**GroupId.N**  
[EC2-VPC] Changes the security groups of the instance. You must specify at least one security group, even if it's just the default security group for the VPC. You must specify the security group ID, not the security group name.  
Type: array of Strings  
Required: No

**InstanceId**  
The ID of the instance.  
Type: String  
Required: Yes

**InstanceInitiatedShutdownBehavior**  
Specifies whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).  
Type: AttributeValue (p. 529) object  
Required: No

**InstanceType**  
Changes the instance type to the specified value. For more information, see Instance Types. If the instance type is not valid, the error returned is `InvalidInstanceAttributeValue`.  
Type: AttributeValue (p. 529) object  
Required: No

**Kernel**  
Changes the instance's kernel to the specified value. We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see PV-GRUB.  
Type: AttributeValue (p. 529) object  
Required: No

**Ramdisk**  
Changes the instance’s RAM disk to the specified value. We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see PV-GRUB.  
Type: AttributeValue (p. 529) object  
Required: No

**SourceDestCheck**  
Specifies whether source/destination checking is enabled. A value of true means that checking is enabled, and false means checking is disabled. This value must be false for a NAT instance to perform NAT.  
Type: AttributeBooleanValue (p. 528) object  
Required: No

**SriovNetSupport**  
Set to simple to enable enhanced networking with the Intel 82599 Virtual Function interface for the instance.  
There is no way to disable enhanced networking with the Intel 82599 Virtual Function interface at this time.  
This option is supported only for HVM instances. Specifying this option with a PV instance can make it unreachable.  
Type: AttributeValue (p. 529) object  
Required: No

**UserData**  
Changes the instance’s user data to the specified value. If you are using an AWS SDK or command line tool, Base64-encoding is performed for you, and you can load the text from a file. Otherwise, you must provide Base64-encoded text.  
Type: BlobAttributeValue (p. 533) object  
Required: No
Value
A new value for the attribute. Use only with the kernel, ramdisk, userData, disableApiTermination, or instanceInitiatedShutdownBehavior attribute.
Type: String
Required: No

Response Elements
The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example changes the instance type of the specified instance. The instance must be in the stopped state.

Sample Request

https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-1234567890abcdef0
&InstanceType.Value=m1.small

Sample Response

<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>

Example 2
This example changes the InstanceInitiatedShutdownBehavior attribute of the specified instance.

Sample Request

https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-1234567890abcdef0
&InstanceInitiatedShutdownBehavior.Value=terminate
<table>
<thead>
<tr>
<th>&amp;AUTHPARAMS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sample Response</strong></td>
</tr>
</tbody>
</table>
| ```xml
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>
``` |
| **Example 3**  
This example changes the `DisableApiTermination` attribute of the specified instance. |
| **Sample Request** |
| `https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-1234567890abcdef0
&DisableApiTermination.Value=true
&AUTHPARAMS` |
| **Sample Response** |
| ```xml
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>
``` |
ModifyInstancePlacement

Set the instance affinity value for a specific stopped instance and modify the instance tenancy setting. Instance affinity is disabled by default. When instance affinity is `host` and it is not associated with a specific Dedicated Host, the next time it is launched it will automatically be associated with the host it lands on. This relationship will persist if the instance is stopped, started, or rebooted.

You can modify the host ID associated with a stopped instance. If a stopped instance has a new host ID association, the instance will target that host when restarted.

You can modify the tenancy of a stopped instance with a tenancy of `host` or `dedicated`.

Affinity, hostID, and tenancy are not required parameters, but at least one of them must be specified in the request. Affinity and tenancy can be modified in the same request, but tenancy can only be modified on instances that are stopped.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**Affinity**
- The new affinity setting for the instance.
- Type: String
- Valid Values: `default` | host
- Required: No

**HostId**
- The ID of the Dedicated Host that the instance will have affinity with.
- Type: String
- Required: No

**InstanceId**
- The ID of the instance that you are modifying.
- Type: String
- Required: Yes

**Tenancy**
- The tenancy of the instance that you are modifying.
- Type: String
- Valid Values: `dedicated` | `host`
- Required: No

Response Elements

The following elements are returned by the service.

**requestId**
- The ID of the request.
- Type: String

**return**
- Is true if the request succeeds, and an error otherwise.
- Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

Example
This example modifies the affinity of instance i-0b33i09 so that it always has affinity with host h-00548908djdsdfs.

Sample Request

https://ec2.amazonaws.com/?Action=ModifyInstancePlacement
&Affinity=host
&HostId=h-00548908djdsdfs
&InstanceId=i-0b33i09
&AUTHPARAMS

Sample Response

<ModifyInstancePlacementResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <return>true</item>
</ModifyInstancePlacementResponse>
ModifyNetworkInterfaceAttribute

Modifies the specified network interface attribute. You can specify only one attribute at a time.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Attachment

Information about the interface attachment. If modifying the 'delete on termination' attribute, you must specify the ID of the interface attachment.

Type: NetworkInterfaceAttachmentChanges (p. 631) object

Required: No

Description

A description for the network interface.

Type: AttributeValue (p. 529) object

Required: No

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

NetworkInterfaceId

The ID of the network interface.

Type: String

Required: Yes

SecurityGroupId.N

Changes the security groups for the network interface. The new set of groups you specify replaces the current set. You must specify at least one group, even if it's just the default security group in the VPC. You must specify the ID of the security group, not the name.

Type: array of Strings

Required: No

SourceDestCheck

Indicates whether source/destination checking is enabled. A value of true means checking is enabled, and false means checking is disabled. This value must be false for a NAT instance to perform NAT. For more information, see NAT Instances in the Amazon Virtual Private Cloud User Guide.

Type: AttributeBooleanValue (p. 528) object

Required: No

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

Type: String

return

Is true if the request succeeds, and an error otherwise.

Type: Boolean
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example
This example sets source/destination checking to false for the specified network interface.

Sample Request

https://ec2.amazonaws.com/?Action=ModifyNetworkInterfaceAttribute
&NetworkInterfaceId=eni-ffda3197
&SourceDestCheck.Value=false
&AUTHPARAMS

Sample Response

  <requestId>657a4623-5620-4232-b03b-427e852d71cf</requestId>
  <return>true</return>
</ModifyNetworkInterfaceAttributeResponse>
ModifyReservedInstances

Modifies the Availability Zone, instance count, instance type, or network platform (EC2-Classic or EC2-VPC) of your Standard Reserved Instances. The Reserved Instances to be modified must be identical, except for Availability Zone, network platform, and instance type.

For more information, see Modifying Reserved Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

ClientToken
A unique, case-sensitive token you provide to ensure idempotency of your modification request.
For more information, see Ensuring Idempotency.
Type: String
Required: No

ReservedInstancesConfigurationSetItemType.N
The configuration settings for the Reserved Instances to modify.
Type: array of ReservedInstancesConfiguration (p. 660) objects
Required: Yes

ReservedInstancesId.N
The IDs of the Reserved Instances to modify.
Type: array of Strings
Required: Yes

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

reservedInstancesModificationId
The ID for the modification.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Sample Request

https://ec2.amazonaws.com/?Action=ModifyReservedInstances
&ClientToken=myClientToken
&ReservedInstancesConfigurationSetItemType.1.AvailabilityZone=us-east-1a
&ReservedInstancesConfigurationSetItemType.1.InstanceCount=1
Example

```xml
&ReservedInstancesConfigurationSetItemType.1.Platform=EC2-VPC
&ReservedInstancesConfigurationSetItemType.1.InstanceType=m1.small
&ReservedInstancesId.1=d16f7a91-4d0f-4f19-9d7f-a74d26b1ccfa
&AUTHPARAMS

Sample Response

```xml
<ModifyReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>bef729b6-0731-4489-8881-2258746ae163</requestId>
  <reservedInstancesModificationId>rimod-3aae219d-3d63-47a9-a7e9-e764example</reservedInstancesModificationId>
</ModifyReservedInstancesResponse>
```
ModifySnapshotAttribute

Adds or removes permission settings for the specified snapshot. You may add or remove specified AWS account IDs from a snapshot’s list of create volume permissions, but you cannot do both in a single API call. If you need to both add and remove account IDs for a snapshot, you must use multiple API calls.

**Note**
Encrypted snapshots and snapshots with AWS Marketplace product codes cannot be made public. Snapshots encrypted with your default CMK cannot be shared with other accounts.

For more information on modifying snapshot permissions, see Sharing Snapshots in the Amazon Elastic Compute Cloud User Guide.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**Attribute**
The snapshot attribute to modify.

- **Note**
  Only volume creation permissions may be modified at the customer level.

  **Type:** String
  **Valid Values:** productCodes | createVolumePermission
  **Required:** No

**CreateVolumePermission**
A JSON representation of the snapshot attribute modification.

  **Type:** CreateVolumePermissionModifications (p. 546) object
  **Required:** No

**DryRun**
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

  **Type:** Boolean
  **Required:** No

**OperationType**
The type of operation to perform to the attribute.

  **Type:** String
  **Valid Values:** add | remove
  **Required:** No

**SnapshotId**
The ID of the snapshot.

  **Type:** String
  **Required:** Yes

**UserGroup.N**
The group to modify for the snapshot.

  **Type:** array of Strings
  **Required:** No

**UserId.N**
The account ID to modify for the snapshot.

  **Type:** array of Strings
Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example
This example makes the snap-1234567890abcdef0 snapshot public, and gives the account with ID 111122223333 permission to create volumes from the snapshot.

Sample Request

https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&SnapshotId=snap-1234567890abcdef0
&CreateVolumePermission.Add.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS

Sample Response

  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifySnapshotAttributeResponse>

Example
This example makes the snap-1234567890abcdef0 snapshot public, and removes the account with ID 111122223333 from the list of users with permission to create volumes from the snapshot.

Sample Request

https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&SnapshotId=snap-1234567890abcdef0
&CreateVolumePermission.Remove.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
Sample Response

<?xml version="1.0" encoding="UTF-8"?>
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</ModifySnapshotAttributeResponse>
ModifySpotFleetRequest

Modifies the specified Spot fleet request.
While the Spot fleet request is being modified, it is in the modifying state.
To scale up your Spot fleet, increase its target capacity. The Spot fleet launches the additional Spot
instances according to the allocation strategy for the Spot fleet request. If the allocation strategy is
lowestPrice, the Spot fleet launches instances using the Spot pool with the lowest price. If the
allocation strategy is diversified, the Spot fleet distributes the instances across the Spot pools.
To scale down your Spot fleet, decrease its target capacity. First, the Spot fleet cancels any open bids
that exceed the new target capacity. You can request that the Spot fleet terminate Spot instances
until the size of the fleet no longer exceeds the new target capacity. If the allocation strategy is
lowestPrice, the Spot fleet terminates the instances with the highest price per unit. If the allocation
strategy is diversified, the Spot fleet terminates instances across the Spot pools. Alternatively, you
can request that the Spot fleet keep the fleet at its current size, but not replace any Spot instances that
are interrupted or that you terminate manually.

Request Parameters
The following parameters are for this specific action. For more information about required and optional
parameters that are common to all actions, see Common Query Parameters (p. 773).

ExcessCapacityTerminationPolicy
Indicates whether running Spot instances should be terminated if the target capacity of the Spot
fleet request is decreased below the current size of the Spot fleet.
Type: String
Valid Values: noTermination  |  default
Required: No

SpotFleetRequestId
The ID of the Spot fleet request.
Type: String
Required: Yes

TargetCapacity
The size of the fleet.
Type: Integer
Required: No

Response Elements
The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).
ModifySubnetAttribute

Modifies a subnet attribute.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **MapPublicIpOnLaunch**
  - Specify `true` to indicate that instances launched into the specified subnet should be assigned public IP address.
  - Type: `AttributeBooleanValue (p. 528)` object
  - Required: No

- **SubnetId**
  - The ID of the subnet.
  - Type: String
  - Required: Yes

Response Elements

The following elements are returned by the service.

- **requestId**
  - The ID of the request.
  - Type: String

- **return**
  - Is `true` if the request succeeds, and an error otherwise.
  - Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example modifies the attribute for `subnet-1a2b3c4d` to specify that all instances launched into this subnet are assigned a public IP address.

Sample Request

```
https://ec2.amazonaws.com/?Action=ModifySubnetAttribute
&SubnetId=subnet-1a2b3c4d
&MapPublicIpOnLaunch.Value=true
&AUTHPARAMS
```
ModifyVolumeAttribute

Modifies a volume attribute.

By default, all I/O operations for the volume are suspended when the data on the volume is determined to be potentially inconsistent, to prevent undetectable, latent data corruption. The I/O access to the volume can be resumed by first enabling I/O access and then checking the data consistency on your volume.

You can change the default behavior to resume I/O operations. We recommend that you change this only for boot volumes or for volumes that are stateless or disposable.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AutoEnableIO
Indicates whether the volume should be auto-enabled for I/O operations.
Type: AttributeBooleanValue (p. 528) object
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

VolumeId
The ID of the volume.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example
This example modifies the attribute of the volume vol-1234567890abcdef0.

Sample Request

https://ec2.amazonaws.com/?Action=ModifyVolumeAttribute
&VolumeId=vol-1234567890abcdef0
&AutoEnableIO.Value=true
&AUTHPARAMS

Sample Response

```xml
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <return>true</return>
</ModifyVolumeAttributeResponse>
```
ModifyVpcAttribute

Modifies the specified attribute of the specified VPC.

Request Parameters
The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

EnableDnsHostnames
Indicates whether the instances launched in the VPC get DNS hostnames. If enabled, instances in the VPC get DNS hostnames; otherwise, they do not.
You cannot modify the DNS resolution and DNS hostnames attributes in the same request. Use separate requests for each attribute. You can only enable DNS hostnames if you've enabled DNS support.
Type: AttributeBooleanValue (p. 528) object
Required: No

EnableDnsSupport
Indicates whether the DNS resolution is supported for the VPC. If enabled, queries to the Amazon provided DNS server at the 169.254.169.253 IP address, or the reserved IP address at the base of the VPC network range "plus two" will succeed. If disabled, the Amazon provided DNS service in the VPC that resolves public DNS hostnames to IP addresses is not enabled.
You cannot modify the DNS resolution and DNS hostnames attributes in the same request. Use separate requests for each attribute.
Type: AttributeBooleanValue (p. 528) object
Required: No

VpcId
The ID of the VPC.
Type: String
Required: Yes

Response Elements
The following elements are returned by the service.

RequestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example
This example disables support for DNS hostnames in the specified VPC.
Sample Request

https://ec2.amazonaws.com/?Action=ModifyVpcAttribute
&VpcId=vpc-1a2b3c4d
&EnableDnsHostnames.Value=false
&AUTHPARAMS
ModifyVpcEndpoint

Modifies attributes of a specified VPC endpoint. You can modify the policy associated with the endpoint, and you can add and remove route tables associated with the endpoint.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AddRouteTableId.N

- One or more route tables IDs to associate with the endpoint.
- Type: array of Strings
- Required: No

DryRun

- Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
- Type: Boolean
- Required: No

PolicyDocument

- A policy document to attach to the endpoint. The policy must be in valid JSON format.
- Type: String
- Required: No

RemoveRouteTableId.N

- One or more route table IDs to disassociate from the endpoint.
- Type: array of Strings
- Required: No

ResetPolicy

- Specify true to reset the policy document to the default policy. The default policy allows access to the service.
- Type: Boolean
- Required: No

VpcEndpointId

- The ID of the endpoint.
- Type: String
- Required: Yes

Response Elements

The following elements are returned by the service.

requestId

- The ID of the request.
- Type: String

return

- Returns true if the request succeeds; otherwise, it returns an error.
- Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

This example modifies vpce-1a2b3c4d by associating route table rtb-aaa222bb with the endpoint, and resetting the policy document.

Sample Request

https://ec2.amazonaws.com/?Action=ModifyVpcEndpoint
&VpcEndpointId=vpce-1a2b3c4d
&ResetPolicy=true
&AddRouteTableId.1=rtb-aaa222bb
&AUTHPARAMS

Sample Response

<ModifyVpcEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <return>true</return>
  <requestId>125acea6-ba5c-4c6e-8e17-example</requestId>
</ModifyVpcEndpointResponse>
ModifyVpcPeeringConnectionOptions

Modifies the VPC peering connection options on one side of a VPC peering connection. You can do the following:

- Enable/disable communication over the peering connection between an EC2-Classic instance that's linked to your VPC (using ClassicLink) and instances in the peer VPC.
- Enable/disable communication over the peering connection between instances in your VPC and an EC2-Classic instance that's linked to the peer VPC.
- Enable/disable a local VPC to resolve public DNS hostnames to private IP addresses when queried from instances in the peer VPC.

If the peered VPCs are in different accounts, each owner must initiate a separate request to modify the peering connection options, depending on whether their VPC was the requester or accepter for the VPC peering connection. If the peered VPCs are in the same account, you can modify the requester and accepter options in the same request. To confirm which VPC is the accepter and requester for a VPC peering connection, use the DescribeVpcPeeringConnections (p. 355) command.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**AcceptorPeeringConnectionOptions**

The VPC peering connection options for the accepter VPC.
Type: PeeringConnectionOptionsRequest (p. 635) object
Required: No

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

**RequesterPeeringConnectionOptions**

The VPC peering connection options for the requester VPC.
Type: PeeringConnectionOptionsRequest (p. 635) object
Required: No

**VpcPeeringConnectionId**

The ID of the VPC peering connection.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

**accepterPeeringConnectionOptions**

Information about the VPC peering connection options for the accepter VPC.
Type: PeeringConnectionOptions (p. 634) object

**requesterPeeringConnectionOptions**

Information about the VPC peering connection options for the requester VPC.
Type: PeeringConnectionOptions (p. 634) object
requestId
The ID of the request.
Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example
In this example, you have an EC2-Classic instance linked to your VPC. You want to enable communication over the VPC peering connection to allow the linked EC2-Classic instance to communicate with instances in the peer VPC. You were the requester of the VPC peering connection, therefore you modify the requester VPC peering connection options.

Sample Request

https://ec2.amazonaws.com/?Action=ModifyVpcPeeringConnectionOptions
&VpcPeeringConnectionId=pcx-1a2b3c4d
&RequesterPeeringConnectionOptions.AllowEgressFromLocalClassicLinkToRemoteVpc=true
&AUTHPARAMS

Sample Response

<ModifyVpcPeeringConnectionOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>8d977c82-8aba-4cd1-81ca-example</requestId>
  <requesterPeeringConnectionOptions>
    <allowEgressFromLocalClassicLinkToRemoteVpc>true</allowEgressFromLocalClassicLinkToRemoteVpc>
  </requesterPeeringConnectionOptions>
</ModifyVpcPeeringConnectionOptionsResponse>

Example
In this example, you want to enable communication from instances in your local VPC to any linked EC2-Classic instances in the peer VPC. You were the accepter of the VPC peering connection, therefore you modify the accepter VPC peering connection options.

Sample Request

https://ec2.amazonaws.com/?Action=ModifyVpcPeeringConnectionOptions
&VpcPeeringConnectionId=pcx-1a2b3c4d
&AccepterPeeringConnectionOptions.AllowEgressFromLocalVpcToRemoteClassicLink=true
&AUTHPARAMS

Sample Response

<ModifyVpcPeeringConnectionOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>f5131846-7920-4359-b565-example</requestId>
  <accepterPeeringConnectionOptions>
  </accepterPeeringConnectionOptions>
</ModifyVpcPeeringConnectionOptionsResponse>
Example

In this example, you want to enable your VPC to resolve public DNS hostname to private IP addresses when queried from instances in the peer VPC. You were the accepter of the VPC peering connection, therefore you modify the accepter VPC peering connection options.

Sample Request

https://ec2.amazonaws.com/?Action=ModifyVpcPeeringConnectionOptions
&VpcPeeringConnectionId=pcx-1a2b3c4d
&AccepterPeeringConnectionOptions.AllowDnsResolutionFromRemoteVpc=true
&AUTHPARAMS

Sample Response

<ModifyVpcPeeringConnectionOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>f5131846-7920-4359-b565-example</requestId>
  <accepterPeeringConnectionOptions>
    <allowDnsResolutionFromRemoteVpc>true</allowDnsResolutionFromRemoteVpc>
  </accepterPeeringConnectionOptions>
</ModifyVpcPeeringConnectionOptionsResponse>
MonitorInstances

Enables detailed monitoring for a running instance. Otherwise, basic monitoring is enabled. For more information, see Monitoring Your Instances and Volumes in the Amazon Elastic Compute Cloud User Guide.

To disable detailed monitoring, see UnmonitorInstances (p. 517).

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

**InstanceId.N**

One or more instance IDs.

Type: array of Strings

Required: Yes

Response Elements

The following elements are returned by the service.

**instancesSet**

The monitoring information.

Type: array of InstanceMonitoring (p. 596) objects

**requestId**

The ID of the request.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example enables detailed monitoring for the specified two instances.

Sample Request

https://ec2.amazonaws.com/?Action=MonitorInstances
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eb4a8d7
&AUTHPARAMS

Sample Response

<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<instancesSet>
  <item>
    <instanceId>i-1234567890abcdef0</instanceId>
    <monitoring>
      <state>pending</state>
    </monitoring>
  </item>
  <item>
    <instanceId>i-0598c7d356eba48d7</instanceId>
    <monitoring>
      <state>pending</state>
    </monitoring>
  </item>
</instancesSet>
</MonitorInstancesResponse>
MoveAddressToVpc

Moves an Elastic IP address from the EC2-Classic platform to the EC2-VPC platform. The Elastic IP address must be allocated to your account for more than 24 hours, and it must not be associated with an instance. After the Elastic IP address is moved, it is no longer available for use in the EC2-Classic platform, unless you move it back using the RestoreAddressToClassic (p. 492) request. You cannot move an Elastic IP address that was originally allocated for use in the EC2-VPC platform to the EC2-Classic platform.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

PublicIp
The Elastic IP address.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

allocationId
The allocation ID for the Elastic IP address.
Type: String

requestId
The ID of the request.
Type: String

status
The status of the move of the IP address.
Type: String
Valid Values: MoveInProgress | InVpc | InClassic

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example moves Elastic IP address 54.123.4.56 to the EC2-VPC platform.

Sample Request

https://ec2.amazonaws.com/?Action=MoveAddressToVpc
&publicIp=54.123.4.56
&AUTHPARAMS

Sample Response

<MoveAddressToVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>f7de5e98-491a-4c19-a92d-908d6EXAMPLE</requestId>
  <allocationId>eipalloc-1cfe1879</allocationId>
  <status>InVpc</status>
</MoveAddressToVpcResponse>
PurchaseHostReservation

Purchase a reservation with configurations that match those of your Dedicated Host. You must have active Dedicated Hosts in your account before you purchase a reservation. This action results in the specified reservation being purchased and charged to your account.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

ClientToken
  Unique, case-sensitive identifier you provide to ensure idempotency of the request. For more information, see How to Ensure Idempotency in the Amazon Elastic Compute Cloud User Guide.
  Type: String
  Required: No

CurrencyCode
  The currency in which the totalUpfrontPrice, LimitPrice, and totalHourlyPrice amounts are specified. At this time, the only supported currency is USD.
  Type: String
  Valid Values: USD
  Required: No

HostIdSet.N
  The ID/s of the Dedicated Host/s that the reservation will be associated with.
  Type: array of Strings
  Required: Yes

LimitPrice
  The specified limit is checked against the total upfront cost of the reservation (calculated as the offering's upfront cost multiplied by the host count). If the total upfront cost is greater than the specified price limit, the request will fail. This is used to ensure that the purchase does not exceed the expected upfront cost of the purchase. At this time, the only supported currency is USD. For example, to indicate a limit price of USD 100, specify 100.00.
  Type: String
  Required: No

OfferingId
  The ID of the offering.
  Type: String
  Required: Yes

Response Elements

The following elements are returned by the service.

clientToken
  Unique, case-sensitive identifier you provide to ensure idempotency of the request. For more information, see How to Ensure Idempotency in the Amazon Elastic Compute Cloud User Guide
  Type: String

currencyCode
  The currency in which the totalUpfrontPrice and totalHourlyPrice amounts are specified. At this time, the only supported currency is USD.
  Type: String
  Valid Values: USD
purchase
Describes the details of the purchase.
Type: array of Purchase (p. 648) objects

requestId
The ID of the request.
Type: String

totalHourlyPrice
The total hourly price of the reservation calculated per hour.
Type: String

totalUpfrontPrice
The total amount that will be charged to your account when you purchase the reservation.
Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example
This example uses the same configuration information from GetHostReservationPurchasePreview (p. 395) to make the purchase and associate the offering with the specified Dedicated Host.

Sample Request

https://ec2.amazonaws.com/?Action=PurchaseHostReservation
&OfferingId=hro-0eb3541dght849c2d
&HostIdSet=h-0fgr9db0ecd0alcd
&AUTHPARAMS

Sample Response

<PurchaseHostReservationResult xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>d4904fd9-84c3-b40d-gtyk-a9983EXAMPLE</requestId>
  <purchase>
    <item>
      <duration>3153600</duration>
      <upfrontPrice>7453.000</upfrontPrice>
      <paymentOption>PartialUpfront</paymentOption>
      <instanceFamily>m4</instanceFamily>
      <hourlyPrice>0.850</hourlyPrice>
      <hostIdSet>
        <item>h-0fgr9db0ecd0alcd</item>
      </hostIdSet>
    </item>
  </purchase>
  <totalHourlyPrice>0.850</totalHourlyPrice>
  <totalUpfrontPrice>7453.000</totalUpfrontPrice>
</PurchaseHostReservationResult>
PurchaseReservedInstancesOffering

Purchases a Reserved Instance for use with your account. With Reserved Instances, you pay a lower hourly rate compared to On-Demand instance pricing.

Use DescribeReservedInstancesOfferings (p. 279) to get a list of Reserved Instance offerings that match your specifications. After you've purchased a Reserved Instance, you can check for your new Reserved Instance with DescribeReservedInstances (p. 271).

For more information, see Reserved Instances and Reserved Instance Marketplace in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

InstanceCount
The number of Reserved Instances to purchase.

Type: Integer
Required: Yes

LimitPrice
Specified for Reserved Instance Marketplace offerings to limit the total order and ensure that the Reserved Instances are not purchased at unexpected prices.

Type: ReservedInstanceLimitPrice (p. 656) object
Required: No

ReservedInstancesOfferingId
The ID of the Reserved Instance offering to purchase.

Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.

Type: String

reservedInstancesId
The IDs of the purchased Reserved Instances.

Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Examples

Example 1
This example uses a limit price to limit the total purchase order of Standard Reserved Instances from the Reserved Instance Marketplace.

Sample Request

https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
&LimitPrice.Amount=200
&InstanceCount=2
&AUTHPARAMS

Sample Response

<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
</PurchaseReservedInstancesOfferingResponse>

Example 2
This example illustrates a purchase of a Reserved Instances offering.

Sample Request

https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
&InstanceCount=2
&AUTHPARAMS

Sample Response

<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
</PurchaseReservedInstancesOfferingResponse>
PurchaseScheduledInstances

Purchases one or more Scheduled Instances with the specified schedule. Scheduled Instances enable you to purchase Amazon EC2 compute capacity by the hour for a one-year term. Before you can purchase a Scheduled Instance, you must call DescribeScheduledInstanceAvailability (p. 291) to check for available schedules and obtain a purchase token. After you purchase a Scheduled Instance, you must call RunScheduledInstances (p. 507) during each scheduled time period.

After you purchase a Scheduled Instance, you can't cancel, modify, or resell your purchase.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

ClientToken

Unique, case-sensitive identifier that ensures the idempotency of the request. For more information, see Ensuring Idempotency.

Type: String

Required: No

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

PurchaseRequest.N

One or more purchase requests.

Type: array of PurchaseRequest (p. 649) objects

Array Members: Minimum number of 1 item.

Required: Yes

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

Type: String

scheduledInstanceSet

Information about the Scheduled Instances.

Type: array of ScheduledInstance (p. 673) objects

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
RebootInstances

Requests a reboot of one or more instances. This operation is asynchronous; it only queues a request to reboot the specified instances. The operation succeeds if the instances are valid and belong to you. Requests to reboot terminated instances are ignored. If an instance does not cleanly shut down within four minutes, Amazon EC2 performs a hard reboot. For more information about troubleshooting, see Getting Console Output and Rebooting Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

InstanceId.N

One or more instance IDs.

Type: array of Strings

Required: Yes

Response Elements

The following elements are returned by the service.

requestId

The ID of the request.

Type: String

return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example reboots two instances.

Sample Request

https://ec2.amazonaws.com/?Action=RebootInstances
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eba48d7
&AUTHPARAMS
Sample Response

<RebootInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/"
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RebootInstancesResponse>
RegisterImage

Registers an AMI. When you're creating an AMI, this is the final step you must complete before you can launch an instance from the AMI. For more information about creating AMIs, see Creating Your Own AMIs in the Amazon Elastic Compute Cloud User Guide.

**Note**

For Amazon EBS-backed instances, CreateImage (p. 75) creates and registers the AMI in a single request, so you don't have to register the AMI yourself.

You can also use RegisterImage to create an Amazon EBS-backed Linux AMI from a snapshot of a root device volume. For more information, see Launching an Instance from a Snapshot in the Amazon Elastic Compute Cloud User Guide.

**Important**

Some Linux distributions, such as Red Hat Enterprise Linux (RHEL) and SUSE Linux Enterprise Server (SLES), use the EC2 billingProduct code associated with an AMI to verify subscription status for package updates. Creating an AMI from an EBS snapshot does not maintain this billing code, and subsequent instances launched from such an AMI will not be able to connect to package update infrastructure.

Similarly, although you can create a Windows AMI from a snapshot, you can't successfully launch an instance from the AMI.

To create Windows AMIs or to create AMIs for Linux operating systems that must retain AMI billing codes to work properly, see CreateImage (p. 75).

If needed, you can deregister an AMI at any time. Any modifications you make to an AMI backed by an instance store volume invalidates its registration. If you make changes to an image, deregister the previous image and register the new image.

**Note**

You can't register an image where a secondary (non-root) snapshot has AWS Marketplace product codes.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**Architecture**

The architecture of the AMI.

Default: For Amazon EBS-backed AMIs, i386. For instance store-backed AMIs, the architecture specified in the manifest file.

Type: String

Valid Values: i386 | x86_64

Required: No

**BlockDeviceMapping.N**

One or more block device mapping entries.

Type: array of BlockDeviceMapping (p. 534) objects

Required: No

**Description**

A description for your AMI.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Response Elements

The following elements are returned by the service.

imageId
The ID of the newly registered AMI.
Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

## Examples

### Example 1

This example registers the AMI specified in the `my-new-image.manifest.xml` manifest file, located in the bucket called `myawsbucket`.

**Sample Request**

```plaintext
https://ec2.amazonaws.com/?Action=RegisterImage
&ImageLocation=myawsbucket/my-new-image.manifest.xml
&AUTHPARAMS
```

**Sample Response**

```xml
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

### Example 2

This example specifies a snapshot for the root device of an Amazon EBS-backed AMI.

**Sample Request**

```plaintext
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1234567890abcdef0
&Name=MyImage
&AUTHPARAMS
```

**Sample Response**

```xml
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

### Example 3

This example registers an AMI with a block device mapping for three Amazon EBS volumes. The first volume is the root device volume based on an Amazon EBS snapshot. The second volume is based on another snapshot. The third volume is an empty 100 GiB Amazon EBS volume.
Sample Request

https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1234567890abcdef0
&BlockDeviceMapping.2.DeviceName=/dev/sdb
&BlockDeviceMapping.2.Ebs.SnapshotId=snap-1234567890abcdef1
&BlockDeviceMapping.3.DeviceName=/dev/sdc
&BlockDeviceMapping.3.Ebs.VolumeSize=100
&Name=MyImage
AUTHPARAMS

Sample Response

<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
RejectVpcPeeringConnection

Rejects a VPC peering connection request. The VPC peering connection must be in the pending-acceptance state. Use the DescribeVpcPeeringConnections (p. 355) request to view your outstanding VPC peering connection requests. To delete an active VPC peering connection, or to delete a VPC peering connection request that you initiated, use DeleteVpcPeeringConnection (p. 173).

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

- Type: Boolean
- Required: No

VpcPeeringConnectionId
The ID of the VPC peering connection.

- Type: String
- Required: Yes

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.

- Type: String

return
Returns true if the request succeeds; otherwise, it returns an error.

- Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Sample Request

https://ec2.amazonaws.com/?Action=RejectVpcPeeringConnection&vpcPeeringConnectionId=pcx-1a2b3c4d&AUTHPARAMS
Sample Response

```xml
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</RejectVpcPeeringConnectionResponse>
```
ReleaseAddress

Releases the specified Elastic IP address.

After releasing an Elastic IP address, it is released to the IP address pool and might be unavailable to you. Be sure to update your DNS records and any servers or devices that communicate with the address. If you attempt to release an Elastic IP address that you already released, you'll get an AuthFailure error if the address is already allocated to another AWS account.

[EC2-Classic, default VPC] Releasing an Elastic IP address automatically disassociates it from any instance that it's associated with. To disassociate an Elastic IP address without releasing it, use DisassociateAddress (p. 380).

[Nondefault VPC] You must use DisassociateAddress (p. 380) to disassociate the Elastic IP address before you try to release it. Otherwise, Amazon EC2 returns an error (InvalidIPAddress.InUse).

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**AllocationId**

[EC2-VPC] The allocation ID. Required for EC2-VPC.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

**PublicIp**


Type: String

Required: No

Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

**Example for EC2-Classic**

This example releases the specified Elastic IP address for EC2-Classic.
Sample Request

https://ec2.amazonaws.com/?Action=ReleaseAddress
&PublicIp=192.0.2.1
&AUTHPARAMS

Example for EC2-VPC
This example releases the specified Elastic IP address for EC2-VPC.

Sample Request

https://ec2.amazonaws.com/?Action=ReleaseAddress
&AllocationId=eipalloc-5723d13e
&AUTHPARAMS
ReleaseHosts

When you no longer want to use an On-Demand Dedicated Host it can be released. On-Demand billing is stopped and the host goes into `released` state. The host ID of Dedicated Hosts that have been released can no longer be specified in another request, e.g., ModifyHosts. You must stop or terminate all instances on a host before it can be released.

When Dedicated Hosts are released, it may take some time for them to stop counting toward your limit and you may receive capacity errors when trying to allocate new Dedicated hosts. Try waiting a few minutes, and then try again.

Released hosts will still appear in a `DescribeHosts` response.

Request Parameters

For more information about required and optional parameters that are common to all actions, see `Common Query Parameters`.

`HostId.N`
The IDs of the Dedicated Hosts you want to release.
Type: array of Strings
Required: Yes

Response Elements

The following elements are returned by the service.

`requestId`
The ID of the request.
Type: String

`successful`
The IDs of the Dedicated Hosts that were successfully released.
Type: array of Strings

`unsuccessful`
The IDs of the Dedicated Hosts that could not be released, including an error message.
Type: array of `UnsuccessfulItem` objects

Errors

For information about the errors that are common to all actions, see `Common Client Errors`.

Examples

Example
This releases a Dedicated Host successfully.

Sample Request

```
https://ec2.amazonaws.com/?Action=ReleaseHosts
&HostId=h-00548908djdsgfs
&AUTHPARAMS
```

Sample Response

```
```
Example
This request is unsuccessful.

Sample Request

https://ec2.amazonaws.com/?Action=ReleaseHosts
&HostId=h-00548908djdsqfs
&AUTHPARAMS

Sample Response

  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <unsuccessful>
    <item>
      <error>
        <message>Dedicated host 'h-00548908djdsqfs' cannot be released as it is occupied</message>
        <code>Client.InvalidHost.Occupied</code>
      </error>
      <resourceId>h-00548908djdsqfs</resourceId>
    </item>
  </unsuccessful>
  <successful/>
</ReleaseHostsResponse>
ReplaceNetworkAclAssociation

Changes which network ACL a subnet is associated with. By default when you create a subnet, it's automatically associated with the default network ACL. For more information about network ACLs, see Network ACLs in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AssociationId
The ID of the current association between the original network ACL and the subnet.
  Type: String
  Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
  Type: Boolean
  Required: No

NetworkAclId
The ID of the new network ACL to associate with the subnet.
  Type: String
  Required: Yes

Response Elements

The following elements are returned by the service.

newAssociationId
The ID of the new association.
  Type: String

requestId
The ID of the request.
  Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example starts with a network ACL associated with a subnet, and a corresponding association ID aclassoc-e5b95c8c. You want to associate a different network ACL (acl-5fb85d36) with the subnet. The result is a new association ID representing the new association.

Sample Request

https://ec2.amazonaws.com/?Action=ReplaceNetworkAclAssociation
&AssociationId=aclassoc-e5b95c8c
Sample Response

<ReplaceNetworkAclAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>aclassoc-17b85d7e</newAssociationId>
</ReplaceNetworkAclAssociationResponse>
ReplaceNetworkAclEntry

Replaces an entry (rule) in a network ACL. For more information about network ACLs, see Network ACLs in the Amazon Virtual Private Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**CidrBlock**
The network range to allow or deny, in CIDR notation.
Type: String
Required: Yes

**DryRun**
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

**Egress**
Indicates whether to replace the egress rule.
Default: If no value is specified, we replace the ingress rule.
Type: Boolean
Required: Yes

**Icmp**
ICMP protocol: The ICMP type and code. Required if specifying 1 (ICMP) for the protocol.
Type: IcmpTypeCode (p. 573) object
Required: No

**NetworkAclId**
The ID of the ACL.
Type: String
Required: Yes

**PortRange**
TCP or UDP protocols: The range of ports the rule applies to. Required if specifying 6 (TCP) or 17 (UDP) for the protocol.
Type: PortRange (p. 638) object
Required: No

**Protocol**
The IP protocol. You can specify all or -1 to mean all protocols.
Type: String
Required: Yes

**RuleAction**
Indicates whether to allow or deny the traffic that matches the rule.
Type: String
Valid Values: allow | deny
Required: Yes

**RuleNumber**
The rule number of the entry to replace.
Type: Integer
Required: Yes
Response Elements

The following elements are returned by the service.

requestId
   The ID of the request.
   Type: String

return
   Is true if the request succeeds, and an error otherwise.
   Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example replaces the egress entry numbered 110 in the network ACL with ID acl-2cb85d45. The new rule denies egress traffic destined for anywhere (0.0.0.0/0) on TCP port 139.

Sample Request

https://ec2.amazonaws.com/?Action=ReplaceNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=110
&Protocol=tcp
&RuleAction=deny
&Egress=true
&CidrBlock=0.0.0.0/0
&PortRange.From=139
&PortRange.To=139
&AUTHPARAMS

Sample Response

<ReplaceNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</ReplaceNetworkAclEntryResponse>
**ReplaceRoute**

Replaces an existing route within a route table in a VPC. You must provide only one of the following: Internet gateway or virtual private gateway, NAT instance, NAT gateway, VPC peering connection, or network interface.

For more information about route tables, see Route Tables in the Amazon Virtual Private Cloud User Guide.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **DestinationCidrBlock**
  The CIDR address block used for the destination match. The value you provide must match the CIDR of an existing route in the table.
  Type: String
  Required: Yes

- **DryRun**
  Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
  Type: Boolean
  Required: No

- **GatewayId**
  The ID of an Internet gateway or virtual private gateway.
  Type: String
  Required: No

- **InstanceId**
  The ID of a NAT instance in your VPC.
  Type: String
  Required: No

- **NatGatewayId**
  The ID of a NAT gateway.
  Type: String
  Required: No

- **NetworkInterfaceId**
  The ID of a network interface.
  Type: String
  Required: No

- **RouteTableId**
  The ID of the route table.
  Type: String
  Required: Yes

- **VpcPeeringConnectionId**
  The ID of a VPC peering connection.
  Type: String
  Required: No

**Response Elements**

The following elements are returned by the service.
errors

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example
This example replaces a route in the specified route table. The new route matches the CIDR 10.0.0.0/8 and sends the traffic to the virtual private gateway with the ID vgw-1d00376e.

Sample Request

https://ec2.amazonaws.com/?Action=ReplaceRoute
&RouteTableId=rtb-e4ad488d
&DestinationCidrBlock=10.0.0.0/8
&GatewayId=vgw-1d00376e
&AUTHPARAMS

Sample Response

<ReplaceRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReplaceRouteResponse>
ReplaceRouteTableAssociation

Changes the route table associated with a given subnet in a VPC. After the operation completes, the
subnet uses the routes in the new route table it's associated with. For more information about route
tables, see Route Tables in the Amazon Virtual Private Cloud User Guide.
You can also use ReplaceRouteTableAssociation to change which table is the main route table in the
VPC. You just specify the main route table's association ID and the route table to be the new main
route table.

Request Parameters

The following parameters are for this specific action. For more information about required and optional
parameters that are common to all actions, see Common Query Parameters (p. 773).

AssociationId
- The association ID.
- Type: String
- Required: Yes

DryRun
- Checks whether you have the required permissions for the action, without actually making the
  request, and provides an error response. If you have the required permissions, the error response
  is DryRunOperation. Otherwise, it is UnauthorizedOperation.
- Type: Boolean
- Required: No

RouteTableId
- The ID of the new route table to associate with the subnet.
- Type: String
- Required: Yes

Response Elements

The following elements are returned by the service.

newAssociationId
- The ID of the new association.
- Type: String

requestId
- The ID of the request.
- Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example starts with a route table associated with a subnet, and a corresponding association ID
rtbassoc-f8ad4891. You want to associate a different route table (table rtb-f9ad4890) to the
subnet. The result is a new association ID representing the new association.
Sample Request

https://ec2.amazonaws.com/?Action=ReplaceRouteTableAssociation
&AssociationId=rtbassoc-f8ad4891
&RouteTableId=rtb-f9ad4890
&AUTHPARAMS

Sample Response

<ReplaceRouteTableAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>rtbassoc-faad4893</newAssociationId>
</ReplaceRouteTableAssociationResponse>
ReportInstanceStatus

Submits feedback about the status of an instance. The instance must be in the running state. If your experience with the instance differs from the instance status returned by DescribeInstanceStatus (p. 242), use ReportInstanceStatus (p. 476) to report your experience with the instance. Amazon EC2 collects this information to improve the accuracy of status checks. Use of this action does not change the value returned by DescribeInstanceStatus (p. 242).

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Description
   Descriptive text about the health state of your instance.
   Type: String
   Required: No

DryRun
   Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
   Type: Boolean
   Required: No

EndTime
   The time at which the reported instance health state ended.
   Type: Timestamp
   Required: No

InstanceId.N
   One or more instances.
   Type: array of Strings
   Required: Yes

ReasonCode.N
   One or more reason codes that describes the health state of your instance.
   • instance-stuck-in-state: My instance is stuck in a state.
   • unresponsive: My instance is unresponsive.
   • not-accepting-credentials: My instance is not accepting my credentials.
   • password-not-available: A password is not available for my instance.
   • performance-network: My instance is experiencing performance problems which I believe are network related.
   • performance-instance-store: My instance is experiencing performance problems which I believe are related to the instance stores.
   • performance-ebs-volume: My instance is experiencing performance problems which I believe are related to an EBS volume.
   • performance-other: My instance is experiencing performance problems.
   • other: [explain using the description parameter]
   Type: array of Strings
   Required: Yes

StartTime
   The time at which the reported instance health state began.
Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example 1
This example reports instance health state for two instances.

Sample Request

https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Status=impaired
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eba48d7
&AUTHPARAMS

Example 2
This example reports instance health state for two instances with reason codes.

Sample Request

https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Description=Description+of+my+issue.
&Status=impaired
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eba48d7
&ReasonCode.1=instance-performance-network
&ReasonCode.2=instance-performance-disk
&AUTHPARAMS
RequestSpotFleet

Creates a Spot fleet request.
You can submit a single request that includes multiple launch specifications that vary by instance type, AMI, Availability Zone, or subnet.
By default, the Spot fleet requests Spot instances in the Spot pool where the price per unit is the lowest. Each launch specification can include its own instance weighting that reflects the value of the instance type to your application workload.
Alternatively, you can specify that the Spot fleet distribute the target capacity across the Spot pools included in its launch specifications. By ensuring that the Spot instances in your Spot fleet are in different Spot pools, you can improve the availability of your fleet.
For more information, see Spot Fleet Requests in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean Required: No

SpotFleetRequestConfig
The configuration for the Spot fleet request.
Type: SpotFleetRequestConfigData (p. 704) object Required: Yes

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

spotFleetRequestId
The ID of the Spot fleet request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example creates a Spot fleet request with 2 launch specifications.

Sample Request

https://ec2.amazonaws.com/?Action=RequestSpotFleet
&SpotFleetRequestConfig.IamFleetRole=arn:aws:iam::123456789011:role/spot-fleet-role
&SpotFleetRequestConfig.SpotPrice=0.0153
&SpotFleetRequestConfig.TargetCapacity=5
&SpotFleetRequestConfig.LaunchSpecifications.1.ImageId=ami-1ecae776
&SpotFleetRequestConfig.LaunchSpecifications.1.InstanceType=m4.large
&SpotFleetRequestConfig.LaunchSpecifications.1.SubnetId=subnet-1a2b3c4d
&SpotFleetRequestConfig.LaunchSpecifications.2.ImageId=ami-1ecae776
&SpotFleetRequestConfig.LaunchSpecifications.2.InstanceType=m3.medium
&SpotFleetRequestConfig.LaunchSpecifications.2.SubnetId=subnet-1a2b3c4d
&AUTHPARAMS

Sample Response

<RequestSpotFleetResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
   <requestId>60262cc5-2bd4-4c8d-98ed-example</requestId>
   <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</spotFleetRequestId>
</RequestSpotFleetResponse>
RequestSpotInstances

Creates a Spot instance request. Spot instances are instances that Amazon EC2 launches when the bid price that you specify exceeds the current Spot price. Amazon EC2 periodically sets the Spot price based on available Spot Instance capacity and current Spot instance requests. For more information, see Spot Instance Requests in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AvailabilityZoneGroup
The user-specified name for a logical grouping of bids. When you specify an Availability Zone group in a Spot Instance request, all Spot instances in the request are launched in the same Availability Zone. Instance proximity is maintained with this parameter, but the choice of Availability Zone is not. The group applies only to bids for Spot Instances of the same instance type. Any additional Spot instance requests that are specified with the same Availability Zone group name are launched in that same Availability Zone, as long as at least one instance from the group is still active.

If there is no active instance running in the Availability Zone group that you specify for a new Spot instance request (all instances are terminated, the bid is expired, or the bid falls below current market), then Amazon EC2 launches the instance in any Availability Zone where the constraint can be met. Consequently, the subsequent set of Spot instances could be placed in a different zone from the original request, even if you specified the same Availability Zone group.

Default: Instances are launched in any available Availability Zone.

Type: String
Required: No

BlockDurationMinutes
The required duration for the Spot instances (also known as Spot blocks), in minutes. This value must be a multiple of 60 (60, 120, 180, 240, 300, or 360).

The duration period starts as soon as your Spot instance receives its instance ID. At the end of the duration period, Amazon EC2 marks the Spot instance for termination and provides a Spot instance termination notice, which gives the instance a two-minute warning before it terminates.

Note that you can't specify an Availability Zone group or a launch group if you specify a duration.

Type: Integer
Required: No

ClientToken
Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to Ensure Idempotency in the Amazon Elastic Compute Cloud User Guide.

Type: String
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

InstanceCount
The maximum number of Spot instances to launch.

Default: 1
Type: Integer
Response Elements

The following elements are returned by the service.

**requestId**
- The ID of the request.
- Type: String

**spotInstanceRequestSet**
- One or more Spot instance requests.
- Type: array of SpotInstanceRequest (p. 706) objects

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Examples

Example 1
This example creates a one-time Spot instance request for two instances. It does not include an Availability Zone or subnet, so Amazon EC2 selects an Availability Zone for you. If your account supports EC2-VPC only, Amazon EC2 launches the instances in the default subnet of the selected Availability Zone. If your account supports EC2-Classic, Amazon EC2 launch the instances in EC2-Classic in the selected Availability Zone.

Sample Request

```plaintext
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&SpotPrice=0.03
&InstanceCount=2
&Type=one-time
&LaunchSpecification.ImageId=ami-1a2b3c4d
&LaunchSpecification.KeyName=my-key-pair
&LaunchSpecification.SecurityGroupId.1=sg-1a2b3c4d
&LaunchSpecification.InstanceType=m3.medium
&LaunchSpecification.IamInstanceProfile.Name=s3access
&AUTHPARAMS
```

Example 2
The following example includes an Availability Zone. If your account supports EC2-VPC only, Amazon EC2 launches the instances in the default subnet of the specified Availability Zone. If your account support EC2-Classic, Amazon EC2 launches the instances in EC2-Classic in the specified Availability Zone.

Sample Request

```plaintext
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&SpotPrice=0.03
&InstanceCount=2
&Type=one-time
&LaunchSpecification.ImageId=ami-1a2b3c4d
&LaunchSpecification.KeyName=my-key-pair
&LaunchSpecification.SecurityGroupId.1=sg-1a2b3c4d
&LaunchSpecification.InstanceType=m3.medium
&LaunchSpecification.Placement.AvailabilityZone=us-west-2a
&LaunchSpecification.IamInstanceProfile.Name=s3access
&AUTHPARAMS
```

Example 3
The following example includes a subnet. Amazon EC2 launches the instances in the specified subnet. Note that you can specify security groups for EC2-Classic either by ID or by name. You must specify security groups for EC2-VPC by ID.

Sample Request

```plaintext
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&SpotPrice=0.03
&InstanceCount=2
&Type=one-time
```
&LaunchSpecification.ImageId=ami-1a2b3c4d
&LaunchSpecification.KeyName=my-key-pair
&LaunchSpecification.SecurityGroupId.1=sg-1a2b3c4d
&LaunchSpecification.InstanceType=m3.medium
&LaunchSpecification.SubnetId=subnet-1a2b3c4d
&LaunchSpecification.IamInstanceProfile.Name=s3access
&AUTHPARAMS
ResetImageAttribute

Resets an attribute of an AMI to its default value.

**Note**
The productCodes attribute can't be reset.

**Request Parameters**
The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**Attribute**
The attribute to reset (currently you can only reset the launch permission attribute).
- Type: String
- Valid Values: launchPermission
- Required: Yes

**DryRun**
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is **DryRunOperation**. Otherwise, it is **UnauthorizedOperation**.
- Type: Boolean
- Required: No

**ImageId**
The ID of the AMI.
- Type: String
- Required: Yes

**Response Elements**
The following elements are returned by the service.

**requestId**
The ID of the request.
- Type: String

**return**
Is true if the request succeeds, and an error otherwise.
- Type: Boolean

**Errors**
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

**Example**

This example resets the launchPermission attribute for the specified AMI.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=ResetImageAttribute
&ImageId=ami-61a54008
&Attribute=launchPermission
```
&AUTHPARAMS

Sample Response

```xml
<ResetImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/"
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetImageAttributeResponse>
```
**ResetInstanceAttribute**

Resets an attribute of an instance to its default value. To reset the `kernel` or `ramdisk`, the instance must be in a stopped state. To reset the `sourceDestCheck`, the instance can be either running or stopped.

The `sourceDestCheck` attribute controls whether source/destination checking is enabled. The default value is `true`, which means checking is enabled. This value must be `false` for a NAT instance to perform NAT. For more information, see NAT Instances in the Amazon Virtual Private Cloud User Guide.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**Attribute**

The attribute to reset.

**Important**

You can only reset the following attributes: `kernel` | `ramdisk` | `sourceDestCheck`. To change an instance attribute, use `ModifyInstanceAttribute` (p. 423).

**Type:** String

**Valid Values:** `instanceType` | `kernel` | `ramdisk` | `userData` | `disableApiTermination` | `instanceInitiatedShutdownBehavior` | `rootDeviceName` | `blockDeviceMapping` | `productCodes` | `sourceDestCheck` | `groupSet` | `ebsOptimized` | `sriovNetSupport` | `enaSupport`

**Required:** Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

**Type:** Boolean

**Required:** No

**InstanceId**

The ID of the instance.

**Type:** String

**Required:** Yes

**Response Elements**

The following elements are returned by the service.

**requestId**

The ID of the request.

**Type:** String

**return**

Is `true` if the request succeeds, and an error otherwise.

**Type:** Boolean

**Errors**

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

This example resets the `sourceDestCheck` attribute.

Sample Request

```
https://ec2.amazonaws.com/?Action=ResetInstanceAttribute
&InstanceId=i-1234567890abcdef0
&Attribute=sourceDestCheck
&AUTHPARAMS
```

Sample Response

```
<ResetInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetInstanceAttributeResponse>
```
ResetNetworkInterfaceAttribute

Resets a network interface attribute. You can specify only one attribute at a time.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

NetworkInterfaceId
The ID of the network interface.
Type: String
Required: Yes

SourceDestCheck
The source/destination checking attribute. Resets the value to true.
Type: String
Required: No

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example resets the sourceDestCheck attribute for the specified network interface.

Sample Request

https://ec2.amazonaws.com/?Action=ResetNetworkInterfaceAttribute
&NetworkInterfaceId=eni-ffda3197
&Attribute=sourceDestCheck
&AUTHPARAMS
Sample Response

```xml
  <requestId>5187642e-3f16-44a3-b05f-24c3848b5162</requestId>
  <return>true</return>
</ResetNetworkInterfaceAttributeResponse>
```
ResetSnapshotAttribute

Resets permission settings for the specified snapshot.
For more information on modifying snapshot permissions, see Sharing Snapshots in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

Attribute
The attribute to reset. Currently, only the attribute for permission to create volumes can be reset.
Type: String
Valid Values: productCodes | createVolumePermission
Required: Yes

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

SnapshotId
The ID of the snapshot.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example resets the permissions for snap-1234567890abcdef0, making it a private snapshot that can only be used by the account that created it.

Sample Request

https://ec2.amazonaws.com/?Action=ResetSnapshotAttribute
&SnapshotId=snap-1234567890abcdef0
&Attribute=createVolumePermission
&AUTHPARAMS

Sample Response

  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetSnapshotAttributeResponse>
RestoreAddressToClassic

Restores an Elastic IP address that was previously moved to the EC2-VPC platform back to the EC2-Classic platform. You cannot move an Elastic IP address that was originally allocated for use in EC2-VPC. The Elastic IP address must not be associated with an instance or network interface.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

PublicIp
The Elastic IP address.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

publicIp
The Elastic IP address.
Type: String

requestId
The ID of the request.
Type: String

status
The move status for the IP address.
Type: String
Valid Values: MoveInProgress | InVpc | InClassic

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example restores Elastic IP address 54.123.45.67 to the EC2-Classic platform.

Sample Request

https://ec2.amazonaws.com/?Action=RestoreAddressToClassic
&publicIp=54.123.45.67
&AUTHPARAMS
Sample Response

```xml
<RestoreAddressToClassicResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>f7de5e98-491a-4c19-a92d-908d6EXAMPLE</requestId>
  <publicIp>54.123.45.67</publicIp>
  <status>MoveInProgress</status>
</RestoreAddressToClassicResponse>
```
RevokeSecurityGroupEgress

[EC2-VPC only] Removes one or more egress rules from a security group for EC2-VPC. This action doesn't apply to security groups for use in EC2-Classic. The values that you specify in the revoke request (for example, ports) must match the existing rule's values for the rule to be revoked.

Each rule consists of the protocol and the CIDR range or source security group. For the TCP and UDP protocols, you must also specify the destination port or range of ports. For the ICMP protocol, you must also specify the ICMP type and code.

Rule changes are propagated to instances within the security group as quickly as possible. However, a small delay might occur.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

CidrIp
The CIDR IP address range. We recommend that you specify the CIDR range in a set of IP permissions instead.
Type: String
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

FromPort
The start of port range for the TCP and UDP protocols, or an ICMP type number. We recommend that you specify the port range in a set of IP permissions instead.
Type: Integer
Required: No

GroupId
The ID of the security group.
Type: String
Required: Yes

IpPermissions.N
A set of IP permissions. You can't specify a destination security group and a CIDR IP address range.
Type: array of IpPermission (p. 612) objects
Required: No

IpProtocol
The IP protocol name or number. We recommend that you specify the protocol in a set of IP permissions instead.
Type: String
Required: No

SourceSecurityGroupName
The name of a destination security group. To revoke outbound access to a destination security group, we recommend that you use a set of IP permissions instead.
Type: String
Required: No
Response Elements

The following elements are returned by the service.

**SourceSecurityGroupId**
- The AWS account number for a destination security group. To revoke outbound access to a destination security group, we recommend that you use a set of IP permissions instead.
  - Type: String
  - Required: No

**ToPort**
- The end of port range for the TCP and UDP protocols, or an ICMP type number. We recommend that you specify the port range in a set of IP permissions instead.
  - Type: Integer
  - Required: No

**Errors**

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

**Examples**

**Example 1**

This example revokes the access that the specified security group has to the 205.192.0.0/16 and 205.159.0.0/16 address ranges on TCP port 80.

**Sample Request**

```url
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=205.192.0.0/16
&IpPermissions.1.IpRanges.2.CidrIp=205.159.0.0/16
&AUTHPARAMS
```

**Example 2**

This example revokes the access that the specified security group has to the security group with the ID sg-9a8d7f5c on TCP port 1433.

**Sample Request**

```url
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
```

API Version 2016-09-15
&IpPermissions.1.FromPort=1433
&IpPermissions.1.ToPort=1433
&IpPermissions.1.Groups.1.GroupId=sg-9a8d7f5c
&AUTHPARAMS
RevokeSecurityGroupIngress

Removes one or more ingress rules from a security group. The values that you specify in the revoke request (for example, ports) must match the existing rule's values for the rule to be removed.

Each rule consists of the protocol and the CIDR range or source security group. For the TCP and UDP protocols, you must also specify the destination port or range of ports. For the ICMP protocol, you must also specify the ICMP type and code.

Rule changes are propagated to instances within the security group as quickly as possible. However, a small delay might occur.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

**CidrIp**

The CIDR IP address range. You can't specify this parameter when specifying a source security group.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

**FromPort**

The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, use -1 to specify all ICMP types.

Type: Integer

Required: No

**GroupId**

The ID of the security group. Required for a security group in a nondefault VPC.

Type: String

Required: No

**GroupName**

[EC2-Classic, default VPC] The name of the security group.

Type: String

Required: No

**IpPermissions.N**

A set of IP permissions. You can't specify a source security group and a CIDR IP address range.

Type: array of IpPermission (p. 612) objects

Required: No

**IpProtocol**

The IP protocol name (tcp, udp, icmp) or number (see Protocol Numbers). Use -1 to specify all.

Type: String

Required: No

**SourceSecurityGroupName**

[EC2-Classic, default VPC] The name of the source security group. You can't specify this parameter in combination with the following parameters: the CIDR IP address range, the start of the port range, the IP protocol, and the end of the port range. For EC2-VPC, the source security group must be in the same VPC. To revoke a specific rule for an IP protocol and port range, use a set of IP permissions instead.
Response Elements

The following elements are returned by the service.

requestId
- The ID of the request.
  - Type: String

return
- Is true if the request succeeds, and an error otherwise.
  - Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

This example revokes TCP port 80 access from the 205.192.0.0/16 address range for the security group named websrv. If the security group is for a VPC, specify the ID of the security group instead of the name.

Sample Request

https://ec2.amazonaws.com/?Action=RevokeSecurityGroupIngress
&GroupName=websrv
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=205.192.0.0/16
&AUTHPARAMS

Sample Response


SourceSecurityGroupId
- [EC2-Classic] The AWS account ID of the source security group, if the source security group is in a different account. You can't specify this parameter in combination with the following parameters: the CIDR IP address range, the IP protocol, the start of the port range, and the end of the port range. To revoke a specific rule for an IP protocol and port range, use a set of IP permissions instead.
  - Type: String
  - Required: No

ToPort
- The end of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, use -1 to specify all ICMP codes for the ICMP type.
  - Type: Integer
  - Required: No
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</RevokeSecurityGroupIngressResponse>
RunInstances

Launches the specified number of instances using an AMI for which you have permissions.
When you launch an instance, it enters the pending state. After the instance is ready for you, it enters the running state. To check the state of your instance, call DescribeInstances (p. 234).
To ensure faster instance launches, break up large requests into smaller batches. For example, create five separate launch requests for 100 instances each instead of one launch request for 500 instances.
To tag your instance, ensure that it is running as CreateTags (p. 116) requires a resource ID. For more information about tagging, see Tagging Your Amazon EC2 Resources.
If you don't specify a security group when launching an instance, Amazon EC2 uses the default security group. For more information, see Security Groups in the Amazon Elastic Compute Cloud User Guide.
[EC2-VPC only accounts] If you don't specify a subnet in the request, we choose a default subnet from your default VPC for you.
[EC2-Classic accounts] If you're launching into EC2-Classic and you don't specify an Availability Zone, we choose one for you.
Linux instances have access to the public key of the key pair at boot. You can use this key to provide secure access to the instance. Amazon EC2 public images use this feature to provide secure access without passwords. For more information, see Key Pairs in the Amazon Elastic Compute Cloud User Guide.
You can provide optional user data when launching an instance. For more information, see Instance Metadata in the Amazon Elastic Compute Cloud User Guide.
If any of the AMIs have a product code attached for which the user has not subscribed, RunInstances fails.
Some instance types can only be launched into a VPC. If you do not have a default VPC, or if you do not specify a subnet ID in the request, RunInstances fails. For more information, see Instance Types Available Only in a VPC.
For more information about troubleshooting, see What To Do If An Instance Immediately Terminates, and Troubleshooting Connecting to Your Instance in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AdditionalInfo
- Reserved.
- Type: String
- Required: No

BlockDeviceMapping.N
- The block device mapping.
  - Important
  - Supplying both a snapshot ID and an encryption value as arguments for block-device mapping results in an error. This is because only blank volumes can be encrypted on start, and these are not created from a snapshot. If a snapshot is the basis for the volume, it contains data by definition and its encryption status cannot be changed using this action.
  - Type: array of BlockDeviceMapping (p. 534) objects
  - Required: No

ClientToken
- Unique, case-sensitive identifier you provide to ensure the idempotency of the request. For more information, see Ensuring Idempotency.
- Constraints: Maximum 64 ASCII characters
DisableApiTermination
If you set this parameter to true, you can't terminate the instance using the Amazon EC2 console, CLI, or API; otherwise, you can. If you set this parameter to true and then later want to be able to terminate the instance, you must first change the value of the disableApiTermination attribute to false using ModifyInstanceAttribute (p. 423). Alternatively, if you set InstanceInitiatedShutdownBehavior to terminate, you can terminate the instance by running the shutdown command from the instance. Default: false
Type: Boolean
Required: No

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation. Type: Boolean
Required: No

EbsOptimized
Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS-optimized instance. Default: false
Type: Boolean
Required: No

IamInstanceProfile
The IAM instance profile. Type: IamInstanceProfileSpecification (p. 572) object
Required: No

ImageId
The ID of the AMI, which you can get by calling DescribeImages (p. 222). Type: String
Required: Yes

InstanceInitiatedShutdownBehavior
Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown). Default: stop
Type: String
Valid Values: stop | terminate
Required: No

InstanceType
The instance type. For more information, see Instance Types in the Amazon Elastic Compute Cloud User Guide. Default: m1.small
Type: String
Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large
| m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large |
m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge |
m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge |
Request Parameters

<table>
<thead>
<tr>
<th>Instance Types</th>
</tr>
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<tbody>
<tr>
<td>cr1.8xlarge</td>
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<td>r3.large</td>
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<td>hi1.4xlarge</td>
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<td>hs1.8xlarge</td>
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<tr>
<td>c1.medium</td>
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<tr>
<td>d2.xlarge</td>
</tr>
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</tr>
<tr>
<td>d2.4xlarge</td>
</tr>
<tr>
<td>d2.8xlarge</td>
</tr>
</tbody>
</table>

**KernelId**
The ID of the kernel.

**Important**
We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see PV-GRUB in the Amazon Elastic Compute Cloud User Guide.

Type: String
Required: No

**KeyName**
The name of the key pair. You can create a key pair using CreateKeyPair (p. 81) or ImportKeyPair (p. 408).

**Important**
If you do not specify a key pair, you can't connect to the instance unless you choose an AMI that is configured to allow users another way to log in.

Type: String
Required: No

**MaxCount**
The maximum number of instances to launch. If you specify more instances than Amazon EC2 can launch in the target Availability Zone, Amazon EC2 launches the largest possible number of instances above MinCount.

Constraints: Between 1 and the maximum number you’re allowed for the specified instance type.
For more information about the default limits, and how to request an increase, see How many instances can I run in Amazon EC2 in the Amazon EC2 FAQ.

Type: Integer
Required: Yes

**MinCount**
The minimum number of instances to launch. If you specify a minimum that is more instances than Amazon EC2 can launch in the target Availability Zone, Amazon EC2 launches no instances.
Constraints: Between 1 and the maximum number you’re allowed for the specified instance type.
For more information about the default limits, and how to request an increase, see How many instances can I run in Amazon EC2 in the Amazon EC2 General FAQ.

Type: Integer
Required: Yes

**Monitoring**
The monitoring for the instance.

Type: RunInstancesMonitoringEnabled (p. 671) object
Required: No

**NetworkInterface.N**
One or more network interfaces.

Type: array of InstanceNetworkInterfaceSpecification (p. 601) objects
Required: No

**Placement**
The placement for the instance.
Type: Placement (p. 636) object
Required: No

**PrivateIpAddress**
[EC2-VPC] The primary IP address. You must specify a value from the IP address range of the subnet.
Only one private IP address can be designated as primary. Therefore, you can’t specify this parameter if `PrivateIpAddresses.n.Primary` is set to `true` and `PrivateIpAddresses.n.PrivateIpAddress` is set to an IP address.
You cannot specify this option if you’re launching more than one instance in the request.
Default: We select an IP address from the IP address range of the subnet.
Type: String
Required: No

**RamdiskId**
The ID of the RAM disk.

**Important**
We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see PV-GRUB in the Amazon Elastic Compute Cloud User Guide.
Type: String
Required: No

**SecurityGroup.N**
[EC2-Classic, default VPC] One or more security group names. For a nondefault VPC, you must use security group IDs instead.
Default: Amazon EC2 uses the default security group.
Type: array of Strings
Required: No

**SecurityGroupId.N**
One or more security group IDs. You can create a security group using `CreateSecurityGroup` (p. 106).
Default: Amazon EC2 uses the default security group.
Type: array of Strings
Required: No

**SubnetId**
[EC2-VPC] The ID of the subnet to launch the instance into.
Type: String
Required: No

**UserData**
The user data to make available to the instance. For more information, see Running Commands on Your Linux Instance at Launch (Linux) and Adding User Data (Windows). If you are using an AWS SDK or command line tool, Base64-encoding is performed for you, and you can load the text from a file. Otherwise, you must provide Base64-encoded text.
Type: String
Required: No

---

**Response Elements**
The following elements are returned by the service.

**groupSet**
[EC2-Classic only] One or more security groups.
Type: array of `GroupIdentifier` (p. 563) objects
instancesSet
   One or more instances.
   Type: array of Instance (p. 587) objects

ownerId
   The ID of the AWS account that owns the reservation.
   Type: String

requesterId
   The ID of the requester that launched the instances on your behalf (for example, AWS Management Console or Auto Scaling).
   Type: String

requestId
   The ID of the request.
   Type: String

reservationId
   The ID of the reservation.
   Type: String

Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Examples

Example
This example launches three instances using the AMI with the ID ami-60a54009.

Sample Request

https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-60a54009
&MaxCount=3
&MinCount=1
&KeyName=my-key-pair
&Placement.AvailabilityZone=us-east-1d
&AUTHPARAMS

Example
This example launches an m1.small instance into a subnet. Because no network interface is specified, the default network interface is used.

Sample Request

https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-31814f58
&InstanceType=m1.small
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SubnetId=subnet-b2a249da
Example

This example launches an m1.large instance into a subnet. The network interface specifies a primary private IP address of 10.0.2.106 and two secondary private IP addresses (10.0.2.107 and 10.0.2.108).

Sample Request

https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-bеб0caec
&InstanceType=m1.large
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&NetworkInterface.1.DeviceIndex=0
&NetworkInterface.1.PrivateIpAddresses.1.Primary=true
&NetworkInterface.1.PrivateIpAddresses.1.PrivateIpAddress=10.0.2.106
&NetworkInterface.1.PrivateIpAddresses.2.Primary=false
&NetworkInterface.1.PrivateIpAddresses.2.PrivateIpAddress=10.0.2.107
&NetworkInterface.1.PrivateIpAddresses.3.Primary=false
&NetworkInterface.1.PrivateIpAddresses.3.PrivateIpAddress=10.0.2.108
&NetworkInterface.1.SubnetId=subnet-a61dafcf

Example

This example launches a Dedicated Instance into the specified subnet.

Sample Request

https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-2a1fec43
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SubnetId=subnet-dea63cb7
&Placement.Tenancy=dedicated

Example

This request launches an instance into a nondefault subnet, and requests a public IP address for a new network interface with the device index of 0.

Sample Request

https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&MaxCount=1
&MinCount=1
&NetworkInterface.1.DeviceIndex=0
&NetworkInterface.1.AssociatePublicIpAddress=true
&NetworkInterface.1.SubnetId=subnet-1a2b3c4d
Example
This request launches an `m1.large` instance with a block device mapping. There are two instance store volumes mapped to `/dev/sdc` and `/dev/sdd`, and a 100 GB EBS volume mapped to `/dev/sdf`.

Sample Request

```plaintext
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&InstanceType=m1.large
&BlockDeviceMapping.1.DeviceName=%2Fdev%2Fsdc
&BlockDeviceMapping.1.VirtualName=ephemeral0
&BlockDeviceMapping.2.DeviceName=%2Fdev%2Fsdd
&BlockDeviceMapping.2.VirtualName=ephemeral1
&BlockDeviceMapping.3.DeviceName=%2Fdev%2Fsdf
&BlockDeviceMapping.3.Ebs.DeleteOnTermination=false
&BlockDeviceMapping.3.Ebs.VolumeSize=100
&EbsOptimized=false
&MinCount=1
&MaxCount=1
&DisableApiTermination=false
&Monitoring.Enabled=false
&AUTHPARAMS
```
RunScheduledInstances

Launches the specified Scheduled Instances.

Before you can launch a Scheduled Instance, you must purchase it and obtain an identifier using PurchaseScheduledInstances (p. 455).

You must launch a Scheduled Instance during its scheduled time period. You can't stop or reboot a Scheduled Instance, but you can terminate it as needed. If you terminate a Scheduled Instance before the current scheduled time period ends, you can launch it again after a few minutes. For more information, see Scheduled Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

ClientToken

Unique, case-sensitive identifier that ensures the idempotency of the request. For more information, see Ensuring Idempotency.

Type: String
Required: No

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

InstanceCount

The number of instances.
Default: 1
Type: Integer
Required: No

LaunchSpecification

The launch specification. You must match the instance type, Availability Zone, network, and platform of the schedule that you purchased.

Type: ScheduledInstancesLaunchSpecification (p. 682) object
Required: Yes

ScheduledInstanceId

The Scheduled Instance ID.
Type: String
Required: Yes

Response Elements

The following elements are returned by the service.

instanceIdSet

The IDs of the newly launched instances.
Type: array of Strings

requestId

The ID of the request.
Type: String
Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
StartInstances

Starts an Amazon EBS-backed AMI that you've previously stopped. Instances that use Amazon EBS volumes as their root devices can be quickly stopped and started. When an instance is stopped, the compute resources are released and you are not billed for hourly instance usage. However, your root partition Amazon EBS volume remains, continues to persist your data, and you are charged for Amazon EBS volume usage. You can restart your instance at any time. Each time you transition an instance from stopped to started, Amazon EC2 charges a full instance hour, even if transitions happen multiple times within a single hour.
Before stopping an instance, make sure it is in a state from which it can be restarted. Stopping an instance does not preserve data stored in RAM. Performing this operation on an instance that uses an instance store as its root device returns an error. For more information, see Stopping Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

AdditionalInfo
  Reserved.
  Type: String
  Required: No

DryRun
  Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
  Type: Boolean
  Required: No

InstanceId.N
  One or more instance IDs.
  Type: array of Strings
  Required: Yes

Response Elements

The following elements are returned by the service.

instancesSet
  Information about one or more started instances.
  Type: array of InstanceStateChange (p. 605) objects

requestId
  The ID of the request.
  Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

This example starts the specified instance.

Sample Request

https://ec2.amazonaws.com/?Action=StartInstances
&InstanceId.1=i-1234567890abcdef0
&AUTHPARAMS

Sample Response

<StartInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-1234567890abcdef0</instanceId>
      <currentState>
        <code>0</code>
        <name>pending</name>
      </currentState>
      <previousState>
        <code>80</code>
        <name>stopped</name>
      </previousState>
    </item>
  </instancesSet>
</StartInstancesResponse>
StopInstances

Stops an Amazon EBS-backed instance.

We don’t charge hourly usage for a stopped instance, or data transfer fees; however, your root partition Amazon EBS volume remains, continues to persist your data, and you are charged for Amazon EBS volume usage. Each time you transition an instance from stopped to started, Amazon EC2 charges a full instance hour, even if transitions happen multiple times within a single hour.

You can’t start or stop Spot instances, and you can’t stop instance store-backed instances.

When you stop an instance, we shut it down. You can restart your instance at any time. Before stopping an instance, make sure it is in a state from which it can be restarted. Stopping an instance does not preserve data stored in RAM.

Stopping an instance is different to rebooting or terminating it. For example, when you stop an instance, the root device and any other devices attached to the instance persist. When you terminate an instance, the root device and any other devices attached during the instance launch are automatically deleted. For more information about the differences between rebooting, stopping, and terminating instances, see Instance Lifecycle in the Amazon Elastic Compute Cloud User Guide.

When you stop an instance, we attempt to shut it down forcibly after a short while. If your instance appears stuck in the stopping state after a period of time, there may be an issue with the underlying host computer. For more information, see Troubleshooting Stopping Your Instance in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean
Required: No

Force

Forces the instances to stop. The instances do not have an opportunity to flush file system caches or file system metadata. If you use this option, you must perform file system check and repair procedures. This option is not recommended for Windows instances.

Default: false
Type: Boolean
Required: No

InstanceId.N

One or more instance IDs.

Type: array of Strings
Required: Yes

Response Elements

The following elements are returned by the service.

instancesSet

Information about one or more stopped instances.

Type: array of InstanceStateChange (p. 605) objects

requestId

The id of the request.
Errors
For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example
This example stops the specified instance.

Sample Request

https://ec2.amazonaws.com/?Action=StopInstances
&InstanceId.1=i-1234567890abcdef0
&AUTHPARAMS

Sample Response

<StopInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-1234567890abcdef0</instanceId>
      <currentState>
        <code>64</code>
        <name>stopping</name>
      </currentState>
      <previousState>
        <code>16</code>
        <name>running</name>
      </previousState>
    </item>
  </instancesSet>
</StopInstancesResponse>
Terminates an instance.

**Terminates an instance**

Terminates an instance.

**Request Parameters**

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

- **DryRun**
  - Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
  - Type: Boolean
  - Required: No

- **InstanceId.N**
  - One or more instance IDs.
  - Constraints: Up to 1000 instance IDs. We recommend breaking up this request into smaller batches.
  - Type: array of Strings
  - Required: Yes

**Response Elements**

The following elements are returned by the service.

- **instancesSet**
  - Information about one or more terminated instances.
  - Type: array of InstanceStateChange (p. 605) objects

- **requestId**
  - The ID of the request.
  - Type: String

**Errors**

For information about the errors that are common to all actions, see Common Client Errors (p. 793).
Example

This example terminates the specified instance.

Sample Request

```
https://ec2.amazonaws.com/?Action=TerminateInstances
&InstanceId.1=i-1234567890abcdef0
&AUTHPARAMS
```

Sample Response

```
<TerminateInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-1234567890abcdef0</instanceId>
      <currentState>
        <code>32</code>
        <name>shutting-down</name>
      </currentState>
      <previousState>
        <code>16</code>
        <name>running</name>
      </previousState>
    </item>
  </instancesSet>
</TerminateInstancesResponse>
```
UnassignPrivateIpAddresses

Unassigns one or more secondary private IP addresses from a network interface.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

NetworkInterfaceId
The ID of the network interface.
Type: String
Required: Yes

PrivateIpAddress.N
The secondary private IP addresses to unassign from the network interface. You can specify this option multiple times to unassign more than one IP address.
Type: array of Strings
Required: Yes

Response Elements

The following elements are returned by the service.

requestId
The ID of the request.
Type: String

return
Is true if the request succeeds, and an error otherwise.
Type: Boolean

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

Example

The following example unassigns two secondary private IP addresses from the specified network interface.

Sample Request

https://ec2.amazonaws.com/?Action=UnassignPrivateIpAddresses
&NetworkInterfaceId=eni-197d9972
&PrivateIpAddress.1=10.0.2.60
&PrivateIpAddress.2=10.0.2.65
&AUTHPARAMS

Sample Response

  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
</UnassignPrivateIpAddresses>
<return>true</return>
</UnassignPrivateIpAddresses>
UnmonitorInstances

Disables detailed monitoring for a running instance. For more information, see Monitoring Your Instances and Volumes in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters (p. 773).

DryRun
Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.
Type: Boolean
Required: No

InstanceId.N
One or more instance IDs.
Type: array of Strings
Required: Yes

Response Elements

The following elements are returned by the service.

instancesSet
The monitoring information.
Type: array of InstanceMonitoring (p. 596) objects

requestId
The ID of the request.
Type: String

Errors

For information about the errors that are common to all actions, see Common Client Errors (p. 793).

Example

This example disables detailed monitoring for the specified instances.

Sample Request

https://ec2.amazonaws.com/?Action=UnmonitorInstances
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eb48d7
&AUTHPARAMS

Sample Response

<UnmonitorInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-09-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
</UnmonitorInstancesResponse>
<instancesSet>
  <item>
    <instanceId>i-1234567890abcdef0</instanceId>
    <monitoring>
      <state>disabled</state>
    </monitoring>
  </item>
  <item>
    <instanceId>i-0598c7d356eba48d7</instanceId>
    <monitoring>
      <state>disabled</state>
    </monitoring>
  </item>
</instancesSet>
</UnmonitorInstancesResponse>
Data Types

The Amazon Elastic Compute Cloud API contains several data types that various actions use. This section describes each data type in detail.

**Note**
The order of each element in a data type structure is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

- `AccountAttribute` (p. 524)
- `AccountAttributeValue` (p. 525)
- `ActiveInstance` (p. 526)
- `Address` (p. 527)
- `AttributeBooleanValue` (p. 528)
- `AttributeValue` (p. 529)
- `AvailabilityZone` (p. 530)
- `AvailabilityZoneMessage` (p. 531)
- `AvailableCapacity` (p. 532)
- `BlobAttributeValue` (p. 533)
- `BlockDeviceMapping` (p. 534)
- `BundleTask` (p. 535)
- `BundleTaskError` (p. 536)
- `CancelledSpotInstanceRequest` (p. 537)
- `CancelSpotFleetRequestsError` (p. 538)
- `CancelSpotFleetRequestsErrorItem` (p. 539)
- `CancelSpotFleetRequestsSuccessItem` (p. 540)
- `ClassicLinkDnsSupport` (p. 541)
- `ClassicLinkInstance` (p. 542)
- `ClientData` (p. 543)
- `ConversionTask` (p. 544)
- `CreateVolumePermission` (p. 545)
- `CreateVolumePermissionModifications` (p. 546)
- `CustomerGateway` (p. 547)
- `DhcpConfiguration` (p. 548)
- DhcpOptions (p. 549)
- DiskImage (p. 550)
- DiskImageDescription (p. 551)
- DiskImageDetail (p. 552)
- DiskImageVolumeDescription (p. 553)
- EbsBlockDevice (p. 554)
- EbsInstanceBlockDevice (p. 555)
- EbsInstanceBlockDeviceSpecification (p. 556)
- EventInformation (p. 557)
- ExportTask (p. 558)
- ExportToS3Task (p. 559)
- ExportToS3TaskSpecification (p. 560)
- Filter (p. 561)
- FlowLog (p. 562)
- GroupIdentifier (p. 563)
- HistoryRecord (p. 564)
- Host (p. 565)
- HostInstance (p. 566)
- HostOffering (p. 567)
- HostProperties (p. 568)
- HostReservation (p. 569)
- IamInstanceProfile (p. 571)
- IamInstanceProfileSpecification (p. 572)
- IcmpTypeCode (p. 573)
- IdFormat (p. 574)
- Image (p. 575)
- ImageDiskContainer (p. 578)
- ImportImageTask (p. 579)
- ImportInstanceLaunchSpecification (p. 581)
- ImportInstanceTaskDetails (p. 583)
- ImportInstanceVolumeDetailItem (p. 584)
- ImportSnapshotTask (p. 585)
- ImportVolumeTaskDetails (p. 586)
- Instance (p. 587)
- InstanceBlockDeviceMapping (p. 591)
- InstanceBlockDeviceMappingSpecification (p. 592)
- InstanceCapacity (p. 593)
- InstanceCount (p. 594)
- InstanceExportDetails (p. 595)
- InstanceMonitoring (p. 596)
- InstanceNetworkInterface (p. 597)
- InstanceNetworkInterfaceAssociation (p. 599)
- InstanceNetworkInterfaceAttachment (p. 600)
- InstanceNetworkInterfaceSpecification (p. 601)
- InstancePrivatelpAddress (p. 603)
- InstanceState (p. 604)
• ReservationValue (p. 655)
• ReservedInstanceLimitPrice (p. 656)
• ReservedInstanceReservationValue (p. 657)
• ReservedInstances (p. 658)
• ReservedInstancesConfiguration (p. 660)
• ReservedInstancesId (p. 661)
• ReservedInstancesListing (p. 662)
• ReservedInstancesModification (p. 663)
• ReservedInstancesModificationResult (p. 664)
• ReservedInstancesOffering (p. 665)
• Route (p. 667)
• RouteTable (p. 669)
• RouteTableAssociation (p. 670)
• RunInstancesMonitoringEnabled (p. 671)
• S3Storage (p. 672)
• ScheduledInstance (p. 673)
• ScheduledInstanceAvailability (p. 675)
• ScheduledInstanceRecurrence (p. 677)
• ScheduledInstanceRecurrenceRequest (p. 678)
• ScheduledInstancesBlockDeviceMapping (p. 679)
• ScheduledInstancesEbs (p. 680)
• ScheduledInstancesIamInstanceProfile (p. 681)
• ScheduledInstancesLaunchSpecification (p. 682)
• ScheduledInstancesMonitoring (p. 684)
• ScheduledInstancesNetworkInterface (p. 685)
• ScheduledInstancesPlacement (p. 687)
• ScheduledInstancesPrivateIpAddressConfig (p. 688)
• SecurityGroup (p. 689)
• SecurityGroupReference (p. 690)
• SlotDateTimeRangeRequest (p. 691)
• SlotStartTimeRangeRequest (p. 692)
• Snapshot (p. 693)
• SnapshotDetail (p. 695)
• SnapshotDiskContainer (p. 696)
• SnapshotTaskDetail (p. 697)
• SpotDatafeedSubscription (p. 698)
• SpotFleetLaunchSpecification (p. 699)
• SpotFleetMonitoring (p. 702)
• SpotFleetRequestConfig (p. 703)
• SpotFleetRequestConfigData (p. 704)
• SpotInstanceRequest (p. 706)
• SpotInstanceStateFault (p. 708)
• SpotInstanceStatus (p. 709)
• SpotPlacement (p. 710)
• SpotPrice (p. 711)
• StaleIpPermission (p. 712)
• StaleSecurityGroup (p. 713)
• StateReason (p. 714)
• Storage (p. 715)
• Subnet (p. 716)
• Tag (p. 717)
• TagDescription (p. 718)
• TargetConfiguration (p. 719)
• TargetConfigurationRequest (p. 720)
• TargetReservationValue (p. 721)
• UnsuccessfulItem (p. 722)
• UnsuccessfulItemError (p. 723)
• UserBucket (p. 724)
• UserBucketDetails (p. 725)
• UserData (p. 726)
• UserIdGroupPair (p. 727)
• VgwTelemetry (p. 728)
• Volume (p. 729)
• VolumeAttachment (p. 731)
• VolumeDetail (p. 732)
• VolumeStatusAction (p. 733)
• VolumeStatusDetails (p. 734)
• VolumeStatusEvent (p. 735)
• VolumeStatusInfo (p. 736)
• VolumeStatusItem (p. 737)
• Vpc (p. 738)
• VpcAttachment (p. 739)
• VpcClassicLink (p. 740)
• VpcEndpoint (p. 741)
• VpcPeeringConnection (p. 742)
• VpcPeeringConnectionOptionsDescription (p. 743)
• VpcPeeringConnectionStateReason (p. 744)
• VpcPeeringConnectionVpcInfo (p. 745)
• VpnConnection (p. 746)
• VpnConnectionOptions (p. 748)
• VpnConnectionOptionsSpecification (p. 749)
• VpnGateway (p. 750)
• VpnStaticRoute (p. 751)
AccountAttribute

Describes an account attribute.

Contents

attributeName
The name of the account attribute.
Type: String
Required: No

attributeValueSet
One or more values for the account attribute.
Type: array of AccountAttributeValue (p. 525) objects
Required: No
AccountAttributeValue

Describes a value of an account attribute.

Contents

attributeValue

The value of the attribute.
Type: String
Required: No
ActiveInstance
Describes a running instance in a Spot fleet.

Contents

instanceId
The ID of the instance.
Type: String
Required: No

instanceType
The instance type.
Type: String
Required: No

spotInstanceRequestId
The ID of the Spot instance request.
Type: String
Required: No
Address

Describes an Elastic IP address.

Contents

allocationId
  The ID representing the allocation of the address for use with EC2-VPC.
  Type: String
  Required: No

associationId
  The ID representing the association of the address with an instance in a VPC.
  Type: String
  Required: No

domain
  Indicates whether this Elastic IP address is for use with instances in EC2-Classic (standard) or instances in a VPC (vpc).
  Type: String
  Valid Values: vpc | standard
  Required: No

instanceId
  The ID of the instance that the address is associated with (if any).
  Type: String
  Required: No

networkInterfaceId
  The ID of the network interface.
  Type: String
  Required: No

networkInterfaceOwnerId
  The ID of the AWS account that owns the network interface.
  Type: String
  Required: No

privateIpAddress
  The private IP address associated with the Elastic IP address.
  Type: String
  Required: No

publicIp
  The Elastic IP address.
  Type: String
  Required: No
AttributeBooleanValue

Describes a value for a resource attribute that is a Boolean value.

Contents

Value (request), value (response)
The attribute value. The valid values are true or false.
Type: Boolean
Required: No
AttributeValue

Describes a value for a resource attribute that is a String.

Contents

Value (request), value (response)

The attribute value. Note that the value is case-sensitive.
Type: String
Required: No
AvailabilityZone
Describes an Availability Zone.

Contents

messageSet
Any messages about the Availability Zone.
Type: array of AvailabilityZoneMessage (p. 531) objects
Required: No

regionName
The name of the region.
Type: String
Required: No

zoneName
The name of the Availability Zone.
Type: String
Required: No

zoneState
The state of the Availability Zone.
Type: String
Valid Values: available | information | impaired | unavailable
Required: No
AvailabilityZoneMessage

Describes a message about an Availability Zone.

Contents

message

The message about the Availability Zone.
Type: String
Required: No
AvailableCapacity

The capacity information for instances launched onto the Dedicated Host.

Contents

availableInstanceCapacity

The total number of instances that the Dedicated Host supports.
Type: array of InstanceCapacity (p. 593) objects
Required: No

availableVCpus

The number of vCPUs available on the Dedicated Host.
Type: Integer
Required: No
BlobAttributeValue

Describes Base64-encoded binary data.

Contents

Value

The value of the data.
Type: Base64-encoded binary data
Required: No
BlockDeviceMapping

Describes a block device mapping.

Contents

DeviceName (request), deviceName (response)
The device name exposed to the instance (for example, /dev/sdh or xvdh).
Type: String
Required: No

Ebs (request), ebs (response)
Parameters used to automatically set up EBS volumes when the instance is launched.
Type: EbsBlockDevice (p. 554) object
Required: No

NoDevice (request), noDevice (response)
Suppresses the specified device included in the block device mapping of the AMI.
Type: String
Required: No

VirtualName (request), virtualName (response)
The virtual device name (ephemeralN). Instance store volumes are numbered starting from 0. An instance type with 2 available instance store volumes can specify mappings for ephemeral0 and ephemeral1. The number of available instance store volumes depends on the instance type. After you connect to the instance, you must mount the volume.
Constraints: For M3 instances, you must specify instance store volumes in the block device mapping for the instance. When you launch an M3 instance, we ignore any instance store volumes specified in the block device mapping for the AMI.
Type: String
Required: No
BundleTask

Describes a bundle task.

Contents

**bundleId**
- The ID of the bundle task.
- Type: String
- Required: No

**error**
- If the task fails, a description of the error.
- Type: BundleTaskError (p. 536) object
- Required: No

**instanceId**
- The ID of the instance associated with this bundle task.
- Type: String
- Required: No

**progress**
- The level of task completion, as a percent (for example, 20%).
- Type: String
- Required: No

**startTime**
- The time this task started.
- Type: Timestamp
- Required: No

**state**
- The state of the task.
- Type: String
- Valid Values: pending | waiting-for-shutdown | bundling | storing | cancelling | complete | failed
- Required: No

**storage**
- The Amazon S3 storage locations.
- Type: Storage (p. 715) object
- Required: No

**updateTime**
- The time of the most recent update for the task.
- Type: Timestamp
- Required: No
BundleTaskError

Describes an error for BundleInstance (p. 47).

Contents

code
The error code.
Type: String
Required: No

message
The error message.
Type: String
Required: No
CancelledSpotInstanceRequest

Describes a request to cancel a Spot instance.

Contents

spotInstanceId
The ID of the Spot instance request.
Type: String
Required: No

state
The state of the Spot instance request.
Type: String
Valid Values: active | open | closed | cancelled | completed
Required: No
CancelSpotFleetRequestsError

Describes a Spot fleet error.

Contents

code

The error code.
Type: String
Valid Values: fleetRequestIdDoesNotExist | fleetRequestIdMalformed | fleetRequestNotInCancellableState | unexpectedError
Required: Yes

message

The description for the error code.
Type: String
Required: Yes
CancelSpotFleetRequestsErrorItem

Describes a Spot fleet request that was not successfully canceled.

Contents

- **error**
  - The error.
  - Type: CancelSpotFleetRequestsError (p. 538) object
  - Required: Yes

- **spotFleetRequestId**
  - The ID of the Spot fleet request.
  - Type: String
  - Required: Yes
CancelSpotFleetRequestsSuccessItem

Describes a Spot fleet request that was successfully canceled.

Contents

**currentSpotFleetRequestState**

The current state of the Spot fleet request.

Type: String

Valid Values: submitted | active | cancelled | failed | cancelled_running | cancelled_terminating | modifying

Required: Yes

**previousSpotFleetRequestState**

The previous state of the Spot fleet request.

Type: String

Valid Values: submitted | active | cancelled | failed | cancelled_running | cancelled_terminating | modifying

Required: Yes

**spotFleetRequestId**

The ID of the Spot fleet request.

Type: String

Required: Yes
ClassicLinkDnsSupport

Describes the ClassicLink DNS support status of a VPC.

Contents

classicLinkDnsSupported

Indicates whether ClassicLink DNS support is enabled for the VPC.
Type: Boolean
Required: No

vpcId

The ID of the VPC.
Type: String
Required: No
ClassicLinkInstance
Describes a linked EC2-Classic instance.

Contents

groupSet
A list of security groups.
Type: array of GroupIdentifier (p. 563) objects
Required: No

instanceId
The ID of the instance.
Type: String
Required: No

tagSet
Any tags assigned to the instance.
Type: array of Tag (p. 717) objects
Required: No

vpcId
The ID of the VPC.
Type: String
Required: No
**ClientData**

Describes the client-specific data.

**Contents**

**Comment**
A user-defined comment about the disk upload.
Type: String
Required: No

**UploadEnd**
The time that the disk upload ends.
Type: Timestamp
Required: No

**UploadSize**
The size of the uploaded disk image, in GiB.
Type: Double
Required: No

**UploadStart**
The time that the disk upload starts.
Type: Timestamp
Required: No
ConversionTask

Describes a conversion task.

Contents

conversionTaskId
The ID of the conversion task.
Type: String
Required: Yes

expirationTime
The time when the task expires. If the upload isn't complete before the expiration time, we automatically cancel the task.
Type: String
Required: No

importInstance
If the task is for importing an instance, this contains information about the import instance task.
Type: ImportInstanceTaskDetails (p. 583) object
Required: No

importVolume
If the task is for importing a volume, this contains information about the import volume task.
Type: ImportVolumeTaskDetails (p. 586) object
Required: No

state
The state of the conversion task.
Type: String
Valid Values: active | cancelling | cancelled | completed
Required: Yes

statusMessage
The status message related to the conversion task.
Type: String
Required: No

tagSet
Any tags assigned to the task.
Type: array of Tag (p. 717) objects
Required: No
CreateVolumePermission

Describes the user or group to be added or removed from the permissions for a volume.

Contents

**Group (request), group (response)**
- The specific group that is to be added or removed from a volume's list of create volume permissions.
- Type: String
- Valid Values: all
- Required: No

**UserId (request), userId (response)**
- The specific AWS account ID that is to be added or removed from a volume's list of create volume permissions.
- Type: String
- Required: No
CreateVolumePermissionModifications

Describes modifications to the permissions for a volume.

Contents

Add

Adds a specific AWS account ID or group to a volume's list of create volume permissions.
Type: array of CreateVolumePermission (p. 545) objects
Required: No

Remove

Removes a specific AWS account ID or group from a volume's list of create volume permissions.
Type: array of CreateVolumePermission (p. 545) objects
Required: No
CustomerGateway

Describes a customer gateway.

Contents

bgpAsn
The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).
Type: String
Required: No

customerGatewayId
The ID of the customer gateway.
Type: String
Required: No

ipAddress
The Internet-routable IP address of the customer gateway's outside interface.
Type: String
Required: No

state
The current state of the customer gateway (pending | available | deleting | deleted).
Type: String
Required: No

tagSet
Any tags assigned to the customer gateway.
Type: array of Tag (p. 717) objects
Required: No

type
The type of VPN connection the customer gateway supports (ipsec.1).
Type: String
Required: No
DhcpConfiguration

Describes a DHCP configuration option.

Contents

key
  The name of a DHCP option.
  Type: String
  Required: No

valueSet
  One or more values for the DHCP option.
  Type: array of AttributeValue (p. 529) objects
  Required: No
DhcpOptions

Describes a set of DHCP options.

Contents

- **dhcpConfigurationSet**
  
  One or more DHCP options in the set.
  
  Type: array of DhcpConfiguration objects
  
  Required: No

- **dhcpOptionsId**
  
  The ID of the set of DHCP options.
  
  Type: String
  
  Required: No

- **tagSet**
  
  Any tags assigned to the DHCP options set.
  
  Type: array of Tag objects
  
  Required: No
DiskImage

Describes a disk image.

Contents

Description
A description of the disk image.
Type: String
Required: No

Image
Information about the disk image.
Type: DiskImageDetail (p. 552) object
Required: No

Volume
Information about the volume.
Type: VolumeDetail (p. 732) object
Required: No
DiskImageDescription

Describes a disk image.

Contents

checksum

The checksum computed for the disk image.
Type: String
Required: No

format

The disk image format.
Type: String
Valid Values: VMDK | RAW | VHD
Required: Yes

importManifestUrl

A presigned URL for the import manifest stored in Amazon S3. For information about creating a presigned URL for an Amazon S3 object, read the "Query String Request Authentication Alternative" section of the Authenticating REST Requests topic in the Amazon Simple Storage Service Developer Guide.

For information about the import manifest referenced by this API action, see VM Import Manifest.
Type: String
Required: Yes

size

The size of the disk image, in GiB.
Type: Long
Required: Yes
DiskImageDetail

Describes a disk image.

Contents

Bytes
The size of the disk image, in GiB.
Type: Long
Required: Yes

Format
The disk image format.
Type: String
Valid Values: VMDK | RAW | VHD
Required: Yes

ImportManifestUrl
A presigned URL for the import manifest stored in Amazon S3 and presented here as an Amazon S3 presigned URL. For information about creating a presigned URL for an Amazon S3 object, read the "Query String Request Authentication Alternative" section of the Authenticating REST Requests topic in the Amazon Simple Storage Service Developer Guide.
For information about the import manifest referenced by this API action, see VM Import Manifest.
Type: String
Required: Yes
DiskImageVolumeDescription

Describes a disk image volume.

Contents

id
The volume identifier.
Type: String
Required: Yes

size
The size of the volume, in GiB.
Type: Long
Required: No
EbsBlockDevice

Describes a block device for an EBS volume.

Contents

DeleteOnTermination (request), deleteOnTermination (response)
Indicates whether the EBS volume is deleted on instance termination.
Type: Boolean
Required: No

Encrypted (request), encrypted (response)
Indicates whether the EBS volume is encrypted. Encrypted Amazon EBS volumes may only be attached to instances that support Amazon EBS encryption.
Type: Boolean
Required: No

Iops (request), iops (response)
The number of I/O operations per second (IOPS) that the volume supports. For io1, this represents the number of IOPS that are provisioned for the volume. For gp2, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting. For more information about General Purpose SSD baseline performance, I/O credits, and bursting, see Amazon EBS Volume Types in the Amazon Elastic Compute Cloud User Guide.
Constraint: Range is 100-20000 IOPS for io1 volumes and 100-10000 IOPS for gp2 volumes.
Condition: This parameter is required for requests to create io1 volumes; it is not used in requests to create gp2, st1, scl, or standard volumes.
Type: Integer
Required: No

SnapshotId (request), snapshotId (response)
The ID of the snapshot.
Type: String
Required: No

VolumeSize (request), volumeSize (response)
The size of the volume, in GiB.
Constraints: 1-16384 for General Purpose SSD (gp2), 4-16384 for Provisioned IOPS SSD (io1), 500-16384 for Throughput Optimized HDD (st1), 500-16384 for Cold HDD (scl), and 1-1024 for Magnetic (standard) volumes. If you specify a snapshot, the volume size must be equal to or larger than the snapshot size.
Default: If you’re creating the volume from a snapshot and don’t specify a volume size, the default is the snapshot size.
Type: Integer
Required: No

VolumeType (request), volumeType (response)
The volume type: gp2, io1, st1, scl, or standard.
Default: standard
Type: String
Valid Values: standard | io1 | gp2 | scl | st1
Required: No
EbsInstanceBlockDevice

Describes a parameter used to set up an EBS volume in a block device mapping.

Contents

attachTime
The time stamp when the attachment initiated.
Type: Timestamp
Required: No

deleteOnTermination
Indicates whether the volume is deleted on instance termination.
Type: Boolean
Required: No

status
The attachment state.
Type: String
Valid Values: attaching | attached | detaching | detached
Required: No

volumeId
The ID of the EBS volume.
Type: String
Required: No
EbsInstanceBlockDeviceSpecification

Describes information used to set up an EBS volume specified in a block device mapping.

Contents

DeleteOnTermination
Indicates whether the volume is deleted on instance termination.
Type: Boolean
Required: No

VolumeId
The ID of the EBS volume.
Type: String
Required: No
EventInformation

Describes a Spot fleet event.

Contents

eventDescription
The description of the event.
Type: String
Required: No

eventSubType
The event.
The following are the error events.
• iamFleetRoleInvalid - The Spot fleet did not have the required permissions either to launch or terminate an instance.
• launchSpecTemporarilyBlacklisted - The configuration is not valid and several attempts to launch instances have failed. For more information, see the description of the event.
• spotFleetRequestConfigurationInvalid - The configuration is not valid. For more information, see the description of the event.
• spotInstanceCountLimitExceeded - You've reached the limit on the number of Spot instances that you can launch.
The following are the fleetRequestChange events.
• active - The Spot fleet has been validated and Amazon EC2 is attempting to maintain the target number of running Spot instances.
• cancelled - The Spot fleet is canceled and has no running Spot instances. The Spot fleet will be deleted two days after its instances were terminated.
• cancelled_running - The Spot fleet is canceled and will not launch additional Spot instances, but its existing Spot instances continue to run until they are interrupted or terminated.
• cancelled_terminating - The Spot fleet is canceled and its Spot instances are terminating.
• expired - The Spot fleet request has expired. A subsequent event indicates that the instances were terminated, if the request was created with TerminateInstancesWithExpiration set.
• modify_in_progress - A request to modify the Spot fleet request was accepted and is in progress.
• modify_successful - The Spot fleet request was modified.
• price_update - The bid price for a launch configuration was adjusted because it was too high. This change is permanent.
• submitted - The Spot fleet request is being evaluated and Amazon EC2 is preparing to launch the target number of Spot instances.
The following are the instanceChange events.
• launched - A bid was fulfilled and a new instance was launched.
• terminated - An instance was terminated by the user.
Type: String
Required: No

instanceId
The ID of the instance. This information is available only for instanceChange events.
Type: String
Required: No
ExportTask

Describes an instance export task.

Contents

description
A description of the resource being exported.
Type: String
Required: No

exportTaskId
The ID of the export task.
Type: String
Required: No

exportToS3
Information about the export task.
Type: ExportToS3Task (p. 559) object
Required: No

instanceExport
Information about the instance to export.
Type: InstanceExportDetails (p. 595) object
Required: No

state
The state of the export task.
Type: String
Valid Values: active | cancelling | cancelled | completed
Required: No

statusMessage
The status message related to the export task.
Type: String
Required: No
ExportToS3Task

Describes the format and location for an instance export task.

Contents

**containerFormat**
- The container format used to combine disk images with metadata (such as OVF). If absent, only the disk image is exported.
- Type: String
- Valid Values: ova
- Required: No

**diskImageFormat**
- The format for the exported image.
- Type: String
- Valid Values: VMDK | RAW | VHD
- Required: No

**s3Bucket**
- The S3 bucket for the destination image. The destination bucket must exist and grant WRITE and READ_ACP permissions to the AWS account vm-import-export@amazon.com.
- Type: String
- Required: No

**s3Key**
- The encryption key for your S3 bucket.
- Type: String
- Required: No
ExportToS3TaskSpecification

Describes an instance export task.

Contents

**ContainerFormat**
The container format used to combine disk images with metadata (such as OVF). If absent, only the disk image is exported.
Type: String
Valid Values: **ova**
Required: No

**DiskImageFormat**
The format for the exported image.
Type: String
Valid Values: **VMDK | RAW | VHD**
Required: No

**S3Bucket**
The S3 bucket for the destination image. The destination bucket must exist and grant WRITE and READ_ACP permissions to the AWS account `vm-import-export@amazon.com`.
Type: String
Required: No

**S3Prefix**
The image is written to a single object in the S3 bucket at the S3 key `s3prefix + exportTaskId + '.' + diskImageFormat`.
Type: String
Required: No
Filter

A filter name and value pair that is used to return a more specific list of results. Filters can be used to match a set of resources by various criteria, such as tags, attributes, or IDs.

Contents

Name
The name of the filter. Filter names are case-sensitive.
Type: String
Required: No

Values
One or more filter values. Filter values are case-sensitive.
Type: array of Strings
Required: No
FlowLog

Describes a flow log.

Contents

creationTime
The date and time the flow log was created.
Type: Timestamp
Required: No

deliverLogsErrorMessage
Information about the error that occurred. Rate limited indicates that CloudWatch logs throttling has been applied for one or more network interfaces, or that you’ve reached the limit on the number of CloudWatch Logs log groups that you can create. Access error indicates that the IAM role associated with the flow log does not have sufficient permissions to publish to CloudWatch Logs. Unknown error indicates an internal error.
Type: String
Required: No

deliverLogsPermissionArn
The ARN of the IAM role that posts logs to CloudWatch Logs.
Type: String
Required: No

deliverLogsStatus
The status of the logs delivery (SUCCESS | FAILED).
Type: String
Required: No

flowLogId
The flow log ID.
Type: String
Required: No

flowLogStatus
The status of the flow log (ACTIVE).
Type: String
Required: No

logGroupName
The name of the flow log group.
Type: String
Required: No

resourceId
The ID of the resource on which the flow log was created.
Type: String
Required: No

trafficType
The type of traffic captured for the flow log.
Type: String
Valid Values: ACCEPT | REJECT | ALL
Required: No
GroupIdentifier

Describes a security group.

Contents

**GroupId (request), groupId (response)**
- The ID of the security group.
- Type: String
- Required: No

**GroupName (request), groupName (response)**
- The name of the security group.
- Type: String
- Required: No
HistoryRecord

Describes an event in the history of the Spot fleet request.

Contents

eventInformation
Information about the event.
Type: EventInformation (p. 557) object
Required: Yes

eventType
The event type.
- error - Indicates an error with the Spot fleet request.
- fleetRequestChange - Indicates a change in the status or configuration of the Spot fleet request.
- instanceChange - Indicates that an instance was launched or terminated.
Type: String
Valid Values: instanceChange | fleetRequestChange | error
Required: Yes

timestamp
The date and time of the event, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ).
Type: Timestamp
Required: Yes
Host

Describes the properties of the Dedicated Host.

Contents

**autoPlacement**
Whether auto-placement is on or off.
Type: String
Valid Values: on | off
Required: No

**availabilityZone**
The Availability Zone of the Dedicated Host.
Type: String
Required: No

**availableCapacity**
The number of new instances that can be launched onto the Dedicated Host.
Type: `AvailableCapacity (p. 532)` object
Required: No

**clientToken**
Unique, case-sensitive identifier you provide to ensure idempotency of the request. For more information, see How to Ensure Idempotency in the Amazon Elastic Compute Cloud User Guide.
Type: String
Required: No

**hostId**
The ID of the Dedicated Host.
Type: String
Required: No

**hostProperties**
The hardware specifications of the Dedicated Host.
Type: `HostProperties (p. 568)` object
Required: No

**hostReservationId**
The reservation ID of the Dedicated Host. This returns a null response if the Dedicated Host doesn't have an associated reservation.
Type: String
Required: No

**instances**
The IDs and instance type that are currently running on the Dedicated Host.
Type: array of `HostInstance (p. 566)` objects
Required: No

**state**
The Dedicated Host's state.
Type: String
Valid Values: available | under-assessment | permanent-failure | released | released-permanent-failure
Required: No
HostInstance

Describes an instance running on a Dedicated Host.

Contents

**instanceId**

the IDs of instances that are running on the Dedicated Host.
Type: String
Required: No

**instanceType**

The instance type size (for example, m3.medium) of the running instance.
Type: String
Required: No
HostOffering
Details about the Dedicated Host Reservation offering.

Contents

currencyCode
The currency of the offering.
Type: String
Valid Values: USD
Required: No
duration
The duration of the offering (in seconds).
Type: Integer
Required: No
hourlyPrice
The hourly price of the offering.
Type: String
Required: No
instanceFamily
The instance family of the offering.
Type: String
Required: No
offeringId
The ID of the offering.
Type: String
Required: No
paymentOption
The available payment option.
Type: String
Valid Values: AllUpfront | PartialUpfront | NoUpfront
Required: No
upfrontPrice
The upfront price of the offering. Does not apply to No Upfront offerings.
Type: String
Required: No
HostProperties
Describes properties of a Dedicated Host.

Contents

cores
The number of cores on the Dedicated Host.
Type: Integer
Required: No

instanceType
The instance type size that the Dedicated Host supports (for example, m3.medium).
Type: String
Required: No

sockets
The number of sockets on the Dedicated Host.
Type: Integer
Required: No

totalVCpus
The number of vCPUs on the Dedicated Host.
Type: Integer
Required: No
HostReservation

Details about the Dedicated Host Reservation and associated Dedicated Hosts.

Contents

count
The number of Dedicated Hosts the reservation is associated with.
Type: Integer
Required: No

currencyCode
The currency in which the upfrontPrice and hourlyPrice amounts are specified. At this time, the only supported currency is USD.
Type: String
Valid Values: USD
Required: No

duration
The length of the reservation's term, specified in seconds. Can be 31536000 (1 year) | 94608000 (3 years).
Type: Integer
Required: No

date
The date and time that the reservation ends.
Type: Timestamp
Required: No

hostIdSet
The IDs of the Dedicated Hosts associated with the reservation.
Type: array of Strings
Required: No

hostReservationId
The ID of the reservation that specifies the associated Dedicated Hosts.
Type: String
Required: No

hourlyPrice
The hourly price of the reservation.
Type: String
Required: No

instanceFamily
The instance family of the Dedicated Host Reservation. The instance family on the Dedicated Host must be the same in order for it to benefit from the reservation.
Type: String
Required: No

offeringId
The ID of the reservation. This remains the same regardless of which Dedicated Hosts are associated with it.
Type: String
Required: No

paymentOption
The payment option selected for this reservation.
Type: String
Valid Values: AllUpfront | PartialUpfront | NoUpfront
Required: No

start
The date and time that the reservation started.
Type: Timestamp
Required: No

state
The state of the reservation.
Type: String
Valid Values: payment-pending | payment-failed | active | retired
Required: No

upfrontPrice
The upfront price of the reservation.
Type: String
Required: No
iamInstanceProfile

Describes an IAM instance profile.

Contents

arn
The Amazon Resource Name (ARN) of the instance profile.
Type: String
Required: No

id
The ID of the instance profile.
Type: String
Required: No
IamInstanceProfileSpecification

Describes an IAM instance profile.

Contents

Arn (request), arn (response)
The Amazon Resource Name (ARN) of the instance profile.
Type: String
Required: No

Name (request), name (response)
The name of the instance profile.
Type: String
Required: No
IcmpTypeCode

Describes the ICMP type and code.

Contents

**Code** (request), **code** (response)
The ICMP type. A value of -1 means all types.
Type: Integer
Required: No

**Type** (request), **type** (response)
The ICMP code. A value of -1 means all codes for the specified ICMP type.
Type: Integer
Required: No
IdFormat

Describes the ID format for a resource.

Contents

deadline
The date in UTC at which you are permanently switched over to using longer IDs. If a deadline is not yet available for this resource type, this field is not returned.
Type: Timestamp
Required: No

resource
The type of resource.
Type: String
Required: No

useLongIds
Indicates whether longer IDs (17-character IDs) are enabled for the resource.
Type: Boolean
Required: No
Image

Describes an image.

Contents

architecture
The architecture of the image.
Type: String
Valid Values: i386 | x86_64
Required: No

blockDeviceMapping
Any block device mapping entries.
Type: array of BlockDeviceMapping (p. 534) objects
Required: No

creationDate
The date and time the image was created.
Type: String
Required: No

description
The description of the AMI that was provided during image creation.
Type: String
Required: No

enaSupport
Specifies whether enhanced networking with ENA is enabled.
Type: Boolean
Required: No

hypervisor
The hypervisor type of the image.
Type: String
Valid Values: ovf | xen
Required: No

imageId
The ID of the AMI.
Type: String
Required: No

imageLocation
The location of the AMI.
Type: String
Required: No

imageOwnerAlias
The AWS account alias (for example, amazon, self) or the AWS account ID of the AMI owner.
Type: String
Required: No

imageOwnerId
The AWS account ID of the image owner.
Type: String
Required: No
imageState
The current state of the AMI. If the state is available, the image is successfully registered and can be used to launch an instance.
Type: String
Valid Values: pending | available | invalid | deregistered | transient | failed | error
Required: No

imageType
The type of image.
Type: String
Valid Values: machine | kernel | ramdisk
Required: No

isPublic
Indicates whether the image has public launch permissions. The value is true if this image has public launch permissions or false if it has only implicit and explicit launch permissions.
Type: Boolean
Required: No

kernelId
The kernel associated with the image, if any. Only applicable for machine images.
Type: String
Required: No

name
The name of the AMI that was provided during image creation.
Type: String
Required: No

platform
The value is Windows for Windows AMIs; otherwise blank.
Type: String
Valid Values: Windows
Required: No

productCodes
Any product codes associated with the AMI.
Type: array of ProductCode (p. 645) objects
Required: No

ramdiskId
The RAM disk associated with the image, if any. Only applicable for machine images.
Type: String
Required: No

rootDeviceName
The device name of the root device (for example, /dev/sda1 or /dev/xvda).
Type: String
Required: No

rootDeviceType
The type of root device used by the AMI. The AMI can use an EBS volume or an instance store volume.
Type: String
Valid Values: ebs | instance-store
Required: No

sriovNetSupport
Specifies whether enhanced networking with the Intel 82599 Virtual Function interface is enabled.
Type: String
Required: No

**stateReason**
The reason for the state change.
Type: StateReason \(\text{(p. 714)}\) object
Required: No

**tagSet**
Any tags assigned to the image.
Type: array of Tag \(\text{(p. 717)}\) objects
Required: No

**virtualizationType**
The type of virtualization of the AMI.
Type: String
Valid Values: hvm | paravirtual
Required: No
ImageDiskContainer

Describes the disk container object for an import image task.

Contents

Description
The description of the disk image.
Type: String
Required: No

DeviceName
The block device mapping for the disk.
Type: String
Required: No

Format
The format of the disk image being imported.
Valid values: RAW | VHD | VMDK | OVA
Type: String
Required: No

SnapshotId
The ID of the EBS snapshot to be used for importing the snapshot.
Type: String
Required: No

Url
The URL to the Amazon S3-based disk image being imported. The URL can either be a https URL (https://..) or an Amazon S3 URL (s3://..)
Type: String
Required: No

UserBucket
The S3 bucket for the disk image.
Type: UserBucket (p. 724) object
Required: No
ImportImageTask

Describes an import image task.

Contents

architecture
   The architecture of the virtual machine.
   Valid values: i386 | x86_64
   Type: String
   Required: No

description
   A description of the import task.
   Type: String
   Required: No

hypervisor
   The target hypervisor for the import task.
   Valid values: xen
   Type: String
   Required: No

imageId
   The ID of the Amazon Machine Image (AMI) of the imported virtual machine.
   Type: String
   Required: No

importTaskId
   The ID of the import image task.
   Type: String
   Required: No

licenseType
   The license type of the virtual machine.
   Type: String
   Required: No

platform
   The description string for the import image task.
   Type: String
   Required: No

progress
   The percentage of progress of the import image task.
   Type: String
   Required: No

snapshotDetailSet
   Information about the snapshots.
   Type: array of SnapshotDetail (p. 695) objects
   Required: No

status
   A brief status for the import image task.
   Type: String
   Required: No
statusMessage
   A descriptive status message for the import image task.
   Type: String
   Required: No
ImportInstanceLaunchSpecification

Describes the launch specification for VM import.

Contents

**AdditionalInfo**
- Reserved.
- Type: String
- Required: No

**Architecture**
- The architecture of the instance.
- Type: String
- Valid Values: i386 | x86_64
- Required: No

**GroupId**
- One or more security group IDs.
- Type: array of Strings
- Required: No

**GroupNames**
- One or more security group names.
- Type: array of Strings
- Required: No

**InstanceInitiatedShutdownBehavior**
- Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).
- Type: String
- Valid Values: stop | terminate
- Required: No

**InstanceType**
- The instance type. For more information about the instance types that you can import, see **Instance Types** in the VM Import/Export User Guide.
- Type: String
- Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | x1.16xlarge | x1.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | p2.xlarge | p2.2xlarge | p2.3xlarge | p2.5xlarge | p2.6xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.5xlarge | d2.8xlarge | d2.9xlarge
- Required: No

**Monitoring**
- Indicates whether monitoring is enabled.
- Type: Boolean
- Required: No

**Placement**
- The placement information for the instance.
Type: Placement (p. 636) object
Required: No

PrivateIpAddress
[EC2-VPC] An available IP address from the IP address range of the subnet.
Type: String
Required: No

SubnetId
[EC2-VPC] The ID of the subnet in which to launch the instance.
Type: String
Required: No

UserData
The user data to make available to the instance. If you are using an AWS SDK or command line tool, Base64-encoding is performed for you, and you can load the text from a file. Otherwise, you must provide Base64-encoded text.
Type: UserData (p. 726) object
Required: No
ImportInstanceTaskDetails

Describes an import instance task.

Contents

description
   A description of the task.
   Type: String
   Required: No

instanceId
   The ID of the instance.
   Type: String
   Required: No

platform
   The instance operating system.
   Type: String
   Valid Values: Windows
   Required: No

volumes
   One or more volumes.
   Type: array of ImportInstanceVolumeDetailItem objects
   Required: Yes
**ImportInstanceVolumeDetailItem**

Describes an import volume task.

**Contents**

- **availabilityZone**
  - The Availability Zone where the resulting instance will reside.
  - Type: String
  - Required: Yes

- **bytesConverted**
  - The number of bytes converted so far.
  - Type: Long
  - Required: Yes

- **description**
  - A description of the task.
  - Type: String
  - Required: No

- **image**
  - The image.
  - Type: `DiskImageDescription (p. 551)` object
  - Required: Yes

- **status**
  - The status of the import of this particular disk image.
  - Type: String
  - Required: Yes

- **statusMessage**
  - The status information or errors related to the disk image.
  - Type: String
  - Required: No

- **volume**
  - The volume.
  - Type: `DiskImageVolumeDescription (p. 553)` object
  - Required: Yes
ImportSnapshotTask

Describes an import snapshot task.

Contents

description
A description of the import snapshot task.
Type: String
Required: No

importTaskId
The ID of the import snapshot task.
Type: String
Required: No

snapshotTaskDetail
Describes an import snapshot task.
Type: SnapshotTaskDetail (p. 697) object
Required: No
ImportVolumeTaskDetails
Describes an import volume task.

Contents

availabilityZone
The Availability Zone where the resulting volume will reside.
Type: String
Required: Yes

bytesConverted
The number of bytes converted so far.
Type: Long
Required: Yes

description
The description you provided when starting the import volume task.
Type: String
Required: No

image
The image.
Type: DiskImageDescription (p. 551) object
Required: Yes

volume
The volume.
Type: DiskImageVolumeDescription (p. 553) object
Required: Yes
Instance

Describes an instance.

Contents

amiLaunchIndex
The AMI launch index, which can be used to find this instance in the launch group.
Type: Integer
Required: No

architecture
The architecture of the image.
Type: String
Valid Values: i386 | x86_64
Required: No

blockDeviceMapping
Any block device mapping entries for the instance.
Type: array of InstanceBlockDeviceMapping (p. 591) objects
Required: No

clientToken
The idempotency token you provided when you launched the instance, if applicable.
Type: String
Required: No

dnsName
The public DNS name assigned to the instance. This name is not available until the instance enters the running state. For EC2-VPC, this name is only available if you've enabled DNS hostnames for your VPC.
Type: String
Required: No

ebsOptimized
Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.
Type: Boolean
Required: No

enaSupport
Specifies whether enhanced networking with ENA is enabled.
Type: Boolean
Required: No

groupSet
One or more security groups for the instance.
Type: array of GroupIdentifier (p. 563) objects
Required: No

hypervisor
The hypervisor type of the instance.
Type: String
Valid Values: ovm | xen
Required: No
iamInstanceProfile
The IAM instance profile associated with the instance, if applicable.
Type: iamInstanceProfile (p. 571) object
Required: No

imageId
The ID of the AMI used to launch the instance.
Type: String
Required: No

instanceId
The ID of the instance.
Type: String
Required: No

instanceLifecycle
Indicates whether this is a Spot instance or a Scheduled Instance.
Type: String
Valid Values: spot | scheduled
Required: No

instanceState
The current state of the instance.
Type: InstanceState (p. 604) object
Required: No

instanceType
The instance type.
Type: String
Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m4.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | x1.16xlarge | x1.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | cgl.4xlarge | p2.xlarge | p2.0xlarge | p2.16xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.0xlarge
Required: No

ipAddress
The public IP address assigned to the instance, if applicable.
Type: String
Required: No

kernelId
The kernel associated with this instance, if applicable.
Type: String
Required: No

keyName
The name of the key pair, if this instance was launched with an associated key pair.
Type: String
Required: No

launchTime
The time the instance was launched.
Type: Timestamp
Required: No

**monitoring**
The monitoring for the instance.
Type: Monitoring (p. 619) object
Required: No

**networkInterfaceSet**
[EC2-VPC] One or more network interfaces for the instance.
Type: array of InstanceNetworkInterface (p. 597) objects
Required: No

**placement**
The location where the instance launched, if applicable.
Type: Placement (p. 636) object
Required: No

**platform**
The value is Windows for Windows instances; otherwise blank.
Type: String
Valid Values: Windows
Required: No

**privateDnsName**
The private DNS hostname name assigned to the instance. This DNS hostname can only be used inside the Amazon EC2 network. This name is not available until the instance enters the running state.

[EC2-VPC] The Amazon-provided DNS server will resolve Amazon-provided private DNS hostnames if you've enabled DNS resolution and DNS hostnames in your VPC. If you are not using the Amazon-provided DNS server in your VPC, your custom domain name servers must resolve the hostname as appropriate.
Type: String
Required: No

**privateIpAddress**
The private IP address assigned to the instance.
Type: String
Required: No

**productCodes**
The product codes attached to this instance, if applicable.
Type: array of ProductCode (p. 645) objects
Required: No

**ramdiskId**
The RAM disk associated with this instance, if applicable.
Type: String
Required: No

**reason**
The reason for the most recent state transition. This might be an empty string.
Type: String
Required: No

**rootDeviceName**
The root device name (for example, /dev/sdal or /dev/xvda).
Type: String
Required: No
**rootDeviceType**

The root device type used by the AMI. The AMI can use an EBS volume or an instance store volume.

Type: String

Valid Values: ebs | instance-store

Required: No

**sourceDestCheck**

Specifies whether to enable an instance launched in a VPC to perform NAT. This controls whether source/destination checking is enabled on the instance. A value of true means checking is enabled, and false means checking is disabled. The value must be false for the instance to perform NAT. For more information, see NAT Instances in the Amazon Virtual Private Cloud User Guide.

Type: Boolean

Required: No

**spotInstanceRequestId**

If the request is a Spot instance request, the ID of the request.

Type: String

Required: No

**sriovNetSupport**

Specifies whether enhanced networking with the Intel 82599 Virtual Function interface is enabled.

Type: String

Required: No

**stateReason**

The reason for the most recent state transition.

Type: StateReason (p. 714) object

Required: No

**subnetId**

[EC2-VPC] The ID of the subnet in which the instance is running.

Type: String

Required: No

**tagSet**

Any tags assigned to the instance.

Type: array of Tag (p. 717) objects

Required: No

**virtualizationType**

The virtualization type of the instance.

Type: String

Valid Values: hvm | paravirtual

Required: No

**vpcId**

[EC2-VPC] The ID of the VPC in which the instance is running.

Type: String

Required: No
InstanceBlockDeviceMapping

Describes a block device mapping.

Contents

deviceName
   The device name exposed to the instance (for example, /dev/sdh or xvdh).
   Type: String
   Required: No

ebs
   Parameters used to automatically set up EBS volumes when the instance is launched.
   Type: EbsInstanceBlockDevice (p. 555) object
   Required: No
InstanceBlockDeviceMappingSpecification

Describes a block device mapping entry.

## Contents

**DeviceName**
  
  The device name exposed to the instance (for example, `/dev/sdh` or `xvdh`).
  
  Type: String
  
  Required: No

**Ebs**
  
  Parameters used to automatically set up EBS volumes when the instance is launched.
  
  Type: `EbsInstanceBlockDeviceSpecification (p. 556)` object
  
  Required: No

**NoDevice**
  
  Suppress the specified device included in the block device mapping.
  
  Type: String
  
  Required: No

**VirtualName**
  
  The virtual device name.
  
  Type: String
  
  Required: No
InstanceCapacity

Information about the instance type that the Dedicated Host supports.

Contents

availableCapacity
The number of instances that can still be launched onto the Dedicated Host.
Type: Integer
Required: No

instanceType
The instance type size supported by the Dedicated Host.
Type: String
Required: No

totalCapacity
The total number of instances that can be launched onto the Dedicated Host.
Type: Integer
Required: No
InstanceCount

Describes a Reserved Instance listing state.

Contents

instanceCount
The number of listed Reserved Instances in the state specified by the state.
Type: Integer
Required: No

state
The states of the listed Reserved Instances.
Type: String
Valid Values: available | sold | cancelled | pending
Required: No
InstanceExportDetails

Describes an instance to export.

Contents

**instanceId**

The ID of the resource being exported.

Type: String

Required: No

**targetEnvironment**

The target virtualization environment.

Type: String

Valid Values: citrix | vmware | microsoft

Required: No
InstanceMonitoring

Describes the monitoring of an instance.

Contents

**instanceId**

The ID of the instance.

Type: String

Required: No

**monitoring**

The monitoring for the instance.

Type: Monitoring (p. 619) object

Required: No
InstanceNetworkInterface

Describes a network interface.

Contents

association
The association information for an Elastic IP associated with the network interface.
Type: InstanceNetworkInterfaceAssociation (p. 599) object
Required: No

attachment
The network interface attachment.
Type: InstanceNetworkInterfaceAttachment (p. 600) object
Required: No

description
The description.
Type: String
Required: No

groupSet
One or more security groups.
Type: array of GroupIdentifier (p. 563) objects
Required: No

macAddress
The MAC address.
Type: String
Required: No

networkInterfaceId
The ID of the network interface.
Type: String
Required: No

ownerId
The ID of the AWS account that created the network interface.
Type: String
Required: No

privateDnsName
The private DNS name.
Type: String
Required: No

privateIpAddress
The IP address of the network interface within the subnet.
Type: String
Required: No

privateIpAddressesSet
The private IP addresses associated with the network interface.
Type: array of InstancePrivateIpAddress (p. 603) objects
Required: No

sourceDestCheck
Indicates whether to validate network traffic to or from this network interface.
Type: Boolean
Required: No

**status**
The status of the network interface.
Type: String
Valid Values: available | attaching | in-use | detaching
Required: No

**subnetId**
The ID of the subnet.
Type: String
Required: No

**vpcId**
The ID of the VPC.
Type: String
Required: No
InstanceNetworkInterfaceAssociation

Describes association information for an Elastic IP address.

**Contents**

**ipOwnerId**
The ID of the owner of the Elastic IP address.
Type: String
Required: No

**publicDnsName**
The public DNS name.
Type: String
Required: No

**publicIp**
The public IP address or Elastic IP address bound to the network interface.
Type: String
Required: No
InstanceNetworkInterfaceAttachment

Describes a network interface attachment.

Contents

attachmentId
The ID of the network interface attachment.
Type: String
Required: No

attachTime
The time stamp when the attachment initiated.
Type: Timestamp
Required: No

deleteOnTermination
Indicates whether the network interface is deleted when the instance is terminated.
Type: Boolean
Required: No

deviceIndex
The index of the device on the instance for the network interface attachment.
Type: Integer
Required: No

status
The attachment state.
Type: String
Valid Values: attaching | attached | detaching | detached
Required: No
InstanceNetworkInterfaceSpecification

Describes a network interface.

Contents

**AssociatePublicIpAddress** (request), **associatePublicIpAddress** (response)
Indicates whether to assign a public IP address to an instance you launch in a VPC. The public IP address can only be assigned to a network interface for eth0, and can only be assigned to a new network interface, not an existing one. You cannot specify more than one network interface in the request. If launching into a default subnet, the default value is true.
Type: Boolean
Required: No

**DeleteOnTermination** (request), **deleteOnTermination** (response)
If set to true, the interface is deleted when the instance is terminated. You can specify true only if creating a new network interface when launching an instance.
Type: Boolean
Required: No

**Description** (request), **description** (response)
The description of the network interface. Applies only if creating a network interface when launching an instance.
Type: String
Required: No

**DeviceIndex** (request), **deviceIndex** (response)
The index of the device on the instance for the network interface attachment. If you are specifying a network interface in a RunInstances (p. 500) request, you must provide the device index.
Type: Integer
Required: No

**NetworkInterfaceId** (request), **networkInterfaceId** (response)
The ID of the network interface.
Type: String
Required: No

**PrivateIpAddress** (request), **privateIpAddress** (response)
The private IP address of the network interface. Applies only if creating a network interface when launching an instance. You cannot specify this option if you're launching more than one instance in a RunInstances (p. 500) request.
Type: String
Required: No

**PrivateIpAddresses** (request), **privateIpAddressesSet** (response)
One or more private IP addresses to assign to the network interface. Only one private IP address can be designated as primary. You cannot specify this option if you're launching more than one instance in a RunInstances (p. 500) request.
Type: array of PrivateIpAddressSpecification (p. 644) objects
Required: No

**SecondaryPrivateIpAddressCount** (request), **secondaryPrivateIpAddressCount** (response)
The number of secondary private IP addresses. You can't specify this option and specify more than one private IP address using the private IP addresses option. You cannot specify this option if you're launching more than one instance in a RunInstances (p. 500) request.
Type: Integer
Required: No
Groups (request), SecurityGroupId (response)
The IDs of the security groups for the network interface. Applies only if creating a network interface when launching an instance.
Type: array of Strings
Required: No

SubnetId (request), subnetId (response)
The ID of the subnet associated with the network string. Applies only if creating a network interface when launching an instance.
Type: String
Required: No
InstancePrivatIpAddress

Describes a private IP address.

Contents

association
The association information for an Elastic IP address for the network interface.
Type: InstanceNetworkInterfaceAssociation (p. 599) object
Required: No

primary
Indicates whether this IP address is the primary private IP address of the network interface.
Type: Boolean
Required: No

privateDnsName
The private DNS name.
Type: String
Required: No

privateIpAddress
The private IP address of the network interface.
Type: String
Required: No
InstanceState

Describes the current state of an instance.

Contents

code
The low byte represents the state. The high byte is an opaque internal value and should be ignored.

• 0: pending
• 16: running
• 32: shutting-down
• 48: terminated
• 64: stopping
• 80: stopped

Type: Integer
Required: No

name
The current state of the instance.

Type: String

Valid Values: pending | running | shutting-down | terminated | stopping | stopped
Required: No
InstanceStateChange

Describes an instance state change.

Contents

currentState
The current state of the instance.
Type: InstanceState (p. 604) object
Required: No

instanceId
The ID of the instance.
Type: String
Required: No

previousState
The previous state of the instance.
Type: InstanceState (p. 604) object
Required: No
**InstanceStatus**

Describes the status of an instance.

## Contents

- **availabilityZone**
  
The Availability Zone of the instance.
  
  Type: String
  
  Required: No

- **eventsSet**
  
  Any scheduled events associated with the instance.
  
  Type: array of `InstanceStatusEvent` objects
  
  Required: No

- **instanceId**
  
  The ID of the instance.
  
  Type: String
  
  Required: No

- **instanceState**
  
  The intended state of the instance. `DescribeInstanceStatus` requires that an instance be in the **running** state.
  
  Type: `InstanceState` object
  
  Required: No

- **instanceStatus**
  
  Reports impaired functionality that stems from issues internal to the instance, such as impaired reachability.
  
  Type: `InstanceStatusSummary` object
  
  Required: No

- **systemStatus**
  
  Reports impaired functionality that stems from issues related to the systems that support an instance, such as hardware failures and network connectivity problems.
  
  Type: `InstanceStatusSummary` object
  
  Required: No
InstanceStatusDetails

Describes the instance status.

Contents

impairedSince

The time when a status check failed. For an instance that was launched and impaired, this is the time when the instance was launched.
Type: Timestamp
Required: No

name

The type of instance status.
Type: String
Valid Values: reachability
Required: No

status

The status.
Type: String
Valid Values: passed | failed | insufficient-data | initializing
Required: No
InstanceStatusEvent

Describes a scheduled event for an instance.

Contents

code
The event code.
Type: String
Valid Values: instance-reboot | system-reboot | system-maintenance | instance-retirement | instance-stop
Required: No

description
A description of the event.
After a scheduled event is completed, it can still be described for up to a week. If the event has been completed, this description starts with the following text: [Completed].
Type: String
Required: No

notAfter
The latest scheduled end time for the event.
Type: Timestamp
Required: No

notBefore
The earliest scheduled start time for the event.
Type: Timestamp
Required: No
InstanceStatusSummary

Describes the status of an instance.

Contents

details
- The system instance health or application instance health.
  Type: array of InstanceStatusDetails (p. 607) objects
  Required: No

status
- The status.
  Type: String
  Valid Values: ok | impaired | insufficient-data | not-applicable | initializing
  Required: No
InternetGateway

Describes an Internet gateway.

Contents

**attachmentSet**
Any VPCs attached to the Internet gateway.
Type: array of InternetGatewayAttachment (p. 611) objects
Required: No

**internetGatewayId**
The ID of the Internet gateway.
Type: String
Required: No

**tagSet**
Any tags assigned to the Internet gateway.
Type: array of Tag (p. 717) objects
Required: No
InternetGatewayAttachment

Describes the attachment of a VPC to an Internet gateway.

Contents

state
  The current state of the attachment.
  Type: String
  Valid Values: attaching | attached | detaching | detached
  Required: No

vpcId
  The ID of the VPC.
  Type: String
  Required: No
IpPermission

Describes a security group rule.

Contents

**FromPort** (request), **fromPort** (response)
The start of port range for the TCP and UDP protocols, or an ICMP type number. A value of -1 indicates all ICMP types.
Type: Integer
Required: No

**UserIdGroupPairs** (request), **groups** (response)
One or more security group and AWS account ID pairs.
Type: array of **UserIdGroupPair** (p. 727) objects
Required: No

**IpProtocol** (request), **ipProtocol** (response)
The IP protocol name (for tcp, udp, and icmp) or number (see Protocol Numbers).
[EC2-VPC only] When you authorize or revoke security group rules, you can use -1 to specify all.
Type: String
Required: No

**IpRanges** (request), **ipRanges** (response)
One or more IP ranges.
Type: array of **IpRange** (p. 613) objects
Required: No

**PrefixListIds** (request), **prefixListIds** (response)
(Valid for AuthorizeSecurityGroupEgress (p. 40), RevokeSecurityGroupEgress (p. 494) and DescribeSecurityGroups (p. 297) only) One or more prefix list IDs for an AWS service. In an AuthorizeSecurityGroupEgress (p. 40) request, this is the AWS service that you want to access through a VPC endpoint from instances associated with the security group.
Type: array of **PrefixListId** (p. 640) objects
Required: No

**ToPort** (request), **toPort** (response)
The end of port range for the TCP and UDP protocols, or an ICMP code. A value of -1 indicates all ICMP codes for the specified ICMP type.
Type: Integer
Required: No
IpRange

Describes an IP range.

Contents

CidrIp (request), cidrIp (response)
The CIDR range. You can either specify a CIDR range or a source security group, not both.
Type: String
Required: No
KeyPairInfo

Describes a key pair.

Contents

**keyFingerprint**

If you used CreateKeyPair (p. 81) to create the key pair, this is the SHA-1 digest of the DER encoded private key. If you used ImportKeyPair (p. 408) to provide AWS the public key, this is the MD5 public key fingerprint as specified in section 4 of RFC4716.

Type: String

Required: No

**keyName**

The name of the key pair.

Type: String

Required: No
LaunchPermission

Describes a launch permission.

Contents

Group (request), group (response)
The name of the group.
Type: String
Valid Values: all
Required: No

UserId (request), userId (response)
The AWS account ID.
Type: String
Required: No
LaunchPermissionModifications

Describes a launch permission modification.

Contents

Add
The AWS account ID to add to the list of launch permissions for the AMI.
Type: array of LaunchPermission (p. 615) objects
Required: No

Remove
The AWS account ID to remove from the list of launch permissions for the AMI.
Type: array of LaunchPermission (p. 615) objects
Required: No
LaunchSpecification

Descries the launch specification for an instance.

Contents

addressingType
  Deprecated.
  Type: String
  Required: No

blockDeviceMapping
  One or more block device mapping entries.
  Although you can specify encrypted EBS volumes in this block device mapping for your Spot
  Instances, these volumes are not encrypted.
  Type: array of BlockDeviceMapping (p. 534) objects
  Required: No

ebsOptimized
  Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated
  throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O
  performance. This optimization isn’t available with all instance types. Additional usage charges
  apply when using an EBS Optimized instance.
  Default: false
  Type: Boolean
  Required: No

groupSet
  One or more security groups. When requesting instances in a VPC, you must specify the IDs of
  the security groups. When requesting instances in EC2-Classic, you can specify the names or the
  IDs of the security groups.
  Type: array of GroupIdentifier (p. 563) objects
  Required: No

iamInstanceProfile
  The IAM instance profile.
  Type: IamInstanceProfileSpecification (p. 572) object
  Required: No

imageId
  The ID of the AMI.
  Type: String
  Required: No

instanceType
  The instance type.
  Type: String
  Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large
  | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large |
  | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge |
  | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge |
  | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge |
  | x1.16xlarge | x1.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge |
  | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large |
  | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge |
  | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge |
  | g2.2xlarge | g2.8xlarge | cg1.4xlarge | p2.xlarge | p2.8xlarge |
  | p2.16xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge |
**kernelId**
The ID of the kernel.
Type: String
Required: No

**keyName**
The name of the key pair.
Type: String
Required: No

**monitoring**
Describes the monitoring of an instance.
Type: RunInstancesMonitoringEnabled (p. 671) object
Required: No

**networkInterfaceSet**
One or more network interfaces. If you specify a network interface, you must specify subnet IDs and security group IDs using the network interface.
Type: array of InstanceNetworkInterfaceSpecification (p. 601) objects
Required: No

**placement**
The placement information for the instance.
Type: SpotPlacement (p. 710) object
Required: No

**ramdiskId**
The ID of the RAM disk.
Type: String
Required: No

**subnetId**
The ID of the subnet in which to launch the instance.
Type: String
Required: No

**userData**
The user data to make available to the instances. If you are using an AWS SDK or command line tool, Base64-encoding is performed for you, and you can load the text from a file. Otherwise, you must provide Base64-encoded text.
Type: String
Required: No
Monitoring

Describes the monitoring of an instance.

Contents

state

Indicates whether detailed monitoring is enabled. Otherwise, basic monitoring is enabled.

Type: String

Valid Values: disabled | disabling | enabled | pending

Required: No
MovingAddressStatus

Describes the status of a moving Elastic IP address.

Contents

moveStatus

The status of the Elastic IP address that's being moved to the EC2-VPC platform, or restored to the EC2-Classic platform.

Type: String
Valid Values: movingToVpc | restoringToClassic
Required: No

publicIp

The Elastic IP address.

Type: String
Required: No
NatGateway

Describes a NAT gateway.

Contents

createTime
  The date and time the NAT gateway was created.
  Type: Timestamp
  Required: No

deleteTime
  The date and time the NAT gateway was deleted, if applicable.
  Type: Timestamp
  Required: No

failureCode
  If the NAT gateway could not be created, specifies the error code for the failure.
  (InsufficientFreeAddressesInSubnet | Gateway.NotAttached | InvalidAllocationID.NotFound | Resource.AlreadyAssociated | InternalError | InvalidSubnetID.NotFound)
  Type: String
  Required: No

failureMessage
  If the NAT gateway could not be created, specifies the error message for the failure, that corresponds to the error code.
  • For InsufficientFreeAddressesInSubnet: “Subnet has insufficient free addresses to create this NAT gateway”
  • For Gateway.NotAttached: “Network vpc-xxxxxxxx has no Internet gateway attached”
  • For InvalidAllocationID.NotFound: “Elastic IP address eipalloc-xxxxxxxx could not be associated with this NAT gateway”
  • For Resource.AlreadyAssociated: “Elastic IP address eipalloc-xxxxxxxx is already associated”
  • For InternalError: “Network interface eni-xxxxxxxx, created and used internally by this NAT gateway is in an invalid state. Please try again.”
  • For InvalidSubnetID.NotFound: “The specified subnet subnet-xxxxxxxx does not exist or could not be found.”
  Type: String
  Required: No

natGatewayAddressSet
  Information about the IP addresses and network interface associated with the NAT gateway.
  Type: array of NatGatewayAddress (p. 623) objects
  Required: No

natGatewayId
  The ID of the NAT gateway.
  Type: String
  Required: No

provisionedBandwidth
  Reserved. If you need to sustain traffic greater than the documented limits, contact us through the Support Center.
  Type: ProvisionedBandwidth (p. 647) object
  Required: No
state
   The state of the NAT gateway.
   • pending: The NAT gateway is being created and is not ready to process traffic.
   • failed: The NAT gateway could not be created. Check the failureCode and failureMessage fields for the reason.
   • available: The NAT gateway is able to process traffic. This status remains until you delete the NAT gateway, and does not indicate the health of the NAT gateway.
   • deleting: The NAT gateway is in the process of being terminated and may still be processing traffic.
   • deleted: The NAT gateway has been terminated and is no longer processing traffic.
   Type: String
   Valid Values: pending | failed | available | deleting | deleted
   Required: No

subnetId
   The ID of the subnet in which the NAT gateway is located.
   Type: String
   Required: No

vpcId
   The ID of the VPC in which the NAT gateway is located.
   Type: String
   Required: No
NatGatewayAddress

Describes the IP addresses and network interface associated with a NAT gateway.

Contents

allocationId
- The allocation ID of the Elastic IP address that's associated with the NAT gateway.
- Type: String
- Required: No

networkInterfaceId
- The ID of the network interface associated with the NAT gateway.
- Type: String
- Required: No

privateIp
- The private IP address associated with the Elastic IP address.
- Type: String
- Required: No

publicIp
- The Elastic IP address associated with the NAT gateway.
- Type: String
- Required: No
NetworkAcl

Describes a network ACL.

Contents

associationSet
  Any associations between the network ACL and one or more subnets
  Type: array of NetworkAclAssociation (p. 625) objects
  Required: No

default
  Indicates whether this is the default network ACL for the VPC.
  Type: Boolean
  Required: No

entrySet
  One or more entries (rules) in the network ACL.
  Type: array of NetworkAclEntry (p. 626) objects
  Required: No

networkAclId
  The ID of the network ACL.
  Type: String
  Required: No

tagSet
  Any tags assigned to the network ACL.
  Type: array of Tag (p. 717) objects
  Required: No

vpcId
  The ID of the VPC for the network ACL.
  Type: String
  Required: No
NetworkAclAssociation

Describes an association between a network ACL and a subnet.

Contents

networkAclAssociationId
   The ID of the association between a network ACL and a subnet.
   Type: String
   Required: No

networkAclid
   The ID of the network ACL.
   Type: String
   Required: No

subnetId
   The ID of the subnet.
   Type: String
   Required: No
NetworkAclEntry

Describes an entry in a network ACL.

Contents

cidrBlock
   The network range to allow or deny, in CIDR notation.
   Type: String
   Required: No

egress
   Indicates whether the rule is an egress rule (applied to traffic leaving the subnet).
   Type: Boolean
   Required: No

icmpTypeCode
   ICMP protocol: The ICMP type and code.
   Type: IcmpTypeCode (p. 573) object
   Required: No

portRange
   TCP or UDP protocols: The range of ports the rule applies to.
   Type: PortRange (p. 638) object
   Required: No

protocol
   The protocol. A value of -1 means all protocols.
   Type: String
   Required: No

ruleAction
   Indicates whether to allow or deny the traffic that matches the rule.
   Type: String
   Valid Values: allow | deny
   Required: No

ruleNumber
   The rule number for the entry. ACL entries are processed in ascending order by rule number.
   Type: Integer
   Required: No
NetworkInterface

Describes a network interface.

Contents

association
The association information for an Elastic IP associated with the network interface.
Type: NetworkInterfaceAssociation (p. 629) object
Required: No

attachment
The network interface attachment.
Type: NetworkInterfaceAttachment (p. 630) object
Required: No

availabilityZone
The Availability Zone.
Type: String
Required: No

description
A description.
Type: String
Required: No

groupSet
Any security groups for the network interface.
Type: array of GroupIdentifier (p. 563) objects
Required: No

interfaceType
The type of interface.
Type: String
Valid Values: interface | natGateway
Required: No

macAddress
The MAC address.
Type: String
Required: No

networkInterfaceId
The ID of the network interface.
Type: String
Required: No

ownerId
The AWS account ID of the owner of the network interface.
Type: String
Required: No

privateDnsName
The private DNS name.
Type: String
Required: No

privateIpAddress
The IP address of the network interface within the subnet.
Type: String  
Required: No

privateIpAddressesSet  
The private IP addresses associated with the network interface.  
Type: array of NetworkInterfacePrivateIpAddress (p. 632) objects  
Required: No

requesterId  
The ID of the entity that launched the instance on your behalf (for example, AWS Management Console or Auto Scaling).  
Type: String  
Required: No

requesterManaged  
Indicates whether the network interface is being managed by AWS.  
Type: Boolean  
Required: No

sourceDestCheck  
Indicates whether traffic to or from the instance is validated.  
Type: Boolean  
Required: No

status  
The status of the network interface.  
Type: String  
Valid Values: available | attaching | in-use | detaching  
Required: No

subnetId  
The ID of the subnet.  
Type: String  
Required: No

tagSet  
Any tags assigned to the network interface.  
Type: array of Tag (p. 717) objects  
Required: No

vpcId  
The ID of the VPC.  
Type: String  
Required: No
NetworkInterfaceAssociation

Describes association information for an Elastic IP address.

Contents

allocationId
    The allocation ID.
    Type: String
    Required: No

associationId
    The association ID.
    Type: String
    Required: No

ipOwnerId
    The ID of the Elastic IP address owner.
    Type: String
    Required: No

publicDnsName
    The public DNS name.
    Type: String
    Required: No

publicIp
    The address of the Elastic IP address bound to the network interface.
    Type: String
    Required: No
NetworkInterfaceAttachment

Describes a network interface attachment.

Contents

**attachmentId**
- The ID of the network interface attachment.
- Type: String
- Required: No

**attachTime**
- The timestamp indicating when the attachment initiated.
- Type: Timestamp
- Required: No

**deleteOnTermination**
- Indicates whether the network interface is deleted when the instance is terminated.
- Type: Boolean
- Required: No

**deviceIndex**
- The device index of the network interface attachment on the instance.
- Type: Integer
- Required: No

**instanceId**
- The ID of the instance.
- Type: String
- Required: No

**instanceOwnerId**
- The AWS account ID of the owner of the instance.
- Type: String
- Required: No

**status**
- The attachment state.
- Type: String
- Valid Values: attaching | attached | detaching | detached
- Required: No
NetworkInterfaceAttachmentChanges

Describes an attachment change.

Contents

AttachmentId
The ID of the network interface attachment.
Type: String
Required: No

DeleteOnTermination
Indicates whether the network interface is deleted when the instance is terminated.
Type: Boolean
Required: No
NetworkInterfacePrivateIpAddress

Describes the private IP address of a network interface.

Contents

**association**
The association information for an Elastic IP address associated with the network interface.
Type: NetworkInterfaceAssociation (p. 629) object
Required: No

**primary**
Indicates whether this IP address is the primary private IP address of the network interface.
Type: Boolean
Required: No

**privateDnsName**
The private DNS name.
Type: String
Required: No

**privateIpAddress**
The private IP address.
Type: String
Required: No
NewDhcpConfiguration

Describes a DHCP configuration option.

Contents

**Key**
The type of DHCP option.
Type: String
Required: No

**Values**
The provided values for the DHCP option.
Type: array of Strings
Required: No
PeeringConnectionOptions

Describes the VPC peering connection options.

Contents

allowDnsResolutionFromRemoteVpc
If true, enables a local VPC to resolve public DNS hostnames to private IP addresses when queried from instances in the peer VPC.
Type: Boolean
Required: No

allowEgressFromLocalClassicLinkToRemoteVpc
If true, enables outbound communication from an EC2-Classic instance that's linked to a local VPC via ClassicLink to instances in a peer VPC.
Type: Boolean
Required: No

allowEgressFromLocalVpcToRemoteClassicLink
If true, enables outbound communication from instances in a local VPC to an EC2-Classic instance that's linked to a peer VPC via ClassicLink.
Type: Boolean
Required: No
PeeringConnectionOptionsRequest

The VPC peering connection options.

Contents

AllowDnsResolutionFromRemoteVpc
    If true, enables a local VPC to resolve public DNS hostnames to private IP addresses when queried from instances in the peer VPC.
    Type: Boolean
    Required: No

AllowEgressFromLocalClassicLinkToRemoteVpc
    If true, enables outbound communication from an EC2-Classic instance that's linked to a local VPC via ClassicLink to instances in a peer VPC.
    Type: Boolean
    Required: No

AllowEgressFromLocalVpcToRemoteClassicLink
    If true, enables outbound communication from instances in a local VPC to an EC2-Classic instance that's linked to a peer VPC via ClassicLink.
    Type: Boolean
    Required: No
Placement

Describes the placement of an instance.

Contents

**Affinity** (request), **affinity** (response)
The affinity setting for the instance on the Dedicated Host. This parameter is not supported for the ImportInstance (p. 405) command.
Type: String
Required: No

**AvailabilityZone** (request), **availabilityZone** (response)
The Availability Zone of the instance.
Type: String
Required: No

**GroupName** (request), **groupName** (response)
The name of the placement group the instance is in (for cluster compute instances).
Type: String
Required: No

**HostId** (request), **hostId** (response)
The ID of the Dedicated host on which the instance resides. This parameter is not supported for the ImportInstance (p. 405) command.
Type: String
Required: No

**Tenancy** (request), **tenancy** (response)
The tenancy of the instance (if the instance is running in a VPC). An instance with a tenancy of dedicated runs on single-tenant hardware. The host tenancy is not supported for the ImportInstance (p. 405) command.
Type: String
Valid Values: default | dedicated | host
Required: No
PlacementGroup

Describes a placement group.

Contents

groupName
  The name of the placement group.
  Type: String
  Required: No

state
  The state of the placement group.
  Type: String
  Valid Values: pending | available | deleting | deleted
  Required: No

strategy
  The placement strategy.
  Type: String
  Valid Values: cluster
  Required: No
PortRange

Describes a range of ports.

Contents

From (request), from (response)
The first port in the range.
Type: Integer
Required: No

To (request), to (response)
The last port in the range.
Type: Integer
Required: No
PrefixList

Describes prefixes for AWS services.

Contents

- **cidrSet**
  - The IP address range of the AWS service.
  - Type: array of Strings
  - Required: No

- **prefixListId**
  - The ID of the prefix.
  - Type: String
  - Required: No

- **prefixListName**
  - The name of the prefix.
  - Type: String
  - Required: No
PrefixListId

The ID of the prefix.

Contents

PrefixListId (request), prefixListId (response)

The ID of the prefix.
Type: String
Required: No
PriceSchedule

Describes the price for a Reserved Instance.

Contents

active
The current price schedule, as determined by the term remaining for the Reserved Instance in the listing.
A specific price schedule is always in effect, but only one price schedule can be active at any time. Take, for example, a Reserved Instance listing that has five months remaining in its term. When you specify price schedules for five months and two months, this means that schedule 1, covering the first three months of the remaining term, will be active during months 5, 4, and 3. Then schedule 2, covering the last two months of the term, will be active for months 2 and 1.
Type: Boolean
Required: No

currencyCode
The currency for transacting the Reserved Instance resale. At this time, the only supported currency is USD.
Type: String
Valid Values: USD
Required: No

price
The fixed price for the term.
Type: Double
Required: No

term
The number of months remaining in the reservation. For example, 2 is the second to the last month before the capacity reservation expires.
Type: Long
Required: No
PriceScheduleSpecification

Describes the price for a Reserved Instance.

Contents

CurrencyCode
The currency for transacting the Reserved Instance resale. At this time, the only supported currency is USD.
Type: String
Valid Values: USD
Required: No

Price
The fixed price for the term.
Type: Double
Required: No

Term
The number of months remaining in the reservation. For example, 2 is the second to the last month before the capacity reservation expires.
Type: Long
Required: No
PricingDetail

Describes a Reserved Instance offering.

Contents

count
   The number of reservations available for the price.
   Type: Integer
   Required: No

price
   The price per instance.
   Type: Double
   Required: No
PrivateIpAddressSpecification

Describes a secondary private IP address for a network interface.

Contents

**Primary** (request), **primary** (response)
Indicates whether the private IP address is the primary private IP address. Only one IP address can be designated as primary.
Type: Boolean
Required: No

**PrivatelpAddress** (request), **privatelpAddress** (response)
The private IP addresses.
Type: String
Required: Yes
ProductCode

Describes a product code.

Contents

**productCode**

The product code.
Type: String
Required: No

**type**

The type of product code.
Type: String
Valid Values: `devpay` | `marketplace`
Required: No
PropagatingVgw

Describes a virtual private gateway propagating route.

Contents

gatewayId

The ID of the virtual private gateway (VGW).
Type: String
Required: No
ProvisionedBandwidth

Reserved. If you need to sustain traffic greater than the documented limits, contact us through the Support Center.

Contents

provisioned
   Reserved. If you need to sustain traffic greater than the documented limits, contact us through the Support Center.
   Type: String
   Required: No

provisionTime
   Reserved. If you need to sustain traffic greater than the documented limits, contact us through the Support Center.
   Type: Timestamp
   Required: No

requested
   Reserved. If you need to sustain traffic greater than the documented limits, contact us through the Support Center.
   Type: String
   Required: No

requestTime
   Reserved. If you need to sustain traffic greater than the documented limits, contact us through the Support Center.
   Type: Timestamp
   Required: No

status
   Reserved. If you need to sustain traffic greater than the documented limits, contact us through the Support Center.
   Type: String
   Required: No
Purchase

Describes the result of the purchase.

Contents

currencyCode
The currency in which the UpfrontPrice and HourlyPrice amounts are specified. At this time, the only supported currency is USD.
Type: String
Valid Values: USD
Required: No

duration
The duration of the reservation's term in seconds.
Type: Integer
Required: No

hostIdSet
The IDs of the Dedicated Hosts associated with the reservation.
Type: array of Strings
Required: No

hostReservationId
The ID of the reservation.
Type: String
Required: No

hourlyPrice
The hourly price of the reservation per hour.
Type: String
Required: No

instanceFamily
The instance family on the Dedicated Host that the reservation can be associated with.
Type: String
Required: No

paymentOption
The payment option for the reservation.
Type: String
Valid Values: AllUpfront | PartialUpfront | NoUpfront
Required: No

upfrontPrice
The upfront price of the reservation.
Type: String
Required: No
PurchaseRequest

Describes a request to purchase Scheduled Instances.

Contents

InstanceCount
The number of instances.
Type: Integer
Required: Yes

PurchaseToken
The purchase token.
Type: String
Required: Yes
RecurringCharge

Describes a recurring charge.

Contents

amount
The amount of the recurring charge.
Type: Double
Required: No

frequency
The frequency of the recurring charge.
Type: String
Valid Values: Hourly
Required: No
Region

Describes a region.

Contents

regionEndpoint
   The region service endpoint.
   Type: String
   Required: No

regionName
   The name of the region.
   Type: String
   Required: No
RequestSpotLaunchSpecification

Describes the launch specification for an instance.

Contents

AddressingType
- Deprecated.
- Type: String
- Required: No

BlockDeviceMappings
- One or more block device mapping entries.
  - Although you can specify encrypted EBS volumes in this block device mapping for your Spot Instances, these volumes are not encrypted.
- Type: array of BlockDeviceMapping (p. 534) objects
- Required: No

EbsOptimized
- Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.
  - Default: false
  - Type: Boolean
  - Required: No

IamInstanceProfile
- The IAM instance profile.
- Type: IamInstanceProfileSpecification (p. 572) object
- Required: No

ImageId
- The ID of the AMI.
- Type: String
- Required: No

InstanceType
- The instance type.
- Type: String
- Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | x1.4xlarge | x1.8xlarge | x1.16xlarge | x1.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | h1.4xlarge | h1l.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge
- Required: No

KernelId
- The ID of the kernel.
- Type: String
- Required: No
KeyName
The name of the key pair.
Type: String
Required: No

Monitoring
Describes the monitoring for the instance.
Type: RunInstancesMonitoringEnabled (p. 671) object
Required: No

NetworkInterfaces
One or more network interfaces.
Type: array of InstanceNetworkInterfaceSpecification (p. 601) objects
Required: No

Placement
The placement information for the instance.
Type: SpotPlacement (p. 710) object
Required: No

RamdiskId
The ID of the RAM disk.
Type: String
Required: No

SecurityGroups
One or more security group names. When requesting instances in a VPC, you must specify the IDs of the security groups. When requesting instances in EC2-Classic, you can specify the names or the IDs of the security groups.
Type: array of Strings
Required: No

SecurityGroupIds
One or more security group IDs.
Type: array of Strings
Required: No

SubnetId
The ID of the subnet in which to launch the instance.
Type: String
Required: No

UserData
The user data to make available to the instances. If you are using an AWS SDK or command line tool, Base64-encoding is performed for you, and you can load the text from a file. Otherwise, you must provide Base64-encoded text.
Type: String
Required: No
Reservation

Describes a reservation.

Contents

**groupSet**
[EC2-Classic only] One or more security groups.
Type: array of GroupIdentifier (p. 563) objects
Required: No

**instancesSet**
One or more instances.
Type: array of Instance (p. 587) objects
Required: No

**ownerId**
The ID of the AWS account that owns the reservation.
Type: String
Required: No

**requesterId**
The ID of the requester that launched the instances on your behalf (for example, AWS Management Console or Auto Scaling).
Type: String
Required: No

**reservationId**
The ID of the reservation.
Type: String
Required: No
ReservationValue
The cost associated with the Reserved Instance.

Contents

`hourlyPrice`
The hourly rate of the reservation.
Type: String
Required: No

`remainingTotalValue`
The balance of the total value (the sum of `remainingUpfrontValue` + `hourlyPrice` * number of hours remaining).
Type: String
Required: No

`remainingUpfrontValue`
The remaining upfront cost of the reservation.
Type: String
Required: No
ReservedInstanceLimitPrice

Describes the limit price of a Reserved Instance offering.

Contents

Amount
Used for Reserved Instance Marketplace offerings. Specifies the limit price on the total order (instanceCount * price).
Type: Double
Required: No

CurrencyCode
The currency in which the limitPrice amount is specified. At this time, the only supported currency is USD.
Type: String
Valid Values: USD
Required: No
ReservedInstanceReservationValue

The total value of the Convertible Reserved Instance.

Contents

- reservationValue
  - The total value of the Convertible Reserved Instance that you are exchanging.
  - Type: ReservationValue (p. 655) object
  - Required: No

- reservedInstanceId
  - The ID of the Convertible Reserved Instance that you are exchanging.
  - Type: String
  - Required: No
ReservedInstances

Describes a Reserved Instance.

Contents

availabilityZone
The Availability Zone in which the Reserved Instance can be used.
Type: String
Required: No

currencyCode
The currency of the Reserved Instance. It's specified using ISO 4217 standard currency codes. At this time, the only supported currency is USD.
Type: String
Valid Values: USD
Required: No

duration
The duration of the Reserved Instance, in seconds.
Type: Long
Required: No

end
The time when the Reserved Instance expires.
Type: Timestamp
Required: No

fixedPrice
The purchase price of the Reserved Instance.
Type: Float
Required: No

instanceCount
The number of reservations purchased.
Type: Integer
Required: No

instanceTenancy
The tenancy of the instance.
Type: String
Valid Values: default | dedicated | host
Required: No

instanceType
The instance type on which the Reserved Instance can be used.
Type: String
Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large
| m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large |
m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge |
m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge |
cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge |
x1.16xlarge | x1.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge |
i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large |
c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge |
c4.2xlarge | c4.4xlarge | c4.8xlarge | c4.16xlarge | cc2.8xlarge |
g2.2xlarge | g2.8xlarge | g3.7xlarge | p2.xlarge | p2.8xlarge |
p2.16xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge

Required: No

**offeringClass**
The offering class of the Reserved Instance.
Type: String
Valid Values: standard | convertible
Required: No

**offeringType**
The Reserved Instance offering type.
Type: String
Valid Values: Heavy Utilization | Medium Utilization | Light Utilization | No Upfront | Partial Upfront | All Upfront
Required: No

**productDescription**
The Reserved Instance product platform description.
Type: String
Valid Values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)
Required: No

**recurringCharges**
The recurring charge tag assigned to the resource.
Type: array of RecurringCharge (p. 650) objects
Required: No

**reservedInstancesId**
The ID of the Reserved Instance.
Type: String
Required: No

**scope**
The scope of the Reserved Instance.
Type: String
Valid Values: Availability Zone | Region
Required: No

**start**
The date and time the Reserved Instance started.
Type: Timestamp
Required: No

**state**
The state of the Reserved Instance purchase.
Type: String
Valid Values: payment-pending | active | payment-failed | retired
Required: No

**tagSet**
Any tags assigned to the resource.
Type: array of Tag (p. 717) objects
Required: No

**usagePrice**
The usage price of the Reserved Instance, per hour.
Type: Float
Required: No
ReservedInstancesConfiguration

Describes the configuration settings for the modified Reserved Instances.

Contents

**AvailabilityZone** (request), **availabilityZone** (response)
The Availability Zone for the modified Reserved Instances.
Type: String
Required: No

**InstanceCount** (request), **instanceCount** (response)
The number of modified Reserved Instances.
Type: Integer
Required: No

**InstanceType** (request), **instanceType** (response)
The instance type for the modified Reserved Instances.
Type: String
Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | x1.16xlarge | x1.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge
Required: No

**Platform** (request), **platform** (response)
The network platform of the modified Reserved Instances, which is either EC2-Classic or EC2-VPC.
Type: String
Required: No

**Scope** (request), **scope** (response)
Whether the Reserved Instance is applied to instances in a region or instances in a specific Availability Zone.
Type: String
Valid Values: Availability Zone | Region
Required: No
ReservedInstancesId

Describes the ID of a Reserved Instance.

Contents

reservedInstancesId

The ID of the Reserved Instance.
Type: String
Required: No
ReservedInstancesListing

Describes a Reserved Instance listing.

Contents

clientToken
A unique, case-sensitive key supplied by the client to ensure that the request is idempotent. For more information, see Ensuring Idempotency.
Type: String
Required: No

createDate
The time the listing was created.
Type: Timestamp
Required: No

instanceCounts
The number of instances in this state.
Type: array of InstanceCount (p. 594) objects
Required: No

priceSchedules
The price of the Reserved Instance listing.
Type: array of PriceSchedule (p. 641) objects
Required: No

reservedInstancesId
The ID of the Reserved Instance.
Type: String
Required: No

reservedInstancesListingId
The ID of the Reserved Instance listing.
Type: String
Required: No

status
The status of the Reserved Instance listing.
Type: String
Valid Values: active | pending | cancelled | closed
Required: No

statusMessage
The reason for the current status of the Reserved Instance listing. The response can be blank.
Type: String
Required: No

tagSet
Any tags assigned to the resource.
Type: array of Tag (p. 717) objects
Required: No

updateDate
The last modified timestamp of the listing.
Type: Timestamp
Required: No
ReservedInstancesModification

Describes a Reserved Instance modification.

Contents

clientToken
A unique, case-sensitive key supplied by the client to ensure that the request is idempotent. For more information, see Ensuring Idempotency.
Type: String
Required: No

createDate
The time when the modification request was created.
Type: Timestamp
Required: No

effectiveDate
The time for the modification to become effective.
Type: Timestamp
Required: No

modificationResultSet
Contains target configurations along with their corresponding new Reserved Instance IDs.
Type: array of ReservedInstancesModificationResult (p. 664) objects
Required: No

reservedInstancesModificationId
A unique ID for the Reserved Instance modification.
Type: String
Required: No

reservedInstancesSet
The IDs of one or more Reserved Instances.
Type: array of ReservedInstancesId (p. 661) objects
Required: No

status
The status of the Reserved Instances modification request.
Type: String
Required: No

statusMessage
The reason for the status.
Type: String
Required: No

updateDate
The time when the modification request was last updated.
Type: Timestamp
Required: No
ReservedInstancesModificationResult

Describes the modification request/s.

Contents

reservedInstancesId
The ID for the Reserved Instances that were created as part of the modification request. This field is only available when the modification is fulfilled.
Type: String
Required: No

targetConfiguration
The target Reserved Instances configurations supplied as part of the modification request.
Type: ReservedInstancesConfiguration (p. 660) object
Required: No
ReservedInstancesOffering

Describes a Reserved Instance offering.

Contents

availabilityZone
The Availability Zone in which the Reserved Instance can be used.
Type: String
Required: No

currencyCode
The currency of the Reserved Instance offering you are purchasing. It's specified using ISO 4217 standard currency codes. At this time, the only supported currency is USD.
Type: String
Valid Values: USD
Required: No

duration
The duration of the Reserved Instance, in seconds.
Type: Long
Required: No

fixedPrice
The purchase price of the Reserved Instance.
Type: Float
Required: No

instanceTenancy
The tenancy of the instance.
Type: String
Valid Values: default | dedicated | host
Required: No

instanceType
The instance type on which the Reserved Instance can be used.
Type: String
Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large
| m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large |
| m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge
| m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge |
cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge
| x1.16xlarge | x1.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge |
i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large
| c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge
| c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge
| g2.2xlarge | g2.8xlarge | cg1.4xlarge | p2.xlarge | p2.8xlarge |
p2.16xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge
Required: No

marketplace
Indicates whether the offering is available through the Reserved Instance Marketplace (resale) or AWS. If it's a Reserved Instance Marketplace offering, this is true.
Type: Boolean
Required: No
offeringClass
   If convertible it can be exchanged for Reserved Instances of the same or higher monetary value, with different configurations. If standard, it is not possible to perform an exchange.
   Type: String
   Valid Values: standard | convertible
   Required: No

offeringType
   The Reserved Instance offering type.
   Type: String
   Valid Values: Heavy Utilization | Medium Utilization | Light Utilization | No Upfront | Partial Upfront | All Upfront
   Required: No

pricingDetailsSet
   The pricing details of the Reserved Instance offering.
   Type: array of PricingDetail (p. 643) objects
   Required: No

productDescription
   The Reserved Instance product platform description.
   Type: String
   Valid Values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)
   Required: No

recurringCharges
   The recurring charge tag assigned to the resource.
   Type: array of RecurringCharge (p. 650) objects
   Required: No

reservedInstancesOfferingId
   The ID of the Reserved Instance offering. This is the offering ID used in GetReservedInstancesExchangeQuote (p. 399) to confirm that an exchange can be made.
   Type: String
   Required: No

scope
   Whether the Reserved Instance is applied to instances in a region or an Availability Zone.
   Type: String
   Valid Values: Availability Zone | Region
   Required: No

usagePrice
   The usage price of the Reserved Instance, per hour.
   Type: Float
   Required: No
Route

Describes a route in a route table.

Contents

destinationCidrBlock
The CIDR block used for the destination match.
  Type: String
  Required: No

destinationPrefixListId
The prefix of the AWS service.
  Type: String
  Required: No
gatewayId
The ID of a gateway attached to your VPC.
  Type: String
  Required: No
instanceld
The ID of a NAT instance in your VPC.
  Type: String
  Required: No
instanceOwnerId
The AWS account ID of the owner of the instance.
  Type: String
  Required: No
natGatewayId
The ID of a NAT gateway.
  Type: String
  Required: No
networkInterfaceId
The ID of the network interface.
  Type: String
  Required: No
origin
Describes how the route was created.
  • CreateRouteTable - The route was automatically created when the route table was created.
  • CreateRoute - The route was manually added to the route table.
  • EnableVgwRoutePropagation - The route was propagated by route propagation.
  Type: String
  Valid Values: CreateRouteTable | CreateRoute | EnableVgwRoutePropagation
  Required: No
state
The state of the route. The blackhole state indicates that the route's target isn't available (for example, the specified gateway isn't attached to the VPC, or the specified NAT instance has been terminated).
  Type: String
  Valid Values: active | blackhole
  Required: No
vpcPeeringConnectionId
  The ID of the VPC peering connection.
  Type: String
  Required: No
RouteTable

Describes a route table.

Contents

associationSet
The associations between the route table and one or more subnets.
Type: array of RouteTableAssociation (p. 670) objects
Required: No

propagatingVgwSet
Any virtual private gateway (VGW) propagating routes.
Type: array of PropagatingVgw (p. 646) objects
Required: No

drouteSet
The routes in the route table.
Type: array of Route (p. 667) objects
Required: No

drouteTableId
The ID of the route table.
Type: String
Required: No

tagSet
Any tags assigned to the route table.
Type: array of Tag (p. 717) objects
Required: No

tpclid
The ID of the VPC.
Type: String
Required: No
RouteTableAssociation

Describes an association between a route table and a subnet.

Contents

main
  Indicates whether this is the main route table.
  Type: Boolean
  Required: No

routeTableAssociationId
  The ID of the association between a route table and a subnet.
  Type: String
  Required: No

routeTableId
  The ID of the route table.
  Type: String
  Required: No

subnetId
  The ID of the subnet. A subnet ID is not returned for an implicit association.
  Type: String
  Required: No
RunInstancesMonitoringEnabled

Describes the monitoring of an instance.

**Contents**

**Enabled** (request), **enabled** (response)

- Indicates whether detailed monitoring is enabled. Otherwise, basic monitoring is enabled.
- Type: Boolean
- Required: Yes
S3Storage

Describes the storage parameters for S3 and S3 buckets for an instance store-backed AMI.

Contents

AWSAccessKeyId (request), AWSAccessKeyId (response)
The access key ID of the owner of the bucket. Before you specify a value for your access key ID, review and follow the guidance in Best Practices for Managing AWS Access Keys.
Type: String
Required: No

Bucket (request), bucket (response)
The bucket in which to store the AMI. You can specify a bucket that you already own or a new bucket that Amazon EC2 creates on your behalf. If you specify a bucket that belongs to someone else, Amazon EC2 returns an error.
Type: String
Required: No

Prefix (request), prefix (response)
The beginning of the file name of the AMI.
Type: String
Required: No

UploadPolicy (request), uploadPolicy (response)
An Amazon S3 upload policy that gives Amazon EC2 permission to upload items into Amazon S3 on your behalf.
Type: Base64-encoded binary data
Required: No

UploadPolicySignature (request), uploadPolicySignature (response)
The signature of the JSON document.
Type: String
Required: No
ScheduledInstance

Describes a Scheduled Instance.

Contents

availabilityZone
   The Availability Zone.
   Type: String
   Required: No

createDate
   The date when the Scheduled Instance was purchased.
   Type: Timestamp
   Required: No

hourlyPrice
   The hourly price for a single instance.
   Type: String
   Required: No

instanceCount
   The number of instances.
   Type: Integer
   Required: No

instanceType
   The instance type.
   Type: String
   Required: No

networkPlatform
   The network platform (EC2-Classic or EC2-VPC).
   Type: String
   Required: No

nextSlotStartTime
   The time for the next schedule to start.
   Type: Timestamp
   Required: No

platform
   The platform (Linux/UNIX or Windows).
   Type: String
   Required: No

previousSlotEndTime
   The time that the previous schedule ended or will end.
   Type: Timestamp
   Required: No

recurrence
   The schedule recurrence.
   Type: ScheduledInstanceRecurrence (p. 677) object
   Required: No

scheduledInstanceId
   The Scheduled Instance ID.
   Type: String
Required: No

**slotDurationInHours**
- The number of hours in the schedule.
- Type: Integer
- Required: No

**termEndDate**
- The end date for the Scheduled Instance.
- Type: Timestamp
- Required: No

**termStartDate**
- The start date for the Scheduled Instance.
- Type: Timestamp
- Required: No

**totalScheduledInstanceHours**
- The total number of hours for a single instance for the entire term.
- Type: Integer
- Required: No
ScheduledInstanceAvailability

Describes a schedule that is available for your Scheduled Instances.

## Contents

### availabilityZone

The Availability Zone.
Type: String
Required: No

### availableInstanceCount

The number of available instances.
Type: Integer
Required: No

### firstSlotStartTime

The time period for the first schedule to start.
Type: Timestamp
Required: No

### hourlyPrice

The hourly price for a single instance.
Type: String
Required: No

### instanceType

The instance type. You can specify one of the C3, C4, M4, or R3 instance types.
Type: String
Required: No

### maxTermDurationInDays

The maximum term. The only possible value is 365 days.
Type: Integer
Required: No

### minTermDurationInDays

The minimum term. The only possible value is 365 days.
Type: Integer
Required: No

### networkPlatform

The network platform (EC2-Classic or EC2-VPC).
Type: String
Required: No

### platform

The platform (Linux/UNIX or Windows).
Type: String
Required: No

### purchaseToken

The purchase token. This token expires in two hours.
Type: String
Required: No

### recurrence

The schedule recurrence.
Type: ScheduledInstanceRecurrence (p. 677) object
Required: No

**slotDurationInHours**
The number of hours in the schedule.
Type: Integer
Required: No

**totalScheduledInstanceHours**
The total number of hours for a single instance for the entire term.
Type: Integer
Required: No
ScheduledInstanceRecurrence

Describes the recurring schedule for a Scheduled Instance.

Contents

**frequency**
- The frequency (Daily, Weekly, or Monthly).
  - Type: String
  - Required: No

**interval**
- The interval quantity. The interval unit depends on the value of `frequency`. For example, every 2 weeks or every 2 months.
  - Type: Integer
  - Required: No

**occurrenceDaySet**
- The days. For a monthly schedule, this is one or more days of the month (1-31). For a weekly schedule, this is one or more days of the week (1-7, where 1 is Sunday).
  - Type: array of Integers
  - Required: No

**occurrenceRelativeToEnd**
- Indicates whether the occurrence is relative to the end of the specified week or month.
  - Type: Boolean
  - Required: No

**occurrenceUnit**
- The unit for `occurrenceDaySet` (DayOfWeek or DayOfMonth).
  - Type: String
  - Required: No
ScheduledInstanceRecurrenceRequest

Describes the recurring schedule for a Scheduled Instance.

Contents

**Frequency**
The frequency (Daily, Weekly, or Monthly).
Type: String
Required: No

**Interval**
The interval quantity. The interval unit depends on the value of Frequency. For example, every 2 weeks or every 2 months.
Type: Integer
Required: No

**OccurrenceDays**
The days. For a monthly schedule, this is one or more days of the month (1-31). For a weekly schedule, this is one or more days of the week (1-7, where 1 is Sunday). You can't specify this value with a daily schedule. If the occurrence is relative to the end of the month, you can specify only a single day.
Type: array of Integers
Required: No

**OccurrenceRelativeToEnd**
Indicates whether the occurrence is relative to the end of the specified week or month. You can't specify this value with a daily schedule.
Type: Boolean
Required: No

**OccurrenceUnit**
The unit for OccurrenceDays (DayOfWeek or DayOfMonth). This value is required for a monthly schedule. You can't specify DayOfWeek with a weekly schedule. You can't specify this value with a daily schedule.
Type: String
Required: No
ScheduledInstancesBlockDeviceMapping

Describes a block device mapping for a Scheduled Instance.

Contents

DeviceName
The device name exposed to the instance (for example, /dev/sdh or xvdh).
Type: String
Required: No

Ebs
Parameters used to set up EBS volumes automatically when the instance is launched.
Type: ScheduledInstancesEbs (p. 680) object
Required: No

NoDevice
Suppresses the specified device included in the block device mapping of the AMI.
Type: String
Required: No

VirtualName
The virtual device name (ephemeralN). Instance store volumes are numbered starting from 0. An instance type with two available instance store volumes can specify mappings for ephemeral0 and ephemeral1. The number of available instance store volumes depends on the instance type. After you connect to the instance, you must mount the volume.
Constraints: For M3 instances, you must specify instance store volumes in the block device mapping for the instance. When you launch an M3 instance, we ignore any instance store volumes specified in the block device mapping for the AMI.
Type: String
Required: No
ScheduledInstancesEbs

Describes an EBS volume for a Scheduled Instance.

Contents

DeleteOnTermination
  Indicates whether the volume is deleted on instance termination.
  Type: Boolean
  Required: No

Encrypted
  Indicates whether the volume is encrypted. You can attached encrypted volumes only to instances that support them.
  Type: Boolean
  Required: No

Iops
  The number of I/O operations per second (IOPS) that the volume supports. For io1 volumes, this represents the number of IOPS that are provisioned for the volume. For gp2 volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting. For more information about gp2 baseline performance, I/O credits, and bursting, see Amazon EBS Volume Types in the Amazon Elastic Compute Cloud User Guide.
  Constraint: Range is 100-20000 IOPS for io1 volumes and 100-10000 IOPS for gp2 volumes.
  Condition: This parameter is required for requests to create io1 volumes; it is not used in requests to create gp2, st1, scl, or standard volumes.
  Type: Integer
  Required: No

SnapshotId
  The ID of the snapshot.
  Type: String
  Required: No

VolumeSize
  The size of the volume, in GiB.
  Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.
  Type: Integer
  Required: No

VolumeType
  The volume type. gp2 for General Purpose SSD, io1 for Provisioned IOPS SSD, Throughput Optimized HDD for st1, Cold HDD for scl, or standard for Magnetic.
  Default: standard
  Type: String
  Required: No
ScheduledInstancesIamInstanceProfile

Describes an IAM instance profile for a Scheduled Instance.

Contents

**Arn**
- The Amazon Resource Name (ARN).
- Type: String
- Required: No

**Name**
- The name.
- Type: String
- Required: No
ScheduledInstancesLaunchSpecification

Describes the launch specification for a Scheduled Instance.

If you are launching the Scheduled Instance in EC2-VPC, you must specify the ID of the subnet. You can specify the subnet using either `SubnetId` or `NetworkInterface`.

Contents

**BlockDeviceMappings**
One or more block device mapping entries.
Type: array of `ScheduledInstancesBlockDeviceMapping (p. 679)` objects
Required: No

**EbsOptimized**
Indicates whether the instances are optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS-optimized instance.
Default: `false`
Type: Boolean
Required: No

**IamInstanceProfile**
The IAM instance profile.
Type: `ScheduledInstancesIamInstanceProfile (p. 681)` object
Required: No

**ImageId**
The ID of the Amazon Machine Image (AMI).
Type: String
Required: Yes

**InstanceType**
The instance type.
Type: String
Required: No

**KernelId**
The ID of the kernel.
Type: String
Required: No

**KeyName**
The name of the key pair.
Type: String
Required: No

**Monitoring**
Enable or disable monitoring for the instances.
Type: `ScheduledInstancesMonitoring (p. 684)` object
Required: No

**NetworkInterfaces**
One or more network interfaces.
Type: array of `ScheduledInstancesNetworkInterface (p. 685)` objects
Required: No

**Placement**
The placement information.
Type: `ScheduledInstancesPlacement (p. 687) object`
Required: No

**RamdiskId**
The ID of the RAM disk.
Type: String
Required: No

**SecurityGroupIds**
The IDs of one or more security groups.
Type: array of Strings
Required: No

**SubnetId**
The ID of the subnet in which to launch the instances.
Type: String
Required: No

**UserData**
The base64-encoded MIME user data.
Type: String
Required: No
ScheduledInstancesMonitoring

Describes whether monitoring is enabled for a Scheduled Instance.

Contents

Enabled

Indicates whether monitoring is enabled.
Type: Boolean
Required: No
ScheduledInstancesNetworkInterface

Describes a network interface for a Scheduled Instance.

Contents

**AssociatePublicIpAddress**
Indicates whether to assign a public IP address to instances launched in a VPC. The public IP address can only be assigned to a network interface for eth0, and can only be assigned to a new network interface, not an existing one. You cannot specify more than one network interface in the request. If launching into a default subnet, the default value is `true`.
Type: Boolean
Required: No

**DeleteOnTermination**
Indicates whether to delete the interface when the instance is terminated.
Type: Boolean
Required: No

**Description**
The description.
Type: String
Required: No

**DeviceIndex**
The index of the device for the network interface attachment.
Type: Integer
Required: No

**Groups**
The IDs of one or more security groups.
Type: array of Strings
Required: No

**NetworkInterfaceId**
The ID of the network interface.
Type: String
Required: No

**PrivateIpAddress**
The IP address of the network interface within the subnet.
Type: String
Required: No

**PrivateIpAddressConfigs**
The private IP addresses.
Type: array of ScheduledInstancesPrivateIpAddressConfig (p. 688) objects
Required: No

**SecondaryPrivateIpAddressCount**
The number of secondary private IP addresses.
Type: Integer
Required: No

**SubnetId**
The ID of the subnet.
Type: String
Required: No
ScheduledInstancesPlacement

Describes the placement for a Scheduled Instance.

Contents

AvailabilityZone
The Availability Zone.
Type: String
Required: No

GroupName
The name of the placement group.
Type: String
Required: No
ScheduledInstancesPrivateIpAddressConfig

Describes a private IP address for a Scheduled Instance.

Contents

Primary
Indicates whether this is a primary IP address. Otherwise, this is a secondary IP address.
Type: Boolean
Required: No

PrivateIpAddress
The IP address.
Type: String
Required: No
SecurityGroup

Describes a security group

Contents

groupDescription
   A description of the security group.
   Type: String
   Required: No

groupId
   The ID of the security group.
   Type: String
   Required: No

groupName
   The name of the security group.
   Type: String
   Required: No

ipPermissions
   One or more inbound rules associated with the security group.
   Type: array of IpPermission (p. 612) objects
   Required: No

ipPermissionsEgress
   [EC2-VPC] One or more outbound rules associated with the security group.
   Type: array of IpPermission (p. 612) objects
   Required: No

ownerId
   The AWS account ID of the owner of the security group.
   Type: String
   Required: No

tagSet
   Any tags assigned to the security group.
   Type: array of Tag (p. 717) objects
   Required: No

vpcId
   [EC2-VPC] The ID of the VPC for the security group.
   Type: String
   Required: No
SecurityGroupReference

Describes a VPC with a security group that references your security group.

Contents

groupId
  The ID of your security group.
  Type: String
  Required: Yes

referencingVpcId
  The ID of the VPC with the referencing security group.
  Type: String
  Required: Yes

vpcPeeringConnectionId
  The ID of the VPC peering connection.
  Type: String
  Required: No
SlotDateTimeRangeRequest

Describes the time period for a Scheduled Instance to start its first schedule. The time period must span less than one day.

Contents

**EarliestTime**
- The earliest date and time, in UTC, for the Scheduled Instance to start.
- Type: Timestamp
- Required: Yes

**LatestTime**
- The latest date and time, in UTC, for the Scheduled Instance to start. This value must be later than or equal to the earliest date and at most three months in the future.
- Type: Timestamp
- Required: Yes
SlotStartTimeRangeRequest

Describes the time period for a Scheduled Instance to start its first schedule.

Contents

EarliestTime
The earliest date and time, in UTC, for the Scheduled Instance to start.
Type: Timestamp
Required: No

LatestTime
The latest date and time, in UTC, for the Scheduled Instance to start.
Type: Timestamp
Required: No
Snapshot

Describes a snapshot.

Contents

dataEncryptionKeyId
The data encryption key identifier for the snapshot. This value is a unique identifier that corresponds to the data encryption key that was used to encrypt the original volume or snapshot copy. Because data encryption keys are inherited by volumes created from snapshots, and vice versa, if snapshots share the same data encryption key identifier, then they belong to the same volume/snapshot lineage. This parameter is only returned by the DescribeSnapshots (p. 304) API operation.
Type: String
Required: No

description
The description for the snapshot.
Type: String
Required: No

encrypted
Indicates whether the snapshot is encrypted.
Type: Boolean
Required: No

kmsKeyId
The full ARN of the AWS Key Management Service (AWS KMS) customer master key (CMK) that was used to protect the volume encryption key for the parent volume.
Type: String
Required: No

ownerAlias
Value from an Amazon-maintained list (amazon | aws-marketplace | microsoft) of snapshot owners. Not to be confused with the user-configured AWS account alias, which is set from the IAM console.
Type: String
Required: No

ownerId
The AWS account ID of the EBS snapshot owner.
Type: String
Required: No

progress
The progress of the snapshot, as a percentage.
Type: String
Required: No

snapshotId
The ID of the snapshot. Each snapshot receives a unique identifier when it is created.
Type: String
Required: No

startTime
The time stamp when the snapshot was initiated.
Type: Timestamp
Required: No

status
  The snapshot state.
  Type: String
  Valid Values: pending | completed | error
  Required: No

statusMessage
  Encrypted Amazon EBS snapshots are copied asynchronously. If a snapshot copy operation
  fails (for example, if the proper AWS Key Management Service (AWS KMS) permissions are not
  obtained) this field displays error state details to help you diagnose why the error occurred. This
  parameter is only returned by the DescribeSnapshots (p. 304) API operation.
  Type: String
  Required: No

tagSet
  Any tags assigned to the snapshot.
  Type: array of Tag (p. 717) objects
  Required: No

volumeId
  The ID of the volume that was used to create the snapshot. Snapshots created by the
  CopySnapshot (p. 65) action have an arbitrary volume ID that should not be used for any purpose.
  Type: String
  Required: No

volumeSize
  The size of the volume, in GiB.
  Type: Integer
  Required: No
**SnapshotDetail**

Describes the snapshot created from the imported disk.

**Contents**

- **description**
  - A description for the snapshot.
  - Type: String
  - Required: No

- **deviceName**
  - The block device mapping for the snapshot.
  - Type: String
  - Required: No

- **diskImageSize**
  - The size of the disk in the snapshot, in GiB.
  - Type: Double
  - Required: No

- **format**
  - The format of the disk image from which the snapshot is created.
  - Type: String
  - Required: No

- **progress**
  - The percentage of progress for the task.
  - Type: String
  - Required: No

- **snapshotId**
  - The snapshot ID of the disk being imported.
  - Type: String
  - Required: No

- **status**
  - A brief status of the snapshot creation.
  - Type: String
  - Required: No

- **statusMessage**
  - A detailed status message for the snapshot creation.
  - Type: String
  - Required: No

- **url**
  - The URL used to access the disk image.
  - Type: String
  - Required: No

- **userBucket**
  - The S3 bucket for the disk image.
  - Type: UserBucketDetails (p. 725) object
  - Required: No
SnapshotDiskContainer

The disk container object for the import snapshot request.

Contents

Description
The description of the disk image being imported.
Type: String
Required: No

Format
The format of the disk image being imported.
Valid values: RAW | VHD | VMDK | OVA
Type: String
Required: No

Url
The URL to the Amazon S3-based disk image being imported. It can either be a https URL (https://..) or an Amazon S3 URL (s3://..).
Type: String
Required: No

UserBucket
The S3 bucket for the disk image.
Type: UserBucket (p. 724) object
Required: No
SnapshotTaskDetail

Details about the import snapshot task.

Contents

description
The description of the snapshot.
Type: String
Required: No
diskImageSize
The size of the disk in the snapshot, in GiB.
Type: Double
Required: No
format
The format of the disk image from which the snapshot is created.
Type: String
Required: No
progress
The percentage of completion for the import snapshot task.
Type: String
Required: No
snapshotId
The snapshot ID of the disk being imported.
Type: String
Required: No
status
A brief status for the import snapshot task.
Type: String
Required: No
statusMessage
A detailed status message for the import snapshot task.
Type: String
Required: No
url
The URL of the disk image from which the snapshot is created.
Type: String
Required: No
userBucket
The S3 bucket for the disk image.
Type: UserBucketDetails (p. 725) object
Required: No
SpotDatafeedSubscription

Describes the data feed for a Spot instance.

Contents

bucket
The Amazon S3 bucket where the Spot instance data feed is located.
Type: String
Required: No

cost
The fault codes for the Spot instance request, if any.
Type: SpotInstanceStateFault (p. 708) object
Required: No

ownerId
The AWS account ID of the account.
Type: String
Required: No

prefix
The prefix that is prepended to data feed files.
Type: String
Required: No

state
The state of the Spot instance data feed subscription.
Type: String
Valid Values: Active | Inactive
Required: No
SpotFleetLaunchSpecification

Describes the launch specification for one or more Spot instances.

Contents

**AddressingType** (request), **addressingType** (response)
  Deprecated.
  Type: String
  Required: No

**BlockDeviceMappings** (request), **blockDeviceMapping** (response)
  One or more block device mapping entries.
  Type: array of **BlockDeviceMapping** (p. 534) objects
  Required: No

**EbsOptimized** (request), **ebsOptimized** (response)
  Indicates whether the instances are optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.
  Default: false
  Type: Boolean
  Required: No

**SecurityGroups** (request), **groupSet** (response)
  One or more security groups. When requesting instances in a VPC, you must specify the IDs of the security groups. When requesting instances in EC2-Classic, you can specify the names or the IDs of the security groups.
  Type: array of **GroupIdentifier** (p. 563) objects
  Required: No

**IamInstanceProfile** (request), **iamInstanceProfile** (response)
  The IAM instance profile.
  Type: **IamInstanceProfileSpecification** (p. 572) object
  Required: No

**ImageId** (request), **imageId** (response)
  The ID of the AMI.
  Type: String
  Required: No

**InstanceType** (request), **instanceType** (response)
  The instance type.
  Type: String
  Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large |
  m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large |
  m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge |
  m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge |
  cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge |
  x1.16xlarge | x1.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge |
  i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large |
  c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge |
  c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge |
  g2.2xlarge | g2.8xlarge | cg1.4xlarge | p2.xlarge | p2.8xlarge |
  p2.16xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge |
  Required: No
KernelId (request), kernelId (response)
The ID of the kernel.
Type: String
Required: No

KeyName (request), keyName (response)
The name of the key pair.
Type: String
Required: No

Monitoring (request), monitoring (response)
Enable or disable monitoring for the instances.
Type: SpotFleetMonitoring (p. 702) object
Required: No

NetworkInterfaces (request), networkInterfaceSet (response)
One or more network interfaces. If you specify a network interface, you must specify subnet IDs and security group IDs using the network interface.
Type: array of InstanceNetworkInterfaceSpecification (p. 601) objects
Required: No

Placement (request), placement (response)
The placement information.
Type: SpotPlacement (p. 710) object
Required: No

RamdiskId (request), ramdiskId (response)
The ID of the RAM disk.
Type: String
Required: No

SpotPrice (request), spotPrice (response)
The bid price per unit hour for the specified instance type. If this value is not specified, the default is the Spot bid price specified for the fleet. To determine the bid price per unit hour, divide the Spot bid price by the value of WeightedCapacity.
Type: String
Required: No

SubnetId (request), subnetId (response)
The ID of the subnet in which to launch the instances. To specify multiple subnets, separate them using commas; for example, "subnet-a61dafcf, subnet-65ea5f08".
Type: String
Required: No

UserData (request), userData (response)
The user data to make available to the instances. If you are using an AWS SDK or command line tool, Base64-encoding is performed for you, and you can load the text from a file. Otherwise, you must provide Base64-encoded text.
Type: String
Required: No

WeightedCapacity (request), weightedCapacity (response)
The number of units provided by the specified instance type. These are the same units that you chose to set the target capacity in terms (instances or a performance characteristic such as vCPUs, memory, or I/O).
If the target capacity divided by this value is not a whole number, we round the number of instances to the next whole number. If this value is not specified, the default is 1.
Type: Double
Required: No
SpotFleetMonitoring

Describes whether monitoring is enabled.

Contents

Enabled (request), enabled (response)
Enables monitoring for the instance.
Default: false
Type: Boolean
Required: No
SpotFleetRequestConfig

Describes a Spot fleet request.

Contents

activityStatus
The progress of the Spot fleet request. If there is an error, the status is error. After all bids are placed, the status is pending fulfillment. If the size of the fleet is equal to or greater than its target capacity, the status is fulfilled. If the size of the fleet is decreased, the status is pending termination while Spot instances are terminating.
Type: String
Valid Values: error | pending_fulfillment | pending_termination | fulfilled
Required: No

createTime
The creation date and time of the request.
Type: Timestamp
Required: Yes

spotFleetRequestConfig
Information about the configuration of the Spot fleet request.
Type: SpotFleetRequestConfigData (p. 704) object
Required: Yes

spotFleetRequestId
The ID of the Spot fleet request.
Type: String
Required: Yes

spotFleetRequestState
The state of the Spot fleet request.
Type: String
Valid Values: submitted | active | cancelled | failed | cancelled_running | cancelled_terminating | modifying
Required: Yes
SpotFleetRequestConfigData

Describes the configuration of a Spot fleet request.

Contents

**AllocationStrategy** (request), **allocationStrategy** (response)
Indicates how to allocate the target capacity across the Spot pools specified by the Spot fleet request. The default is `lowestPrice`.
Type: String
Valid Values: `lowestPrice` | `diversified`
Required: No

**ClientToken** (request), **clientToken** (response)
A unique, case-sensitive identifier you provide to ensure idempotency of your listings. This helps avoid duplicate listings. For more information, see Ensuring Idempotency.
Type: String
Required: No

**ExcessCapacityTerminationPolicy** (request), **excessCapacityTerminationPolicy** (response)
Indicates whether running Spot instances should be terminated if the target capacity of the Spot fleet request is decreased below the current size of the Spot fleet.
Type: String
Valid Values: `noTermination` | `default`
Required: No

**FulfilledCapacity** (request), **fulfilledCapacity** (response)
The number of units fulfilled by this request compared to the set target capacity.
Type: Double
Required: No

**IamFleetRole** (request), **iamFleetRole** (response)
Grants the Spot fleet permission to terminate Spot instances on your behalf when you cancel its Spot fleet request using `CancelSpotFleetRequests` (p. 57) or when the Spot fleet request expires, if you set `terminateInstancesWithExpiration`.
Type: String
Required: Yes

**LaunchSpecifications** (request), **launchSpecifications** (response)
Information about the launch specifications for the Spot fleet request.
Type: array of `SpotFleetLaunchSpecification` (p. 699) objects
Array Members: Minimum number of 1 item.
Required: Yes

**SpotPrice** (request), **spotPrice** (response)
The bid price per unit hour.
Type: String
Required: Yes

**TargetCapacity** (request), **targetCapacity** (response)
The number of units to request. You can choose to set the target capacity in terms of instances or a performance characteristic that is important to your application workload, such as vCPUs, memory, or I/O.
Type: Integer
Required: Yes

**TerminateInstancesWithExpiration** (request), **terminateInstancesWithExpiration** (response)
Indicates whether running Spot instances should be terminated when the Spot fleet request expires.
Type: Boolean
Required: No

**Type** (request), **type** (response)
The type of request. Indicates whether the fleet will only request the target capacity or also attempt to maintain it. When you request a certain target capacity, the fleet will only place the required bids. It will not attempt to replenish Spot instances if capacity is diminished, nor will it submit bids in alternative Spot pools if capacity is not available. When you want to maintain a certain target capacity, the fleet will place the required bids to meet this target capacity. It will also automatically replenish any interrupted instances. Default: maintain.

Type: String
Valid Values: request | maintain
Required: No

**ValidFrom** (request), **validFrom** (response)
The start date and time of the request, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ). The default is to start fulfilling the request immediately.

Type: Timestamp
Required: No

**ValidUntil** (request), **validUntil** (response)
The end date and time of the request, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ). At this point, no new Spot instance requests are placed or enabled to fulfill the request.

Type: Timestamp
Required: No
SpotInstanceRequest

Describes a Spot instance request.

Contents

actualBlockHourlyPrice
If you specified a duration and your Spot instance request was fulfilled, this is the fixed hourly price in effect for the Spot instance while it runs.
Type: String
Required: No

availabilityZoneGroup
The Availability Zone group. If you specify the same Availability Zone group for all Spot instance requests, all Spot instances are launched in the same Availability Zone.
Type: String
Required: No

blockDurationMinutes
The duration for the Spot instance, in minutes.
Type: Integer
Required: No

createTime
The date and time when the Spot instance request was created, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ).
Type: Timestamp
Required: No

fault
The fault codes for the Spot instance request, if any.
Type: SpotInstanceStateFault (p. 708) object
Required: No

instanceId
The instance ID, if an instance has been launched to fulfill the Spot instance request.
Type: String
Required: No

launchGroupId
The instance launch group. Launch groups are Spot instances that launch together and terminate together.
Type: String
Required: No

launchSpecification
Additional information for launching instances.
Type: LaunchSpecification (p. 617) object
Required: No

productDescription
The product description associated with the Spot instance.
Type: String
Valid Values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)
Required: No

**spotInstanceRequestId**
The ID of the Spot instance request.
Type: String
Required: No

**spotPrice**
The maximum hourly price (bid) for the Spot instance launched to fulfill the request.
Type: String
Required: No

**state**
The state of the Spot instance request. Spot bid status information can help you track your Spot instance requests. For more information, see Spot Bid Status in the Amazon Elastic Compute Cloud User Guide.
Type: String
Valid Values: open | active | closed | cancelled | failed
Required: No

**status**
The status code and status message describing the Spot instance request.
Type: SpotInstanceStatus (p. 709) object
Required: No

**tagSet**
Any tags assigned to the resource.
Type: array of Tag (p. 717) objects
Required: No

**type**
The Spot instance request type.
Type: String
Valid Values: one-time | persistent
Required: No

**validFrom**
The start date of the request, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ). The request becomes active at this date and time.
Type: Timestamp
Required: No

**validUntil**
The end date of the request, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ). If this is a one-time request, it remains active until all instances launch, the request is canceled, or this date is reached. If the request is persistent, it remains active until it is canceled or this date is reached.
Type: Timestamp
Required: No
SpotInstanceStateFault
Describes a Spot instance state change.

Contents

code
  The reason code for the Spot instance state change.
  Type: String
  Required: No

message
  The message for the Spot instance state change.
  Type: String
  Required: No
SpotInstanceStatus

Describes the status of a Spot instance request.

Contents

code
The status code. For a list of status codes, see Spot Bid Status Codes in the Amazon Elastic Compute Cloud User Guide.
Type: String
Required: No

message
The description for the status code.
Type: String
Required: No

updateTime
The date and time of the most recent status update, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ).
Type: Timestamp
Required: No
SpotPlacement

Describes Spot instance placement.

Contents

AvailabilityZone (request), availabilityZone (response)
The Availability Zone.
[Spot fleet only] To specify multiple Availability Zones, separate them using commas; for example, "us-west-2a, us-west-2b".
Type: String
Required: No

GroupName (request), groupName (response)
The name of the placement group (for cluster instances).
Type: String
Required: No
SpotPrice

Describes the maximum hourly price (bid) for any Spot instance launched to fulfill the request.

Contents

availabilityZone

The Availability Zone.

Type: String

Required: No

instanceType

The instance type.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large
| m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large |
m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge
| m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge |
cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge
| x1.16xlarge | x1.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge |
i2.8xlarge | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large |
c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge |
c4.2xlarge | c4.4xlarge | c4.8xlarge | cc1.4xlarge | cc2.8xlarge |
g2.2xlarge | g2.8xlarge | cg1.4xlarge | p2.xlarge | p2.8xlarge |
p2.16xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge

Required: No

productDescription

A general description of the AMI.

Type: String

Valid Values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

Required: No

spotPrice

The maximum price (bid) that you are willing to pay for a Spot instance.

Type: String

Required: No

timestamp

The date and time the request was created, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ).

Type: Timestamp

Required: No
StaleIpPermission

Describes a stale rule in a security group.

Contents

fromPort
The start of the port range for the TCP and UDP protocols, or an ICMP type number. A value of –1 indicates all ICMP types.
Type: Integer
Required: No

groups
One or more security group pairs. Returns the ID of the referenced security group and VPC, and the ID and status of the VPC peering connection.
Type: array of UserIdGroupPair (p. 727) objects
Required: No

ipProtocol
The IP protocol name (for tcp, udp, and icmp) or number (see Protocol Numbers).
Type: String
Required: No

ipRanges
One or more IP ranges. Not applicable for stale security group rules.
Type: array of Strings
Required: No

prefixListIds
One or more prefix list IDs for an AWS service. Not applicable for stale security group rules.
Type: array of Strings
Required: No

toPort
The end of the port range for the TCP and UDP protocols, or an ICMP type number. A value of –1 indicates all ICMP types.
Type: Integer
Required: No
StaleSecurityGroup

Describes a stale security group (a security group that contains stale rules).

Contents

description
The description of the security group.
Type: String
Required: No
groupId
The ID of the security group.
Type: String
Required: Yes
groupName
The name of the security group.
Type: String
Required: No
staleIpPermissions
Information about the stale inbound rules in the security group.
Type: array of StaleIpPermission (p. 712) objects
Required: No
staleIpPermissionsEgress
Information about the stale outbound rules in the security group.
Type: array of StaleIpPermission (p. 712) objects
Required: No
vpcId
The ID of the VPC for the security group.
Type: String
Required: No
StateReason

Describes a state change.

Contents

code
The reason code for the state change.
Type: String
Required: No

message
The message for the state change.
• Server.SpotInstanceTermination: A Spot instance was terminated due to an increase in the market price.
• Server.InternalError: An internal error occurred during instance launch, resulting in termination.
• Server.InsufficientInstanceCapacity: There was insufficient instance capacity to satisfy the launch request.
• Client.InternalError: A client error caused the instance to terminate on launch.
• Client.InstanceInitiatedShutdown: The instance was shut down using the shutdown -h command from the instance.
• Client.UserInitiatedShutdown: The instance was shut down using the Amazon EC2 API.
• Client.VolumeLimitExceeded: The limit on the number of EBS volumes or total storage was exceeded. Decrease usage or request an increase in your limits.
• Client.InvalidSnapshot.NotFound: The specified snapshot was not found.
Type: String
Required: No
Storage

Describes the storage location for an instance store-backed AMI.

Contents

S3 (request), S3 (response)
An Amazon S3 storage location.
Type: S3Storage (p. 672) object
Required: No
Subnet

Describes a subnet.

Contents

**availabilityZone**

The Availability Zone of the subnet.

- Type: String
- Required: No

**availableIpAddressCount**

The number of unused IP addresses in the subnet. Note that the IP addresses for any stopped instances are considered unavailable.

- Type: Integer
- Required: No

**cidrBlock**

The CIDR block assigned to the subnet.

- Type: String
- Required: No

**defaultForAz**

Indicates whether this is the default subnet for the Availability Zone.

- Type: Boolean
- Required: No

**mapPublicIpOnLaunch**

Indicates whether instances launched in this subnet receive a public IP address.

- Type: Boolean
- Required: No

**state**

The current state of the subnet.

- Type: String
- Valid Values: pending | available
- Required: No

**subnetId**

The ID of the subnet.

- Type: String
- Required: No

**tagSet**

Any tags assigned to the subnet.

- Type: array of Tag (p. 717) objects
- Required: No

**vpcId**

The ID of the VPC the subnet is in.

- Type: String
- Required: No
Tag

Describes a tag.

Contents

**Key** (request), **key** (response)
The key of the tag.
Constraints: Tag keys are case-sensitive and accept a maximum of 127 Unicode characters. May not begin with `aws`.
Type: String
Required: No

**Value** (request), **value** (response)
The value of the tag.
Constraints: Tag values are case-sensitive and accept a maximum of 255 Unicode characters.
Type: String
Required: No
TagDescription

Describes a tag.

Contents

key
The tag key.
Type: String
Required: No

resourceId
The ID of the resource. For example, ami-1a2b3c4d.
Type: String
Required: No

resourceType
The resource type.
Type: String
Required: No

value
The tag value.
Type: String
Required: No
TargetConfiguration

Information about the Convertible Reserved Instance offering.

Contents

instanceCount
   The number of instances the Convertible Reserved Instance offering can be applied to. This parameter is reserved and cannot be specified in a request
   Type: Integer
   Required: No

offeringId
   The ID of the Convertible Reserved Instance offering.
   Type: String
   Required: No
TargetConfigurationRequest
Details about the target configuration.

Contents

InstanceCount
The number of instances the Convertible Reserved Instance offering can be applied to. This parameter is reserved and cannot be specified in a request.
Type: Integer
Required: No

OfferingId
The Convertible Reserved Instance offering ID.
Type: String
Required: Yes
TargetReservationValue

The total value of the new Convertible Reserved Instances.

Contents

reservationValue

The total value of the Convertible Reserved Instances that make up the exchange. This is the sum of the list value, remaining upfront price, and additional upfront cost of the exchange.

Type: ReservationValue (p. 655) object

Required: No

targetConfiguration

The configuration of the Convertible Reserved Instances that make up the exchange.

Type: TargetConfiguration (p. 719) object

Required: No
UnsuccessfulItem

Information about items that were not successfully processed in a batch call.

Contents

error

Information about the error.
Type: UnsuccessfulItemError (p. 723) object
Required: Yes

resourceId

The ID of the resource.
Type: String
Required: No
UnsuccessfulItemError

Information about the error that occurred. For more information about errors, see Error Codes.

Contents

code
  The error code.
  Type: String
  Required: Yes

message
  The error message accompanying the error code.
  Type: String
  Required: Yes
UserBucket

Describes the S3 bucket for the disk image.

Contents

S3Bucket
The name of the S3 bucket where the disk image is located.
Type: String
Required: No

S3Key
The file name of the disk image.
Type: String
Required: No
UserBucketDetails

Describes the S3 bucket for the disk image.

Contents

s3Bucket
The S3 bucket from which the disk image was created.
Type: String
Required: No

s3Key
The file name of the disk image.
Type: String
Required: No
UserData

Describes the user data for an instance.

Contents

Data

The user data. If you are using an AWS SDK or command line tool, Base64-encoding is performed for you, and you can load the text from a file. Otherwise, you must provide Base64-encoded text.

Type: String

Required: No
**UserIdGroupPair**

Describes a security group and AWS account ID pair.

**Contents**

- **GroupId** (request), **groupId** (response)
  The ID of the security group.
  Type: String
  Required: No

- **GroupName** (request), **groupName** (response)
  The name of the security group. In a request, use this parameter for a security group in EC2-Classic or a default VPC only. For a security group in a nondefault VPC, use the security group ID.
  Type: String
  Required: No

- **PeeringStatus** (request), **peeringStatus** (response)
  The status of a VPC peering connection, if applicable.
  Type: String
  Required: No

- **UserId** (request), **userId** (response)
  The ID of an AWS account. For a referenced security group in another VPC, the account ID of the referenced security group is returned.
  [EC2-Classic] Required when adding or removing rules that reference a security group in another AWS account.
  Type: String
  Required: No

- **VpcId** (request), **vpcId** (response)
  The ID of the VPC for the referenced security group, if applicable.
  Type: String
  Required: No

- **VpcPeeringConnectionId** (request), **vpcPeeringConnectionId** (response)
  The ID of the VPC peering connection, if applicable.
  Type: String
  Required: No
VgwTelemetry

Describes telemetry for a VPN tunnel.

Contents

acceptedRouteCount
  The number of accepted routes.
  Type: Integer
  Required: No

lastStatusChange
  The date and time of the last change in status.
  Type: Timestamp
  Required: No

outsideIpAddress
  The Internet-routable IP address of the virtual private gateway's outside interface.
  Type: String
  Required: No

status
  The status of the VPN tunnel.
  Type: String
  Valid Values: UP | DOWN
  Required: No

statusMessage
  If an error occurs, a description of the error.
  Type: String
  Required: No
Volume

Describes a volume.

Contents

attachmentSet
  Information about the volume attachments.
  Type: array of VolumeAttachment (p. 731) objects
  Required: No

availabilityZone
  The Availability Zone for the volume.
  Type: String
  Required: No

createTime
  The time stamp when volume creation was initiated.
  Type: Timestamp
  Required: No

encrypted
  Indicates whether the volume will be encrypted.
  Type: Boolean
  Required: No

iops
  The number of I/O operations per second (IOPS) that the volume supports. For Provisioned IOPS SSD volumes, this represents the number of IOPS that are provisioned for the volume. For General Purpose SSD volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting. For more information on General Purpose SSD baseline performance, I/O credits, and bursting, see Amazon EBS Volume Types in the Amazon Elastic Compute Cloud User Guide.
  Constraint: Range is 100-20000 IOPS for io1 volumes and 100-10000 IOPS for gp2 volumes.
  Condition: This parameter is required for requests to create io1 volumes; it is not used in requests to create gp2, st1, scl, or standard volumes.
  Type: Integer
  Required: No

kmsKeyId
  The full ARN of the AWS Key Management Service (AWS KMS) customer master key (CMK) that was used to protect the volume encryption key for the volume.
  Type: String
  Required: No

size
  The size of the volume, in GiBs.
  Type: Integer
  Required: No

snapshotId
  The snapshot from which the volume was created, if applicable.
  Type: String
  Required: No

status
  The volume state.
  Type: String
Valid Values: creating | available | in-use | deleting | deleted | error
Required: No

tagSet
Any tags assigned to the volume.
Type: array of Tag (p. 717) objects
Required: No

volumeld
The ID of the volume.
Type: String
Required: No

volumeType
The volume type. This can be gp2 for General Purpose SSD, iol for Provisioned IOPS SSD, st1 for Throughput Optimized HDD, scl for Cold HDD, or standard for Magnetic volumes.
Type: String
Valid Values: standard | iol | gp2 | scl | st1
Required: No
VolumeAttachment

Describes volume attachment details.

Contents

attachTime
  The time stamp when the attachment initiated.
  Type: Timestamp
  Required: No

deleteOnTermination
  Indicates whether the EBS volume is deleted on instance termination.
  Type: Boolean
  Required: No

device
  The device name.
  Type: String
  Required: No

instanceId
  The ID of the instance.
  Type: String
  Required: No

status
  The attachment state of the volume.
  Type: String
  Valid Values: attaching | attached | detaching | detached
  Required: No

volumeId
  The ID of the volume.
  Type: String
  Required: No
VolumeDetail

Describes an EBS volume.

Contents

Size
The size of the volume, in GiB.
Type: Long
Required: Yes
VolumeStatusAction

Describes a volume status operation code.

Contents

code
  The code identifying the operation, for example, enable-volume-io.
  Type: String
  Required: No

description
  A description of the operation.
  Type: String
  Required: No

eventId
  The ID of the event associated with this operation.
  Type: String
  Required: No

eventType
  The event type associated with this operation.
  Type: String
  Required: No
VolumeStatusDetails

Describes a volume status.

Contents

name
The name of the volume status.
Type: String
Valid Values: io-enabled | io-performance
Required: No

status
The intended status of the volume status.
Type: String
Required: No
VolumeStatusEvent

Describes a volume status event.

Contents

description
A description of the event.
Type: String
Required: No

eventId
The ID of this event.
Type: String
Required: No

eventType
The type of this event.
Type: String
Required: No

notAfter
The latest end time of the event.
Type: Timestamp
Required: No

notBefore
The earliest start time of the event.
Type: Timestamp
Required: No
VolumeStatusInfo

Describes the status of a volume.

Contents

details
The details of the volume status.
Type: array of VolumeStatusDetails objects
Required: No

status
The status of the volume.
Type: String
Valid Values: ok | impaired | insufficient-data
Required: No
VolumeStatusItem

Describes the volume status.

Contents

actionsSet
The details of the operation.
Type: array of VolumeStatusAction (p. 733) objects
Required: No

availabilityZone
The Availability Zone of the volume.
Type: String
Required: No

eventsSet
A list of events associated with the volume.
Type: array of VolumeStatusEvent (p. 735) objects
Required: No

volumeId
The volume ID.
Type: String
Required: No

volumeStatus
The volume status.
Type: VolumeStatusInfo (p. 736) object
Required: No
Vpc

Describes a VPC.

Contents

cidrBlock
  The CIDR block for the VPC.
  Type: String
  Required: No

dhcpOptionsId
  The ID of the set of DHCP options you've associated with the VPC (or default if the default options are associated with the VPC).
  Type: String
  Required: No

instanceTenancy
  The allowed tenancy of instances launched into the VPC.
  Type: String
  Valid Values: default | dedicated | host
  Required: No

isDefault
  Indicates whether the VPC is the default VPC.
  Type: Boolean
  Required: No

state
  The current state of the VPC.
  Type: String
  Valid Values: pending | available
  Required: No

tagSet
  Any tags assigned to the VPC.
  Type: array of Tag (p. 717) objects
  Required: No

vpcId
  The ID of the VPC.
  Type: String
  Required: No
VpcAttachment

Describes an attachment between a virtual private gateway and a VPC.

Contents

state

The current state of the attachment.

Type: String

Valid Values: attaching | attached | detaching | detached

Required: No

vpcId

The ID of the VPC.

Type: String

Required: No
VpcClassicLink

Describes whether a VPC is enabled for ClassicLink.

Contents

classicLinkEnabled
   Indicates whether the VPC is enabled for ClassicLink.
   Type: Boolean
   Required: No

tagSet
   Any tags assigned to the VPC.
   Type: array of Tag objects
   Required: No

vpcId
   The ID of the VPC.
   Type: String
   Required: No
VpcEndpoint

Describes a VPC endpoint.

Contents

creationTimestamp
The date and time the VPC endpoint was created.
Type: Timestamp
Required: No

policyDocument
The policy document associated with the endpoint.
Type: String
Required: No

routeTableIdsSet
One or more route tables associated with the endpoint.
Type: array of Strings
Required: No

serviceName
The name of the AWS service to which the endpoint is associated.
Type: String
Required: No

state
The state of the VPC endpoint.
Type: String
Valid Values: Pending | Available | Deleting | Deleted
Required: No

vpcEndpointId
The ID of the VPC endpoint.
Type: String
Required: No

vpcId
The ID of the VPC to which the endpoint is associated.
Type: String
Required: No
VpcPeeringConnection

Describes a VPC peering connection.

Contents

accepterVpcInfo
Information about the accepter VPC. CIDR block information is not returned when creating a VPC peering connection, or when describing a VPC peering connection that’s in the initiating-request or pending-acceptance state.
Type: VpcPeeringConnectionVpcInfo (p. 745) object
Required: No

expirationTime
The time that an unaccepted VPC peering connection will expire.
Type: Timestamp
Required: No

requesterVpcInfo
Information about the requester VPC.
Type: VpcPeeringConnectionVpcInfo (p. 745) object
Required: No

status
The status of the VPC peering connection.
Type: VpcPeeringConnectionStateReason (p. 744) object
Required: No

tagSet
Any tags assigned to the resource.
Type: array of Tag (p. 717) objects
Required: No

vpcPeeringConnectionId
The ID of the VPC peering connection.
Type: String
Required: No
VpcPeeringConnectionOptionsDescription

Describes the VPC peering connection options.

Contents

allowDnsResolutionFromRemoteVpc
    Indicates whether a local VPC can resolve public DNS hostnames to private IP addresses when
    queried from instances in a peer VPC.
    Type: Boolean
    Required: No

allowEgressFromLocalClassicLinkToRemoteVpc
    Indicates whether a local ClassicLink connection can communicate with the peer VPC over the
    VPC peering connection.
    Type: Boolean
    Required: No

allowEgressFromLocalVpcToRemoteClassicLink
    Indicates whether a local VPC can communicate with a ClassicLink connection in the peer VPC
    over the VPC peering connection.
    Type: Boolean
    Required: No
VpcPeeringConnectionStateReason

Describes the status of a VPC peering connection.

Contents

code
The status of the VPC peering connection.
Type: String
Valid Values: initiating-request | pending-acceptance | active | deleted |
rejected | failed | expired | provisioning | deleting
Required: No

message
A message that provides more information about the status, if applicable.
Type: String
Required: No
VpcPeeringConnectionVpcInfo

Describes a VPC in a VPC peering connection.

Contents

cidrBlock
The CIDR block for the VPC.
Type: String
Required: No

ownerId
The AWS account ID of the VPC owner.
Type: String
Required: No

peeringOptions
Information about the VPC peering connection options for the accepter or requester VPC.
Type: VpcPeeringConnectionOptionsDescription (p. 743) object
Required: No

vpcId
The ID of the VPC.
Type: String
Required: No
VpnConnection

Describes a VPN connection.

Contents

customerGatewayConfiguration
The configuration information for the VPN connection's customer gateway (in the native XML format). This element is always present in the CreateVpnConnection (p. 129) response; however, it's present in the DescribeVpnConnections (p. 360) response only if the VPN connection is in the pending or available state.
Type: String
Required: No
customerGatewayId
The ID of the customer gateway at your end of the VPN connection.
Type: String
Required: No
options
The VPN connection options.
Type: VpnConnectionOptions (p. 748) object
Required: No
routes
The static routes associated with the VPN connection.
Type: array of VpnStaticRoute (p. 751) objects
Required: No
state
The current state of the VPN connection.
Type: String
Valid Values: pending | available | deleting | deleted
Required: No
tagSet
Any tags assigned to the VPN connection.
Type: array of Tag (p. 717) objects
Required: No
type
The type of VPN connection.
Type: String
Valid Values: ipsec.1
Required: No
vgwTelemetry
Information about the VPN tunnel.
Type: array of VgwTelemetry (p. 728) objects
Required: No
vpnConnectionId
The ID of the VPN connection.
Type: String
Required: No
vpnGatewayId
The ID of the virtual private gateway at the AWS side of the VPN connection.
Type: String
Required: No
VpnConnectionOptions

Describes VPN connection options.

Contents

staticRoutesOnly

Indicates whether the VPN connection uses static routes only. Static routes must be used for devices that don’t support BGP.

Type: Boolean

Required: No
VpnConnectionOptionsSpecification

Describes VPN connection options.

Contents

StaticRoutesOnly
 Indicates whether the VPN connection uses static routes only. Static routes must be used for devices that don't support BGP.
 Type: Boolean
 Required: No
VpnGateway

Describes a virtual private gateway.

Contents

**attachments**

Any VPCs attached to the virtual private gateway.
Type: array of VpcAttachment (p. 739) objects
Required: No

**availabilityZone**

The Availability Zone where the virtual private gateway was created, if applicable. This field may be empty or not returned.
Type: String
Required: No

**state**

The current state of the virtual private gateway.
Type: String
Valid Values: pending | available | deleting | deleted
Required: No

**tagSet**

Any tags assigned to the virtual private gateway.
Type: array of Tag (p. 717) objects
Required: No

**type**

The type of VPN connection the virtual private gateway supports.
Type: String
Valid Values: ipsec.1
Required: No

**vpnGatewayId**

The ID of the virtual private gateway.
Type: String
Required: No
VpnStaticRoute

Describes a static route for a VPN connection.

Contents

destinationCidrBlock

The CIDR block associated with the local subnet of the customer data center.
Type: String
Required: No

source

Indicates how the routes were provided.
Type: String
Valid Values: Static
Required: No

state

The current state of the static route.
Type: String
Valid Values: pending | available | deleting | deleted
Required: No
Making API Requests

We provide the Query API for Amazon EC2, as well as software development kits (SDK) for Amazon Web Services (AWS) that enable you to access Amazon EC2 from your preferred programming language.

To monitor the calls made to the Amazon EC2 API for your account, including calls made by the AWS Management Console, command line tools, and other services, use AWS CloudTrail. For more information, see the AWS CloudTrail User Guide.

Topics

• Required Knowledge (p. 752)
• Available APIs for Amazon EC2 (p. 752)
• Query Requests (p. 753)
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• Logging API Calls Using AWS CloudTrail (p. 764)
• VM Import Manifest (p. 766)

Required Knowledge

If you plan to access Amazon EC2 through an API, you should be familiar with the following:

• XML
• Web services
• HTTP requests
• One or more programming languages, such as Java, PHP, Perl, Python, Ruby, C#, or C++.

Available APIs for Amazon EC2

The Amazon EC2 Query API provides HTTP or HTTPS requests that use the HTTP verb GET or POST and a Query parameter named Action.
AWS provides libraries, sample code, tutorials, and other resources for software developers who prefer to build applications using language-specific APIs instead of submitting a request over HTTP or HTTPS. These libraries provide basic functions that automatically take care of tasks such as cryptographically signing your requests, retrying requests, and handling error responses, so that it is easier for you to get started.

For more information about downloading the AWS SDKs, see AWS SDKs and Tools. For more information about the language-specific APIs for Amazon EC2, see the following documentation.

**AWS SDK for .NET**
- Amazon.EC2
- Amazon.EC2.Model
- Amazon.EC2.Util

**AWS SDK for Java**
- com.amazonaws.services.ec2
- com.amazonaws.services.ec2.model
- com.amazonaws.services.ec2.util

**AWS SDK for JavaScript**
- AWS.EC2

**AWS SDK for Python**
- boto.ec2

**AWS SDK for Ruby**
- Aws::EC2

**AWS SDK for PHP**
- Ec2Client

**AWS SDK for IOS**
- AWSEC2

**AWS SDK for Android**
- com.amazonaws.services.ec2
- com.amazonaws.services.ec2.model
- com.amazonaws.services.ec2.util

---

**Query Requests**

Query requests are HTTP or HTTPS requests that use the HTTP verb GET or POST and a Query parameter named Action. For a list of Amazon EC2 API actions, see Actions.
Structure of a GET Request

The Amazon EC2 documentation presents the GET requests as URLs, which can be used directly in a browser.

**Tip**
Because the GET requests are URLs, you must URL encode the parameter values. In the Amazon EC2 documentation, we leave the example GET requests unencoded to make them easier to read.

The request consists of the following:

- **Endpoint**: The URL that serves as the entry point for the web service.
- **Action**: The action that you want to perform; for example, use `RunInstances` to launch an instance.
- **Parameters**: Any parameters for the action; each parameter is separated by an ampersand (&).
- **Version**: The API version to use; for example, 2015-10-01.
- **Authorization parameters**: The authorization parameters that AWS uses to ensure the validity and authenticity of the request. Amazon EC2 supports Signature Version 2 and Signature Version 4; for more information, see [Signature Version 2 Signing Process](#) and [Signature Version 4 Signing Process](#) in the *Amazon Web Services General Reference*.

The following optional parameters can be included in your request:

- **DryRun**: Checks whether you have the required permissions for the action, without actually making the request. If you have the required permissions, the request returns `DryRunOperation`; otherwise, it returns `UnauthorizedOperation`.
- **SecurityToken**: The temporary security token obtained through a call to AWS Security Token Service.

For more information about common parameters for API requests, see [Common Query Parameters](#).

The following is an example request that launches instances:

```plaintext
https://ec2.amazonaws.com/?
Action=RunInstances&ImageId=ami-2bb65342&MaxCount=3&MinCount=1&Placement.AvailabilityZone=us-east-1a&Monitoring.Enabled=true&Version=2015-10-01&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIDEXAMPLE%2F20130813%2Fus-east-1%2Fec2%2Faws4_request&X-Amz-Date=20130813T150206Z&X-Amz-SignedHeaders=content-type%3Ehost%3Ex-amz-date&X-Amz-Signature=525d1a96c69b5549dd78dbec8efe264102288b83ba87b7d58d4b76b71f59fd2
Content-type: application/json
host:ec2.amazonaws.com
```
To make these example requests even easier to read, the Amazon EC2 documentation presents them in the following format:

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-2bb65342
&MaxCount=3
&MinCount=1
&Placement.AvailabilityZone=us-east-1a
&Monitoring.Enabled=true
&Version=2015-10-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLEus-east-1%2Fec2%2Faws4_request
&X-Amz-Date=20130813T150206Z
&X-Amz-SignedHeaders=content-type%3Ahost%3Ax-amz-date
&X-Amz-Signature=ced6826de92d2bdeed8f846f0bf508e8559e98e4b0194b84example54174deb456c
Content-type: application/json
host: ec2.amazonaws.com
```

The first line specifies the endpoint of the request. After the endpoint is a question mark (?), which separates the endpoint from the parameters.

The `Action` parameter indicates the action to perform. For a complete list of actions, see Actions.

The remaining lines specify additional parameters for the request.

**Important**
Before you specify your access key ID for the `AWSAccessKeyId` or `Credential` parameter, review and follow the guidance in Best Practices for Managing AWS Access Keys.

## Endpoints

An endpoint is a URL that serves as an entry point for a web service. You can select a regional endpoint for Amazon EC2 when you make your requests to reduce latency. For more information about regions, see Regions and Availability Zones in the Amazon EC2 User Guide for Linux Instances. For information about the endpoints for Amazon EC2, see Regions and Endpoints in the Amazon Web Services General Reference.

If you specify the general endpoint, ec2.amazonaws.com, we use the endpoint for us-east-1. To use a different region, specify its associated endpoint. For example, if you specify ec2.us-west-2.amazonaws.com as the endpoint, we direct your request to the us-west-2 endpoint.

## Query Parameters

Each Query request must include required common parameters to handle authentication and selection of an action.

Some operations take lists of parameters. These lists are specified using the `param.n` notation, where `n` is an integer starting from 1.

The following example adds multiple devices to a block device mapping using a list of `BlockDeviceMapping` parameters.

```
http://ec2.amazonaws.com/?Action=RunInstances
&ImageId.1=ami-72aa081b
...
Query API Authentication

You can send Query requests over either the HTTP or HTTPS protocol.

Regardless of which protocol you use, you must include a signature in every Query request. Amazon EC2 supports Signature Version 2 and Signature Version 4. For more information, see Signature Version 2 Signing Process and Signature Version 4 Signing Process in the Amazon Web Services General Reference.

Signature Version 4 requests allow you specify all the authorization parameters in a single header, for example:

```
Content-Type: application/x-www-form-urlencoded; charset=UTF-8
X-Amz-Date: 20130813T150211Z
Host: ec2.amazonaws.com
Authorization: AWS4-HMAC-SHA256 Credential=AKIDEXAMPLE/20130813/us-east-1/ec2/aws4_request, SignedHeaders=content-type;host;x-amz-date,
  Signature=ced6826de92d2bdeed8f846f0bf5088559e98e4b0194b84example54174deb456c
http://ec2.amazonaws.com/?Action=RunInstances
ImageId=ami-2bb65342
&MaxCount=3
&MinCount=1
&Monitoring.Enabled=true
&Placement.AvailabilityZone=us-east-1a
&Version=2015-10-01
```

In the example Query requests we present in the Amazon EC2 documentation, we omit headers and the parameters related to authentication to make it easier for you to focus on the parameters for the action. We replace them with the following literal string to remind you that you must include these parameters in your request: &AUTHPARAMS.

Query Response Structures

In response to a Query request, the service returns an XML data structure that conforms to an XML schema defined for Amazon EC2. The structure of an XML response is specific to the associated request. In general, the response data types are named according to the operation performed and whether the data type is a container (can have children). Examples of containers include groupSet for security groups and keySet for key pairs (see the example that follows). Item elements are children of containers, and their contents vary according to the container's role.

Every successful response includes a request ID in a requestId element, and every unsuccessful response includes a request ID in a RequestID element. The value is a unique string that AWS assigns. If you ever have issues with a particular request, AWS will ask for the request ID to help troubleshoot the issue. The following shows an example response.

```
<DescribeKeyPairsResponse xmlns="http://ec2.amazonaws.com/doc/2015-10-01/">
```

---

_API Version 2016-09-15

756_
Troubleshooting API Request Errors

In the Amazon EC2 Query API, errors codes are indicated as being either client or server. Client errors usually occur because there is a problem with the structure, content, or validity of the request. Server errors usually indicate a server-side issue.

For more information about API error codes, see Error Codes.

Topics
- Query API Request Rate (p. 757)
- Eventual Consistency (p. 758)
- Unauthorized Operation (p. 759)

Query API Request Rate

We throttle Amazon EC2 API requests for each AWS account on a per-region basis to help the performance of the service. We ensure that all calls to the Amazon EC2 API (whether they originate from an application, calls to a command line interface, or the Amazon EC2 console) don't exceed the maximum allowed API request rate. The maximum API request rate may vary across regions. Note that API requests made by IAM users are attributed to the underlying AWS account.

The Amazon EC2 API actions are divided into the following categories:

- Describe actions, such as DescribeInstances and DescribeVolumes. These requests simply retrieve cached data, so they have the highest request limit.
- Modify actions, such as RunInstances and CreateVolumes. These requests create or modify resources, so they have a lower request limit than describe calls.
- The CreateKeyPair, GetConsoleOutput, AuthorizeSecurityGroupIngress, and RevokeSecurityGroupIngress actions. These requests take the most time and resource to complete, so they have the lowest request limit.

If an API request exceeds the API request rate for its category, the request returns the RequestLimitExceeded error code. To prevent this error, ensure that your application doesn't retry API requests at a high rate. You can do this by using care when polling and by using exponential backoff retries.

Polling

Your application might need to call an API repeatedly to check for an update in status. Before you start polling, give the request time to potentially complete. When you begin polling, use an appropriate sleep interval between successive requests. For best results, use an increasing sleep interval.
Retries or batch processing

Your application might need to retry an API request after it fails, or to process multiple resources (for example, all your volumes). To lower the rate of API requests, use an appropriate sleep interval between successive requests. For best results, use an increasing or variable sleep interval.

Calculating the sleep interval

When you have to poll or retry an API request, we recommend using an exponential backoff algorithm to calculate the sleep interval between API calls. The idea behind exponential backoff is to use progressively longer waits between retries for consecutive error responses. For more information, and implementation examples of this algorithm, see Error Retries and Exponential Backoff in AWS.

Eventual Consistency

The Amazon EC2 API follows an eventual consistency model, due to the distributed nature of the system supporting the API. This means that the result of an API command you run that affects your Amazon EC2 resources might not be immediately visible to all subsequent commands you run. You should keep this in mind when you carry out an API command that immediately follows a previous API command.

Eventual consistency can affect the way you manage your resources. For example, if you run a command to create a resource, it will eventually be visible to other commands. This means that if you run a command to modify or describe the resource that you just created, its ID might not have propagated throughout the system, and you will get an error responding that the resource does not exist.

To manage eventual consistency, you can do the following:

- Confirm the state of the resource before you run a command to modify it. Run the appropriate Describe command using an exponential backoff algorithm to ensure that you allow enough time for the previous command to propagate through the system. To do this, run the Describe command repeatedly, starting with a couple of seconds of wait time, and increasing gradually up to five minutes of wait time.
- Add wait time between subsequent commands, even if a Describe command returns an accurate response. Apply an exponential backoff algorithm starting with a couple of seconds of wait time, and increase gradually up to about five minutes of wait time.

Eventual Consistency Error Examples

The following are examples of error codes you may encounter as a result of eventual consistency.

- InvalidInstanceID.NotFound

  If you successfully run the RunInstances command, and then immediately run another command using the instance ID that was provided in the response of RunInstances, it may return an InvalidInstanceID.NotFound error. This does not mean the instance does not exist.

  Some specific commands that may be affected are:
  - DescribeInstances: To confirm the actual state of the instance, run this command using an exponential backoff algorithm.
  - TerminateInstances: To confirm the state of the instance, first run the DescribeInstances command using an exponential backoff algorithm.

    Important
    If you get an InvalidInstanceID.NotFound error after running TerminateInstances, this does not mean that the instance is or will be terminated.
Your instance could still be running. This is why it is important to first confirm the instance’s state using DescribeInstances.

- **InvalidGroup.NotFound**

  If you successfully run the CreateSecurityGroup command, and then immediately run another command using the instance ID that was provided in the response of CreateSecurityGroup, it may return an InvalidGroup.NotFound error. To confirm the state of the security group, run the DescribeSecurityGroups command using an exponential backoff algorithm.

- **InstanceLimitExceeded**

  You have requested more instances than your current instance limit allows for the specified instance type. You could reach this limit unexpectedly if you are launching and terminating instances rapidly, as terminated instances count toward your instance limit for a while after they’ve been terminated.

### Unauthorized Operation

By default, AWS Identity and Access Management (IAM) users don’t have permission to create or modify Amazon EC2 resources, or perform tasks using the Amazon EC2 API, unless they’ve been explicitly granted permission through IAM policies. If an IAM user attempts to perform an action for which permission has not been granted, the request returns the following error: Client.UnauthorizedOperation.

This error may occur when a policy is unintentionally restrictive. For example, to allow an IAM user to launch instances into a specific subnet, you need to grant permissions for the following resources by specifying their ARNs in your IAM policy: instances, volumes, AMIs, the specific subnet, network interfaces, key pairs, and security groups. If you omit the permission for volumes, for example, the user is only able to launch an instance from an instance store-backed AMI, as they do not have permission to create the root EBS volume for an EBS-backed instance.

For more information about creating IAM policies for Amazon EC2, see IAM Policies for Amazon EC2 in the Amazon EC2 User Guide for Linux Instances.

Currently, not all API actions support resource-level permissions; we’ll add support for more in the future. For more information about which ARNs you can use with which Amazon EC2 API actions, see Granting IAM Users Required Permissions for Amazon EC2 Resources.

### Ensuring Idempotency

An idempotent operation completes no more than one time.

When you launch an instance, the request typically returns before the operation has completed. You determine whether the operation was successful by monitoring the state of the instance (it goes from pending to running). If the operation times out or there are connection issues, you might need to retry the request. However, if the original request and a retry are both successful, you’ll end up with more instances than you intended to launch.

If you launch your instance using run-instances (AWS CLI), ec2-run-instances (Amazon EC2 CLI), or RunInstances, you can optionally provide a client token to ensure that the request is idempotent. If you repeat a request, the same response is returned for each repeated request. The only information that might vary in the response is the state of the instance.

**Contents**

- Client Tokens (p. 760)
- Idempotency Support (p. 760)
Client Tokens

A client token is a unique, case-sensitive string of up to 64 ASCII characters. It is included in the response when you describe the instance. A client token is valid for at least 24 hours after the termination of the instance. You should not reuse a client token in another call later on.

If you repeat a request with the same client token, but change another request parameter, Amazon EC2 returns an `IdempotentParameterMismatch` error.

You can use the same client token for the same request across different regions. For example, if you send an idempotent request to launch an instance in the `us-east-1` region, and then use the same client token in a request in other regions, we'll launch instances in each of those regions.

The following table shows common response codes and the recommended course of action.

<table>
<thead>
<tr>
<th>Code</th>
<th>Retry</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 (OK)</td>
<td>No effect</td>
<td>The request has succeeded and any further retries have no effect.</td>
</tr>
<tr>
<td>400 (Client Error)</td>
<td>Not recommended</td>
<td>The request will never succeed (for example, a specified parameter value is not valid). If the request involves a resource that is in the process of changing states, repeating the request could possibly succeed (for example, launching an instance using an Amazon EBS volume that is about to become available).</td>
</tr>
<tr>
<td>500 (Server Internal Error)</td>
<td>Recommended</td>
<td>The error is generally transient. Repeat the request with an appropriate backoff strategy.</td>
</tr>
<tr>
<td>503 (Server Unavailable)</td>
<td>Recommended</td>
<td>The error can occur when there is extreme load. Repeat the request with an appropriate backoff strategy.</td>
</tr>
</tbody>
</table>

Idempotency Support

The following commands and actions are idempotent:

**AWS CLI Idempotent Commands**

- `associate-address`
- `create-vpn-connection`
- `disassociate-address`
- `terminate-instances`

**Query API Idempotent Actions**

- `AssociateAddress`
- `CreateVpnConnection`
The following commands and actions support idempotent operations using a client token:

**AWS CLI Commands with a --client-token Option**

- allocate-hosts
- copy-image
- create-flow-logs
- create-nat-gateway
- create-reserved-instances-listing
- create-route
- create-vpc-endpoint
- import-image
- import-snapshot
- modify-reserved-instances
- request-spot-fleet
- request-spot-instances
- run-instances

**Query API Actions with a ClientToken Parameter**

- AllocateHosts
- CopyImage
- CreateFlowLogs
- CreateNatGateway
- CreateReservedInstancesListing
- CreateRoute
- CreateVpcEndpoint
- ImportImage
- ImportSnapshot
- ModifyReservedInstances
- RequestSpotFleet
- RequestSpotInstances
- RunInstances

**Example Idempotent Command**

To make a command an idempotent request, add the `--client-token` option. The client token is a unique, case-sensitive string of up to 64 ASCII characters.

**AWS CLI**

Use the `run-instances` command as follows to make an idempotent request:
Example Idempotent Query

Use the `ec2-run-instances` command as follows to make an idempotent request:

```
ec2-run-instances ami-b232d0db -k my-key-pair --client-token 550e8400-e29b-41d4-a716-446655440000
```

Example Idempotent Query

Use the `RunInstances` action as follows to make an idempotent request:

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-3ac33653
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&ClientToken=550e8400-e29b-41d4-a716-446655440000
&AUTHPARAMS
```

The `ClientToken` parameter requires a unique, case-sensitive string of up to 64 ASCII characters.

SOAP Requests

We have deprecated the SOAP API for Amazon EC2. After 1 December 2015, we will no longer support SOAP requests for any API versions, including versions 2014-02-01 and earlier. If you use a SOAP request against a later API version or after 1 December 2015, you will receive the following response:

```
Client.UnsupportedProtocol: SOAP is no longer supported.
```

Similarly, the AWS software development kits (SDKs) will no longer support SOAP requests after 1 December 2015 for any API version.

If you are using the Amazon EC2 CLI tools, you can no longer use the `EC2_PRIVATE_KEY` and `EC2_CERT` environment variables. You must use the `AWS_ACCESS_KEY` and `AWS_SECRET_KEY` variables instead. For more information, see Setting Up the Amazon EC2 CLI and AMI Tools.

We recommend that you use the Query API for Amazon EC2, or the SDKs for AWS. For more information, see Making API Requests (p. 752).

Cross-Origin Resource Sharing Support

The Amazon EC2 API supports cross-origin resource sharing (CORS). CORS defines a way for client web applications that are loaded in one domain to interact with resources in a different domain. For more information, go to the Cross-Origin Resource Sharing W3C Recommendation. With CORS support for Amazon EC2, you can build rich client-side web applications that leverage the Amazon EC2...
API. For example, suppose you are hosting a web site, mywebsite.example.com, and you want to use JavaScript on your web pages to make requests to the Amazon EC2 API. Normally, a browser blocks JavaScript from allowing these requests, but with CORS, you are able to make cross-origin Amazon EC2 API calls from mywebsite.example.com.

CORS is already enabled for the Amazon EC2 API, and is ready for you to use. You do not need to perform any additional configuration steps to start using this feature. There is no change to the way that you make calls to the Amazon EC2 API; they must still be signed with valid AWS credentials to ensure that AWS can authenticate the requestor. For more information, see Signing AWS API Requests in the Amazon Web Services General Reference.

The implementation of CORS in the Amazon EC2 API is standardized. Your application can send a simple request to the Amazon EC2 API, or, depending on the content of the request, a preflight request followed by an actual request. Amazon EC2 allows the request from any origin.

For more information about CORS and examples of how it works, go to the following article on the Mozilla Developer Network: HTTP access control (CORS).

Simple/Actual Requests

The following are the criteria that define a simple request:

- Requests only use the GET or POST HTTP methods. If the POST method is used, then Content-Type can only be one of the following: application/x-www-form-urlencoded, multipart/form-data, or text/plain.
- Requests do not set custom headers, such as X-Other-Header.

Amazon EC2 allows the request from any origin. Any GET or POST request that attempts to use browser credentials by setting the Access-Control-Allow-Credentials value to true (where XMLHttpRequest.withCredentials = true) will fail.

The following information describes the request headers to Amazon EC2:

**Simple/Actual Request Header Values**

- **Origin**: Specifies the domain that would like access to the resource (in this case, the resource is Amazon EC2). This is inserted by the browser in a cross-origin request.

The following information describes the response headers that Amazon EC2 returns (or does not return) after a simple or actual request:

**Simple/Actual Response Header Values**

- **Access-Control-Allow-Origin**: Specifies the domain that can access the resource (in this case, the resource is Amazon EC2). This is always returned with a * value; therefore, Amazon EC2 will allow any cross-domain origin, and will never allow browser credentials, such as cookies.
- **Access-Control-Allow-Credentials**: Indicates whether browser credentials can be used to make the actual request. This is never returned; therefore, the browser should interpret the value as Access-Control-Allow-Credentials: false.

Preflight Requests

If the content of your request meets the criteria below, then your request is preflighted to check whether the actual request should be sent. A preflight request first sends an HTTP request to the resource (in this case, Amazon EC2) using the OPTIONS method.
The following are the criteria that define a preflight request:

- Requests use HTTP methods other than GET or POST; however, if the POST method is used, then the Content-Type is not one of the following: application/x-www-form-urlencoded, multipart/form-data, or text/plain.
- Requests set custom headers; for example, X-Other-Header.

The Amazon EC2 CORS implementation will allow any headers, and will allow any origin in the actual request.

The following information describes the request headers for a preflight request to Amazon EC2:

**Preflight Request Header Values**

- **Origin**: Specifies the domain that would like access to the resource (in this case, the resource is Amazon EC2). This is inserted by the browser in a cross-origin request.
- **Access-Control-Request-Method**: The HTTP method that will be used in the actual request from the browser.
- **Access-Control-Request-Headers**: The custom headers that will be sent in the actual cross-origin request.

The following information is about the response headers that Amazon EC2 returns (or does not return) after a preflight request:

**Preflight Response Header Values**

- **Access-Control-Allow-Origin**: Specifies the domain that can access the resource (in this case, the resource is Amazon EC2). This is always returned with a * value; therefore, Amazon EC2 will allow any cross-domain origin, and will never allow browser credentials, such as cookies.
- **Access-Control-Allow-Credentials**: Indicates whether browser credentials can be used to make the actual request. This is never returned by Amazon EC2; therefore, the browser should interpret the value as Access-Control-Allow-Credentials: false.
- **Access-Control-Expose-Headers**: Allows headers to be exposed to the browser. This is never returned by Amazon EC2; therefore, no return headers from Amazon EC2 can be read by the requesting domain.
- **Access-Control-Max-Age**: Specifies how long preflight request results can be cached. The value is set to 1800 seconds (30 minutes).
- **Access-Control-Allow-Methods**: Indicates which methods are allowed when making an actual request. The following methods are allowed: GET, POST, OPTIONS, DELETE, and PUT. This also depends on how you are calling the Amazon EC2 API; for example, by using the Query API, or by using REST.
- **Access-Control-Allow-Headers**: Indicates which headers can be used in the actual request. Amazon EC2 accepts any headers in preflight requests. If the HTTP headers are not relevant in the actual request, they are ignored.

### Logging API Calls Using AWS CloudTrail

Amazon EC2, Amazon EBS, and Amazon VPC are integrated with AWS CloudTrail, a service that captures API calls and delivers the log files to an Amazon S3 bucket that you specify. The API calls can be made indirectly by using the console, or directly by using a client such as the Amazon EC2 CLI, the AWS CLI, or the AWS SDKs. Using the information collected by CloudTrail, you can determine
what request was made, the source IP address from which the request was made, who made the request, when it was made, and so on. To learn more about CloudTrail, including how to configure and enable it, see the AWS CloudTrail User Guide.

Amazon EC2, Amazon EBS, and Amazon VPC Information in CloudTrail

When CloudTrail logging is enabled, calls made to Amazon EC2, Amazon EBS, and Amazon VPC actions are tracked in log files, along with any other AWS service records. CloudTrail determines when to create and write to a new file based on a specified time period and file size.

All of the Amazon EC2, Amazon EBS, and Amazon VPC actions are logged. For example, calls to the RunInstances, DescribeInstances, or CreateImage API actions generate entries in the CloudTrail log files.

Every log entry contains information about who generated the request. The user identity information in the log helps you determine whether the request was made with root or IAM user credentials, with temporary security credentials for a role or federated user, or by another AWS service. For more information, see the userIdentity element topic in the CloudTrail Event Reference.

You can store your log files in your bucket for as long as you want, but you can also define Amazon S3 lifecycle rules to archive or delete log files automatically. By default, your log files are encrypted by using Amazon S3 server-side encryption (SSE).

You can choose to have CloudTrail publish Amazon SNS notifications when new log files are delivered if you want to take quick action upon log file delivery. For more information, see Configuring Amazon SNS Notifications.

You can also aggregate Amazon EC2, Amazon EBS, and Amazon VPC log files from multiple AWS regions and multiple AWS accounts into a single Amazon S3 bucket. For more information, see Aggregating CloudTrail Log Files to a Single Amazon S3 Bucket.

Understanding Amazon EC2, Amazon EBS, and Amazon VPC Log File Entries

CloudTrail log files can contain one or more log entries where each entry is made up of multiple JSON-formatted events. A log entry represents a single request from any source and includes information about the requested action, any input parameters, the date and time of the action, and so on. The log entries are not in any particular order; that is, they are not an ordered stack trace of the public API calls.

The following log file record shows that a user terminated two instances.

```json
{
   "Records": [
      {
         "eventVersion": "1.03",
         "userIdentity": {
            "type": "Root",
            "principalId": "123456789012",
            "arn": "arn:aws:iam::123456789012:root",
            "accountId": "123456789012",
            "accessKeyId": "AKIAIMPO7DNN7EXAMPLE",
            "userName": "user"
```
VM Import Manifest

The import manifest is an XML file created by the ec2-import-instance CLI command or AWS Management Portal for vCenter and consumed by the Amazon EC2 API operations ImportInstance or ImportVolume, or by the ec2-import-volume CLI command. The manifest allows a virtual machine image to be broken into small parts for transfer and then reassembled at the destination, with support for retrying failed partial transfers. This file is normally created, consumed, and destroyed by the Amazon EC2 tools without user intervention.

In some exceptional situations, developers may wish to construct a manifest manually or programmatically, making it possible to bypass certain API operations while still providing a manifest for other operations that require the file as a parameter value.

This topic documents the structure of the manifest and provides a sample file.

**Note**
Direct manipulation of the manifest departs from the standard workflow of the Amazon EC2 API and CLI. In general, we recommend that you follow the procedures in Importing and Exporting Instances when importing VM images.
Manifest Schema

The schema below describes the format of the manifest. Documentation for the schema elements is presented inline.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="manifest">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="version" type="xs:string">
          <xs:annotation>
            <xs:documentation> Version designator for the manifest file, </xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="file-format" type="xs:string">
          <xs:annotation>
            <xs:documentation> File format of volume to be imported, with value RAW, VHD, or VMDK. </xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="importer" type="Importer">
          <xs:annotation>
            <xs:documentation> Complex type describing the software that created the manifest. </xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="self-destruct-url" type="xs:anyURI">
          <xs:annotation>
            <xs:documentation> Signed URL used to delete the stored manifest file. </xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="import" type="Import">
          <xs:annotation>
            <xs:documentation> Complex type describing the size and chunking of the volume file. </xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```
<xs:element name="version" type="xs:string">
  <xs:annotation>
    <xs:documentation>Version of the software that created the manifest.</xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="release" type="xs:string">
  <xs:annotation>
    <xs:documentation>Release number of the software that created the manifest.</xs:documentation>
  </xs:annotation>
</xs:element>

<xs:complexType name="Import">
  <xs:sequence>
    <xs:element name="size" type="xs:long">
      <xs:annotation>
        <xs:documentation>Exact size of the file to be imported (bytes on disk).</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="volume-size" type="xs:long">
      <xs:annotation>
        <xs:documentation>Rounded size in gigabytes of volume to be imported.</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="parts" type="Parts">
      <xs:annotation>
        <xs:documentation>Complex type describing and counting the parts into which the file is split.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>

<xs:complexType name="Parts">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="unbounded" name="part" type="Part">
      <xs:annotation>
        <xs:documentation>Definition of a particular part. Any number of parts may be defined.</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
  <xs:attribute name="count" type="xs:int">
    <xs:annotation>
      <xs:documentation>Total count of the parts.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>
<xs:complexType name="Part">
  <xs:sequence>
    <xs:element name="byte-range" type="ByteRange">
      <xs:annotation>
        <xs:documentation> Complex type defining the starting and ending byte count of a part. </xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="key" type="xs:string">
      <xs:annotation>
        <xs:documentation> The S3 object name of the part. </xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="head-url" type="xs:anyURI">
      <xs:annotation>
        <xs:documentation> Signed URLs for issuing a HEAD request on the S3 object containing this part. </xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="get-url" type="xs:anyURI">
      <xs:annotation>
        <xs:documentation> Signed URLs for issuing a GET request on the S3 object containing this part. </xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="delete-url" minOccurs="0" type="xs:anyURI">
      <xs:annotation>
        <xs:documentation> Signed URLs for issuing a DELETE request on the S3 object containing this part. </xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
  <xs:attribute name="index" type="xs:int">
    <xs:annotation>
      <xs:documentation> Index number of this part. </xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>

<xs:complexType name="ByteRange">
  <xs:attribute name="start" type="xs:long">
    <xs:annotation>
      <xs:documentation> Offset of a part's first byte in the disk image. </xs:documentation>
    </xs:annotation>
  </xs:attribute>
  <xs:attribute name="end" type="xs:long">
    <xs:annotation>
      <xs:documentation> </xs:documentation>
    </xs:annotation>
  </xs:attribute>
</xs:complexType>
<xs:documentation> Offset of a part's last byte in the disk image. </xs:documentation>
</xs:annotation>
</xs:attribute>
</xs:complexType>
</xs:schema>

Examples

This first example of a manifest describes a volume image with two parts. The files containing the parts are on a local system and must be uploaded to Amazon S3.

<manifest>
  <version>2010-11-15</version>
  <file-format>VMDK</file-format>
  <importer>
    <name>ec2-upload-disk-image</name>
    <version>1.0.0</version>
    <release>2010-11-15</release>
  </importer>
  <self-destruct-url>https://example-disk-part-bucket.s3.amazonaws.com/d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-disk.vmdk?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&amp;Expires=1416618486&amp;Signature=m%2Bk%2FkUvEEeD4Fya%2B0Tg7eH%2Fv1%3D</self-destruct-url>
  <import>
    <size>12595200</size>
    <volume-size>1</volume-size>
    <parts count="2">
      <part index="0">
        <byte-range end="10485759" start="0"/>
        <key>d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-disk.vmdk.part0</key>
        <head-url>https://example-disk-part-bucket.s3.amazonaws.com/d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-disk.vmdk.part0?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&amp;Expires=1416618486&amp;Signature=2yqS2VGYXGm%2FrtQEn8FGI1Ka%3D</head-url>
        <get-url>https://example-disk-part-bucket.s3.amazonaws.com/d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-disk.vmdk.part0?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&amp;Expires=1416618486&amp;Signature=nEv18VhFoEuiJjFjKAv%3D</get-url>
      </part>
      <part index="1">
        <byte-range end="12595199" start="10485760"/>
        <key>d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-disk.vmdk.part1</key>
        <head-url>https://example-disk-part-bucket.s3.amazonaws.com/d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-disk.vmdk.part1?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&amp;Expires=1416618486&amp;Signature=3b%2F8ky92L8g%2BFf150u194VnR4%3D</head-url>
        <get-url>https://example-disk-part-bucket.s3.amazonaws.com/d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-disk.vmdk.part1?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&amp;Expires=1416618486&amp;Signature=3b%2F8ky92L8g%2BFf150u194VnR4%3D</get-url>
      </part>
    </parts>
  </import>
</manifest>
The second example describes a volume image with a single part that has already been uploaded to Amazon S3.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<manifest>
  <version>2010-11-15</version>
  <file-format>VMDK</file-format>
  <importer>
    <name>Linux_RHEL_59_64.vmdk</name>
    <version>1.0.0</version>
    <release>2010-11-15</release>
  </importer>
  <self-destruct-url>https://example-disk-part-bucket.s3.ap-northeast-2.amazonaws.com/Linux_RHEL_59_64.vmdk?X-Amz-Algorithm=AWS4-HMAC-SHA256&amp;X-Amz-Credential=AKIAJ26ZRPZDGYJT4KAQFEXAMPLE%2Fap-northeast-2%2Fs3%2Faws4_request&amp;X-Amz-Date=20151119T234529Z&amp;X-Amz-Expires=604800&amp;X-Amz-Signature=4c3a7bdf3ef8fa53a5585fc67747c81eaf1f65bf09f3768998a575dabf5dfda2e&amp;X-Amz-SignedHeaders=Host</self-destruct-url>
  <import>
    <size>994433536</size>
    <volume-size>1</volume-size>
    <parts count="1">
      <part index="0">
        <byte-range end="994433536" start="0"/>
        <key>Linux_RHEL_59_64.vmdk</key>
        <head-url>https://example-disk-part-bucket.s3.ap-northeast-2.amazonaws.com/Linux_RHEL_59_64.vmdk?X-Amz-Algorithm=AWS4-HMAC-SHA256&amp;X-Amz-Credential=AKIAJ26ZRPZDGYJT4KAQFEXAMPLE%2Fap-northeast-2%2Fs3%2Faws4_request&amp;X-Amz-Date=20151119T234529Z&amp;X-Amz-Expires=604800&amp;X-Amz-Signature=4c3a7bdf3ef8fa53a5585fc67747c81eaf1f65bf09f3768998a575dabf5dfda2e&amp;X-Amz-SignedHeaders=Host</head-url>
        <get-url>https://example-disk-part-bucket.s3.ap-northeast-2.amazonaws.com/Linux_RHEL_59_64.vmdk?X-Amz-Algorithm=AWS4-HMAC-SHA256&amp;X-Amz-Credential=AKIAJ26ZRPZDGYJT4KAQFEXAMPLE%2Fap-northeast-2%2Fs3%2Faws4_request&amp;X-Amz-Date=20151119T234529Z&amp;X-Amz-Expires=604800&amp;X-Amz-Signature=329d6abb673e4cell0a602f34f62bf8ced703e8ae6c04f24c16e79d7699e52&amp;X-Amz-SignedHeaders=Host</get-url>
      </part>
    </parts>
  </import>
</manifest>
```
Signature=4dbf803f2e52fb6a876d3b63778033af42ec1155b37366ab4fca56691672807&amp;X-Amz-SignedHeaders=Host</delete-url>
    </part>
</parts>
</import>
</manifest>
Common Query Parameters

Most Amazon EC2 API actions support the parameters described in the following tables. The common parameters vary depending on whether you're using Signature Version 2 or Signature Version 4 to sign your requests.

For more information about using the Query API for Amazon EC2, see Making API Requests (p. 752).

Topics
- Common Query Parameters for Signature Version 2 (p. 773)
- Common Query Parameters for Signature Version 4 (p. 774)

Common Query Parameters for Signature Version 2

For more information about Signature Version 2, see Signature Version 2 Signing Process in the Amazon Web Services General Reference.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td>The action to perform.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Example: RunInstances</td>
<td></td>
</tr>
<tr>
<td>Version</td>
<td>The API version to use.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Example: 2015-10-01</td>
<td></td>
</tr>
<tr>
<td>AWSAccessKeyId</td>
<td>The access key ID for the request sender. This identifies the account which</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>will be charged for usage of the service. The account that’s associated with</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the access key ID must be signed up for Amazon EC2, or the request isn't</td>
<td></td>
</tr>
<tr>
<td></td>
<td>accepted.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Example: AKIAIOSFODNN7EXAMPLE</td>
<td></td>
</tr>
<tr>
<td>Expires</td>
<td>The date and time at which the signature included in the request expires, in</td>
<td>Conditional. Requests must include either Timestamp or Expires,</td>
</tr>
<tr>
<td></td>
<td>the format YYYY-MM-DDTh:mm:ssZ. For more information, see ISO 8601.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Example: 2006-07-07T15:04:56Z</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
<td>Required</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td><strong>Timestamp</strong></td>
<td>The date and time at which the request is signed, in the format YYYY-MM-DDTh:mm:ssZ. For more information, see ISO 8601.</td>
<td>Conditional. Requests must include either Timestamp or Expires, but cannot contain both.</td>
</tr>
<tr>
<td>Example: 2006-07-07T15:04:56Z</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Signature</strong></td>
<td>The request signature.</td>
<td>Yes</td>
</tr>
<tr>
<td>Example: Qnpl4Qk/7tINHzfXCiT7VEXAMPLE</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SignatureMethod</strong></td>
<td>The hash algorithm you use to create the request signature. Valid values: HmacSHA256</td>
<td>Yes</td>
</tr>
<tr>
<td>Example: HmacSHA256</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SignatureVersion</strong></td>
<td>The signature version you use to sign the request. Set this value to 2.</td>
<td>Yes</td>
</tr>
<tr>
<td>Example: 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DryRun</strong></td>
<td>Checks whether you have the required permissions for the action, without actually making the request. If you have the required permissions, the request returns DryRunOperation; otherwise, it returns UnauthorizedOperation.</td>
<td>No</td>
</tr>
<tr>
<td><strong>SecurityToken</strong></td>
<td>The temporary security token obtained through a call to AWS Security Token Service.</td>
<td>No</td>
</tr>
<tr>
<td>Example: AQoEXAMPLEH4aoAH0gNCAPyJxz4B1CFFxWNE1OPTgk5TthT+FvwnKwRc0IfrRh3c/L</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Parameter values must be URL-encoded. This is true for any Query parameter passed to Amazon EC2 and is typically necessary in the Signature parameter. Some clients do this automatically, but this is not the norm.

### Common Query Parameters for Signature Version 4

For more information about Signature Version 4, see [Signature Version 4 Signing Process](#) in the [Amazon Web Services General Reference](#).
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version</td>
<td>The API version to use.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong> 2015-10-01</td>
<td></td>
</tr>
<tr>
<td>X-Amz-Algorithm</td>
<td>The hash algorithm you use to create the request signature.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong> AWS4-HMAC-SHA256</td>
<td></td>
</tr>
<tr>
<td>X-Amz-Credential</td>
<td>The credential scope for the request, in the format <code>access-key-ID/YYYYMMDD/region/service/aws4_request</code>.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong> AKIDEXAMPLE/20140707/us-east-1/ec2/aws4_request</td>
<td></td>
</tr>
<tr>
<td>X-Amz-Date</td>
<td>The date and time at which the request is signed, in the format YYYYMMDDThhmmssZ. The date must match the date that's included in the credential scope for the X-Amz-Credential parameter, or the date used in an Authorization header (see the note below the table).</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong> 20140707T150456Z</td>
<td></td>
</tr>
<tr>
<td>X-Amz-SignedHeaders</td>
<td>The headers you are including as part of the request. At a minimum, you must include the host header. If you include an x-amz-date header in your request, you must include it in the list of signed headers.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong> content-type;host;user-agent</td>
<td></td>
</tr>
<tr>
<td>X-Amz-Signature</td>
<td>A signature derived from your secret access key.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong> ced6826de92d2bdeed8f846f0bf508e8559example</td>
<td></td>
</tr>
<tr>
<td>X-Amz-Security-Token</td>
<td>The temporary security token obtained through a call to AWS Security Token Service.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong> AQoEXAMPLEEH4aoAH0gNCAPyJxz4B1CFFxWNE1OPTgk5TthT +FwqnKwRcOIfrrh3c/L</td>
<td></td>
</tr>
<tr>
<td>DryRun</td>
<td>Checks whether you have the required permissions for the action, without actually making the request. If you have the required permissions, the request returns DryRunOperation; otherwise, it returns UnauthorizedOperation.</td>
<td>No</td>
</tr>
</tbody>
</table>

**Note**

The X-Amz-Algorithm, X-Amz-Credential, X-Amz-SignedHeaders, and X-Amz-Signature parameters can either be specified as separate parameters in the query string, or their values can be included in a single Authorization header. For more information, see Adding Signing Information to the Authorization Header in the Amazon Web Services General Reference.
Granting IAM Users Required Permissions for Amazon EC2 Resources

By default, AWS Identity and Access Management (IAM) users don't have permission to create or modify Amazon EC2 resources, or perform tasks using the Amazon EC2 API. To allow IAM users to create or modify resources and perform tasks, you must create IAM policies that grant IAM users permissions for the specific resources and API actions they'll need to use, and then attach those policies to the IAM users or groups that require those permissions.

For more information and for example policies, see IAM Policies for Amazon EC2 in the Amazon EC2 User Guide.

When you make an API request, the parameters that you specify in the request determine which resources an IAM user must have permission to use. If the user doesn't have the required permissions, the request fails. For example, if you use `RunInstances` to launch an instance in a subnet (by specifying the `SubnetId` parameter), an IAM user must have permission to use the VPC.

If an action creates a resource, an IAM user must have permission to create the resource or the request fails. Many Amazon EC2 resources receive an identifier when they are created. Because you can't know what that identifier is in advance, you must use a wildcard in the ARN for a resource when it is to be created by the request, as shown in the following sections. Note that because you can't tag a resource when you create it, you can't use any of the tag condition keys with a resource that's created by an action. (We'll add support for tagging a resource at creation later.)

Resource-level permissions refers to the ability to specify which resources users are allowed to perform actions on. Amazon EC2 has partial support for resource-level permissions. This means that for certain Amazon EC2 actions, you can control when users are allowed to use those actions based on conditions that have to be fulfilled, or specific resources that users are allowed to use. For example, you can grant users permission to launch instances, but only of a specific type, and only using a specific AMI.

Topics

- Supported Resource-Level Permissions (p. 777)
- Unsupported Resource-Level Permissions (p. 788)
Supported Resource-Level Permissions

The following sections describe the resources that are created or modified by the Amazon EC2 actions, and the ARNs and Amazon EC2 condition keys that you can use in an IAM policy statement to grant users permission to create or modify particular Amazon EC2 resources. (We’ll add support for additional actions, ARNs, and condition keys later.)

When specifying an ARN, you can use the * wildcard in your paths; for example, when you cannot or do not want to specify exact resource IDs. For examples of using wildcards, see Example 5: Allow users to launch instances with a specific configuration in the Amazon EC2 User Guide.

Topics
- Customer Gateways (p. 777)
- DHCP Options Sets (p. 777)
- Instances (p. 777)
- Internet Gateways (p. 782)
- Network ACLs (p. 783)
- Route Tables (p. 783)
- Security Groups (p. 783)
- Volumes (p. 784)
- VPCs (p. 786)
- VPC Peering Connections (p. 787)

Customer Gateways

<table>
<thead>
<tr>
<th>Resource</th>
<th>ARN Format</th>
<th>Condition Keys</th>
</tr>
</thead>
</table>

DHCP Options Sets

<table>
<thead>
<tr>
<th>Resource</th>
<th>ARN Format</th>
<th>Condition Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action: DeleteDhcpOptions (p. 138)</td>
<td>arn:aws:ec2:region:account:dhcp-options/*</td>
<td>ec2:Region</td>
</tr>
</tbody>
</table>

Instances

<table>
<thead>
<tr>
<th>Resource</th>
<th>ARN Format</th>
<th>Condition Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource</td>
<td>ARN Format</td>
<td>Condition Keys</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Instance</td>
<td>arn:aws:ec2:region:account:instance/*</td>
<td>ec2:AvailabilityZone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:EbsOptimized</td>
</tr>
<tr>
<td></td>
<td>arn:aws:ec2:region:account:instance/instance-id</td>
<td>ec2:InstanceProfile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:InstanceType</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:PlacementGroup</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:Region</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:ResourceTag/tag-key</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:RootDeviceType</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:Tenancy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:Vpc</td>
</tr>
<tr>
<td>VPC</td>
<td>arn:aws:ec2:region:account:vpc/*</td>
<td>ec2:Region</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:Tenancy</td>
</tr>
</tbody>
</table>

**Action:** DetachClassicLinkVpc (p. 365)
<table>
<thead>
<tr>
<th>Resource</th>
<th>ARN Format</th>
<th>Condition Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action</strong>: GetConsoleScreenshot (p. 393)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Action</strong>: RebootInstances (p. 456)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Action</strong>: RunInstances (p. 500)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource</td>
<td>ARN Format</td>
<td>Condition Keys</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Instance</td>
<td>arn:aws:ec2:region:account:instance/*</td>
<td>ec2:AvailabilityZone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:EbsOptimized</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:InstanceProfile</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:InstanceType</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:PlacementGroup</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:Region</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:RootDeviceType</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:Tenancy</td>
</tr>
<tr>
<td>Key pair</td>
<td>arn:aws:ec2:region:account:key-pair/*</td>
<td>ec2:Region</td>
</tr>
<tr>
<td></td>
<td>arn:aws:ec2:region:account:key-pair/key-pair-name</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(if specifying a subnet in the request)</td>
<td>ec2:Region</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:ResourceTag/tag-key</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:Vpc</td>
</tr>
<tr>
<td>Placement group</td>
<td>arn:aws:ec2:region:account:placement-group/*</td>
<td>ec2:Region</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:Vpc</td>
</tr>
<tr>
<td>Snapshot</td>
<td>arn:aws:ec2:region::snapshot/*</td>
<td>ec2:Owner</td>
</tr>
<tr>
<td></td>
<td>arn:aws:ec2:region::snapshot/snapshot-id</td>
<td>ec2:ParentVolume</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:Region</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:SnapshotTime</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:ResourceTag/tag-key</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:VolumeSize</td>
</tr>
</tbody>
</table>
## Resource: **Subnet**

<table>
<thead>
<tr>
<th>ARN Format</th>
<th>Condition Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>arn:aws:ec2:region:account:subnet/*</td>
<td>ec2:AvailabilityZone</td>
</tr>
<tr>
<td>arn:aws:ec2:region:account:subnet/subnet-id</td>
<td>ec2:Region</td>
</tr>
<tr>
<td></td>
<td>ec2:ResourceTag/tag-key</td>
</tr>
<tr>
<td></td>
<td>ec2:Vpc</td>
</tr>
</tbody>
</table>

## Resource: **Volume**

<table>
<thead>
<tr>
<th>ARN Format</th>
<th>Condition Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>arn:aws:ec2:region:account:volume/* (if launching from an EBS-backed image)</td>
<td>ec2:AvailabilityZone</td>
</tr>
<tr>
<td></td>
<td>ec2:ParentSnapshot</td>
</tr>
<tr>
<td></td>
<td>ec2:Region</td>
</tr>
<tr>
<td></td>
<td>ec2:Volumelops</td>
</tr>
<tr>
<td></td>
<td>ec2:VolumeSize</td>
</tr>
<tr>
<td></td>
<td>ec2:VolumeType</td>
</tr>
</tbody>
</table>

**Action:** [StartInstances](#) (p. 509)

## Resource: **Instance**

<table>
<thead>
<tr>
<th>ARN Format</th>
<th>Condition Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>arn:aws:ec2:region:account:instance/*</td>
<td>ec2:AvailabilityZone</td>
</tr>
<tr>
<td></td>
<td>ec2:InstanceProfile</td>
</tr>
<tr>
<td></td>
<td>ec2:InstanceType</td>
</tr>
<tr>
<td></td>
<td>ec2:PlacementGroup</td>
</tr>
<tr>
<td></td>
<td>ec2:Region</td>
</tr>
<tr>
<td></td>
<td>ec2:ResourceTag/tag-key</td>
</tr>
<tr>
<td></td>
<td>ec2:RootDeviceType</td>
</tr>
<tr>
<td></td>
<td>ec2:Tenancy</td>
</tr>
</tbody>
</table>

**Action:** [StopInstances](#) (p. 511)
### Internet Gateways

<table>
<thead>
<tr>
<th>Resource</th>
<th>ARN Format</th>
<th>Condition Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet gateway</td>
<td>arn:aws:ec2:region:account:internet-gateway/*</td>
<td>ec2:Region</td>
</tr>
</tbody>
</table>

**Action:** DeleteInternetGateway (p. 141)
## Network ACLs

<table>
<thead>
<tr>
<th>Resource</th>
<th>ARN Format</th>
<th>Condition Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action:</strong> DeleteNetworkAcl (p. 146)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:Vpc</td>
</tr>
<tr>
<td><strong>Action:</strong> DeleteNetworkAclEntry (p. 148)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:Vpc</td>
</tr>
</tbody>
</table>

## Route Tables

<table>
<thead>
<tr>
<th>Resource</th>
<th>ARN Format</th>
<th>Condition Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action:</strong> DeleteRoute (p. 154)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route table</td>
<td>arn:aws:ec2:region:account:route-table/*</td>
<td>ec2:Region</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:Vpc</td>
</tr>
<tr>
<td><strong>Action:</strong> DeleteRouteTable (p. 156)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route table</td>
<td>arn:aws:ec2:region:account:route-table/*</td>
<td>ec2:Region</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:Vpc</td>
</tr>
</tbody>
</table>

## Security Groups

<table>
<thead>
<tr>
<th>Resource</th>
<th>ARN Format</th>
<th>Condition Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action:</strong> AuthorizeSecurityGroupEgress (p. 40)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ec2:Vpc</td>
</tr>
<tr>
<td>Resource</td>
<td>ARN Format</td>
<td>Condition Keys</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td><strong>Action: AuthorizeSecurityGroupIngress (p. 43)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Action: DeleteSecurityGroup (p. 158)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Action: RevokeSecurityGroupEgress (p. 494)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Action: RevokeSecurityGroupIngress (p. 497)</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Volumes

<table>
<thead>
<tr>
<th>Resource</th>
<th>ARN Format</th>
<th>Condition Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action: AttachVolume (p. 36)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource</td>
<td>ARN Format</td>
<td>Condition Keys</td>
</tr>
<tr>
<td>----------</td>
<td>------------</td>
<td>----------------</td>
</tr>
</tbody>
</table>
| Instance | arn:aws:ec2:region:account:instance/*
            arn:aws:ec2:region:account:instance/instance-id | ec2:AvailabilityZone
            ec2:EbsOptimized
            ec2:InstanceProfile
            ec2:InstanceType
            ec2:PlacementGroup
            ec2:Region
            ec2:ResourceTag/tag-key
            ec2:RootDeviceType
            ec2:Tenancy |
| Volume   | arn:aws:ec2:region:account:volume/*
            ec2:ParentSnapshot
            ec2:Region
            ec2:ResourceTag/tag-key
            ec2:VolumeIops
            ec2:VolumeSize
            ec2:VolumeType |

**Action:** DeleteVolume (p. 167)

| Volume   | arn:aws:ec2:region:account:volume/*
            ec2:ParentSnapshot
            ec2:Region
            ec2:ResourceTag/tag-key
            ec2:VolumeIops
            ec2:VolumeSize
            ec2:VolumeType |

**Action:** DetachVolume (p. 371)
<table>
<thead>
<tr>
<th>Resource</th>
<th>ARN Format</th>
<th>Condition Keys</th>
</tr>
</thead>
</table>

### VPCs

<table>
<thead>
<tr>
<th>Resource</th>
<th>ARN Format</th>
<th>Condition Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action:</strong> DisableVpcClassicLink (p. 377)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>arn:aws:ec2:region:account:vpc/vpc-id</td>
<td></td>
</tr>
<tr>
<td><strong>Action:</strong> EnableVpcClassicLink (p. 388)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>arn:aws:ec2:region:account:vpc/vpc-id</td>
<td></td>
</tr>
</tbody>
</table>
# VPC Peering Connections

<table>
<thead>
<tr>
<th>Resource</th>
<th>ARN Format</th>
<th>Condition Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action</strong>: AcceptVpcPeeringConnection (p. 15)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VPC</td>
<td><code>arn:aws:ec2:region:account:vpc/*</code></td>
<td><code>ec2:Region</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>ec2:Tenancy</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>ec2:ResourceTag/tag-key</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>ec2:RequesterVpc</code></td>
</tr>
<tr>
<td><strong>Action</strong>: CreateVpcPeeringConnection (p. 126)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VPC</td>
<td><code>arn:aws:ec2:region:account:vpc/*</code></td>
<td><code>ec2:Region</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>ec2:Tenancy</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>ec2:Region</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>ec2:RequesterVpc</code></td>
</tr>
<tr>
<td><strong>Action</strong>: DeleteVpcPeeringConnection (p. 173)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>ec2:ResourceTag/tag-key</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>ec2:RequesterVpc</code></td>
</tr>
<tr>
<td><strong>Action</strong>: RejectVpcPeeringConnection (p. 462)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>ec2:ResourceTag/tag-key</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td><code>ec2:RequesterVpc</code></td>
</tr>
</tbody>
</table>
Unsupported Resource-Level Permissions

All Amazon EC2 actions can be used in an IAM policy to either grant or deny users permission to use that action. However, not all Amazon EC2 actions support resource-level permissions, which enable you to specify the resources on which an action can be performed. The following Amazon EC2 API actions currently do not support resource-level permissions; therefore, to use these actions in an IAM policy, you must grant users permission to use all resources for the action by using a * wildcard for the Resource element in your statement. You cannot use Amazon EC2 condition keys for these actions. For examples, see Example Policies for CLI or SDK.

- AllocateAddress
- AllocateHosts
- AssignPrivateIpAddress
- AssociateAddress
- AssociateDhcpOptions
- AssociateRouteTable
- AttachInternetGateway
- AttachNetworkInterface
- AttachVpnGateway
- BundleInstance
- CancelBundleTask
- CancelConversionTask
- CancelExportTask
- CancelImportTask
- CancelReservedInstancesListing
- CancelSpotFleetRequests
- CancelSpotInstanceRequests
- ConfirmProductInstance
- CopyImage
- CopySnapshot
- CreateCustomerGateway
- CreateDhcpOptions
- CreateFlowLogs
- CreateImage
- CreateInstanceExportTask
- CreateInternetGateway
- CreateKeyPair
- CreateNatGateway
- CreateNetworkAcl
- CreateNetworkAclEntry
- CreateNetworkInterface
- CreatePlacementGroup
- CreateReservedInstancesListing
- CreateRoute
- CreateRouteTable
- CreateSecurityGroup
- CreateSnapshot
Unsupported Resource-Level Permissions

- CreateSpotDatafeedSubscription
- CreateSubnet
- CreateTags
- CreateVolume
- CreateVpc
- CreateVpcEndpoint
- CreateVpnConnection
- CreateVpnConnectionRoute
- CreateVpnGateway
- DeleteFlowLogs
- DeleteKeyPair
- DeleteNatGateways
- DeleteNetworkInterface
- DeletePlacementGroup
- DeleteSnapshot
- DeleteSpotDatafeedSubscription
- DeleteSubnet
- DeleteTags
- DeleteVpc
- DeleteVpcEndpoints
- DeleteVpnConnection
- DeleteVpnConnectionRoute
- DeleteVpnGateway
- DeregisterImage
- DescribeAccountAttributes
- DescribeAddresses
- DescribeAvailabilityZones
- DescribeBundleTasks
- DescribeClassicLinkInstances
- DescribeConversionTasks
- DescribeCustomerGateways
- DescribeDhcpOptions
- DescribeExportTasks
- DescribeHosts
- DescribeIdentityIdFormat
- DescribeIdFormat
- DescribeImageAttribute
- DescribeImages
- DescribeImportImageTasks
- DescribeImportSnapshotTasks
- DescribeInstanceAttribute
- DescribeInstances
- DescribeInstanceStatus
- DescribeInternetGateways
- DescribeFlowLogs
- DescribeKeyPairs
Unsupported Resource-Level Permissions

- DescribeMovingAddresses
- DescribeNatGateways
- DescribeNetworkAcls
- DescribeNetworkInterfaceAttribute
- DescribeNetworkInterfaces
- DescribePlacementGroups
- DescribePrefixLists
- DescribeRegions
- DescribeReservedInstances
- DescribeReservedInstancesListings
- DescribeReservedInstancesModifications
- DescribeReservedInstancesOfferings
- DescribeRouteTables
- DescribeScheduledInstanceAvailability
- DescribeScheduledInstances
- DescribeSecurityGroupReferences
- DescribeSecurityGroups
- DescribeStaleSecurityGroups
- DescribeSnapshotAttribute
- DescribeSnapshots
- DescribeSpotDatafeedSubscription
- DescribeSpotFleetInstances
- DescribeSpotFleetRequestHistory
- DescribeSpotFleetRequests
- DescribeSpotInstanceRequests
- DescribeSpotPriceHistory
- DescribeSubnets
- DescribeTags
- DescribeVolumeAttribute
- DescribeVolumes
- DescribeVolumeStatus
- DescribeVpcAttribute
- DescribeVpcClassicLink
- DescribeVpcClassicLinkDnsSupport
- DescribeVpcEndpoints
- DescribeVpcEndpointServices
- DescribeVpcPeeringConnections
- DescribeVpcs
- DescribeVpnConnections
- DescribeVpnGateways
- DetachInternetGateway
- DetachNetworkInterface
- DetachVpnGateway
- DisableVgwRoutePropagation
- DisableVpcClassicLinkDnsSupport
- DisassociateAddress
• DisassociateRouteTable
• EnableVgwRoutePropagation
• EnableVolumeIO
• EnableVpcClassicLinkDnsSupport
• GetConsoleOutput
• GetPasswordData
• ImportImage
• ImportInstance
• ImportKeyPair
• ImportSnapshot
• ImportVolume
• ModifyHosts
• ModifyIdentityIdFormat
• ModifyIdFormat
• ModifyImageAttribute
• ModifyInstanceAttribute
• ModifyInstancePlacement
• ModifyNetworkInterfaceAttribute
• ModifyReservedInstances
• ModifySnapshotAttribute
• ModifySpotFleetRequest
• ModifySubnetAttribute
• ModifyVolumeAttribute
• ModifyVpcAttribute
• ModifyVpcEndpoint
• ModifyVpcPeeringConnectionOptions
• MonitorInstances
• MoveAddressToVpc
• PurchaseReservedInstancesOffering
• PurchaseScheduledInstances
• RegisterImage
• ReleaseAddress
• ReleaseHosts
• ReplaceNetworkAclAssociation
• ReplaceNetworkAclEntry
• ReplaceRoute
• ReplaceRouteTableAssociation
• ReportInstanceStatus
• RequestSpotFleet
• RequestSpotInstances
• ResetImageAttribute
• ResetInstanceAttribute
• ResetNetworkInterfaceAttribute
• ResetSnapshotAttribute
• RestoreAddressToClassic
• RunScheduledInstances
Unsupported Resource-Level Permissions

- UnassignPrivateIpAddresses
- UnmonitorInstances
Error Codes

Amazon EC2 has two types of error codes:

- **Client errors.** These errors are usually caused by something the client did, such as specifying an incorrect or invalid parameter in the request, or using an action or resource on behalf of a user that doesn't have permission to use the action or resource. These errors are accompanied by a 400-series HTTP response code.

- **Server errors.** These errors are usually caused by an AWS server-side issue. These errors are accompanied by a 500-series HTTP response code.

Contents

- Common Client Errors (p. 793)
- Client Errors For Specific Actions (p. 795)
- Server Errors (p. 816)
- Example Error Response (p. 817)
- Eventual Consistency (p. 817)

Common Client Errors

This section lists the common client errors that all actions can return.

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AuthFailure</td>
<td>The provided credentials could not be validated. You may not be authorized to carry out the request; for example, associating an Elastic IP address that is not yours, or trying to use an AMI for which you do not have permissions. Ensure that your account is authorized to use the Amazon EC2 service, that your credit card details are correct, and that you are using the correct access keys.</td>
</tr>
<tr>
<td>Blocked</td>
<td>Your account is currently blocked. Contact <a href="mailto:aws-verification@amazon.com">aws-verification@amazon.com</a> if you have questions.</td>
</tr>
<tr>
<td>DryRunOperation</td>
<td>The user has the required permissions, so the request would have succeeded, but the <strong>DryRun</strong> parameter was used.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>IdempotentParameterMismatch</td>
<td>The request uses the same client token as a previous, but non-identical request. Do not reuse a client token with different requests, unless the requests are identical.</td>
</tr>
<tr>
<td>IncompleteSignature</td>
<td>The request signature does not conform to AWS standards.</td>
</tr>
<tr>
<td>InvalidAction</td>
<td>The action or operation requested is not valid. Verify that the action is typed correctly.</td>
</tr>
<tr>
<td>InvalidCharacter</td>
<td>A specified character is invalid.</td>
</tr>
<tr>
<td>InvalidClientTokenId</td>
<td>The X.509 certificate or AWS access key ID provided does not exist in our records.</td>
</tr>
<tr>
<td>InvalidPaginationToken</td>
<td>The specified pagination token is not valid or is expired.</td>
</tr>
<tr>
<td>InvalidParameter</td>
<td>A parameter specified in a request is not valid, unsupported, or cannot be used. The returned message provides an explanation of the error value. For example, if you are launching an instance, you can't specify a security group and subnet that are in different VPCs.</td>
</tr>
<tr>
<td>InvalidParameterCombination</td>
<td>Indicates an incorrect combination of parameters, or a missing parameter. For example, trying to terminate an instance without specifying the instance ID.</td>
</tr>
<tr>
<td>InvalidParameterValue</td>
<td>A value specified in a parameter is not valid, unsupported, or cannot be used. Ensure that you specify a resource by using its full ID. The returned message provides an explanation of the error value.</td>
</tr>
<tr>
<td>InvalidQueryParameter</td>
<td>The AWS query string is malformed or does not adhere to AWS standards.</td>
</tr>
<tr>
<td>MalformedQueryString</td>
<td>The query string contains a syntax error.</td>
</tr>
<tr>
<td>MissingAction</td>
<td>The request is missing an action or a required parameter.</td>
</tr>
<tr>
<td>MissingAuthenticationToken</td>
<td>The request must contain either a valid (registered) AWS access key ID or X.509 certificate.</td>
</tr>
<tr>
<td>MissingParameter</td>
<td>The request is missing a required parameter. Ensure that you have supplied all the required parameters for the request; for example, the resource ID.</td>
</tr>
<tr>
<td>OptInRequired</td>
<td>You are not authorized to use the requested service. Ensure that you have subscribed to the service you are trying to use. If you are new to AWS, your account might take some time to be activated while your credit card details are being verified.</td>
</tr>
</tbody>
</table>
### Client Errors For Specific Actions

This section lists client errors that are specific to certain Amazon EC2 API actions.

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PendingVerification</td>
<td>Your account is pending verification. Until the verification process is complete, you may not be able to carry out requests with this account. If you have questions, contact <a href="https://aws.amazon.com/support/">AWS Support</a></td>
</tr>
<tr>
<td>RequestExpired</td>
<td>The request reached the service more than 15 minutes after the date stamp on the request or more than 15 minutes after the request expiration date (such as for pre-signed URLs), or the date stamp on the request is more than 15 minutes in the future. If you're using temporary security credentials, this error can also occur if the credentials have expired. For more information, see <a href="https://docs.aws.amazon.com/iam/latest/userguide/temporary-security-credentials.html">Temporary Security Credentials</a> in the <a href="https://docs.aws.amazon.com/IAM/latest/UserGuide/">IAM User Guide</a></td>
</tr>
<tr>
<td>UnauthorizedOperation</td>
<td>You are not authorized to perform this operation. Check your IAM policies, and ensure that you are using the correct access keys. For more information, see <a href="https://docs.aws.amazon.com/IAM/latest/UserGuide/access-control-overview.html">Controlling Access</a>. If the returned message is encoded, you can decode it using the <code>DecodeAuthorizationMessage</code> action. For more information, see <a href="https://docs.aws.amazon.com/IAM/latest/APIReference/API_DecodeAuthorizationMessage.html">DecodeAuthorizationMessage</a> in the <a href="https://docs.aws.amazon.com/IAM/latest/APIReference/">AWS Security Token Service API Reference</a></td>
</tr>
<tr>
<td>UnknownParameter</td>
<td>An unknown or unrecognized parameter was supplied. Requests that could cause this error include supplying a misspelled parameter or a parameter that is not supported for the specified API version.</td>
</tr>
<tr>
<td>UnsupportedInstanceAttribute</td>
<td>The specified attribute cannot be modified.</td>
</tr>
<tr>
<td>UnsupportedOperation</td>
<td>The specified request includes an unsupported operation. For example, you can't stop an instance that's instance store-backed. Or you might be trying to launch an instance type that is not supported by the specified AMI. The returned message provides details of the unsupported operation.</td>
</tr>
<tr>
<td>UnsupportedProtocol</td>
<td>SOAP has been deprecated and is no longer supported. For more information, see <a href="https://docs.aws.amazon.com/AmazonS3/latest/userguide/soap-requests.html">SOAP Requests</a>.</td>
</tr>
<tr>
<td>ValidationError</td>
<td>The input fails to satisfy the constraints specified by an AWS service.</td>
</tr>
<tr>
<td>ActiveVpcPeeringConnectionPerVpcLimitExceeded</td>
<td>You've reached the limit on the number of active VPC peering connections you can have for the specified VPC.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
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<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>AddressLimitExceeded</td>
<td>You've reached the limit on the number of Elastic IP addresses that you can allocate.</td>
</tr>
<tr>
<td></td>
<td>For more information, see <a href="https://docs.aws.amazon.com/elasticloadbalancing/latest/prehalt/elastic-ip-address-limit.html">Elastic IP Address Limit</a>. If you need additional Elastic IP addresses, complete the Amazon EC2 Elastic IP Address Request Form. If you need additional Elastic IP addresses for your VPCs, complete the Amazon VPC Limits form.</td>
</tr>
<tr>
<td>AttachmentLimitExceeded</td>
<td>You've reached the limit on the number of Amazon EBS volumes or network interfaces that can be attached to a single instance.</td>
</tr>
<tr>
<td>BootForVolumeTypeUnsupported</td>
<td>The specified volume type cannot be used as a boot volume. For more information, see <a href="https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AMIBootDevice.html">Amazon EBS Volume Types</a>.</td>
</tr>
<tr>
<td>BundlingInProgress</td>
<td>The specified instance already has a bundling task in progress.</td>
</tr>
<tr>
<td>CannotDelete</td>
<td>You cannot delete the ‘default’ security group in your VPC, but you can change its rules. For more information, see <a href="https://docs.aws.amazon.com/AmazonEC2/latest/UserGuide/ManagingSecurityGroups.html">Amazon EC2 Security Groups</a>.</td>
</tr>
<tr>
<td>CidrConflict</td>
<td>You cannot enable a VPC for ClassicLink or extend a VPC peering connection to use the ClassicLink connection of a peer VPC if the VPC has routing that conflicts with the EC2-Classic private IP address range.</td>
</tr>
<tr>
<td>ConcurrentSnapshotLimitExceeded</td>
<td>You've reached the limit on the number of concurrent snapshots you can create on the specified volume. Wait until the 'pending' requests have completed, and check that you do not have snapshots that are in a incomplete state, such as 'error', which count against your concurrent snapshot limit.</td>
</tr>
<tr>
<td>ConcurrentTagAccess</td>
<td>You can't run simultaneous commands to modify a tag for a specific resource. Allow sufficient wait time for the previous request to complete, then retry your request. For more information, see <a href="https://docs.aws.amazon.com/AmazonS3/latest/userguide/ErrorHandling.html">Error Retries and Exponential Backoff in AWS</a>.</td>
</tr>
<tr>
<td>CustomerGatewayLimitExceeded</td>
<td>You've reached the limit on the number of customer gateways you can create for the region. For more information, see <a href="https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/amazon-ec2-concepts.html">Amazon VPC Limits</a>. To request an increase on your customer gateway limit, complete the Amazon VPC Limits form.</td>
</tr>
<tr>
<td>CustomerKeyHasBeenRevoked</td>
<td>The customer master key cannot be accessed. For more information, see <a href="https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AmazonEBS.html">Amazon EBS Encryption</a>.</td>
</tr>
<tr>
<td>DeleteConversionTaskError</td>
<td>The conversion task cannot be canceled.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
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<td>----------------------------------</td>
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</tr>
<tr>
<td>DependencyViolation</td>
<td>The specified object has dependent resources. A number of resources in a VPC may have dependent resources, which prevent you from deleting or detaching them. Remove the dependencies first, then retry your request. For example, this error occurs if you try to delete a security group in a VPC that is in use by another security group.</td>
</tr>
<tr>
<td>DisallowedForDedicatedTenancyNetwork</td>
<td>Dedicated tenancy VPCs cannot be used with ClassicLink. If you want to allow your dedicated tenancy VPC to be enabled for ClassicLink, contact AWS Support.</td>
</tr>
<tr>
<td>DiskImageSizeTooLarge</td>
<td>The disk image exceeds the allowed limit (for instance or volume import).</td>
</tr>
<tr>
<td>EIPMigratedToVpc</td>
<td>The Elastic IP address has been migrated to EC2-VPC, and cannot be used in EC2-Classic.</td>
</tr>
<tr>
<td>EncryptedVolumesNotSupported</td>
<td>Encrypted Amazon EBS volumes may only be attached to instances that support Amazon EBS encryption. For more information, see Amazon EBS encryption in the Amazon EC2 User Guide for Linux Instances.</td>
</tr>
<tr>
<td>FleetNotInModifiableState</td>
<td>The Spot Fleet request must be in the active state in order to modify it. For more information, see Modifying a Spot Fleet Request.</td>
</tr>
<tr>
<td>FlowLogAlreadyExists</td>
<td>A flow log with the specified configuration already exists.</td>
</tr>
<tr>
<td>FlowLogsLimitExceeded</td>
<td>You've reached the limit on the number of flow logs you can create. For more information, see Amazon VPC Limits.</td>
</tr>
<tr>
<td>FilterLimitExceeded</td>
<td>The request uses too many filters or too many filter values.</td>
</tr>
<tr>
<td>Gateway.NotAttached</td>
<td>An Internet gateway is not attached to a VPC. If you are trying to detach an Internet gateway, ensure that you specify the correct VPC. If you are trying to associate an Elastic IP address with a network interface or an instance, ensure that an Internet gateway is attached to the relevant VPC.</td>
</tr>
<tr>
<td>HostAlreadyCoveredByReservation</td>
<td>The specified Dedicated Host is already covered by a reservation.</td>
</tr>
<tr>
<td>HostLimitExceeded</td>
<td>You've reached the limit on the number of Dedicated Hosts that you can allocate. For more information, see Dedicated Hosts.</td>
</tr>
<tr>
<td>IdempotentInstanceTerminated</td>
<td>The request to launch an instance uses the same client token as a previous request for which the instance has been terminated.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
<tr>
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</tr>
<tr>
<td>IncorrectInstanceState</td>
<td>The instance is in an incorrect state for the requested action. For example, some instance attributes, such as user data, can only be modified if the instance is in a 'stopped' state. If you are associating an Elastic IP address with a network interface, ensure that the instance that the interface is attached to is not in the 'pending' state.</td>
</tr>
<tr>
<td>IncorrectState</td>
<td>The resource is in an incorrect state for the request. This error can occur if you are trying to attach a volume that is still being created. Ensure that the volume is in the 'available' state. If you are creating a snapshot, ensure that the previous request to create a snapshot on the same volume has completed. If you are deleting a virtual private gateway, ensure that it's detached from the VPC.</td>
</tr>
<tr>
<td>IncompatibleHostRequirements</td>
<td>There are no available or compatible Dedicated Hosts available on which to launch or start the instance.</td>
</tr>
<tr>
<td>InstanceAlreadyLinked</td>
<td>The EC2-Classic instance you are trying to link is already linked to another VPC. You cannot link an EC2-Classic instance to more than one VPC at a time.</td>
</tr>
<tr>
<td>InstanceLimitExceeded</td>
<td>You’ve reached the limit on the number of instances you can run concurrently. The limit depends on the instance type. For more information, see How many instances can I run in Amazon EC2. If you need additional instances, complete the Amazon EC2 Instance Request Form.</td>
</tr>
<tr>
<td>InsufficientCapacityOnHost</td>
<td>There is not enough capacity on the Dedicated Host to launch or start the instance.</td>
</tr>
<tr>
<td>InsufficientFreeAddressesInSubnet</td>
<td>The specified subnet does not contain enough free private IP addresses to fulfill your request. Use the DescribeSubnets request to view how many IP addresses are available (unused) in your subnet. IP addresses associated with stopped instances are considered unavailable.</td>
</tr>
<tr>
<td>InsufficientReservedInstancesCapacity</td>
<td>There is insufficient capacity for the requested Reserved instances.</td>
</tr>
<tr>
<td>InternetGatewayLimitExceeded</td>
<td>You’ve reached the limit on the number of Internet gateways that you can create. For more information, see Amazon VPC Limits. To request an increase on the Internet gateway limit, complete the Amazon VPC Limits form.</td>
</tr>
<tr>
<td>InvalidAddress.Locked</td>
<td>The specified Elastic IP address cannot be released from your account. A reverse DNS record may be associated with the Elastic IP address. Contact AWS Support to unlock the address.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
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</tr>
<tr>
<td>InvalidAddress.Malformed</td>
<td>The specified IP address is not valid. Ensure that you provide the address in the form <code>xx.xx.xx.xx</code>; for example, <code>55.123.45.67</code></td>
</tr>
<tr>
<td>InvalidAddress.NotFound</td>
<td>The specified Elastic IP address that you are describing cannot be found. Ensure that you specify the region in which the IP address is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidAddressID.NotFound</td>
<td>The specified allocation ID for the Elastic IP address you are trying to release cannot be found. Ensure that you specify the region in which the IP address is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidAffinity</td>
<td>The specified affinity value is not valid.</td>
</tr>
<tr>
<td>InvalidAllocationID.NotFound</td>
<td>The specified allocation ID you are trying to describe or associate does not exist. Ensure that you specify the region in which the IP address is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidAMIAttributeItemValue</td>
<td>The value of an item added to, or removed from, an image attribute is not valid. If you are specifying a <code>userId</code>, check that it is in the form of an AWS account ID, without hyphens.</td>
</tr>
<tr>
<td>InvalidAMIID.Malformed</td>
<td>The specified AMI ID is malformed. Ensure that you provide the full AMI ID, in the form <code>ami-xxxxxxxx</code>.</td>
</tr>
<tr>
<td>InvalidAMIID.NotFound</td>
<td>The specified AMI does not exist. Check the AMI ID, and ensure that you specify the region in which the AMI is located, if it's not in the default region. This error may also occur if you specified an incorrect kernel ID when launching an instance.</td>
</tr>
<tr>
<td>InvalidAMIID.Unavailable</td>
<td>The specified AMI has been deregistered and is no longer available, or is not in a state from which you can launch an instance.</td>
</tr>
<tr>
<td>InvalidAMIName.Duplicate</td>
<td>The specified AMI name is already in use by another AMI. If you have recently deregistered an AMI with the same name, allow enough time for the change to propagate through the system, and retry your request.</td>
</tr>
<tr>
<td>InvalidAMIName.Malformed</td>
<td>AMI names must be between 3 and 128 characters long, and may contain letters, numbers, and only the following characters: <code>()_.~</code></td>
</tr>
<tr>
<td>InvalidAssociationID.NotFound</td>
<td>The specified association ID (for an Elastic IP address, a route table, or network ACL) does not exist. Ensure that you specify the region in which the association ID is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidAttachment.NotFound</td>
<td>Indicates an attempt to detach a volume from an instance to which it is not attached.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
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</tr>
<tr>
<td>InvalidAttachmentID.NotFound</td>
<td>The specified network interface attachment does not exist.</td>
</tr>
<tr>
<td>InvalidAutoPlacement</td>
<td>The specified value for auto-placement is not valid.</td>
</tr>
<tr>
<td>InvalidAvailabilityZone</td>
<td>The specified Availability Zone is not valid.</td>
</tr>
<tr>
<td>InvalidBlockDeviceMapping</td>
<td>A block device mapping parameter is not valid. The returned message indicates the incorrect value.</td>
</tr>
<tr>
<td>InvalidBundleID.NotFound</td>
<td>The specified bundle task ID cannot be found. Ensure that you specify the region in which the bundle task is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidClientToken</td>
<td>The specified client token is not valid. For more information, see Client Tokens (p. 760).</td>
</tr>
<tr>
<td>InvalidConversionTaskId</td>
<td>The specified conversion task ID (for instance or volume import) is not valid.</td>
</tr>
<tr>
<td>InvalidConversionTaskId.Malformed</td>
<td>The specified conversion task ID (for instance or volume import) is malformed. Ensure that you've specified the ID in the form import-i-xxxxxxxx.</td>
</tr>
<tr>
<td>InvalidCustomerGateway.DuplicateIpAddress</td>
<td>There is a conflict among the specified gateway IP addresses. Each VPN connection in a region must be created with a unique customer gateway IP address (across all AWS accounts). For more information, see Your Customer Gateway in the Amazon VPC Network Administrator Guide.</td>
</tr>
<tr>
<td>InvalidCustomerGatewayId.Malformed</td>
<td>The specified customer gateway ID is malformed, or cannot be found. Specify the ID in the form cgw-xxxxxxxx, and ensure that you specify the region in which the customer gateway is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidCustomerGatewayId.NotFound</td>
<td>The specified customer gateway ID cannot be found. Ensure that you specify the region in which the customer gateway is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidCustomerGatewayState</td>
<td>The customer gateway is not in the available state, and therefore cannot be used.</td>
</tr>
<tr>
<td>InvalidDevice.InUse</td>
<td>The device to which you are trying to attach (for example, /dev/sdh) is already in use on the instance.</td>
</tr>
<tr>
<td>InvalidDhcpOptionID.NotFound</td>
<td>The specified DHCP options set does not exist. Ensure that you specify the region in which the DHCP options set is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidDhcpOptionsID.NotFound</td>
<td>The specified DHCP options set does not exist. Ensure that you specify the region in which the DHCP options set is located, if it's not in the default region.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
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</tr>
<tr>
<td>InvalidDhcpOptionsId.Malformed</td>
<td>The specified DHCP options set ID is malformed. Ensure that you provide the full DHCP options set ID in the request, in the form dopt-xxxxxxxx.</td>
</tr>
<tr>
<td>InvalidExportTaskID.NotFound</td>
<td>The specified export task ID cannot be found.</td>
</tr>
<tr>
<td>InvalidFilter</td>
<td>The specified filter is not valid.</td>
</tr>
<tr>
<td>InvalidFlowLogId.NotFound</td>
<td>The specified flow log does not exist. Ensure that you have indicated the region in which the flow log is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidFormat</td>
<td>The specified disk format (for the instance or volume import) is not valid.</td>
</tr>
<tr>
<td>InvalidGatewayID.NotFound</td>
<td>The specified gateway does not exist.</td>
</tr>
<tr>
<td>InvalidGroup.Duplicate</td>
<td>You cannot create a security group with the same name as an existing security group in the same VPC, or the same region (EC2-Classic).</td>
</tr>
<tr>
<td>InvalidGroupId.Malformed</td>
<td>The specified security group ID is malformed. Ensure that you provide the full security group ID in the request, in the form sg-xxxxxxxx.</td>
</tr>
<tr>
<td>InvalidGroupId.InUse</td>
<td>The specified security group can't be deleted because it's in use by another security group. You can remove dependencies by modifying or deleting rules in the affected security groups.</td>
</tr>
<tr>
<td>InvalidGroupId.NotFound</td>
<td>The specified security group does not exist.</td>
</tr>
<tr>
<td></td>
<td>This error can occur because the ID of a recently created security group has not propagated through the system. For more information, see Eventual Consistency (p. 758).</td>
</tr>
<tr>
<td></td>
<td>You can't specify a security group that is in a different region or VPC than the request.</td>
</tr>
<tr>
<td>InvalidGroup.Reserved</td>
<td>The name 'default' is reserved, and cannot be used to create a new security group. You also cannot delete the default EC2-Classic security group, but you can change its rules. For more information, see Amazon EC2 Security Groups.</td>
</tr>
<tr>
<td>InvalidHostConfiguration</td>
<td>The specified Dedicated Host configuration is not supported.</td>
</tr>
<tr>
<td>InvalidHostId</td>
<td>The specified Dedicated Host ID is not valid.</td>
</tr>
<tr>
<td>InvalidHostId.Malformed</td>
<td>The specified Dedicated Host ID is not formed correctly. Ensure that you provide the full ID in the form h-xxxxxxxxxxxxxxxxxxxx.</td>
</tr>
<tr>
<td>InvalidHostId.Malformed</td>
<td>The specified Dedicated Host ID is not formed correctly. Ensure that you provide the full ID in the form h-xxxxxxxxxxxxxxxxxxxx.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
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</tr>
<tr>
<td>InvalidHostID.NotFound</td>
<td>The specified Dedicated Host ID does not exist. Ensure that you specify the region in which the Dedicated Host is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidHostId.NotFound</td>
<td>The specified Dedicated Host ID does not exist. Ensure that you specify the region in which the Dedicated Host is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidHostReservationId.Malformed</td>
<td>The specified Dedicated Host Reservation ID is not formed correctly. Ensure that you provide the full ID in the form hr-xxxxxxxxxxxxxxxxxx.</td>
</tr>
<tr>
<td>InvalidHostReservationOfferingId.Malformed</td>
<td>The specified Dedicated Host Reservation offering is not formed correctly. Ensure that you provide the full ID in the form hro-xxxxxxxxxxxxxxxxxx.</td>
</tr>
<tr>
<td>InvalidHostState</td>
<td>The Dedicated Host must be in the available state to complete the operation.</td>
</tr>
<tr>
<td>InvalidID</td>
<td>The specified ID for the resource you are trying to tag is not valid. Ensure that you provide the full resource ID; for example, ami-2bb65342 for an AMI.</td>
</tr>
<tr>
<td></td>
<td>If you're using the command line tools on a Windows system, you might need to use quotation marks for the key-value pair; for example, &quot;Name=TestTag&quot;.</td>
</tr>
<tr>
<td>InvalidInput</td>
<td>An input parameter in the request is not valid; for example, if you specified an incorrect Reserved instance listing ID in the request.</td>
</tr>
<tr>
<td>InvalidInstanceAttributeValue</td>
<td>The specified instance attribute value is not valid. This error is most commonly encountered when trying to set the InstanceType/--instance-type attribute to an unrecognized value.</td>
</tr>
<tr>
<td>InvalidInstanceID</td>
<td>This error commonly occurs when trying to associate an IP address with an instance that is not in the 'running' state. This error can also occur when trying to perform an operation on an instance that has multiple network interfaces. A network interface can have individual attributes; therefore, you may need to specify the network interface ID as part of the request, or use a different request. For example, each network interface in an instance can have a source/destination check flag. If you want to modify this attribute, you need to modify the network interface attribute, and not the instance attribute. If you want to create a route in a route table, you need to provide a specific network interface ID as part of the request.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
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<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>InvalidInstanceID.Malformed</td>
<td>The specified instance ID is malformed. Ensure that you provide the full instance ID in the request, in the form i-xxxxxxxx or i-xxxxxxxxxxxxxxxxxx.</td>
</tr>
<tr>
<td>InvalidInstanceID.NotFound</td>
<td>The specified instance does not exist. Ensure that you have indicated the region in which the instance is located, if it's not in the default region. This error may occur because the ID of a recently created instance has not propagated through the system. For more information, see Eventual Consistency (p. 758).</td>
</tr>
<tr>
<td>InvalidInstanceID.NotLinkable</td>
<td>The specified instance cannot be linked to the specified VPC. Ensure that the instance is an EC2-Classic instance. This error may also occur if the instance was recently launched, and its ID has not yet propagated through the system. Wait a few minutes, or wait until the instance is in the running state, and then try again.</td>
</tr>
<tr>
<td>InvalidInstanceFamily</td>
<td>The instance family for the Dedicated Host Reservation offering is different from the instance family of the Dedicated Hosts.</td>
</tr>
<tr>
<td>InvalidInstanceState</td>
<td>The instance is not in an appropriate state to complete the request. If you're modifying the instance placement, the instance must be in the stopped state.</td>
</tr>
<tr>
<td>InvalidInstanceType</td>
<td>The instance type is not supported for this request. For example, you can only bundle instance store-backed Windows instances.</td>
</tr>
<tr>
<td>InvalidInterface.IpAddressLimitExceeded</td>
<td>The number of private IP addresses for a specified network interface exceeds the limit for the type of instance you are trying to launch. For more information about the maximum number of private IP addresses per ENI, see Private IP addresses per ENI.</td>
</tr>
<tr>
<td>InvalidInternetGatewayId.Malformed</td>
<td>The specified Internet gateway ID is malformed. Ensure that you provide the full ID in the request, in the form igw-xxxxxxxx.</td>
</tr>
<tr>
<td>InvalidInternetGatewayID.NotFound</td>
<td>The specified Internet gateway does not exist. Ensure that you specify the region in which the Internet gateway is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidIPAddress.InUse</td>
<td>The specified IP address is already in use. If you are trying to release an address, you must first disassociate it from the instance.</td>
</tr>
<tr>
<td>InvalidKey.Format</td>
<td>The key pair is not specified in a valid OpenSSH public key format.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
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<td>-----------------------------</td>
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</tr>
<tr>
<td>InvalidKeyPair.Duplicate</td>
<td>The key pair name already exists in that region. If you are creating or importing a key pair, ensure that you use a unique name.</td>
</tr>
<tr>
<td>InvalidKeyPair.Format</td>
<td>The format of the public key you are attempting to import is not valid.</td>
</tr>
<tr>
<td>InvalidKeyPair.NotFound</td>
<td>The specified key pair name does not exist. Ensure that you specify the region in which the key pair is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidManifest</td>
<td>The specified AMI has an unparsable manifest, or you may not have access to the location of the manifest file in Amazon S3.</td>
</tr>
<tr>
<td>InvalidMaxResults</td>
<td>The specified value for MaxResults is not valid.</td>
</tr>
<tr>
<td>InvalidNatGatewayID.NotFound</td>
<td>The specified NAT gateway ID does not exist. Ensure that you specify the region in which the NAT gateway is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidNetworkAclEntry.NotFound</td>
<td>The specified network ACL entry does not exist.</td>
</tr>
<tr>
<td>InvalidNetworkAclId.Malformed</td>
<td>The specified network ACL ID is malformed. Ensure that you provide the ID in the form acl-xxxxxxxx.</td>
</tr>
<tr>
<td>InvalidNetworkAclId.NotFound</td>
<td>The specified network ACL does not exist. Ensure that you specify the region in which the network ACL is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidNetworkInterfaceAttachmentId.Malformed</td>
<td>The ID for the network interface attachment is malformed. Ensure that you use the attachment ID rather than the network interface ID, in the form eni-attach-xxxxxxxx.</td>
</tr>
<tr>
<td>InvalidNetworkInterface.InUse</td>
<td>The specified interface is currently in use and cannot be deleted or attached to another instance. Ensure that you have detached the network interface first. You may also receive the InvalidParameterValue error if a network interface is in use.</td>
</tr>
<tr>
<td>InvalidNetworkInterfaceId.Malformed</td>
<td>The specified network interface ID is malformed. Ensure that you specify the network interface ID in the form eni-xxxxxxx.</td>
</tr>
<tr>
<td>InvalidNetworkInterfaceId.NotFound</td>
<td>The specified network interface does not exist. Ensure that you specify the region in which the network interface is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidNextToken</td>
<td>The specified NextToken is not valid.</td>
</tr>
<tr>
<td>InvalidOption.Conflict</td>
<td>A VPN connection between the virtual private gateway and the customer gateway already exists.</td>
</tr>
<tr>
<td>InvalidPermission.Duplicate</td>
<td>The specified inbound or outbound rule already exists for that security group.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>InvalidPermission.Malformed</td>
<td>The specified security group rule is malformed. If you are specifying an IP address range, ensure that you use CIDR notation; for example, 203.0.113.0/24.</td>
</tr>
<tr>
<td>InvalidPermission.NotFound</td>
<td>The specified rule does not exist in this security group.</td>
</tr>
<tr>
<td>InvalidPlacementGroup.Duplicate</td>
<td>The specified placement group already exists in that region.</td>
</tr>
<tr>
<td>InvalidPlacementGroup.InUse</td>
<td>The specified placement group is in use. If you are trying to delete a placement group, ensure that its instances have been terminated.</td>
</tr>
<tr>
<td>InvalidPlacementGroup.Unknown</td>
<td>The specified placement group cannot be found. Ensure that you specify the region in which the placement group is located, if it’s not in the default region.</td>
</tr>
<tr>
<td>InvalidPolicyDocument</td>
<td>The specified policy document is not a valid JSON policy document.</td>
</tr>
<tr>
<td>InvalidPrefixListId.Malformed</td>
<td>The specified prefix list ID is malformed. Ensure that you provide the ID in the form pl-xxxxxxxxx.</td>
</tr>
<tr>
<td>InvalidPrefixListId.NotFound</td>
<td>The specified prefix list ID does not exist. Ensure that you have indicated the region for the service, if it’s not in the default region.</td>
</tr>
<tr>
<td>InvalidProductInfo</td>
<td>(AWS Marketplace) The product code is not valid.</td>
</tr>
<tr>
<td>InvalidPurchaseToken.Expired</td>
<td>The specified purchase token has expired.</td>
</tr>
<tr>
<td>InvalidPurchaseToken.Malformed</td>
<td>The specified purchase token is not valid.</td>
</tr>
<tr>
<td>InvalidQuantity</td>
<td>The specified quantity of Dedicated Hosts is not valid.</td>
</tr>
<tr>
<td>InvalidRegion</td>
<td>The specified region is not valid. For copying a snapshot or image, specify the source region using its region code, for example, us-west-2.</td>
</tr>
<tr>
<td>InvalidRequest</td>
<td>The request is not valid. The returned message provides details about the nature of the error.</td>
</tr>
<tr>
<td>InvalidReservationID.Malformed</td>
<td>The specified reservation ID is not valid.</td>
</tr>
<tr>
<td>InvalidReservationID.NotFound</td>
<td>The specified reservation does not exist.</td>
</tr>
<tr>
<td>InvalidReservedInstancesId</td>
<td>The specified Reserved instance does not exist.</td>
</tr>
<tr>
<td>InvalidReservedInstancesOfferingId</td>
<td>The specified Reserved instances offering does not exist.</td>
</tr>
<tr>
<td>InvalidResourceType.Unknown</td>
<td>The specified resource type is not supported or is not valid. To view resource types that support longer IDs, use DescribeIdFormat.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>InvalidRoute.InvalidState</td>
<td>The specified route is not valid.</td>
</tr>
<tr>
<td>InvalidRoute.Malformed</td>
<td>The specified route is not valid. If you are deleting a route in a VPN connection, ensure that you've entered the value for the CIDR block correctly.</td>
</tr>
<tr>
<td>InvalidRoute.NotFound</td>
<td>The specified route does not exist in the specified route table. Ensure that you indicate the exact CIDR range for the route in the request. This error can also occur if you've specified a route table ID in the request that does not exist.</td>
</tr>
<tr>
<td>InvalidRouteTableId.Malformed</td>
<td>The specified route table ID is malformed. Ensure that you specify the route table ID in the form rtb-xxxxxx.</td>
</tr>
<tr>
<td>InvalidRouteTableID.NotFound</td>
<td>The specified route table does not exist. Ensure that you specify the region in which the route table is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidScheduledInstance</td>
<td>The specified Scheduled Instance does not exist.</td>
</tr>
<tr>
<td>InvalidSecurityGroupID.NotFound</td>
<td>The specified security group does not exist. If you are creating a network interface, ensure that you specify a VPC security group, and not an EC2-Classic security group.</td>
</tr>
<tr>
<td>InvalidSecurity.RequestHasExpired</td>
<td>The difference between the request timestamp and the AWS server time is greater than 5 minutes. Ensure that your system clock is accurate and configured to use the correct time zone.</td>
</tr>
<tr>
<td>InvalidServiceName</td>
<td>The name of the AWS service is not valid. Ensure that you provide the name of the service in the form com.amazonaws.&lt;region&gt;.&lt;service_name&gt;; for example com.amazonaws.us-east-1.s3.</td>
</tr>
<tr>
<td>InvalidSnapshotID.Malformed</td>
<td>The snapshot ID is not valid.</td>
</tr>
<tr>
<td>InvalidSnapshot.InUse</td>
<td>The snapshot that you are trying to delete is in use by one or more AMIs.</td>
</tr>
<tr>
<td>InvalidSnapshot.NotFound</td>
<td>The specified snapshot does not exist. Ensure that you specify the region in which the snapshot is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidSpotDatafeed.NotFound</td>
<td>You have no data feed for Spot instances.</td>
</tr>
<tr>
<td>InvalidSpotFleetRequestConfig</td>
<td>The Spot fleet request configuration is not valid. Ensure that you provide valid values for all of the configuration parameters; for example, a valid AMI ID. Limits apply on the target capacity and the number of launch specifications per Spot fleet request. For more information, see Spot Fleet Limits.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
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</tr>
<tr>
<td>InvalidSpotFleetRequestId.Malformed</td>
<td>The specified Spot fleet request ID is malformed. Ensure that you specify the Spot fleet request ID in the form sfr- followed by 36 characters, including hyphens; for example, sfr-123f8fc2-11aa-22bb-33cc-example12710.</td>
</tr>
<tr>
<td>InvalidSpotFleetRequestId.NotFound</td>
<td>The specified Spot fleet request ID does not exist. Ensure that you specify the region in which the Spot fleet request is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidSpotInstanceRequestID.Malformed</td>
<td>The specified Spot instance request ID is not valid. Ensure that you specify the Spot instance request ID in the form sir-xxxxxxxx.</td>
</tr>
<tr>
<td>InvalidSpotInstanceRequestID.NotFound</td>
<td>The specified Spot instance request ID does not exist. Ensure that you specify the region in which the Spot instance request is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidState</td>
<td>The specified resource is not in the correct state for the request; for example, if you are trying to enable monitoring on a recently terminated instance, or if you are trying to create a snapshot when a previous identical request has not yet completed.</td>
</tr>
<tr>
<td>InvalidStateTransition</td>
<td>The specified VPC peering connection is not in the correct state for the request. For example, you may be trying to accept a VPC peering request that has failed, or that was rejected.</td>
</tr>
<tr>
<td>InvalidSubnet</td>
<td>The specified subnet ID is not valid or does not exist.</td>
</tr>
<tr>
<td>InvalidSubnet.Conflict</td>
<td>The specified CIDR block conflicts with that of another subnet in your VPC.</td>
</tr>
<tr>
<td>InvalidSubnetID.NotFound</td>
<td>The specified subnet does not exist. Ensure that you have indicated the region in which the subnet is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidSubnet.Range</td>
<td>The CIDR block you've specified for the subnet is not valid. The allowed block size is between a /28 netmask and /16 netmask.</td>
</tr>
<tr>
<td>InvalidTargetArn.Unknown</td>
<td>The specified ARN for the IAM user, IAM role, or root user is not valid or does not exist.</td>
</tr>
<tr>
<td>InvalidTenancy</td>
<td>You cannot modify the tenancy of an instance with a tenancy of default. You can modify the tenancy of instances with a tenancy of host or dedicated.</td>
</tr>
<tr>
<td>InvalidTime</td>
<td>The specified timestamp is not valid.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
</tr>
<tr>
<td>InvalidUserID.Malformed</td>
<td>The specified user or owner is not valid. If you are performing a DescribeImages request, you must specify a valid value for the owner or executableBy parameters, such as an AWS account ID. If you are performing a DescribeSnapshots request, you must specify a valid value for the owner or restorableBy parameters.</td>
</tr>
<tr>
<td>InvalidVolumeID.Duplicate</td>
<td>The Amazon EBS volume already exists.</td>
</tr>
<tr>
<td>InvalidVolumeID.Malformed</td>
<td>The specified volume ID is not valid. Check the letter-number combination carefully.</td>
</tr>
<tr>
<td>InvalidVolumeID.ZoneMismatch</td>
<td>The specified volume and instance are in different Availability Zones.</td>
</tr>
<tr>
<td>InvalidVolume.NotFound</td>
<td>The specified volume does not exist. Ensure that you have indicated the region in which the volume is located, if it's not in the default region. Ensure that you are using the correct access credentials.</td>
</tr>
<tr>
<td>InvalidVolume.ZoneMismatch</td>
<td>The specified volume is not in the same Availability Zone as the specified instance. You can only attach an Amazon EBS volume to an instance if they are in the same Availability Zone.</td>
</tr>
<tr>
<td>InvalidVpcEndpointId.Malformed</td>
<td>The specified VPC endpoint ID is malformed. Use the full VPC endpoint ID in the request, in the form vpce-xxxxxxxx.</td>
</tr>
<tr>
<td>InvalidVpcEndpointId.NotFound</td>
<td>The specified VPC endpoint does not exist. Ensure that you have indicated the region in which the endpoint is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidVpcID.Malformed</td>
<td>The specified VPC ID is malformed. Ensure that you've specified the ID in the form vpc-xxxxxxxx.</td>
</tr>
<tr>
<td>InvalidVpcID.NotFound</td>
<td>The specified VPC does not exist. Ensure that you have indicated the region in which the VPC is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidVpcPeeringConnectionId.Malformed</td>
<td>The specified VPC peering connection ID is malformed. Ensure that you provide the ID in the form pcx-xxxxxxxx.</td>
</tr>
<tr>
<td>InvalidVpcPeeringConnectionID.NotFound</td>
<td>The specified VPC peering connection ID does not exist. Ensure that you have indicated the region in which the VPC peering connection is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidVpcPeeringConnectionState.DnsHostnamesDisabled</td>
<td>To enable DNS hostname resolution for the VPC peering connection, DNS hostname support must be enabled for the VPCs.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
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</tr>
<tr>
<td>InvalidVpcRange</td>
<td>The specified CIDR block range is not valid. The block range must be between a /28 netmask and /16 netmask. For more information, see Your VPC and Subnets.</td>
</tr>
<tr>
<td>InvalidVpcState</td>
<td>The specified VPC already has a virtual private gateway attached to it.</td>
</tr>
<tr>
<td>InvalidVpnConnectionID</td>
<td>The specified VPN connection ID cannot be found. Ensure that you have indicated the region in which the VPN connection ID is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidVpnConnectionID.NotFound</td>
<td>The specified VPN connection ID does not exist. Ensure that you have indicated the region in which the VPN connection ID is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidVpnConnection.InvalidState</td>
<td>The VPN connection must be in the available state to complete the request.</td>
</tr>
<tr>
<td>InvalidVpnConnection.InvalidType</td>
<td>The specified VPN connection does not support static routes.</td>
</tr>
<tr>
<td>InvalidVpnGatewayAttachment.NotFound</td>
<td>An attachment between the specified virtual private gateway and specified VPC does not exist. This error can also occur if you've specified an incorrect VPC ID in the request.</td>
</tr>
<tr>
<td>InvalidVpnGatewayID.NotFound</td>
<td>The specified virtual private gateway does not exist. Ensure that you have indicated the region in which the virtual private gateway is located, if it's not in the default region.</td>
</tr>
<tr>
<td>InvalidVpnGatewayState</td>
<td>The virtual private gateway is not in an available state.</td>
</tr>
<tr>
<td>InvalidZone.NotFound</td>
<td>The specified Availability Zone does not exist, or is not available for you to use. Use the DescribeAvailabilityZones request to list the Availability Zones that are currently available to you. Ensure that you have indicated the region for the Availability Zone in the request, if it's not in the default region. Specify the full name of the Availability Zone: for example, us-east-1a.</td>
</tr>
<tr>
<td>KeyPairLimitExceeded</td>
<td>You've reached the limit on the number of key pairs that you can have in this region. For more information, see Amazon EC2 Key Pairs.</td>
</tr>
<tr>
<td>LegacySecurityGroup</td>
<td>Any VPC created using an API version older than 2011-01-01 may have the 2009-07-15-default security group. You must delete this security group before you can attach an Internet gateway to the VPC.</td>
</tr>
<tr>
<td>LimitPriceExceeded</td>
<td>The cost of the total order is greater than the specified limit price (instance count * price).</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
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<td>-------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MaxIOPSLimitExceeded</td>
<td>You've reached the limit on your IOPS usage for that region. If you need to increase your volume limit, complete the Amazon EC2 EBS Volume Limit Form.</td>
</tr>
<tr>
<td>MaxScheduledInstanceCapacityExceeded</td>
<td>You've attempted to launch more instances than you purchased.</td>
</tr>
<tr>
<td>MaxSpotFleetRequestCountExceeded</td>
<td>You've reached one or both of these limits: the total number of Spot fleet requests that you can make, or the total number of instances in all Spot fleets for the region (the target capacity). For more information, see Spot Fleet Limits.</td>
</tr>
<tr>
<td>MaxSpotInstanceCountExceeded</td>
<td>You've reached the limit on the number of Spot instances that you can launch. The limit depends on the instance type. For more information, see How many instances can I run in Amazon EC2. If you need additional instances, complete the Amazon EC2 Instance Request Form.</td>
</tr>
<tr>
<td>MissingInput</td>
<td>An input parameter is missing.</td>
</tr>
<tr>
<td>NatGatewayLimitExceeded</td>
<td>You've reached the limit on the number of NAT gateways that you can create. For more information, see Amazon VPC Limits.</td>
</tr>
<tr>
<td>NatGatewayMalformed</td>
<td>The specified NAT gateway ID is not formed correctly. Ensure that you specify the NAT gateway ID in the form nat-xxxxxxxxxxxxxxxxx.</td>
</tr>
<tr>
<td>NatGatewayNotFound</td>
<td>The specified NAT gateway does not exist. Ensure that you have indicated the region in which the NAT gateway is located, if it's not in the default region.</td>
</tr>
<tr>
<td>NetworkAclEntryAlreadyExists</td>
<td>The specified rule number already exists in this network ACL.</td>
</tr>
<tr>
<td>NetworkAclEntryLimitExceeded</td>
<td>You've reached the limit on the number of rules that you can add to the network ACL. For more information, see Amazon VPC Limits.</td>
</tr>
<tr>
<td>NetworkAclLimitExceeded</td>
<td>You've reached the limit on the number of network ACLs that you can create for the specified VPC. For more information, see Amazon VPC Limits. To request an increase on your network ACL limit, complete the Amazon VPC Limits form.</td>
</tr>
<tr>
<td>NetworkInterfaceLimitExceeded</td>
<td>You've reached the limit on the number of network interfaces that you can create. For more information, see Amazon VPC Limits.</td>
</tr>
<tr>
<td>NonEBSInstance</td>
<td>The specified instance does not support Amazon EBS. Restart the instance and try again, to ensure that the code is run on an instance with updated code.</td>
</tr>
<tr>
<td>NoSuchVersion</td>
<td>The specified API version does not exist.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>NotExportable</td>
<td>The specified instance cannot be exported. You can only export instances that were previously imported into Amazon EC2. For more information, see Exporting EC2 Instances</td>
</tr>
<tr>
<td>OperationNotPermitted</td>
<td>The specified operation is not allowed. This error can occur for a number of reasons; for example, you might be trying to terminate an instance that has termination protection enabled, or trying to detach the primary network interface (eth0) from an instance.</td>
</tr>
<tr>
<td>OutstandingVpcPeeringConnectionLimitExceeded</td>
<td>You've reached the limit on the number of VPC peering connection requests that you can create for the specified VPC.</td>
</tr>
<tr>
<td>PendingSnapshotLimitExceeded</td>
<td>You've reached the limit on the number of Amazon EBS snapshots that you can have in the pending state.</td>
</tr>
<tr>
<td>PendingVpcPeeringConnectionLimitExceeded</td>
<td>You've reached the limit on the number of pending VPC peering connections that you can have.</td>
</tr>
<tr>
<td>PlacementGroupLimitExceeded</td>
<td>You've reached the limit on the number of placement groups that you can have.</td>
</tr>
<tr>
<td>PrivateIpAddressLimitExceeded</td>
<td>You've reached the limit on the number of private IP addresses that you can assign to the specified network interface for that type of instance. For more information about the maximum number of private IP addresses per ENI, see Private IP addresses per ENI.</td>
</tr>
</tbody>
</table>
| RequestResourceCountExceeded     | Details in your Spot request exceed the numbers allowed by the Spot service in one of the following ways, depending on the action that generated the error:  

  —If you get this error when you submitted a bid for Spot instances, check the number of Spot instances specified in your request. The number shouldn't exceed the 3,000 maximum allowed per request. Resend your Spot instance request and specify a number less than 3,000. If your account's regional Spot request limit is greater than 3,000 instances, you can access these instances by submitting multiple smaller requests.  

  —If you get this error when you sent Describe Spot instance requests, check the number of requests for Spot instance data, the amount of data you requested, and how often you sent the request. The frequency with which you requested the data combined with the amount of data exceeds the levels allowed by the Spot service. Try again and submit fewer large Describe requests over longer intervals. |
<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ReservedInstancesCountExceeded</td>
<td>You’ve reached the limit for the number of Reserved Instances.</td>
</tr>
<tr>
<td>ReservedInstancesLimitExceeded</td>
<td>Your current quota does not allow you to purchase the required number of Reserved instances.</td>
</tr>
<tr>
<td>ReservedInstancesUnavailable</td>
<td>The requested Reserved Instances are not available.</td>
</tr>
<tr>
<td>Resource.AlreadyAssigned</td>
<td>The specified private IP address is already assigned to a resource. Unassign the private IP first, or use a different private IP address.</td>
</tr>
<tr>
<td>Resource.AlreadyAssociated</td>
<td>The specified resource is already in use. For example, in EC2-VPC, you cannot associate an Elastic IP address with an instance if it's already associated with another instance. You also cannot attach an Internet gateway to more than one VPC at a time.</td>
</tr>
<tr>
<td>ResourceCountExceeded</td>
<td>You have exceeded the number of resources allowed for this request; for example, if you try to launch more instances than AWS allows in a single request. This limit is separate from your individual resource limit. If you get this error, break up your request into smaller requests; for example, if you are launching 15 instances, try launching 5 instances in 3 separate requests.</td>
</tr>
<tr>
<td>ResourceCountLimitExceeded</td>
<td>You have exceeded a resource limit for creating routes.</td>
</tr>
<tr>
<td>ResourceLimitExceeded</td>
<td>You have exceeded an Amazon EC2 resource limit. For example, you might have too many snapshot copies in progress.</td>
</tr>
<tr>
<td>RouteAlreadyExists</td>
<td>A route for the specified CIDR block already exists in this route table.</td>
</tr>
<tr>
<td>RouteLimitExceeded</td>
<td>You’ve reached the limit on the number of routes that you can add to a route table.</td>
</tr>
<tr>
<td>RouteTableLimitExceeded</td>
<td>You’ve reached the limit on the number of route tables that you can create for the specified VPC. For more information about route table limits, see Amazon VPC Limits.</td>
</tr>
<tr>
<td>RulesPerSecurityGroupLimitExceeded</td>
<td>You've reached the limit on the number of rules that you can add to a security group. The limit depends on whether you are using EC2-Classic or EC2-VPC. For more information, see Security Group Rules.</td>
</tr>
<tr>
<td>ScheduledInstanceLimitExceeded</td>
<td>You’ve reached the limit on the number of Scheduled Instances that you can purchase.</td>
</tr>
<tr>
<td>ScheduledInstanceParameterMismatch</td>
<td>The launch specification does not match the details for the Scheduled Instance.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
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<td>----------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ScheduledInstanceSlotNotOpen</td>
<td>You can launch a Scheduled Instance only during its scheduled time periods.</td>
</tr>
<tr>
<td>ScheduledInstanceSlotUnavailable</td>
<td>The requested Scheduled Instance is no longer available during this scheduled time period.</td>
</tr>
<tr>
<td>SecurityGroupLimitExceeded</td>
<td>You've reached the limit on the number of security groups that you can create, or that you can assign to an instance. The limit depends on whether you are using EC2-Classic or EC2-VPC. For more information, see Creating Your Own Security Groups.</td>
</tr>
<tr>
<td>SecurityGroupsPerInstanceLimitExceeded</td>
<td>You've reached the limit on the number of security groups that you can assign to an instance. The limit depends on whether you are using EC2-Classic or EC2-VPC. For more information, see Amazon EC2 Security Groups.</td>
</tr>
<tr>
<td>SecurityGroupsPerInterfaceLimitExceeded</td>
<td>You've reached the limit on the number of security groups you can associate with the specified network interface. For more information, see Amazon VPC Limits.</td>
</tr>
<tr>
<td>SignatureDoesNotMatch</td>
<td>The request signature that Amazon has does not match the signature that you provided. Check your AWS access keys and signing method.</td>
</tr>
<tr>
<td>SnapshotCopyUnsupported.InterRegion</td>
<td>Inter-region snapshot copy is not supported for this region.</td>
</tr>
<tr>
<td>SnapshotCreationPerVolumeRateExceeded</td>
<td>The rate limit for creating concurrent snapshots of an EBS volume has been exceeded. Wait at least 15 seconds between concurrent volume snapshots.</td>
</tr>
<tr>
<td>SnapshotLimitExceeded</td>
<td>You've reached the limit on the number of Amazon EBS snapshots that you can create. To request an increase on your snapshot limit, complete the Amazon EC2 EBS Volume Limit Form.</td>
</tr>
<tr>
<td>SubnetLimitExceeded</td>
<td>You've reached the limit on the number of subnets that you can create for the specified VPC. For more information about subnet limits, see Amazon VPC Limits. To request an increase on your subnet limit, complete the Amazon VPC Limits form.</td>
</tr>
<tr>
<td>TagLimitExceeded</td>
<td>You've reached the limit on the number of tags that you can assign to the specified resource. For more information, see Tag Restrictions.</td>
</tr>
<tr>
<td>UnavailableHostRequirements</td>
<td>There are no valid Dedicated Hosts available on which you can launch an instance.</td>
</tr>
<tr>
<td>UnknownPrincipalType.Unsupported</td>
<td>The principal type is not supported. The principal must be an IAM user, IAM role, or the root user for the AWS account.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
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</tr>
<tr>
<td>UnknownVolumeType</td>
<td>The specified volume type is unsupported. The supported volume types are gp2, io1, st1, sc1, and standard.</td>
</tr>
<tr>
<td>Unsupported</td>
<td>The specified request is unsupported. For example, you might be trying to launch an instance in an Availability Zone that currently has constraints on that instance type. The returned message provides details of the unsupported request.</td>
</tr>
<tr>
<td>UnsupportedHostConfiguration</td>
<td>The specified Dedicated Host configuration is unsupported. For more information about supported configurations, see Dedicated Hosts.</td>
</tr>
<tr>
<td>UnsupportedInstanceTypeOnHost</td>
<td>The instance type is not supported on the Dedicated Host. For more information about supported instance types, see Amazon EC2 Dedicated Hosts Pricing.</td>
</tr>
<tr>
<td>VolumeInUse</td>
<td>The specified Amazon EBS volume is attached to an instance. Ensure that the specified volume is in an ‘available’ state.</td>
</tr>
<tr>
<td>VolumeIOPSLimit</td>
<td>The maximum IOPS limit for the volume has been reached. For more information, see Amazon EBS Volume Types.</td>
</tr>
<tr>
<td>VolumeLimitExceeded</td>
<td>You’ve reached the limit on your Amazon EBS volume storage. To request an increase, complete the Amazon EC2 EBS Volume Limit Form.</td>
</tr>
<tr>
<td>VolumeTypeNotAvailableInZone</td>
<td>The specified Availability Zone does not support Provisioned IOPS SSD volumes. Try launching your instance in a different Availability Zone, or don’t specify a zone in the request. If you’re creating a volume, try specifying a different Availability Zone in the request.</td>
</tr>
<tr>
<td>VpcCidrConflict</td>
<td>You cannot enable a VPC for ClassicLink if the VPC has routing that conflicts with the EC2-Classic private IP address range of 10/8; for example, if your VPC’s route table points to 10.0.0.0/16 for a VPC peering connection. This excludes local routes for VPCs in the 10.0.0.0/16 and 10.1.0.0/16 IP address ranges. For more information, see Routing for ClassicLink.</td>
</tr>
<tr>
<td>VPCIdNotSpecified</td>
<td>You have no default VPC in which to carry out the request. Specify a VPC ID or subnet ID, or in the case of security groups, specify the ID, and not the security group name. You can contact AWS Support to create a new default VPC.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>VpcEndpointLimitExceeded</td>
<td>You’ve reached the limit on the number of VPC endpoints that you can create in the region. For more information about VPC limits, see Amazon VPC Limits. To request an increase on your VPC limit, complete the Amazon VPC Limits form.</td>
</tr>
<tr>
<td>VpcLimitExceeded</td>
<td>You’ve reached the limit on the number of VPCs that you can create in the region. For more information about VPC limits, see Amazon VPC Limits. To request an increase on your VPC limit, complete the Amazon VPC Limits form.</td>
</tr>
<tr>
<td>VpcPeeringConnectionAlreadyExists</td>
<td>A VPC peering connection between the VPCs already exists.</td>
</tr>
<tr>
<td>VpcPeeringConnectionsPerVpcLimitExceeded</td>
<td>You’ve reached the limit on the number of VPC peering connections that you can have per VPC. For more information, see Amazon VPC Limits.</td>
</tr>
<tr>
<td>VpcResourceNotSpecified</td>
<td>The specified resource can be used only in a VPC; for example, T2 instances. Ensure that you have a VPC in your account, and then specify a subnet ID or network interface ID in the request.</td>
</tr>
<tr>
<td>VpnConnectionLimitExceeded</td>
<td>You’ve reached the limit on the number of VPN connections that you can create. For more information about limits, see Amazon VPC Limits. To request an increase on your VPN connection limit, complete the Amazon VPC Limits form.</td>
</tr>
<tr>
<td>VpnGatewayAttachmentLimitExceeded</td>
<td>You’ve reached the limit on the number of VPCs that can be attached to the specified virtual private gateway.</td>
</tr>
<tr>
<td>VpnGatewayLimitExceeded</td>
<td>You’ve reached the limit on the number of virtual private gateways that you can create. For more information about limits, see Amazon VPC Limits. To request an increase on your virtual private gateway limit, complete the Amazon VPC Limits form.</td>
</tr>
<tr>
<td>ZonesMismatched</td>
<td>The Availability Zone for the instance does not match that of the Dedicated Host.</td>
</tr>
</tbody>
</table>

**Common Causes of Client Errors**

There are a number of reasons that you might encounter an error while performing a request. Some errors can be prevented or easily solved by following these guidelines:

- **Specify the region**: Some resources can’t be shared between regions. If you are specifying a resource that’s located in a region other than the default region (us-east-1), you need to specify its region in the request. If the resource cannot be found, you’ll get the following kind of error: `Client.InvalidResource.NotFound`; for example, `Client.InvalidInstanceID.NotFound`.
- **Allow for eventual consistency**: Some errors are caused because a previous request has not yet propagated thorough the system. For more information, see Eventual Consistency (p. 758).
• **Use a sleep interval between request rates:** Amazon EC2 API requests are throttled to help maintain the performance of the service. If your requests have been throttled, you’ll get the following error: `Client.RequestLimitExceeded`. For more information, see Query API Request Rate (p. 757).

• **Use the full ID of the resource:** When specifying a resource, ensure that you use its full ID, and not its user-supplied name or description. For example, when specifying a security group in a request, use its ID in the form `sg-xxxxxxxx`.

• **Check your services:** Ensure that you have signed up for all the services you are attempting to use. You can check which services you’re signed up for by going to the **My Account** section of the AWS home page.

• **Check your permissions:** Ensure that you have the required permissions to carry out the request. If you are not authorized, you’ll get the following error: `Client.UnauthorizedOperation`. For more information, see Controlling Access in the Amazon EC2 User Guide for Linux Instances.

• **Check your VPC:** Some resources cannot be shared between VPCs; for example, security groups.

• **Check your credentials:** Ensure that you provide your access keys when you are making requests; that you have entered the credentials correctly; and, if you have more than one account, that you are using the correct credentials for a particular account. If the provided credentials are incorrect, you may get the following error: `Client.AuthFailure`.

## Server Errors

This section lists server errors that can be returned.

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>InsufficientAddressCapacity</td>
<td>Not enough available addresses to satisfy your minimum request. Reduce the number of addresses you are requesting or wait for additional capacity to become available.</td>
</tr>
<tr>
<td>InsufficientCapacity</td>
<td>There is not enough capacity to fulfill your import instance request. You can wait for additional capacity to become available.</td>
</tr>
<tr>
<td>InsufficientInstanceCapacity</td>
<td>There is not enough capacity to fulfill your instance request. Reduce the number of instances in your request, or wait for additional capacity to become available. You can also try launching an instance by selecting different instance types (which you can resize at a later stage). The returned message might also give specific guidance about how to solve the problem.</td>
</tr>
<tr>
<td>InsufficientHostCapacity</td>
<td>There is not enough capacity to fulfill your Dedicated Host request. Reduce the number of Dedicated Hosts in your request, or wait for additional capacity to become available.</td>
</tr>
<tr>
<td>InsufficientReservedInstanceCapacity</td>
<td>Not enough available Reserved instances to satisfy your minimum request. Reduce the number of Reserved instances in your request or wait for additional capacity to become available.</td>
</tr>
<tr>
<td>InternalError</td>
<td>An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a message on the AWS forums.</td>
</tr>
</tbody>
</table>
## Error Code

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>InternalFailure</td>
<td>The request processing has failed because of an unknown error, exception or failure.</td>
</tr>
<tr>
<td>RequestLimitExceeded</td>
<td>The maximum request rate permitted by the Amazon EC2 APIs has been exceeded for your account. For best results, use an increasing or variable sleep interval between requests. For more information, see Query API Request Rate (p. 757).</td>
</tr>
<tr>
<td>ServiceUnavailable</td>
<td>The request has failed due to a temporary failure of the server.</td>
</tr>
<tr>
<td>Unavailable</td>
<td>The server is overloaded and can't handle the request.</td>
</tr>
</tbody>
</table>

## Example Error Response

The following shows the structure of a request error response.

```xml
<Response>
  <Errors>
    <Error>
      <Code>Error code text</Code>
      <Message>Error message</Message>
    </Error>
  </Errors>
  <RequestID>request ID</RequestID>
</Response>
```

The following shows an example of an error response.

```xml
<Response>
  <Errors>
    <Error>
      <Code>InvalidInstanceID.NotFound</Code>
      <Message>The instance ID 'i-1a2b3c4d' does not exist</Message>
    </Error>
  </Errors>
  <RequestID>ea966190-f9aa-478e-9ede-example</RequestID>
</Response>
```

## Eventual Consistency

The Amazon EC2 API follows an eventual consistency model, due to the distributed nature of the system supporting the API. This means that when you run an API command, the result may not be immediately visible to subsequent API commands, which can result in an error.

For more information about eventual consistency and how to manage it, see Eventual Consistency (p. 758).