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Welcome

This is the Amazon Elastic Compute Cloud API Reference. It provides descriptions, syntax, and usage examples for each of the actions and data types for Amazon EC2.

**Note**
This guide also includes the actions for Amazon Virtual Private Cloud (Amazon VPC). For more information about this service, go to the Amazon Virtual Private Cloud User Guide.

This reference has a single set of topics that you can reference for both the Query and SOAP APIs (the actions are the same for both APIs). The topic for each action shows the Query API request parameters and the XML response (which is the same for both APIs). The XML request elements for the SOAP API have names that are similar to the Query API parameter names. You can view the XML request elements in the WSDL, or look at the proxy classes that a SOAP toolkit generates from the WSDL.

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<th>Relevant Topics</th>
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</thead>
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<tr>
<td>Learn about using the API.</td>
<td>Making API Requests</td>
</tr>
<tr>
<td>Get a list of the Amazon EC2 actions by function.</td>
<td>List of Actions by Function (p. 3)</td>
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- Amazon EC2 product page
- Amazon Elastic Compute Cloud User Guide
Amazon Elastic Compute Cloud API Reference

• Amazon Elastic Compute Cloud Command Line Reference
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AllocateAddress

Description

Acquires an Elastic IP address for use with your AWS account.

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domain</td>
<td>Set to vpc to allocate the address for use with instances in a VPC. Type: String</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>Valid values: vpc</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: The address is for use in Amazon EC2.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: Required when allocating the address for use in a VPC.</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in an AllocateAddressResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>publicIp</td>
<td>The Elastic IP address. Type: xsd:string</td>
</tr>
<tr>
<td>domain</td>
<td>Specifies whether this Elastic IP address is for use with instances in Amazon EC2 (standard) or instances in a VPC. Type: xsd:string Valid values: standard</td>
</tr>
<tr>
<td>allocationId</td>
<td>[VPC] The ID that AWS assigns to represent the allocation of the Elastic IP address for use with a VPC. Type: xsd:string</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example returns an Elastic IP address for use in Amazon EC2.
Example Response

Example Request

Related Operations
AssignPrivateIpAddresses

Description

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 Available 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.

This action is available only in VPC.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetworkInterfaceId</td>
<td>The network interface to which the IP address is assigned. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td>PrivateIpAddress.n</td>
<td>The IP address to be assigned as a secondary private IP address to the network interface. Type: AssignPrivateIpAddressesSetItemRequestType (p. 442) Default: None Condition: You cannot specify this parameter when also specifying SecondaryPrivateIpAddressCount.</td>
<td>Conditional</td>
</tr>
<tr>
<td>SecondaryPrivateIpAddressCount</td>
<td>The number of secondary IP addresses to assign to the network interface. Type: Integer Default: None Condition: You cannot specify this parameter when also specifying PrivateIpAddress.n.</td>
<td>Conditional</td>
</tr>
<tr>
<td>AllowReassignment</td>
<td>Specifies 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 Default: False</td>
<td>No</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in an AssignPrivateIpAddressesResponse element.
### Examples

#### Example Request

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

https://ec2.amazonaws.com/?Action=AssignPrivateIpAddresses
&NetworkInterfaceId=eni-d83388b1
&PrivateIpAddress.0=10.0.2.1
&PrivateIpAddress.1=10.0.2.11
&AUTHPARAMS

#### Example Response

```xml
<AssignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssignPrivateIpAddresses>
```

#### Example Request

This example assigns two secondary private IP addresses to the network interface. The IP addresses are automatically assigned from the available IP addresses within the subnet's CIDR block range.

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

#### Example Response

```xml
<AssignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssignPrivateIpAddresses>
```

### Related Operations

- DescribeAddresses (p. 164)
- ReleaseAddress (p. 381)
• AssociateAddress (p. 18)
• DisassociateAddress (p. 337)
AssociateAddress

Description

Associates an Elastic IP address with an instance or a network interface. For more information about Elastic IP addresses, see Elastic IP Addresses in the Amazon Elastic Compute Cloud User Guide.

[EC2] 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] 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 specify the AllowReassociation parameter.

This is an idempotent operation. If you enter it more than once, Amazon EC2 does not return an error.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>PublicIp</td>
<td>The Elastic IP address. Type: String Default: None Condition: Required for EC2 Elastic IP addresses.</td>
<td>Conditional</td>
</tr>
<tr>
<td>InstanceId</td>
<td>The ID of the instance. Type: String Default: None Condition: Required for Amazon EC2. For a VPC, you can specify either an instance ID or a network interface ID, but not both. Example: -i i-43a4412a</td>
<td>Conditional</td>
</tr>
<tr>
<td>AllocationId</td>
<td>[VPC] The allocation ID. Type: String Default: None Condition: Required for a VPC.</td>
<td>No</td>
</tr>
<tr>
<td>NetworkInterfaceId</td>
<td>[VPC] The ID of the network interface. Association fails when specifying an instance ID unless exactly one interface is attached. Type: String Default: None Condition: If the instance has more than one network interface, you must specify a network interface ID.</td>
<td>No</td>
</tr>
<tr>
<td>PrivateIpAddress</td>
<td>[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 Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>
### RequiredDescription

**Name**: AllowReassociation

**Description**: [VPC] Allows an Elastic IP address that is already associated with an instance or network interface to be re-associated with the specified instance or network interface. If the Elastic IP address is associated, and this option is not specified, the operation fails.

**Type**: Boolean

**Default**: false if not specified

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AllowReassociation</td>
<td>[VPC] Allows an Elastic IP address that is already associated with an instance or network interface to be re-associated with the specified instance or network interface. If the Elastic IP address is associated, and this option is not specified, the operation fails.</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
</tr>
<tr>
<td></td>
<td>Default: false if not specified</td>
</tr>
</tbody>
</table>

### Response Elements

The elements in the following table are wrapped in an AssociateAddressResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:boolean</td>
</tr>
<tr>
<td>associationId</td>
<td>[VPC] The ID that represents the association of the Elastic IP address with an instance.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
</tbody>
</table>

### Examples

#### Example Request

This example associates an Elastic IP address with an instance in Amazon EC2.

```
https://ec2.amazonaws.com/?Action=AssociateAddress
&InstanceId=i-2ea64347
&PublicIp=192.0.2.1
&AUTHPARAMS
```

#### Example Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4ec9-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssociateAddressResponse>
```

#### Example Request

This example associates a Elastic IP address with an instance in a VPC and allows the Elastic IP address to be re-assigned to this instance if it's currently assigned to another instance or network interface.
Example Response

```xml
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <associationId>eipassoc-fc5ca095</associationId>
</AssociateAddressResponse>
```

Related Operations

- AllocateAddress (p. 13)
- DescribeAddresses (p. 164)
- ReleaseAddress (p. 381)
- DisassociateAddress (p. 337)
AssociateDhcpOptions

Description

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. If you want, you can explicitly renew the lease using the operating system on the instance.

For more information about the supported DHCP options and using them with a VPC, see Using DHCP Options in Your VPC in the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>DhcpOptionsId</td>
<td>The ID of the DHCP options you want to associate with the VPC, or default if you want the VPC to use no DHCP options. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>VpcId</td>
<td>The ID of the VPC to associate the DHCP options with. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in an AssociateDhcpOptionsResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

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

```xml
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</AssociateDhcpOptionsResponse>
```

Example Request

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

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

Example Response

```xml
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</AssociateDhcpOptionsResponse>
```

Related Operations

- [CreateDhcpOptions](p. 60)
- [DescribeDhcpOptions](p. 180)
- [DeleteDhcpOptions](p. 124)
AssociateRouteTable

Description

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 if you want 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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>RouteTableId</td>
<td>The ID of the route table.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>SubnetId</td>
<td>The ID of the subnet.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in an AssociateRouteTableResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>associationId</td>
<td>The ID that AWS provides to represent the association of the route table and subnet.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td></td>
<td>Example: rtbassoc-f8ad4891</td>
</tr>
</tbody>
</table>

Examples

Example Request

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

https://ec2.amazonaws.com/?Action=AssociateRouteTable
&RouteTableId=rtb-e4ad488d
&SubnetId=subnet-15ad487c
Example Response

```
<AssociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <associationId>rtbassoc-f8ad4891</associationId>
</AssociateRouteTableResponse>
```

Related Operations

- CreateRouteTable (p. 92)
- DisassociateRouteTable (p. 339)
- DescribeRouteTables (p. 267)
- ReplaceRouteTableAssociation (p. 390)
AttachInternetGateway

Description

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InternetGatewayId</td>
<td>The ID of the Internet gateway. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>VpcId</td>
<td>The ID of the VPC. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in an AttachInternetGatewayResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

The example attaches the Internet gateway with ID igw-eaad4883 to the VPC with ID vpc-11ad4878.

https://ec2.amazonaws.com/?Action=AttachInternetGateway &InternetGatewayId=igw-eaad4883 &VpcId=vpc-11ad4878 &AUTHPARAMS

Example Response

<AttachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</AttachInternetGatewayResponse>

Related Operations

- CreateInternetGateway (p. 69)
- DeleteInternetGateway (p. 126)
- DetachInternetGateway (p. 327)
- DescribeInternetGateways (p. 223)
AttachNetworkInterface

Description
Attaches a network interface to an instance.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetworkInterfaceId</td>
<td>The ID of the network interface to attach. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>InstanceId</td>
<td>The ID of the instance to attach to the network interface. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>DeviceIndex</td>
<td>The index of the device for the network interface attachment. Type: Integer Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements
The elements in the following table are wrapped in an AttachNetworkInterfaceResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the attachment request. Type: xsd:string</td>
</tr>
<tr>
<td>attachmentId</td>
<td>The ID of the attachment. Type: xsd:string</td>
</tr>
</tbody>
</table>

Examples

Example Request
This example attaches an elastic network interface (ENI) eni-ffda3197 to the specified instance i-9cc316fe.

https://ec2.amazonaws.com/?Action=AttachNetworkInterface &DeviceIndex=1 &InstanceId=i-9cc316fe &NetworkInterfaceId=eni-ffda3197 &AUTHPARAMS
Example Response

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

Related Operations

- DetachNetworkInterface (p. 329)
- CreateNetworkInterface (p. 78)
- DeleteNetworkInterface (p. 134)
- DescribeNetworkInterfaceAttribute (p. 235)
- DescribeNetworkInterfaces (p. 237)
- ModifyNetworkInterfaceAttribute (p. 364)
- ResetNetworkInterfaceAttribute (p. 407)
AttachVolume

Description

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

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

**Note**

If a volume has an AWS Marketplace product code:

- The volume can only be attached to the root device of a stopped instance.
- You must be subscribed to the AWS Marketplace code that is on the volume.
- The configuration (instance type, operating system) of the instance must support that specific AWS Marketplace code. For example, you cannot take a volume from a Windows instance and attach it to a Linux instance.
- AWS Marketplace product codes are copied from the volume to the instance.

For an overview of the AWS Marketplace, go to https://aws.amazon.com/marketplace/help/200900000. For details on how to use the AWS Marketplace, see AWS Marketplace.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VolumeId</td>
<td>The ID of the Amazon EBS volume. The volume and instance must be within the same Availability Zone. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>InstanceId</td>
<td>The ID of the instance. The instance must be running. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>Device</td>
<td>The device name as exposed to the instance (e.g., /dev/sdh, or xvdh). Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in an AttachVolumeResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>volumeId</td>
<td>The ID of the volume.</td>
</tr>
<tr>
<td>instanceId</td>
<td>The ID of the instance.</td>
</tr>
<tr>
<td>device</td>
<td>The device name as exposed to the instance (e.g., /dev/sdh, or xvdh).</td>
</tr>
<tr>
<td>status</td>
<td>The volume state.</td>
</tr>
<tr>
<td>attachTime</td>
<td>The time stamp when the attachment initiated.</td>
</tr>
</tbody>
</table>

**Examples**

**Example Request**

This example attaches volume `vol-1a2b3c4d` to instance `i-1a2b3c4d` and exposes it as `/dev/sdh`. For information on standard storage locations, see the Amazon Elastic Compute Cloud User Guide.

```xml
https://ec2.amazonaws.com/?Action=AttachVolume
&VolumeId=vol-1a2b3c4d
&InstanceId=i-1a2b3c4d
&Device=/dev/sdh
&AUTHPARAMS
```

**Example Response**

```xml
<AttachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1a2b3c4d</volumeId>
  <instanceId>i-1a2b3c4d</instanceId>
  <device>/dev/sdh</device>
  <status>attaching</status>
  <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</AttachVolumeResponse>
```

**Related Operations**

- CreateVolume (p. 105)
- DeleteVolume (p. 152)
- DescribeVolumes (p. 305)
- DetachVolume (p. 331)
AttachVpnGateway

Description

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VpnGatewayId</td>
<td>The ID of the virtual private gateway. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>VpcId</td>
<td>The ID of the VPC. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in an AttachVpnGatewayResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>attachment</td>
<td>Information about the attachment. Type: AttachmentType (p. 443)</td>
</tr>
</tbody>
</table>

Examples

Example Request

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

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

Example Response

<AttachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <attachment>
<vpcId>vpc-1a2b3c4d</vpcId>
<state>attaching</state>
</attachment>
</AttachVpnGatewayResponse>

**Related Operations**

- CreateVpnGateway (p. 120)
- DescribeVpnGateways (p. 323)
- DetachVpnGateway (p. 333)
- CreateVpc (p. 108)
- CreateVpnConnection (p. 111)
AuthorizeSecurityGroupEgress

Description

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.

Important

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

A security group is for use with instances either in Amazon EC2 or in a specific VPC. This action doesn't apply to security groups for Amazon EC2. For more information, see Security Groups for Your VPC in the Amazon Virtual Private Cloud User Guide.

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>GroupId</td>
<td>The ID of the VPC security group to modify.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>IpPermissions.n.IpProtocol</td>
<td>The IP protocol name or number (go to Protocol Numbers). When you call DescribeSecurityGroups, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, tcp, udp, or icmp). Type: String Valid values: tcp</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>udp</td>
</tr>
<tr>
<td>IpPermissions.n.FromPort</td>
<td>The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, you can use -1 to specify all ICMP types. Type: Integer Default: None Condition: Required for ICMP and any protocol that uses ports</td>
<td>Conditional</td>
</tr>
</tbody>
</table>
### Response Elements

The elements in the following table are wrapped in an `AuthorizeSecurityGroupEgressResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if request is successful. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

### Examples

#### Example Request

This example 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.

```
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
```
Example Request

This example grants your security group with the ID sg-1a2b3c4d access to your security group with ID sg-9a8d7f5c on TCP port 1433.

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

Example Response

<AuthorizeSecurityGroupEgressResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AuthorizeSecurityGroupEgressResponse>

Related Operations

- CreateSecurityGroup (p. 94)
- DescribeSecurityGroups (p. 272)
- RevokeSecurityGroupEgress (p. 411)
- AuthorizeSecurityGroupIngress (p. 36)
- RevokeSecurityGroupIngress (p. 414)
- DeleteSecurityGroup (p. 142)
AuthorizeSecurityGroupIngress

Description

Adds one or more ingress rules to a security group.

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

A security group is for use with instances either in Amazon EC2 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.

[Amazon EC2] 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.

[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.

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 instances within the security group as quickly as possible. However, a small delay might occur.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>UserId</td>
<td>Deprecated</td>
<td>No</td>
</tr>
<tr>
<td>GroupId</td>
<td>The ID of the security group to modify. The group must belong to your account. Type: String Default: None Condition: Required for security groups for a VPC; can be used instead of GroupName Otherwise</td>
<td>Conditional</td>
</tr>
<tr>
<td>GroupName</td>
<td>The name of the EC2 security group to modify. Type: String Default: None Condition: Can be used instead of GroupId for EC2 security groups</td>
<td>Conditional</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
<td>Required</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>IpPermissions.n.IpProtocol</td>
<td>The IP protocol name or number (see Protocol Numbers). EC2 security groups can have rules only for TCP, UDP, and ICMP, whereas VPC security groups can have rules assigned to any protocol number. When you call DescribeSecurityGroups, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, tcp, udp, or icmp). Type: String Valid values for EC2 security groups: tcp</td>
<td>Required</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IpPermissions.n.FromPort</td>
<td>The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, you can use -1 to specify all ICMP types. Type: Integer Default: None Default: Required for ICMP and any protocol that uses ports</td>
<td>Conditional</td>
</tr>
<tr>
<td>IpPermissions.n.ToPort</td>
<td>The end of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, you can use -1 to specify all ICMP codes for the given ICMP type. Type: Integer Default: None Default: Required for ICMP and any protocol that uses ports</td>
<td>Conditional</td>
</tr>
<tr>
<td>IpPermissions.n.Groups.m.UserID</td>
<td>The AWS account ID that owns the source security group. Cannot be used when specifying a CIDR IP address. Type: String Default: None Condition: For EC2 security groups only. Required if modifying access for one or more source security groups.</td>
<td>Conditional</td>
</tr>
<tr>
<td>IpPermissions.n.Groups.m.GroupName</td>
<td>The name of the source security group. Cannot be used when specifying a CIDR IP address. Type: String Default: None Condition: Required if modifying access for one or more source security groups.</td>
<td>Conditional</td>
</tr>
</tbody>
</table>
### Response Elements

The elements in the following table are wrapped in an AuthorizeSecurityGroupIngressResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>IpPermissions.n.Groups.m.GroupId</td>
<td>The ID of the source security group. Cannot be used when specifying a CIDR IP address. Type: String Default: None Condition: For VPC security groups only. Required if modifying access for one or more source security groups.</td>
<td>Conditional</td>
</tr>
<tr>
<td>IpPermissions.n.IpRanges.m.CidrIp</td>
<td>The CIDR range. Cannot be used when specifying a source security group. Type: String Default: None Constraints: Valid CIDR IP address range. Condition: Required if modifying access for one or more IP address ranges.</td>
<td>Conditional</td>
</tr>
</tbody>
</table>

### Examples

#### Example Request

This example is for an EC2 security group. The request grants the 192.0.2.0/24 and 198.51.100.0/24 address ranges access to your websrv security group on TCP port 80.

```xml
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupName=websrv
&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
```

**Example Request**

This example is for an EC2 security group. The request grants TCP port 80 access from the source group called OtherAccountGroup (in AWS account 111122223333) to your websrv security group.
Example Request

This example is for a security group for VPC. The request grants TCP port 80 access from the source group called OtherGroupInMyVPC (sg-2a2b3c4d) to your VpcWebServers security group (sg-1a2b3c4d). The request requires the group IDs and not the group names. Your AWS account ID is 111122223333.

Example Response

```
<AuthorizeSecurityGroupIngressResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AuthorizeSecurityGroupIngressResponse>
```

Related Operations

- CreateSecurityGroup (p. 94)
- DescribeSecurityGroups (p. 272)
- RevokeSecurityGroupIngress (p. 414)
- DeleteSecurityGroup (p. 142)
BundleInstance

**Description**

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 procedure is not applicable for Linux/UNIX instances or Windows instances that are backed by Amazon EBS.

**Request Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceId</td>
<td>The ID of the instance to bundle.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Storage.S3.Bucket</td>
<td>The bucket in which to store the AMI. You can specify a bucket that you</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>already own or a new bucket that Amazon EC2 creates on your behalf. If you</td>
<td></td>
</tr>
<tr>
<td></td>
<td>specify a bucket that belongs to someone else, Amazon EC2 returns an error.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Storage.S3.Prefix</td>
<td>The beginning of the file name of the AMI.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Storage.S3.AWSAccessKeyId</td>
<td>The Access Key ID of the owner of the Amazon S3 bucket.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Storage.S3.UploadPolicy</td>
<td>A Base64-encoded Amazon S3 upload policy that gives Amazon EC2 permission</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>to upload items into Amazon S3 on your behalf.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Storage.S3.UploadPolicySignature</td>
<td>The signature of the Base64 encoded JSON document.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

**JSON Parameters**

The upload policy gives Amazon EC2 limited permission to upload items into your Amazon S3 bucket. The following table describes the required parameters for the upload policy JSON document. Parameter names are case sensitive. For more information about upload policies and how to sign them, see the...
sections about policy construction and signatures in the Amazon Simple Storage Service Developer Guide.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>expiration</td>
<td>The expiration of the policy. We recommend 12 hours or longer.</td>
<td>Yes</td>
</tr>
<tr>
<td>conditions</td>
<td>A list of restrictions on what can be uploaded to Amazon S3. Must contain the bucket and ACL conditions in this table.</td>
<td>Yes</td>
</tr>
<tr>
<td>bucket</td>
<td>The bucket to store the AMI.</td>
<td>Yes</td>
</tr>
<tr>
<td>acl</td>
<td>This must be set to ec2-bundle-read.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in a `BundleInstanceResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
<td></td>
</tr>
<tr>
<td>bundleInstanceTask</td>
<td>The bundle task. Type: BundleInstanceTaskType (p. 448)</td>
<td></td>
</tr>
</tbody>
</table>

**Examples**

**Example Request**

This example bundles the i-e468cd8d instance.

```xml
https://ec2.amazonaws.com/?Action=BundleInstance
&InstanceId=i-e468cd8d
&Storage.S3.AWSAccessKeyId='AKIAIOSFODNN7EXAMPLE'
&Storage.S3.Bucket=myawsbucket
&Storage.S3.Prefix=winami
&Storage.S3.UploadPolicy=eyJleHBpcmF0aW9uIjogIjIwMDgtMDgtMzBUMDg6NDk6MDlaIi
wiY29uZGl0aW9ucyI6IFt7ImJ1Y2t1dCI6ICJteS1idWNrZXQifSxbInN0YXJ0cyI6ICJi
rZXkiLCAibXktbmV3LWdlI10seyJhY2wiOiAiZWNyYWdlbnRsa2FsYm90YWJsZS1zaWdu
&Storage.S3.UploadPolicySignature=fh5tyyyQD8W4COEthj3n1GNEXAMPLE
&AUTHPARAMS
```

**Example Response**

```xml
<BundleInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTask>
    <instanceId>i-12345678</instanceId>
  </bundleInstanceTask>
</BundleInstanceResponse>
```
<bundleId>bun-CLA540a8</bundleId>
<state>bundling</state>
<startTime>2008-10-07T11:41:50.000Z</startTime>
<updateTime>2008-10-07T11:50:000Z</updateTime>
<progress>70%</progress>
<storage>
  <S3>
    <bucket>myawsbucket</bucket>
    <prefix>winami</prefix>
  </S3>
</storage>
</bundleInstanceTask>
</BundleInstanceResponse>

Related Operations

- CancelBundleTask (p. 43)
- DescribeBundleTasks (p. 172)
- CreateImage (p. 63)
CancelBundleTask

Description

Cancels a bundling operation for an instance store-backed Windows instance.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>BundleId</td>
<td>The ID of the bundle task.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a CancelBundleTaskResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>bundleInstanceTask</td>
<td>The bundle task.</td>
</tr>
<tr>
<td></td>
<td>Type: BundleInstanceTaskType (p. 448)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example cancels the `bun-cla322b9` bundle task.

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

Example Response

```xml
<CancelBundleTaskResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTask>
    <instanceId>i-12345678</instanceId>
    <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>
  </bundleInstanceTask>
</CancelBundleTaskResponse>
```
<storage>
  <S3>
    <bucket>myawsbucket</bucket>
    <prefix>my-new-image</prefix>
  </S3>
</storage>
</bundleInstanceTask>
</CancelBundleTaskResponse>

Related Operations

- BundleInstance (p. 40)
- DescribeBundleTasks (p. 172)
CancelConversionTask

Description

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 Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2 in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ConversionTaskId</td>
<td>The ID of the task. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: string</td>
</tr>
<tr>
<td>return</td>
<td>Indicates whether the cancellation was successful. Type: Boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

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

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

Example Response

<CancelConversionTaskResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</CancelConversionTaskResponse>
Related Operations

- ImportInstance (p. 349)
- ImportVolume (p. 355)
- DescribeConversionTasks (p. 175)
CancelExportTask

Description

Cancels an active export task. The command 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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ExportTaskId</td>
<td>The ID of the export task.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Indicates whether the cancellation was successful. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

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

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

Example Response

```xml
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</RequestId>  
  <return>true</return>  
</CancelExportTask>
```

Related Operations

- CreateInstanceExportTask (p. 66)
• DescribeExportTasks (p. 184)
CancelReservedInstancesListing

Description

Cancels the specified Reserved Instance listing in the Reserved Instance Marketplace.

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>reservedInstancesListingId</td>
<td>The ID of the Reserved Instance listing to be canceled. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a CancelReservedInstancesListingResponseType element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request to cancel Reserved Instance listing. Type: String</td>
</tr>
<tr>
<td>reservedInstancesListingsSet</td>
<td>The Reserved Instance listing for cancellation. The listing information is wrapped in an item element. Type: DescribeReservedInstancesListingsResponseSetItemType (p. 455)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example cancels a Reserved Instance listing in the Reserved Instance Marketplace.

https://ec2.amazonaws.com/?Action=CancelReservedInstancesListing &ReservedInstancesListingId.0=3ebe97b5-f273-43b6-a204-7a18ceexample

Example Response

The response will show status is cancelled.

<CANCELReservedInstancesListingResponse>
    <requestId>bec2cf62-98ef-434a-8a15-886fexample</requestId>
</CANCELReservedInstancesListingResponse>
```xml
<reservedInstancesListingsSet>
  <item>
    <reservedInstancesListingId>3ebe97b5-f273-43b6-a204-7a18cexample</reservedInstancesListingId>
    <reservedInstancesId>af9f760e-9b3f-417a-ad5e-93f0cexample</reservedInstancesId>
    <createDate>2012-07-12T16:55:28.000Z</createDate>
    <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>
  </item>
</reservedInstancesListingsSet>
```
Related Operations

- `CreateReservedInstancesListing` (p. 85)
- `DescribeReservedInstancesListings` (p. 254)
CancelSpotInstanceRequests

Description

Cancels one or more Spot Instance requests. Spot Instances are instances that Amazon EC2 starts on your behalf when the maximum 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 about Spot Instances, see Spot Instances 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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>SpotInstanceRequestId.n</td>
<td>One or more Spot Instance request IDs.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a CancelSpotInstanceRequestsResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>spotInstanceRequestSet</td>
<td>A list of Spot Instance requests. Each request is wrapped in an item element.</td>
</tr>
<tr>
<td></td>
<td>Type: CancelSpotInstanceRequestsResponseSetItemResponse (p. 449)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example cancels a Spot Instance request.

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

```xml
<CancelSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/"/>
:requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<spotInstanceRequestSet>
  <item>
    <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
    <state>cancelled</state>
  </item>
</spotInstanceRequestSet>
</CancelSpotInstanceRequestsResponse>
```

Related Operations

- DescribeSpotInstanceRequests (p. 285)
- RequestSpotInstances (p. 395)
- DescribeSpotPriceHistory (p. 291)
ConfirmProductInstance

Description
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 EC2 user's instance is eligible for support.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
</table>
| ProductCode | The product code. Type: String  
Default: None | Yes      |
| InstanceId   | The instance. Type: String  
Default: None     | Yes      |

Response Elements

The elements in the following table are wrapped in a ConfirmProductInstanceResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| requestId | The ID of the request.  
Type: xsd:string |
| return   | Returns true if the product code is attached to the instance. Otherwise, returns an error.  
Type: xsd:boolean |
| ownerId | The instance owner's account ID. Only present if the product code is attached to the instance.  
Type: xsd:string |

Examples

Example Request
This example displays the product code that is associated with the instance.

https://ec2.amazonaws.com/?Action=ConfirmProductInstance
&ProductCode=774F4FF8
&InstanceId=i-10a64379
&AUTHPARAMS
Example Response

```xml
<ConfirmProductInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <ownerId>111122223333</ownerId>
</ConfirmProductInstanceResponse>
```

Related Operations

- DescribeInstances (p. 200)
- RunInstances (p. 417)
CopySnapshot

Description

Copies a point-in-time snapshot of an Amazon Elastic Block Store (Amazon EBS) volume and stores it in Amazon Simple Storage Service (Amazon S3). You can copy the snapshot within the same region or from one region to another. You can use the snapshot to create new Amazon EBS volumes or Amazon Machine Images (AMIs). For more information about Amazon EBS, see Amazon Elastic Block Store (Amazon EBS).

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>SourceRegion</td>
<td>The ID of the AWS region that contains the snapshot to be copied.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>SourceSnapshotId</td>
<td>The ID of the Amazon EBS snapshot to copy.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>A description of the new Amazon EBS snapshot.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constraints: Up to 255 characters</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a CopySnapshotResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>snapshotId</td>
<td>The ID of the new snapshot.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
</tbody>
</table>
Examples

Example Request

This example copies Amazon EBS snapshot snap-1a2b3c4d located in the us-west-1 region.

https://ec2.amazonaws.com/?Action=CopySnapshot
&AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE
&Description=My%20snapshot
&Signature=VjpSFePIkxDc1IUy92W3BApdLiap7nno4pEc9iEXAMPLE
&SignatureMethod=HmacSHA256
&SignatureVersion=2
&SourceRegion=us-west-1
&SourceSnapshotId=snap-1a2b3c4d
&Timestamp=2012-12-11T03%3A03%3A59.453Z
&Version=2012-12-01

Example Response

<CopySnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
  <snapshotId>snap-2a2b3c4d</snapshotId>
</CopySnapshotResponse>

Related Operations

- CreateSnapshot (p. 96)
- DeleteSnapshot (p. 144)
- DescribeSnapshots (p. 278)
CreateCustomerGateway

Description

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 can't be behind a device performing network address translation (NAT).

You must provide the Internet-routable IP address of the customer gateway's external interface. The IP address must be static and can't 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 Region, and 9059, which is reserved in the EU West Region.

For more information about ASNs, see the Wikipedia article.

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>The type of VPN connection this customer gateway supports.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: ipsec.1</td>
<td></td>
</tr>
<tr>
<td><strong>IpAddress</strong></td>
<td>The Internet-routable IP address for the customer gateway's outside interface. The address must be static.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td><strong>BgpAsn</strong></td>
<td>The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN) for devices that support BGP.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: Integer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: 65000</td>
<td></td>
</tr>
</tbody>
</table>
Response Elements

The elements in the following table are wrapped in a `CreateCustomerGatewayResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>customerGateway</td>
<td>Information about the customer gateway. Type: CustomerGatewayType (p. 451)</td>
</tr>
</tbody>
</table>

Examples

Example Request

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

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

Example Response

```
<CreateCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <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>
```

Related Operations

- DescribeCustomerGateways (p. 177)
- DeleteCustomerGateway (p. 122)
CreateDhcpOptions

Description

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

<table>
<thead>
<tr>
<th>DHCP Option Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>domain-name</td>
<td>A domain name of your choice (for example, example.com).</td>
</tr>
<tr>
<td>domain-name-servers</td>
<td>The IP address of a domain name server. You can specify up to four addresses.</td>
</tr>
<tr>
<td>ntp-servers</td>
<td>The IP address of a Network Time Protocol (NTP) server. You can specify up to four addresses.</td>
</tr>
<tr>
<td>netbios-name-servers</td>
<td>The IP address of a NetBIOS name server. You can specify up to four addresses.</td>
</tr>
<tr>
<td>netbios-node-type</td>
<td>The NetBIOS node type (1, 2, 4, or 8). For more information about the values, see RFC 2132. We recommend you only use 2 at this time (broadcast and multicast are currently not supported).</td>
</tr>
</tbody>
</table>

Important

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 new 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 Using DHCP Options with Your VPC in the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>DhcpConfiguration.n.Key</td>
<td>The name of a DHCP option. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>DhcpConfiguration.n.Value.m</td>
<td>A value for the DHCP option. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a CreateDhcpOptionsResponse element.
Examples

Example Request

This example creates a new set of DHCP options with a domain name example.com and two DNS servers (10.2.5.1 and 10.2.5.2).

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
&DhcpConfiguration.2.Value.2=10.2.5.2
&AUTHPARAMS

Example Response

<CreateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
 <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>
Related Operations

- AssociateDhcpOptions (p. 21)
- DescribeDhcpOptions (p. 180)
- DeleteDhcpOptions (p. 124)
CreateImage

Description

Creates an Amazon EBS-backed AMI from an Amazon EBS-backed instance that is either running or stopped. For more information about Amazon EBS-backed AMIs, see Storage for the Root Device.

Note

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.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceId</td>
<td>The ID of the instance. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>Name</td>
<td>A name for the new image. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>Description</td>
<td>A description of the new image. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>NoReboot</td>
<td>By default this parameter is set to false, which means Amazon EC2 attempts</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>to cleanly shut down the instance before image creation and then reboot the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>instance. When the parameter is set to true, Amazon EC2 does not shut down</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the instance before creating the image. When this option is used, file</td>
<td></td>
</tr>
<tr>
<td></td>
<td>system integrity on the created image cannot be guaranteed. Type: Boolean</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: false</td>
<td></td>
</tr>
<tr>
<td>BlockDeviceMapping.n.DeviceName</td>
<td>The device name exposed to the instance (for example, /dev/sdh or xvdh). For</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>more information, see Block Device Mapping. Type: String Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: If you're registering an Amazon EBS-backed AMI from a snapshot,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>you must specify DeviceName with the root device name (for example, /dev/sda1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or xvda), and BlockDeviceMapping.n.Ebs.SnapshotId with the snapshot ID</td>
<td></td>
</tr>
</tbody>
</table>
### Response Elements

The elements in the following table are wrapped in a `CreateImageResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>BlockDeviceMapping.n.NoDevice</td>
<td>Suppresses a device mapping. Type: Boolean Default: true</td>
<td>No</td>
</tr>
<tr>
<td>BlockDeviceMapping.n.VirtualName</td>
<td>The name of the virtual device, ephemeral[0..3]. The number of instance store volumes depends on the instance type. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>BlockDeviceMapping.n.Ebs.SnapshotId</td>
<td>The ID of the snapshot. Type: String Default: None Condition: If you're registering an Amazon EBS-backed AMI from a snapshot, you must at least specify <code>SnapshotId</code> with the snapshot ID, and <code>BlockDeviceMapping.n.DeviceName</code> with the root device name.</td>
<td>Conditional</td>
</tr>
<tr>
<td>BlockDeviceMapping.n.Ebs.VolumeSize</td>
<td>The size of the volume, in GiBs. Type: Integer Valid values: If the volume type is <code>io1</code>, the minimum size of the volume is 10 GiB. Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size. Condition: Required unless you're creating the volume from a snapshot.</td>
<td>Conditional</td>
</tr>
<tr>
<td>BlockDeviceMapping.n.Ebs.DeleteOnTermination</td>
<td>Whether the volume is deleted on instance termination. Type: Boolean Default: true</td>
<td>No</td>
</tr>
<tr>
<td>BlockDeviceMapping.n.Ebs.VolumeType</td>
<td>The volume type. Type: String Valid values: <code>standard</code></td>
<td>No</td>
</tr>
<tr>
<td>BlockDeviceMapping.n.Ebs.Iops</td>
<td>The number of I/O operations per second (IOPS) that the volume supports. Type: Integer Valid values: Range is 100 to 2000. Default: None Condition: Required when the volume type is <code>io1</code>; not used with <code>standard</code> volumes.</td>
<td>Conditional</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
<td></td>
</tr>
<tr>
<td>imageId</td>
<td>The ID of the AML. Type: xsd:string</td>
<td></td>
</tr>
</tbody>
</table>

### Examples

#### Example Request

This example creates an AMI from the i-10a64379 instance.

```
https://ec2.amazonaws.com/?Action=CreateImage
&Description=Standard+Web+Server+v1.0
&InstanceId=i-10a64379
&Name=standard-web-server-v1.0
&AUTHPARAMS
```

#### Example Response

```
<CreateImageResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-4fa54026</imageId>
</CreateImageResponse>
```

### Related Operations

- RunInstances (p. 417)
- DescribeInstances (p. 200)
- TerminateInstances (p. 433)
CreateInstanceExportTask

Description

Exports a running or stopped instance to an Amazon S3 bucket. For information about the supported operating systems, image formats, and known limitations for the types of instances you can export, see Exporting EC2 Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>A description of the conversion task or the resource being exported.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>InstanceId</td>
<td>The ID of the instance being exported.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>TargetEnvironment</td>
<td>The target virtualization environment.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: vmware</td>
<td>citrix</td>
</tr>
<tr>
<td>ExportToS3.DiskImage</td>
<td>The format for the exported image.</td>
<td>No</td>
</tr>
<tr>
<td>Format</td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: vmdk if TargetEnvironment = vmware, otherwise vhd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: vmdk</td>
<td>vhd</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>ExportToS3.Container</td>
<td>The container format used to combine disk images with metadata (such as OVF).</td>
<td>No</td>
</tr>
<tr>
<td>Format</td>
<td>If absent, only the disk image will be exported.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: ova if TargetEnvironment = vmare, otherwise blank</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: ova</td>
<td></td>
</tr>
<tr>
<td>ExportToS3.S3Bucket</td>
<td>The Amazon S3 bucket for the destination image. The bucket must exist and</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>grant write permissions to AWS account <a href="mailto:vm-import-export@amazon.com">vm-import-export@amazon.com</a>.</td>
<td></td>
</tr>
<tr>
<td>ExportToS3.S3Prefix</td>
<td>The image is written to a single object in the Amazon S3 bucket at the S3</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>key s3prefix + exportTaskId + '.' + diskImageFormat.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>
Response Elements

The elements in the following table are wrapped in a `CreateInstanceExportTaskResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>exportTask</td>
<td>The details of the created ExportVM task.</td>
</tr>
<tr>
<td></td>
<td>Type: <code>ExportTaskResponseType</code> (p. 468)</td>
</tr>
</tbody>
</table>

Examples

Example Request

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

```
https://ec2.amazonaws.com/?Action=CreateInstanceExportTask
&Description=Example%20for%20docs
&InstanceId=i-12345678
&TargetEnvironment=VMWare
&ExportToS3.DiskImageFormat=VMDK
&ExportToS3.ContainerFormat=OVA
&ExportToS3.S3bucket=my-bucket-for-exported-vm
&ExportToS3.S3prefix=my-exports/
&AUTHPARAMS
```

Example Response

```
<CreateInstanceExportTaskResponse xmlns="http://ec2.amazonaws.com/doc/2020-02-02/">
  <requestId>59dbff89-35bd-4ec9-99ed-be587EXAMPLE</requestId>
  <exportTask>
    <exportTaskId>export-i-1234wxyz</exportTaskId>
    <description>Example for docs</description>
    <state>active</state>
    <statusMessage>Running</statusMessage>
    <instanceExport>
      <instanceId>i-12345678</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>
```
Related Operations

- CancelExportTask (p. 47)
- DescribeExportTasks (p. 184)
CreateInternetGateway

Description

Creates a new Internet gateway for use with a VPC. After creating the Internet gateway, you attach it to a VPC using AttachInternetGateway (p. 25). For more information about your VPC and Internet gateway, see Amazon Virtual Private Cloud User Guide.

Request Parameters

This action has no request parameters.

Response Elements

The elements in the following table are wrapped in a CreateInternetGatewayResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| requestId        | The ID of the request.  
Type: String                                                             |
| internetGateway  | Information about the Internet gateway  
Type: InternetGatewayType (p. 489)                                      |

Examples

Example Request

This example creates an Internet gateway.

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

Example Response

CreateInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <internetGateway>
      <internetGatewayId>igw-eaad4883</internetGatewayId>
      <attachmentSet/>
      <tagSet/>
   </internetGateway>
</CreateInternetGatewayResponse>

Related Operations

- DeleteInternetGateway (p. 126)
• AttachInternetGateway (p. 25)
• DetachInternetGateway (p. 327)
• DescribeInternetGateways (p. 223)
CreateKeyPair

Description

Creates a new 2048-bit RSA key pair with the specified name. The public key is stored by Amazon EC2 and the private key is returned to you. 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.

Tip

The key pair returned to you works only in the region you're using when you create the key pair. To create a key pair that works in all regions, use ImportKeyPair (p. 353).

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>A unique name for the key pair.</td>
<td>Yes</td>
</tr>
<tr>
<td>Type</td>
<td>String</td>
<td></td>
</tr>
<tr>
<td>Default</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Constraints</td>
<td>Accepts alphanumeric characters, spaces, dashes, and underscores.</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a CreateKeyPairResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td>Type</td>
<td>xsd:string</td>
</tr>
<tr>
<td>keyName</td>
<td>The key pair name you provided.</td>
</tr>
<tr>
<td>Type</td>
<td>xsd:string</td>
</tr>
<tr>
<td>keyFingerprint</td>
<td>A SHA-1 digest of the DER encoded private key.</td>
</tr>
<tr>
<td>Type</td>
<td>xsd:string</td>
</tr>
<tr>
<td>keyMaterial</td>
<td>An unencrypted PEM encoded RSA private key.</td>
</tr>
<tr>
<td>Type</td>
<td>xsd:string</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example creates a key pair named gsg-keypair.

https://ec2.amazonaws.com/?Action=CreateKeyPair
&KeyName=gsg-keypair
AUTHPARAMS
Example Response

```
<CreateKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXmple</requestId>
  <keyName>gsg-keypair</keyName>
  <keyFingerprint>
    00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
  </keyFingerprint>
  <keyMaterial>----- BEGIN RSA PRIVATE KEY -----
    MIICiTCCAfICCQD6m7oRw0uX0jANBgkgqhkiG9w0BAQFADBzBdBMRAwGyVQQQHEwTZWFD6gX1MQ8wDZYDVQQKEwZBBWF6
    b24xFDASBgNVBAgTC0lDTSBSBdb25zb2x1MRIwEAYDVQQDEw1UZXNQ21siYWmxHzd
    BgkqhkiG9w0BCQEGWE5vb251QGFTYXpbi5j682whcNMTIwNDI0MA0TfNcbCIjDElMAkGA1UEBhMC
    VVMxCzAJBgNVBAgTBWlsYXVuMCBDREVyQ29kY2xhcmQxHjAlBgNVBAsTD0lBIU0gJ
    2uU5fwfEvvSwtc2XADZ4nB+SLYyVIK60Cpw21s3G93vUEIGI3IyNh/f0wYK8m9T
    rDHudU2g3qX4wAL5M43q7WgG/MbQITxOUSV7c7uFFDzQGBzZswY6786m86gPE
    Ibb3Ohj2nzvCAaRHi6d1QI6MmnrAgMBAEwDQYJKoZIhvcNAQEFBQRAdvYEAtCu4
    nU5VvXYuLnteN9+h8Mg9q6g+aunKXwzXw1Ao075JHldbtS4J51NhM2gL0Fkb
    FFBjvsFpJ1J0zbhNYS5f6GuoEdFJ102xHjJyypJ780D8uTs7fLvjx79LjSTb
    NYlyVb2PQQQ5Ya2jKh1mWw3rsszlaEXmple=-----END RSA PRIVATE KEY-----
  </keyMaterial>
</CreateKeyPairResponse>
```

Related Operations

- RunInstances (p. 417)
- DescribeKeyPairs (p. 226)
- DeleteKeyPair (p. 128)
CreateNetworkAcl

Description

Creates a network ACL in a VPC. Network ACLs provide an optional layer of security (on top of 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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VpcId</td>
<td>The ID of the VPC. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a CreateNetworkAclResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>networkAcl</td>
<td>Information about the new network ACL. Type: NetworkAclType (p. 497)</td>
</tr>
</tbody>
</table>

Examples

Example Request

The example creates a new network ACL in the VPC with ID vpc-11ad4878. Notice that 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.

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

Example Response

<CreateNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <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>

**Related Operations**

- [DeleteNetworkAcl](p. 130)
- [DescribeNetworkAcls](p. 229)
- [ReplaceNetworkAclAssociation](p. 383)
CreateNetworkAclEntry

Description

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.

Tip

We recommend that you leave room between the rule numbers (for example, 100, 110, 120, etc.), and not number them one right after the other (for example, 101, 102, 103, etc.). This makes it easier to add a new 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 a new 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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetworkAclId</td>
<td>The ID of the ACL.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>RuleNumber</td>
<td>The rule number to assign to the entry (for example, 100). ACL entries are processed in ascending order by rule number. Type: Integer Default: None Constraints: Positive integer from 1 to 32766</td>
<td>Yes</td>
</tr>
<tr>
<td>Protocol</td>
<td>The IP protocol the rule applies to. You can use -1 to mean all protocols. Type: Integer Valid values: -1 or a protocol number (go to Protocol Numbers).</td>
<td>Yes</td>
</tr>
<tr>
<td>RuleAction</td>
<td>Indicates whether to allow or deny traffic that matches the rule. Type: String Default: None Valid values: allow</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>deny</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>Egress</td>
<td>Indicates whether this rule applies to egress traffic from the subnet (true) or ingress traffic to the subnet (false). Type: Boolean Default: false Valid values: true</td>
<td>No</td>
</tr>
<tr>
<td>CidrBlock</td>
<td>The CIDR range to allow or deny, in CIDR notation (for example, 172.16.0.0/24). Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>Icmp.Code</td>
<td>For the ICMP protocol, the ICMP code. You can use -1 to specify all ICMP codes for the given ICMP type. Type: Integer Default: None Condition: Required if specifying 1 (ICMP) for the protocol.</td>
<td>Conditional</td>
</tr>
<tr>
<td>Icmp.Type</td>
<td>For the ICMP protocol, the ICMP type. You can use -1 to specify all ICMP types. Type: Integer Default: None Condition: Required if specifying 1 (ICMP) for the protocol.</td>
<td>Conditional</td>
</tr>
<tr>
<td>PortRange.From</td>
<td>The first port in the range. Type: Integer Default: None Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.</td>
<td>Conditional</td>
</tr>
<tr>
<td>PortRange.To</td>
<td>The last port in the range. Type: Integer Default: None Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.</td>
<td>Conditional</td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in a `CreateNetworkAclEntryResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>
Examples

Example Request

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

```
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
```

Example Response

```
<CreateNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CreateNetworkAclEntryResponse>
```

Related Operations

- DeleteNetworkAclEntry (p. 132)
- ReplaceNetworkAclEntry (p. 385)
- DescribeNetworkAcls (p. 229)
CreateNetworkInterface

Description

Creates a network interface in the specified subnet.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>SubnetId</td>
<td>The ID of the subnet to associate with the network interface.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>PrivateIpAddress</td>
<td>The primary private IP address of the network interface.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>PrivateIpAddresses.n .PrivateIpAddress</td>
<td>The private IP address of the specified network interface. This parameter can be used multiple times to specify explicit private IP addresses for a network interface, but only one private IP address can be designated as primary. You cannot specify this parameter with the PrivateIpAddresses.n.Primary value of true if you specify the PrivateIpAddress option.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>PrivateIpAddresses.n .Primary</td>
<td>Specifies whether the private IP address is the primary private IP address. Only one IP address can be designated as primary. You cannot specify this parameter with the value of true and the PrivateIpAddresses.n.PrivateIpAddress option if you specify the PrivateIpAddress option.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: False</td>
<td></td>
</tr>
</tbody>
</table>
RequiredDescriptionName
NoThe number of secondary private IP addresses
to assign to a network interface. When you
specify a number of secondary IP addresses,
AWS automatically assigns these IP addresses
within the subnet's range.
The number of IP addresses you can assign
to a network interface varies by instance type.
For more information, see Available Instance
Types in the Amazon Elastic Compute Cloud
User Guide.
For a single network interface, you cannot
specify this option and specify more than one
private IP address using
PrivateIpAddress.n.
Type: Integer
Default: None

Description
NoThe description of the network interface.
Type: String
Default: None

SecurityGroupId.n
NoA list of group IDs for use by the network
interface.
Type: SecurityGroupIdSetItemType (p. 518)
Default: None

Response Elements
The elements in the following table are wrapped in an CreateNetworkInterfaceResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request to create a network interface. Type: xsd:string</td>
</tr>
<tr>
<td>networkInterface</td>
<td>The network interface that was created. Type: NetworkInterfaceType (p. 500)</td>
</tr>
</tbody>
</table>

Examples

Example Request
This example creates an elastic network interface (ENI) in the specified subnet with a primary IP address
that is automatically assigned to the network interface.

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

```xml
<CreateNetworkInterfaceResponse xmlns='http://ec2.amazonaws.com/doc/2012-12-01/'>
  <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:b0:72:79:61</macAddress>
    <privateIpAddress>10.0.2.157</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-1a2b3c4d</groupId>
        <groupName>default</groupName>
      </item>
    </groupSet>
    <tagSet/>
    <privateIpAddressesSet>
      <item>
        <privateIpAddress>10.0.2.157</privateIpAddress>
        <primary>true</primary>
      </item>
    </privateIpAddressesSet>
  </networkInterface>
</CreateNetworkInterfaceResponse>
```

Example Request

This example creates an elastic network interface (ENI) in the specified subnet with a primary IP address of 10.0.2.140 and four secondary private IP addresses that are automatically assigned to the network interface.

https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&PrivateIpAddresses.0.Primary=true
&PrivateIpAddresses.0.PrivateIpAddress=10.0.2.140
&SecondaryPrivateIpAddressCount=4
&SubnetId=subnet-a61dafcf
&AUTHPARAMS

Example Response

```xml
<CreateNetworkInterfaceResponse xmlns='http://ec2.amazonaws.com/doc/2012-12-01/'>
  <requestId>bd78c839-0895-4fac-a17f-98b559b6b630</requestId>
  <networkInterface>
    <networkInterfaceId>eni-1bcb7772</networkInterfaceId>
    <subnetId>subnet-a61dafcf</subnetId>
  </networkInterface>
</CreateNetworkInterfaceResponse>
```
Example Request

The following requests 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.

https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&PrivateIpAddresses.0.Primary=true
&PrivateIpAddresses.0.PrivateIpAddress=10.0.2.130
&PrivateIpAddresses.1.Primary=false
&PrivateIpAddresses.1.PrivateIpAddress=10.0.2.132
&PrivateIpAddresses.2.Primary=false
&PrivateIpAddresses.2.PrivateIpAddress=10.0.2.133
&SubnetId=subnet-a61dafcf
&AUTHPARAMS
Example Response

```xml
<CreateNetworkInterfaceResponse xmlns='http://ec2.amazonaws.com/doc/2012-12-01/'>
  <requestId>a9565f4c-f928-4113-859b-905886d11658</requestId>
  <networkInterface>
    <networkInterfaceId>eni-41c47828</networkInterfaceId>
    <subnetId>subnet-a61daaf8</subnetId>
    <vpcId>vpc-c31daaa5</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>
        <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>
```

Related Operations

- AttachNetworkInterface (p. 27)
- DetachNetworkInterface (p. 329)
- DeleteNetworkInterface (p. 134)
- DescribeNetworkInterfaceAttribute (p. 235)
- DescribeNetworkInterfaces (p. 237)
- ModifyNetworkInterfaceAttribute (p. 364)
- ResetNetworkInterfaceAttribute (p. 407)
CreatePlacementGroup

Description

Creates a placement group that you launch cluster instances into. You must give the group a name unique within the scope of your account. For more information about placement groups and cluster instances, see Using Cluster Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>GroupName</td>
<td>A name for the placement group.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Strategy</td>
<td>The placement group strategy.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: cluster</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a CreatePlacementGroupResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example creates a placement group named XYZ-cluster.

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

Example Response

<CreatePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/"/>
<requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
<return>true</return>
</CreatePlacementGroupResponse>

Related Operations

- DeletePlacementGroup (p. 136)
- DescribePlacementGroups (p. 244)
CreateReservedInstancesListing

Description

Creates a new listing for Amazon EC2 Reserved Instances that will be sold in the Reserved Instance Marketplace. You can submit one Reserved Instance listing at a time.

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.

If you want to sell your 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 Reserved Instances, and specify the upfront price you want to receive for them. Your Reserved Instance listings then become available for purchase.

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>reservedInstancesId</td>
<td>The ID of the Reserved Instance that will be listed. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>instanceCount</td>
<td>The number of instances that are a part of a Reserved Instance account that will 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 Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>priceSchedules</td>
<td>A list specifying the price of the Reserved Instance for each month remaining in the Reserved Instance term. Type: PriceScheduleRequestSetItemType (p. 504)</td>
<td>Yes</td>
</tr>
<tr>
<td>clientToken</td>
<td>Unique, case-sensitive identifier you provide to ensure idempotency of your listings. This helps avoid duplicate listings. For more information, go to Ensuring Idempotency in the Amazon Elastic Compute Cloud User Guide. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Response Elements

The elements in the following table are wrapped in a
CreateReservedInstancesListingResponseType element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request to create the Reserved Instances listing. Type: String</td>
</tr>
<tr>
<td>reservedInstancesListingSet</td>
<td>The Reserved Instances listing that was created. The listing information is wrapped in an item element. Type: DescribeReservedInstancesListingsResponseSetItemType (p. 455)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example creates a Reserved Instance Marketplace listing from the existing Reserved Instance named f127bd27-a218-43a4-926d-870e8a4307c1, 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:

<table>
<thead>
<tr>
<th>Term (months)</th>
<th>Upfront Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>11, 10, 9</td>
<td>$2.50</td>
</tr>
<tr>
<td>8, 7, 6</td>
<td>$2.00</td>
</tr>
<tr>
<td>5, 4</td>
<td>$1.50</td>
</tr>
<tr>
<td>3, 2</td>
<td>$0.70</td>
</tr>
<tr>
<td>1</td>
<td>$0.10</td>
</tr>
</tbody>
</table>

https://ec2.amazonaws.com/?Action=CreateReservedInstancesListing
&ClientToken=myIdempToken1
&InstanceCount=1
&PriceSchedules.0.Price=2.5
&PriceSchedules.0.Term=11
&PriceSchedules.1.Price=2.0
&PriceSchedules.1.Term=8
&PriceSchedules.2.Price=1.5
&PriceSchedules.2.Term=5
&PriceSchedules.3.Price=0.7
&PriceSchedules.3.Term=3
&PriceSchedules.4.Price=0.1
&PriceSchedules.4.Term=1
&ReservedInstancesId=f127bd27-a218-43a4-926d-870e8a4307c1
&AUTHPARAMS
Example Response

<?xml version="1.0" encoding="UTF-8"?>

<CreateReservedInstancesListingResponse>
  <requestId>a42481af-335a-4e9e-b291-bd18dexample</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>5ec28771-05ff-4b9b-aa31-9e57dexample</reservedInstancesListingId>
      <reservedInstancesId>f127bd27-a218-43a4-926d-870e8example</reservedInstancesId>
      <createDate>2012-07-17T17:11:09.449Z</createDate>
      <updateDate>2012-07-17T17:11:09.468Z</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>
          <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>
      </priceSchedules>
    </item>
  </reservedInstancesListingsSet>
</CreateReservedInstancesListingResponse>
<item>
  <term>7</term>
  <price>2.0</price>
  <currencyCode>USD</currencyCode>
  <active>false</active>
</item>
</priceSchedules>
<tagSet/>
</reservedInstancesListingsSet>
</CreateReservedInstancesListingResponse>

Related Operations

- CancelReservedInstancesListing (p. 49)
- DescribeReservedInstancesListings (p. 254)
CreateRoute

Description

Creates a route in a route table within a VPC. The route's target can be either a gateway attached to the VPC or a NAT instance in the VPC.

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>RouteTableId</td>
<td>The ID of the route table where the route will be added. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>DestinationCidrBlock</td>
<td>The CIDR address block used for the destination match. For example: 0.0.0.0/0. Routing decisions are based on the most specific match. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>GatewayId</td>
<td>The ID of a gateway attached to your VPC. Type: String Default: None Condition: You must provide only one of the following: a GatewayId, InstanceId, or NetworkInterfaceId.</td>
<td>Conditional</td>
</tr>
<tr>
<td>InstanceId</td>
<td>The ID of a NAT instance in your VPC. Type: String Default: None Condition: You must provide only one of the following: a GatewayId, InstanceId, or NetworkInterfaceId.</td>
<td>Conditional</td>
</tr>
</tbody>
</table>
**NetworkInterfaceId**

Allows the routing of network interface IDs. Exactly one interface must be attached when specifying an instance ID or it fails.

- **Type**: String
- **Default**: None
- **Condition**: You must provide only one of the following: a `GatewayId`, `InstanceId`, or `NetworkInterfaceId`.

### Response Elements

The elements in the following table are wrapped in a `CreateRouteResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>NetworkInterfaceId</code></td>
<td>Allows the routing of network interface IDs. Exactly one interface must be attached when specifying an instance ID or it fails. Type: String Default: None Condition: You must provide only one of the following: a <code>GatewayId</code>, <code>InstanceId</code>, or <code>NetworkInterfaceId</code>.</td>
</tr>
</tbody>
</table>

#### Examples

**Example Request**

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

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

**Example Request**

This example creates a route in the route table with ID `rtb-g8ff4ea2`. The route sends all traffic (0.0.0.0/0) to the NAT instance with ID `i-1a2b3c4d`.

```plaintext
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-g8ff4ea2
&DestinationCidrBlock=0.0.0.0/0
&InstanceId=i-1a2b3c4d
&AUTHPARAMS
```
Example Response

```
<CreateRouteResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CreateRouteResponse>
```

Related Operations

- DeleteRoute (p. 138)
- ReplaceRoute (p. 388)
- DescribeRouteTables (p. 267)
CreateRouteTable

Description

Creates a route table within a VPC. After you create a new 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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VpcId</td>
<td>The ID of the VPC. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a CreateRouteTableResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request received. Type: xsd:string</td>
</tr>
<tr>
<td>routeTable</td>
<td>Information about the newly created route table. Type: RouteTableType (p. 513)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example creates a route table within the VPC with ID of vpc-11ad4878.

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

Example Response

By default, every route table includes a local route that enables traffic to flow within the VPC. The following response shows that route.

CreateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01 /">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <routeTable>
    <routeTableId>rtb-f9ad4890</routeTableId>
<table>
<thead>
<tr>
<th>Related Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>AssociateRouteTable (p. 23)</td>
</tr>
<tr>
<td>DisassociateRouteTable (p. 339)</td>
</tr>
<tr>
<td>DescribeRouteTables (p. 267)</td>
</tr>
<tr>
<td>DeleteRouteTable (p. 140)</td>
</tr>
<tr>
<td>ReplaceRouteTableAssociation (p. 390)</td>
</tr>
<tr>
<td>CreateRoute (p. 89)</td>
</tr>
</tbody>
</table>
CreateSecurityGroup

**Description**

Creates a security group.

**Important**

Amazon EC2: You can have up to 500 security groups.

VPC: You can have up to 50 security groups per VPC.

A security group is for use with instances either in Amazon EC2 or in a specific VPC. For more information, see [Amazon EC2 Security Groups](https://docs.aws.amazon.com/AmazonEC2/latest/UserGuide/security-groups.html) in the *Amazon Elastic Compute Cloud User Guide* and [Security Groups for Your VPC](https://docs.aws.amazon.com/vpc/latest/userguide/vpc-security-groups.html) in the *Amazon Virtual Private Cloud User Guide*.

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

You have a default security group for Amazon EC2 and a default security group for 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.


**Request Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>GroupName</td>
<td>The name of the security group. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constraints: Accepts alphanumeric characters, spaces, periods, dashes, and underscores.</td>
<td></td>
</tr>
<tr>
<td>GroupDescription</td>
<td>A description of the security group. This is informational only. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constraints: Accepts alphanumeric characters, spaces, periods dashes, and underscores.</td>
<td></td>
</tr>
<tr>
<td>VpcId</td>
<td>[VPC] The ID of the VPC. Type: String</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: Required for VPC.</td>
<td></td>
</tr>
</tbody>
</table>
Response Elements

The elements in the following table are wrapped in a CreateSecurityGroupResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
<tr>
<td>groupId</td>
<td>The ID that AWS assigns to the security group. Type: xsd:string</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example creates the websrv security group.

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

Example Response

<CreateSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <return>true</return>
    <groupId>sg-1a2b3c4d</groupId>
</CreateSecurityGroupResponse>

Related Operations

- RunInstances (p. 417)
- DescribeSecurityGroups (p. 272)
- AuthorizeSecurityGroupIngress (p. 36)
- RevokeSecurityGroupIngress (p. 414)
- DeleteSecurityGroup (p. 142)
CreateSnapshot

Description

Creates a snapshot of an Amazon EBS volume and stores it in Amazon S3. You can use snapshots for backups, to make copies of instance store volumes, and to save data before shutting down an instance. For more information about Amazon EBS, see Using Amazon Elastic Block Store.

When a snapshot is created, any AWS Marketplace product codes from the volume are propagated to the snapshot.

When taking a snapshot of a file system, we recommend unmounting it first. This ensures the file system metadata is in a consistent state, that the ‘mounted indicator’ is cleared, and that all applications using that file system are stopped and in a consistent state. Some file systems, such as xfs, can freeze and unfreeze activity so a snapshot can be made without unmounting.

For Linux/UNIX, enter the following command from the command line to unmount the volume.

```bash
umount -d device_name
```

For example:

```bash
umount -d /dev/sdh
```

For Windows, open Disk Management, right-click the volume to unmount, and select Change Drive Letter and Path. Then, select the mount point to remove and click Remove.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VolumeId</td>
<td>The ID of the Amazon EBS volume. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>Description</td>
<td>A description of the Amazon EBS snapshot. Type: String Default: None Constraints: Up to 255 characters</td>
<td>No</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a CreateSnapshotResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>snapshotId</td>
<td>The ID of the snapshot. Type: xsd:string</td>
</tr>
<tr>
<td>volumeId</td>
<td>The ID of the volume. Type: xsd:string</td>
</tr>
<tr>
<td>status</td>
<td>The snapshot state. Type: xsd:string Valid values: pending</td>
</tr>
<tr>
<td>startTime</td>
<td>The time stamp when the snapshot was initiated. Type: xsd:dateTime</td>
</tr>
<tr>
<td>progress</td>
<td>The progress of the snapshot, as a percentage. Type: xsd:string</td>
</tr>
<tr>
<td>ownerId</td>
<td>The AWS account ID of the Amazon EBS snapshot owner. Type: xsd:string</td>
</tr>
<tr>
<td>volumeSize</td>
<td>The size of the volume, in GiB. Type: xsd:string</td>
</tr>
<tr>
<td>description</td>
<td>A description of the snapshot. Type: xsd:string</td>
</tr>
</tbody>
</table>

### Examples

#### Example Request

This example creates a snapshot of volume `vol-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=CreateSnapshot
&VolumeId=vol-1a2b3c4d
&Description=Daily+Backup
&AUTHPARAMS
```

#### Example Response

```
<CreateSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotId>snap-1a2b3c4d</snapshotId>
  <volumeId>vol-1a2b3c4d</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>
```
Related Operations

- DeleteSnapshot (p. 144)
- DescribeSnapshots (p. 278)
CreateSpotDatafeedSubscription

Description

Creates the datafeed for Spot Instances, enabling you to view Spot Instance usage logs. You can create one data feed per account. For more information about Spot Instances, see Spot Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bucket</td>
<td>The Amazon S3 bucket in which to store the Spot Instance datafeed.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constraints: Must be a valid bucket associated with your account.</td>
<td></td>
</tr>
<tr>
<td>Prefix</td>
<td>A prefix that is prepended to datafeed files.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a CreateSpotDatafeedSubscriptionResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>spotDatafeedSubscription</td>
<td>The datafeed subscription.</td>
</tr>
<tr>
<td></td>
<td>Type: SpotDatafeedSubscriptionType (p. 520)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example creates the data feed for the account.

https://ec2.amazonaws.com/?Action=CreateSpotDatafeedSubscription
&Bucket=myawsbucket
&AUTHPARAMS
Example Response

```
<CreateSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>111122223333</ownerId>
    <bucket>myawsbucket</bucket>
    <prefix>spotdata_</prefix>
    <state>Active</state>
  </spotDatafeedSubscription>
</CreateSpotDatafeedSubscriptionResponse>
```

Related Operations

- DeleteSpotDatafeedSubscription (p. 146)
- DescribeSpotDatafeedSubscription (p. 283)
CreateSubnet

Description

Creates a subnet in an existing VPC. You can create up to 20 subnets in a VPC. 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 need more than 20 subnets, you can request more by going to http://aws.amazon.com/contact-us/vpc-request/.

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 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 Amazon EBS-backed AMIs, see AMI Basics in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VpcId</td>
<td>The ID of the VPC. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>CidrBlock</td>
<td>The CIDR block for the subnet to cover (for example, 10.0.0.0/24). Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>AvailabilityZone</td>
<td>The Availability Zone for the subnet. Type: String Default: AWS selects a zone for you (recommended)</td>
<td>No</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a CreateSubnetResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
</tbody>
</table>
**Examples**

**Example Request**

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

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

**Example Response**

```
<CreateSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <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>
```

**Related Operations**

- DescribeSubnets (p. 295)
- DeleteSubnet (p. 147)
CreateTags

Description

Adds or overwrites one or more tags for the specified EC2 resource or resources. Each resource can have a maximum of 10 tags. Each tag consists of a key and optional value. Tag keys must be unique per resource.

For more information about tags, see Using Tags in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ResourceId.n</td>
<td>The ID of a resource to tag. For example, ami-1a2b3c4d. You can specify multiple resources to assign the tags to. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>Tag.n.Key</td>
<td>The key for a tag. Type: String Default: None Constraints: Tag keys are case sensitive and accept a maximum of 128 Unicode characters.</td>
<td>Yes</td>
</tr>
<tr>
<td>Tag.n.Value</td>
<td>The value for a tag. 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: String Default: None Constraints: Tag values are case sensitive and accept a maximum of 256 Unicode characters.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a CreateTagsResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>
Examples

Example Request

This example 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 consists of a key (stack) and value (Production).

https://ec2.amazonaws.com/?Action=CreateTags
&ResourceId.1=ami-1a2b3c4d
&ResourceId.2=i-7f4d3a2b
&Tag.1.Key=webserver
&Tag.1.Value=
&Tag.2.Key=stack
&Tag.2.Value=Production
&AUTHPARAMS

Example Response

<CreateTagsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</CreateTagsResponse>

Related Operations

- DescribeTags (p. 299)
- DeleteTags (p. 149)
CreateVolume

Description

Creates an Amazon EBS volume that can be attached to any Amazon EC2 instance in the same Availability Zone. Any AWS Marketplace product codes from the snapshot are propagated to the volume. For more information about Amazon EBS, see Amazon Elastic Block Store.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>The size of the volume, in GiBs.</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: 1-1024</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: If the volume type is io1, the minimum size of the volume is 10 GiB.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: Required unless you're creating the volume from a snapshot.</td>
<td></td>
</tr>
<tr>
<td>SnapshotId</td>
<td>The snapshot from which to create the new volume.</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: Required if you are creating a volume from a snapshot.</td>
<td></td>
</tr>
<tr>
<td>AvailabilityZone</td>
<td>The Availability Zone for the new volume. Use DescribeAvailabilityZones (p. 169) to display Availability Zones that are currently available to your account.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>VolumeType</td>
<td>The volume type.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: standard</td>
<td>io1</td>
</tr>
<tr>
<td></td>
<td>Default: standard</td>
<td></td>
</tr>
<tr>
<td>Iops</td>
<td>The number of I/O operations per second (IOPS) that the volume supports.</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>Type: Integer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: Range is 100 to 2000.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: Required when the volume type is io1; not used with standard volumes.</td>
<td></td>
</tr>
</tbody>
</table>
Response Elements

The elements in the following table are wrapped in a CreateVolumeResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>volumeId</td>
<td>The ID of the volume. Type: xsd:string</td>
</tr>
<tr>
<td>size</td>
<td>The size of the volume, in GiBs. Type: xsd:string</td>
</tr>
<tr>
<td>snapshotId</td>
<td>The snapshot from which the volume was created, if applicable. Type: xsd:string</td>
</tr>
<tr>
<td>availabilityZone</td>
<td>The Availability Zone for the volume. Type: xsd:string</td>
</tr>
<tr>
<td>status</td>
<td>The volume state. Type: xsd:string</td>
</tr>
<tr>
<td>createTime</td>
<td>The time stamp when volume creation was initiated. Type: xsd:dateTime</td>
</tr>
<tr>
<td>volumeType</td>
<td>The volume type. Type: xsd:string</td>
</tr>
<tr>
<td>iops</td>
<td>The number of I/O operations per second (IOPS) that the volume supports. Type: xsd:int</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example creates a new 80 GiB volume in Availability Zone us-east-1a.

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

```xml
<CreateVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <volumeId>vol-1a2b3c4d</volumeId>
    <size>80</size>
    <snapshotId/>
    <availabilityZone>us-east-1a</availabilityZone>
    <status>creating</status>
    <createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
    <volumeType>standard</volumeType>
</CreateVolumeResponse>
```

Related Operations

- DeleteVolume (p. 152)
- DescribeVolumes (p. 305)
- AttachVolume (p. 29)
- DetachVolume (p. 331)
- DescribeAvailabilityZones (p. 169)
CreateVpc

Description

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 Using DHCP Options with Your VPC in the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>CidrBlock</td>
<td>The CIDR block you want the VPC to cover (for example, 10.0.0.0/16).</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>instanceTenancy</td>
<td>The supported tenancy options for instances launched into the VPC.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>A value of default means that instances can be launched with any tenancy;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a value of dedicated means all instances are launched as dedicated tenancy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>instances regardless of the tenancy assigned to the instance at launch.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Setting the instance tenancy to dedicated runs your instance on single-tenant</td>
<td></td>
</tr>
<tr>
<td></td>
<td>hardware.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: default</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in an CreateVpcResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td>vpc</td>
<td>Information about the VPC.</td>
</tr>
</tbody>
</table>
Examples

Example Request

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

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

Example Response

<?xml version="1.0" encoding="UTF-8"?>
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <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 Request

This example creates a VPC with the dedicated tenancy option.

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

Example Response

<?xml version="1.0" encoding="UTF-8"?>
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>a9e49797-a74f-4f68-b302-a134a51fd054</requestId>
  <vpc>
    <vpcId>vpc-1a63c78</vpcId>
    <state>pending</state>
    <cidrBlock>10.32.0.0/16</cidrBlock>
    <dhcpOptionsId>dopt-1a2b3c4d2</dhcpOptionsId>
    <instanceTenancy>dedicated</instanceTenancy>
    <tagSet/>
  </vpc>
</CreateVpcResponse>

Related Operations

- DescribeVpcs (p. 316)
- DeleteVpc (p. 154)
- CreateDhcpOptions (p. 60)
• AssociateDhcpOptions (p. 21)
CreateVpnConnection

Description

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 configure your customer gateway, in XML format. We recommend that you use the command line version of this operation (ec2-create-vpn-connection), which lets you get the configuration information formatted in a friendlier way. For information about the command, see ec2-create-vpn-connection in the Amazon Elastic Compute Cloud Command Line Reference.

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 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 CreateVpnConnection.

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>The type of VPN connection. Type: String Default: None Valid values: ipsec.1</td>
<td>Yes</td>
</tr>
<tr>
<td>CustomerGatewayId</td>
<td>The ID of the customer gateway. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>VpnGatewayId</td>
<td>The ID of the virtual private gateway. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>AvailabilityZone</td>
<td>Deprecated. The action ignores this parameter. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Options.StaticRoutesOnly</td>
<td>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. Type: Boolean Default: false</td>
<td>No</td>
</tr>
</tbody>
</table>
Response Elements

The elements in the following table are wrapped in a `CreateVpnConnectionResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>vpnConnection</td>
<td>Information about the VPN connection.</td>
</tr>
<tr>
<td></td>
<td>Type: <code>VpnConnectionType</code> (p. 533)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example creates a VPN connection between the virtual private gateway (VGW) with ID vgw-8db04f81 and the customer gateway with ID cgw-b4dc3961. The response includes configuration information for the VPN connection's customer gateway (in the native XML format, but escaped).

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

Example Response

```xml
<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnConnection>
    <vpnConnectionId>vpn-44a8938f</vpnConnectionId>
    <state>pending</state>
    <customerGatewayConfiguration>
      <?xml version="1.0" encoding="UTF-8"?>
      <vpn_connection id="vpn-44a8938f">
        <customer_gateway_id>cgw-b4dc3961</customer_gateway_id>
        <vpn_gateway_id>vgw-8db04f81</vpn_gateway_id>
        <vpn_connection_type>ipsec.1</vpn_connection_type>
        <ipsec_tunnel>
          <customer_gateway>
            <tunnel_outside_address>
              <ip_address>YOUR_UPLINK_ADDRESS</ip_address>
            </tunnel_outside_address>
            <tunnel_inside_address>
              <ip_address>169.254.255.1</ip_address>
              <network_mask>255.255.255.252</network_mask>
              <network_cidr>30</network_cidr>
            </tunnel_inside_address>
          </customer_gateway>
          <bgp>
            <asn>YOUR_BGP_ASN</asn>
          </bgp>
        </ipsec_tunnel>
      </vpn_connection>
    </customerGatewayConfiguration>
</CreateVpnConnectionResponse>
```
<hold_time>30</hold_time>
</bgp>
</customer_gateway>
<vpn_gateway>
<tunnel_outside_address>
<ip_address>72.21.209.193</ip_address>
</tunnel_outside_address>
<tunnel_inside_address>
<ip_address>169.254.255.2</ip_address>
<network_mask>255.255.255.252</network_mask>
<network_cidr>30</network_cidr>
</tunnel_inside_address>
<bgp>
<asn>7224</asn>
<hold_time>30</hold_time>
</bgp>
</vpn_gateway>
<ike>
<authentication_protocol>sha1</authentication_protocol>
<encryption_protocol>aes-128-cbc</encryption_protocol>
<lifetime>28800</lifetime>
<perfect_forward_secrecy>group2</perfect_forward_secrecy>
<mode>main</mode>
<pre_shared_key>plain-text-password1</pre_shared_key>
</ike>
<ipsec>
<protocol>esp</protocol>
<authentication_protocol>hmac-sha1-96</authentication_protocol>
<encryption_protocol>aes-128-cbc</encryption_protocol>
<lifetime>3600</lifetime>
<perfect_forward_secrecy>group2</perfect_forward_secrecy>
<mode>tunnel</mode>
<clear_df_bit>true</clear_df_bit>
<fragmentation_before_encryption>true</fragmentation_before_encryption>
<tcp_mss_adjustment>1396</tcp_mss_adjustment>
<dead_peer_detection>
<interval>10</interval>
<retries>3</retries>
</dead_peer_detection>
</ipsec>
</ipsec_tunnel>
<ipsec_tunnel>
<customer_gateway>
<tunnel_outside_address>
<ip_address>YOUR_UPLINK_ADDRESS</ip_address>
</tunnel_outside_address>
<tunnel_inside_address>
<ip_address>169.254.255.5</ip_address>
<network_mask>255.255.255.252</network_mask>
<network_cidr>30</network_cidr>
</tunnel_inside_address>
<bgp>
<asn>YOUR_BGP_ASN</asn>
<hold_time>30</hold_time>
</bgp>
</customer_gateway>
<vpn_gateway>
<tunnel_outside_address>
  <ip_address>72.21.209.225</ip_address>
</tunnel_outside_address>
<tunnel_inside_address>
  <ip_address>169.254.255.6</ip_address>
  <network_mask>255.255.255.252</network_mask>
  <network_cidr>30</network_cidr>
</tunnel_inside_address>
<bgp>
  <asn>7224</asn>
  <hold_time>30</hold_time>
</bgp>
</vpn_gateway>
<ike>
  <authentication_protocol>sha1</authentication_protocol>
  <encryption_protocol>aes-128-cbc</encryption_protocol>
  <lifetime>28800</lifetime>
  <perfect_forward_secrecy>group2</perfect_forward_secrecy>
  <pre_shared_key>plain-text-password2</pre_shared_key>
  <mode>main</mode>
</ike>
<ipsec>
  <protocol>esp</protocol>
  <authentication_protocol>hmac-sha1-96</authentication_protocol>
  <encryption_protocol>aes-128-cbc</encryption_protocol>
  <lifetime>3600</lifetime>
  <perfect_forward_secrecy>group2</perfect_forward_secrecy>
  <clear_df_bit>true</clear_df_bit>
  <fragmentation_before_encryption>true</fragmentation_before_encryption>
  <tcp_mss_adjustment>1396</tcp_mss_adjustment>
  <dead_peer_detection>
    <interval>10</interval>
    <retries>3</retries>
  </dead_peer_detection>
</ipsec>
</ipsec_tunnel>
</vpn_connection>
</customerGatewayConfiguration>
</type>ipsec.1</type>
</customerGatewayId>cgw-b4dc3961</customerGatewayId>
</vpnGatewayId>vgw-8db04f81</vpnGatewayId>
<tagSet/>
</vpnConnection>
</CreateVpnConnectionResponse>

Example Request

This example creates a VPN connection with the static routes option between the virtual private gateway (VGW), with ID vgw-8db04f81, and the customer gateway, with 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 (in the native XML format, but escaped).

https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.1
Example Response

```xml
<CreateVpnConnectionResponse xmlns='http://ec2.amazonaws.com/doc/2012-08-01/'>
  <requestId>5cc7891f-1f3b-4fc4-a626-bdea8f63ff5a</requestId>
  <vpnConnection>
    <vpnConnectionId>vpn-83ad48ea</vpnConnectionId>
    <state>pending</state>
    <customerGatewayConfiguration><?xml version="1.0" encoding="UTF-8"?><vpn_connection id="vpn-83ad48ea">
      <customer_gateway_id>cgw-63ae4b0a</customer_gateway_id>
      <vpn_gateway_id>vgw-4ea04527</vpn_gateway_id>
      <vpn_connection_type>ipsec.1</vpn_connection_type>
      <vpn_connection_attributes>NoBGPVPNConnection</vpn_connection_attributes>
      <ipsec_tunnel>
        <customer_gateway>
          <tunnel_outside_address>
            <ip_address>111.112.113.11</ip_address>
          </tunnel_outside_address>
          <tunnel_inside_address>
            <ip_address>169.254.200.18</ip_address>
            <network_mask>255.255.255.252</network_mask>
            <network_cidr>30</network_cidr>
          </tunnel_inside_address>
        </customer_gateway>
        <vpn_gateway>
          <tunnel_outside_address>
            <ip_address>92.168.1.2</ip_address>
          </tunnel_outside_address>
          <tunnel_inside_address>
            <ip_address>169.254.200.17</ip_address>
            <network_mask>255.255.255.252</network_mask>
            <network_cidr>30</network_cidr>
          </tunnel_inside_address>
        </vpn_gateway>
      </ipsec_tunnel>
      <ike>
        <authentication_protocol>sha1</authentication_protocol>
        <encryption_protocol>aes-128-cbc</encryption_protocol>
        <lifetime>28800</lifetime>
        <perfect_forward_secrecy>group2</perfect_forward_secrecy>
        <mode>main</mode>
        <pre_shared_key>UNoSTegjalhXf_Sc3iFyHeyPWvRLg4PF</pre_shared_key>
      </ike>
      <ipsec>
        <protocol>esp</protocol>
        <authentication_protocol>hmac-sha1-96</authentication_protocol>
        <encryption_protocol>aes-128-cbc</encryption_protocol>
        <lifetime>3600</lifetime>
        <perfect_forward_secrecy>group2</perfect_forward_secrecy>
        <mode>tunnel</mode>
        <clear_df_bit>true</clear_df_bit>
      </ipsec>
    </vpn_connection>
  </vpnConnection>
</CreateVpnConnectionResponse>
```
<fragmentation_before_encryption>true</fragmentation_before_encryption>
<tcp_mss_adjustment>1387</tcp_mss_adjustment>
<dead_peer_detection>
  <interval>10</interval>
  <retries>3</retries>
</dead_peer_detection>
<ipsec>
</ipsec>
<ipsec_tunnel>
<customer_gateway>
  <tunnel_outside_address>
    <ip_address>111.112.113.11</ip_address>
  </tunnel_outside_address>
  <tunnel_inside_address>
    <ip_address>169.254.200.22</ip_address>
    <network_mask>255.255.255.252</network_mask>
    <network_cidr>30</network_cidr>
  </tunnel_inside_address>
</customer_gateway>
<vpn_gateway>
  <tunnel_outside_address>
    <ip_address>192.168.49.23</ip_address>
  </tunnel_outside_address>
  <tunnel_inside_address>
    <ip_address>169.254.200.21</ip_address>
    <network_mask>255.255.255.252</network_mask>
    <network_cidr>30</network_cidr>
  </tunnel_inside_address>
</vpn_gateway>
<ike>
  <authentication_protocol>sha1</authentication_protocol>
  <encryption_protocol>aes-128-cbc</encryption_protocol>
  <lifetime>28800</lifetime>
  <perfect_forward_secrecy>group2</perfect_forward_secrecy>
  <mode>main</mode>
  <pre_shared_key>ihG3vT7xtPfNqDa9o3Sn2sJARDigAW19</pre_shared_key>
</ike>
<ipsec>
  <protocol>esp</protocol>
  <authentication_protocol>hmac-sha-96</authentication_protocol>
  <encryption_protocol>aes-128-cbc</encryption_protocol>
  <lifetime>3600</lifetime>
  <perfect_forward_secrecy>group2</perfect_forward_secrecy>
  <mode>tunnel</mode>
  <clear_df_bit>true</clear_df_bit>
  <fragmentation_before_encryption>true</fragmentation_before_encryption>
  <tcp_mss_adjustment>1387</tcp_mss_adjustment>
  <dead_peer_detection>
    <interval>10</interval>
    <retries>3</retries>
  </dead_peer_detection>
</ipsec>
</ipsec_tunnel>
</vpn_connection>
</customerGatewayConfiguration>
Related Operations

- DescribeVpnConnections (p. 319)
- DeleteVpnConnection (p. 156)
- CreateVpc (p. 108)
- CreateSubnet (p. 101)
- AttachVpnGateway (p. 31)
CreateVpnConnectionRoute

Description

Creates a new 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.

Important

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

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>DestinationCidrBlock</td>
<td>The CIDR block associated with the local subnet of the customer data center. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>VpnConnectionId</td>
<td>The ID of the VPN connection. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a CreateVpnConnectionRouteResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example creates a static route to the VPN connection for the VPN connection 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".
Example Response

```
<CreateVpnConnectionRouteResponse xmlns='http://ec2.amazonaws.com/doc/2012-08-01/'>
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</CreateVpnConnectionRouteResponse>
```

Related Operations

- `DeleteVpnConnectionRoute` (p. 158)
- `DeleteVpnConnection` (p. 156)
- `DescribeVpnConnections` (p. 319)
- `CreateVpc` (p. 108)
- `CreateSubnet` (p. 101)
- `AttachVpnGateway` (p. 31)
CreateVpnGateway

Description

Creates a virtual private gateway. A virtual private gateway is the VPC-side endpoint for your VPN connection. You can create a virtual private gateway before creating the VPC itself.

For more information about virtual private gateways, see Adding an IPsec Hardware Virtual Private Gateway to Your VPC in the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>The type of VPN connection this virtual private gateway supports.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: ipsec.1</td>
<td></td>
</tr>
<tr>
<td>AvailabilityZone</td>
<td>The Availability Zone option has been deprecated.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>The API ignores this parameter.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a CreateVpnGatewayResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>vpnGateway</td>
<td>Information about the virtual private gateway.</td>
</tr>
<tr>
<td></td>
<td>Type: VpnGatewayType (p. 534)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example creates a virtual private gateway.

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

```xml
<CreateVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <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>
```

Related Operations

- DescribeVpnGateways (p. 323)
- DeleteVpnGateway (p. 160)
- AttachVpnGateway (p. 31)
- DetachVpnGateway (p. 333)
DeleteCustomerGateway

Description

Deletes a VPN customer gateway. You must delete the VPN connection before deleting the customer gateway.

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>CustomerGatewayId</td>
<td>The ID of the customer gateway. Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeleteCustomerGatewayResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes the customer gateway with ID cgw-b4dc3961.

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

Example Response

<?xml version="1.0" encoding="UTF-8"?>
<DeleteCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
</DeleteCustomerGatewayResponse>
<return>true</return>
</DeleteCustomerGatewayResponse>

Related Operations

- CreateCustomerGateway (p. 58)
- DescribeCustomerGateways (p. 177)
DeleteDhcpOptions

Description

Deletes a set of DHCP options that you specify. The API action returns an error if the set of options you specify is currently associated with a VPC. You can disassociate the set of options by associating either a new set of options or the default options with the VPC.

For more information about DHCP options sets, see Using DHCP Options with Your VPC in the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>DhcpOptionsId</td>
<td>The ID of the DHCP options set.</td>
<td>Yes</td>
</tr>
<tr>
<td>Type: String</td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in an DeleteDhcpOptionsResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td>Type: xsd:string</td>
<td></td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error.</td>
</tr>
<tr>
<td>Type: xsd:boolean</td>
<td></td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes the set of DHCP options with ID dopt-7a8b9c2d.

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

Example Response

<DeleteDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
</DeleteDhcpOptionsResponse>
<return>true</return>
</DeleteDhcpOptionsResponse>

Related Operations

- AssociateDhcpOptions (p. 21)
- CreateDhcpOptions (p. 60)
- DescribeDhcpOptions (p. 180)
DeleteInternetGateway

Description

Deletes an Internet gateway from your AWS account. The gateway must not be attached to a VPC. For more information about your VPC and Internet gateway, see the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InternetGatewayId</td>
<td>The ID of the Internet gateway. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeleteInternetGatewayResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: String</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes the Internet gateway with ID igw-eaad4883.

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

Example Response

<DeleteInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteInternetGatewayResponse>
Related Operations

- CreateInternetGateway (p. 69)
- AttachInternetGateway (p. 25)
- DetachInternetGateway (p. 327)
- DescribeInternetGateways (p. 223)
DeleteKeyPair

Description

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>KeyName</td>
<td>The name of the key pair.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeleteKeyPairResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes the gsg-keypair key pair.

https://ec2.amazonaws.com/?Action=DeleteKeyPair
&KeyName=gsg-keypair
&AUTHPARAMS

Example Response

例: <DeleteKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteKeyPairResponse>

Related Operations

• CreateKeyPair (p. 71)
• DescribeKeyPairs (p. 226)
• ImportKeyPair (p. 353)
DeleteNetworkAcl

Description

Deletes a network ACL from a VPC. The ACL must not have any subnets associated with it. You can't delete the default network ACL. For more information about network ACLs, see Network ACLs in the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetworkAclId</td>
<td>The ID of the network ACL. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeleteNetworkAclResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes the network ACL with ID acl-2cb85d45.

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

Example Response

<DeleteNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteNetworkAclResponse>
Related Operations

- `DeleteNetworkAcl` (p. 130)
- `DescribeNetworkAcls` (p. 229)
- `ReplaceNetworkAclAssociation` (p. 383)
DeleteNetworkAclEntry

Description

Deletes an ingress or egress entry (i.e., rule) from a network ACL. For more information about network ACLs, see Network ACLs in the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetworkAclId</td>
<td>The ID of the network ACL.</td>
<td>Yes</td>
</tr>
<tr>
<td>RuleNumber</td>
<td>The rule number for the entry to delete.</td>
<td>Yes</td>
</tr>
<tr>
<td>Egress</td>
<td>Specifies whether the rule to delete is an egress rule (true) or ingress rule (false).</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NetworkAclId</td>
<td>The ID of the network ACL.</td>
<td></td>
</tr>
<tr>
<td>RuleNumber</td>
<td>The rule number for the entry to delete.</td>
<td></td>
</tr>
<tr>
<td>Egress</td>
<td>Specifies whether the rule to delete is an egress rule (true) or ingress rule (false).</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeleteNetworkAclEntryResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error.</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes the ingress entry with rule number 100 from the network ACL with ID acl-2cb85d45.

https://ec2.amazonaws.com/?Action=DeleteNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=100
&AUTHPARAMS
Example Response

```xml
<DeleteNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteNetworkAclEntryResponse>
```

Related Operations

- CreateNetworkAclEntry (p. 75)
- ReplaceNetworkAclEntry (p. 385)
- DescribeNetworkAcls (p. 229)
DeleteNetworkInterface

Description

Deletes the specified network interface.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetworkInterfaceId</td>
<td>The ID of the network interface. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeleteNetworkInterfaceResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request to delete the network interface. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes an elastic network interface (ENI) eni-ffda3197.

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

Example Response

  <requestId>e1c6d73b-edaa-4e62-9909-6611404e1739</requestId>
  <return>true</return>
</DeleteNetworkInterfaceResponse>

Related Operations

- AttachNetworkInterface (p. 27)
• DetachNetworkInterface (p. 329)
• CreateNetworkInterface (p. 78)
• DescribeNetworkInterfaceAttribute (p. 235)
• DescribeNetworkInterfaces (p. 237)
• ModifyNetworkInterfaceAttribute (p. 364)
• ResetNetworkInterfaceAttribute (p. 407)
DeletePlacementGroup

Description

Deletes a placement group from your account. You must terminate all instances in the placement group before deleting it. For more information about placement groups and cluster instances, see Using Cluster Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>GroupName</td>
<td>The name of the placement group. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeletePlacementGroupResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes the placement group named XYZ-cluster.

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

Example Response

<DeletePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <return>true</return>
</DeletePlacementGroupResponse>
Related Operations

- CreatePlacementGroup (p. 83)
- DescribePlacementGroups (p. 244)
DeleteRoute

Description

Deletes a route from a route table in a VPC. For more information about route tables, see Route Tables in the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>RouteTableId</td>
<td>The ID of the route table. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>DestinationCidrBlock</td>
<td>The CIDR range for the route to delete. The value you specify must exactly match the CIDR for the route. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a ReplaceRouteResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example removes the route with destination CIDR 172.16.1.0/24 from the route table with ID rtb-e4ad488d.

https://ec2.amazonaws.com/?Action=DeleteRoute &RouteTableId=rtb-e4ad488d &DestinationCidrBlock=172.16.1.0/24 &AUTHPARAMS
Example Response

<DeleteRouteResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteRouteResponse>

Related Operations

- CreateRoute (p. 89)
- ReplaceRoute (p. 388)
- DescribeRouteTables (p. 267)
DeleteRouteTable

Description

Deletes a route table from a VPC. The route table must not be associated with a subnet. You can't delete the main route table. For more information about route tables, see Route Tables in the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>RouteTableId</td>
<td>The ID of the route table.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeleteRouteTableResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes the route table with ID rtb-e4ad488d.

https://ec2.amazonaws.com/?Action=DeleteRouteTable &RouteTableId=rtb-e4ad488d &AUTHPARAMS

Example Response

<DeleteRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteRouteTableResponse>
Related Operations

- AssociateRouteTable (p. 23)
- DisassociateRouteTable (p. 339)
- DescribeRouteTables (p. 267)
- CreateRouteTable (p. 92)
- ReplaceRouteTableAssociation (p. 390)
DeleteSecurityGroup

Description

Deletes a security group.

Important
If you attempt to delete a security group that contains instances, or is referenced by another security group, the operation fails with InvalidGroup.InUse for Amazon EC2 or DependencyViolation for VPC.

A security group is for use with instances either in Amazon EC2 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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>GroupName</td>
<td>The name of the security group. Type: String Default: None Condition: For EC2, you can specify either GroupName or GroupId</td>
<td>Conditional</td>
</tr>
<tr>
<td>GroupId</td>
<td>The ID of the security group. Type: String Default: None Condition: Required for a VPC; for EC2, you can specify either GroupName or GroupId</td>
<td>Conditional</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeleteSecurityGroupResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>
Example Request

This example deletes the security group for VPC with the ID sg-1a2b3c4d.

Example Response

```xml
<DeleteSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSecurityGroupResponse>
```

Related Operations

- CreateSecurityGroup (p. 94)
- DescribeSecurityGroups (p. 272)
- AuthorizeSecurityGroupIngress (p. 36)
- RevokeSecurityGroupIngress (p. 414)
DeleteSnapshot

Description

Deletes a snapshot of an Amazon EBS volume.

Note

If you make periodic snapshots of a volume, the snapshots are incremental so that only the blocks on the device that have changed since your last snapshot are incrementally saved in the new snapshot. Even though snapshots are saved incrementally, the snapshot deletion process is designed so that you need to retain only the most recent snapshot in order to restore the volume.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>SnapshotId</td>
<td>The ID of the Amazon EBS snapshot. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeleteSnapshotResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes snapshot snap-1a2b3c4d.

https://ec2.amazonaws.com/?Action=DeleteSnapshot
&SnapshotId.1=snap-1a2b3c4d
&AUTHPARAMS

Example Response

<DeleteSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
</DeleteSnapshotResponse>

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<return>true</return>
</DeleteSnapshotResponse>

Related Operations

- CreateSnapshot (p. 96)
- DescribeSnapshots (p. 278)
DeleteSpotDatafeedSubscription

Description

Deletes the datafeed for Spot Instances. For more information about Spot Instances, see Spot Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

The DeleteSpotDatafeedSubscription operation does not have any request parameters.

Response Elements

The elements in the following table are wrapped in a DeleteSpotDatafeedSubscriptionResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| requestId | The ID of the request.  
Type: xsd:string                                                             |
| return   | Returns true if the request succeeds. Otherwise, returns an error.  
Type: xsd:boolean                                                         |

Examples

Example Request

This example deletes the data feed for the account.

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

Example Response

```xml
<DeleteSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/"
    requestId="59dbff89-35bd-4eac-99ed-be587EXAMPLE">
    <return>true</return>
</DeleteSpotDatafeedSubscriptionResponse>
```

Related Operations

- CreateSpotDatafeedSubscription (p. 99)
- DescribeSpotDatafeedSubscription (p. 283)
DeleteSubnet

Description

Deletes a subnet from a VPC. You must terminate all running instances in the subnet before deleting it, otherwise the API action returns an error.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>SubnetId</td>
<td>The ID of the subnet.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeleteSubnetResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes the subnet with ID subnet-9d4a7b6c.

https://ec2.amazonaws.com/?Action=DeleteSubnet
&SubnetId=subnet-9d4a7b6c
&AUTHPARAMS

Example Response

<DeleteSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteSubnetResponse>
Related Operations

- CreateSubnet (p. 101)
- DescribeSubnets (p. 295)
DeleteTags

Description

Deletes a specific set of tags from a specific set of resources. This call is designed to follow a DescribeTags call. You first determine what tags a resource has, and then you call DeleteTags with the resource ID and the specific tags you want to delete.

For more information about tags, see Using Tags in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ResourceId.n</td>
<td>The ID of the resource. For example, ami-1a2b3c4d. You can specify more than one resource ID.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Tag.n.Key</td>
<td>The tag's key. You can specify more than one tag to delete.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Tag.n.Value</td>
<td>The tag's value.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: If you omit this 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.</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeleteTagsResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes the tags for the AMI with ID ami-1a2b3c4d. You first get a list of the tags.
Sample response:

```xml
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <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>
```

Then you delete the tags. Specifying the value for the stack tag is optional.

Sample response:

```xml
<DeleteTagsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteTagsResponse>
```

**Example Request**

This example deletes the stack tag from two particular instances.

```xml
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-5f4e3d2a
&ResourceId.2=i-12345678
&Tag.1.Key=stack
&Tag.2.Key=stack
&AUTHPARAMS
```

**Example Request**

This example deletes the stack and webserver tags for one particular instance.

```xml
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-5f4e3d2a
&Tag.1.Key=stack
&Tag.2.Key=webserver
&AUTHPARAMS
```
Example Request

You can specify a tag key without a corresponding tag value if you want to delete the tag regardless of its value. This example deletes all tags whose key=Purpose, regardless of the tag value.

https://ec2.amazonaws.com/?Action=DeleteTags &ResourceId.1=i-5f4e3d2a &Tag.1.Key=stack &ResourceId.2=i-5f4e3d2a &Tag.2.Key=webserver &AUTHPARAMS

Example Request

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 deletes all tags for the specified instance where key=Purpose and the tag value is the empty string.

https://ec2.amazonaws.com/?Action=DeleteTags &ResourceId.1=i-5f4e3d2a &Tag.1.Key=Purpose &Tag.2.Value= &AUTHPARAMS

Related Operations

- CreateTags (p. 103)
- DescribeTags (p. 299)
DeleteVolume

Description

Deletes an Amazon EBS volume. The volume must be in the available state (not attached to an instance). For more information about Amazon EBS, see Using Amazon Elastic Block Store in the Amazon Elastic Compute Cloud User Guide.

Note

The volume remains in the deleting state for several minutes after you call this action.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VolumeId</td>
<td>The ID of the volume.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeleteVolumeResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes volume vol-1a2b3c4d.

https://ec2.amazonaws.com/?Action=DeleteVolume
&VolumeId=vol-1a2b3c4d
&AUTHPARAMS

Example Response

<DeleteVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteVolumeResponse>
Related Operations

- CreateVolume (p. 105)
- DescribeVolumes (p. 305)
- AttachVolume (p. 29)
- DetachVolume (p. 331)
DeleteVpc

Description

Deletes a VPC. You must detach or delete all gateways or other objects that are dependent on the VPC first. For example, you must terminate all running instances, delete all security groups (except the default), delete all the route tables (except the default), and so on.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VpcId</td>
<td>The ID of the VPC. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a `DeleteVpcResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes the VPC with ID vpc-1a2b3c4d.

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

Example Response

```
<DeleteVpcResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DeleteVpcResponse>
```
Related Operations

- CreateVpc (p. 108)
- DescribeVpcs (p. 316)
DeleteVpnConnection

Description

Deletes a VPN connection. Use this if you want to delete a VPC and all its associated components. Another reason to use this operation is if you believe the tunnel credentials for your VPN connection have been compromised. In that situation, 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.

If you’re deleting the VPC and all its associated parts, we recommend you detach the virtual private gateway from the VPC and delete the VPC before deleting the VPN connection.

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VpnConnectionId</td>
<td>The ID of the VPN connection.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeleteVpnConnectionResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes the VPN connection with ID vpn-44a8938f.

https://ec2.amazonaws.com/?Action=DeleteVpnConnection
&vpnConnectionId=vpn-44a8938f
&AUTHPARAMS
Example Response

```xml
<DeleteVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpnConnectionResponse>
```

Related Operations

- CreateVpnConnection (p. 111)
- DescribeVpnConnections (p. 319)
- DetachVpnGateway (p. 333)
- DeleteVpc (p. 154)
DeleteVpnConnectionRoute

Description

Deletes 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.

Important

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

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>DestinationCidrBlock</td>
<td>The CIDR block associated with the local subnet of the customer data center. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>VpnConnectionId</td>
<td>The ID of the VPN connection. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a `DeleteVpnConnectionRouteResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: <code>xsd:string</code></td>
<td></td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: <code>boolean</code></td>
<td></td>
</tr>
</tbody>
</table>

Examples

Example Request

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

```xml
<DeleteVpnConnectionRouteResponse xmlns='http://ec2.amazonaws.com/doc/2012-08-01/'>
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</DeleteVpnConnectionRouteResponse>
```

Related Operations

- CreateVpnConnectionRoute (p. 118)
- DeleteVpnConnection (p. 156)
- DescribeVpnConnections (p. 319)
- CreateVpc (p. 108)
- CreateSubnet (p. 101)
- AttachVpnGateway (p. 31)
DeleteVpnGateway

Description

Deletes a virtual private gateway. Use this when you want to delete a VPC and all its associated components because you no longer need them. 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 just want to delete and recreate the VPN connection between your VPC and data center.

For more information about virtual private gateways, see Adding an IPsec Hardware Virtual Private Gateway to Your VPC in the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VpnGatewayId</td>
<td>The ID of the virtual private gateway.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeleteVpnGatewayResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
<td></td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type: xsd:boolean</td>
<td></td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deletes the virtual private gateway with ID vgw-8db04f81.

https://ec2.amazonaws.com/?Action=DeleteVpnGateway
&vpnGatewayId=vgw-8db04f81
&AUTHPARAMS
Example Response

```
<DeleteVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpnGatewayResponse>
```

Related Operations

- CreateVpnGateway (p. 120)
- DescribeVpnGateways (p. 323)
- DeleteVpnConnection (p. 156)
DeregisterImage

Description

Deregisters the specified AMI. Once deregistered, the AMI cannot be used to launch new instances.

Note

This command does not delete the AMI.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ImageId</td>
<td>The ID of the AMI to deregister. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DeregisterImageResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example deregisters the ami-4fa54026 AMI.

https://ec2.amazonaws.com/?Action=DeregisterImage&ImageId=ami-4fa54026&AUTHPARAMS

Example Response

<br/>&lt;DeregisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/"
 &requestId=59dbff89-35bd-4eac-99ed-be587EXAMPLE&gt;&lt;/requestId&gt;
 &return=true&lt;/return&gt;
 &lt;/DeregisterImageResponse&gt;
Related Operations

- RegisterImage (p. 377)
- DescribeImages (p. 189)
DescribeAddresses

Description

Describes one or more of your Elastic IP addresses.

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>PublicIp.n</td>
<td>One or more EC2 Elastic IP addresses. Type: String</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>AllocationId.n</td>
<td>One or more allocation IDs corresponding to the address or addresses to describe (VPC addresses only). Type: String</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names. Type: String</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter. Type: String</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain Elastic IP addresses. For example, you can use a filter to specify that you’re interested in addresses that have a specific tag. You can specify multiple values for a filter. The response includes information for an address only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify addresses of a specific value that have a specific tag. The response includes information for an address only if it matches all the filters that you specified. If there’s no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of \\*amazon\\?\ searches for the literal string *amazon?.

The following table lists the available filters.
<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>domain</td>
<td>Indicates whether the address is for use in a VPC. Type: String Valid values: standard</td>
</tr>
<tr>
<td>instance-id</td>
<td>The instance the address is associated with (if any). Type: String</td>
</tr>
<tr>
<td>public-ip</td>
<td>The Elastic IP address. Type: String</td>
</tr>
<tr>
<td>allocation-id</td>
<td>The allocation ID for the address (VPC only). Type: String</td>
</tr>
<tr>
<td>association-id</td>
<td>The association ID for the address (VPC only). Type: String</td>
</tr>
<tr>
<td>network-interface-id</td>
<td>The network interface (if any) that the address is associated with (VPC only). Type: String</td>
</tr>
<tr>
<td>network-interface-owner-id</td>
<td>The owner IID.</td>
</tr>
<tr>
<td>private-ip-address</td>
<td>The private IP address associated with the Elastic IP address (VPC only). Type: String</td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in a `DescribeAddressesResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>addressesSet</td>
<td>A list of IP addresses, each one wrapped in an item element. Type: DescribeAddressesResponseItemType (p. 452)</td>
</tr>
</tbody>
</table>

**Examples**

**Example Request**

EC2 addresses: This example describes two specific EC2 Elastic IP addresses assigned to the account. Amazon EC2 returns information about 192.0.2.1, which is assigned to instance i-f15ebb98, and for 198.51.100.2, which is not assigned to an instance.

```
https://ec2.amazonaws.com/?Action=DescribeAddresses
&PublicIp.1=192.0.2.1
&PublicIp.2=198.51.100.2
&AUTHPARAMS
```
Example Response

<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <addressesSet>
    <item>
      <publicIp>192.0.2.1</publicIp>
      <domain>standard</domain>
      <instanceId>i-f15ebb98</instanceId>
    </item>
    <item>
      <publicIp>198.51.100.2</publicIp>
      <domain>standard</domain>
    </item>
  </addressesSet>
</DescribeAddressesResponse>

Example Request

VPC Addresses: This example describes a specific VPC address allocated to your account. You must use the allocation ID to specify the address.

https://ec2.amazonaws.com/?Action=DescribeAddresses
&AllocationId.1=eipalloc-08229861
&AUTHPARAMS

Example Response

<soap:Body>
  <DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
    <requestId>f7de5e98-491a-4c19-a92d-908d6EXAMPLE</requestId>
    <addressesSet>
      <item>
        <publicIp>46.51.223.41</publicIp>
        <allocationId>eipalloc-08229861</allocationId>
        <domain>vpc</domain>
        <instanceId>i-64600030</instanceId>
        <associationId>eipassoc-f0229899</associationId>
        <networkInterfaceId>eni-ef229886</networkInterfaceId>
        <networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
        <privateIpAddress>10.0.0.228</privateIpAddress>
      </item>
    </addressesSet>
  </DescribeAddressesResponse>
</soap:Body>

Example Request

VPC Addresses: This example lists only your VPC addresses (assuming you have both standard and VPC addresses).
Example Response

```xml
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>0782c68a-5f24-4dce-93c0-b5a066d6e0d0</requestId>
  <addressesSet>
    <item>
      <publicIp>203.0.113.12</publicIp>
      <allocationId>eipalloc-08229861</allocationId>
      <domain>vpc</domain>
      <instanceId>i-64600030</instanceId>
      <associationId>eipassoc-f0229899</associationId>
      <networkInterfaceId>eni-ef229886</networkInterfaceId>
      <networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
      <privateIpAddress>10.0.0.228</privateIpAddress>
    </item>
    <item>
      <publicIp>46.51.221.164</publicIp>
      <allocationId>eipalloc-1b5fe072</allocationId>
      <domain>vpc</domain>
    </item>
    <item>
      <publicIp>203.0.113.14</publicIp>
      <allocationId>eipalloc-f38a359a</allocationId>
      <domain>vpc</domain>
      <instanceId>i-7a00642e</instanceId>
      <associationId>eipassoc-1f239876</associationId>
      <networkInterfaceId>eni-d83388b1</networkInterfaceId>
      <networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
      <privateIpAddress>10.0.0.12</privateIpAddress>
    </item>
    <item>
      <publicIp>203.0.113.33</publicIp>
      <allocationId>eipalloc-282d9641</allocationId>
      <domain>vpc</domain>
      <instanceId>i-7a00642e</instanceId>
      <associationId>eipassoc-252d964c</associationId>
      <networkInterfaceId>eni-d83388b1</networkInterfaceId>
      <networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
      <privateIpAddress>10.0.0.14</privateIpAddress>
    </item>
    <item>
      <publicIp>203.0.113.22</publicIp>
      <allocationId>eipalloc-1266dd7b</allocationId>
      <domain>vpc</domain>
      <instanceId>i-880f6fdc</instanceId>
      <associationId>eipassoc-832e94ea</associationId>
      <networkInterfaceId>eni-af2e94c6</networkInterfaceId>
      <networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
      <privateIpAddress>10.0.0.47</privateIpAddress>
    </item>
  </addressesSet>
</DescribeAddressesResponse>
```
<publicIp>203.0.113.42 </publicIp>
<allocationId>eipalloc-ff229896</allocationId>
<domain>vpc</domain>
</item>

<item>
<publicIp>203.0.113.53</publicIp>
<allocationId>eipalloc-b463dcd6</allocationId>
<domain>vpc</domain>
<instanceId>i-c844219c</instanceId>
<associationId>eipassoc-d667ddbf</associationId>
<networkInterfaceId>eni-ea67dc83</networkInterfaceId>
<networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
<privateIpAddress>10.0.0.174</privateIpAddress>
</item>

<item>
<publicIp>203.0.113.61</publicIp>
<allocationId>eipalloc-bf66dcd6</allocationId>
<domain>vpc</domain>
<instanceId>i-ba6a0dee</instanceId>
<associationId>eipassoc-9c66dcf5</associationId>
<networkInterfaceId>eni-73e05a1a</networkInterfaceId>
<networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
<privateIpAddress>10.0.0.85</privateIpAddress>
</item>
</addressesSet>
</DescribeAddressesResponse>

Related Operations

- AllocateAddress (p. 13)
- ReleaseAddress (p. 381)
- AssociateAddress (p. 18)
- DisassociateAddress (p. 337)
**DescribeAvailabilityZones**

**Description**

Describes one or more of the Availability Zones that are currently available to the account. The results include zones only for the region you're currently using.

**Note**

Availability Zones are not the same across accounts. The Availability Zone us-east-1a for account A is not necessarily the same as us-east-1a for account B. Zone assignments are mapped independently for each account.

**Request Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZoneName.n</td>
<td>One or more Availability Zones. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter. Type: String Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>

**Supported Filters**

You can specify filters so that the response includes information for only certain Availability Zones. For example, you can use a filter to specify that you're interested in Availability Zones in the available state. You can specify multiple values for a filter. The response includes information for an Availability Zone only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify Availability Zones that are in a particular region and are in the available state. The response includes information for an Availability Zone only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `*amazon?\` searches for the literal string `*amazon?\`.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>message</td>
<td>Information about the Availability Zone. Type: String</td>
</tr>
</tbody>
</table>
### Filter Name | Description
--- | ---
region-name | The region for the Availability Zone (for example, us-east-1). Type: String
state | The state of the Availability Zone Type: String Valid values: available
zone-name | The name of the zone. Type: String

### Response Elements

The elements in the following table are wrapped in a `DescribeAvailabilityZonesResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>availabilityZoneInfo</td>
<td>A list of Availability Zones, each one wrapped in an <code>item</code> element. Type: AvailabilityZoneItemType (p. 443)</td>
</tr>
</tbody>
</table>

### Examples

#### Example Request

This example displays information about Availability Zones that are available to the account. The results includes zones only in the region (endpoint) you're currently using.

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

#### Example Response

```xml
<DescribeAvailabilityZonesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <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>
    </item>
  </availabilityZoneInfo>
</DescribeAvailabilityZonesResponse>
```
<messageSet/>
</item>
</item>
  <zoneName>us-east-1c</zoneName>
  <zoneState>available</zoneState>
  <regionName>us-east-1</regionName>
  <messageSet/>
</item>
</availabilityZoneInfo>
</DescribeAvailabilityZonesResponse>

Related Operations

- RunInstances (p. 417)
- DescribeRegions (p. 247)
DescribeBundleTasks

Description

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 the RegisterImage action with the Amazon S3 bucket name and image manifest name you provided to the bundle task.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>BundleId.n</td>
<td>One or more bundle task IDs.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: If no ID is specified, all bundle tasks are described.</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain bundle tasks. For example, you can use a filter to specify that you’re interested in the bundle tasks in the complete state. You can specify multiple values for a filter. The response includes information for a bundle task only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify bundles that are stored in a specific Amazon S3 bucket and are in the complete state. The response includes information for a bundle task only if it matches all the filters that you specified. If there’s no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of "*amazon?\" searches for the literal string *amazon?\.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>bundle-id</td>
<td>The ID of the bundle task.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------------------------------------------------------</td>
</tr>
<tr>
<td>error-code</td>
<td>If the task failed, the error code returned. Type: String</td>
</tr>
<tr>
<td>error-message</td>
<td>If the task failed, the error message returned. Type: String</td>
</tr>
<tr>
<td>instance-id</td>
<td>The ID of the instance that was bundled. Type: String</td>
</tr>
<tr>
<td>progress</td>
<td>The level of task completion, as a percentage (for example, 20%). Type: String</td>
</tr>
<tr>
<td>s3-bucket</td>
<td>The Amazon S3 bucket to store the AMI. Type: String</td>
</tr>
<tr>
<td>s3-prefix</td>
<td>The beginning of the AMI name. Type: String</td>
</tr>
<tr>
<td>start-time</td>
<td>The time the task started (for example, 2008-09-15T17:15:20.000Z). Type: DateTime</td>
</tr>
<tr>
<td>state</td>
<td>The state of the task. Valid values: pending</td>
</tr>
<tr>
<td>update-time</td>
<td>The time of the most recent update for the task (for example, 2008-09-15T17:15:20.000Z). Type: DateTime</td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in a `DescribeBundleTasksResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>bundleInstanceTasksSet</td>
<td>A list of bundle tasks, each one wrapped in an item element. Type: BundleInstanceTaskType (p. 448)</td>
</tr>
</tbody>
</table>

**Examples**

**Example Request**

This example describes the status of the `bun-57a5403e` bundle task.
Example Response

```xml
<DescribeBundleTasksResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTasksSet>
    <item>
      <instanceId>i-12345678</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 Request

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 called `myawsbucket`.

```bash
https://ec2.amazonaws.com/?Action=DescribeBundleTasks
&bundleId.1=bun-c1a540a8
&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
```

Related Operations

- BundleInstance (p. 40)
- CancelBundleTask (p. 43)
DescribeConversionTasks

Description

Describes one or more of your conversion tasks. For more information, see Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2 in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ConversionTaskId.n</td>
<td>One or more conversion task IDs.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DescribeConversionTasksResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>conversionTasks</td>
<td>A list of conversion tasks, each one wrapped in an item element. Type: ConversionTaskType (p. 449)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example describes all your conversion tasks.

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

Example Response

```xml
<DescribeConversionTasksResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <conversionTasks>
    <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-97c1-15c7325d3f41/Wi
n_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccessKeyId=AKIAIO
SFDENN7EXAMPE&Expires=1294855591&Signature=5snej01T1T10uR7KE
</importManifestUrl>
</image>
<volume>
<size>8</size>
</volume>
</importVolume>
</conversionTask>
</item>
</conversionTasks>
</DescribeConversionTasksResponse>

Related Operations

- ImportInstance (p. 349)
- ImportVolume (p. 355)
- CancelConversionTask (p. 45)
DescribeCustomerGateways

Description

Describes one or more of your VPN customer gateways.

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>CustomerGatewayId.n</td>
<td>A customer gateway ID. You can specify more than one in the request. Type: String Default: Describes your customer gateways.</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter. Type: String Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain customer gateways. For example, you can use a filter to specify that you're interested in customer gateways in the pending or available state. You can specify multiple values for a filter. The response includes information for a customer gateway only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify customer gateways that have a specific IP address for the Internet-routable external interface and are in the pending or available state. The response includes information for a customer gateway only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of \*amazon\?\ searches for the literal string *amazon?\.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>bgp-asn</td>
<td>The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN). Type: String</td>
</tr>
</tbody>
</table>
### Filter Name

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ID of the customer gateway.</td>
<td>String</td>
</tr>
<tr>
<td>The IP address of the customer gateway's Internet-routable external interface (for example, 12.1.2.3).</td>
<td>String</td>
</tr>
<tr>
<td>The state of the customer gateway.</td>
<td>String</td>
</tr>
<tr>
<td>Valid values: pending</td>
<td>available</td>
</tr>
<tr>
<td>The type of customer gateway. Currently the only supported type is ipsec.1</td>
<td>String</td>
</tr>
<tr>
<td>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 &quot;tag-key=Purpose&quot; and the filter &quot;tag-value=X&quot;, 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 filter later in this table. For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide.</td>
<td>String</td>
</tr>
<tr>
<td>The value of a tag assigned to the resource. This filter is independent of the tag-key filter.</td>
<td>String</td>
</tr>
<tr>
<td>Filters the response based on a specific tag/value combination. Example: To list just the resources that have been assigned tag Purpose=X, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</td>
<td>String</td>
</tr>
</tbody>
</table>

### Response Elements

The elements in the following table are wrapped in a `DescribeCustomerGatewaysResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
</tbody>
</table>
A list of customer gateways, each one wrapped in an `item` element.

Type: `CustomerGatewayType` (p. 451)

### Examples

#### Example Request

This example gives a description of the customer gateway with ID cgw-b4dc3961.

```
https://ec2.amazonaws.com/?Action=DescribeCustomerGateways
&CustomerGatewayId.1=cgw-b4dc3961
&AUTHPARAMS
```

#### Example Response

```
<DescribeCustomerGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
 <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 Request

This example uses filters to give a description of any customer gateway you own whose IP address is 12.1.2.3, and whose state is either pending or available.

```
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
```

### Related Operations

- CreateCustomerGateway (p. 58)
- DeleteCustomerGateway (p. 122)
DescribeDhcpOptions

Description

Describes one or more of your sets of DHCP options.

For more information about DHCP options sets, see Using DHCP Options with Your VPC in the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>DhcpOptionsId.n</td>
<td>A DHCP options set ID. You can specify more than one in the request.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: Describes your sets of DHCP options, or only those otherwise specified.</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain sets of DHCP options. For example, you can use a filter to specify that you're interested in sets of DHCP options with a particular value for the domain-name option. You can specify multiple values for a filter. The response includes information for a set of DHCP options only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify sets of DHCP options that have a specific value for the domain-name option and a specific tag. The response includes information for a set of DHCP options only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of \*amazon\\ searches for the literal string *amazon?\.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dhcp-options-id</td>
<td>The ID of a set of DHCP options.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
</tbody>
</table>
### Filter Name

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>key</td>
<td>The key for one of the options (for example, domain-name). Type: String</td>
</tr>
<tr>
<td>value</td>
<td>The value for one of the options. Type: String</td>
</tr>
<tr>
<td>tag-key</td>
<td>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 &quot;tag-key=Purpose&quot; and the filter &quot;tag-value=X&quot;, 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 filter later in this table. For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide. Type: String</td>
</tr>
<tr>
<td>tag-value</td>
<td>The value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String</td>
</tr>
<tr>
<td>tag: key</td>
<td>Filters the response based on a specific tag/value combination. Example: To list just the resources that have been assigned tag Purpose=X, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</td>
</tr>
</tbody>
</table>
Examples

Example Request

This example gives a description of the DHCP options set with ID dopt-7a8b9c2d.

https://ec2.amazonaws.com/?Action=DescribeDhcpOptions
&DhcpOptionsId.1=dopt-7a8b9c2d
&AUTHPARAMS

Example Response

Example Request

This example uses filters to give a description of any DHCP options set that includes a domain-name option whose value includes the string example.
Related Operations

- CreateDhcpOptions (p. 60)
- AssociateDhcpOptions (p. 21)
- DeleteDhcpOptions (p. 124)
DescribeExportTasks

Description

Describes one or more of your export tasks.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ExportTaskId.n</td>
<td>One or more export task IDs. If no task IDs are provided, all active export tasks are described. Type: String Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DescribeExportTasks element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>exportTaskSet</td>
<td>A list of export tasks, each one wrapped in an item element. Type: ExportTaskResponseType (p. 468)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example describes a single export task.

https://ec2.amazonaws.com/?Action=DescribeExportTasks &exportTaskId.1=export-i-1234wxyz &AUTHPARAMS

Example Response

```xml
<DescribeExportTasksResponse xmlns="http://ec2.amazonaws.com/doc/2020-02-02/">
  <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>
    </item>
  </exportTaskSet>
</DescribeExportTasksResponse>
```
Related Operations

- CancelExportTask (p. 47)
- CreateInstanceExportTask (p. 66)
DescribeImageAttribute

Description

Describes an attributes of an AMI. You can specify only one attribute at a time. These are the available attributes:

- **description**—Description of the AMI provided at image creation
- **kernel**—ID of the kernel associated with the AMI
- **ramdisk**—ID of the RAM disk associated with the AMI
- **launchPermission**—Launch permissions for the AMI
- **productCodes**—Product codes associated with the AMI (if any). Each product code contains a product code and a type.
- **blockDeviceMapping**—Block device mapping of the AMI

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ImageId</td>
<td>The ID of the AMI. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>Attribute</td>
<td>The AMI attribute. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Valid values:</th>
<th>description</th>
<th>kernel</th>
<th>ramdisk</th>
<th>launchPermission</th>
<th>productCodes</th>
<th>blockDeviceMapping</th>
</tr>
</thead>
</table>

Response Elements

The elements in the following table are wrapped in a DescribeImageAttributeResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>imageId</td>
<td>The ID of the AMI. Type: xsd:string</td>
</tr>
<tr>
<td>launchPermission</td>
<td>A list of launch permissions, each one wrapped in an item element. Type: LaunchPermissionItemType (p. 491)</td>
</tr>
<tr>
<td>productCodes</td>
<td>A list of product codes, each one wrapped in an item element that contains a product code and a product code type. Type: ProductCodeItemType (p. 507)</td>
</tr>
</tbody>
</table>
### Examples

#### Example Request

This example lists the launch permissions for the ami-61a54008 AMI.

```
https://ec2.amazonaws.com/?Action=DescribeImageAttribute
&ImageId=ami-61a54008
&Attribute=launchPermission
&AUTHPARAMS
```

#### Example Response

```
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <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 Request

This example lists the product code for the ami-2bb65342 AMI.

```
https://ec2.amazonaws.com/?Action=DescribeImageAttribute
&ImageId=ami-2bb65342
&Attribute=productCodes
&AUTHPARAMS
```
Example Response

```xml
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/"
   xmlns:a1="http://ec2.amazonaws.com/doc/2012-12-01/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <imageId>ami-2bb65342</imageId>
   <productCodes>
      <item>
         <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
         <type>marketplace</type>
      </item>
   </productCodes>
</DescribeImageAttributeResponse>
```

Related Operations

- DescribeImages (p. 189)
- ModifyImageAttribute (p. 358)
- ResetImageAttribute (p. 403)
DescribleImages

Description

Describes 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.

Launch permissions fall into three categories:

<table>
<thead>
<tr>
<th>Launch Permission</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>public</td>
<td>The owner of the AMI granted launch permissions for the AMI to the all group. All AWS accounts have launch permissions for these AMIs.</td>
</tr>
<tr>
<td>explicit</td>
<td>The owner of the AMI granted launch permissions to a specific AWS account.</td>
</tr>
<tr>
<td>implicit</td>
<td>An AWS account has implicit launch permissions for all the AMIs it owns.</td>
</tr>
</tbody>
</table>

The list of AMIs returned can be modified by specifying AMI IDs, AMI owners, or AWS accounts with launch permissions. If no options are specified, Amazon EC2 returns all AMIs for which you have launch permissions.

If you specify one or more AMI IDs, only AMIs that have the specified IDs are returned. If you specify an invalid AMI ID, an error is returned. If you specify an AMI ID for which you do not have access, it will not be included in the returned results.

If you specify one or more AMI owners, only AMIs from the specified owners and for which you have access are returned. The results can include the account IDs of the specified owners—amazon for AMIs owned by Amazon or self, for AMIs that you own, or marketplace for AMIs from the AWS Marketplace.

Note
For an overview of the AWS Marketplace, go to https://aws.amazon.com/marketplace/help/200900000. For details on how to use the AWS Marketplace, see AWS Marketplace.

If you specify a list users with launch permissions, only AMIs with launch permissions for those users are returned. You can specify account IDs (if you own the AMI(s)), self for AMIs for which you own or have explicit permissions, or all for public AMIs.

Note
Deregistered images are included in the returned results for an unspecified interval after deregistration.
Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ExecutableBy.n</td>
<td>The AMIs for which the specified user ID has explicit launch permissions. The user ID can be an AWS account ID, self to return AMIs for which the sender of the request has explicit launch permissions, or all to return AMIs with public launch permissions. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>ImageId.n</td>
<td>One or more AMI IDs. Type: String Default: Returns all AMIs, or only those otherwise specified.</td>
<td>No</td>
</tr>
<tr>
<td>Owner.n</td>
<td>The AMIs owned by the specified owner. Multiple owner values can be specified. The IDs amazon, aws-marketplace, and self can be used to include AMIs owned by Amazon, AWS Marketplace, or AMIs owned by you, respectively. Type: String Default: None Valid values: amazon</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>aws-marketplace</td>
<td>self</td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names.</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter.</td>
<td>No</td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain images. For example, you can use a filter to specify that you're interested in images that use a specific kernel. You can specify multiple values for a filter. The response includes information for an image only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify images that use a specific kernel and use an Amazon EBS volume as the root device. The response includes information for an image only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of \*amazon?\ searches for the literal string *amazon?\.
The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>architecture</td>
<td>The image architecture. Type: String</td>
</tr>
<tr>
<td>block-device-mapping.delete-on-termination</td>
<td>Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean</td>
</tr>
<tr>
<td>block-device-mapping.device-name</td>
<td>The device name (for example, /dev/sdh) for the Amazon EBS volume. Type: String</td>
</tr>
<tr>
<td>block-device-mapping.snapshot-id</td>
<td>The ID of the snapshot used for the Amazon EBS volume. Type: String</td>
</tr>
<tr>
<td>block-device-mapping.volume-size</td>
<td>The volume size of the Amazon EBS volume, in GiB. Type: Integer</td>
</tr>
<tr>
<td>block-device-mapping.volume-type</td>
<td>The volume type of the Amazon EBS volume. Type: String</td>
</tr>
<tr>
<td>description</td>
<td>The description of the image (provided during image creation). Type: String</td>
</tr>
<tr>
<td>image-id</td>
<td>The ID of the image. Type: String</td>
</tr>
<tr>
<td>image-type</td>
<td>The image type. Type: String</td>
</tr>
<tr>
<td>is-public</td>
<td>Whether the image is public. Type: Boolean</td>
</tr>
<tr>
<td>kernel-id</td>
<td>The kernel ID. Type: String</td>
</tr>
<tr>
<td>manifest-location</td>
<td>The location of the image manifest. Type: String</td>
</tr>
<tr>
<td>name</td>
<td>The name of the AMI (provided during image creation). Type: String</td>
</tr>
<tr>
<td>owner-alias</td>
<td>The AWS account alias (for example, amazon). Type: String</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>owner-id</td>
<td>The AWS account ID of the image owner. Type: String</td>
</tr>
<tr>
<td>platform</td>
<td>The platform. To only list Windows-based AMIs, use windows. Otherwise, leave blank. Type: String Valid value: windows</td>
</tr>
<tr>
<td>product-code</td>
<td>The product code. Type: String</td>
</tr>
<tr>
<td>product-code.type</td>
<td>The type of the product code. Type: String Valid values: devpay</td>
</tr>
<tr>
<td>ramdisk-id</td>
<td>The RAM disk ID. Type: String</td>
</tr>
<tr>
<td>root-device-name</td>
<td>The name of the root device volume (for example, /dev/sda1). Type: String</td>
</tr>
<tr>
<td>root-device-type</td>
<td>The type of the root device volume. Type: String Valid values: ebs</td>
</tr>
<tr>
<td>state</td>
<td>The state of the image. Type: String Valid values: available</td>
</tr>
<tr>
<td>state-reason-code</td>
<td>The reason code for the state change. Type: String</td>
</tr>
<tr>
<td>state-reason-message</td>
<td>The message for the state change. Type: String</td>
</tr>
<tr>
<td>tag-key</td>
<td>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 &quot;tag-key=Purpose&quot; and the filter &quot;tag-value=x&quot;, 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 filter later in this table. For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide. Type: String</td>
</tr>
</tbody>
</table>
Filter Name | Description
---|---
tag-value | The value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String
tag: key | Filters the response based on a specific tag/value combination. Example: To list just the resources that have been assigned tag Purpose=X, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y
virtualization-type | The virtualization type. Type: String Valid values: paravirtual | hvm
hypervisor | The hypervisor type. Type: String Valid values: ovm | xen

Response Elements

The elements in the following table are wrapped in a DescribeImagesResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>imagesSet</td>
<td>A list of images, each one wrapped in an item element. Type: DescribeImagesResponseItemType (p. 452)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example describes the ami-be3adfd7 AMI.

https://ec2.amazonaws.com/?Action=DescribeImages &ImageId.1=ami-be3adfd7 &AUTHPARAMS
Example Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>amazon/getting-started</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>111122223333</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-1a2b3c4d</snapshotId>
            <volumeSize>15</volumeSize>
            <deleteOnTermination>false</deleteOnTermination>
            <volumeType>standard</volumeType>
          </ebs>
        </item>
      </blockDeviceMapping>
      <virtualizationType>paravirtual</virtualizationType>
      <hypervisor>xen</hypervisor>
    </item>
  </imagesSet>
</DescribeImagesResponse>
```

Example Request

This example filters the response to include only the public Windows images with an x86_64 architecture.

```
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
&AUTHPARAMS
```
Example Response

<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <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>111122223333</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 Request

This example returns the results to display images where the owner is aws-marketplace.

https://ec2.amazonaws.com/?Action=DescribeImages
&Owner.0=aws-marketplace
&AUTHPARAMS

Example Response

<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>4a4a27a2-2e7c-475d-b35b-ca822EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>aws-marketplace/example-marketplace-amzn-amd1.1</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>111122223333</imageOwnerId>
      <isPublic>true</isPublic>
      <productCodes>
        <item>
          <productCode>a1b2c3d4e5f6g7h8i9j0k11</productCode>
          <type>marketplace</type>
        </item>
        ...
      </productCodes>
      <architecture>i386</architecture>
      <imageType>machine</imageType>
    </item>
  </imagesSet>
</DescribeImagesResponse>
<kernelId>aki-la2b3c4d</kernelId>
<imageOwnerAlias>aws-marketplace</imageOwnerAlias>
<name>example-marketplace-amzn-ami.1</name>
<description>Amazon Linux AMI i386 EBS</description>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sda1</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sda1</deviceName>
    <ebs>
      <snapshotId>snap-la2b3c4d</snapshotId>
      <volumeSize>8</volumeSize>
      <deleteOnTermination>true</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping>
<virtualizationType>paravirtual</virtualizationType>
<hypervisor>xen</hypervisor>
...
</imagesSet>
</DescribeImagesResponse>

Related Operations

- DescribeInstances (p. 200)
- DescribeImageAttribute (p. 186)
DescribeInstanceAttribute

Description

Describes an attribute of the specified instance. You can specify only one attribute at a time. These are the available attributes:

- **instanceType**—The instance type (for example, `m1.small`). See [Available Instance Types](#) for more information.
- **kernel**—The ID of the kernel associated with the instance
- **ramdisk**—The ID of the RAM disk associated with the instance
- **userData**—MIME, Base64-encoded user data provided to the instance
- **disableApiTermination**—Whether the instance can be terminated using the Amazon EC2 API (`false` means the instance can be terminated with the API)
- **instanceInitiatedShutdownBehavior**—Whether the instance stops or terminates when an instance shutdown is initiated (default is stop)
- **rootDeviceName**—The name of the root device volume.
- **blockDeviceMapping**—The block device mapping.
- **sourceDestCheck**—This attribute exists to enable a Network Address Translation (NAT) instance in a VPC to perform NAT. The attribute controls whether source/destination checking is enabled on the instance. A value of `true` means checking is enabled. The value must be `false` for the instance to perform NAT.
- **groupSet**—The security groups the instance belongs to.
- **productCodes**—The product codes associated with the instance. Each product code contains a product code and a type.
- **ebsOptimized**—Whether the instance is optimized for EBS I/O.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
</table>
| **InstanceId** | The instance ID. Type: String  
Default: None | Yes |
| **Attribute** | The instance attribute. Type: String  
Default: None  
**Valid values**: `instanceType | kernel | ramdisk | userData | disableApiTermination | instanceInitiatedShutdownBehavior | rootDeviceName | blockDeviceMapping | sourceDestCheck | groupSet | productCodes | ebsOptimized | Yes |
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>instanceId</td>
<td>The ID of the instance. Type: xsd:string</td>
</tr>
<tr>
<td>instanceType</td>
<td>The instance type (for example, m1.small), wrapped in a value element. See Available Instance Types for more information. Type: xsd:string</td>
</tr>
<tr>
<td>kernel</td>
<td>The kernel ID, wrapped in a value element. Type: xsd:string</td>
</tr>
<tr>
<td>ramdisk</td>
<td>The RAM disk ID, wrapped in a value element. Type: xsd:string</td>
</tr>
<tr>
<td>userData</td>
<td>MIME, Base64-encoded user data, wrapped in a value element. Type: xsd:string</td>
</tr>
<tr>
<td>disableApiTermination</td>
<td>Indicates whether the instance can be terminated through the Amazon EC2 API. The value is wrapped in a value element. A value of true means you can't terminate the instance using the API (i.e., the instance is &quot;locked&quot;); a value of false means you can. You must modify this attribute before you can terminate any &quot;locked&quot; instances using the API. Type: xsd:boolean</td>
</tr>
<tr>
<td>instanceInitiatedShutdownBehavior</td>
<td>If an instance shutdown is initiated, this determines whether the instance stops or terminates. The value is wrapped in a value element. Type: xsd:string Valid values: stop</td>
</tr>
<tr>
<td>rootDeviceName</td>
<td>The name of the root device (for example, /dev/sda1), wrapped in a value element. Type: xsd:string</td>
</tr>
<tr>
<td>blockDeviceMapping</td>
<td>Any block device mapping entries for the instance, each one wrapped in an item element. Type: InstanceBlockDeviceMappingResponseType (p. 475)</td>
</tr>
<tr>
<td>sourceDestCheck</td>
<td>This attribute exists to enable a Network Address Translation (NAT) instance in a VPC to perform NAT. The attribute 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: xsd:boolean</td>
</tr>
<tr>
<td>groupSet</td>
<td>The security groups the instance belongs to. Each group's information is wrapped in an item element. Type: GroupItemType (p. 470)</td>
</tr>
</tbody>
</table>
### Examples

#### Example Request

This example lists the kernel ID of the i-10a64379 instance.

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-10a64379
&Attribute=kernel
&AUTHPARAMS
```

#### Example Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-10a64379</instanceId>
  <kernel>
    <value>aki-f70657b2</value>
  </kernel>
</DescribeInstanceAttributeResponse>
```

#### Related Operations

- DescribeInstances (p. 200)
- ModifyInstanceAttribute (p. 361)
- ResetInstanceAttribute (p. 405)
DescribeInstances

Description

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 invalid instance ID, 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.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceId.n</td>
<td>One or more instance IDs. Type: String Default: Returns all instances, or only those otherwise specified.</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter. Type: String Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain instances. For example, you can use a filter to specify that you’re interested in instances launched with a specific key pair. You can specify multiple values for a filter. The response includes information for an instance only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify instances that are launched with a specific key pair and use an Amazon EBS volume as the root device. The response includes information for an instance only if it matches all the filters that you specified. If there’s no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of "*amazon\?\" searches for the literal string "amazon?\".

The following table lists the available filters.
### Request Parameters

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| architecture | The instance architecture.  
Type: String  
Valid values: i386 | x86_64 |
| availability-zone | The Availability Zone of the instance.  
Type: String |
| block-device-mapping.attach-time | The attach time for an Amazon EBS volume mapped to the instance (for example, 2010-09-15T17:15:20.000Z)  
Type: DateTime |
| block-device-mapping.delete-on-termination | Indicates whether the Amazon EBS volume is deleted on instance termination.  
Type: Boolean |
| block-device-mapping.device-name | The device name (for example, /dev/sdh) for the Amazon EBS volume.  
Type: String |
| block-device-mapping.status | The status for the Amazon EBS volume.  
Type: String  
Valid values: attaching | attached | detaching | detached |
| block-device-mapping.volume-id | The volume ID of the Amazon EBS volume.  
Type: String |
| client-token | The idempotency token you provided when you launched the instance.  
Type: String |
| dns-name | The public DNS name of the instance.  
Type: String |
| group-id | The ID of the security group for the instance. If the instance is in a VPC, use instance.group-id instead.  
Type: String |
| group-name | The name of the security group for the instance. If the instance is in a VPC, use instance.group-name instead.  
Type: String |
| image-id | The ID of the image used to launch the instance.  
Type: String |
| instance-id | The ID of the instance.  
Type: String |
<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>instance-lifecycle</td>
<td>Indicates whether this is a Spot Instance.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: spot</td>
</tr>
<tr>
<td>instance-state-code</td>
<td>The state of the instance. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented.</td>
</tr>
<tr>
<td></td>
<td>Type: Integer (16-bit unsigned integer)</td>
</tr>
<tr>
<td></td>
<td>Valid values: 0 (pending)</td>
</tr>
<tr>
<td>instance-state-name</td>
<td>The state of the instance.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: pending</td>
</tr>
<tr>
<td>instance-type</td>
<td>The type of instance (for example, m1.small).</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>instance.group-id</td>
<td>The ID of the security group for the instance. If the instance is in a VPC, use group-id instead.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>instance.group-name</td>
<td>The name of the security group for the instance. If the instance is in a VPC, use group-name instead.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>ip-address</td>
<td>The public IP address of the instance.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>kernel-id</td>
<td>The kernel ID.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>key-name</td>
<td>The name of the key pair used when the instance was launched.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>launch-index</td>
<td>When launching multiple instances, this is the index for the instance in the launch group (for example, 0, 1, 2, and so on).</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>launch-time</td>
<td>The time the instance was launched (for example, 2010-08-07T11:54:42.000Z).</td>
</tr>
<tr>
<td></td>
<td>Type: DateTime</td>
</tr>
<tr>
<td>monitoring-state</td>
<td>Indicates whether monitoring is enabled for the instance.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: disabled</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>owner-id</td>
<td>The AWS account ID of the instance owner. Type: String</td>
</tr>
<tr>
<td>placement-group-name</td>
<td>The name of the placement group for the instance. Type: String</td>
</tr>
<tr>
<td>platform</td>
<td>The platform. Use <code>windows</code> if you have Windows based instances; otherwise, leave blank. Type: String. Valid value: <code>windows</code></td>
</tr>
<tr>
<td>private-dns-name</td>
<td>The private DNS name of the instance. Type: String</td>
</tr>
<tr>
<td>private-ip-address</td>
<td>The private IP address of the instance. Type: String</td>
</tr>
<tr>
<td>product-code</td>
<td>The product code associated with the AMI used to launch the instance. Type: String</td>
</tr>
<tr>
<td>product-code.type</td>
<td>The type of product code. Type: String. Valid values: `devpay</td>
</tr>
<tr>
<td>ramdisk-id</td>
<td>The RAM disk ID. Type: String</td>
</tr>
<tr>
<td>reason</td>
<td>The reason for the current state of the instance (for example, shows &quot;User Initiated [date]&quot; when you stop or terminate the instance). Similar to the state-reason-code filter. Type: String</td>
</tr>
<tr>
<td>requester-id</td>
<td>The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on). Type: String</td>
</tr>
<tr>
<td>reservation-id</td>
<td>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. Type: String</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>root-device-name</td>
<td>The name of the root device for the instance (for example, /dev/sda1). Type: String</td>
</tr>
<tr>
<td>root-device-type</td>
<td>The type of root device the instance uses. Type: String Valid values: ebs</td>
</tr>
<tr>
<td>source-dest-check</td>
<td>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. Type: Boolean</td>
</tr>
<tr>
<td>spot-instance-request-id</td>
<td>The ID of the Spot Instance request. Type: String</td>
</tr>
<tr>
<td>state-reason-code</td>
<td>The reason code for the state change. Type: String</td>
</tr>
<tr>
<td>state-reason-message</td>
<td>A message that describes the state change. Type: String</td>
</tr>
<tr>
<td>subnet-id</td>
<td>The ID of the subnet for the instance. Type: String</td>
</tr>
<tr>
<td>tag-key</td>
<td>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 &quot;tag-key=Purpose&quot; and the filter &quot;tag-value=X&quot;, 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 filter later in this table. For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide. Type: String</td>
</tr>
<tr>
<td>tag-value</td>
<td>The value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>tag:&lt;i&gt;key&lt;/i&gt;</td>
<td>Filters the response based on a specific tag/value combination. Example: To list just the resources that have been assigned tag Purpose=X, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</td>
</tr>
<tr>
<td>virtualization-type</td>
<td>The virtualization type of the instance. Type: String Valid values: paravirtual</td>
</tr>
<tr>
<td>vpc-id</td>
<td>The ID of the VPC the instance is running in. Type: String</td>
</tr>
<tr>
<td>hypervisor</td>
<td>The hypervisor type of the instance. Type: String Valid values: ovm</td>
</tr>
<tr>
<td>network-interface.description</td>
<td>The description of the network interface. Type: String</td>
</tr>
<tr>
<td>network-interface.subnet-id</td>
<td>The ID of the subnet for the network interface. Type: String</td>
</tr>
<tr>
<td>network-interface.vpc-id</td>
<td>The ID of the VPC for the network interface. Type: String</td>
</tr>
<tr>
<td>network-interface.network-interface.id</td>
<td>The ID of the network interface. Type: String</td>
</tr>
<tr>
<td>network-interface.owner-id</td>
<td>The ID of the owner of the network interface. Type: String</td>
</tr>
<tr>
<td>network-interface.availability-zone</td>
<td>The availability zone for the network interface. Type: String</td>
</tr>
<tr>
<td>network-interface.requester-id</td>
<td>The requester ID for the network interface. Type: String</td>
</tr>
<tr>
<td>network-interface.requester-managed</td>
<td>Indicates whether the network interface is being managed by AWS. Type: Boolean</td>
</tr>
<tr>
<td>network-interface.status</td>
<td>The status of the network interface. Type: String Valid values: available</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| network-interface.mac-address                   | The MAC address of the network interface. Type: String  
Valid values: available | in-use                                                                                                                                     |
| network-interface.private-dns-name              | The private DNS name of the network interface. Type: String                                                                                     |
| network-interface.source-destination-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. Type: Boolean |
| network-interface.group-id                      | The ID of a security group associated with the network interface. Type: String                                                                    |
| network-interface.group-name                   | The name of a security group associated with the network interface. Type: String                                                                    |
| network-interface.attachment.attachment-id      | The ID of the interface attachment. Type: String                                                                                                 |
| network-interface.attachment.instance-id        | The ID of the instance to which the network interface is attached. Type: String                                                                      |
| network-interface.attachment.instance-owner-id  | The owner ID of the instance to which the network interface is attached. Type: String                                                                       |
| network-interface.addresses.private-ip-address  | The private IP address associated with the network interface. Type: String                                                                          |
| network-interface.attachment.device-index       | The device index to which the network interface is attached. Type: Integer                                                                             |
| network-interface.attachment.status             | The status of the attachment. Type: String  
Valid values: attaching | attached | detaching | detached                                                                 |
| network-interface.attachment.attach-time        | The time that the network interface was attached to an instance. Type: Date                                                                            |
### Filter Name

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>network-interface.attachment.delete-on-termination</td>
<td>Specifies whether the attachment is deleted when an instance is terminated.</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
</tr>
<tr>
<td>network-interface.addresses.primary</td>
<td>Specifies whether the IP address of the network interface is the primary private IP address.</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
</tr>
<tr>
<td>network-interface.addresses.association.public-ip</td>
<td>The ID of the association of an Elastic IP address with a network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>network-interface.addresses.association.ip-owner-id</td>
<td>The owner ID of the private IP address associated with the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>association.public-ip</td>
<td>The address of the Elastic IP address bound to the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>association.ip-owner-id</td>
<td>The owner of the Elastic IP address associated with the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>association.allocation-id</td>
<td>The allocation ID that AWS returned when you allocated the Elastic IP address for your network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>association.association-id</td>
<td>The association ID returned when the network interface was associated with an IP address.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
</tbody>
</table>

### Response Elements

The elements in the following table are wrapped in a `DescribeInstancesResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>reservationSet</td>
<td>A list of reservations, each one wrapped in an <code>item</code> element.</td>
</tr>
<tr>
<td></td>
<td>Type: ReservationInfoType (p. 511)</td>
</tr>
</tbody>
</table>
Examples

Example Request

This example describes the current state of the instances owned by your AWS account.

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

Example Response

<DescribeInstancesResponse xmlns='http://ec2.amazonaws.com/doc/2012-12-01/'>
  <requestId>fdcdcab1-ae5c-489e-9c33-4637c5dda355</requestId>
  <reservationSet>
    <item>
      <reservationId>r-1a2b3c4d</reservationId>
      <ownerId>111122223333</ownerId>
      <groupSet>
        <item>
          <groupId>sg-1a2b3c4d</groupId>
          <groupName>my-security-group</groupName>
        </item>
      </groupSet>
      <instancesSet>
        <item>
          <instanceId>i-1a2b3c4d</instanceId>
          <imageId>ami-1a2b3c4d</imageId>
          <instanceState>
            <code>16</code>
            <name>running</name>
          </instanceState>
          <privateDnsName/>
          <dnsName/>
          <reason/>
          <keyName>gsg-keypair</keyName>
          <amiLaunchIndex>0</amiLaunchIndex>
          <productCodes/>
          <instanceType>c1.medium</instanceType>
          <launchTime>YYYY-MM-DDTHH:MM:SS+0000</launchTime>
          <placement>
            <availabilityZone>us-west-2a</availabilityZone>
            <groupName/>
            <tenancy>default</tenancy>
          </placement>
          <platform>windows</platform>
          <monitoring>
            <state>disabled</state>
          </monitoring>
          <subnetId>subnet-1a2b3c4d</subnetId>
          <vpcId>vpc-1a2b3c4d</vpcId>
          <privateIpAddress>10.0.0.12</privateIpAddress>
          <ipAddress>46.51.219.63</ipAddress>
          <sourceDestCheck>true</sourceDestCheck>
        </item>
      </instancesSet>
    </item>
  </reservationSet>
</DescribeInstancesResponse>
<groupId>sg-1a2b3c4d</groupId>
<groupName>my-security-group</groupName>
</item>
</groupSet>
<architecture>x86_64</architecture>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sda1</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sda1</deviceName>
    <ebs>
      <volumeId>vol-1a2b3c4d</volumeId>
      <status>attached</status>
      <attachTime>YYYY-MM-DDTHH:MM:SS.SSSZ</attachTime>
      <deleteOnTermination>true</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping>
<virtualizationType>hvm</virtualizationType>
<clientToken>ABCDE1234567890123</clientToken>
<tagSet>
  <item>
    <key>Name</key>
    <value>Windows Instance</value>
  </item>
</tagSet>
<hypervisor>xen</hypervisor>
<networkInterfaceSet>
  <item>
    <networkInterfaceId>eni-1a2b3c4d</networkInterfaceId>
    <subnetId>subnet-1a2b3c4d</subnetId>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <description>Primary network interface</description>
    <ownerId>111122223333</ownerId>
    <status>in-use</status>
    <privateIpAddress>10.0.0.12</privateIpAddress>
    <macAddress>1b:2b:3c:4d:5e:6f</macAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-1a2b3c4d</groupId>
        <groupName>my-security-group</groupName>
      </item>
    </groupSet>
    <attachment>
      <attachmentId>eni-attach-1a2b3c4d</attachmentId>
      <deviceIndex>0</deviceIndex>
      <status>attached</status>
      <attachTime>YYYY-MM-DDTHH:MM:SS+0000</attachTime>
      <deleteOnTermination>true</deleteOnTermination>
    </attachment>
    <association>
      <publicIp>46.51.219.63</publicIp>
      <ipOwnerId>111122223333</ipOwnerId>
    </association>
  </item>
</privateIpAddressesSet>
</item>
Amazon Elastic Compute Cloud API Reference
Examples

<primary>true</primary>
<association>
<publicIp>46.51.219.63</publicIp>
<ipOwnerId>111122223333</ipOwnerId>
</association>
</item>
<item>
<privateIpAddress>10.0.0.14</privateIpAddress>
<primary>false</primary>
<association>
<publicIp>46.51.221.177</publicIp>
<ipOwnerId>111122223333</ipOwnerId>
</association>
</item>
</privateIpAddressesSet>
</item>
</networkInterfaceSet>
</item>
</instancesSet>
</item>
<item>
<reservationId>r-2a2b3c4d</reservationId>
<ownerId>111122223333</ownerId>
<groupSet>
<item>
<groupId>sg-2a2b3c4d</groupId>
<groupName>my-security-group-2</groupName>
</item>
</groupSet>
<instancesSet>
<item>
<instanceId>i-2a2b3c4d</instanceId>
<imageId>ami-2a2b3c4d</imageId>
<instanceState>
<code>16</code>
<name>running</name>
</instanceState>
<privateDnsName>ip-10-251-50-35.ec2.internal</privateDnsName>
<dnsName>ec2-67-202-51-223.compute-1.amazonaws.com</dnsName>
<reason/>
<keyName>gsg-keypair</keyName>
<amiLaunchIndex>0</amiLaunchIndex>
<productCodes/>
<instanceType>t1.micro</instanceType>
<launchTime>YYYY-MM-DDTHH:MM:SS+0000</launchTime>
<placement>
<availabilityZone>us-west-2b</availabilityZone>
<groupName/>
<tenancy>default</tenancy>
</placement>
<platform>windows</platform>
<monitoring>
<state>disabled</state>
</monitoring>
<privateIpAddress>10.139.34.251</privateIpAddress>
<ipAddress>122.248.233.255</ipAddress>
<groupSet>
<item>

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Example Request

This example filters the response to include only the m1.small or m1.large instances that have an Amazon EBS volume that is both attached and set to delete on termination.

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 Response

<DescribeInstancesResponse xmlns='http://ec2.amazonaws.com/doc/2012-12-01/'>
  <requestId>fcdccabi-ae5c-489e-9c33-4637c5dda355</requestId>
  <reservationSet>
    <item>
      <!-- XML content -->
    </item>
  </reservationSet>
</DescribeInstancesResponse>
<reservationId>r-1a2b3c4d</reservationId>
<ownerId>111122223333</ownerId>
<groupSet>
  <item>
    <groupId>sg-1a2b3c4d</groupId>
    <groupName>my-security-group</groupName>
  </item>
</groupSet>
<instancesSet>
  <item>
    <reservationId>r-2a2b3c4d</reservationId>
    <ownerId>111122223333</ownerId>
    <groupSet>
      <item>
        <groupId>sg-2a2b3c4d</groupId>
        <groupName>my-security-group-2</groupName>
      </item>
    </groupSet>
    <instancesSet>
      <item>
        <instanceId>i-2a2b3c4d</instanceId>
        <imageId>ami-2a2b3c4d</imageId>
        <instanceState>
          <code>16</code>
          <name>running</name>
        </instanceState>
        <privateDnsName>ip-10-251-50-35.ec2.internal</privateDnsName>
        <dnsName>ec2-67-202-51-223.compute-1.amazonaws.com</dnsName>
        <keyName>gsg-keypair</keyName>
        <amiLaunchIndex>0</amiLaunchIndex>
        <instanceType>m1.large</instanceType>
        <launchTime>YYYY-MM-DDTHH:MM:SS+0000</launchTime>
        <placement>
          <availabilityZone>us-west-2b</availabilityZone>
          <groupName/>
          <tenancy>default</tenancy>
        </placement>
        <platform>windows</platform>
        <monitoring>
          <state>disabled</state>
        </monitoring>
        <privateIpAddress>10.139.34.251</privateIpAddress>
        <ipAddress>122.248.233.255</ipAddress>
        <groupSet>
          <item>
            <groupId>sg-2a2b3c4d</groupId>
            <groupName>my-security-group</groupName>
          </item>
        </groupSet>
        <architecture>x86_64</architecture>
        <rootDeviceType>ebs</rootDeviceType>
        <rootDeviceName>/dev/sdal</rootDeviceName>
        <blockDeviceMapping>
          <item>
            <deviceName>/dev/sdal</deviceName>
          </item>
        </blockDeviceMapping>
      </item>
    </instancesSet>
  </item>
</instancesSet>
Example Request

The following example describes an instance running in a VPC with instance ID i-1a2b3c4d.

https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=instance-id
&Filter.1.Value.1=i-1a2b3c4d
&AUTHPARAMS

Example Response

<DescribeInstancesResponse xmlns='http://ec2.amazonaws.com/doc/2012-12-01/'>
<requestId>fdcdcab1-ae5c-489e-9c33-4637c5dda355</requestId>
<reservationSet>
  <item>
    <reservationId>r-1a2b3c4d</reservationId>
    <ownerId>111122223333</ownerId>
    <groupSet>
      <item>
        <groupId>sg-1a2b3c4d</groupId>
        <groupName>my-security-group</groupName>
      </item>
    </groupSet>
    <instancesSet>
      <item>
        <instanceId>i-1a2b3c4d</instanceId>
        <imageId>ami-1a2b3c4d</imageId>
        <instanceState>
          <code>16</code>
          <name>running</name>
        </instanceState>
        <privateDnsName/>
      </item>
    </instancesSet>
  </item>
</reservationSet>
</DescribeInstancesResponse>
<dnsName/>
<reason/>
<keyName>gsg-keypair</keyName>
<amiLaunchIndex>0</amiLaunchIndex>
<productCodes/>
<instanceType>c1.medium</instanceType>
<launchTime>YYYY-MM-DDTHH:MM:SS+0000</launchTime>
<placement>
  <availabilityZone>us-west-2a</availabilityZone>
  <groupName/>
  <tenancy>default</tenancy>
</placement>
<platform>windows</platform>
<monitoring>
  <state>disabled</state>
</monitoring>
<subnetId>subnet-1a2b3c4d</subnetId>
<vpcId>vpc-1a2b3c4d</vpcId>
<privateIpAddress>10.0.0.12</privateIpAddress>
<ipAddress>46.51.219.63</ipAddress>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-1a2b3c4d</groupId>
    <groupName>my-security-group</groupName>
  </item>
</groupSet>
<architecture>x86_64</architecture>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sda1</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sda1</deviceName>
    <ebs>
      <volumeId>vol-1a2b3c4d</volumeId>
      <status>attached</status>
      <attachTime>YYYY-MM-DDTHH:MM:SS.SSSZ</attachTime>
      <deleteOnTermination>true</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping>
<virtualizationType>hvm</virtualizationType>
<clientToken>ABCDE1234567890123</clientToken>
<tagSet>
  <item>
    <key>Name</key>
    <value>Windows Instance</value>
  </item>
</tagSet>
<hypervisor>xen</hypervisor>
<networkInterfaceSet>
  <item>
    <networkInterfaceId>eni-1a2b3c4d</networkInterfaceId>
    <subnetId>subnet-1a2b3c4d</subnetId>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <description>Primary network interface</description>
    <ownerId>111122223333</ownerId>
    <status>in-use</status>
  </item>
</networkInterfaceSet>
<privateIpAddress>10.0.0.12</privateIpAddress>
<macAddress>1b:2b:3c:4d:5e:6f</macAddress>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-1a2b3c4d</groupId>
    <groupName>my-security-group</groupName>
  </item>
</groupSet>
<attachment>
  <attachmentId>eni-attach-1a2b3c4d</attachmentId>
  <deviceIndex>0</deviceIndex>
  <status>attached</status>
  <attachTime>YYYY-MM-DDTHH:MM:SS+0000</attachTime>
  <deleteOnTermination>true</deleteOnTermination>
</attachment>
<association>
  <publicIp>46.51.219.63</publicIp>
  <ipOwnerId>111122223333</ipOwnerId>
</association>
<privateIpAddressesSet>
  <item>
    <privateIpAddress>10.0.0.12</privateIpAddress>
    <primary>true</primary>
    <association>
      <publicIp>46.51.219.63</publicIp>
      <ipOwnerId>111122223333</ipOwnerId>
    </association>
  </item>
  <item>
    <privateIpAddress>10.0.0.14</privateIpAddress>
    <primary>false</primary>
    <association>
      <publicIp>46.51.221.177</publicIp>
      <ipOwnerId>111122223333</ipOwnerId>
    </association>
  </item>
</privateIpAddressesSet>
</networkInterfaceSet>
</item>
</reservationSet>
</DescribeInstancesResponse>

Related Operations

- RunInstances (p. 417)
- StopInstances (p. 431)
- StartInstances (p. 429)
- TerminateInstances (p. 433)
DescribeInstanceStatus

Description

Describes the status of one or more Amazon EC2 instances, including any scheduled events. Instance status has two main components:

- System Status reports impaired functionality that stems from issues related to the systems that support an instance, such as hardware failures and network connectivity problems. The DescribeInstanceStatus response elements report such problems as impaired reachability.

- Instance Status reports impaired functionality that arises from problems internal to the instance. The DescribeInstanceStatus response elements report such problems as impaired reachability.

Instance status provides information about four types of scheduled events for an instance that may require your attention:

- Scheduled Reboot: When Amazon EC2 determines that an instance must be rebooted, the instance's status will return one of two event codes: system-reboot or instance-reboot. System reboot commonly occurs if certain maintenance or upgrade operations require a reboot of the underlying host that supports an instance. Instance reboot commonly occurs if the instance must be rebooted, rather than the underlying host. Rebooting events include a scheduled start and end time.

- System Maintenance: When Amazon EC2 determines that an instance requires maintenance that requires power or network impact, the instance's status will return an event code called system-maintenance. System maintenance is either power maintenance or network maintenance. For power maintenance, your instance will be unavailable for a brief period of time and then rebooted. For network maintenance, your instance will experience a brief loss of network connectivity. System maintenance events include a scheduled start and end time. You will also be notified by email if one of your instances is set for system maintenance. The email message indicates when your instance is scheduled for maintenance.

- Scheduled Retirement: When Amazon EC2 determines that an instance must be shut down, the instance's status returns an event code called instance-retirement. Retirement commonly occurs when the underlying host is degraded and must be replaced. Retirement events include a scheduled start and end time. You will also be notified by email if one of your instances is set to retiring. The email message indicates when your instance will be permanently retired.

- Scheduled Stop: When Amazon EC2 determines that an instance must be shut down, the instance's status returns an event code called instance-stop. Stop events include a scheduled start and end time. You will also be notified by email if one of your instances is set to stop. The email message indicates when your instance will be stopped.

When your instance is retired, it will either be terminated (if its root device type is the instance-store) or stopped (if its root device type is an EBS volume). Instances stopped due to retirement will not be restarted, but you can do so manually. You can also avoid retirement of EBS-backed instances by manually restarting your instance when its event code is instance-retirement. This ensures that your instance is started on a different underlying host.
Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceId</td>
<td>The list of instance IDs. If not specified, all instances are described.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constraints: Maximum 100 explicitly specified instance IDs.</td>
<td></td>
</tr>
<tr>
<td>IncludeAllInstances</td>
<td>When true, returns the health status for all instances (for example, running, stopped, pending, shutting down). When false, returns only the health status for running instances.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: false</td>
<td></td>
</tr>
<tr>
<td>MaxResults</td>
<td>The maximum number of paginated instance items per response.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: Integer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: 1000</td>
<td></td>
</tr>
<tr>
<td>NextToken</td>
<td>The next paginated set of results to return.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain instances. For example, you can use a filter to specify that you’re interested in instances in a specific Availability Zone. You can specify multiple values for a filter. The response includes information for an instance only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify instances that are in a specific Availability Zone and have a status of retiring. The response includes information for an instance only if it matches all the filters that you specified. If there’s no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of \*amazon\?\ searches for the literal string *amazon?\.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>availability-zone</td>
<td>The Availability Zone of the instance.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>event.code</td>
<td>The code identifying the type of event. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: instance-reboot</td>
</tr>
<tr>
<td>event.description</td>
<td>A description of the event. Type: String</td>
</tr>
<tr>
<td>event.not-after</td>
<td>The latest end time for the scheduled event. Type: DateTime</td>
</tr>
<tr>
<td>event.not-before</td>
<td>The earliest start time for the scheduled event. Type: DateTime</td>
</tr>
<tr>
<td>instance-state-name</td>
<td>The state of the instance. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: pending</td>
</tr>
<tr>
<td>instance-state-code</td>
<td>A code representing the state of the instance. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented. Type: Integer (16-bit unsigned integer) Valid values: 0 (pending)</td>
</tr>
<tr>
<td>system-status.status</td>
<td>The system status of the instance. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: ok</td>
</tr>
<tr>
<td>system-status.reachability</td>
<td>Filters on system status where the name is reachability. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: passed</td>
</tr>
<tr>
<td>instance-status.status</td>
<td>The status of the instance. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: ok</td>
</tr>
<tr>
<td>instance-status.reachability</td>
<td>Filters on instance status where the name is reachability. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: passed</td>
</tr>
</tbody>
</table>
Response Elements

The elements in the following table are wrapped in a `DescribeInstanceStatusResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: <code>xsd:string</code></td>
</tr>
<tr>
<td>instanceStatusSet</td>
<td>A set of <code>InstanceStatusItemType</code> (p. 486) elements that describe the status of each instance.</td>
</tr>
<tr>
<td>nextToken</td>
<td>The next paginated set of results to return. Type: <code>xsd:string</code></td>
</tr>
</tbody>
</table>

Examples

Example Request

This example returns instance status descriptions for all instances.

https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&Version=2012-12-01
&AuthParams

Example Request

This example returns instance status descriptions for the specified instances.

https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&InstanceId.0=i-1a2b3c4d
&InstanceId.1=i-2a2b3c4d
&Version=2012-12-01
&AuthParams

Example Request

This example returns instance status descriptions for all instances specified by supported `DescribeInstanceStatus` filters.

https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&Filter.0.Name=system-status.reachability
&Filter.0.Value.failed
&Version=2012-12-01
&AuthParams
Example Response

<DescribeInstanceStatusResponse xmlns='http://ec2.amazonaws.com/doc/2012-12-01/'>
  <requestId>3be1508e-c444-4fef-89cc-0b1223c4f02fEXAMPLE</requestId>
  <instanceStatusSet>
    <item>
      <instanceId>i-1a2b3c4d</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>
      <instanceId>i-2a2b3c4d</instanceId>
      <availabilityZone>us-east-1d</availabilityZone>
      <instanceState>
        <code>16</code>
        <name>running</name>
      </instanceState>
      <systemStatus>
        <status>ok</status>
        <details>
          <item>
            <name>reachability</name>
            <status>passed</status>
          </item>
        </details>
      </systemStatus>
    </item>
  </instanceStatusSet>
  <eventsSet>
    <code>instance-retirement</code>
    <notBefore>YYYY-MM-DDTHH:MM:SS+0000</notBefore>
    <notAfter>YYYY-MM-DDTHH:MM:SS+0000</notAfter>
    <description>
      The instance is running on degraded hardware
    </description>
  </eventsSet>
</DescribeInstanceStatusResponse>
<item>
  <id>i-4a2b3c4d</id>
  <availabilityZone>us-east-1c</availabilityZone>
  <instanceStatus>
    <code>16</code>
    <name>running</name>
    <systemStatus>
      <status>ok</status>
      <details>
        <item>
          <name>reachability</name>
          <status>passed</status>
        </item>
      </details>
    </systemStatus>
  </instanceStatus>
</item>

<item>
  <id>i-3a2b3c4d</id>
  <availabilityZone>us-east-1c</availabilityZone>
  <instanceStatus>
    <code>16</code>
    <name>running</name>
    <systemStatus>
      <status>ok</status>
      <details>
        <item>
          <name>reachability</name>
          <status>passed</status>
        </item>
      </details>
    </systemStatus>
  </instanceStatus>
</item>

<eventsSet>
  <code>instance-reboot</code>
  <notBefore>YYYY-MM-DDTHH:MM:SS+0000</notBefore>
  <notAfter>YYYY-MM-DDTHH:MM:SS+0000</notAfter>
  <description>
    The instance is scheduled for a reboot
  </description>
</eventsSet>
<name>reachability</name>
<status>passed</status>
</item>
</details>
</systemStatus>
<instanceStatus>
<status>insufficient-data</status>
<details>
<item>
<name>reachability</name>
<status>insufficient-data</status>
</item>
</details>
</instanceStatus>
</item>
</instanceStatusSet>
</DescribeInstanceStatusResponse>
Describes one or more of your Internet gateways.

**Request Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InternetGatewayId.n</td>
<td>One or more Internet gateway IDs. Type: String</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter. Type: String Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>

**Supported Filters**

You can specify filters so that the response includes information for only certain Internet gateways. For example, you can use a filter to specify that you're interested in the Internet gateways with particular tags. You can specify multiple values for a filter. The response includes information for an Internet gateway only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify Internet gateways that are attached to a specific VPC and have a specific tag. The response includes information for an Internet gateway only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `*amazon\?\` searches for the literal string `*amazon?`.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>attachment.state</td>
<td>The current state of the attachment between the gateway and the VPC. Returned only if a VPC is attached. Type: String Valid value: available</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>attachment.vpc-id</td>
<td>The ID of an attached VPC.</td>
</tr>
<tr>
<td>internet-gateway-id</td>
<td>The ID of the Internet gateway.</td>
</tr>
<tr>
<td>tag-key</td>
<td>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 &quot;tag-key=Purpose&quot; and the filter &quot;tag-value=X&quot;, 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 filter later in this table. For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide. Type: String</td>
</tr>
<tr>
<td>tag-value</td>
<td>The value of a tag assigned to the resource. This filter is independent of the tag-key filter.</td>
</tr>
<tr>
<td>tag: key</td>
<td>Filters the response based on a specific tag/value combination. Example: To list just the resources that have been assigned tag Purpose=X, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in a `DescribeInternetGatewaysResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>internetGatewaysSet</td>
<td>A list of Internet gateways, each one wrapped in an item element. Type: <code>InternetGatewayType</code> (p. 489)</td>
</tr>
</tbody>
</table>

**Examples**

**Example Request**

This example describes your Internet gateways.
Example Response

```xml
<DescribeInternetGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <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>
```

Related Operations

- CreateInternetGateway (p. 69)
- DeleteInternetGateway (p. 126)
- DetachInternetGateway (p. 25)
- DetachInternetGateway (p. 327)
DescribeKeyPairs

Description

Describes one or more of your key pairs.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>KeyName.n</td>
<td>One or more key pair names. Type: String</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Default: Describes all key pairs you own, or only those otherwise specified.</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain key pairs. For example, you can use a filter to specify that you're interested in key pairs whose names include the string Dave. You can specify multiple values for a filter. The response includes information for a key pair only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify key pairs whose names include the string Dave and whose fingerprint is a specific value. The response includes information for a key pair only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of \\*amazon\\ searches for the literal string *amazon?\.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>fingerprint</td>
<td>The fingerprint of the key pair.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>key-name</td>
<td>The name of the key pair.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
</tbody>
</table>
Response Elements

The elements in the following table are wrapped in a DescribeKeyPairsResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>keySet</td>
<td>A list of key pairs, each one wrapped in an item element.</td>
</tr>
<tr>
<td></td>
<td>Type: DescribeKeyPairsResponseType (p. 454)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example describes the keypair with name gsg-keypair.

https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&KeyName.1=gsg-keypair
&AUTHPARAMS

Example Response

<DescribeKeyPairsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <keySet>
    <item>
      <keyName>gsg-keypair</keyName>
      <keyFingerprint>
        00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
      </keyFingerprint>
    </item>
  </keySet>
</DescribeKeyPairsResponse>

Example Request

This example filters the response to include only key pairs whose names include the string Dave.

https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&Filter.1.Name=key-name
&Filter.1.Value.1=*Dave*
&AUTHPARAMS

Related Operations

- CreateKeyPair (p. 71)
- ImportKeyPair (p. 353)
• DeleteKeyPair (p. 128)
DescribeNetworkAcls

Description

Describes the network ACLs in your VPC.

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
</table>
| NetworkAclId.n | One or more network ACL IDs.  
Type: String  
Default: None | No       |
| Filter.n.Name  | The name of a filter. See the table in the Supported Filters section for a list of supported  
filter names.  
Type: String  
Default: None | No       |
| Filter.n.Value.m | A value for the filter. See the table in the Supported Filters section for a list of supported  
values for each filter.  
Type: String  
Default: None | No       |

Supported Filters

You can specify filters so that the response includes information for only certain ACLs. For example, you can use a filter to specify that you're interested in the ACLs associated with a particular subnet. You can specify multiple values for a filter. The response includes information for an ACL only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify ACLs that are associated with a specific subnet and have an egress entry that denies traffic to a specific port. The response includes information for an ACL only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of "*amazon?\" searches for the literal string "*amazon?\".

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| association.association-id  | The ID of an association ID for the ACL.  
Type: String |
<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>association.network-acl-id</td>
<td>The ID of the network ACL involved in the association.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>association.subnet-id</td>
<td>The ID of the subnet involved in the association.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>default</td>
<td>Indicates whether the ACL is the default network ACL for the VPC.</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
</tr>
<tr>
<td>entry.cidr</td>
<td>The CIDR range specified in the entry.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>entry.egress</td>
<td>Indicates whether the entry applies to egress traffic.</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
</tr>
<tr>
<td>entry.icmp.code</td>
<td>The ICMP code specified in the entry, if any.</td>
</tr>
<tr>
<td></td>
<td>Type: Integer</td>
</tr>
<tr>
<td>entry.icmp.type</td>
<td>The ICMP type specified in the entry, if any.</td>
</tr>
<tr>
<td></td>
<td>Type: Integer</td>
</tr>
<tr>
<td>entry.port-range.from</td>
<td>The start of the port range specified in the entry.</td>
</tr>
<tr>
<td></td>
<td>Type: Integer</td>
</tr>
<tr>
<td>entry.port-range.to</td>
<td>The end of the port range specified in the entry.</td>
</tr>
<tr>
<td></td>
<td>Type: Integer</td>
</tr>
<tr>
<td>entry.protocol</td>
<td>The protocol specified in the entry.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: tcp</td>
</tr>
<tr>
<td>entry.rule-action</td>
<td>Indicates whether the entry allows or denies the matching traffic.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: allow</td>
</tr>
<tr>
<td>entry.rule-number</td>
<td>The number of an entry (i.e., rule) in the ACL’s set of entries.</td>
</tr>
<tr>
<td></td>
<td>Type: Integer</td>
</tr>
<tr>
<td>network-acl-id</td>
<td>The ID of the network ACL.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
</tbody>
</table>
### Response Elements

The elements in the following table are wrapped in a `DescribeNetworkAclsResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td>vpc-id</td>
<td>The ID of the VPC for the network ACL.</td>
</tr>
</tbody>
</table>

For more information about tags, see [Tagging Your Resources](https://docs.aws.amazon.com/AmazonElasticComputeCloud/latest/UserGuide/) in the Amazon Elastic Compute Cloud User Guide.

Type: String

#### Filter Name

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tag-key</td>
<td>The key of a tag assigned to the resource. This filter is independent of the <code>tag-value</code> filter. For example, if you use both the filter &quot;tag-key=Purpose&quot; and the filter &quot;tag-value=X&quot;, you get any resources assigned both the tag key <code>Purpose</code> (regardless of what the tag’s value is), and the tag value <code>X</code> (regardless of what the tag’s key is). If you want to list only resources where <code>Purpose</code> is <code>X</code>, see the <code>tag:key</code> filter later in this table. For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide. Type: String</td>
</tr>
<tr>
<td>tag-value</td>
<td>The value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String</td>
</tr>
<tr>
<td>tag:key</td>
<td>Filters the response based on a specific tag/value combination. Example: To list just the resources that have been assigned tag <code>Purpose=X</code>, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources that have been assigned tag <code>Purpose=X OR Purpose=Y</code>, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</td>
</tr>
<tr>
<td>vpc-id</td>
<td>The ID of the VPC for the network ACL. Type: String</td>
</tr>
</tbody>
</table>
Examples

Example Request

This example describes all the network ACLs in your VPC.

https://ec2.amazonaws.com/?Action=DescribeNetworkAcls

Example Response

The first ACL in the returned list is the VPC's default ACL.

```xml
<DescribeNetworkAclsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <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>
        <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/>
  </item>
  <item>
    <networkAclId>acl-5d659634</networkAclId>
  </item>
</DescribeNetworkAclsResponse>
```
<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>
  <item>
    <ruleNumber>32767</ruleNumber>
    <protocol>all</protocol>
    <ruleAction>deny</ruleAction>
    <egress>false</egress>
    <cidrBlock>0.0.0.0/0</cidrBlock>
  </item>
</entrySet>
<associationSet>
  <item>
    <networkAclAssociationId>aclassoc-5c659635</networkAclAssociationId>
    <networkAclId>acl-5d659634</networkAclId>
    <subnetId>subnet-ff669596</subnetId>
  </item>
  <item>
    <networkAclAssociationId>aclassoc-5c659636</networkAclAssociationId>
    <networkAclId>acl-5d659634</networkAclId>
    <subnetId>subnet-ff669597</subnetId>
  </item>
</associationSet>
Related Operations

- CreateNetworkAcl (p. 73)
- DeleteNetworkAcl (p. 130)
- ReplaceNetworkAclAssociation (p. 383)
- CreateNetworkAclEntry (p. 75)
- DeleteNetworkAclEntry (p. 132)
- ReplaceNetworkAclEntry (p. 385)
DescribeNetworkInterfaceAttribute

Description

Describes a network interface attribute. You can specify only one attribute at a time.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetworkInterfaceId</td>
<td>The ID of the network interface. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>Attribute</td>
<td>The attribute of the network interface. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Valid values: description</td>
<td>groupSet</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DescribeNetworkInterfaceAttributeResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>networkInterfaceId</td>
<td>The ID of the network interface. Type: xsd:string</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example describes the attributes of a network interface.

http://ec2.us-east-1.amazonaws.com/?Action=DescribeNetworkInterfaceAttribute&NetworkInterfaceId=eni-686ea200&Attribute=sourceDestCheck&AUTH_PARAMS

Example Response

  <requestId>7a20c6b2-d71c-45fb-bba7-37306850544b</requestId>
</DescribeNetworkInterfaceAttributeResponse>
<networkInterfaceId>eni-686ea200</networkInterfaceId>
<sourceDestCheck>
  <value>true</value>
</sourceDestCheck>
</DescribeNetworkInterfaceAttributeResponse>

Related Operations

- AttachNetworkInterface (p. 27)
- DetachNetworkInterface (p. 329)
- CreateNetworkInterface (p. 78)
- DeleteNetworkInterface (p. 134)
- DescribeNetworkInterfaces (p. 237)
- ModifyNetworkInterfaceAttribute (p. 364)
- ResetNetworkInterfaceAttribute (p. 407)
DescribeNetworkInterfaces

Description

Describes one or more of your network interfaces.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetworkInterfaceId.n</td>
<td>One or more network interface IDs.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain network interfaces. For example, you can use a filter to specify that you’re interested in network interfaces launched in a specific Availability Zone. You can specify multiple values for a filter. The response includes information for a network interface only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify network interfaces in a specific Availability Zone, and that have a specific owner ID. The response includes information for a network interface only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of \*amazon\?\ searches for the literal string *amazon?\

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>addresses.private-ip-address</td>
<td>The private IP addresses associated with the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>addresses.primary</td>
<td>Whether the private IP address is the primary IP address associated with the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
</tr>
<tr>
<td></td>
<td>Valid values: true</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>addresses.association.public-ip</td>
<td>The association ID returned when the network interface was associated with the Elastic IP address.</td>
</tr>
<tr>
<td>addresses.association.owner-id</td>
<td>The owner ID of the addresses associated with the network interface.</td>
</tr>
<tr>
<td>association.association-id</td>
<td>The association ID returned when the network interface was associated with an IP address.</td>
</tr>
<tr>
<td>association.allocation-id</td>
<td>The allocation ID that AWS returned when you allocated the Elastic IP address for your network interface.</td>
</tr>
<tr>
<td>association.ip-owner-id</td>
<td>The owner of the Elastic IP address associated with the network interface.</td>
</tr>
<tr>
<td>association.public-ip</td>
<td>The address of the Elastic IP address bound to the network interface.</td>
</tr>
<tr>
<td>attachment.attachment-id</td>
<td>The ID of the interface attachment.</td>
</tr>
<tr>
<td>attachment.instance-id</td>
<td>The ID of the instance to which the network interface is attached.</td>
</tr>
<tr>
<td>attachment.instance-owner-id</td>
<td>The owner ID of the instance to which the network interface is attached.</td>
</tr>
<tr>
<td>attachment.device-index</td>
<td>The device index to which the network interface is attached.</td>
</tr>
<tr>
<td>attachment.status</td>
<td>The status of the attachment.</td>
</tr>
<tr>
<td>attachment.attach.time</td>
<td>The time that the network interface was attached to an instance.</td>
</tr>
<tr>
<td>attachment.delete-on-termination</td>
<td>Indicates whether the attachment is deleted when an instance is terminated.</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>availability-zone</td>
<td>The Availability Zone of the network interface. Type: String</td>
</tr>
<tr>
<td>description</td>
<td>The description of the network interface. Type: String</td>
</tr>
<tr>
<td>group-id</td>
<td>The ID of a security group associated with the network interface. Type: String</td>
</tr>
<tr>
<td>group-name</td>
<td>The name of a security group associated with the network interface. Type: String</td>
</tr>
<tr>
<td>mac-address</td>
<td>The MAC address of the network interface. Type: String</td>
</tr>
<tr>
<td>network-interface-id</td>
<td>The ID of the network interface. Type: String</td>
</tr>
<tr>
<td>owner-id</td>
<td>The AWS account ID of the network interface owner. Type: String</td>
</tr>
<tr>
<td>private-ip-address</td>
<td>The private IP address or addresses of the network interface. Type: String</td>
</tr>
<tr>
<td>private-dns-name</td>
<td>The private DNS name of the network interface. Type: String</td>
</tr>
<tr>
<td>requester-id</td>
<td>The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on). Type: String</td>
</tr>
<tr>
<td>requester-managed</td>
<td>Indicates whether the network interface is being managed by an AWS service (for example, AWS Management Console, Auto Scaling, and so on). Type: Boolean</td>
</tr>
<tr>
<td>source-dest-check</td>
<td>Indicates whether the network interface performs source/destination checking. A value of <code>true</code> means checking is enabled, and <code>false</code> means checking is disabled. The value must be <code>false</code> for the network interface to perform Network Address Translation (NAT) in your VPC. Type: Boolean</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>status</td>
<td>The status of the network interface. If the network interface is not attached to an instance, the status shows available; if a network interface is attached to an instance the status shows in-use. Type: String. Valid values: available</td>
</tr>
<tr>
<td>subnet-id</td>
<td>The ID of the subnet for the network interface. Type: String</td>
</tr>
<tr>
<td>tag-key</td>
<td>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 &quot;tag-key=Purpose&quot; and the filter &quot;tag-value=X&quot;, 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 filter later in this table. For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide. Type: String</td>
</tr>
<tr>
<td>tag-value</td>
<td>The value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String</td>
</tr>
<tr>
<td>tag: key</td>
<td>Filters the response based on a specific tag/value combination. Example: To list just the resources that have been assigned tag Purpose=X, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</td>
</tr>
<tr>
<td>vpc-id</td>
<td>The ID of the VPC for the network interface. Type: String</td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in a `DescribeNetworkInterfacesResponse` element.
### Examples

#### Example Request

This example describes network interfaces.

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

#### Example Response

```xml
<DescribeNetworkInterfacesResponse xmlns='http://ec2.amazonaws.com/doc/2012-12-01/'>
  <requestId>fc45294c-006b-457b-bab9-012f5b3b0e40</requestId>
  <networkInterfaceSet>
    <item>
      <networkInterfaceId>eni-0f62d866</networkInterfaceId>
      <subnetId>subnet-c53c87ac</subnetId>
      <vpcId>vpc-cc3c87a5</vpcId>
      <availabilityZone>ap-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-22197876</instanceId>
        <instanceOwnerId>053230519467</instanceOwnerId>
        <deviceIndex>0</deviceIndex>
        <status>attached</status>
        <attachTime>2012-07-01T21:45:27.000Z</attachTime>
        <deleteOnTermination>true</deleteOnTermination>
      </attachment>
    </item>
  </networkInterfaceSet>
</DescribeNetworkInterfacesResponse>
```
<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>

<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-886401dc</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>
Related Operations

- AttachNetworkInterface (p. 27)
- DetachNetworkInterface (p. 329)
- CreateNetworkInterface (p. 78)
- DeleteNetworkInterface (p. 134)
- DescribeNetworkInterfaceAttribute (p. 235)
- ModifyNetworkInterfaceAttribute (p. 364)
- ResetNetworkInterfaceAttribute (p. 407)
DescribePlacementGroups

Description

Describes one or more of your placement groups. For more information about placement groups and cluster instances, see Using Cluster Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>GroupName.n</td>
<td>One or more placement group names. Type: String Default: Describes all your placement groups, or only those otherwise specified.</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter. Type: String Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filter so that the response includes information for only certain placement groups. For example, you can use a filter to specify that you're interested in groups in the deleted state. You can specify multiple values for a filter. The response includes information for a placement group only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify group's that are in the deleted state and have a name that includes the string Project. The response includes information for a group only if it matches all your filters. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of \*amazon\?\ searches for the literal string *amazon?\.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>group-name</td>
<td>The name of the placement group. Type: String</td>
</tr>
<tr>
<td>state</td>
<td>The state of the placement group. Type: String Valid values: pending</td>
</tr>
</tbody>
</table>
Filter Name | Description
---|---
strategy | The strategy of the placement group. Type: String Valid value: `cluster`

**Response Elements**

The elements in the following table are wrapped in a `DescribePlacementGroupsResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: <code>xsd:string</code></td>
</tr>
<tr>
<td>placementGroupSet</td>
<td>A list of placement groups, each one wrapped in an <code>item</code> element. Type: <code>PlacementGroupInfoType</code> (p. 502)</td>
</tr>
</tbody>
</table>

**Examples**

**Example Request**

This example describes the placement group named `XYZ-cluster`.

https://ec2.amazonaws.com/?Action=DescribePlacementGroups &GroupName.1=XYZ-cluster &AUTHPARAMS

**Example Response**

```xml
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
  <placementGroupSet>
    <item>
      <groupName>XYZ-cluster</groupName>
      <strategy>cluster</strategy>
      <state>available</state>
    </item>
  </placementGroupSet>
</DescribePlacementGroupsResponse>
```

**Example Request**

This example filters the response to include only placement groups that include the string `Project` in the name.

https://ec2.amazonaws.com/?Action=DescribePlacementGroups &Filter.1.Name=group-name
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
  <placementGroupSet>
    <item>
      <groupName>Project-cluster</groupName>
      <strategy>cluster</strategy>
      <state>available</state>
    </item>
  </placementGroupSet>
</DescribePlacementGroupsResponse>

Related Operations

- CreatePlacementGroup (p. 83)
- DeletePlacementGroup (p. 136)
DescribeRegions

Description

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>RegionName.n</td>
<td>One or more region names.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: Describes all regions available to the account.</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain regions.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of *amazon??\ searches for the literal string *amazon?\.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>endpoint</td>
<td>The endpoint of the region (for example, ec2.us-east-1.amazonaws.com).</td>
</tr>
<tr>
<td>region-name</td>
<td>The name of the region. Type: String</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DescribeRegionsResponse element.
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td>regionInfo</td>
<td>A list of regions, each one wrapped in an item element.</td>
</tr>
</tbody>
</table>

**Examples**

**Example Request**

This example displays information about all regions.

https://ec2.amazonaws.com/?Action=DescribeRegions

**Example Request**

This example displays information about just the specified regions.

https://ec2.amazonaws.com/?Action=DescribeRegions
&RegionName.1=us-east-1
&RegionName.2=eu-west-1

**Example Response**

```xml
<DescribeRegionsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <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>

**Example Request**

This example displays information about all regions that have the string *ap* in the endpoint.

https://ec2.amazonaws.com/?Action=DescribeRegions
&Filter.1.Name=endpoint
&Filter.1.Value.1=*ap*

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Example Response

```
<DescribeRegionsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <regionInfo>
    <item>
      <regionName>ap-southeast-1</regionName>
      <regionEndpoint>ec2.ap-southeast-1.amazonaws.com</regionEndpoint>
    </item>
  </regionInfo>
</DescribeRegionsResponse>
```

Related Operations

- DescribeAvailabilityZones (p. 169)
- RunInstances (p. 417)
DescribeReservedInstances

Description

Describes one or more of the Reserved Instances that you purchased.

Starting with the 2011-11-01 API version, AWS expanded its offering of Amazon EC2 Reserved Instances to address a range of projected instance use. There are three types of Reserved Instances based on customer utilization levels: Heavy Utilization, Medium Utilization, and Light Utilization. You determine the type of the Reserved Instances offerings by including the optional offeringType parameter. The Medium Utilization offering type is equivalent to the Reserved Instance offering available before API version 2011-11-01. 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.

For more information about Reserved Instances, see Reserved Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ReservedInstancesId. n</td>
<td>One or more Reserved Instance IDs.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: Describes all your Reserved Instances, or only those otherwise specified.</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>offeringType</td>
<td>The Reserved Instance offering type.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: Heavy Utilization</td>
<td>Medium Utilization</td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filter so that the response includes information for only certain Reserved Instances. For example, you can use a filter to specify that you're interested in Reserved Instances in a specific Availability Zone. You can specify multiple values for a filter. The response includes information for a Reserved Instance only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify Reserved Instances that are in a specific Availability Zone and have a specific tag. The response includes information for a Reserved Instance only if it matches all of the filters that you specified. If there's no match, no special message is returned, the response is simply empty.
You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `*amazon?\` searches for the literal string `*amazon?\`.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>availability-zone</td>
<td>The Availability Zone where the Reserved Instance can be used. Type: String</td>
</tr>
<tr>
<td>duration</td>
<td>The duration of the Reserved Instance (one year or three years), in seconds. Type: Long Valid values: 31536000</td>
</tr>
<tr>
<td>fixed-price</td>
<td>The purchase price of the Reserved Instance (for example, 9800.0) Type: Double</td>
</tr>
<tr>
<td>instance-type</td>
<td>The instance type on which the Reserved Instance can be used. Type: String</td>
</tr>
<tr>
<td>product-description</td>
<td>The product description of the Reserved Instance. Type: String Valid values: Linux/UNIX</td>
</tr>
<tr>
<td>reserved-instances-id</td>
<td>The ID of the Reserved Instance. Type: String</td>
</tr>
<tr>
<td>start</td>
<td>The time at which the Reserved Instance purchase request was placed (for example, 2010-08-07T11:54:42.000Z). Type: DateTime</td>
</tr>
<tr>
<td>state</td>
<td>The state of the Reserved Instance. Type: String Valid values: pending-payment</td>
</tr>
<tr>
<td>tag-key</td>
<td>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 &quot;tag-key=Purpose&quot; and the filter &quot;tag-value=X&quot;, 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 filter later in this table. For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide. Type: String</td>
</tr>
<tr>
<td>tag-value</td>
<td>The value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String</td>
</tr>
</tbody>
</table>

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251
Filter Name | Description
---|---
tag: key | Filters the response based on a specific tag/value combination. Example: To list just the resources that have been assigned tag Purpose=X, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y

usage-price | The usage price of the Reserved Instance, per hour (for example, 0.84) Type: Double

### Response Elements

The elements in the following table are wrapped in a `DescribeReservedInstancesResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>reservedInstancesSet</td>
<td>A list of Reserved Instances, each one wrapped in an <code>item</code> element. Type: <code>DescribeReservedInstancesResponseSetItemType (p. 459)</code></td>
</tr>
</tbody>
</table>

### Examples

#### Example Request

This example describes Reserved Instances owned by your account.

https://ec2.amazonaws.com/?Action=DescribeReservedInstances

#### Example Response

```
<DescribeReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesSet>
    <item>
      <reservedInstancesId>4b2293b4-5813-4cc8-9ce3-1957fc1dcfc8EXAMPLE</reservedInstancesId>
      <instanceType>m1.xlarge</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
    </item>
  </reservedInstancesSet>
</DescribeReservedInstancesResponse>
```
Example Request

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).

```
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/UNIX
&AUTHPARAMS
```

Related Operations

- PurchaseReservedInstancesOffering (p. 372)
- DescribeReservedInstancesOfferings (p. 258)
DescribeReservedInstancesListings

Description

Describes your account's Reserved Instance listings in the Reserved Instance Marketplace. This call returns information, such as the ID of the Reserved Instance to which a listing is associated.

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 you want 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 you want to purchase, and the Marketplace will match what you're searching for with what's available. The Marketplace will first sell the lowest priced Reserved Instances to you, and continue to sell available Reserved Instance listings to you until your demand is met. You will be charged based on the total price of all of the listings that you purchase.

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ReservedInstancesListingId.n</td>
<td>The information about the Reserved Instance listing wrapped in an item element. Type: DescribeReservedInstancesListingSetItemType (p.456) Default: None</td>
<td>No</td>
</tr>
<tr>
<td>ReservedInstancesId.n</td>
<td>The set of Reserved Instances IDs which are used to see associated listings. Type: DescribeReservedInstancesSetItemType (p.460) Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter. Type: String Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>
Supported Filters

Our policy is to provide filters for all `ec2-describe` calls so that you can limit the response to your specified criteria. Therefore, you can use filters to limit the response when describing Reserved Instances listings, even though you can use other options instead.

For example, you can use a filter or an option to get the listing of Reserved Instances that are in an active state. You can also specify multiple options or filters (for example, to limit the response to the Reserved Instances listings that are in the closed state with a specific status message). The response includes information for a listing only if it matches all options or filters. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>Status of the Reserved Instance listing. Valid values: pending</td>
</tr>
<tr>
<td>status-message</td>
<td>Reason for the status. Type: String</td>
</tr>
<tr>
<td>reserved-instances-listing-id</td>
<td>The ID of the Reserved Instance listing. Type: String</td>
</tr>
<tr>
<td>reserved-instances-id</td>
<td>The ID of the Reserved Instances. Type: String</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a `DescribeReservedInstancesListingsResponseType` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request to describe Reserved Instance listing. Type: String</td>
</tr>
<tr>
<td>reservedInstancesListingsSet</td>
<td>The Reserved Instance listing information wrapped in an <code>item</code> element. Type: <code>DescribeReservedInstancesListingsResponseTypeSetItemType (p. 455)</code></td>
</tr>
</tbody>
</table>
Examples

Example Request

This example shows all the listings associated with your account.

http://ec2.amazonaws.com/?Action=DescribeReservedInstancesListings
&AUTHPARAMS

Example Response

<DescribeReservedInstancesListingsResponse>
  <requestId>cec5c904-8f3a-4de5-8f5a-ff7f9EXAMPLE</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>253dfbf9-c335-4808-b956-d942c9ef5c83</reservedInstancesListingId>
      <reservedInstancesId>af9f760e-64a5-4739-b416-a27540bf4b19</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>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
      </priceSchedules>
    </item>
  </reservedInstancesListingsSet>
</DescribeReservedInstancesListingsResponse>
6
<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/>
<clientToken>myclienttoken1</clientToken>
</item>
</reservedInstancesListingsSet>
</DescribeReservedInstancesListingsResponse>

Related Operations

- CancelReservedInstancesListing (p. 49)
- CreateReservedInstancesListing (p. 85)
**DescribeReservedInstancesOfferings**

**Description**

Describes Reserved Instance offerings that are available for purchase. With Amazon EC2 Reserved Instances, you purchase the right to launch Amazon EC2 instances for a period of time. During that time period you will not receive insufficient capacity errors, and you will pay a lower usage rate than the rate charged for On-Demand instances for the actual time used.

Starting with the 2011-11-01 API version, AWS expanded its offering of Amazon EC2 Reserved Instances to address a range of projected instance usage. There are three types of Reserved Instances based on customer utilization levels: **Heavy Utilization**, **Medium Utilization**, and **Light Utilization**. You determine the type of the Reserved Instances offerings by including the optional `offeringType` parameter when calling `DescribeReservedInstancesOfferings`. The Medium Utilization offering type is equivalent to the Reserved Instance offering available before API version 2011-11-01. If you are using tools that predate the 2011-11-01 API version, `DescribeReservedInstancesOfferings` will only list information about the Medium Utilization Reserved Instance offering type.

For information about Reserved Instances pricing, go to Understanding Reserved Instance Pricing Tiers in the *Amazon Elastic Compute Cloud User Guide*. For more information about Reserved Instances, go to Reserved Instances also in the *Amazon Elastic Compute Cloud User Guide*.

Starting with the 2012-08-15 API version, AWS offers the Reserved Instance Marketplace, where you can buy and sell Reserved Instances. 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.

By default, with the 2012-08-15 API version, `DescribeReservedInstancesOfferings` returns information about AWS and Reserved Instance Marketplace offerings. If you are using tools that predate the 2012-08-15 API version, `DescribeReservedInstancesOfferings` will only list information about the Amazon EC2 Reserved Instance offerings.

For more information about the Reserved Instance Marketplace, go to Reserved Instance Marketplace in the *Amazon Elastic Compute Cloud User Guide*.

**Request Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>ReservedInstancesOfferingId.n</code></td>
<td>One or more Reserved Instances offering IDs.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td><code>InstanceType</code></td>
<td>The Amazon EC2 instance type on which the Reserved Instance can be used.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>See Available Instance Types for more information.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td><code>AvailabilityZone</code></td>
<td>The Availability Zone in which the Reserved Instance can be used.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</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>ProductDescription</td>
<td>The Reserved Instance description. Instances that include (Amazon VPC) in the description are for use with Amazon VPC. Type: String Valid Values: Linux/UNIX</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Linux/UNIX (Amazon VPC), Windows, Windows (Amazon VPC) Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>InstanceTenancy</td>
<td>The tenancy of the Reserved Instance offering. A Reserved Instance with tenancy of dedicated will run on single-tenant hardware and can only be launched within a VPC. Type: String Valid Values: default</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>dedicated Default: default</td>
<td></td>
</tr>
<tr>
<td>OfferingType</td>
<td>The Reserved Instance offering type. Type: String Valid Values: Heavy Utilization, Medium Utilization, Light Utilization Default: none</td>
<td>No</td>
</tr>
<tr>
<td>IncludeMarketplace</td>
<td>Include Marketplace offerings in the response. Type: Boolean Default: true</td>
<td>No</td>
</tr>
<tr>
<td>MinDuration</td>
<td>Minimum duration (in seconds) to filter when searching for offerings. Type: Long Default: 2592000 (1 month)</td>
<td>No</td>
</tr>
<tr>
<td>MaxDuration</td>
<td>Maximum duration (in seconds) to filter when searching for offerings. Type: Long Default: 94608000 (3 years)</td>
<td>No</td>
</tr>
<tr>
<td>MaxInstanceCount</td>
<td>Maximum number of instances to filter when searching for offerings. Type: Integer Default: 20</td>
<td>No</td>
</tr>
</tbody>
</table>
### Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>NextToken</td>
<td>Token to use when requesting the next paginated set of offerings.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: First page of results if the string is empty.</td>
<td></td>
</tr>
<tr>
<td>MaxResults</td>
<td>Maximum number of offerings to return.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: Integer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: 1000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum: 1000</td>
<td></td>
</tr>
</tbody>
</table>

### Supported Filters

Our policy is to provide filters for all `ec2-describe` calls so that you can limit the response to your specified criteria. Therefore, you can use filters to limit the response when describing Reserved Instances offerings, even though you can use other options instead.

For example, you could use an option or a filter to get the offerings for a specific instance type. You can specify multiple options or filters (for example, limit the response to the m2.xlarge instance type, and only for Windows instances). The response includes information for an offering only if it matches all options or filters. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following table lists the available filters:

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>availability-zone</td>
<td>The Availability Zone where the Reserved Instance can be used.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>duration</td>
<td>The duration of the Reserved Instance (for example, one year or three years), in seconds.</td>
</tr>
<tr>
<td></td>
<td>Type: Long</td>
</tr>
<tr>
<td></td>
<td>Valid values: 31536000</td>
</tr>
<tr>
<td>fixed-price</td>
<td>The purchase price of the Reserved Instance (for example, 9800.0)</td>
</tr>
<tr>
<td></td>
<td>Type: Double</td>
</tr>
<tr>
<td>instance-type</td>
<td>The Amazon EC2 instance type on which the Reserved Instance can be used.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>marketplace</td>
<td>Set to true to show only Reserved Instance Marketplace offerings. When this filter is not used, which is the default behavior, all offerings from AWS and Reserved Instance Marketplace are listed.</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
</tr>
</tbody>
</table>
### Filter Name

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>product-description</td>
<td>The description of the Reserved Instance. Type: String.</td>
</tr>
<tr>
<td></td>
<td>Valid values: Linux/UNIX</td>
</tr>
<tr>
<td>reserved-instances-offering-id</td>
<td>The Reserved Instances offering ID. Type: String.</td>
</tr>
<tr>
<td>usage-price</td>
<td>The usage price of the Reserved Instance, per hour (for example, 0.84).</td>
</tr>
<tr>
<td></td>
<td>Type: Double.</td>
</tr>
</tbody>
</table>

### Response Elements

The elements in the following table are wrapped in a `DescribeReservedInstancesOfferingsResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: String.</td>
</tr>
<tr>
<td>reservedInstancesOfferingsSet</td>
<td>A list of Reserved Instances offerings. Each offering's information is wrapped in an item element. Type: <code>DescribeReservedInstancesOfferingsResponseSetItemType</code> (p. 457)</td>
</tr>
<tr>
<td>nextToken</td>
<td>Specifies the next paginated set of results to return. Type: String.</td>
</tr>
</tbody>
</table>

### Examples

#### Example Describing Reserved Instance Marketplace Offerings Only

This example requests a list of Linux/UNIX, Light Utilization Reserved Instances that are available through the Reserved Instance Marketplace only.

```
http://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.0.Name=marketplace
&Filter.0.Value.1=true
&IncludeMarketplace=true
&OfferingType=Light+Utilization
&ProductDescription=Linux%2FUNIX&
&Version=2012-08-15
&AUTHPARAMS
```
Note
When using the Query API the "/" is denoted as "%2F".

This is the response listing Reserved Instance Marketplace offerings only.

```
<DescribeReservedInstancesOfferingsResponse xmlns='http://ec2.amazonaws.com/doc/2012-08-15/'>
  <requestId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>a6ce8269-7b8c-42cd-a7f5-0841c726be4c</reservedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>90720000</duration>
      <fixedPrice>4083.333333</fixedPrice>
      <usagePrice>0.124</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <marketplace>true</marketplace>
      <pricingDetailsSet>
        <item>
          <price>4083.333333</price>
          <count>1</count>
        </item>
      </pricingDetailsSet>
    </item>
    <item>
      <reservedInstancesOfferingId>9948307c-4e03-4ffb-8bd3-8dea689513cb</reservedInstancesOfferingId>
      <instanceType>m1.xlarge</instanceType>
      <availabilityZone>us-east-1b</availabilityZone>
      <duration>28512000</duration>
      <fixedPrice>430.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <marketplace>true</marketplace>
      <pricingDetailsSet>
        <item>
          <price>430.0</price>
          <count>2</count>
        </item>
      </pricingDetailsSet>
    </item>
  </reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
```
Example Describing AWS Offerings Only

By default, with the 2012-08-15 API version, DescribeReservedInstancesOfferings returns information about AWS Reserved Instances and Reserved Instance Marketplace offerings. If you want a list of AWS offerings only, set IncludeMarketplace to false.

```
http://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&IncludeMarketplace=false
&Version=2012-08-15
&AUTHPARAMS
```

Example Using MaxResults and nextToken to Manage Results

API version 2012-08-15 provides pagination support, which means that you can query the results sequentially and in parts. Use MaxResults to specify the maximum number of results that will be returned in the response. Then each paginated response will contain a nextToken, which can be provided as input to a subsequent DescribeReservedInstancesOfferings call to fetch the next page.

```
http://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&MaxResults=5
&Version=2012-08-15
&AUTHPARAMS
```

The response should look similar to the following example.

```
<DescribeReservedInstancesOfferingsResponse>
  <requestId>d072f652-cc57-458c-89e0-e6c02EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>649fd0c8-7846-46b8-8f84-a6400ea2a8f4</reservedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>1200.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Heavy Utilization</offeringType>
      <recurringCharges>
        <item>
          <frequency>Hourly</frequency>
          <amount>0.052</amount>
        </item>
      </recurringCharges>
      <marketplace>false</marketplace>
      <pricingDetailsSet/>
    </item>
    <item>
      <reservedInstancesOfferingId>e5a2ff3b-a4f3-477c-8928-dbd0016cad</reservedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
    </item>
  </reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
```
Then, you can use the nextToken to fetch the next page. The request should look like the following example.

http://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings &MaxResults=5 &NextToken=h/C8YKPQBHEjW8xKz1827/Zzyb0VqsqkJRo3TqhFYeE= &Version=2012-08-15 &AUTHPARAMS

The response should be similar to the following example.

<DescribeReservedInstancesOfferingsResponse>  
  <requestId>652900ca-902c-42fa-b8ae-da67bEXAMPLE</requestId>  
  <reservedInstancesOfferingsSet>  
    <item>  
      <reservedInstancesOfferingId>438012d3-496e-4ab3-b1f6-38ffe8469244</reservedInstancesOfferingId>  
      <instanceType>m1.large</instanceType>  
      <availabilityZone>us-east-1a</availabilityZone>  
      <duration>94608000</duration>  
      <fixedPrice>425.2</fixedPrice>  
      <usagePrice>0.124</usagePrice>  
      <productDescription>Linux/UNIX</productDescription>  
      <instanceTenancy>default</instanceTenancy>  
      <currencyCode>USD</currencyCode>  
      <offeringType>Light Utilization</offeringType>  
      <recurringCharges/>  
      <marketplace>false</marketplace>  
      <pricingDetailsSet/>  
    </item>  
    <item>  
      <reservedInstancesOfferingId>248e7b75-579e-4599-a34d-cb6aa9ba2ac8</reservedInstancesOfferingId>  
      <instanceType>m1.large</instanceType>  
      <availabilityZone>us-east-1a</availabilityZone>  
      <duration>31536000</duration>  
      <fixedPrice>780.0</fixedPrice>  
      <usagePrice>0.0</usagePrice>  
      <productDescription>Linux/UNIX</productDescription>  
    </item>  
  </reservedInstancesOfferingsSet>  
</DescribeReservedInstancesOfferingsResponse>
Example Request

This example describes available Reserved Instance offerings.

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

Example Response

<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>48692a1d-3036-48fd-8c0e-d34681b97efdEXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>248e7b75-c83a-48c1-bcf7-b7f03e9c43feEXAMPLE</reservedInstancesOfferingId>
      <instanceType>c1.medium</instanceType>
      <availabilityZone>us-east-1b</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>700.0</fixedPrice>
      <usagePrice>0.06</usagePrice>
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Medium Utilization</offeringType>
      <recurringCharges/>
    </item>
    ...</reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>

Example Request

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).
Related Operations

- PurchaseReservedInstancesOffering (p. 372)
- DescribeReservedInstances (p. 250)
DescribeRouteTables

Description

Describes one or more of your route tables.

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

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>RouteTableId.n</td>
<td>One or more route table IDs. Type: String</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Default: Returns all route tables, or only those otherwise specified.</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names. Type: String</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter. Type: String</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain tables. For example, you can use a filter to specify that you're interested in the tables associated with a particular subnet. You can specify multiple values for a filter. The response includes information for a table only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify tables that have a specific route and are associated with a specific subnet. The response includes information for a table only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of \\*amazon?\\ searches for the literal string *amazon?\.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>association.route-table-association-id</td>
<td>The ID of an association ID for the route table. Type: String</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>association.route-table-id</td>
<td>The ID of the route table involved in the association. Type: String</td>
</tr>
<tr>
<td>association.subnet-id</td>
<td>The ID of the subnet involved in the association. Type: String</td>
</tr>
<tr>
<td>association.main</td>
<td>Indicates whether the route table is the main route table for the VPC. Type: Boolean</td>
</tr>
<tr>
<td>route-table-id</td>
<td>The ID of the route table. Type: String</td>
</tr>
<tr>
<td>route.destination-cidr-block</td>
<td>The CIDR range specified in a route in the table. Type: String</td>
</tr>
<tr>
<td>route.gateway-id</td>
<td>The ID of a gateway specified in a route in the table. Type: String</td>
</tr>
<tr>
<td>route.instance-id</td>
<td>The ID of an instance specified in a route in the table. Type: String</td>
</tr>
<tr>
<td>route.origin</td>
<td>Describes how the route was created. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: CreateRouteTable</td>
</tr>
<tr>
<td></td>
<td>CreateRouteTable indicates that route was automatically created when the route table was created.</td>
</tr>
<tr>
<td></td>
<td>CreateRoute indicates that the route was manually added to the route table.</td>
</tr>
<tr>
<td></td>
<td>EnableVgwRoutePropogation indicates that the route was propagated by route propagation.</td>
</tr>
<tr>
<td>route.state</td>
<td>The state of a route in the route table. 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).</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: active</td>
</tr>
</tbody>
</table>
### Filter Name

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tag-key</td>
<td>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 &quot;tag-key=Purpose&quot; and the filter &quot;tag-value=X&quot;, 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 filter later in this table. For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide. Type: String</td>
</tr>
<tr>
<td>tag-value</td>
<td>The value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String</td>
</tr>
<tr>
<td>tag: key</td>
<td>Filters the response based on a specific tag/value combination. Example: To list just the resources that have been assigned tag Purpose=X, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</td>
</tr>
<tr>
<td>vpc-id</td>
<td>The ID of the VPC for the route table. Type: String</td>
</tr>
</tbody>
</table>

### Response Elements

The elements in the following table are wrapped in a DescribeRouteTablesResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>routeTableSet</td>
<td>A list of route tables, each one wrapped in an item element. Type: RouteTableType (p. 513)</td>
</tr>
</tbody>
</table>
Examples

Example Request

This example describes all route tables in the VPC.

https://ec2.amazonaws.com/?Action=DescribeRouteTables

Example Response

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.
<routeTableAssociationId>rtbassoc-faad4893</routeTableAssociationId>
  <routeTableId>rtb-f9ad4890</routeTableId>
  <subnetId>subnet-15ad487c</subnetId>
</item>
</associationSet>
<tagSet/>
</item>
</routeTableSet>
</DescribeRouteTablesResponse>

## Related Operations

- AssociateRouteTable (p. 23)
- DisassociateRouteTable (p. 339)
- DeleteRouteTable (p. 140)
- CreateRouteTable (p. 92)
- ReplaceRouteTableAssociation (p. 390)
DescribeSecurityGroups

Description

A security group is for use with instances either in Amazon EC2 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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>GroupName.n</td>
<td>One or more security group names.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: Describes all your security groups, or only those otherwise specified.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: For EC2, you can specify either GroupName or GroupId</td>
<td></td>
</tr>
<tr>
<td>GroupId.n</td>
<td>One or more security group IDs.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: Describes all your security groups, or only those otherwise specified.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: Required for a VPC; for EC2, you can specify either GroupName or GroupId</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain security groups. For example, you can use a filter to specify that you're interested in groups whose name contains a specific string. You can specify multiple values for a filter. The response includes information for a security group only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify group's whose name contains a specific string, and that give permission to another security group with a different string in its name. The response includes information for a group only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

**Important**

Filters are based on literal strings only. This is important to remember when you want to use filters to return only security groups with access allowed on a specific port number or numbers. For example, suppose that you want to get all groups that have access on port 22, and that
GroupA gives access on a range of ports using `fromPort=20` and `toPort=30`. If you filter with `ip-permission.from-port=22` or `ip-permission.to-port=22` (or both), the response does not contain information for GroupA. You get information for GroupA only if you specify `ip-permission.from-port=20` or `ip-permission.to-port=30` (or both).

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\\?\` searches for the literal string `*amazon?`.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>The description of the security group. Type: String</td>
</tr>
<tr>
<td>group-id</td>
<td>The ID of the security group. Type: String</td>
</tr>
<tr>
<td>group-name</td>
<td>The name of the security group. Type: String</td>
</tr>
<tr>
<td>ip-permission.cidr</td>
<td>The CIDR range that has been granted the permission. Type: String</td>
</tr>
<tr>
<td>ip-permission.from-port</td>
<td>The start of port range for the TCP and UDP protocols, or an ICMP type number. Type: String</td>
</tr>
<tr>
<td>ip-permission.group-name</td>
<td>The name of security group that has been granted the permission. Type: String</td>
</tr>
<tr>
<td>ip-permission.protocol</td>
<td>The IP protocol for the permission. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: tcp</td>
</tr>
<tr>
<td>ip-permission.to-port</td>
<td>The end of port range for the TCP and UDP protocols, or an ICMP code. Type: String</td>
</tr>
<tr>
<td>ip-permission.user-id</td>
<td>The ID of an AWS account that has been granted the permission. Type: String</td>
</tr>
<tr>
<td>owner-id</td>
<td>The AWS account ID of the owner of the security group. Type: String</td>
</tr>
<tr>
<td>tag-key</td>
<td>The key of a tag assigned to the security group. Type: String</td>
</tr>
<tr>
<td>tag-value</td>
<td>The value of a tag assigned to the security group. Type: String</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>vpc-id</td>
<td>Only return the security groups that belong to the specified VPC ID. Type: String</td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in a `DescribeSecurityGroupsResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: <code>xsd:string</code></td>
</tr>
<tr>
<td>securityGroupInfo</td>
<td>A list of security groups, each one wrapped in an <code>item</code> element. Type: <code>SecurityGroupItemType (p. 519)</code></td>
</tr>
</tbody>
</table>

**Examples**

**Example Request**

This example returns information about two security groups that are configured for the account.

https://ec2.amazonaws.com/?Action=DescribeSecurityGroups &GroupName.1=WebServers &GroupName.2=RangedPortsBySource &AUTHPARAMS

**Example Response**

```xml
<DescribeSecurityGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/"
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<securityGroupInfo>
  <item>
    <ownerId>111122223333</ownerId>
    <groupId>sg-1a2b3c4d</groupId>
    <groupName>WebServers</groupName>
    <groupDescription>Web Servers</groupDescription>
    <vpcId/>
    <ipPermissions>
      <item>
        <ipProtocol>tcp</ipProtocol>
        <fromPort>80</fromPort>
        <toPort>80</toPort>
        <groups/>
      </item>
      <ipRanges>
        <item>
          <cidrIp>0.0.0.0/0</cidrIp>
```

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Example Request

This example returns information about all security groups that grant access over TCP specifically on port 22 from instances in either the app_server_group or database_group.

&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

Related Operations

- CreateSecurityGroup (p. 94)
- AuthorizeSecurityGroupIngress (p. 36)
- RevokeSecurityGroupIngress (p. 414)
- DeleteSecurityGroup (p. 142)
DescribeSnapshotAttribute

Description

Describes an attribute of the specified snapshot. You can specify only one attribute at a time.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>SnapshotId</td>
<td>The ID of the Amazon EBS snapshot. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Attribute</td>
<td>The snapshot attribute. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: createVolumePermission</td>
<td></td>
</tr>
<tr>
<td></td>
<td>productCodes</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DescribeSnapshotAttributeResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>snapshotId</td>
<td>The ID of the Amazon EBS snapshot. Type: xsd:string</td>
</tr>
<tr>
<td>createVolumePermission</td>
<td>A list of permissions for creating volumes from the snapshot. Each permission is wrapped in an item element. Type: CreateVolumePermissionItemType (p. 450)</td>
</tr>
<tr>
<td>productCodes</td>
<td>A list of product codes. Each product code is wrapped in an item element that contains a product code and a type. Type: ProductCodesSetItemType (p. 508)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example describes permissions for the snap-1a2b3c4d snapshot.

https://ec2.amazonaws.com/?Action=DescribeSnapshotAttribute
&SnapshotId=snap-1a2b3c4d
Example Response

```xml
<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotId>snap-1a2b3c4d</snapshotId>
  <createVolumePermission>
    <item>
      <group>all</group>
    </item>
  </createVolumePermission>
</DescribeSnapshotAttributeResponse>
```

Example Request

This example describes product codes associated with the snap-1a2b3c4d snapshot.

https://ec2.amazonaws.com/?Action=DescribeSnapshotAttribute
&SnapshotId=snap-1a2b3c4d
&Attribute=productCodes
&AUTHPARAMS

Example Response

```xml
<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-04-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotId>snap-1a2b3c4d</snapshotId>
  <productCodes>
    <item>
      <productCode>a1b2c3d4e5f6g7h819j10k11</productCode>
      <type>marketplace</type>
    </item>
  </productCodes>
</DescribeSnapshotAttributeResponse>
```

Related Operations

- ModifySnapshotAttribute (p. 366)
- DescribeSnapshots (p. 278)
- ResetSnapshotAttribute (p. 409)
- CreateSnapshot (p. 96)
DescribeSnapshots

Description

Describes one or more of the Amazon EBS snapshots available to you. Snapshots available to you include public snapshots available for any AWS account to launch, private snapshots 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 3 categories:

<table>
<thead>
<tr>
<th>Permission</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>public</td>
<td>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.</td>
</tr>
<tr>
<td>explicit</td>
<td>The owner of the snapshot granted create volume permissions to a specific AWS account.</td>
</tr>
<tr>
<td>implicit</td>
<td>An AWS account has implicit create volume permissions for all snapshots it owns.</td>
</tr>
</tbody>
</table>

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 will not be included in the returned results.

If you specify one or more snapshot owners, 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 snapshot(s)), self for snapshots for which you own or have explicit permissions, or all for public snapshots.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>SnapshotId.n</td>
<td>One or more snapshot IDs. Type: String Default: Describes snapshots for which you have launch permissions.</td>
<td>No</td>
</tr>
<tr>
<td>Owner.n</td>
<td>Returns the snapshots owned by the specified owner. Multiple owners can be specified. Type: String Valid values: self</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>amazon</td>
<td>AWS Account ID Default: None</td>
</tr>
</tbody>
</table>
**Required Description Name**

One or more AWS accounts IDs that can create volumes from the snapshot.

**Type**: String  
**Default**: None  

**RestorableBy.n**

The name of a filter. See the table in the Supported Filters section for a list of supported filter names.

**Type**: String  
**Default**: None  

**Filter.n.Name**

A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter.

**Type**: String  
**Default**: None  

**Supported Filters**

You can specify filters so that the response includes information for only certain snapshots. For example, you can use a filter to specify that you’re interested in snapshots whose status is `pending`. You can specify multiple values for a filter. The response includes information for a snapshot only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify snapshot's that have a `pending` status, and have a specific tag. The response includes information for a snapshot only if it matches all the filters that you specified. If there’s no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon\?\` searches for the literal string `*amazon?\`.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>A description of the snapshot. Type: String</td>
</tr>
<tr>
<td>owner-alias</td>
<td>The AWS account alias (for example, amazon) that owns the snapshot. Type: String</td>
</tr>
<tr>
<td>owner-id</td>
<td>The ID of the AWS account that owns the snapshot. Type: String</td>
</tr>
<tr>
<td>progress</td>
<td>The progress of the snapshot, as a percentage (for example, 80%). Type: String</td>
</tr>
<tr>
<td>snapshot-id</td>
<td>The snapshot ID. Type: String</td>
</tr>
<tr>
<td>start-time</td>
<td>The time stamp when the snapshot was initiated. Type: DateTime</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>status</td>
<td>The status of the snapshot. Type: String Valid values: pending</td>
</tr>
<tr>
<td>tag-key</td>
<td>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 &quot;tag-key=Purpose&quot; and the filter &quot;tag-value=X&quot;, 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 filter later in this table. For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide. Type: String</td>
</tr>
<tr>
<td>tag-value</td>
<td>The value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String</td>
</tr>
<tr>
<td>tag: key</td>
<td>Filters the response based on a specific tag/value combination. Example: To list just the resources that have been assigned tag Purpose=X, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</td>
</tr>
<tr>
<td>volume-id</td>
<td>The ID of the volume the snapshot is for. Type: String</td>
</tr>
<tr>
<td>volume-size</td>
<td>The size of the volume, in GiB (for example, 20). Type: String</td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in a `DescribeSnapshotsResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>snapshotSet</td>
<td>A list of snapshots. Each snapshot is wrapped in an item element. Type: DescribeSnapshotsSetItemResponseType (p. 461)</td>
</tr>
</tbody>
</table>
Examples

Example Request

This example describes snapshot snap-1a2b3c4d.

https://ec2.amazonaws.com/?Action=DescribeSnapshots
&SnapshotId=snap-1a2b3c4d
&AUTHPARAMS

Example Response

<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotSet>
    <item>
      <snapshotId>snap-1a2b3c4d</snapshotId>
      <volumeId>vol-1a2b3c4d</volumeId>
      <status>pending</status>
      <startTime>YYYY-MM-DDTHH:MM:SS.SSSZ</startTime>
      <progress>80%</progress>
      <ownerId>111122223333</ownerId>
      <volumeSize>15</volumeSize>
      <description>Daily Backup</description>
      <tagSet/>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>

Example Request

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_.

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

Example Response

<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotSet>
    <item>
      <snapshotId>snap-1a2b3c4d</snapshotId>
      <volumeId>vol-1a2b3c4d</volumeId>
      <status>pending</status>
      <startTime>YYYY-MM-DDTHH:MM:SS.SSSZ</startTime>
      <progress>30%</progress>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
Related Operations

- CreateSnapshot (p. 96)
- DeleteSnapshot (p. 144)
**DescribeSpotDatafeedSubscription**

**Description**

Describes the datafeed for Spot Instances. For more information about Spot Instances, see Spot Instances in the *Amazon Elastic Compute Cloud User Guide*.

**Request Parameters**

The `DescribeSpotDatafeedSubscription` operation does not have any request parameters.

**Response Elements**

The elements in the following table are wrapped in a `DescribeSpotDatafeedSubscriptionResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: <code>xsd:string</code></td>
</tr>
<tr>
<td>spotDatafeedSubscription</td>
<td>The Spot Instance datafeed subscription. Type: <code>SpotDatafeedSubscriptionType</code> (p. 520)</td>
</tr>
</tbody>
</table>

**Examples**

**Example Request**

This example describes the datafeed for the account.

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

**Example Response**

```xml
<DescribeSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>111122223333</ownerId>
    <bucket>myawsbucket</bucket>
    <prefix>spotdata_</prefix>
    <state>Active</state>
  </spotDatafeedSubscription>
</DescribeSpotDatafeedSubscriptionResponse>
```

**Related Operations**

- CreateSpotDatafeedSubscription (p. 99)
• DeleteSpotDatafeedSubscription (p. 146)
DescribeSpotInstanceRequests

Description

Describes the Spot Instance requests that belong to your account. Spot Instances are instances that Amazon EC2 starts on your behalf when the maximum 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 about Spot Instances, see Spot Instances in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>SpotInstanceRequestId.n</td>
<td>One or more Spot Instance request IDs. Type: String</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain Spot Instance requests. For example, you can use a filter to specify that you're interested in requests where the Spot Price is a specific value. (You can't use a greater than or less than comparison, however you can use * and ? wildcards.) You can specify multiple values for a filter. The response includes information for a Spot Instance request only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify that the Spot Price is a specific value, and that the instance type is m1.small. The response includes information for a request only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of \*amazon\?\ searches for the literal string *amazon?\. 

The following table lists the available filters.
<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>availability-zone-group</td>
<td>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</td>
</tr>
<tr>
<td>create-time</td>
<td>The time stamp when the Spot Instance request was created. Type: String</td>
</tr>
<tr>
<td>fault-code</td>
<td>The fault code related to the request. Type: String</td>
</tr>
<tr>
<td>fault-message</td>
<td>The fault message related to the request. Type: String</td>
</tr>
<tr>
<td>instance-id</td>
<td>The ID of the instance that fulfilled the request. Type: String</td>
</tr>
<tr>
<td>launch-group</td>
<td>The Spot Instance launch group. Launch groups are Spot Instances that launch together and terminate together. Type: String</td>
</tr>
<tr>
<td>launch.block-device-mapping.delete-on-termination</td>
<td>Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean</td>
</tr>
<tr>
<td>launch.block-device-mapping.device-name</td>
<td>The device name (for example, /dev/sdh) for the Amazon EBS volume. Type: String</td>
</tr>
<tr>
<td>launch.block-device-mapping.snapshot-id</td>
<td>The ID of the snapshot used for the Amazon EBS volume. Type: String</td>
</tr>
<tr>
<td>launch.block-device-mapping.volume-size</td>
<td>The volume size of the Amazon EBS volume, in GiB. Type: String</td>
</tr>
<tr>
<td>launch.block-device-mapping.volume-type</td>
<td>The volume type of the Amazon EBS volume. Type: String                                     Valid values: standard</td>
</tr>
<tr>
<td>launch.group-id</td>
<td>The security group for the instance. Type: String</td>
</tr>
<tr>
<td>launch.image-id</td>
<td>The ID of the AMI. Type: String</td>
</tr>
<tr>
<td>launch.instance-type</td>
<td>The type of instance (for example, m1.small). Type: String</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>launch.kernel-id</td>
<td>The kernel ID.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>launch.key-name</td>
<td>The name of the key pair the instance launched with.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>launch.monitoring-enabled</td>
<td>Whether monitoring is enabled for the Spot Instance.</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
</tr>
<tr>
<td>launch.ramdisk-id</td>
<td>The RAM disk ID.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>launch.network-interface.network-interface-id</td>
<td>The ID of the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>launch.network-interface.device-index</td>
<td>The index of the device for the network interface attachment on the instance.</td>
</tr>
<tr>
<td></td>
<td>Type: Integer</td>
</tr>
<tr>
<td>launch.network-interface.subnet-id</td>
<td>The ID of the subnet for the instance.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>launch.network-interface.description</td>
<td>A description of the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>launch.network-interface.private-ip-address</td>
<td>The primary private IP address of the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>launch.network-interface.delete-on-termination</td>
<td>Indicates whether the network interface is deleted when the instance is</td>
</tr>
<tr>
<td></td>
<td>terminated.</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
</tr>
<tr>
<td>launch.network-interface.group-id</td>
<td>The ID of the security group associated with the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>launch.network-interface.group-name</td>
<td>The name of the security group associated with the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>launch.network-interface.addresses.primary</td>
<td>Indicates whether the IP address is the primary private IP address.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>product-description</td>
<td>The product description associated with the instance.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: Linux/UNIX</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><code>spot-instance-request-id</code></td>
<td>The Spot Instance request ID. Type: String</td>
</tr>
<tr>
<td><code>spot-price</code></td>
<td>The maximum hourly price for any Spot Instance launched to fulfill the request. Type: String</td>
</tr>
</tbody>
</table>
| `state`                    | The state of the Spot Instance request. Type: String  
Valid values: active | cancelled | open | closed | failed  |
| `status-code`              | The short code describing the most recent evaluation of your Spot Instance request. For more information, see Spot Bid Status in the Amazon Elastic Compute Cloud User Guide. Type: String                                                                                                                                 |
| `status-message`           | The message explaining the status of the Spot Instance request. Type: String                                                                                                                                                                                                                                                               |
| `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` filter later in this table.  
For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide. Type: String |
| `tag-value`                | The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter. Type: String                                                                                                                                                                                                                                    |
| `tag: key`                 | Filters the response based on a specific tag/value combination.  
Example: To list just the resources that have been assigned tag Purpose=X, specify:  
Filter.1.Name=tag:Purpose  
Filter.1.Value.1=X  
Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:  
Filter.1.Name=tag:Purpose  
Filter.1.Value.1=X  
Filter.1.Value.2=Y |
## Filter Name

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>The type of Spot Instance request. Type: String Valid values: one-time</td>
</tr>
<tr>
<td>launched-availability-zone</td>
<td>The Availability Zone in which the bid is launched. Type: String Valid values: us-east-1a, etc.</td>
</tr>
<tr>
<td>valid-from</td>
<td>The start date of the request. Type: DateTime</td>
</tr>
<tr>
<td>valid-until</td>
<td>The end date of the request. Type: DateTime</td>
</tr>
</tbody>
</table>

### Response Elements

The elements in the following table are wrapped in a `DescribeSpotInstanceRequestsResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>spotInstanceRequestSet</td>
<td>A list of Spot Instance requests. Each request is wrapped in an item element. Type: SpotInstanceRequestSetItemType (p. 521)</td>
</tr>
<tr>
<td>networkInterfaceSet</td>
<td>Information about the network interface. Type: InstanceNetworkInterfaceSetItemRequestType (p. 480)</td>
</tr>
</tbody>
</table>

### Examples

#### Example Request

This example returns information about current Spot Instance requests.

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

#### Example Response

```
<DescribeSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/"
  requestId="59dbff89-35bd-4eac-99ed-be587EXAMPLE"
  <spotInstanceRequestSet>
    <item>
```

API Version 2012-12-01
289
Example Request

This example describes all persistent Spot Instance requests that have resulted in the launch of at least one m1.small instance, that has been fulfilled in the us-east-1a Availability Zone, and that also has monitoring enabled.

https://ec2.amazonaws.com/?Action=DescribeSpotInstanceRequests
&Filter.1.Name=type
&Filter.1.Value.1=persistent
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
&Filter.3.Name=monitoring-enabled
&Filter.3.Value.1=true
&Filter.4.Name=launched-availability-zone
&Filter.4.Value.1=us-east-1a
&AUTHPARAMS

Related Operations

- RequestSpotInstances (p. 395)
- CancelSpotInstanceRequests (p. 52)
- DescribeSpotPriceHistory (p. 291)
**DescribeSpotPriceHistory**

**Description**

Describes the Spot Price history. Spot Instances are instances that Amazon EC2 starts on your behalf when the maximum 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 about Spot Instances, see Spot Instances in the Amazon Elastic Compute Cloud User Guide.

When you use the availability-zone option, this command describes the price history for the specified Availability Zone with the most recent set of prices listed first. If you don’t specify an Availability Zone, the command returns the prices across all Availability Zones, starting with the most recent set. However, if you use this command with versions of the API earlier than the 2011-05-15 version, this command returns the lowest price across the region for the given time period. The prices returned are listed in chronological order — from the oldest to the most recent.

**Request Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>StartTime</strong></td>
<td>The start date and time of the Spot Instance price history data.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: DateTime</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td><strong>EndTime</strong></td>
<td>The end date and time of the Spot Instance price history data.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: DateTime</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td><strong>InstanceType.n</strong></td>
<td>The instance type to return.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: t1.micro</td>
<td>m1.small</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td><strong>ProductDescription.n</strong></td>
<td>Filters the results by basic product description.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: Linux/UNIX</td>
<td>SUSE Linux</td>
</tr>
<tr>
<td></td>
<td>Default: Returns all information</td>
<td></td>
</tr>
<tr>
<td><strong>Filter.n.Name</strong></td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>
### Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>AvailabilityZone</td>
<td>Filters the results by availability zone. Type: String Valid values: us-east-1a, etc. Default: None</td>
<td>No</td>
</tr>
<tr>
<td>MaxResults</td>
<td>Specifies the number of rows to return. Type: Integer Valid values: 0 Default: None</td>
<td>No</td>
</tr>
<tr>
<td>NextToken</td>
<td>Specifies the next set of rows to return. Type: String Valid values: A NextToken value returned by a previous call of the API. Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>

### Supported Filters

**Note**

Our policy is to provide filters for all ec2-describe calls so you can limit the response to your specified criteria. Therefore, you can use filters to limit the response when describing Spot Price histories, even though you can use the options instead.

For example, you could use an option or a filter to get the history for a particular instance type. You can specify multiple request parameters or filters (for example, limit the response to the m2.xlarge instance type, and only for Windows instances). The response includes information for a price history only if it matches all your options or filters. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of \*amazon\?\ searches for the literal string *amazon?.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>instance-type</td>
<td>The type of instance (for example, m1.small). Type: String</td>
</tr>
<tr>
<td>product-description</td>
<td>The product description for the Spot Price. Type: String Valid values: Linux/UNIX</td>
</tr>
</tbody>
</table>
The Spot Price. The value must match exactly (or use wildcards; greater than or less than comparison is not supported).
Type: String

The timestamp of the Spot Price history (for example, 2010-08-16T05:06:11.000Z). You can use wildcards (* and ?). Greater than or less than comparison is not supported.
Type: DateTime

The Availability Zone for which prices should be returned.
Type: String

### Response Elements

The elements in the following table are wrapped in a `DescribeSpotPriceHistoryResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. The ID is a string.</td>
</tr>
<tr>
<td>spotPriceHistorySet</td>
<td>A list of historical Spot Prices. Each price is wrapped in an item element.</td>
</tr>
<tr>
<td>nextToken</td>
<td>The string marking the next set of results returned. Displays empty if there are no more results to be returned.</td>
</tr>
</tbody>
</table>

### Examples

#### Example Request

This example returns Spot Price history for a particular day in December 2009 for Availability Zone us-east-1a.

https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&StartTime=2009-12-04T00:00:00.000Z
&EndTime=2009-12-04T23:59:59.000Z
&AvailabilityZone=us-east-1a
&AUTHPARAMS

This request uses filters instead of regular request parameters to achieve the same results.

https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&Filter.1.Name=timestamp
&Filter.1.Value.1=2009-12-04*
&Filter.2.Name=availability-zone
Example Response

```xml
<DescribeSpotPriceHistoryResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotPriceHistorySet>
    <item>
      <instanceType>m1.small</instanceType>
      <productDescription>Linux/UNIX</productDescription>
      <spotPrice>0.287</spotPrice>
      <timestamp>2009-12-04T20:56:05.000Z</timestamp>
      <availabilityZone>us-east-1a</availabilityZone>
    </item>
    <item>
      <instanceType>m1.small</instanceType>
      <productDescription>Windows</productDescription>
      <spotPrice>0.033</spotPrice>
      <timestamp>2009-12-04T22:33:47.000Z</timestamp>
      <availabilityZone>us-east-1a</availabilityZone>
    </item>
  </spotPriceHistorySet>
  <nextToken/>
</DescribeSpotPriceHistoryResponse>
```

Related Operations

- DescribeSpotInstanceRequests (p. 285)
- RequestSpotInstances (p. 395)
- CancelSpotInstanceRequests (p. 52)
DescribeSubnets

Description

Describes one or more of your subnets.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>SubnetId.n</td>
<td>A subnet ID. You can specify more than one in the request.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: Describes your subnets</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain subnets. For example, you can use a filter to specify that you're interested in the subnets in the available state. You can specify multiple values for a filter. The response includes information for a subnet only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify subnets that are in a specific VPC and are in the available state. The response includes information for a subnet only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash () before the character. For example, a value of "*amazon?\" searches for the literal string *amazon?\.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>availability-zone</td>
<td>The Availability Zone for the subnet.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>available-ip-address-count</td>
<td>The number of IP addresses in the subnet that are available.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
</tbody>
</table>
### Filter Name

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>cidr</td>
<td>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. Type: String Constraints: Must contain the slash followed by one or two digits (for example, /28)</td>
</tr>
<tr>
<td>state</td>
<td>The state of the subnet. Type: String Valid values: pending</td>
</tr>
<tr>
<td>subnet-id</td>
<td>The ID of the subnet. Type: String</td>
</tr>
<tr>
<td>tag-key</td>
<td>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 &quot;tag-key=Purpose&quot; and the filter &quot;tag-value=X&quot;, 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 filter later in this table. For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide. Type: String</td>
</tr>
<tr>
<td>tag-value</td>
<td>The value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String</td>
</tr>
<tr>
<td>tag: key</td>
<td>Filters the response based on a specific tag/value combination. Example: To list just the resources that have been assigned tag Purpose=X, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</td>
</tr>
<tr>
<td>vpc-id</td>
<td>The ID of the VPC for the subnet. Type: String</td>
</tr>
</tbody>
</table>

---

### Response Elements

The elements in the following table are wrapped in a `DescribeSubnetsResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
</tbody>
</table>
A list of subnets. Each subnet is wrapped in an `<item>` element.

**Type:** `SubnetType` (p. 525)

### Examples

#### Example Request

This example gives a description of two subnets with IDs `subnet-9d4a7b6c` and `subnet-6e7f829e`.

```
https://ec2.amazonaws.com/?Action=DescribeSubnets
&SubnetId.1=subnet-9d4a7b6c
&SubnetId.2=subnet-6e7f829e
&AUTHPARAMS
```

#### Example Response

```
<DescribeSubnetsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <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>
      <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>
      <tagSet/>
    </item>
  </subnetSet>
</DescribeSubnetsResponse>
```

#### Example Request

This example uses filters to give a description of any subnet you own that is in the VPC with ID `vpc-1a2b3c4d` or `vpc-6e7f8a92`, and whose state is `available`.

```
https://ec2.amazonaws.com/?Action=DescribeSubnets
&Filter.1.Name=vpc-id
&Filter.1.Value.1=vpc-1a2b3c4d
&Filter.1.Value.2=vpc-6e7f8a92
```

---

**Name** | **Description**
--- | ---
subnetSet | A list of subnets. Each subnet is wrapped in an `<item>` element.

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Related Operations

- CreateSubnet (p. 101)
- DeleteSubnet (p. 147)
DescribeTags

**Description**

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**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter. Type: String Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>

**Supported Filters**

You can specify filters to limit the response when describing tags. For example, you can use a filter to get only the tags for a specific resource type. You can specify multiple values for a filter. The response includes information for a tag only if it matches at least one of the filter values that you specified.

You can specify multiple filters (for example, specify a specific resource type and tag values that contain the string `database`). The response includes information for a tag only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of `\*amazon?\` searches for the literal string `*amazon?`.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>key</td>
<td>The tag key. Type: String</td>
</tr>
<tr>
<td>resource-id</td>
<td>The resource ID. Type: String</td>
</tr>
</tbody>
</table>
### Response Elements

The elements in the following table are wrapped in a `DescribeTagsResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: <code>xsd:string</code></td>
</tr>
<tr>
<td>tagSet</td>
<td>A list of tags. Each tag is wrapped in an <code>item</code> element.</td>
</tr>
<tr>
<td></td>
<td>Type: <code>TagSetItemType</code> (p. 526)</td>
</tr>
</tbody>
</table>

### Examples

#### Example Request

This example describes all the tags in your account.

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

Sample response:

```xml
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <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-5f4e3d2a</resourceId>
      <resourceType>instance</resourceType>
      <key>webserver</key>
      <value/>
    </item>
  </tagSet>
</DescribeTagsResponse>
```
Example Request

This example describes only the tags for the AMI with ID ami-1a2b3c4d.

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/2012-12-01/">
  <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 Request

This example describes the tags for all your instances.

https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
Sample response:

```xml
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>i-5f4e3d2a</resourceId>
      <resourceType>instance</resourceType>
      <key>webserver</key>
      <value/>
    </item>
    <item>
      <resourceId>i-5f4e3d2a</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Production</value>
    </item>
    <item>
      <resourceId>i-12345678</resourceId>
      <resourceType>instance</resourceType>
      <key>database_server</key>
      <value/>
    </item>
    <item>
      <resourceId>i-12345678</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Test</value>
    </item>
  </tagSet>
</DescribeTagsResponse>
```

**Example Request**

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`.

https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=key
&Filter.1.Value.1=webserver
&AUTHPARAMS

Sample response:

```xml
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>i-5f4e3d2a</resourceId>
      <resourceType>instance</resourceType>
      <key>webserver</key>
      <value/>
    </item>
  </tagSet>
</DescribeTagsResponse>
```
Example Request

This example describes the tags for all your instances tagged with either stack=Test or stack=Production.

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
&AUTHPARAMS

Sample response:

<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>i-5f4e3d2a</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Production</value>
    </item>
    <item>
      <resourceId>i-12345678</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Test</value>
    </item>
  </tagSet>
</DescribeTagsResponse>

Example Request

This example describes the tags for all your instances tagged with Purpose=[empty string].

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
Related Operations

• CreateTags (p. 103)
• DeleteTags (p. 149)
DescribeVolumes

Description

Describes one or more of your Amazon EBS volumes. For more information about Amazon EBS, see Amazon Elastic Block Store in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VolumeId.n</td>
<td>One or more volume IDs.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: Describes all volumes that you own, or only those otherwise specified.</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain volumes. For example, you can use a filter to specify that you're interested in volumes whose status is available. You can specify multiple values for a filter. The response includes information for a volume only if it matches at least one of the filter values that you specified.

You can specify multiple filters (for example, specify that the volume is available, and has a specific tag. The response includes information for a volume only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of \*amazon\?\ searches for the literal string *amazon?\.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>attachment.attach-time</td>
<td>The time stamp when the attachment initiated. Type: DateTime</td>
</tr>
<tr>
<td>attachment.delete-on-termination</td>
<td>Whether the volume is deleted on instance termination. Type: Boolean</td>
</tr>
<tr>
<td>Filter Name</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>attachment.device</td>
<td>The device name that is exposed to the instance (for example, /dev/sda1). Type: String</td>
</tr>
<tr>
<td>attachment.instance-id</td>
<td>The ID of the instance the volume is attached to. Type: String</td>
</tr>
<tr>
<td>attachment.status</td>
<td>The attachment state. Type: String. Valid values: attaching</td>
</tr>
<tr>
<td>availability-zone</td>
<td>The Availability Zone in which the volume was created. Type: String</td>
</tr>
<tr>
<td>create-time</td>
<td>The time stamp when the volume was created. Type: DateTime</td>
</tr>
<tr>
<td>size</td>
<td>The size of the volume, in GiB (for example, 20). Type: String</td>
</tr>
<tr>
<td>snapshot-id</td>
<td>The snapshot from which the volume was created. Type: String</td>
</tr>
<tr>
<td>status</td>
<td>The status of the volume. Type: String. Valid values: creating</td>
</tr>
<tr>
<td>tag-key</td>
<td>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 &quot;tag-key=Purpose&quot; and the filter &quot;tag-value=X&quot;, 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 filter later in this table. For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide. Type: String</td>
</tr>
<tr>
<td>tag-value</td>
<td>The value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String</td>
</tr>
</tbody>
</table>
Filter Name | Description
--- | ---
tag: key | Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:
Filter.1.Name=tag:Purpose
Filter.1.Value.1=X

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:
Filter.1.Name=tag:Purpose
Filter.1.Value.1=X
Filter.1.Value.2=Y

volume-id | The volume ID.
Type: String

volume-type | The Amazon EBS volume type. If the volume is an io1 volume, the response includes the IOPS as well.
Type: String
Valid values: standard | io1

### Response Elements

The elements in the following table are wrapped in a `DescribeVolumesResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>volumeSet</td>
<td>A list of volumes. Each volume is wrapped in an item element.</td>
</tr>
<tr>
<td></td>
<td>Type: DescribeVolumesSetItemResponseType (p. 462)</td>
</tr>
</tbody>
</table>

### Examples

#### Example Request

This example describes all volumes associated with your account.

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

#### Example Response

```xml
<DescribeVolumesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4ec-99ed-be587EXAMPLE</requestId>
</DescribeVolumesResponse>`
Example Request

This example describes all volumes that are both attached to instance i-1a2b3c4d and also set to delete when the instance terminates.

https://ec2.amazonaws.com/?Action=DescribeVolumes
&Filter.1.Name=attachment.instance-id
&Filter.1.Value.1=i-1a2b3c4d
&Filter.2.Name=attachment.delete-on-termination
&Filter.2.Value.1=true
&AUTHPARAMS

Related Operations

- CreateVolume (p. 105)
- DeleteVolume (p. 152)
- AttachVolume (p. 29)
- DetachVolume (p. 331)
DescribeVolumeAttribute

Description

Describes an attribute of a volume. You can specify only one attribute at a time.

Currently, volumes have two attributes, `autoEnableIO` and `productCodes`.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VolumeId</td>
<td>The ID of the volume.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Attribute</td>
<td>The instance attribute.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: <code>autoEnableIO</code></td>
<td>productCodes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a `DescribeVolumeAttributeResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>volumeId</td>
<td>The ID of the volume.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>autoEnableIO</td>
<td>The state of <code>autoEnableIO</code> attribute.</td>
</tr>
<tr>
<td></td>
<td>Type: NullableAttributeBooleanValueType</td>
</tr>
<tr>
<td>productCodes</td>
<td>A list of product codes. Each product code is wrapped in an item element that contains a product code and a type.</td>
</tr>
<tr>
<td></td>
<td>Type: ProductCodesSetItemType (p. 508)</td>
</tr>
</tbody>
</table>

Example

Example Request

This example describes the `autoEnableIO` attribute of the volume vol-12345678.

https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute &Attribute=autoEnableIO
Example Response

```xml
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeId>vol-12345678</volumeId>
  <autoEnableIO>
    <value>false</value>
  </autoEnableIO>
</DescribeVolumeAttributeResponse>
```

Example Request

This example describes the `productCodes` attribute of the volume `vol-12345678`.

```xml
https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=productCodes
&VolumeId=vol-12345678
&AUTHPARAMS
```

Example Response

```xml
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeId>vol-12345678</volumeId>
  <productCodes>
    <item>
      <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
      <type>marketplace</type>
    </item>
  </productCodes>
</DescribeVolumeAttributeResponse>
```

Related Operations

- DescribeVolumeStatus (p. 311)
- ModifyVolumeAttribute (p. 368)
DescribeVolumeStatus

Description

Describes the status of one or more 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, once 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 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 an 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 will show enable-volume-io. This means that you may want to enable the I/O operations for the volume by calling the EnableVolumeIO (p. 343) 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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VolumeId.n</td>
<td>One or more volume IDs. Type: String Default: Describes all volumes that you own, or only those otherwise specified.</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names.</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter.</td>
<td>No</td>
</tr>
</tbody>
</table>
Supported Filters

You can specify filters so that the response includes information for only certain volumes. For example, you can use a filter to specify that you're interested in volumes that have impaired status. You can specify multiple values for a filter. The response includes information for a volume only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify volumes that are in a specific Availability Zone and have the status impaired. The response includes information for a volume only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of *amazon?\ searches for the literal string *amazon?\. The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>availability-zone</td>
<td>The Availability Zone of the instance.</td>
</tr>
<tr>
<td>volume-status.status</td>
<td>The status of the volume.</td>
</tr>
<tr>
<td>volume-status.details-name</td>
<td>The cause for the volume-status.status.</td>
</tr>
<tr>
<td>volume-status.details-status</td>
<td>The status of the volume-status.details-name.</td>
</tr>
<tr>
<td>event.description</td>
<td>A description of the event.</td>
</tr>
</tbody>
</table>
## Filter Name

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>event.not-after</td>
<td>The latest end time for the event.</td>
</tr>
<tr>
<td></td>
<td>Type: DateTime</td>
</tr>
<tr>
<td>event.not-before</td>
<td>The earliest start time for the event.</td>
</tr>
<tr>
<td></td>
<td>Type: DateTime</td>
</tr>
<tr>
<td>event.event-id</td>
<td>The event ID.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>event.event-type</td>
<td>The event type.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values for io-enabled:</td>
</tr>
<tr>
<td></td>
<td>potential-data-inconsistency</td>
</tr>
<tr>
<td></td>
<td>Valid values for io-performance:</td>
</tr>
<tr>
<td></td>
<td>io-performance:degraded</td>
</tr>
<tr>
<td></td>
<td>io-performance:severely-degraded</td>
</tr>
<tr>
<td></td>
<td>io-performance:stalled</td>
</tr>
<tr>
<td>action.code</td>
<td>The action code for the event, for example,</td>
</tr>
<tr>
<td></td>
<td>enable-volume-io</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>action.event-id</td>
<td>The event ID associated with the action.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>action.description</td>
<td>A description of the action.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
</tbody>
</table>

## Response Elements

The elements in the following table are wrapped in a DescribeVolumeStatusResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>volumeStatusSet</td>
<td>A list of volumes. Each volume is wrapped in an item element.</td>
</tr>
<tr>
<td></td>
<td>Type: VolumeStatusItemType</td>
</tr>
<tr>
<td>nextToken</td>
<td>A string specifying the next paginated set of results to return.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
</tbody>
</table>

## Examples

### Example Request

This example describes the status of all the volumes associated with your account.
Example Response

```xml
<DescribeVolumeStatus xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeStatusSet>
    <item>
      <volumeId>vol-11111111</volumeId>
      <availabilityZone>us-east-1d</availabilityZone>
      <volumeStatus>
        <status>ok</status>
        <details>
          <item>
            <name>io-enabled</name>
            <status>passed</status>
          </item>
        </details>
      </volumeStatus>
    </item>
    <item>
      <volumeId>vol-22222222</volumeId>
      <availabilityZone>us-east-1d</availabilityZone>
      <volumeStatus>
        <status>impaired</status>
        <details>
          <item>
            <name>io-enabled</name>
            <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>
</DescribeVolumeStatusResponse>
```
Example Request

This example describes all the volumes in the us-east-1d Availability Zone with failed io-enabled status.

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

Related Operations

- ModifyVolumeAttribute (p. 368)
- DescribeVolumeAttribute (p. 309)
- EnableVolumeIO (p. 343)
DescribeVpcs

Description

Describes one or more of your VPCs.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>vpcId.n</td>
<td>One or more VPC IDs. Type: String Default: Describes your VPCs, or only those otherwise specified</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter. Type: String Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain VPCs. For example, you can use a filter to specify that you’re interested in VPCs in the available state. You can specify multiple values for a filter. The response includes information for a VPC only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify VPCs that use one of several sets of DHCP options and are in the available state. The results include information for a VPC only if it matches all the filters that you specified. If there’s no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of \*amazon\?\ searches for the literal string *amazon?\.

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>cidr</td>
<td>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. Type: String Constraints: Must contain the slash followed by one or two digits (for example, /28)</td>
</tr>
</tbody>
</table>
### Filter Name

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dhcp-options-id</td>
<td>The ID of a set of DHCP options. Type: String</td>
</tr>
<tr>
<td>state</td>
<td>The state of the VPC. Type: String</td>
</tr>
<tr>
<td>valid values:</td>
<td>pending</td>
</tr>
<tr>
<td>tag-key</td>
<td>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 &quot;tag-key=Purpose&quot; and the filter &quot;tag-value=X&quot;, 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 filter later in this table. For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide. Type: String</td>
</tr>
<tr>
<td>tag-value</td>
<td>The value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String</td>
</tr>
<tr>
<td>tag: key</td>
<td>Filters the response based on a specific tag/value combination. Example: To list just the resources that have been assigned tag Purpose=X, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</td>
</tr>
<tr>
<td>vpc-id</td>
<td>The ID of the VPC. Type: String</td>
</tr>
</tbody>
</table>

### Response Elements

The elements in the following table are wrapped in a DescribeVpcsResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>vpcSet</td>
<td>A list of VPCs. Each VPC is wrapped in an item element. Type: VpcType (p. 532)</td>
</tr>
</tbody>
</table>
Examples

Example Request

This example gives a description of the VPC with ID vpc-1a2b3c4d.

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

Example Response

<DescribeVpcsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <vpcSet>
    <item>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <state>available</state>
      <cidrBlock>10.0.0.0/23</cidrBlock>
      <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
      <instanceTenancy>default</instanceTenancy>
      <tagSet/>
    </item>
  </vpcSet>
</DescribeVpcsResponse>

Example Request

This example uses filters to give a description of any VPC you own that uses the set of DHCP options with ID dopt-7a8b9c2d or dopt-2b2a3d3c and whose state is available.

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

Related Operations

- CreateVpc (p. 108)
- DeleteVpc (p. 154)
- CreateDhcpOptions (p. 60)
- AssociateDhcpOptions (p. 21)
DescribeVpnConnections

Description

Describes one or more of your VPN connections.

Important

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

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

Note

You can get the customer gateway configuration information in a friendly format by using the ec2-describe-vpn-connections command instead. For more information, see ec2-describe-vpn-connections.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VpnConnectionId.n</td>
<td>A VPN connection ID. You can specify more than one in the request.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: Describes your VPN connections</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain VPN connections. For example, you can use a filter to specify that you're interested in the VPN connections in the pending or available state. You can specify multiple values for a filter. The response includes information for a VPN connection only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify VPN connections that are associated with a specific virtual private gateway, and the gateway is in the pending or available state. The response includes information for a VPN connection only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of *amazon?\ searches for the literal string *amazon?.

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The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>customer-gateway-configuration</code></td>
<td>The configuration information for the customer gateway. Type: String</td>
</tr>
<tr>
<td><code>customer-gateway-id</code></td>
<td>The ID of a customer gateway associated with the VPN connection. Type: String</td>
</tr>
<tr>
<td><code>state</code></td>
<td>The state of the VPN connection. Type: String Valid values: pending</td>
</tr>
<tr>
<td><code>option.static-routes-only</code></td>
<td>Indicates whether the connection has static routes only. Used for devices that do not support Border Gateway Protocol (BGP). Type: Boolean</td>
</tr>
<tr>
<td><code>route.destination-cidr-block</code></td>
<td>The destination CIDR block. This corresponds to the subnet used in a customer data center. Type: String</td>
</tr>
<tr>
<td><code>bgp-asn</code></td>
<td>The BGP Autonomous System Number (ASN) associated with a BGP device. Type: Integer</td>
</tr>
</tbody>
</table>
| `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` filter later in this table.
For more information about tags, see Tagging Your Resources in the Amazon Elastic Compute Cloud User Guide. Type: String |
| `tag-value` | The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter. Type: String |
| `tag: key` | Filters the response based on a specific tag/value combination.
Example: To list just the resources that have been assigned tag `Purpose=X`, specify:
Filter.1.Name=tag:Purpose
Filter.1.Value.1=X
Example: To list just resources that have been assigned tag `Purpose=X OR Purpose=Y`, specify:
Filter.1.Name=tag:Purpose
Filter.1.Value.1=X
Filter.1.Value.2=Y |
| `type` | The type of VPN connection. Currently the only supported type is ipsec.1. Type: String Valid values: ipsec.1 |
Response Elements

The elements in the following table are wrapped in a `DescribeVpnConnectionsResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td>vpnConnectionSet</td>
<td>A list of VPN connections. Each VPN connection is wrapped in an <code>item</code> element.</td>
</tr>
<tr>
<td></td>
<td>Type: <code>VpnConnectionType</code> (p. 533)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example describes the VPN connection with ID vpng-44a8938f. The response includes the customer gateway configuration information. Because it's a long set of information, we haven't displayed it here. You can see an example in the topic for `CreateVpnConnection`.

https://ec2.amazonaws.com/?Action=DescribeVpnConnections
&VpnConnectionId.1=vpn-44a8938f
&AUTHPARAMS

Example Response

```
<DescribeVpnConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnConnectionSet>
    <item>
      <vpnConnectionId>vpng-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 Request

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.

https://ec2.amazonaws.com/?Action=DescribeVpnConnections
&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

Related Operations

• CreateVpnConnection (p. 111)
• DeleteVpnConnection (p. 156)
DescribeVpnGateways

Description

Describes one or more of your virtual private gateways.

For more information about virtual private gateways, see Adding an IPsec Hardware Virtual Private Gateway to Your VPC in the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VpnGatewayId.n</td>
<td>A virtual private gateway ID. You can specify more than one in the request. Type: String Default: Describes your virtual private gateways.</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Name</td>
<td>The name of a filter. See the table in the Supported Filters section for a list of supported filter names. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Filter.n.Value.m</td>
<td>A value for the filter. See the table in the Supported Filters section for a list of supported values for each filter. Type: String Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>

Supported Filters

You can specify filters so that the response includes information for only certain virtual private gateways. For example, you can use a filter to specify that you're interested in the virtual private gateways in the pending or available state. You can specify multiple values for a filter. The response includes information for a virtual private gateway only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify virtual private gateways that are in a specific Availability Zone and are in the pending or available state. The response includes information for a virtual private gateway only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

You can use wildcards in a filter value. An asterisk (*) matches zero or more characters, and a question mark (?) matches exactly one character. You can escape special characters using a backslash (\) before the character. For example, a value of "*amazon?\" searches for the literal string "*amazon?".

The following table lists the available filters.

<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| attachment.state| The current state of the attachment between the gateway and the VPC. Type: String Valid values: attaching | attached | detaching | detached
<table>
<thead>
<tr>
<th>Filter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>attachment.vpc-id</td>
<td>The ID of an attached VPC.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>availability-zone</td>
<td>The Availability Zone for the virtual private gateway.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>state</td>
<td>The state of the virtual private gateway.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: pending</td>
</tr>
<tr>
<td>tag-key</td>
<td>The key of a tag assigned to the resource. This filter is independent of the</td>
</tr>
<tr>
<td></td>
<td>tag-value filter. For example, if you use both the filter &quot;tag-key=Purpose&quot;</td>
</tr>
<tr>
<td></td>
<td>and the filter &quot;tag-value=X&quot;, you get any resources assigned both the tag</td>
</tr>
<tr>
<td></td>
<td>key Purpose (regardless of what the tag's value is), and the tag value X</td>
</tr>
<tr>
<td></td>
<td>(regardless of what the tag's key is). If you want to list only resources</td>
</tr>
<tr>
<td></td>
<td>where Purpose is X, see the tag: key filter later in this table.</td>
</tr>
<tr>
<td></td>
<td>For more information about tags, see Tagging Your Resources in the Amazon</td>
</tr>
<tr>
<td></td>
<td>Elastic Compute Cloud User Guide.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>tag-value</td>
<td>The value of a tag assigned to the resource. This filter is independent of the</td>
</tr>
<tr>
<td></td>
<td>tag-key filter.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>tag: key</td>
<td>Filters the response based on a specific tag/value combination. Example:</td>
</tr>
<tr>
<td></td>
<td>To list just the resources that have been assigned tag Purpose=X, specify:</td>
</tr>
<tr>
<td></td>
<td>Filter.1.Name=tag:Purpose</td>
</tr>
<tr>
<td></td>
<td>Filter.1.Value.1=X</td>
</tr>
<tr>
<td></td>
<td>Example: To list just resources that have been assigned tag Purpose=X OR</td>
</tr>
<tr>
<td></td>
<td>Purpose=Y, specify:</td>
</tr>
<tr>
<td></td>
<td>Filter.1.Name=tag:Purpose</td>
</tr>
<tr>
<td></td>
<td>Filter.1.Value.1=X</td>
</tr>
<tr>
<td></td>
<td>Filter.1.Value.2=Y</td>
</tr>
<tr>
<td>type</td>
<td>The type of virtual private gateway. Currently the only supported type is</td>
</tr>
<tr>
<td></td>
<td>ipsec.1.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: ipsec.1</td>
</tr>
<tr>
<td>vpn-gateway-id</td>
<td>The ID of the virtual private gateway.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in a DescribeVpnGatewaysResponse element.
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>vpnGatewaySet</td>
<td>A list of virtual private gateways. Each virtual private gateway is wrapped in an item element.</td>
</tr>
<tr>
<td></td>
<td>Type: VpnGatewayType (p. 534)</td>
</tr>
</tbody>
</table>

**Examples**

**Example Request**

This example gives a description of the virtual private gateway with ID vgw-8db04f81.

https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&VpnGatewayId.1=vgw-8db04f81

**Example Response**

```xml
<DescribeVpnGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <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 Request**

This example uses filters to give a description of any virtual private gateway you own that is in the us-east-1a Availability Zone, and whose state is either pending or available.

https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&Filter.1.Name=availability-zone
&Filter.1.Value.1=us-east-1a
&Filter.2.Name=state
&Filter.2.Value.1=pending
Related Operations

- CreateVpnGateway (p. 120)
- DeleteVpnGateway (p. 160)
DetachInternetGateway

Description

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InternetGatewayId</td>
<td>The ID of the Internet gateway. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td>VpcId</td>
<td>The ID of the VPC. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a `DetachInternetGatewayResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

The example detaches the Internet gateway with ID igw-eaad4883 from the VPC with ID vpc-11ad4878.

https://ec2.amazonaws.com/?Action=DetachInternetGateway
&InternetGatewayId=igw-eaad4883
&VpcId=vpc-11ad4878
&AUTHPARAMS

Example Response

```
<DetachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
</DetachInternetGatewayResponse>
```
<return>true</return>
</DetachInternetGatewayResponse>

Related Operations

- CreateInternetGateway (p. 69)
- DeleteInternetGateway (p. 126)
- DetachInternetGateway (p. 25)
- DescribeInternetGateways (p. 223)
**DetachNetworkInterface**

**Description**
Detaches a network interface from an instance.

**Request Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>AttachmentId</td>
<td>The ID of the attachment.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Force</td>
<td>Set to true to force a detachment.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in a `DetachNetworkInterfaceResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:boolean</td>
</tr>
</tbody>
</table>

**Examples**

**Example Request**

This example detaches an elastic network interface (ENI) `eni-attach-d94b09b0`.

https://ec2.amazonaws.com/?Action=DetachNetworkInterface
&AttachmentId=eni-attach-d94b09b0
&AUTHPARAMS

**Example Response**

```xml
  <requestId>ce540707-0635-46bc-97da-33a8a362a0e8</requestId>
  <return>true</return>
</DetachNetworkInterfaceResponse>
```
Related Operations

- AttachNetworkInterface (p. 27)
- CreateNetworkInterface (p. 78)
- DeleteNetworkInterface (p. 134)
- DescribeNetworkInterfaceAttribute (p. 235)
- DescribeNetworkInterfaces (p. 237)
- ModifyNetworkInterfaceAttribute (p. 364)
- ResetNetworkInterfaceAttribute (p. 407)
DetachVolume

**Description**

Detaches an Amazon 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 will result in volume being stuck in "busy" state while detaching. For more information about Amazon EBS, see Using Amazon Elastic Block Store in the *Amazon Elastic Compute Cloud User Guide*.

**Note**

If an Amazon EBS volume is the root device of an instance, it cannot be detached while the instance is in the "running" state. To detach the root volume, stop the instance first. If the root volume is detached from an instance with an AWS Marketplace product code, then the AWS Marketplace product codes from that volume are no longer associated with the instance.

**Request Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VolumeId</strong></td>
<td>The ID of the volume. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>InstanceId</strong></td>
<td>The ID of the instance. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td><strong>Device</strong></td>
<td>The device name. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td><strong>Force</strong></td>
<td>Forces detachment if the previous detachment attempt did not occur cleanly (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 Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in a *DetachVolumeResponse* element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
</tbody>
</table>
### Examples

**Example Request**

This example detaches volume `vol-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=DetachVolume
&VolumeId=vol-1a2b3c4d
&AUTHPARAMS
```

**Example Response**

```
<DetachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1a2b3c4d</volumeId>
  <instanceId>i-1a2b3c4d</instanceId>
  <device>/dev/sdh</device>
  <status>detaching</status>
  <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</DetachVolumeResponse>
```

**Related Operations**

- CreateVolume (p. 105)
- DeleteVolume (p. 152)
- DescribeVolumes (p. 305)
- AttachVolume (p. 29)
**DetachVpnGateway**

**Description**

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.

For more information about virtual private gateways, see Adding an IPsec Hardware Virtual Private Gateway to Your VPC in the *Amazon Virtual Private Cloud User Guide*.

**Request Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VpnGatewayId</td>
<td>The ID of the virtual private gateway. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>VpcId</td>
<td>The ID of the VPC. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in a `DetachVpnGatewayResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

**Examples**

**Example Request**

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

https://ec2.amazonaws.com/?Action=DetachVpnGateway&VpnGatewayId=vgw-8db04f81
Example Response

```xml
<DetachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DetachVpnGatewayResponse>
```

Related Operations

- AttachVpnGateway (p. 31)
- DescribeVpnGateways (p. 323)
DisableVgwRoutePropagation

Description
Disables a virtual private gateway (VGW) from propagating routes to the routing tables of a VPC.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>RouteTableId</td>
<td>The ID of the routing table.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>GatewayId</td>
<td>The ID of the virtual private gateway.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DisableVgwRoutePropagationResponseType element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example disables the virtual private gateway vgw-d8e09e8a from automatically propagating routes to the routing table with ID rtb-c98a35a0.

https://ec2.amazonaws.com/?Action=DisableVgwRoutePropagationResponse
&RouteTableID=rtb-c98a35a0
&GatewayId= vgw-d8e09e8a
&AUTHPARAMS

Example Response

<DisableVgwRoutePropagationResponse xmlns='http://ec2.amazonaws.com/doc/2012-08-15'/>
Related Operations

- DisableVgwRoutePropagation (p. 335)
DisassociateAddress

Description
Disassociates an Elastic IP address from the instance or network interface it’s associated with.

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

This is an idempotent action. If you enter it more than once, Amazon EC2 does not return an error.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>PublicIp</td>
<td>[Amazon EC2] The Elastic IP address.</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: Required for Amazon EC2</td>
<td></td>
</tr>
<tr>
<td>AssociationId</td>
<td>[VPC] The association ID corresponding to the Elastic IP address.</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: Required for VPC</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DisassociateAddressResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request
This example disassociates the EC2 Elastic IP address 67.202.55.255 from the instance to which it is assigned.

https://ec2.amazonaws.com/?Action=DisassociateAddress&PublicIp=192.0.2.1&AUTHPARAMS

API Version 2012-12-01
337
Example Request

This example disassociates the Elastic IP address with association ID eipassoc-aa7486c3 from the instance in a VPC to which it is assigned.

https://ec2.amazonaws.com/?Action=DisassociateAddress
&AssociationID=eipassoc-aa7486c3
&AUTHPARAMS

Example Response

<DisassociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DisassociateAddressResponse>

Related Operations

- AllocateAddress (p. 13)
- DescribeAddresses (p. 164)
- ReleaseAddress (p. 381)
- AssociateAddress (p. 18)
DisassociateRouteTable

Description

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>AssociationId</td>
<td>The association ID representing the current association between the route table and subnet. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a DisassociateRouteTableResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example disassociates the route table with association ID rtbassoc-fdad4894 from the subnet it's associated to.

https://ec2.amazonaws.com/?Action=DisassociateRouteTable &AssociationId=rtbassoc-fdad4894 &AUTHPARAMS

Example Response

<DisassociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</DisassociateRouteTableResponse>

Related Operations

- CreateRouteTable (p. 92)
- AssociateRouteTable (p. 23)
- DeleteRouteTable (p. 140)
- DescribeRouteTables (p. 267)
- ReplaceRouteTableAssociation (p. 390)
EnableVgwRoutePropagation

Description

Enables a virtual private gateway (VGW) to propagate routes to the routing tables of a VPC.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>RouteTableId</td>
<td>The ID of the routing table. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>GatewayId</td>
<td>The ID of the virtual private gateway. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in an EnableVgwRoutePropagationResponseType element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example enables the virtual private gateway vgw-d8e09e8a to automatically propagate routes to the routing table with ID rtb-c98a35a0.

https://ec2.amazonaws.com/?Action=EnableVgwRoutePropagation&RouteTableID=rtb-c98a35a0&GatewayId=vgw-d8e09e8a&AUTHPARAMS

Example Response

<EnableVgwRoutePropagation xmlns='http://ec2.amazonaws.com/doc/2012-08-15/'>
    <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
</EnableVgwRoutePropagation>
<return>true</return>
</EnableVgwRoutePropagation>

Related Operations

• DisableVgwRoutePropagation (p. 335)
EnableVolumeIO

Description

Enables I/O operations for a volume that had I/O operations disabled because the data on the volume was potentially inconsistent.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VolumeId</td>
<td>The volume ID. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in an EnableVolumeIOResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the I/O operations of the volume are enabled. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example enables the I/O operations of the volume vol-8888888.

https://ec2.amazonaws.com/?Action=EnableVolumeIO&VolumeId=vol-8888888&AUTHPARAMS

Example Response

<EnableVolumeIOResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</EnableVolumeIOResponse>

Related Operations

- DescribeVolumeStatus (p. 311)
• ModifyVolumeAttribute (p. 368)
• DescribeVolumeAttribute (p. 309)
GetConsoleOutput

Description

Retrieves console output for the specified instance.

Instance console output is buffered and posted shortly after instance boot, reboot, and termination. Amazon EC2 preserves the most recent 64 KB output which will be available for at least one hour after the most recent post.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceId</td>
<td>The ID of the instance. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a GetConsoleOutputResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>instanceId</td>
<td>The instance ID. Type: xsd:string</td>
</tr>
<tr>
<td>timestamp</td>
<td>The time the output was last updated. Type: xsd:dateTime</td>
</tr>
<tr>
<td>output</td>
<td>The console output, Base64 encoded. Type: xsd:string</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example retrieves the console output for the i-10a64379 Linux and UNIX instance.

https://ec2.amazonaws.com/?Action=GetConsoleOutput
&InstanceId=i-10a64379
&AUTHPARAMS
Example Response

<GetConsoleOutputResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-9ded-be587EXAMPLE</requestId>
  <instanceId>i-28a64341</instanceId>
  <timestamp>2010-10-14T01:12:41.000Z</timestamp>
  <output>TGludXggdmVyc2lvbiAyLjYuMTYteGVuVSAoYnVpGR1ckBwYXRjaGJhC5hb
WF6b25zYSkgKGdj
YyB2ZXJzaW9uIDQuMC4xIDIwMDUwNzI3IC5hZGWQgSGF0IDQuMC4xLTUpKSAjMSBTTVAgVGlh
WF6b25zYSkgKGdj
YyB2ZXJzaW9uIDQuMC4xIDIwMDUwNzI3IC5hZGWQgSGF0IDQuMC4xLTUpKSAjMSBTTVAgVGlh
</output>
</GetConsoleOutputResponse>

Related Operations

- RunInstances (p. 417)
GetPasswordData

Description

Retrieves the encrypted administrator password for an instance running Windows.

Note
The Windows password is only generated the first time an AMI is launched. It is not generated for rebundled AMIs or after the password is changed on an instance. The password is encrypted using the key pair that you provided.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceId</td>
<td>A Windows instance ID. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a GetPasswordDataResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>instanceId</td>
<td>The ID of the instance. Type: xsd:string</td>
</tr>
<tr>
<td>timestamp</td>
<td>The time the data was last updated. Type: xsd:dateTime</td>
</tr>
<tr>
<td>passwordData</td>
<td>The password of the instance. Type: xsd:string</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example returns the encrypted version of the administrator password for the i-2574e22a instance.

https://ec2.amazonaws.com/?Action=GetPasswordData
&InstanceId=i-10a64379
&AUTHPARAMS
Example Response

```xml
<GetPasswordDataResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-2574e22a</instanceId>
  <timestamp>2009-10-24 15:00:00</timestamp>
  <passwordData>TGludXggdmVyc2lvbiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hbWF6b25zYSkgKGdj</passwordData>
</GetPasswordDataResponse>
```

Related Operations

- RunInstances (p. 417)
**ImportInstance**

**Description**

Creates a new import instance task using metadata from the specified disk image. After importing the image, you then upload it using the `ec2-upload-disk-image` command in the EC2 command line tools. For more information, see Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2 in the Amazon Elastic Compute Cloud User Guide.

**Request Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>A description of the instance being imported.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td><strong>LaunchSpecification.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Architecture</td>
<td>The architecture of the instance.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: i386</td>
<td>x86_64</td>
</tr>
<tr>
<td>GroupName.n</td>
<td>One or more security group names.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>UserData</td>
<td>User data to be made available to the instance.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>InstanceType</td>
<td>The instance type. See Available Instance Types for more information.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>AvailabilityZone</td>
<td>The Availability Zone to launch the instance into.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: EC2 chooses a zone for you</td>
<td></td>
</tr>
<tr>
<td>Monitoring.Enabled</td>
<td>Specifies whether to enable detailed monitoring for the instance.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: false</td>
<td></td>
</tr>
<tr>
<td>SubnetId</td>
<td>[VPC] The ID of the subnet to launch the instance into.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</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>LaunchSpecification. InstanceInitiatedShutdownBehavior</td>
<td>Specifies whether the instance stops or terminates on instance-initiated shutdown. Type: String Valid values: stop</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>terminate Default: stop</td>
<td></td>
</tr>
<tr>
<td>LaunchSpecification. PrivateIpAddress</td>
<td>[VPC] You can optionally use this parameter to assign the instance a specific available IP address from the IP address range of the subnet. Type: String Default: We selects an IP address from the IP address range of subnet for the instance</td>
<td>No</td>
</tr>
<tr>
<td>DiskImage.n.Image.Format</td>
<td>The file format of the disk image. Type: String Default: None Valid values: VMDK</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>RAW</td>
<td>VHD</td>
</tr>
<tr>
<td>DiskImage.n.Image.Bytes</td>
<td>The number of bytes in the disk image. Type: Long Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>DiskImage.n.Image.ImportManifestUrl</td>
<td>The manifest for the disk image, 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 &quot;Signing and Authenticating REST Requests&quot; section of the Signing and Authenticating REST Requests topic in the Amazon Simple Storage Service Developer Guide. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>DiskImage.n.Image.Description</td>
<td>An optional description of the disk image. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>DiskImage.n.Volume.Size</td>
<td>The size, in GB (2^30 bytes), of the Amazon EBS volume that will hold the converted image. Type: Integer Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>Platform</td>
<td>The EC2 instance operating system. Type: String Default: None Valid value: Windows</td>
<td>No</td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in an ImportInstanceResponse element.
Examples

Example Request

This example creates an import instance task that migrates a Windows Server 2008 SP2 (32-bit) VM into the AWS us-east-1 region.

```
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=5snej01T1Tl0u7KeXtEXAMPLE%3D
&DiskImage.1.Volume.Size=12
&Platform=Windows
&AUTHPARAMS
```

Example Response

```
<ImportInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <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=5snej01T1Tl0u7KeXtEXAMPLE%3D
            </importManifestUrl>
        </item>
        <status>active</status>
      </volumes>
    </importInstance>
  </conversionTask>
</ImportInstanceResponse>
```
Related Operations

- ImportVolume (p. 355)
- DescribeConversionTasks (p. 175)
- CancelConversionTask (p. 45)
**ImportKeyPair**

**Description**

Imports the public key from an RSA key pair that you created with a third-party tool. Compare this with CreateKeyPair, 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.

You can easily create an RSA key pair on Windows and Linux using the `ssh-keygen` command line tool (provided with the standard OpenSSH installation). Standard library support for RSA key pair creation is also available in Java, Ruby, Python, and many other programming languages.

Supported formats:

- OpenSSH public key format (e.g., the format in `~/.ssh/authorized_keys`)
- Base64 encoded DER format
- SSH public key file format as specified in RFC4716

DSA keys are not supported. Make sure your key generator is set up to create RSA keys.

Supported lengths: 1024, 2048, and 4096.

**Request Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>KeyName</td>
<td>A unique name for the key pair. Type: String, Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>PublicKeyMaterial</td>
<td>The public key. You must base64 encode the public key material before sending it to AWS. Type: String, Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in an `ImportKeyPairResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>keyName</td>
<td>The key pair name you provided. Type: xsd:string</td>
</tr>
<tr>
<td>keyFingerprint</td>
<td>The MD5 public key fingerprint as specified in section 4 of RFC4716. Type: xsd:string</td>
</tr>
</tbody>
</table>
Examples

Example Request

This example uploads the public key for a key pair you name gsg-keypair.

```
https://ec2.amazonaws.com/?Action=ImportKeyPair
&KeyName=gsg-keypair
&PublicKeyMaterial=LS0tLS1CRUdJTiBDRVJUSUZJQ0FURS0tLS0tDQpNSU1DZhPDQOFIQd2dO1CQWdJR0FQa1RYr3pQ
TUEwOntCudTSIzIrFFQgkJRUVFNRK14Q3pB8kJnt12CQV1UDQpBbf2UTVJNd0VWURWUWVFLRdxwQmJXRjZi
MjR1WTI5dElRd3d211E1VFRTfVE3TkJNMMU14SVRB2kJnt12CQU1UDQpHRUZVX1CTWFXMXBkR12rTVGmMz
Vn12VzVqWNRCRFUQVQWQGdzB3T1RBMO16RX1VFQEXzTxpwYUZ3MhNHREzDQpNekV5TVRM016VmFNKp14Q3pB8K
Jnt12CQV1UQWxWVE1STxdFUV1E1FROV3cEJjV0Y2Yj10dVyQXR1U1dMDQpGVU1E1FRTVE3NjU1WjM1kxH2j125
3pFV1kCTUDBMVFQXhNTWJUSnViRHxZ200MVWUjFNSUdmDQpNQTBHQ1Nxr1NJyjNEUUCQVFQVEOR05BRENCaVF
LQmdRQ1d0azBoQytrCExBrnp2YkFqc3U1TDU5bFMuJn10DQpr2EpaM0RFak1pLO1wV22DSzhpS2hYWw11itHs
JtNjNdMUHZ2aFVKw91eHVUU0XakFDMltybDjKzI1SWXVjdQpFZxg0Tj14ZlpC2pG0A2ZdEqwZ2NuwDddXaBt
ETcOTlp2ZmVi4mNGWU1HdHrpHrnRQ02QTmdUSE92VDE5DQoyR312b1YyU3BDVGFCUU1EQVFQmxfx3dVFQEGmdO
VkhREOEjZyghFQkFQOQlJQxQfdG211Ev1IwbEFROC9CQxdDQpZ11JS3dZQkJRUVhBd013REF2ZSMFRB0UqyQkF
Jd0FEQQRC205VSFEOU2nUU1RFNtu2UzUzYTdXNYTudLOqpejmxVXZ5TThnMHdEUV1K29a5Wh2Y05BUUVG1BF
Rgd2RUFnwJdD11JWHR1WFMINHvqbiU5J0TR0WNRn3krQQpCM023VWVNdJ4WU12GQySVUVWMTFLRVEy20hp2UDU12
jUWg4c2JXTTdtKzcrYm9Unmc2U2hLbuJ1bjkzNKRzTRDQpWRVF225qcE1aE2R2pmaVsPUEc1UG55VENhdkVqS31T
TUdpDVGxpTRTJmr2I3cFU5Uzg3KZ1G2m2sMGReDQpZ11Irbe155Wcru3ROOTg9DQoLS0tLUVO
```

Example Response

```
<ImportKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/" requestId="7a62c49f-347e-4fc4-9331-6e8eEXAMPLE"/>
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<keyName>gsg-keypair</keyName>
<keyFingerprint>00:00:00: 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00</keyFingerprint>
</ImportKeyPairResponse>
```

Related Operations

- CreateKeyPair (p. 71)
- DescribeKeyPairs (p. 226)
- DeleteKeyPair (p. 128)
ImportVolume

Description

Creates a new import volume task using metadata from the specified disk image. After importing the image, you then upload it using the `ec2-upload-disk-image` command in the EC2 command line tools. For more information, see Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2 in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>AvailabilityZone</td>
<td>The Availability Zone for the resulting Amazon EBS volume. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Image.Format</td>
<td>The file format of the disk image. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: VMDK</td>
<td>RAW</td>
</tr>
<tr>
<td>Image(Bytes)</td>
<td>The number of bytes in the disk image. Type: Long</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Image.ImportManifestUrl</td>
<td>The manifest for the disk image, 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 &quot;Signing and Authenticating REST Requests&quot; section of the Signing and Authenticating REST Requests topic in the Amazon Simple Storage Service Developer Guide. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>Description</td>
<td>An optional description of the volume being imported. Type: String</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Volume.Size</td>
<td>The size, in GB (2^30 bytes), of an Amazon EBS volume to hold the converted image. Type: Integer Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in an ImportVolumeResponse element.
**Examples**

**Example Request**

This example creates an import volume task that migrates a Windows Server 2008 SP2 (32-bit) volume into the AWS us-east-1 region.

```xml
https://ec2.amazonaws.com/?Action=ImportVolume
&AvailabilityZone=us-east-1c
&Image.Format=VMDK
&Image.Bytes=128696320
&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=5snej01T1tL0uR7KExtEXAMPLE%3D
&VolumeSize=8
&AUTHPARAMS
```

**Example Response**

```xml
<ImportVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <conversionTask>
    <conversionTaskId>import-i-fh95npoc</conversionTaskId>
    <expirationTime>2010-12-22T12:01Z</expirationTime>
    <importVolume>
      <bytesConverted>0</bytesConverted>
      <availabilityZone>us-east-1c</availabilityZone>
      <description/>
      <image>
        <format>VMDK</format>
        <size>128696320</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=5snej01T1tL0uR7KExtEXAMPLE%3D
        </importManifestUrl>
        <checksum>ccb1b0536a4a70e86016b85229b5c6b10b14a4eb</checksum>
      </image>
      <volume>
        <size>8</size>
        <id>vol-34d8a2ff</id>
      </volume>
    </importVolume>
    <state>active</state>
    <statusMessage/>
  </conversionTask>
</ImportVolumeResponse>
```
Related Operations

- ImportInstance (p. 349)
- DescribeConversionTasks (p. 175)
- CancelConversionTask (p. 45)
# ModifyImageAttribute

## Description

Modifies an attribute of an AMI.

**Note**

AWS Marketplace product codes cannot be modified. Images with an AWS Marketplace product code cannot be made public.

## Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ImageId</td>
<td>The AMI ID. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>LaunchPermission.Add .n.UserID</td>
<td>Adds the specified AWS account ID to the AMI's list of launch permissions. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>LaunchPermission.Remove.n.UserID</td>
<td>Removes the specified AWS account ID from the AMI's list of launch permissions. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>LaunchPermission.Add .n.Group</td>
<td>Adds the specified group to the image's list of launch permissions. The only valid value is <code>all</code>. Type: String Valid value: <code>all</code> (for all EC2 users) Default: None</td>
<td>No</td>
</tr>
<tr>
<td>LaunchPermission.Remove.n.Group</td>
<td>Removes the specified group from the image's list of launch permissions. The only valid value is <code>all</code>. Type: String Valid value: <code>all</code> (for all EC2 users) Default: None</td>
<td>No</td>
</tr>
<tr>
<td>ProductCode.n</td>
<td>Adds the specified product code to the specified instance store-backed AMI. After you add a product code to an AMI, it can’t be removed. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Description.Value</td>
<td>Changes the AMI’s description to the specified value. Type: String Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>
Response Elements

The elements in the following table are wrapped in a ModifyImageAttributeResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if successful. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example makes the AMI public (i.e., so any AWS account can launch it).


Example Request

This example makes the AMI private (i.e., so only you as the owner can launch it).


Example Request

This example grants launch permission to the AWS account with ID 111122223333.

https://ec2.amazonaws.com/?Action=ModifyImageAttribute&ImageId=ami-61a54008&LaunchPermission.Add.1.UserId=111122223333&AUTHPARAMS

Example Request

This example removes launch permission from the AWS account with ID 111122223333.

https://ec2.amazonaws.com/?Action=ModifyImageAttribute&ImageId=ami-61a54008&LaunchPermission.Remove.1.UserId=111122223333&AUTHPARAMS
Example Request

This example adds the 774F4FF8 product code to the ami-61a54008 AMI.

https://ec2.amazonaws.com/?Action=ModifyImageAttribute &ImageId=ami-61a54008 &ProductCode.1=774F4FF8 &AUTHPARAMS

Example Request

This example changes the description of the AMI to New_Description

https://ec2.amazonaws.com/?Action=ModifyImageAttribute &ImageId=ami-61a54008 &Description.Value=New_Description &AUTHPARAMS

Example Response

<ModifyImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <return>true</return>
</ModifyImageAttributeResponse>

Related Operations

• ResetImageAttribute (p. 403)
• DescribeImageAttribute (p. 186)
ModifyInstanceAttribute

Description

Modifies the specified attribute of the specified instance. You can specify only one attribute at a time.

Note

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's Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceId</td>
<td>The ID of the instance.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>InstanceType.Value</td>
<td>Changes the instance type to the specified value. See Available Instance Types for more information. An InvalidInstanceAttributeValue error will be returned if the instance type is not valid.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Kernel.Value</td>
<td>Changes the instance's kernel to the specified value.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Ramdisk.Value</td>
<td>Changes the instance's RAM disk to the specified value.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>UserData.Value</td>
<td>Changes the instance's user data to the specified value.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>DisableApiTermination.Value</td>
<td>Changes the instance's DisableApiTermination flag to the specified value. A value of true means you can't terminate the instance using the API (i.e., the instance is &quot;locked&quot;); a value of false means you can. You must modify this attribute before you can terminate any &quot;locked&quot; instances using the API.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>InstanceInitiatedShutdownBehavior.Value</td>
<td>Changes the instance's InstanceInitiatedShutdownBehavior flag to the specified value.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: stop</td>
<td>terminate</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
<td>Required</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>BlockDeviceMapping.Value</td>
<td>Modifies the <code>DeleteOnTermination</code> attribute for volumes that are currently attached. The volume must be owned by the caller. If no value is specified for <code>DeleteOnTermination</code>, the value defaults to true and the volume is deleted when the instance is terminated.</td>
<td>No</td>
</tr>
<tr>
<td>SourceDestCheck.Value</td>
<td>Enables a Network Address Translation (NAT) instance in a VPC to perform NAT. The attribute controls whether source/destination checking is enabled on the instance. A value of <code>true</code> means checking is enabled, and <code>false</code> means checking is disabled. The value must be <code>false</code> for the instance to perform NAT. For more information, see NAT Instances in the Amazon Virtual Private Cloud User Guide.</td>
<td>No</td>
</tr>
<tr>
<td>GroupId.n</td>
<td>For instances running in a VPC: Changes the security groups that an instance is in. 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 group ID and not the group name. For example, if you want the instance to be in sg-1a1a1a1a and sg-9b9b9b9b, specify GroupId.1=sg-1a1a1a1a and GroupId.2=sg-9b9b9b9b.</td>
<td>No</td>
</tr>
<tr>
<td>EbsOptimized</td>
<td>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.</td>
<td>No</td>
</tr>
</tbody>
</table>
Response Elements

The elements in the following table are wrapped in a ModifyInstanceAttributeResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if successful. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example changes the kernel for the instance.

https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute&InstanceId=i-10a64379&Kernel.Value=aki-f70657b2&AUTHPARAMS

Example Response

```xml
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>
```

Related Operations

- ResetInstanceAttribute (p. 405)
- DescribeInstanceAttribute (p. 197)
# ModifyNetworkInterfaceAttribute

## Description

Modifies a network interface attribute. You can specify only one attribute at a time.

## Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetworkInterfaceId</td>
<td>The ID of the network interface.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Description.Value</td>
<td>The description of the network interface.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>SecurityGroupId.n</td>
<td>Changes the security groups that a network interface is in. The new set of</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>groups you specify replaces the current set. You must specify at least one</td>
<td></td>
</tr>
<tr>
<td></td>
<td>group, even if it's just the default security group in the VPC. You must</td>
<td></td>
</tr>
<tr>
<td></td>
<td>specify the group ID and not the group name.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For example, if you want the instance to be in sg-1a1a1a1a and sg-9b9b9b9b,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>specify GroupId.1=sg-1a1a1a1a and GroupId.2=sg-9b9b9b9b.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>SourceDestCheck.Value</td>
<td>Enables a Network Address Translation (NAT) instance in a VPC to perform</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>NAT. The attribute controls whether source/destination checking is enabled</td>
<td></td>
</tr>
<tr>
<td></td>
<td>on the instance. A value of true means checking is enabled, and false</td>
<td></td>
</tr>
<tr>
<td></td>
<td>means checking is disabled. The value must be false for the instance to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>perform NAT. For more information, see NAT Instances in the Amazon Virtual</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Private Cloud User Guide.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Attachment.AttachmentId</td>
<td>The ID of the interface attachment. This parameter is required if you are</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>modifying the DeleteOnTermination attribute of an interface attachment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Attachment.DeleteOnTermination</td>
<td>Specifies whether to delete the attachment when terminating the instance.</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>You must specify a specific attachment ID to change this attribute.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>
Response Elements

The elements in the following table are wrapped in a `ModifyNetworkInterfaceAttributeResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: <code>xsd:string</code></td>
</tr>
<tr>
<td>return</td>
<td>Returns <code>true</code> if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code></td>
</tr>
</tbody>
</table>

Examples

Example Request

This example sets source/destination checking to `false` for the elastic network interface (ENI) eni-ffda3197.

https://ec2.amazonaws.com/?Action=ModifyNetworkInterfaceAttribute
&NetworkInterfaceId=eni-ffda3197
&SourceDestCheck.Value=false
&AUTHPARAMS

Example Response

```xml
  <requestId>657a4623-5620-4232-b03b-427e852d71cf</requestId>
  <return>true</return>
</ModifyNetworkInterfaceAttributeResponse>
```

Related Operations

- AttachNetworkInterface (p. 27)
- DetachNetworkInterface (p. 329)
- CreateNetworkInterface (p. 78)
- DeleteNetworkInterface (p. 134)
- DescribeNetworkInterfaceAttribute (p. 235)
- DescribeNetworkInterfaces (p. 237)
- ResetNetworkInterfaceAttribute (p. 407)
ModifySnapshotAttribute

Description

Adds or remove permission settings for the specified snapshot.

Note
Snapshots with AWS Marketplace product codes cannot be made public.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>SnapshotId</td>
<td>The ID of the snapshot.</td>
<td>Yes</td>
</tr>
<tr>
<td>CreateVolumePermission.Add.n.UserID</td>
<td>Adds the specified AWS account ID to the volume's list of create volume permissions.</td>
<td>Yes</td>
</tr>
<tr>
<td>CreateVolumePermission.Add.n.Group</td>
<td>Adds the specified group to the volume's list of create volume permissions. The only valid value is all.</td>
<td>Yes</td>
</tr>
<tr>
<td>CreateVolumePermission.Remove.n.UserID</td>
<td>Removes the specified AWS account ID from the volume's list of create volume permissions.</td>
<td>No</td>
</tr>
<tr>
<td>CreateVolumePermission.Remove.n.Group</td>
<td>Removes the specified group from the volume's list of create volume permissions.</td>
<td>No</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a ModifySnapshotAttributeResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if successful. Otherwise, returns an error.</td>
</tr>
</tbody>
</table>
Examples

Example Request

This example makes the `snap-1a2b3c4d` snapshot public, and gives the account with ID 111122223333 permission to create volumes from the snapshot.

```xml
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&snapshotId=snap-1a2b3c4d
&CreateVolumePermission.Add.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

This example makes the `snap-1a2b3c4d` snapshot public, and removes the account with ID 111122223333 from the list of users with permission to create volumes from the snapshot.

```xml
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&snapshotId=snap-1a2b3c4d
&CreateVolumePermission.Remove.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

Example Response

```
<ModifySnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifySnapshotAttributeResponse>
```

Related Operations

- DescribeSnapshotAttribute (p. 276)
- DescribeSnapshots (p. 278)
- ResetSnapshotAttribute (p. 409)
- CreateSnapshot (p. 96)
ModifyVolumeAttribute

Description

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 calling EnableVolumeIO (p. 343) action to enable I/O access and then checking the data consistency on your volume.

You can change the default behavior to resume I/O operations without calling EnableVolumeIO (p. 343) action by setting the AutoEnableIO attribute of the volume to true. We recommend that you change this attribute only for volumes that are stateless, or disposable, or for boot volumes.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>VolumeId</td>
<td>The ID of the volume.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>AutoEnableIO.Value</td>
<td>This attribute exists to auto-enable the I/O operations to the volume.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: false</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a ModifyVolumeAttributeResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the auto-enable of the specified volume is enabled.</td>
</tr>
<tr>
<td></td>
<td>Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example modifies the attribute of the volume vol-12345678

https://ec2.amazonaws.com/?Action=ModifyVolumeAttribute&VolumeId=vol-12345678
Example Response

```
<ModifyVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/"
    xmlns:AUTHPARAMS="http://ec2.amazonaws.com/doc/2012-12-01/"
>
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <return>true</return>
</ModifyVolumeAttributeResponse>
```

Related Operations

- DescribeVolumeAttribute (p. 309)
- DescribeVolumeStatus (p. 311)
MonitorInstances

Description

Enables monitoring for a running instance. For more information about monitoring instances, see Monitoring Your Instances and Volumes in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceId.n</td>
<td>One or more instance IDs. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a MonitorInstancesResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>instancesSet</td>
<td>A list of instances. Each instance is wrapped in an item element. Type: MonitorInstancesResponseSetItemType (p. 495)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example enables monitoring for i-43a4412a and i-23a3397d.

https://ec2.amazonaws.com/?Action=MonitorInstances &InstanceId.1=i-43a4412a &InstanceId.2=i-23a3397d &AUTHPARAMS

Example Response

<MonitorInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <instancesSet>  
    <item>  
      <instanceId>i-43a4412a</instanceId>  
      <monitoring>  
        <state>pending</state>  
      </monitoring>  
    </item>  
  </instancesSet>  
</MonitorInstancesResponse>
Related Operations

- UnmonitorInstances (p. 437)
- RunInstances (p. 417)
PurchaseReservedInstancesOffering

Description

Purchases a Reserved Instance for use with your account. With Amazon EC2 Reserved Instances, you obtain a capacity reservation for a certain instance configuration over a specified period of time. You pay a lower usage rate than with On-Demand instances for the time that you actually use the capacity reservation.

Starting with the 2011-11-01 API version, AWS expanded its offering of Reserved Instances to address a range of projected instance usage. There are three types of Reserved Instances based on customer utilization levels: **Heavy Utilization**, **Medium Utilization**, and **Light Utilization**.

The Medium Utilization offering type is equivalent to the Reserved Instance offering available before API version 2011-11-01. If you are using tools that predate the 2011-11-01 API version, `DescribeReservedInstancesOfferings` will only list information about the Medium Utilization Reserved Instance offering type.

For information about Reserved Instance Pricing Tiers, go to **Understanding Reserved Instance Pricing Tiers** in the *Amazon Elastic Compute Cloud User Guide*. For more information about Reserved Instances, go to **Reserved Instances** also in the *Amazon Elastic Compute Cloud User Guide*.

You determine the type of the Reserved Instances offerings by including the optional `offeringType` parameter when calling `DescribeReservedInstancesOfferings`. After you've identified the Reserved Instance with the offering type you want, specify its `ReservedInstancesOfferingId` when you call `PurchaseReservedInstancesOffering`.

Starting with the 2012-08-15 API version, you can also purchase Reserved Instances from 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.

By default, with the 2012-08-15 API version, `DescribeReservedInstancesOfferings` returns information about Amazon EC2 Reserved Instances available directly from AWS, plus instance offerings available on the Reserved Instance Marketplace. If you are using tools that predate the 2012-08-15 API version, the `DescribeReservedInstancesOfferings` action will only list information about Amazon EC2 Reserved Instances available directly from AWS.

For more information about the Reserved Instance Marketplace, go to **Reserved Instance Marketplace** in the *Amazon Elastic Compute Cloud User Guide*.

You determine the Reserved Instance Marketplace offerings by specifying `true` for the optional `includeMarketplace` parameter when calling `DescribeReservedInstancesOfferings`. After you've identified the Reserved Instance with the offering type you want, specify its `reservedInstancesOfferingId` when you call `PurchaseReservedInstancesOffering`.

**Request Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>reservedInstancesOfferingId</td>
<td>ID of the Reserved Instance offering you want to purchase. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Response Elements

The elements in the following table are wrapped in a `PurchaseReservedInstancesOfferingResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>instanceCount</code></td>
<td>The number of Reserved Instances to purchase. Type: Integer Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td><code>limitPrice</code></td>
<td>Specified for Reserved Instance Marketplace offerings to limit the total order and ensure that the Reserved Instances are not purchased at unexpected prices. Type: <code>ReservedInstanceLimitPriceType</code> (p. 511)</td>
<td>No</td>
</tr>
</tbody>
</table>

### Examples

#### Set the limit price for Reserved Instance Marketplace purchase

This example uses `LimitPrice` to limit the total purchase order of Reserved Instances from Reserved Instance Marketplace.

```plaintext
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fc1dcfc8
&LimitPrice.Amount=200
&InstanceCount=2
&AUTHPARAMS
```

The response looks like the following example.

```xml
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazonaws.com/doc/2012-08-15/"
    xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
    <requestId>59dbff89-35bd-4ed-99ed-be587EXAMPLE</requestId>
    <reservedInstancesId>af9f760e-clcl-449b-8128-1342d3a6927a</reservedInstancesId>
</PurchaseReservedInstancesOfferingResponse>
```
**Example Request**

This example illustrates a purchase of a Reserved Instances offering.

```plaintext
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fc1dcfc8
&InstanceCount=2
&AUTHPARAMS
```

**Example Response**

```xml
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>af9f760e-clcl-449b-8128-1342d3a6927a</reservedInstancesId>
</PurchaseReservedInstancesOfferingResponse>
```

**Related Operations**

- DescribeReservedInstancesOfferings (p. 258)
- DescribeReservedInstances (p. 250)
RebootInstances

Description

Requests a reboot of one or more instances. This operation is asynchronous; it only queues a request to reboot the specified instance(s). The operation will succeed if the instances are valid and belong to you. Requests to reboot terminated instances are ignored.

Note

If a Linux/UNIX instance does not cleanly shut down within four minutes, Amazon EC2 will perform a hard reboot.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceId.n</td>
<td>One or more instance IDs. Type: String&lt;br&gt;Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a RebootInstancesResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if successful. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example reboots two instances.

https://ec2.amazonaws.com/?Action=RebootInstances<br>&InstanceId.1=i-1a2b3c4d<br>&InstanceId.2=i-4d3acf62<br>&AUTHPARAMS

Example Response

<RebootInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
</RebootInstancesResponse>
<return>true</return>
</RebootInstancesResponse>

Related Operations

- RunInstances (p. 417)
RegisterImage

Description

Registers a new AMI with Amazon EC2. 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, the CreateImage operation creates and registers the AMI in a single request, so you don't have to register the AMI yourself.

You can also use the RegisterImage action to create an EBS-backed 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.

If needed, you can deregister an AMI at any time. Any modifications you make to an AMI backed by instance store invalidates its registration. If you make changes to an image, deregister the previous image and register the new image.

Note
You cannot register an image where a secondary (non-root) snapshot has AWS Marketplace product codes.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ImageLocation</td>
<td>The full path to your AMI manifest in Amazon S3 storage.</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: Required if registering an instance store-backed AMI</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>A name for your AMI.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constraints: 3-128 alphanumeric characters, parenthesis (()), commas (,), slashes (/), dashes (-), or underscores(_)</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>A description of the AMI.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constraints: Up to 255 characters.</td>
<td></td>
</tr>
<tr>
<td>Architecture</td>
<td>The architecture of the image.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid values: i386</td>
<td>x86_64</td>
</tr>
<tr>
<td></td>
<td>Default: i386 for Amazon EBS-backed AMIs. Instance store-backed AMIs try to use the architecture specified in the manifest file.</td>
<td></td>
</tr>
</tbody>
</table>
### Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>KernelId</code></td>
<td>The ID of the kernel.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td><code>RamdiskId</code></td>
<td>The ID of the RAM disk. Some kernels require additional drivers at launch. Check the kernel requirements for information on whether you need to specify a RAM disk. To find kernel requirements, refer to the Resource Center and search for the kernel ID.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td><code>RootDeviceName</code></td>
<td>The name of the root device (for example, /dev/sda1, or xvda).</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: Required if registering an Amazon EBS-backed AMI</td>
<td></td>
</tr>
<tr>
<td><code>BlockDeviceMapping.n.DeviceName</code></td>
<td>The device name exposed to the instance (for example, /dev/sd[0..3] or xv[0..3]). For more information, see <a href="#">Block Device Mapping</a>.</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: If you’re registering an Amazon EBS-backed AMI from a snapshot, you must specify <code>DeviceName</code> with the root device name (for example, /dev/sda1 or xvda), and <code>BlockDeviceMapping.n.Ebs.SnapshotId</code> with the snapshot ID.</td>
<td></td>
</tr>
<tr>
<td><code>BlockDeviceMapping.n.NoDevice</code></td>
<td>Suppresses a device mapping.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: true</td>
<td></td>
</tr>
<tr>
<td><code>BlockDeviceMapping.n.VirtualName</code></td>
<td>The name of the virtual device, ephemeral[0..3]. The number of instance store volumes depends on the instance type.</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td><code>BlockDeviceMapping.n.Ebs.SnapshotId</code></td>
<td>The ID of the snapshot.</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: If you’re registering an Amazon EBS-backed AMI from a snapshot, you must at least specify <code>SnapshotId</code> with the snapshot ID, and <code>BlockDeviceMapping.n.DeviceName</code> with the root device name.</td>
<td></td>
</tr>
</tbody>
</table>

---

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### Response Elements

The elements in the following table are wrapped in a `RegisterImageResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>requestId</td>
<td>The ID of the request. The ID of the newly registered AMI. Type: xsd:string</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>imageId</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Examples

#### Example Request

This example registers the AMI specified in the `my-new-image.manifest.xml` manifest file, located in the bucket called `myawsbucket`.
Example Request

This example registers an Amazon EBS snapshot to create an AMI backed by Amazon EBS.

```bash
https://ec2.amazonaws.com/?Action=RegisterImage
&ImageLocation=myawsbucket/my-new-image.manifest.xml
&AUTHPARAMS
```

Example Request

This example registers the AMI with an Amazon EBS snapshot as the root device, a separate snapshot as a secondary device, and an empty 100 GiB Amazon EBS volume as a storage device.

```bash
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1a2b3c4d
&Name=MyImage
&AUTHPARAMS
```

Example Response

```xml
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

Related Operations

- DescribeImages (p. 189)
- DeregisterImage (p. 162)
ReleaseAddress

Description

Releases an Elastic IP address allocated to your account.

Important
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.

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

[EC2] 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 the `ec2-diassociate-address` command.

[VPC] You must use the `ec2-diassociate-address` command to disassociate the Elastic IP address before you try to release it. Otherwise, Amazon EC2 returns an error (InvalidIPAddress.InUse).

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PublicIp</td>
<td>[Amazon EC2] The Elastic IP address. Type: String</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
</tr>
<tr>
<td></td>
<td>Condition: Required for Amazon EC2</td>
</tr>
<tr>
<td>AllocationId</td>
<td>[VPC] The allocation ID that AWS provided when you allocated the address for use with a VPC. Type: String</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
</tr>
<tr>
<td></td>
<td>Condition: Required for VPC</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a `ReleaseAddressResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if successful. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>
Examples

Example Request

This example releases an Elastic IP address (67.202.55.255).

```
https://ec2.amazonaws.com/?Action=ReleaseAddress
&PublicIp=192.0.2.1
&AUTHPARAMS
```

Example Request

This example releases a Elastic IP address with allocation ID eipalloc-5723d13e.

```
https://ec2.amazonaws.com/?Action=ReleaseAddress
&AllocationId=eipalloc-5723d13e
&AUTHPARAMS
```

Example Response

```
<ReleaseAddressResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReleaseAddressResponse>
```

Related Operations

- AllocateAddress (p. 13)
- DescribeAddresses (p. 164)
- AssociateAddress (p. 18)
- DisassociateAddress (p. 337)
ReplaceNetworkAclAssociation

Description
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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>AssociationId</td>
<td>The ID representing the current association between the original network ACL and the subnet. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>NetworkAclId</td>
<td>The ID of the new ACL to associate with the subnet. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a ReplaceNetworkAclAssociationResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>newAssociationId</td>
<td>The ID of the new association. Type: xsd:string</td>
</tr>
</tbody>
</table>

Examples

Example Request
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.

https://ec2.amazonaws.com/?Action=ReplaceNetworkAclAssociation
&AssociationId=aclassoc-e5b95c8c
&NetworkAclId=acl-5fb85d36
&AUTHPARAMS
Example Response

```xml
<ReplaceNetworkAclAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>aclassoc-17b85d7e</newAssociationId>
</ReplaceNetworkAclAssociationResponse>
```

Related Operations

- [CreateNetworkAcl](#) (p. 73)
- [DeleteNetworkAcl](#) (p. 130)
- [DescribeNetworkAcls](#) (p. 229)
ReplaceNetworkAclEntry

Description

Replaces an entry (i.e., rule) in a network ACL. For more information about network ACLs, see Network ACLs in the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetworkAclId</td>
<td>The ID of the ACL.</td>
<td>Yes</td>
</tr>
<tr>
<td>RuleNumber</td>
<td>The rule number of the entry to replace.</td>
<td>Yes</td>
</tr>
<tr>
<td>Protocol</td>
<td>The IP protocol the rule applies to. You can use -1 to mean all protocols.</td>
<td>Yes</td>
</tr>
<tr>
<td>RuleAction</td>
<td>Indicates whether to allow or deny traffic that matches the rule.</td>
<td>Yes</td>
</tr>
<tr>
<td>Egress</td>
<td>Indicates whether this rule applies to egress traffic from the subnet (true) or ingress traffic to the subnet (false).</td>
<td>No</td>
</tr>
<tr>
<td>CidrBlock</td>
<td>The CIDR range to allow or deny, in CIDR notation (for example, 172.16.0.0/24).</td>
<td>Yes</td>
</tr>
<tr>
<td>Icmp.Code</td>
<td>For the ICMP protocol, the ICMP code. You can use -1 to specify all ICMP codes for the given ICMP type.</td>
<td>Conditional</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
<td>Required</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Icmp.Type</td>
<td>For the ICMP protocol, the ICMP type. You can use -1 to specify all ICMP types. Type: Integer  Default: None  Condition: Required if specifying 1 (ICMP) for the protocol.</td>
<td>Conditional</td>
</tr>
<tr>
<td>PortRange.From</td>
<td>The first port in the range. Type: Integer  Default: None  Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.</td>
<td>Conditional</td>
</tr>
<tr>
<td>PortRange.To</td>
<td>The last port in the range. Type: Integer  Default: None  Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.</td>
<td>Conditional</td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in a `ReplaceNetworkAclEntryResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.  Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

**Examples**

**Example Request**

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.

```
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
```
Example Response

```
<ReplaceNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReplaceNetworkAclEntryResponse>
```

Related Operations

- CreateNetworkAclEntry (p. 75)
- DeleteNetworkAclEntry (p. 132)
- DescribeNetworkAcls (p. 229)
ReplaceRoute

Description

Replaces an existing route within a route table in a VPC. For more information about route tables, see Route Tables in the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>RouteTableId</td>
<td>The ID of the route table.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>DestinationCidrBlock</td>
<td>The CIDR address block used for the destination match. For example: 0.0.0.0/0. The value you provide must match the CIDR of an existing route in the table.</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>GatewayId</td>
<td>The ID of a gateway attached to your VPC.</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: You must provide only one of the following: a GatewayId, InstanceId, or NetworkInterfaceId.</td>
<td></td>
</tr>
<tr>
<td>InstanceId</td>
<td>The ID of a NAT instance in your VPC.</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: You must provide only one of the following: a GatewayId, InstanceId, or NetworkInterfaceId.</td>
<td></td>
</tr>
<tr>
<td>NetworkInterfaceId</td>
<td>Allows routing to network interface attachments.</td>
<td>Conditional</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condition: You must provide only one of the following: GatewayId, InstanceId, or NetworkInterfaceId.</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a ReplaceRouteResponse element.
### Examples

#### Example Request

This example replaces a route in the route table with ID rtb-e4ad488d. The new route matches the CIDR 10.0.0.0/8 and sends the traffic to the virtual private gateway with ID vgw-1d00376e.

```text
https://ec2.amazonaws.com/?Action=ReplaceRoute
&RouteTableId=rtb-e4ad488d
&DestinationCidrBlock=10.0.0.0/8
&GatewayId=vgw-1d00376e
&AUTHPARAMS
```

#### Example Response

```xml
<ReplaceRouteResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReplaceRouteResponse>
```

#### Related Operations

- [DeleteRoute](#) (p. 138)
- [CreateRoute](#) (p. 89)
- [DescribeRouteTables](#) (p. 267)
ReplaceRouteTableAssociation

Description

Changes the route table associated with a given subnet in a VPC. After you execute this action, 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 this action 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 that you want to be the new main route table.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>AssociationId</td>
<td>The ID representing the current association between the original route table and the subnet. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>RouteTableId</td>
<td>The ID of the new route table to associate with the subnet. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a ReplaceRouteTableAssociationResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>newAssociationId</td>
<td>The ID of the new association. Type: xsd:string</td>
</tr>
</tbody>
</table>

Examples

Example Request

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.
Example Response

```
<ReplaceRouteTableAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>rtbassoc-faad4893</newAssociationId>
</ReplaceRouteTableAssociationResponse>
```

Related Operations

- CreateRouteTable (p. 92)
- DisassociateRouteTable (p. 339)
- DeleteRouteTable (p. 140)
- DescribeRouteTables (p. 267)
- AssociateRouteTable (p. 23)
ReportInstanceStatus

Description

Use this action to submit feedback about an instance’s status. This action works only for instances that are in the running state. If your experience with the instance differs from the instance status returned by the DescribeInstanceStatus action, use ReportInstanceStatus to report your experience with the instance. Amazon EC2 collects this information to improve the accuracy of status checks.

Note

Use of this action does not change the value returned by DescribeInstanceStatus.

To report an instance’s status, specify an instance ID with the InstanceId.n parameter and a reason code with the ReasonCode.n parameter that applies to that instance. The following table contains descriptions of all available reason codes.

<table>
<thead>
<tr>
<th>Reason Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>instance-stuck-in-state</td>
<td>My instance is stuck in a state.</td>
</tr>
<tr>
<td>unresponsive</td>
<td>My instance is unresponsive.</td>
</tr>
<tr>
<td>not-accepting-credentials</td>
<td>My instance is not accepting my credentials.</td>
</tr>
<tr>
<td>password-not-available</td>
<td>A password is not available for my instance.</td>
</tr>
<tr>
<td>performance-network</td>
<td>My instance is experiencing performance problems which I believe are network related.</td>
</tr>
<tr>
<td>performance-instance-store</td>
<td>My instance is experiencing performance problems which I believe are related to the instance stores.</td>
</tr>
<tr>
<td>performance-ebs-volume</td>
<td>My instance is experiencing performance problems which I believe are related to an EBS volume.</td>
</tr>
<tr>
<td>performance-other</td>
<td>My instance is experiencing performance problems.</td>
</tr>
<tr>
<td>other</td>
<td>Other, explained in the submitted description parameter.</td>
</tr>
</tbody>
</table>

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceId.n</td>
<td>One or more instance IDs. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td>Status</td>
<td>The status of all instances listed in the InstanceId.n parameter. Type: String Valid values: ok</td>
<td>impaired Yes</td>
</tr>
<tr>
<td>StartTime</td>
<td>The time at which the reported instance health state began. Type: DateTime</td>
<td>No</td>
</tr>
</tbody>
</table>
### Response Elements

The elements in the following table are wrapped in a `ReportInstanceStatusResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
<td></td>
</tr>
<tr>
<td>Return</td>
<td>Indicates whether the values submitted were accepted by Amazon EC2.</td>
<td></td>
</tr>
</tbody>
</table>

#### Examples

**Example Request**

This example reports instance health state for two instances.

https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Status=impaired
&InstanceId.0=i-9440effb
&InstanceId.1=i-0cf27c63
&Version=2012-12-01
&AuthParams
Example Request

This example reports instance health state for two instances with reason codes.

```
https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Description=Description+of+my+issue.
&Status=impaired
&InstanceId.0=i-9440effb
&InstanceId.1=i-0cf27c63
&ReasonCode.0=instance-performance-network
&ReasonCode.1=instance-performance-disk
&Version=2012-12-01
&AuthParams
```

Example Response

```
  <requestId>b8131cff-dfbd-4277-bafe-be006fd0c4da</requestId>
  <return>true</return>
</ReportInstanceStatusResponse>
```
RequestSpotInstances

Description

Creates a Spot Instance request. Spot Instances are instances that Amazon EC2 starts on your behalf when the maximum 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 about Spot Instances, see Using Spot Instances in the Amazon Elastic Compute Cloud User Guide.

Note
Users must be subscribed to the required product to run an instance with AWS Marketplace product codes.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>SpotPrice</td>
<td>The maximum hourly price for any Spot Instance launched to fulfill the request. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>InstanceCount</td>
<td>The maximum number of Spot Instances to launch. Type: Integer Default: 1</td>
<td>No</td>
</tr>
<tr>
<td>Type</td>
<td>The Spot Instance request type. Type: String Valid values: one-time</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>persistent Default: one-time</td>
<td></td>
</tr>
<tr>
<td>ValidFrom</td>
<td>The start date of the request. If this is a one-time request, the request becomes active at this date and time and remains active until all instances launch, the request expires, or the request is canceled. If the request is persistent, the request becomes active at this date and time and remains active until it expires or is canceled. Type: DateTime Default: Request is effective independently</td>
<td>No</td>
</tr>
<tr>
<td>ValidUntil</td>
<td>The end date of the request. If this is a one-time request, the request 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 and time is reached. Type: DateTime Default: Request is effective indefinitely</td>
<td>No</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
<td>Required</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td><strong>LaunchGroup</strong></td>
<td>The instance launch group. Launch groups are Spot Instances that launch together and terminate together. Type: String Default: Instances are launched and terminated individually</td>
<td>No</td>
</tr>
<tr>
<td><strong>AvailabilityZoneGroup</strong></td>
<td>The user-specified name for a logical grouping of bids. When you specify AvailabilityZoneGroup 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 choice of Availability Zone is not. AvailabilityZoneGroup applies only to bids for Spot Instances of the same instance type. Any additional Spot Instance requests that are specified with the same AvailabilityZoneGroup name will be 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 (i.e., all instances are terminated, the bid is expired, or the bid falls below current market), then Amazon EC2 will launch 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 the same AvailabilityZoneGroup name was specified. To ensure that all Spot Instances across all bids are launched into a particular Availability Zone, specify LaunchSpecification.Placement.AvailabilityZone in the API or --availability-zone in the CLI. Type: String Default: Instances are launched in any available Availability Zone.</td>
<td>No</td>
</tr>
<tr>
<td>LaunchSpecification.ImageId</td>
<td>The ID of the AMI. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>LaunchSpecification.KeyName</td>
<td>The name of the key pair. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>LaunchSpecification.SecurityGroupId.n</td>
<td>The ID of the security group. Type: String Default: The instance uses the default security group Condition: If you want to specify one or more security groups, you can use either LaunchSpecification.SecurityGroupId.n or LaunchSpecification.SecurityGroup.n.</td>
<td>Conditional</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
<td>Required</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>LaunchSpecification.SecurityGroupId.n</td>
<td>[EC2] The name of the security group. Type: String Default: The instance uses the default security group Condition: If you want to specify one or more security groups, you can use either LaunchSpecification.SecurityGroupId.n or LaunchSpecification.SecurityGroup.n.</td>
<td>Conditional</td>
</tr>
<tr>
<td>LaunchSpecification.UserData</td>
<td>The MIME, Base64-encoded user data to make available to the instances. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>LaunchSpecification.AddressingType</td>
<td>Deprecated. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>LaunchSpecification.InstanceType</td>
<td>The instance type. Type: String Valid values: t1.micro</td>
<td>m1.small</td>
</tr>
<tr>
<td>LaunchSpecification.Placement.AvailabilityZone</td>
<td>The placement constraint (i.e., specific Availability Zone) for launching the instances. Specify if you want all of the Spot Instances in all of your bids to be launched in a particular Availability Zone. Specifying this option requires Amazon EC2 to find capacity in the specified Availability Zone instead of letting Amazon EC2 pick the best Availability Zone available; this can potentially delay the fulfillment of your bid, and/or require a higher bid price. Type: String Default: Amazon EC2 selects an Availability Zone.</td>
<td>No</td>
</tr>
<tr>
<td>LaunchSpecification.Placement.GroupName</td>
<td>The name of an existing placement group you want to launch the instance into (for cluster instances). Type: String Default: None.</td>
<td>No</td>
</tr>
<tr>
<td>LaunchSpecification.KernelId</td>
<td>The ID of the kernel. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
<td>Required</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>LaunchSpecification.RamdiskId</td>
<td>The ID of the RAM disk. Some kernels require additional drivers at launch. Check the kernel requirements for information on whether you need to specify a RAM disk and search for the kernel ID. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>LaunchSpecification.BlockDeviceMapping.n.DeviceName</td>
<td>The device named exposed to the instance (for example, /dev/sdh or xvdh). For more information, see Block Device Mapping. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>LaunchSpecification.BlockDeviceMapping.n.NoDevice</td>
<td>Suppresses the device mapping. Type: Boolean Default: true</td>
<td>No</td>
</tr>
<tr>
<td>LaunchSpecification.BlockDeviceMapping.n.VirtualName</td>
<td>The name of the virtual device, ephemeral[0..3]. The number of instance store volumes depends on the instance type. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>LaunchSpecification.BlockDeviceMapping.n.Ebs.SnapshotId</td>
<td>The ID of the snapshot. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>LaunchSpecification.BlockDeviceMapping.n.Ebs.VolumeSize</td>
<td>The size of the volume, in GiBs. Type: Integer Valid values: If the volume type is iol, the minimum size of the volume is 10 GiB. Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size. Condition: Required unless you're creating the volume from a snapshot.</td>
<td>Conditional</td>
</tr>
<tr>
<td>LaunchSpecification.BlockDeviceMapping.n.Ebs.DeleteOnTermination</td>
<td>Whether the volume is deleted on instance termination. Type: Boolean Default: true</td>
<td>No</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
<td>Required</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>----------</td>
</tr>
<tr>
<td>LaunchSpecification.BlockDeviceMapping.n.Ebs.Iops</td>
<td>The number of I/O operations per second (IOPS) that the volume supports.</td>
<td></td>
</tr>
<tr>
<td>Type: Integer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valid values: Range is 100 to 2000.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default: None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condition: Required when the volume type is io1; not used with standard volumes.</td>
<td>Conditional</td>
<td></td>
</tr>
<tr>
<td>Type: String</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default: Disabled</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>LaunchSpecification.SubnetId</td>
<td>The ID of the subnet in which to launch the Spot Instance.</td>
<td></td>
</tr>
<tr>
<td>Type: String</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default: None</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Type: String</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default:</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Type: Integer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default:</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Type: String</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default:</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Type: String</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default:</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Type: String</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Default:</td>
<td>No</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><code>LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress</code></td>
<td>[VPC] The primary private IP address of the network interface. Applies only when creating new network interfaces. Requires n=1 network interfaces in launch. Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter with <code>LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.Primary</code> with a value of <code>true</code> if you are also specifying the <code>LaunchSpecification.NetworkInterface.n.PrivateIpAddress</code> option. Type: String Default:</td>
<td>No</td>
</tr>
<tr>
<td><code>LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.Primary</code></td>
<td>[VPC] Whether the private IP address is the primary private IP address. Applies only when creating new network interfaces. Requires n=1 network interfaces in launch. Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter with a value of <code>true</code> with the <code>LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress</code> option if you specify the <code>LaunchSpecification.NetworkInterface.n.PrivateIpAddress</code> option. Type: String Default:</td>
<td>No</td>
</tr>
<tr>
<td><code>LaunchSpecification.NetworkInterface.n.SecondaryPrivateIpAddressCount</code></td>
<td>[VPC] The number of secondary private IP addresses to assign to a network interface. When you specify a number of secondary IP addresses, AWS automatically assigns these IP addresses within the subnet's range. The number of IP addresses you can assign to a network interface varies by instance type. For more information, go to <a href="https://docs.aws.amazon.com/elasticloadbalancing/latest/application/elb/instance-types.html">Available Instance Types</a> in the <em>Amazon Elastic Compute Cloud User Guide</em>. For a single network interface, you cannot specify this option and specify more than one private IP address using <code>LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress</code>. Type: Integer Default: None</td>
<td>No</td>
</tr>
<tr>
<td><code>LaunchSpecification.NetworkInterface.n.SecurityGroupId.n</code></td>
<td>The security group IDs to associate with the created instance. Applies only when creating new network interfaces. Type: String Default:</td>
<td>No</td>
</tr>
<tr>
<td><code>LaunchSpecification.NetworkInterface.n.DeleteOnTermination</code></td>
<td>Applies to all network interfaces. Type: Boolean Default:</td>
<td>No</td>
</tr>
</tbody>
</table>
### RequiredDescriptionName

- **Name:** `LaunchSpecification.IamInstanceProfile.Arn`
- **Description:** The Amazon resource name (ARN) of the IAM Instance Profile (IIP) to associate with the instances.
- **Type:** String
- **Default:** None
- **Required:** No

- **Name:** `LaunchSpecification.IamInstanceProfile.Name`
- **Description:** The name of the IAM Instance Profile (IIP) to associate with the instances.
- **Type:** String
- **Default:** None
- **Required:** No

- **Name:** `LaunchSpecification.EbsOptimized`
- **Description:** 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:** Boolean
- **Default:** false
- **Required:** No

### Response Elements

The elements in the following table are wrapped in a `RequestSpotInstancesResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestID</td>
<td>The ID of the request.</td>
</tr>
<tr>
<td></td>
<td>Type: <code>xsd:string</code></td>
</tr>
<tr>
<td>spotInstanceRequestSet</td>
<td>Information about the Spot Instance request, wrapped in an item element.</td>
</tr>
<tr>
<td></td>
<td>Type: <code>SpotInstanceRequestSetItemType (p. 521)</code></td>
</tr>
</tbody>
</table>

### Examples

#### Example Request

This example creates a Spot Instances request for two `m1.small` instances and associates an IAM instance profile called `s3access` with them.

```
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&SpotPrice=0.50
&InstanceCount=2
&Type=one-time
&AvailabilityZoneGroup=MyAzGroup
&LaunchSpecification.ImageId=ami-1a2b3c4d
&LaunchSpecification.KeyName=gsg-keypair
&LaunchSpecification.Group.1=websrv
&LaunchSpecification.InstanceType=m1.small
```
Example Response

```xml
<RequestSpotInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/"

:requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<spotInstanceRequestSet>
  <item>
    <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
    <spotPrice>0.5</spotPrice>
    <type>one-time</type>
    <state>open</state>
    <availabilityZoneGroup>MyAzGroup</availabilityZoneGroup>
    <launchSpecification>
      <imageId>ami-1a2b3c4d</imageId>
      <groupSet>
        <item>
          <groupId></groupId>
          <groupName></groupName>
        </item>
      </groupSet>
      <instanceType>m1.small</instanceType>
      <blockDeviceMapping/>
      <monitoring>
        <enabled>false</enabled>
      </monitoring>
      <ebsOptimized>false</ebsOptimized>
    </launchSpecification>
    <createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
    <productDescription>Linux/UNIX</productDescription>
  </item>
  ...
</spotInstanceRequestSet>
</RequestSpotInstancesResponse>

Related Operations

- DescribeSpotInstanceRequests (p. 285)
- CancelSpotInstanceRequests (p. 52)
- DescribeSpotPriceHistory (p. 291)
ResetImageAttribute

Description

Resets an attribute of an AMI to its default value.

Note

The productCodes attribute cannot be reset.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ImageId</td>
<td>The ID of the AMI. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>Attribute</td>
<td>The attribute to reset (currently you can only reset the launch permission attribute). Type: String Default: None Valid value: launchPermission</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a ResetImageAttributeResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example resets the launchPermission attribute for the specified AMI.

https://ec2.amazonaws.com/?Action=ResetImageAttribute
&ImageId=ami-61a54008
&Attribute=launchPermission
&AUTHPARAMS
Example Response

```xml
<ResetImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://ec2.amazonaws.com/doc/2012-12-01/ i/attributeSchema.xsd">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetImageAttributeResponse>
```

Related Operations

- ModifyImageAttribute (p. 358)
- DescribeImageAttribute (p. 186)
ResetInstanceAttribute

Description

Resets an attribute of an instance to its default value. To reset the kernel or RAM disk, the instance must be in a stopped state. To reset the SourceDestCheck, the instance can be either running or stopped.

The SourceDestCheck attribute exists to enable a Network Address Translation (NAT) instance in a VPC to perform NAT. The attribute controls whether source/destination checking is enabled on the instance. The default value is true, which means checking is enabled. 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.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceId</td>
<td>The ID of the instance. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>Attribute</td>
<td>The attribute to reset. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Valid values: kernel</td>
<td>ramdisk</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a ResetInstanceAttributeResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example resets the kernel attribute.

https://ec2.amazonaws.com/?Action=ResetInstanceAttribute &InstanceId=i-1a2b3c4d &Attribute=kernel &AUTHPARAMS
Example Response

<ResetInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://ec2.amazonaws.com/doc/2012-12-01/ ResetInstanceAttributeResponse.xsd">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetInstanceAttributeResponse>

Related Operations

- ModifyInstanceAttribute (p. 361)
- DescribeInstanceAttribute (p. 197)
ResetNetworkInterfaceAttribute

Description

Resets a network interface attribute. You can specify only one attribute at a time.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetworkInterfaceId</td>
<td>The ID of the network interface. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
<tr>
<td>Attribute=[sourceDestCheck]</td>
<td>The name of the attribute to reset; sourceDestCheck defaults to true. Type: String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Default: None</td>
<td></td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a `ResetNetworkInterfaceAttributeResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example resets the sourceDestCheck attribute for the elastic network interface (ENI) eni-ffda3197.

https://ec2.amazonaws.com/?Action=ResetNetworkInterfaceAttribute&NetworkInterfaceId=eni-ffda3197&Attribute=sourceDestCheck

Example Response

```
  <requestId>5187642e-3f16-44a3-b05f-24c3848b5162</requestId>
</ResetNetworkInterfaceAttributeResponse>
```
<return>true</return>
</ResetNetworkInterfaceAttributeResponse>

Related Operations

- AttachNetworkInterface (p. 27)
- DetachNetworkInterface (p. 329)
- CreateNetworkInterface (p. 78)
- DeleteNetworkInterface (p. 134)
- DescribeNetworkInterfaceAttribute (p. 235)
- DescribeNetworkInterfaces (p. 237)
- ModifyNetworkInterfaceAttribute (p. 364)
ResetSnapshotAttribute

**Description**

Resets permission settings for the specified snapshot.

**Request Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
</table>
| **SnapshotId** | The ID of the snapshot.  
Type: String  
Default: None | Yes      |
| **Attribute** | The attribute to reset (currently only the attribute for permission to create volumes can be reset)  
Type: String  
Default: None  
Valid value: createVolumePermission | Yes      |

**Response Elements**

The elements in the following table are wrapped in a `ResetSnapshotAttributeResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| requestId | The ID of the request.  
Type: xsd:string                                                                 |
| return | Returns true if the request succeeds. Otherwise, returns an error.  
Type: xsd:boolean                                                                 |

**Examples**

**Example Request**

This example resets the permissions for `snap-1a2b3c4d`, making it a private snapshot that can only be used by the account that created it.

https://ec2.amazonaws.com/?Action=ResetSnapshotAttribute  
&SnapshotId=snap-1a2b3c4d  
&Attribute=createVolumePermission  
&AUTHPARAMS
Example Response

```xml
<ResetSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetSnapshotAttributeResponse>
```

Related Operations

- ModifySnapshotAttribute (p. 366)
- DescribeSnapshotAttribute (p. 276)
- DescribeSnapshots (p. 278)
- CreateSnapshot (p. 96)
RevokeSecurityGroupEgress

Description

Removes one or more egress rules from a security group for VPC. 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 destination 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.

For more information, see Security Groups in the Amazon Virtual Private Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>GroupId</td>
<td>The ID of the VPC security group to modify. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>IpPermissions.n.IpProtocol</td>
<td>The IP protocol name or number (go to Protocol Numbers). When you call DescribeSecurityGroups, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, tcp, udp, or icmp). Type: String Valid values: tcp</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>udp</td>
<td>icmp or any protocol number (go to Protocol Numbers). Use -1 to specify all.</td>
</tr>
<tr>
<td>IpPermissions.n.FromPort</td>
<td>The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, you can use -1 to specify all ICMP types. Type: Integer Default: None Condition: Required for ICMP and any protocol that uses ports</td>
<td>Conditional</td>
</tr>
<tr>
<td>IpPermissions.n.ToPort</td>
<td>The end of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, you can use -1 to specify all ICMP codes for the given ICMP type. Type: Integer Default: None Condition: Required for ICMP and any protocol that uses ports</td>
<td>Conditional</td>
</tr>
</tbody>
</table>
### Response Elements

The elements in the following table are wrapped in a `RevokeSecurityGroupEgressResponse` element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>IpPermissions.n.Groups.m.GroupId</code></td>
<td>The name of the destination security group. Cannot be used when specifying a CIDR IP address. Type: String Default: None Condition: Required if modifying access for one or more destination security groups.</td>
<td>Conditional</td>
</tr>
<tr>
<td><code>IpPermissions.n.IpRanges.m.CidrIp</code></td>
<td>The CIDR range. Cannot be used when specifying a destination security group. Type: String Default: None Constraints: Valid CIDR IP address range. Condition: Required if modifying access for one or more IP address ranges.</td>
<td>Conditional</td>
</tr>
</tbody>
</table>

### Examples

**Example Request**

This example revokes the access that the `webserv` security group for EC-VPC (with ID sg-1a2b3c4d) has to the 205.192.0.0/16 and 205.159.0.0/16 address ranges on TCP port 80.

```xml
&GroupName=webserv
&GroupName=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 Request**

This example revokes the access that the security group for VPC (with ID sg-1a2b3c4d) has to the security group for VPC with ID sg-9a8d7f5c on TCP port 1433.
**Example Response**

```xml
<RevokeSecurityGroupEgressResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/"/>
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RevokeSecurityGroupEgressResponse>
```

**Related Operations**

- CreateSecurityGroup (p. 94)
- DescribeSecurityGroups (p. 272)
- AuthorizeSecurityGroupEgress (p. 33)
- AuthorizeSecurityGroupIngress (p. 36)
- AuthorizeSecurityGroupIngress (p. 414)
- DeleteSecurityGroup (p. 142)
RevokeSecurityGroupIngress

**Description**

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.

A security group is for use with instances either in Amazon EC2 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.

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, depending on the number of instances, a small delay might occur.

**Request Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>UserId</td>
<td>Deprecated</td>
<td>No</td>
</tr>
<tr>
<td>GroupId</td>
<td>The ID of the security group to modify. The group must belong to your account. Type: String Default: None Condition: Required for security groups for a VPC; can be used instead of GroupName otherwise</td>
<td>Conditional</td>
</tr>
<tr>
<td>GroupName</td>
<td>The name of the EC2 security group to modify. Type: String Default: None Condition: Can be used instead of GroupId for EC2 security groups</td>
<td>Conditional</td>
</tr>
<tr>
<td>IpPermissions.n.IpProtocol</td>
<td>The IP protocol name or number (see Protocol Numbers). EC2 security groups can have rules only for TCP, UDP, and ICMP, whereas VPC security groups can have rules assigned to any protocol number. When you call DescribeSecurityGroups, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, tcp, udp, or icmp). Type: String Valid values for EC2 security groups: tcp</td>
<td>udp</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
<td>Required</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>IpPermissions.n.From Port</td>
<td>The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, you can use -1 to specify all ICMP types. Type: Integer Default: None Default: Required for ICMP and any protocol that uses ports</td>
<td>Conditional</td>
</tr>
<tr>
<td>IpPermissions.n.ToPort</td>
<td>The end of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, you can use -1 to specify all ICMP codes for the given ICMP type. Type: Integer Default: None Default: Required for ICMP and any protocol that uses ports</td>
<td>Conditional</td>
</tr>
<tr>
<td>IpPermissions.n.Groups.m.UserId</td>
<td>The AWS account ID that owns the source security group. Cannot be used when specifying a CIDR IP address. Type: String Default: None Condition: For EC2 security groups only. Required if modifying access for one or more source security groups.</td>
<td>Conditional</td>
</tr>
<tr>
<td>IpPermissions.n.Groups.m.GroupName</td>
<td>The name of the source security group. Cannot be used when specifying a CIDR IP address. Type: String Default: None Condition: Required if modifying access for one or more source security groups.</td>
<td>Conditional</td>
</tr>
<tr>
<td>IpPermissions.n.Groups.m.GroupId</td>
<td>The ID of the source security group. Cannot be used when specifying a CIDR IP address. Type: String Default: None Condition: For VPC security groups only. Required if modifying access for one or more source security groups.</td>
<td>Conditional</td>
</tr>
<tr>
<td>IpPermissions.n.IpRanges.m.CidrIp</td>
<td>The CIDR range. Cannot be used when specifying a source security group. Type: String Default: None Constraints: Valid CIDR IP address range. Condition: Required if modifying access for one or more IP address ranges.</td>
<td>Conditional</td>
</tr>
</tbody>
</table>

**Response Elements**

The elements in the following table are wrapped in a `RevokeSecurityGroupIngressResponse` element.
### Examples

#### Example Request

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 were for a VPC, you'd specify the ID of the security group instead of the name.

```plaintext
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupIngress
&GroupName=websrv
&IpProtocol=tcp
&FromPort=80
&ToPort=80
&CidrIp=205.192.0.0/16
&AUTHPARAMS
```

#### Example Response

```xml
<RevokeSecurityGroupIngressResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RevokeSecurityGroupIngressResponse>
```

#### Related Operations

- [CreateSecurityGroup](#) (p. 94)
- [DescribeSecurityGroups](#) (p. 272)
- [AuthorizeSecurityGroupIngress](#) (p. 36)
- [DeleteSecurityGroup](#) (p. 142)
RunInstances

Description

Launches the specified number of instances of an AMI for which you have permissions.

If capacity is insufficient to launch the maximum number of instances requested in one Availability Zone (the specified Availability Zone for targeted requests, or an Availability Zone chosen by EC2 for untargeted requests), Amazon EC2 launches the minimum number specified. If Amazon EC2 cannot launch the minimum number of instances requested in a single Availability Zone, no instances are launched.

Note
Every instance is launched in a security group (created using the CreateSecurityGroup operation). If you don't specify a security group in the RunInstances request, the "default" security group is used.

For Linux instances, you can provide an optional key pair ID in the launch request (created using the CreateKeyPair or ImportKeyPair operation). The instances will have access to the public key at boot. You can use this key to provide secure access to an instance of an image on a per-instance basis. Amazon EC2 public images use this feature to provide secure access without passwords.

Important
Launching public images without a key pair ID will leave them inaccessible.

The public key material is made available to the instance at boot time by placing it in the openssh_id.pub file on a logical device that is exposed to the instance as /dev/sda2 (the instance store). The format of this file is suitable for use as an entry within ~/.ssh/authorized_keys (the OpenSSH format). This can be done at boot (e.g., as part of rc.local) allowing for secure access without passwords.

You can provide optional user data in the launch request. All instances that collectively comprise the launch request have access to this data. For more information, see Instance Metadata in the Amazon Elastic Compute Cloud User Guide.

Note
If any of the AMIs have a product code attached for which the user has not subscribed, the RunInstances call will fail.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>ImageId</td>
<td>The ID of the AMI. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>MinCount</td>
<td>The minimum number of instances to launch. If the value is more than Amazon EC2 can launch, no instances are launched at all. Type: Integer Default: None Constraints: Between 1 and the maximum number allowed for your account (the default for each account is 20, but this limit can be increased).</td>
<td>Yes</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
<td>Required</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
</tbody>
</table>
| MaxCount           | The maximum number of instances to launch. If the value is more than Amazon EC2 can launch, the largest possible number above MinCount will be launched instead.  
Type: Integer  
Default: None  
Constraints: Between 1 and the maximum number allowed for your account (the default for each account is 20, but this limit can be increased). | Yes      |
| KeyName            | The name of the key pair to use.  
Type: String  
Default: None                                                                                                                               | No       |
| SecurityGroupId.n  | One or more security group IDs.  
Type: String  
Default: None  
Condition: Required for VPC; optional for EC2                                                                                          | Conditional |
| SecurityGroup.n    | [EC2] One or more security group names.  
Type: String  
Default: None  
Condition: For EC2, you must specify either a group ID or a group name                                                                 | Conditional |
| UserData           | The Base64-encoded MIME user data to be made available to the instance(s) in this reservation.  
Type: String  
Default: None                                                                                                                            | No       |
| AddressingType     | This parameter is deprecated.  
Type: String  
Default: None                                                                                                                            | No       |
| InstanceType       | The instance type. See Available Instance Types for more information.  
Type: String  
Valid values: t1.micro | m1.small | m1.medium | m1.large | m1.xlarge | m3.xlarge | m3.2xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | hi1.4xlarge | hs1.8xlarge | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | Default: m1.small | No |
| Placement.AvailabilityZone | The Availability Zone to launch the instance into.  
Type: String  
Default: EC2 chooses a zone for you                                                                                                        | No       |
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Placement.GroupName</td>
<td>The name of an existing placement group you want to launch the instance into (for cluster instances). Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>Placement.Tenancy</td>
<td>The tenancy of the instance. An instance with a tenancy of dedicated runs on single-tenant hardware and can only be launched into a VPC. Type: String Default: default</td>
<td>No</td>
</tr>
<tr>
<td>KernelId</td>
<td>The ID of the kernel with which to launch the instance. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>RamdiskId</td>
<td>The ID of the RAM disk. Some kernels require additional drivers at launch. Check the kernel requirements for information on whether you need to specify a RAM disk. To find kernel requirements, refer to the Resource Center and search for the kernel ID. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>BlockDeviceMapping.n .DeviceName</td>
<td>The device name exposed to the instance (for example, /dev/sdh or xvdh). For more information, see Block Device Mapping. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>BlockDeviceMapping.n .NoDevice</td>
<td>Suppresses the device mapping. Type: empty element Default: None</td>
<td>No</td>
</tr>
<tr>
<td>BlockDeviceMapping.n .VirtualName</td>
<td>The virtual device name, ephemeral[0..3]. The number of instance store volumes depends on the instance type. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>BlockDeviceMapping.n .Ebs.SnapshotId</td>
<td>The ID of the snapshot. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>BlockDeviceMapping.n .Ebs.VolumeSize</td>
<td>The size of the volume, in GiBs. Type: Integer Valid values: If the volume type is io1, the minimum size of the volume is 10 GiB. Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size. Condition: Required unless you're creating the volume from a snapshot.</td>
<td>Conditional</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
<td>Required</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>----------</td>
</tr>
<tr>
<td>BlockDeviceMapping.n.Ebs.DeleteOnTermination</td>
<td>Whether the volume is deleted on instance termination. &lt;br&gt;Type: Boolean &lt;br&gt;Default: true</td>
<td>No</td>
</tr>
<tr>
<td>BlockDeviceMapping.n.Ebs.VolumeType</td>
<td>The volume type. &lt;br&gt;Type: String &lt;br&gt;Valid values: standard</td>
<td>No</td>
</tr>
<tr>
<td>BlockDeviceMapping.n.Ebs.Iops</td>
<td>The number of I/O operations per second (IOPS) that the volume supports. &lt;br&gt;Type: Integer &lt;br&gt;Valid values: Range is 100 to 2000. &lt;br&gt;Default: None &lt;br&gt;Condition: Required when the volume type is iol; not used with standard volumes.</td>
<td>Conditional</td>
</tr>
<tr>
<td>Monitoring.Enabled</td>
<td>Enables monitoring for the instance. &lt;br&gt;Type: Boolean &lt;br&gt;Default: false</td>
<td>No</td>
</tr>
<tr>
<td>SubnetId</td>
<td>[VPC] The ID of the subnet to launch the instance into. &lt;br&gt;Type: String &lt;br&gt;Default: None</td>
<td>No</td>
</tr>
<tr>
<td>DisableApiTermination</td>
<td>Whether you can terminate the instance using the EC2 API. A value of true means you can't terminate the instance using the API (i.e., the instance is &quot;locked&quot;); a value of false means you can. If you set this to true, and you later want to terminate the instance, you must first change the disableApiTermination attribute's value to false using ModifyInstanceAttribute. &lt;br&gt;Type: Boolean &lt;br&gt;Default: false</td>
<td>No</td>
</tr>
<tr>
<td>InstanceInitiatedShutdownBehavior</td>
<td>Whether the instance stops or terminates on instance-initiated shutdown. &lt;br&gt;Type: String &lt;br&gt;Valid values: stop</td>
<td>No</td>
</tr>
</tbody>
</table>

Amazon Elastic Compute Cloud API Reference
Request Parameters

API Version 2012-12-01
420
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>PrivateIpAddress</td>
<td>[VPC] You can optionally use this parameter to assign the instance a specific available IP address from the IP address range of the subnet as the primary IP address. Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter if you are also specifying PrivateIpAddresses.n.Primary with a value of true with the PrivateIpAddresses.n.PrivateIpAddress option. Type: String Default: We select an IP address from the IP address range of the subnet for the instance</td>
<td>No</td>
</tr>
<tr>
<td>ClientToken</td>
<td>Unique, case-sensitive identifier you provide to ensure idempotency of the request. For more information, go to How to Ensure Idempotency in the Amazon Elastic Compute Cloud User Guide. Type: String Default: None Constraints: Maximum 64 ASCII characters</td>
<td>No</td>
</tr>
<tr>
<td>NetworkInterface.n.NetworkInterfaceId</td>
<td>Attaches an existing interface to a single instance. Requires n=1 instances. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>NetworkInterface.n.DeviceIndex</td>
<td>Applies to both attaching existing network interfaces and when creating new network interfaces. Type: Integer Default: None</td>
<td>No</td>
</tr>
<tr>
<td>NetworkInterface.n.SubnetId</td>
<td>Applies only when creating new network interfaces. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>NetworkInterface.n.Description</td>
<td>Applies only when creating new network interfaces. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>NetworkInterface.n.PrivateIpAddress</td>
<td>The primary private IP address of the network interface. Applies only when creating new network interfaces. Requires n=1 network interfaces in launch. Type: String Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>
### Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetworkInterface.n.PrivateIpAddress</td>
<td>The private IP address of the specified network interface. This parameter can be used multiple times to specify explicit private IP addresses for a network interface, but only one private IP address can be designated as primary. Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter with the NetworkInterface.n.PrivateIpAddresses.n.Primary value of <code>true</code> if you designate a primary private IP address using the NetworkInterface.n.PrivateIpAddress option. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>NetworkInterface.n.PrivateIpAddresses.n.Primary</td>
<td>Whether the private IP address is the primary private IP address. Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter with the NetworkInterface.n.PrivateIpAddresses.n.Primary value of <code>true</code> and the NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress option if you designate a primary private IP address using NetworkInterface.n.PrivateIpAddress. Type: Boolean Default: None</td>
<td>No</td>
</tr>
<tr>
<td>NetworkInterface.n.SecondaryPrivateIpAddressCount</td>
<td>The number of private IP addresses to assign to a network interface. For a single network interface, you cannot specify this option and specify more than one private IP address using NetworkInterface.n.PrivateIpAddress.</td>
<td>No</td>
</tr>
<tr>
<td>NetworkInterface.n.SecurityGroupId.n</td>
<td>Applies only when creating new network interfaces. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>NetworkInterface.n.DeleteOnTermination</td>
<td>Applies to all network interfaces. Type: Boolean Default: None</td>
<td>No</td>
</tr>
<tr>
<td>IamInstanceProfile.Arn</td>
<td>Amazon resource name (ARN) of the IAM Instance Profile (IIP) to associate with the instances. Type: String Default: None</td>
<td>No</td>
</tr>
<tr>
<td>IamInstanceProfile.Name</td>
<td>The name of the IAM Instance Profile (IIP) to associate with the instances. Type: String Default: None</td>
<td>No</td>
</tr>
</tbody>
</table>
Response Elements

The elements in the following table are wrapped in a RunInstancesResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.</td>
<td></td>
</tr>
<tr>
<td>reservationId</td>
<td>The ID of the reservation.</td>
<td></td>
</tr>
<tr>
<td>ownerId</td>
<td>The ID of the AWS account that owns the reservation.</td>
<td></td>
</tr>
<tr>
<td>groupSet</td>
<td>A list of security groups the instance belongs to. Each group is wrapped in an item element.</td>
<td></td>
</tr>
<tr>
<td>instancesSet</td>
<td>A list of instances. Each instance is wrapped in an item element.</td>
<td></td>
</tr>
<tr>
<td>requesterId</td>
<td>The ID of the requester that launched the instances on your behalf (for example, AWS Management Console, Auto Scaling).</td>
<td></td>
</tr>
</tbody>
</table>

Examples

Example Request

This example launches three instances of the ami-60a54009 AMI.

https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-60a54009
&MaxCount=3
&MinCount=1
&Placement.AvailabilityZone=us-east-1b
&Monitoring.Enabled=true
&AUTHPARAMS
Example Response

```xml
<RunInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservationId>r-47a5402e</reservationId>
  <OwnerId>111122223333</OwnerId>
  <groupId>
    <groupId>sg-245f6a01</groupId>
    <groupName>default</groupName>
  </groupId>
  <instancesSet>
    <instanceId>i-2ba64342</instanceId>
    <imageId>ami-60a54009</imageId>
    <instanceState>
      <code>0</code>
      <name>pending</name>
    </instanceState>
    <privateDnsName/>
    <dnsName/>
    <amiLaunchIndex>0</amiLaunchIndex>
    <instanceType>m1.small</instanceType>
    <launchTime>2007-08-07T11:51:50.000Z</launchTime>
    <placement>
      <availabilityZone>us-east-1b</availabilityZone>
      <groupName/>
      <tenancy>default</tenancy>
    </placement>
    <monitoring>
      <state>enabled</state>
    </monitoring>
    <sourceDestCheck>true</sourceDestCheck>
  </groupSet>
  <instanceId>i-2bc64242</instanceId>
  <imageId>ami-60a54009</imageId>
  <instanceState>
    <code>0</code>
    <name>pending</name>
  </instanceState>
  <privateDnsName/>
  <dnsName/>
  <amiLaunchIndex>1</amiLaunchIndex>
  <instanceType>m1.small</instanceType>
</RunInstancesResponse>
```
<launchTime>2007-08-07T11:51:50.000Z</launchTime>
<placement>
  <availabilityZone>us-east-1b</availabilityZone>
  <groupName/>
  <tenancy>default</tenancy>
</placement>
<monitoring>
  <state>enabled</state>
</monitoring>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-245f6a01</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<virtualizationType>paravirtual</virtualizationType>
<hypervisor>xen</hypervisor>
ebsOptimized>false</ebsOptimized>
</item>
</instancesSet>
</RunInstancesResponse>
**Example Request**

This example launches an instance of the `ami-31814f58` AMI and attaches an elastic network interface to it.

```xml
https://ec2.amazonaws.com/?Action=RunInstances
ImageId=ami-31814f58
&InstanceType=m1.small
&MaxCount=1
&MinCount=1
&Monitoring.Enabled=false
&SubnetId=subnet-b2a249da
&AUTHPARAMS
```

**Example Response**

```xml
  <requestId>e86ff3c8-2400-45e3-a4e7-f158a69283d4</requestId>
  <reservationId>r-157ad274</reservationId>
  <ownerId>111122223333</ownerId>
  <instancesSet>
    <item>
      <instanceId>i-0ee0356c</instanceId>
      <imageId>ami-31814f58</imageId>
      <instanceState>
        <code>0</code>
        <name>pending</name>
      </instanceState>
      <privateDnsName/>
      <dnsName/>
      <reason/>
      <amiLaunchIndex>0</amiLaunchIndex>
      <instanceType>m1.small</instanceType>
      <launchTime>2011-12-20T08:29:31.000Z</launchTime>
      <placement>
        <availabilityZone>us-east-1b</availabilityZone>
        <groupId>sg-050c1369</groupId>
        <groupName>default</groupName>
      </placement>
      <kernelId>aki-805ea7e9</kernelId>
      <sourceDestCheck>true</sourceDestCheck>
    </item>
  </instancesSet>
</RunInstancesResponse>
```
Example Request

The following example launches an m1.large instance into a VPC in subnet subnet-a61dafcf with a single network interface, 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)

https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-beb0caec
&InstanceType=m1.large
&MaxCount=1
&MinCount=1
&Monitoring.Enabled=false
&NetworkInterface.0.DeviceIndex=0
&NetworkInterface.0.PrivateIpAddresses.0.Primary=true
&NetworkInterface.0.PrivateIpAddresses.0.PrivateIpAddress=10.0.2.106
&NetworkInterface.0.PrivateIpAddresses.1.Primary=false
&NetworkInterface.0.PrivateIpAddresses.1.PrivateIpAddress=10.0.2.107
Example Request

This example launches a Dedicated Instance into a VPC.

https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-2a1fec43
&SubnetId=subnet-dea63cb7
&Placement.Tenancy=dedicated
&MinCount=1
&MaxCount=1
&AUTHPARAMS

Related Operations

- DescribeInstances (p. 200)
- StopInstances (p. 431)
- StartInstances (p. 429)
- TerminateInstances (p. 433)
- AuthorizeSecurityGroupIngress (p. 36)
- RevokeSecurityGroupIngress (p. 414)
- DescribeSecurityGroups (p. 272)
- CreateSecurityGroup (p. 94)
- CreateKeyPair (p. 71)
- ImportKeyPair (p. 353)
StartInstances

Description

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, we charge a full instance hour, even if transitions happen multiple times within a single hour.

Note

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 Using Amazon EBS-Backed AMIs and Instances.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceId.n</td>
<td>One or more instance IDs. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a StartInstancesResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request.  Type: xsd:string</td>
</tr>
<tr>
<td>instancesSet</td>
<td>A list of instance state changes. Each change is wrapped in an item element. Type: InstanceStateChangeType (p. 483)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example starts the i-10a64379 instance.
Example Response

```
<StartInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-10a64379</instanceId>
      <currentState>
        <code>0</code>
        <name>pending</name>
      </currentState>
      <previousState>
        <code>80</code>
        <name>stopped</name>
      </previousState>
    </item>
  </instancesSet>
</StartInstancesResponse>
```

Related Operations

- StopInstances (p. 431)
- RunInstances (p. 417)
- DescribeInstances (p. 200)
- TerminateInstances (p. 433)
StopInstances

Description

Stops an Amazon EBS-backed instance. Each time you transition an instance from stopped to started, we charge a full instance hour, even if transitions happen multiple times within a single hour.

Important

Although Spot Instances can use Amazon EBS-backed AMIs, they don’t support Stop/Start. In other words, you can’t stop and start Spot Instances launched from an AMI with an Amazon EBS root device.

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.

Note

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.

You can stop, start, and terminate EBS-backed instances. You can only terminate S3-backed instances. What happens to an instance differs if you stop it or terminate 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 stopping and terminating instances, go to the “Stop/Start” and “Instance Termination” in Basics of Amazon EBS-Backed AMIS and Instances in the Amazon EC2 User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceId.n</td>
<td>One or more instance IDs. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>Force</td>
<td>Forces the instance to stop. The instance will 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. Type: Boolean Default: False</td>
<td>No</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a StopInstancesResponse element.
The ID of the request.
Type: xsd:string

.instancesSet

A list of instance state changes. Each change is wrapped in an item element.
Type: InstanceStateChangeType (p. 483)

### Examples

#### Example Request

This example stops the i-10a64379 instance without using the "force" option.

```
https://ec2.amazonaws.com/?Action=StopInstances
&InstanceId.1=i-10a64379
&AUTHPARAMS
```

#### Example Response

```
<StopInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  < requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-10a64379</instanceId>
      <currentState>
        <code>64</code>
        <name>stopping</name>
      </currentState>
      <previousState>
        <code>16</code>
        <name>running</name>
      </previousState>
    </item>
  </instancesSet>
</StopInstancesResponse>
```

### Related Operations

- StartInstances (p. 429)
- RunInstances (p. 417)
- DescribeInstances (p. 200)
- TerminateInstances (p. 433)
TerminateInstances

Description

Shuts down one or more instances. This operation is idempotent; if you terminate an instance more than once, each call will succeed.

Terminated instances will remain visible after termination (approximately one hour).

Note

By default, Amazon EC2 deletes all Amazon EBS volumes that were attached when the instance launched. Amazon EBS volumes attached after instance launch continue running.

You can stop, start, and terminate EBS-backed instances. You can only terminate S3-backed instances. What happens to an instance differs if you stop it or terminate 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 stopping and terminating instances, go to the "Stop/Start" and "Instance Termination" in Basics of Amazon EBS-Backed AMIS and Instances in the Amazon EC2 User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceId.n</td>
<td>One or more instance IDs. Type: String Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in a TerminateInstancesResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>instancesSet</td>
<td>A list of instance state changes. Each change is wrapped in an item element. Type: InstanceStateChangeType (p. 483)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example terminates the i-3ea74257 instance.
Example Response

```xml
<TerminateInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-3ea74257</instanceId>
      <currentState>
        <code>32</code>
        <name>shutting-down</name>
      </currentState>
      <previousState>
        <code>16</code>
        <name>running</name>
      </previousState>
    </item>
  </instancesSet>
</TerminateInstancesResponse>
```

Related Operations

- DescribeInstances (p. 200)
- RunInstances (p. 417)
- StopInstances (p. 431)
- StartInstances (p. 429)
UnassignPrivateIpAddresses

Description

Unassigns one or more secondary private IP addresses from a network interface.

This command is only available in VPC.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetworkInterfaceId</td>
<td>The network interface from which the secondary private IP address will be unassigned. Type: String Default: None</td>
<td>Yes</td>
</tr>
<tr>
<td>PrivateIpAddress.n</td>
<td>The secondary private IP addresses that you want to unassign from the network interface. You can specify this option multiple times to unassign more than one IP address. Type: AssignPrivateIpAddressSetItemRequestType (p. 442) Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in an UnassignPrivateIpAddressesResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>return</td>
<td>Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean</td>
</tr>
</tbody>
</table>

Examples

Example Request

The following request unassigns two secondary private IP addresses from the specified network interface.

```
https://ec2.amazonaws.com/?Action=UnassignPrivateIpAddresses
&NetworkInterfaceId=eni-197d9972
&PrivateIpAddress.0=10.0.2.60
```
Example Response

```xml
<UnassignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</UnassignPrivateIpAddresses>
```

Related Operations

- AssignPrivateIpAddresses (p. 15)
UnmonitorInstances

Description

Disables monitoring for a running instance. For more information about monitoring instances, see Monitoring Your Instances and Volumes in the Amazon Elastic Compute Cloud User Guide.

Request Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>InstanceId.n</td>
<td>One or more instance IDs. Type: String, Default: None</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Response Elements

The elements in the following table are wrapped in an UnmonitorInstancesResponse element.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the request. Type: xsd:string</td>
</tr>
<tr>
<td>instancesSet</td>
<td>A list of monitoring information for one or more instances. Each set of information is wrapped in an item element. Type: MonitorInstancesResponseSetItemType (p. 495)</td>
</tr>
</tbody>
</table>

Examples

Example Request

This example disables monitoring for i-43a4412a and i-23a3397d.

https://ec2.amazonaws.com/?Action=UnmonitorInstances
&InstanceId.1=i-43a4412a
&InstanceId.2=i-23a3397d
&AUTHPARAMS

Example Response

<UnmonitorInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2012-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-43a4412a</instanceId>
      <monitoring>
        <!-- Monitoring information for instance i-43a4412a -->
      </monitoring>
    </item>
    <!-- More instances if needed -->
  </instancesSet>
</UnmonitorInstancesResponse>
Related Operations

- MonitorInstances (p. 370)
- RunInstances (p. 417)
Data Types

Topics

- AssignPrivateIpAddressesSetItemType (p. 442)
- AttachmentSetItemResponseType (p. 442)
- AttachmentType (p. 443)
- AvailabilityZoneItemType (p. 443)
- AvailabilityZoneMessageItemType (p. 444)
- BlockDeviceMappingItemType (p. 445)
- BundleInstanceS3StorageType (p. 445)
- BundleInstanceTaskErrorType (p. 446)
- BundleInstanceTaskStorageType (p. 447)
- BundleInstanceTaskType (p. 448)
- CancelSpotInstanceRequestsResponseSetItemType (p. 449)
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- DescribeReservedInstancesListingsSetItemResponseSetItemType (p. 456)
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- DescribeReservedInstancesOfferingsResponseType (p. 458)
- DescribeReservedInstancesResponseSetItemType (p. 459)
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- DhcConfigurationItemType (p. 463)
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- InstanceCountsSetItemType (p. 476)
- InstanceCountsSetType (p. 477)
- InstanceEbsBlockDeviceType (p. 477)
- InstanceExportTaskResponseType (p. 478)
- InstanceMonitoringStateType (p. 478)
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- InstanceNetworkInterfaceAttachmentType (p. 480)
- InstanceNetworkInterfaceSetItemRequestType (p. 480)
- InstanceNetworkInterfaceSetItemType (p. 481)
- InstancePrivatelIpAddressesSetItemType (p. 483)
- InstanceStateChangeType (p. 483)
- InstanceStateType (p. 484)
- InstanceStatusDetailsSetType (p. 485)
- InstanceStatusEventsSetType (p. 485)
- InstanceStatusEventItemType (p. 486)
- InstanceStatusItemType (p. 486)
- InstanceStatusSetType (p. 487)
- InstanceStatusType (p. 488)
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- InternetGatewayType (p. 489)
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- IpRangeItemType (p. 491)
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- LaunchSpecificationRequestType (p. 492)
- LaunchSpecificationResponseType (p. 493)
- MonitoringInstanceType (p. 495)
- MonitorInstancesResponseSetItemType (p. 495)
- NetworkAclAssociationType (p. 496)
- NetworkAclEntryType (p. 497)
- NetworkAclType (p. 497)
- NetworkInterfaceAssociationType (p. 498)
- NetworkInterfaceAttachmentType (p. 499)
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• NetworkInterfaceType (p. 500)
• PlacementGroupInfoType (p. 502)
• PlacementRequestType (p. 502)
• PlacementResponseType (p. 503)
• PortRangeType (p. 504)
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• PriceScheduleSetItemType (p. 505)
• PriceScheduleSetType (p. 506)
• PricingDetailsSetItemType (p. 506)
• PrivateIpAddressesSetRequestType (p. 507)
• ProductCodeItemType (p. 507)
• ProductCodesSetItemType (p. 508)
• ProductDescriptionSetItemType (p. 509)
• PropagatingVgwType (p. 509)
• RecurringChargesSetItemType (p. 510)
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• ReservationInfoType (p. 511)
• ReservedInstanceLimitPriceType (p. 511)
• ResourceTagSetItemType (p. 512)
• RouteTableAssociationType (p. 512)
• RouteTableType (p. 513)
• RouteType (p. 514)
• RunningInstancesSetItemType (p. 515)
• SecurityGroupIdSetItemType (p. 518)
• SecurityGroupItemType (p. 519)
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• SpotInstanceRequestSetItemType (p. 521)
• SpotInstanceStateFaultType (p. 522)
• SpotInstanceStatusMessageType (p. 523)
• SpotPriceHistorySetItemType (p. 524)
• StateReasonType (p. 524)
• SubnetType (p. 525)
• TagSetItemType (p. 526)
• UserDataType (p. 527)
• UserIdGroupPairType (p. 528)
• VolumeStatusItemtype (p. 528)
• VolumeStatusInfoType (p. 529)
• VolumeStatusDetailsItemtype (p. 530)
• VolumeStatusEventItemtype (p. 530)
• VolumeStatusActionItemtype (p. 531)
• VpcType (p. 532)
• VpnConnectionOptionsResponseType (p. 533)
• VpnConnectionType (p. 533)
• VpnGatewayType (p. 534)
• VpnStaticRouteType (p. 535)
• VpnTunnelTelemetryType (p. 536)
AssignPrivateIpAddressesSetItemRequestType

Describes a private IP address.

**Ancestors**

- AssignPrivateIpAddressesType

**Relevant Operations**

- AssignPrivateIpAddresses (p. 15)
- UnassignPrivateIpAddresses (p. 435)

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>privateIpAddress</td>
<td>The private IP address.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
</tbody>
</table>

AttachmentSetItemResponseType

The AttachmentSetItemResponseType data type.

**Ancestors**

- AttachmentSetResponseType

**Relevant Operations**

- DescribeVolumes

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>volumeId</td>
<td>The ID of the volume.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>instanceId</td>
<td>The ID of the instance.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
</tbody>
</table>
### AttachmentType

Describes an attachment between a virtual private gateway and a VPC.

#### Ancestors

- AttachmentSetType

#### Relevant Operations

- AttachVpnGateway (p. 31)
- CreateVpnGateway (p. 120)
- DescribeVpnGateways (p. 323)

#### Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vpcId</td>
<td>The ID of the VPC the virtual private gateway is attached to.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>state</td>
<td>The current state of the attachment.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: attaching</td>
</tr>
</tbody>
</table>

###AvailabilityZoneItemType

The AvailabilityZoneItemType data type.
**Ancestors**

- AvailabilityZoneSetType

**Relevant Operations**

- DescribeAvailabilityZones

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>zoneName</td>
<td>The name of the Availability Zone. Type: String</td>
</tr>
<tr>
<td>zoneState</td>
<td>The state of the Availability Zone. Type: String</td>
</tr>
<tr>
<td>regionName</td>
<td>The name of the Region. Type: String</td>
</tr>
<tr>
<td>messageSet</td>
<td>Any messages about the Availability Zone, each one wrapped in an item element. Type: AvailabilityZoneMessageType (p. 444)</td>
</tr>
</tbody>
</table>

**AvailabilityZoneMessageType**

The AvailabilityZoneMessageType data type.

**Ancestors**

- AvailabilityZoneMessageSetType

**Relevant Operations**

- DescribeAvailabilityZones

**Contents**

The following table describes the elements in this data type.
**BlockDeviceMappingItemType**

Describes a block device mapping.

**Ancestors**

- BlockDeviceMappingType

**Relevant Operations**

- DescribeImageAttribute (p. 186)
- DescribeImages (p. 189)
- DescribeSpotInstanceRequests (p. 285)
- RegisterImage (p. 377)
- RequestSpotInstances (p. 395)
- RunInstances (p. 417)

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>message</td>
<td>The message about the Availability Zone. Type: String</td>
</tr>
<tr>
<td>deviceName</td>
<td>The device name exposed to the instance (e.g., /dev/sdh). Type: String</td>
</tr>
<tr>
<td>virtualName</td>
<td>The virtual device name. Type: String</td>
</tr>
<tr>
<td>ebs</td>
<td>Parameters used to automatically set up Amazon EBS volumes when the instance is launched. Type: EbsBlockDeviceType (p. 466)</td>
</tr>
<tr>
<td>noDevice</td>
<td>Include this empty element to suppress the specified device included in the block device mapping of the AMI.</td>
</tr>
</tbody>
</table>

**BundleInstanceS3StorageType**

The BundleInstanceS3StorageType data type.
Ancestors

- BundleInstanceTaskStorageType (p. 447)

Relevant Operations

- BundleInstance
- DescribeBundleTasks
- CancelBundleTask
- BundleInstance

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>awsAccessKeyId</td>
<td>The Access Key ID of the owner of the Amazon S3 bucket. Type: String</td>
</tr>
<tr>
<td>bucket</td>
<td>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</td>
</tr>
<tr>
<td>prefix</td>
<td>The beginning of the file name of the AMI. Type: String</td>
</tr>
<tr>
<td>uploadPolicy</td>
<td>A Base64-encoded Amazon S3 upload policy that gives Amazon EC2 permission to upload items into Amazon S3 on the user's behalf. Type: String</td>
</tr>
<tr>
<td>uploadPolicySignature</td>
<td>The signature of the Base64 encoded JSON document. Type: String</td>
</tr>
</tbody>
</table>

BundleInstanceTaskErrorType

The BundleInstanceTaskErrorType data type.

Ancestors

- BundleInstanceTaskType (p. 448)
**Relevant Operations**

- BundleInstance
- DescribeBundleTasks
- CancelBundleTask

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>code</td>
<td>The error code. Type: String</td>
</tr>
<tr>
<td>message</td>
<td>The error message. Type: String</td>
</tr>
</tbody>
</table>

**BundleInstanceTaskStorageType**

The BundleInstanceTaskStorageType data type.

**Ancestors**

- BundleInstanceTaskType (p. 448)

**Relevant Operations**

- BundleInstance
- DescribeBundleTasks
- CancelBundleTask
- BundleInstance

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S3</td>
<td>An Amazon S3 storage location. Type: BundleInstanceS3StorageType (p. 445)</td>
</tr>
</tbody>
</table>
BundleInstanceTaskType

Describes a bundle task.

**Ancestors**

- BundleInstanceTasksSetType

**Relevant Operations**

- BundleInstance (p. 40)
- CancelBundleTask (p. 43)
- DescribeBundleTasks (p. 172)

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>instanceId</td>
<td>The ID of the instance associated with this bundle task. Type: String</td>
</tr>
<tr>
<td>bundleId</td>
<td>The ID for this bundle task. Type: String</td>
</tr>
<tr>
<td>state</td>
<td>The state of the task. Type: String</td>
</tr>
<tr>
<td></td>
<td><strong>Valid values:</strong> pending</td>
</tr>
<tr>
<td>startTime</td>
<td>The time this task started. Type: DateTime</td>
</tr>
<tr>
<td>updateTime</td>
<td>The time of the most recent update for the task. Type: DateTime</td>
</tr>
<tr>
<td>storage</td>
<td>The Amazon S3 storage locations. Type: BundleInstanceTaskStorageType (p. 447)</td>
</tr>
<tr>
<td>progress</td>
<td>The level of task completion, as a percent (for example, 20%). Type: String</td>
</tr>
<tr>
<td>error</td>
<td>If the task fails, a description of the error. Type: BundleInstanceTaskErrorType (p. 446)</td>
</tr>
</tbody>
</table>
CancelSpotInstanceRequestsResponseSetItemType

The CancelSpotInstanceRequestsResponseSetItemType data type.

Ancestors

- CancelSpotInstanceRequestsResponseSetType

Relevant Operations

- CancelSpotInstanceRequests

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>spotInstanceRequestId</td>
<td>The ID of the Spot Instance request. Type: String</td>
</tr>
<tr>
<td>state</td>
<td>The state of the Spot Instance request. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: active</td>
</tr>
</tbody>
</table>

ConversionTaskType

The ConversionTaskType data type.

Ancestors

- ConversionTaskSetType

Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume

Contents

The following table describes the elements in this data type.
### Name | Description
--- | ---
conversionTaskId | The ID of the conversion task. Type: String
expirationTime | The time when the task expires. If the upload isn’t complete before the expiration time, we automatically cancel the task. Type: String
importVolume | If the task is for importing a volume, this contains information about the import volume task. Type: ImportVolumeTaskDetailsType (p. 474)
importInstance | If the task is for importing an instance, this contains information about the import instance task. Type: ImportInstanceTaskDetailsType (p. 472)
state | The state of the conversion task. Type: String Valid values: active | cancelling | cancelled | completed
statusMessage | The status message related to the conversion task. Type: String

**CreateVolumePermissionItemType**

The `CreateVolumePermissionItemType` data type.

**Ancestors**

- `CreateVolumePermissionListType`

**Relevant Operations**

- `ModifySnapshotAttribute`
- `DescribeSnapshotAttribute`

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>userId</td>
<td>The ID of an AWS account that can create volumes from the snapshot. Type: String</td>
</tr>
</tbody>
</table>
CustomerGatewayType

Describes a customer gateway.

Ancestors

- CustomerGatewaySetType

Relevant Operations

- CreateCustomerGateway (p. 58)
- DescribeCustomerGateways (p. 177)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>groupId</td>
<td>The group that is allowed to create volumes from the snapshot.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid value: all</td>
</tr>
</tbody>
</table>

CustomerGatewayType

Describes a customer gateway.

Ancestors

- CustomerGatewaySetType

Relevant Operations

- CreateCustomerGateway (p. 58)
- DescribeCustomerGateways (p. 177)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>customerGatewayId</td>
<td>The ID of the customer gateway.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>state</td>
<td>The current state of the customer gateway.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: pending</td>
</tr>
<tr>
<td>type</td>
<td>The type of VPN connection the customer gateway supports (ipsec.1).</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>ipAddress</td>
<td>The Internet-routable IP address of the customer gateway's outside interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>bgpAsn</td>
<td>The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).</td>
</tr>
<tr>
<td></td>
<td>Type: Integer</td>
</tr>
<tr>
<td>tagSet</td>
<td>Any tags assigned to the resource, each one wrapped in an item element.</td>
</tr>
<tr>
<td></td>
<td>Type: ResourceTagSetItemType (p. 512)</td>
</tr>
</tbody>
</table>
DescribeAddressesResponseItemType

Describes an IP address.

Ancestors

- DescribeAddressesResponseInfoType

Relevant Operations

- DescribeAddresses (p. 164)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>publicIp</td>
<td>The public IP address.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>allocationId</td>
<td>The ID representing the allocation of the address for use with Amazon VPC.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>domain</td>
<td>Whether this Elastic IP address is for EC2 instances (i.e., standard) or VPC instances.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: standard</td>
</tr>
<tr>
<td>instanceId</td>
<td>The ID of the instance the address is associated with (if any).</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>associationId</td>
<td>The ID representing the association of an Elastic IP address with an instance in a VPC.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>networkInterfaceId</td>
<td>The ID of the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>networkInterfaceOwnerId</td>
<td>The ID of the AWS account that owns the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
</tbody>
</table>

DescribeImagesResponseItemType

The DescribeImagesResponseItemType data type.
Ancestors

- DescribeImagesResponseInfoType

Relevant Operations

- DescribeImages

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>imageId</td>
<td>The ID of the AMI. Type: String</td>
</tr>
<tr>
<td>imageLocation</td>
<td>The location of the AMI. Type: String</td>
</tr>
<tr>
<td>imageState</td>
<td>Current state of the AMI. If the operation returns available, the image is successfully registered and available for launching. Type: String Valid values: available</td>
</tr>
<tr>
<td>imageOwnerId</td>
<td>AWS account ID of the image owner. Type: String</td>
</tr>
<tr>
<td>isPublic</td>
<td>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</td>
</tr>
<tr>
<td>productCodes</td>
<td>Any product codes associated with the AMI, each one wrapped in an item element. Type: ProductCodesSetItemType (p. 508)</td>
</tr>
<tr>
<td>architecture</td>
<td>The architecture of the image. Type: String</td>
</tr>
<tr>
<td>imageType</td>
<td>The type of image (machine, kernel, or RAM disk). Type: String</td>
</tr>
<tr>
<td>kernelId</td>
<td>The kernel associated with the image, if any. Only applicable for machine images. Type: String</td>
</tr>
<tr>
<td>ramdiskId</td>
<td>The RAM disk associated with the image, if any. Only applicable for machine images. Type: String</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>platform</td>
<td>The value is Windows for Windows AMIs; otherwise blank. Type: String</td>
</tr>
<tr>
<td>stateReason</td>
<td>The reason for the state change. Type: StateReasonType (p. 524)</td>
</tr>
<tr>
<td>imageOwnerAlias</td>
<td>The AWS account alias (e.g., amazon, self, etc.) or AWS account ID that owns the AMI. Type: String</td>
</tr>
<tr>
<td>name</td>
<td>The name of the AMI that was provided during image creation. Type: String</td>
</tr>
<tr>
<td>description</td>
<td>The description of the AMI that was provided during image creation. Type: String</td>
</tr>
<tr>
<td>rootDeviceType</td>
<td>The type of root device used by the AMI. The AMI can use an Amazon EBS volume or an instance store volume. Type: String</td>
</tr>
<tr>
<td>rootDeviceName</td>
<td>The device name of the root device (e.g., /dev/sda1, or xvda). Type: String</td>
</tr>
<tr>
<td>blockDeviceMapping</td>
<td>Any block device mapping entries, each one wrapped in an item element. Type: BlockDeviceMappingItemType (p. 445)</td>
</tr>
<tr>
<td>virtualizationType</td>
<td>The type of virtualization of the AMI. Type: String</td>
</tr>
<tr>
<td>tagSet</td>
<td>Any tags assigned to the resource, each one wrapped in an item element. Type: ResourceTagSetItemType (p. 512)</td>
</tr>
<tr>
<td>hypervisor</td>
<td>The image's hypervisor type. Type: String</td>
</tr>
</tbody>
</table>

DescribeKeyPairsResponseItemType

The DescribeKeyPairsResponseItemType data type.

Ancestors

- DescribeKeyPairsResponseInfoType
Relevant Operations

- DescribeKeyPairs

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>keyName</td>
<td>The name of the key pair.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>keyFingerprint</td>
<td>If you used CreateKeyPair to create the key pair, this is the SHA-1 digest</td>
</tr>
<tr>
<td></td>
<td>of the DER encoded private key. If you used ImportKeyPair to provide AWS</td>
</tr>
<tr>
<td></td>
<td>the public key, this is the MD5 public key fingerprint as specified in</td>
</tr>
<tr>
<td></td>
<td>section 4 of RFC4716.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
</tbody>
</table>

DescribeReservedInstancesListingsResponseSetItemType

The DescribeReservedInstancesListingsResponseSetItemType data type.

Ancestors

- DescribeReservedInstancesListingsResponseType

Relevant Operations

- DescribeReservedInstancesListings

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>reservedInstancesListingId</td>
<td>The ID of the Reserved Instance listing.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>reservedInstancesId</td>
<td>The ID of the Reserved Instance.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>createDate</td>
<td>The time the listing is created.</td>
</tr>
<tr>
<td></td>
<td>Type: DateTime</td>
</tr>
</tbody>
</table>
The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>reservedInstancesListingId</td>
<td>The ID of the Reserved Instance listing.</td>
</tr>
<tr>
<td>clientToken</td>
<td>The idempotency token you provided when you created the listing.</td>
</tr>
</tbody>
</table>

Ancestors

- DescribeReservedInstancesListings

Relevant Operations

- DescribeReservedInstancesListings

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>reservedInstancesListingId</td>
<td>The ID of the Reserved Instance listing.</td>
</tr>
<tr>
<td>clientToken</td>
<td>The idempotency token you provided when you created the listing.</td>
</tr>
</tbody>
</table>

DescribeReservedInstancesListingSetItemType

The DescribeReservedInstancesListingSetItemType data type.

Ancestors

- DescribeReservedInstancesListings

Relevant Operations

- DescribeReservedInstancesListings

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>reservedInstancesListingId</td>
<td>The ID of the Reserved Instance listing.</td>
</tr>
<tr>
<td>clientToken</td>
<td>The idempotency token you provided when you created the listing.</td>
</tr>
</tbody>
</table>
DescribeReservedInstancesOfferingsResponseSetItemType

The DescribeReservedInstancesOfferingsResponseSetItemType data type.

**Ancestors**

- DescribeReservedInstancesOfferingsResponseSetType

**Relevant Operations**

- DescribeReservedInstancesOfferings

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>reservedInstancesOfferingId</td>
<td>The ID of the Reserved Instance offering. Type: String</td>
</tr>
<tr>
<td>instanceType</td>
<td>The instance type on which the Reserved Instance can be used. Type: String</td>
</tr>
<tr>
<td>availabilityZone</td>
<td>The Availability Zone in which the Reserved Instance can be used. Type: String</td>
</tr>
<tr>
<td>duration</td>
<td>The duration of the Reserved Instance, in seconds. Type: Long</td>
</tr>
<tr>
<td>fixedPrice</td>
<td>The purchase price of the Reserved Instance. Type: Double</td>
</tr>
<tr>
<td>usagePrice</td>
<td>The usage price of the Reserved Instance, per hour. Type: Double</td>
</tr>
<tr>
<td>productDescription</td>
<td>The Reserved Instance description. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: Linux/UNIX</td>
</tr>
<tr>
<td>instanceTenancy</td>
<td>The tenancy of the reserved instance. Type: String</td>
</tr>
<tr>
<td>currencyCode</td>
<td>The currency of the Reserved Instance offering you are purchasing. It's specified using ISO 4217 standard currency codes (e.g., USD, JPY). At this time, the only supported currency is USD. Type: String</td>
</tr>
</tbody>
</table>
## DescribeReservedInstancesOfferingsResponseType

The DescribeReservedInstancesOfferingsResponseType data type.

### Ancestors

- DescribeReservedInstancesOfferings

### Relevant Operations

- DescribeReservedInstancesOfferings

### Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>requestId</td>
<td>The ID of the Reserved Instance offering request. Type: String</td>
</tr>
<tr>
<td>reservedInstancesOfferingsSet</td>
<td>The instance type on which the Reserved Instance can be used. Type:</td>
</tr>
<tr>
<td></td>
<td>DescribeReservedInstancesOfferingsResponseSetItemType (p. 457)</td>
</tr>
<tr>
<td>nextToken</td>
<td>A string specifying the next paginated set of results to return. Type: String</td>
</tr>
</tbody>
</table>
DescribeReservedInstancesResponseSetItemType

The DescribeReservedInstancesResponseSetItemType data type.

Ancestors

- DescribeReservedInstancesResponseSetType

Relevant Operations

- DescribeReservedInstances

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>reservedInstancesId</td>
<td>The ID of the Reserved Instance. Type: String</td>
</tr>
<tr>
<td>instanceType</td>
<td>The instance type on which the Reserved Instance can be used. Type: String</td>
</tr>
<tr>
<td>availabilityZone</td>
<td>The Availability Zone in which the Reserved Instance can be used. Type: String</td>
</tr>
<tr>
<td>start</td>
<td>The date and time the Reserved Instance started. Type: DateTime</td>
</tr>
<tr>
<td>duration</td>
<td>The duration of the Reserved Instance, in seconds. Type: Long</td>
</tr>
<tr>
<td>fixedPrice</td>
<td>The purchase price of the Reserved Instance. Type: Double</td>
</tr>
<tr>
<td>usagePrice</td>
<td>The usage price of the Reserved Instance, per hour. Type: Double</td>
</tr>
<tr>
<td>instanceCount</td>
<td>The number of Reserved Instances purchased. Type: Integer</td>
</tr>
<tr>
<td>productDescription</td>
<td>The Reserved Instance description. Type: String Valid values:Linux/UNIX</td>
</tr>
</tbody>
</table>
The state of the Reserved Instance purchase.
Type: String
Valid values: payment-pending | active | payment-failed | retired

tagSet
Any tags assigned to the resource, each one wrapped in an item element.
Type: ResourceTagSetItemType (p. 512)

instanceTenancy
The tenancy of the reserved instance.
Type: String
Valid values: default | dedicated

currencyCode
The currency of the Reserved Instance. It's specified using ISO 4217 standard currency codes.
Type: String
Valid values: As specified in ISO 4217 (e.g., USD, JPY)

offeringType
The Reserved Instance offering type.
Type: String

recurringCharges
The recurring charge tag assigned to the resource.
Type: RecurringChargesSetItemType (p. 510)

DescribeReservedInstancesSetItemType
The DescribeReservedInstancesSetItemType data type.

Ancestors
• DescribeReservedInstancesListings

Relevant Operations
• DescribeReservedInstances

Contents
The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>reservedInstancesId</td>
<td>The ID of the Reserved Instance.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
</tbody>
</table>
DescribeSnapshotsSetItemResponseType

The DescribeSnapshotsSetItemResponseType data type.

Ancestors

- DescribeSnapshotsSetResponseResponseType

Relevant Operations

- DescribeSnapshots

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>snapshotId</td>
<td>The ID of the snapshot.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>volumeId</td>
<td>The ID of the volume.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>status</td>
<td>The snapshot state.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: pending</td>
</tr>
<tr>
<td>startTime</td>
<td>The time stamp when the snapshot was initiated.</td>
</tr>
<tr>
<td></td>
<td>Type: DateTime</td>
</tr>
<tr>
<td>progress</td>
<td>The progress of the snapshot, as a percentage.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>ownerId</td>
<td>The ID of the AWS account that owns the snapshot.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>volumeSize</td>
<td>The size of the volume, in GiB.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>description</td>
<td>The description of the snapshot.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>ownerAlias</td>
<td>The AWS account alias (amazon, self, etc.) or AWS account ID that owns the AMI.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>tagSet</td>
<td>Any tags assigned to the resource, each one wrapped in an item element.</td>
</tr>
<tr>
<td></td>
<td>Type: ResourceTagSetItemType (p. 512)</td>
</tr>
</tbody>
</table>
DescribeVolumesSetItemResponseType

The DescribeVolumesSetItemResponseType data type.

Ancestors

- ItemType-DescribeVolumesSetResponseResponseType

Relevant Operations

- DescribeVolumes

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>volumeId</td>
<td>The ID of the volume.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>size</td>
<td>The size of the volume, in GiBs.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>snapshotId</td>
<td>The snapshot from which the volume was created (optional).</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>availabilityZone</td>
<td>The Availability Zone in which the volume was created.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>status</td>
<td>The state of the volume.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: creating</td>
</tr>
<tr>
<td>createTime</td>
<td>The time stamp when volume creation was initiated.</td>
</tr>
<tr>
<td></td>
<td>Type: DateTime</td>
</tr>
<tr>
<td>attachmentSet</td>
<td>Any volumes attached, each one wrapped in an item element.</td>
</tr>
<tr>
<td></td>
<td>Type: AttachmentSetItemTypeResponseType (p. 442)</td>
</tr>
<tr>
<td>tagSet</td>
<td>Any tags assigned to the resource, each one wrapped in an item element.</td>
</tr>
<tr>
<td></td>
<td>Type: ResourceTagSetItemType (p. 512)</td>
</tr>
<tr>
<td>volumeType</td>
<td>The volume type.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: standard</td>
</tr>
<tr>
<td></td>
<td>Default: standard</td>
</tr>
</tbody>
</table>
## IOPS

The number of I/O operations per second (IOPS) that the volume supports.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>iops</td>
<td>The number of I/O operations per second (IOPS) that the volume supports. Type: Integer. Valid values: Range is 100 to 2000. Condition: Required when the volume type is io1; not used with standard volumes. Default: None</td>
</tr>
</tbody>
</table>

### DhcpConfigurationItemType

Describes a DHCP configuration option.

**Ancestors**

- DhcpConfigurationItemSetType

**Relevant Operations**

- CreateDhcpOptions (p. 60)
- DescribeDhcpOptions (p. 180)

### Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>key</td>
<td>The name of a DHCP option. Type: String</td>
</tr>
<tr>
<td>valueSet</td>
<td>Any values for a DHCP option, each one wrapped in an item element. Type: DhcpValueType (p. 464)</td>
</tr>
</tbody>
</table>

### DhcpOptionsType

Describes a set of DHCP options.

**Ancestors**

- DhcpOptionsSetType
Relevant Operations

- CreateDhcpOptions (p. 60)
- DescribeDhcpOptions (p. 180)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dhcpOptionsId</td>
<td>The ID of the set of DHCP options.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>dhcpConfigurationSet</td>
<td>The options in the set. Each option's key and set of values are</td>
</tr>
<tr>
<td></td>
<td>wrapped in an item element.</td>
</tr>
<tr>
<td></td>
<td>Type: DhcpConfigurationItemType (p. 463)</td>
</tr>
<tr>
<td>tagSet</td>
<td>Any tags assigned to the resource, each one wrapped in an item element.</td>
</tr>
<tr>
<td></td>
<td>Type: ResourceTagSetItemType (p. 512)</td>
</tr>
</tbody>
</table>

DhcpValueType

The DhcpValueType data type.

Ancestors

- DhcpValueSetType

Relevant Operations

- CreateDhcpOptions
- CreateDhcpOptions
- DescribeDhcpOptions

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>value</td>
<td>A value for the DHCP option. Type: String</td>
</tr>
</tbody>
</table>
DiskImageDescriptionType

The DiskImageDescriptionType data type.

**Ancestors**

- ImportInstanceVolumeDetailItemType (p. 473)
- ImportVolumeTaskDetailsType (p. 474)

**Relevant Operations**

- DescribeConversionTasks
- ImportInstance
- ImportVolume

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>format</td>
<td>The disk image format. Type: String</td>
</tr>
<tr>
<td>size</td>
<td>The size of the disk image. Type: Long</td>
</tr>
<tr>
<td>importManifestUrl</td>
<td>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 &quot;Query String Request Authentication Alternative&quot; section of the Authenticating REST Requests topic in the Amazon Simple Storage Service Developer Guide. Type: String</td>
</tr>
<tr>
<td>checksum</td>
<td>The checksum computed for the disk image. Type: String</td>
</tr>
</tbody>
</table>

DiskImageVolumeDescriptionType

The DiskImageVolumeDescriptionType data type.

**Ancestors**

- ImportInstanceVolumeDetailItemType (p. 473)
- ImportVolumeTaskDetailsType (p. 474)
Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>size</td>
<td>The size of the volume. Type: Integer</td>
</tr>
<tr>
<td>id</td>
<td>The volume identifier. Type: String</td>
</tr>
</tbody>
</table>

EbsBlockDeviceType

Describe an Amazon EBS block device.

Ancestors

- BlockDeviceMappingItemType (p. 445)

Relevant Operations

- DescribeImageAttribute (p. 186)
- DescribeImages (p. 189)
- DescribeSpotInstanceRequests (p. 285)
- RegisterImage (p. 377)
- RequestSpotInstances (p. 395)
- RunInstances (p. 417)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>snapshotId</td>
<td>The ID of the snapshot. Type: String</td>
</tr>
</tbody>
</table>
### EbsInstanceBlockDeviceMappingResponseType

Describes parameter used to set up an Amazon EBS volume in a block device mapping.

**Ancestors**
- InstanceBlockDeviceMappingResponseItemType (p. 475)

**Relevant Operations**
- DescribeInstanceAttribute (p. 197)
- DescribeInstances (p. 200)
- RunInstances (p. 417)

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| volumeSize      | The size of the volume, in GiB. Type: Integer  
Valid values: If the volume type is io1, the minimum size of the volume is 10 GiB. Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.  
Condition: If you're specifying a block device mapping, the volume size is required unless you're creating the volume from a snapshot. |
| deleteOnTermination | Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean                                                                                                                          |
| volumeType      | The volume type. Type: String  
Valid values: standard | io1  
Default: standard                                                                                                                                                                                        |
| iops            | The number of I/O operations per second (IOPS) that the volume supports. Type: Integer  
Valid values: Range is 100 to 2000. Default: None  
Condition: Required when the volume type is io1; not used with standard volumes.                                                                 |

Amazon Elastic Compute Cloud API Reference
### ExportTaskResponseType

The ExportTaskResponseType data type.

#### Ancestors

- CreateInstanceExportTaskResponseType
- DescribeExportTasksResponseType
- ExportTaskSetResponseType

#### Relevant Operations

- CreateInstanceExportTask
- DescribeExportTasks

#### Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>exportTaskId</td>
<td>The ID of the export task. Type: String</td>
</tr>
<tr>
<td>description</td>
<td>A description of the resource being exported. Type: String</td>
</tr>
<tr>
<td>state</td>
<td>The state of the conversion task. Type: String</td>
</tr>
<tr>
<td>Valid values</td>
<td>active</td>
</tr>
</tbody>
</table>
ExportToS3TaskResponseType

The ExportToS3TaskResponseType data type.

**Ancestors**

- CreateInstanceExportTaskResponseType
- DescribeExportTasksResponseType
- ExportTaskSetResponseType
- ExportTaskResponseType

**Relevant Operations**

- CreateInstanceExportTask
- DescribeExportTasks

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>statusMessage</td>
<td>The status message related to the export task. Type: String</td>
</tr>
<tr>
<td>instanceExport</td>
<td>Information about the instance being exported. Type: InstanceExportTaskResponseType (p. 478)</td>
</tr>
<tr>
<td>exportToS3</td>
<td>Information about the destination Amazon S3 bucket. Type: ExportToS3TaskResponseType (p. 469)</td>
</tr>
<tr>
<td>diskImageFormat</td>
<td>The format for the exported image. Type: String</td>
</tr>
<tr>
<td>containerFormat</td>
<td>The container format used to combine disk images with metadata (such as OVF). Type: String Valid values: ova</td>
</tr>
<tr>
<td>s3Bucket</td>
<td>The Amazon S3 bucket for the destination image. Type: String</td>
</tr>
</tbody>
</table>
### GroupItemType

The GroupItemType data type.

#### Ancestors

- GroupSetType

#### Relevant Operations

- DescribeInstanceAttribute
- DescribeInstances
- RequestSpotInstances
- DescribeSpotInstanceRequests
- RequestSpotInstances
- RunInstances
- CreateNetworkInterface

#### Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>groupId</td>
<td>The ID of the security group. In API versions before 2011-01-01, this field returned the name of the security group. Type: String</td>
</tr>
<tr>
<td>groupName</td>
<td>The name of the security group. Type: String</td>
</tr>
</tbody>
</table>

### IamInstanceProfileRequestType

The IamInstanceProfileRequestType data type.
Ancestors

- RunInstancesType
- LaunchSpecificationRequestType
- LaunchSpecificationResponseType

Relevant Operations

- RunInstances
- RequestSpotInstances

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>arn</td>
<td>The Amazon resource name (ARN) of the IAM Instance Profile (IIP) to associate with the instance. Type: String</td>
</tr>
<tr>
<td>name</td>
<td>The name of the IAM Instance Profile (IIP) to associate with the instance. Type: String</td>
</tr>
</tbody>
</table>

IamInstanceProfileResponseType

The IamInstanceProfileResponseType data type.

Ancestors

- RunningInstancesItemType

Relevant Operations

- RunInstances
- RequestSpotInstances

Contents

The following table describes the elements in this data type.
**IcmpTypeCodeType**

Describes the ICMP type and code.

**Ancestors**

- NetworkAclEntryType (p. 497)

**Relevant Operations**

- CreateNetworkAcl (p. 73)
- DescribeNetworkAcls (p. 229)

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>code</td>
<td>The ICMP code. A value of -1 means all codes for the specified ICMP type. Type: Integer</td>
</tr>
<tr>
<td>type</td>
<td>The ICMP type. A value of -1 means all types. Type: Integer</td>
</tr>
</tbody>
</table>

**ImportInstanceTaskDetailsType**

The ImportInstanceTaskDetailsType data type.

**Ancestors**

- ConversionTaskType (p. 449)
Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>volumes</td>
<td>Any instance volumes for import, each one wrapped in an item element.</td>
</tr>
<tr>
<td></td>
<td>Type: ImportInstanceVolumeDetailItemType (p. 473)</td>
</tr>
<tr>
<td>instanceId</td>
<td>The ID of the resulting instance in Amazon EC2.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>platform</td>
<td>The instance operating system.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid value: Windows</td>
</tr>
<tr>
<td>description</td>
<td>An optional description of the instance.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
</tbody>
</table>

ImportInstanceVolumeDetailItemType

The ImportInstanceVolumeDetailItemType data type.

Ancestors

- ImportInstanceVolumeDetailSetType

Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume

Contents

The following table describes the elements in this data type.
ImportVolumeTaskDetailsType

The ImportVolumeTaskDetailsType data type.

**Ancestors**

- ConversionTaskType (p. 449)

**Relevant Operations**

- DescribeConversionTasks
- ImportInstance
- ImportVolume

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>bytesConverted</td>
<td>The number of bytes converted so far. Type: Long</td>
</tr>
<tr>
<td>availabilityZone</td>
<td>The Availability Zone where the resulting instance will reside. Type: String</td>
</tr>
<tr>
<td>image</td>
<td>The information about the image. Type: DiskImageDescriptionType (p. 465)</td>
</tr>
<tr>
<td>description</td>
<td>The description you provided when starting the import instance task. Type: String</td>
</tr>
<tr>
<td>volume</td>
<td>The information about the volume. Type: DiskImageVolumeDescriptionType (p. 465)</td>
</tr>
<tr>
<td>status</td>
<td>The status of the import of this particular disk image. Type: String</td>
</tr>
<tr>
<td>statusMessage</td>
<td>The status information or errors related to the disk image. Type: String</td>
</tr>
</tbody>
</table>
### InstanceBlockDeviceMappingItemType

Describes a block device mapping.

#### Ancestors

- InstanceBlockDeviceMappingType

#### Relevant Operations

- ModifyInstanceAttribute (p. 361)

#### Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>The description you provided when starting the import volume task. Type: String</td>
</tr>
<tr>
<td>image</td>
<td>Information about the image. Type: DiskImageDescriptionType (p. 465)</td>
</tr>
<tr>
<td>volume</td>
<td>Information about the volume. Type: DiskImageVolumeDescriptionType (p. 465)</td>
</tr>
<tr>
<td>deviceName</td>
<td>The device name exposed to the instance (e.g., /dev/sdh, or xvdh). Type: String</td>
</tr>
<tr>
<td>virtualName</td>
<td>The virtual device name. Type: String</td>
</tr>
<tr>
<td>ebs</td>
<td>Parameters used to automatically set up Amazon EBS volumes when the instance is launched. Type: InstanceEbsBlockDeviceType (p. 477)</td>
</tr>
<tr>
<td>noDevice</td>
<td>Include this empty element to suppress the specified device included in the block device mapping of the AMI</td>
</tr>
</tbody>
</table>

### InstanceBlockDeviceMappingResponseItemType

Describes a block device mapping.
Ancestors

- InstanceBlockDeviceMappingResponseType

Relevant Operations

- DescribeInstanceAttribute
- DescribeInstances
- RunInstances

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>deviceName</td>
<td>The device name exposed to the instance (for example, /dev/sdh, or xvdh). Type: String</td>
</tr>
<tr>
<td>ebs</td>
<td>Parameters used to automatically set up Amazon EBS volumes when the instance is launched. Type: EbsInstanceBlockDeviceMappingResponseType (p. 467)</td>
</tr>
</tbody>
</table>

InstanceCountsSetItemType

The InstanceCountsSetItemType data type.

Ancestors

- DescribeReservedInstancesListingSetType
- InstanceCountsSetType

Relevant Operations

- DescribeReservedInstancesListingsResponseType

Contents

The following table describes the elements in this data type.
**InstanceCountsSetType**

The InstanceCountsSetType data type.

**Ancestors**

- DescribeReservedInstancesListingSetType

**Relevant Operations**

- DescribeReservedInstancesListingsResponseType

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>state</td>
<td>The states of the listed Reserved Instances. Type: String Valid values: available</td>
</tr>
<tr>
<td>instanceCount</td>
<td>The number of listed Reserved Instances in the state specified by the state. Type: Integer</td>
</tr>
</tbody>
</table>

**InstanceEbsBlockDeviceType**

Describes parameters used to set up an Amazon EBS volume.

**Ancestors**

- InstanceBlockDeviceMappingItemType (p. 475)

**Relevant Operations**

- ModifyInstanceAttribute (p. 361)
Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>deleteOnTermination</td>
<td>Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean</td>
</tr>
<tr>
<td>volumeId</td>
<td>The ID of the Amazon EBS volume. Type: String</td>
</tr>
</tbody>
</table>

InstanceExportTaskResponseType

The InstanceExportTaskResponseType data type.

Ancestors

- CreateInstanceExportTaskResponseType
- DescribeExportTasksResponseType
- ExportTaskSetResponseType
- ExportTaskResponseType

Relevant Operations

- CreateInstanceExportTask
- DescribeExportTasks

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>instanceId</td>
<td>The ID of the resource being exported. Type: String</td>
</tr>
</tbody>
</table>
| targetEnvironment | The target virtualization environment. Type: String  
Valid values: vmware | citrix |

InstanceMonitoringStateType

Describes the monitoring information for an instance.
Ancestors

- MonitorInstancesResponseSetItemType (p. 495)
- RunningInstancesItemType (p. 515)

Relevant Operations

- MonitorInstances
- UnmonitorInstances
- DescribeInstances
- RunInstances

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>state</td>
<td>The state of monitoring for the instance. The disabled state means that Detailed Monitoring is disabled for the instance. The enabled state means that Detailed Monitoring is enabled for the instance. The pending state means that the instance is launching or that you recently enabled Detailed Monitoring for the instance. Type: String Valid values: disabled</td>
</tr>
</tbody>
</table>

InstanceNetworkInterfaceAssociationType

Describes association information for an Elastic IP address.

Relevant Operations

- DescribeInstances (p. 200)
- RunInstances (p. 417)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>publicIp</td>
<td>The address of the Elastic IP address bound to the network interface. Type: String</td>
</tr>
</tbody>
</table>
### InstanceNetworkInterfaceAttachmentType

**Description**

Describes a network interface attachment.

**Relevant Operations**

- DescribeInstances (p. 200)
- RunInstances (p. 417)

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipOwnerId</td>
<td>The ID of the Elastic IP address owner. Type: String</td>
</tr>
<tr>
<td>attachmentID</td>
<td>The ID of the network interface attachment. Type: String</td>
</tr>
<tr>
<td>deviceIndex</td>
<td>The index of the device on the instance for the network interface attachment. Type: Integer</td>
</tr>
<tr>
<td>status</td>
<td>The attachment state. Type: String</td>
</tr>
<tr>
<td>attachTime</td>
<td>The time stamp when the attachment initiated. Type: DateTime</td>
</tr>
<tr>
<td>deleteOnTermination</td>
<td>Whether the network interface is deleted when the instance is terminated. Type: Boolean</td>
</tr>
</tbody>
</table>

### InstanceNetworkInterfaceSetItemRequestType

**Description**

Describes a network interface.

**Ancestors**

- InstanceNetworkInterfaceSetRequestType
Relevant Operations

- DescribeNetworkInterfaces (p. 237)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>networkInterfaceId</td>
<td>The ID of the network interface. Type: String</td>
</tr>
<tr>
<td>deviceIndex</td>
<td>Required. The index of the device on the instance for the network interface attachment. Type: Integer</td>
</tr>
<tr>
<td>subnetId</td>
<td>The ID of the subnet associated with the network string. Type: String</td>
</tr>
<tr>
<td>description</td>
<td>The description of the network interface. Type: String</td>
</tr>
<tr>
<td>privateIpAddress</td>
<td>The private IP address of the network interface. Type: String</td>
</tr>
<tr>
<td>groupSet</td>
<td>The group IDs for use by the network interface. Type: SecurityGroupIdSetItemType (p. 518)</td>
</tr>
<tr>
<td>deleteOnTermination</td>
<td>If set to true, the interface is deleted when the instance is terminated. Type: Boolean</td>
</tr>
<tr>
<td>privateIpAddressesSet</td>
<td>The list of IP addresses to assign to the network interface. Type: PrivateIpAddressesSetItemType (p. 507)</td>
</tr>
<tr>
<td>secondaryPrivateIpAddressCount</td>
<td>The number of secondary private IP addresses. You cannot specify this option with privateIpAddressesSet. Type: Integer</td>
</tr>
</tbody>
</table>
## Relevant Operations

- DescribeInstances (p. 200)
- RunInstances (p. 417)

## Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>networkInterfaceId</td>
<td>The ID of the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>subnetId</td>
<td>The ID of the subnet.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>vpcId</td>
<td>The ID of the VPC.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>description</td>
<td>The description.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>ownerId</td>
<td>The ID of the customer who created the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>status</td>
<td>The network interface's status (available or in-use).</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>privateIpAddress</td>
<td>The IP address of the network interface within the subnet.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>privateDnsName</td>
<td>The private DNS name.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>sourceDestCheck</td>
<td>Whether to validate network traffic to or from this network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
</tr>
<tr>
<td>groupSet.item</td>
<td>A security group.</td>
</tr>
<tr>
<td></td>
<td>Type: GroupItemType (p. 470)</td>
</tr>
<tr>
<td>attachment</td>
<td>The network interface attachment.</td>
</tr>
<tr>
<td></td>
<td>Type: InstanceNetworkInterfaceAttachmentType (p. 480)</td>
</tr>
<tr>
<td>association</td>
<td>The association information for an Elastic IP associated with the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: InstanceNetworkInterfaceAssociationType (p. 479)</td>
</tr>
<tr>
<td>privateIpsSet</td>
<td>The private IP addresses associated with the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: InstancePrivateIpAddressesSetItemType (p. 483)</td>
</tr>
</tbody>
</table>
**InstancePrivateIpAddressesSetItemType**

Describes a private IP address.

**Ancestors**

- InstancePrivateIpAddressesSetType

**Relevant Operations**

- DescribeInstances (p. 200)
- RunInstances (p. 417)

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>privateIpAddress</td>
<td>The private IP address of the network interface</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>primary</td>
<td>Whether this IP address is the primary private IP address of the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
</tr>
<tr>
<td>association</td>
<td>The association information for an Elastic IP address associated with the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: InstanceNetworkInterfaceAssociationType (p. 479)</td>
</tr>
</tbody>
</table>

**InstanceStateChangeType**

Describes an instance state change.

**Ancestors**

- InstanceStateChangeSetType

**Relevant Operations**

- StartInstances (p. 429)
- StopInstances (p. 431)
- TerminateInstances (p. 433)
Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>instanceId</td>
<td>The instance ID. Type: String</td>
</tr>
<tr>
<td>currentState</td>
<td>The current state of the instance. Type: InstanceStateType (p. 484)</td>
</tr>
<tr>
<td>previousState</td>
<td>The previous state of the instance. Type: InstanceStateType (p. 484)</td>
</tr>
</tbody>
</table>

InstanceStateType

Describes the current state of the instance.

Ancestors

- InstanceStateChangeType (p. 483)
- RunningInstancesItemType (p. 515)

Relevant Operations

- DescribeInstances (p. 200)
- DescribeInstanceStatus (p. 216)
- RunInstances (p. 417)
- StartInstances (p. 429)
- StopInstances (p. 431)
- TerminateInstances (p. 433)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>code</td>
<td>The low byte represents the state. The high byte is an opaque internal value and should be ignored. Type: Integer (16-bit unsigned) Valid values: 0 (pending)</td>
</tr>
</tbody>
</table>
### InstanceStatusDetailsSetType

The InstanceStateType data type.

#### Ancestors

- InstanceStatusItemType (p. 486)
- InstanceStatusType (p. 488)

#### Relevant Operations

- DescribeInstanceStatus (p. 216)

#### Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>The type of instance status detail. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: reachability</td>
</tr>
<tr>
<td>status</td>
<td>The status. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: passed</td>
</tr>
<tr>
<td>impairedSince</td>
<td>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: DateTime</td>
</tr>
</tbody>
</table>

### InstanceStatusEventsSetType

Describes a set of events.

#### Relevant Operations

- DescribeInstanceStatus (p. 216)
Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>item</td>
<td>Information about scheduled events for the instance.</td>
</tr>
<tr>
<td></td>
<td>Type: InstanceStatusEventType (p. 486)</td>
</tr>
</tbody>
</table>

InstanceStatusEventType

Describes an event.

Ancestors

- InstanceStatusEventsSetType (p. 485)

Relevant Operations

- DescribeInstanceStatus (p. 216)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>code</td>
<td>The associated code of the event.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid parameters: instance-reboot</td>
</tr>
<tr>
<td>description</td>
<td>A description of the event.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>notBefore</td>
<td>The earliest scheduled start time for the event.</td>
</tr>
<tr>
<td></td>
<td>Type: DateTime</td>
</tr>
<tr>
<td>notAfter</td>
<td>The latest scheduled end time for the event.</td>
</tr>
<tr>
<td></td>
<td>Type: DateTime</td>
</tr>
</tbody>
</table>

InstanceStatusItemType

Describes the status of an instance.
Ancestors

• InstanceStatusSetType

Relevant Operations

• DescribeInstanceStatus (p. 216)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>instanceId</td>
<td>The ID of the instance. Type: String</td>
</tr>
<tr>
<td>availabilityZone</td>
<td>The Availability Zone of the instance. Type: String</td>
</tr>
<tr>
<td>eventsSet</td>
<td>Extra information regarding events associated with the instance. Type: InstanceStatusEventsSetType (p. 485)</td>
</tr>
<tr>
<td>instanceState</td>
<td>The intended state of the instance. Calls to DescribeInstanceStatus require that an instance be in the running state. Type: InstanceStateType (p. 484)</td>
</tr>
<tr>
<td>systemStatus</td>
<td>Reports impaired functionality that stems from issues related to the systems that support an instance, such as hardware failures and network connectivity problems. Type: InstanceStatusType (p. 488)</td>
</tr>
<tr>
<td>instanceStatus</td>
<td>Reports impaired functionality that arises from problems internal to the instance. The DescribeInstanceStatus (p. 216) response elements report such problems as impaired reachability. Type: InstanceStatusType (p. 488)</td>
</tr>
</tbody>
</table>

InstanceStatusSetType

The InstanceStatusSetType data type.

Relevant Operations

• DescribeInstanceStatus (p. 216)
The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| item      | Information about the status of the instance.  
              Type: InstanceStatusItemType (p. 486) |

**InstanceStatusType**

Describes the state of an instance.

**Ancestors**

- InstanceStatusItemType (p. 486)

**Relevant Operations**

- DescribeInstanceStatus (p. 216)

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| status   | The status.  
              Type: String  
              Valid values: ok | impaired | insufficient-data | not-applicable |
| details  | Information about system instance health or application instance health.  
              Type: InstanceStatusDetailsSetType (p. 485) |

**InternetGatewayAttachmentType**

Describes the attachment of a VPC to an Internet gateway.

**Ancestors**

- InternetGatewayAttachmentSetType
Relevant Operations

- AttachInternetGateway (p. 25)
- CreateInternetGateway (p. 69)
- DescribeInternetGateways (p. 223)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vpcId</td>
<td>The ID of the VPC. Type: String</td>
</tr>
<tr>
<td>state</td>
<td>The current state of the attachment. Type: String Valid values: attaching</td>
</tr>
</tbody>
</table>

InternetGatewayType

Describes an Internet gateway.

Ancestors

- InternetGatewaySetType

Relevant Operations

- CreateInternetGateway (p. 69)
- DescribeInternetGateways (p. 223)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>internetGatewayId</td>
<td>The ID of the Internet gateway. Type: String</td>
</tr>
<tr>
<td>attachmentSet</td>
<td>Any VPCs attached to the Internet gateway, each one wrapped in an item element. Type: InternetGatewayAttachmentType (p. 488)</td>
</tr>
</tbody>
</table>
Name | Description
--- | ---
tagSet | Any tags assigned to the resource, each one wrapped in an item element. Type: ResourceTagSetItemType (p. 512)

IpPermissionType

The IpPermissionType data type.

Ancestors

- IpPermissionSetType

Relevant Operations

- AuthorizeSecurityGroupIngress
- RevokeSecurityGroupIngress
- DescribeSecurityGroups

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipProtocol</td>
<td>The protocol. When you call DescribeSecurityGroups, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (e.g., tcp, udp, or icmp). For a list of protocol numbers, see Protocol Numbers. Type: String</td>
</tr>
<tr>
<td>fromPort</td>
<td>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</td>
</tr>
<tr>
<td>toPort</td>
<td>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 given ICMP type. Type: Integer</td>
</tr>
<tr>
<td>groups</td>
<td>A list of security group and AWS account ID pairs. Each pair is wrapped in an item element. Type: UserIdGroupPairType (p. 528)</td>
</tr>
<tr>
<td>ipRanges</td>
<td>A list of IP ranges. Each range is wrapped in an item element. Type: IpRangeItemType (p. 491)</td>
</tr>
</tbody>
</table>
IpRangeItemType

Describes an IP range.

**Ancestors**

- IpRangeSetType

**Relevant Operations**

- AuthorizeSecurityGroupIngress
- RevokeSecurityGroupIngress
- DescribeSecurityGroups

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>cidrIp</td>
<td>The CIDR range. Cannot be used when specifying a source security group. Type: String</td>
</tr>
</tbody>
</table>

LaunchPermissionItemType

The LaunchPermissionItemType data type.

**Ancestors**

- LaunchPermissionListType

**Relevant Operations**

- DescribeImageAttribute
- ModifyImageAttribute

**Contents**

The following table describes the elements in this data type.
### LaunchSpecificationRequestType

The LaunchSpecificationRequestType data type.

#### Ancestors

- RequestSpotInstancesType

#### Relevant Operations

- RequestSpotInstances

#### Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>groupId</td>
<td>The name of the group.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid value: all</td>
</tr>
<tr>
<td>userId</td>
<td>The AWS account ID.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>imageId</td>
<td>The AMI ID.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>keyName</td>
<td>The name of the key pair.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>groupSet</td>
<td>A list of security groups. Each group is wrapped in an item element.</td>
</tr>
<tr>
<td></td>
<td>Type: GroupItemType (p. 470)</td>
</tr>
<tr>
<td>userData</td>
<td>Base64-encoded MIME user data made available to the instance(s) in the reservation.</td>
</tr>
<tr>
<td></td>
<td>Type: UserDataType (p. 527)</td>
</tr>
<tr>
<td>addressingType</td>
<td>Deprecated.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>instanceType</td>
<td>The instance type.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>placement</td>
<td>The placement information for the instance.</td>
</tr>
<tr>
<td></td>
<td>Type: PlacementRequestType (p. 502)</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>kernelId</td>
<td>The ID of the kernel to select. Type: String</td>
</tr>
<tr>
<td>ramdiskId</td>
<td>The ID of the RAM disk to select. Some kernels require additional drivers at launch. Check the kernel requirements for information on whether you need to specify a RAM disk and search for the kernel ID. Type: String</td>
</tr>
<tr>
<td>blockDeviceMapping</td>
<td>Any block device mapping entries for the instance. Each entry is wrapped in an item element. Type: BlockDeviceMappingItemType (p. 445)</td>
</tr>
<tr>
<td>monitoring</td>
<td>The monitoring information for the instance. Type: MonitoringInstanceType (p. 495)</td>
</tr>
<tr>
<td>subnetId</td>
<td>The ID of the subnet in which to launch the EC2 instance(s). Type: String</td>
</tr>
<tr>
<td>networkInterfaceSet</td>
<td>The network interfaces associated with the instance. Type: InstanceNetworkInterfaceSetItemRequestType (p. 480)</td>
</tr>
<tr>
<td>iamInstanceProfile</td>
<td>The IAM Instance Profile (IIP) associated with the instance. Type: IamInstanceProfileRequestType (p. 470)</td>
</tr>
<tr>
<td>ebsOptimized</td>
<td>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: Boolean Default: false</td>
</tr>
</tbody>
</table>

**LaunchSpecificationResponseType**

The LaunchSpecificationResponseType data type.

**Ancestors**

- SpotInstanceRequestSetItemType (p. 521)

**Relevant Operations**

- DescribeSpotInstanceRequests
The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>imageId</td>
<td>The AMI ID. Type: String</td>
</tr>
<tr>
<td>keyName</td>
<td>The name of the key pair. Type: String</td>
</tr>
<tr>
<td>groupSet</td>
<td>A list of security groups. Each group is wrapped in an item element. Type: GroupItemType (p. 470)</td>
</tr>
<tr>
<td>addressingType</td>
<td>Deprecated. Type: String</td>
</tr>
<tr>
<td>instanceType</td>
<td>The instance type. Type: String</td>
</tr>
<tr>
<td>placement</td>
<td>The placement information for the instance. Type: PlacementRequestType (p. 502)</td>
</tr>
<tr>
<td>kernelId</td>
<td>The ID of the kernel to select. Type: String</td>
</tr>
<tr>
<td>ramdiskId</td>
<td>The ID of the RAM disk to select. Some kernels require additional drivers at launch. Check the kernel requirements for information on whether you need to specify a RAM disk and search for the kernel ID. Type: String</td>
</tr>
<tr>
<td>blockDeviceMapping</td>
<td>Any block device mapping entries for the instance. Each entry is wrapped in an item element. Type: BlockDeviceMappingItemType (p. 445)</td>
</tr>
<tr>
<td>monitoring</td>
<td>The monitoring information for the instance. Type: MonitoringInstanceType (p. 495)</td>
</tr>
<tr>
<td>subnetId</td>
<td>The ID of the subnet in which to launch the instance(s). Type: String</td>
</tr>
<tr>
<td>networkInterfaceSet</td>
<td>The network interfaces for the instance. Type: InstanceNetworkInterfaceSetItemTypeRequestType (p. 480)</td>
</tr>
<tr>
<td>iamInstanceProfile</td>
<td>The IAM Instance Profile (IIP) associated with the instance. Type: iamInstanceProfileRequestType (p. 470)</td>
</tr>
</tbody>
</table>
**MonitoringInstanceType**

The MonitoringInstanceType data type.

**Ancestors**

- LaunchSpecificationRequestType (p. 492)
- LaunchSpecificationResponseType (p. 493)
- RunInstancesType

**Relevant Operations**

- RequestSpotInstances
- DescribeSpotInstanceRequests
- RequestSpotInstances
- RunInstances

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enabled</td>
<td>Whether monitoring is enabled for the instance. Type: Boolean</td>
</tr>
</tbody>
</table>

**MonitorInstancesResponseSetItemType**

The MonitorInstancesResponseSetItemType data type.

**Ancestors**

- MonitorInstancesResponseSetType
Relevant Operations

- MonitorInstances
- UnmonitorInstances

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>instanceId</td>
<td>The instance ID.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>monitoring</td>
<td>The monitoring information.</td>
</tr>
<tr>
<td></td>
<td>Type: InstanceMonitoringStateType (p. 478)</td>
</tr>
</tbody>
</table>

NetworkAclAssociationType

Describes an association between a network ACL and a subnet.

Ancestors

- NetworkAclAssociationSetType

Relevant Operations

- CreateNetworkAcl (p. 73)
- DescribeNetworkAcls (p. 229)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>networkAclAssociationId</td>
<td>An identifier representing the association between a network ACL and a subnet.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>networkAclId</td>
<td>The ID of the network ACL.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>subnetId</td>
<td>The ID of the subnet.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
</tbody>
</table>
NetworkAclEntryType

Describes an entry in a network ACL.

Ancestors

- NetworkAclEntrySetType

Relevant Operations

- CreateNetworkAcl (p. 73)
- DescribeNetworkAcls (p. 229)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ruleNumber</td>
<td>The rule number for the entry. ACL entries are processed in ascending order by rule number. Type: Integer</td>
</tr>
<tr>
<td>protocol</td>
<td>The protocol. A value of -1 means all protocols. Valid values: Any protocol number (see Protocol Numbers). Type: Integer</td>
</tr>
<tr>
<td>ruleAction</td>
<td>Whether to allow or deny the traffic that matches the rule. Type: String</td>
</tr>
<tr>
<td>egress</td>
<td>Indicates an egress rule (rule is applied to traffic leaving the subnet). Value of true indicates egress. Type: Boolean</td>
</tr>
<tr>
<td>cidrBlock</td>
<td>The network range to allow or deny, in CIDR notation. Type: String</td>
</tr>
<tr>
<td>icmpTypeCode</td>
<td>ICMP protocol: The ICMP type and code. Type: IcmpTypeCodeType (p. 472)</td>
</tr>
<tr>
<td>portRange</td>
<td>TCP or UDP protocols: The range of ports the rule applies to. Type: PortRangeType (p. 504)</td>
</tr>
</tbody>
</table>

NetworkAclType

Describes a network ACL.
Ancestors

- NetworkAclSetType

Relevant Operations

- CreateNetworkAcl (p. 73)
- DescribeNetworkAcls (p. 229)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>networkAclId</td>
<td>The ID of the network ACL. Type: String</td>
</tr>
<tr>
<td>vpcId</td>
<td>The ID of the VPC for the network ACL. Type: String</td>
</tr>
<tr>
<td>default</td>
<td>Whether this is the default network ACL for the VPC. Type: Boolean</td>
</tr>
<tr>
<td>entrySet</td>
<td>A list of entries (rules) in the network ACL. Each entry is wrapped in an item element. Type: NetworkAclEntryType (p. 497)</td>
</tr>
<tr>
<td>associationSet</td>
<td>A list of associations between the network ACL and one or more subnets. Each association is wrapped in an item element. Type: NetworkAclAssociationType (p. 496)</td>
</tr>
<tr>
<td>tagSet</td>
<td>Any tags assigned to the resource, each one wrapped in an item element. Type: ResourceTagSetItemType (p. 512)</td>
</tr>
</tbody>
</table>

NetworkInterfaceAssociationType

Describes association information for an Elastic IP address.

Ancestors

- InstanceNetworkInterfaceSetItemType

Relevant Operations

- CreateNetworkInterface (p. 78)
Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>publicIp</td>
<td>The address of the Elastic IP address bound to the network interface. Type: String</td>
</tr>
<tr>
<td>ipOwnerId</td>
<td>The ID of the Elastic IP address owner. Type: String</td>
</tr>
<tr>
<td>allocationID</td>
<td>The allocation ID. Type: String</td>
</tr>
<tr>
<td>associationID</td>
<td>The association ID. Type: String</td>
</tr>
</tbody>
</table>

NetworkInterfaceAttachmentType

Describes a network interface attachment.

Relevant Operations

- CreateNetworkInterface (p. 78)
- DescribeNetworkInterfaces (p. 237)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>attachmentID</td>
<td>The ID of the network interface attachment. Type: String</td>
</tr>
<tr>
<td>instanceID</td>
<td>The ID of the instance. Type: String</td>
</tr>
</tbody>
</table>

NetworkInterfacePrivatIpAddressesSetItemType

Describes the private IP address of a network interface.
**Relevant Operations**

- DescribeNetworkInterfaces

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>privateIpAddress</td>
<td>The private IP address of the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>primary</td>
<td>Whether this IP address is the primary private IP address of the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: Boolean</td>
</tr>
<tr>
<td>association</td>
<td>The association information for an Elastic IP address associated with the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: NetworkInterfaceAssociationType (p. 498)</td>
</tr>
</tbody>
</table>

**NetworkInterfaceType**

Describes a network interface.

**Ancestors**

- NetworkInterfaceSetType

**Relevant Operations**

- CreateNetworkInterface (p. 78)
- DescribeNetworkInterfaces (p. 237)

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>networkInterfaceId</td>
<td>The ID of the network interface.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>subnetId</td>
<td>The ID of the subnet.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>vpcId</td>
<td>The ID of the VPC.</td>
</tr>
<tr>
<td>availabilityZone</td>
<td>The Availability Zone.</td>
</tr>
<tr>
<td>description</td>
<td>A description.</td>
</tr>
<tr>
<td>ownerId</td>
<td>The ID of the customer who created the interface.</td>
</tr>
<tr>
<td>requesterId</td>
<td>The ID of the entity that launched the instance on your behalf (for example, AWS Management Console or Auto Scaling)</td>
</tr>
<tr>
<td>requesterManaged</td>
<td>Whether the network interface is being managed by AWS.</td>
</tr>
<tr>
<td>status</td>
<td>The status (available or in-use).</td>
</tr>
<tr>
<td>macAddress</td>
<td>The MAC address.</td>
</tr>
<tr>
<td>privateIpAddress</td>
<td>The IP address of the interface within the subnet.</td>
</tr>
<tr>
<td>privateDnsName</td>
<td>The private DNS name.</td>
</tr>
<tr>
<td>sourceDestCheck</td>
<td>Whether traffic to or from the instance is validated.</td>
</tr>
<tr>
<td>groupSet</td>
<td>The security group.</td>
</tr>
<tr>
<td>attachment</td>
<td>The network interface attachment.</td>
</tr>
<tr>
<td>association</td>
<td>The association information for an Elastic IP associated with the network interface.</td>
</tr>
<tr>
<td>tagSet</td>
<td>The tags assigned to the resource.</td>
</tr>
<tr>
<td>privateIpAddressesSet</td>
<td>The private IP addresses associated with the network interface. Items are returned in a set.</td>
</tr>
</tbody>
</table>
PlacementGroupInfoType

Describes a placement group.

Ancestors

• PlacementGroupSetType

Relevant Operations

• DeletePlacementGroup (p. 136)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>groupName</td>
<td>The name of the placement group.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>strategy</td>
<td>The placement strategy.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: cluster</td>
</tr>
<tr>
<td>state</td>
<td>The status of the placement group.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: pending</td>
</tr>
</tbody>
</table>

PlacementRequestType

The PlacementRequestType data type.

Ancestors

• LaunchSpecificationRequestType (p. 492)
• LaunchSpecificationResponseType (p. 493)
• RunInstancesType

Relevant Operations

• RequestSpotInstances
• DescribeSpotInstanceRequests
• RequestSpotInstances
• RunInstances

## Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>availabilityZone</td>
<td>The Availability Zone for launching the instance. Type: String</td>
</tr>
<tr>
<td>groupName</td>
<td>The name of a placement group for the instance. Type: String</td>
</tr>
</tbody>
</table>

### PlacementResponseType

The PlacementResponseType data type.

### Ancestors

- RunningInstancesItemType (p. 515)

### Relevant Operations

- DescribeInstances
- RunInstances

## Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>availabilityZone</td>
<td>The Availability Zone of the instance. Type: String</td>
</tr>
<tr>
<td>groupName</td>
<td>The name of the placement group the instance is in (for cluster compute instances). Type: String</td>
</tr>
<tr>
<td>tenancy</td>
<td>The tenancy of the instance (if the instance is running within a VPC). An instance with a tenancy of dedicated runs on single-tenant hardware. Type: String</td>
</tr>
</tbody>
</table>
PortRangeType

Describes a range of ports.

Ancestors

- NetworkAclEntryType (p. 497)

Relevant Operations

- DescribeNetworkAcls (p. 229)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>from</td>
<td>The first port in the range. Type: Integer</td>
</tr>
<tr>
<td>to</td>
<td>The last port in the range. Type: Integer</td>
</tr>
</tbody>
</table>

PriceScheduleRequestSetItemType

The PriceScheduleRequestSetItemType data type.

Ancestors

- PriceScheduleRequestSetType

Relevant Operations

- CreateReservedInstancesListing

Contents

The following table describes the elements in this data type.
PriceScheduleSetItemType

The PriceScheduleSetItemType data type.

Ancestors

- DescribeReservedInstancesListingsResponseSetItemType
- PriceScheduleSetType

Relevant Operations

- CreateReservedInstancesListing

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>term</td>
<td>The number of months remaining in the reservation. For example, 2 is the</td>
</tr>
<tr>
<td></td>
<td>second to the last month before the capacity reservation expires.</td>
</tr>
<tr>
<td></td>
<td>Type: Long</td>
</tr>
<tr>
<td>price</td>
<td>The fixed price for the term.</td>
</tr>
<tr>
<td></td>
<td>Type: Double</td>
</tr>
<tr>
<td>currencyCode</td>
<td>The currency for transacting the Reserved Instance resale.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid value: USD</td>
</tr>
</tbody>
</table>

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

The fixed price for the term.

Type: Double

The currency for transacting the Reserved Instance resale.

Type: String

Valid value: USD
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

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>active</td>
<td>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</td>
</tr>
</tbody>
</table>

**PriceScheduleSetType**

The PriceScheduleSetType data type.

**Ancestors**

- DescribeReservedInstancesListingSetType

**Relevant Operations**

- DescribeReservedInstancesListingsResponseType

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>item</td>
<td>The Reserved Instance listing price schedule item. Type: PriceScheduleSetItemType (p. 505).</td>
</tr>
</tbody>
</table>

**PricingDetailsSetItemType**

The PricingDetailsSetItemType data type.

**Ancestors**

- DescribeReservedInstancesOfferings

**Relevant Operations**

- DescribeReservedInstancesOfferingsResponseType
Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>price</td>
<td>Price per instance. Type: Integer</td>
</tr>
<tr>
<td>count</td>
<td>Number of instances available for the price. Type: Integer</td>
</tr>
</tbody>
</table>

PrivatIpAddressesSetItemRequestType

Describes a secondary private IP address for a network interface.

Ancestors

- PrivatIpAddressesSetRequestType

Relevant Operations

- AssignPrivatIpAddresses
- UnassignPrivatIpAddresses

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>privateIpAddressesSet</td>
<td>The list of private IP addresses. Type: AssignPrivatIpAddressesSetItemRequestType (p. 442)</td>
</tr>
<tr>
<td>primary</td>
<td>Whether the private IP address is the primary private IP address. Type: Boolean</td>
</tr>
</tbody>
</table>

ProductCodeItemType

The ProductCodeItemType data type.

Ancestors

- ProductCodeListType
Relevant Operations

- DescribeImageAttribute
- ModifyImageAttribute

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>productCode</td>
<td>The product code.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
</tbody>
</table>

ProductCodesSetItemType

The ProductCodesSetItemType data type.

Ancestors

- ProductCodesSetType

Relevant Operations

- DescribeImages
- DescribeImageAttribute
- DescribeInstances
- DescribeInstanceAttribute
- DescribeSnapshotAttribute
- DescribeVolumeAttribute
- RunInstances

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>productCode</td>
<td>The product code.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>type</td>
<td>The type of product code.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: devpay</td>
</tr>
</tbody>
</table>
ProductDescriptionSetItemType

The ProductDescriptionSetItemType data type.

Ancestors

- ProductDescriptionSetType

Relevant Operations

- DescribeSpotPriceHistory

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| productDescription | The description of the AMI.  
Type: String  
Valid values: Linux/UNIX | SUSE Linux | Windows |

PropagatingVgwType

Describes a virtual private gateway propagating route.

Ancestors

- PropagatingVgwSetType

Relevant Operations

- CreateRouteTable (p. 92)
- DescribeRouteTables (p. 267)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| gatewayID | The ID of the virtual private gateway (VGW).  
Type: String |
RecurringChargesSetItemType

The RecurringChargesSetItemType data type.

Relevant Operations

- DescribeReservedInstances
- DescribeReservedInstanceOfferings

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>frequency</td>
<td>The frequency of the recurring charge. Type: String Valid value: Hourly</td>
</tr>
<tr>
<td>amount</td>
<td>The amount of the recurring charge. Type: Double</td>
</tr>
</tbody>
</table>

RegionItemType

Describes a region.

Ancestors

- RegionSetType

Relevant Operations

- DescribeRegions (p. 247)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>regionName</td>
<td>The name of the Region. Type: String</td>
</tr>
<tr>
<td>regionEndpoint</td>
<td>The Region service endpoint. Type: String</td>
</tr>
</tbody>
</table>
ReservationInfoType

Describes a reservation.

Ancestors

• ReservationSetType

Relevant Operations

• DescribeInstances (p. 200)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>reservationId</td>
<td>The ID of the reservation. Type: String</td>
</tr>
<tr>
<td>ownerId</td>
<td>The ID of the AWS account that owns the reservation. Type: String</td>
</tr>
<tr>
<td>groupSet</td>
<td>A list of security groups. Each group is wrapped in an item element. Type: GroupItemtype (p. 470)</td>
</tr>
<tr>
<td>instancesSet</td>
<td>A list of instances. Each instance is wrapped in an item element. Type: RunningInstancesItemType (p. 515)</td>
</tr>
<tr>
<td>requesterId</td>
<td>The ID of the requester that launched the instances on your behalf (for example, AWS Management Console or Auto Scaling). Type: String</td>
</tr>
</tbody>
</table>

ReservedInstanceLimitPriceType

The ReservedInstanceLimitPriceType data type.

Ancestors

• PurchaseReservedInstancesOfferings

Relevant Operations

• DescribeReservedInstancesOfferingsResponseType
Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>amount</td>
<td>Used for Reserved Instance Marketplace offerings. Specifies the limit price on the total order (instanceCount * price).</td>
</tr>
<tr>
<td>currencyCode</td>
<td>Currency in which the limitPrice amount is specified. At this time, the only supported currency is USD.</td>
</tr>
</tbody>
</table>

ResourceTagSetItemType

Describes the tags assigned to an EC2 resource.

Ancestors

- ResourceTagSetType

Relevant Operations

- DescribeImages
- DescribeInstances
- DescribeVolumes
- DescribeSnapshots
- DescribeSpotInstanceRequests

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>key</td>
<td>The tag key. Type: String</td>
</tr>
<tr>
<td>value</td>
<td>The tag value. Type: String</td>
</tr>
</tbody>
</table>

RouteTableAssociationType

Describes an association between a route table and a subnet.
Ancestors

• RouteTableAssociationSetType

Relevant Operations

• CreateRouteTable (p. 92)
• DescribeRouteTables (p. 267)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>routeTableAssociationId</td>
<td>An identifier representing the association between a route table and a subnet. Type: String</td>
</tr>
<tr>
<td>routeTableId</td>
<td>The ID of the route table. Type: String</td>
</tr>
<tr>
<td>subnetId</td>
<td>The ID of the subnet. Type: String</td>
</tr>
<tr>
<td>main</td>
<td>Whether this is the main route table. Type: Boolean</td>
</tr>
</tbody>
</table>

RouteTableType

Describes a route table.

Ancestors

• RouteTableSetType

Relevant Operations

• CreateRouteTable (p. 92)
• DescribeRouteTables (p. 267)

Contents

The following table describes the elements in this data type.
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>routeTableId</td>
<td>The route table's ID. Type: String</td>
</tr>
<tr>
<td>vpcId</td>
<td>The ID of the VPC for the route table. Type: String</td>
</tr>
<tr>
<td>routeSet</td>
<td>A list of routes in the route table. Each route is wrapped in an item element. Type: RouteType (p. 514)</td>
</tr>
<tr>
<td>associationSet</td>
<td>A list of associations between the route table and one or more subnets. Each association is wrapped in an item element. Type: RouteTableAssociationType (p. 512)</td>
</tr>
<tr>
<td>propagatingVgwSet</td>
<td>The IDs of any virtual private gateways (VGW) propagating routes, each route wrapped in an item element. Type: PropagatingVgwType (p. 509)</td>
</tr>
<tr>
<td>tagSet</td>
<td>Any tags assigned to the resource, each one wrapped in an item element. Type: ResourceTagSetItemType (p. 512)</td>
</tr>
</tbody>
</table>

**RouteType**

Describes a route in a route table.

**Ancestors**

- RouteSetType

**Relevant Operations**

- CreateRouteTable (p. 92)
- DescribeRouteTables (p. 267)

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>destinationCidrBlock</td>
<td>The CIDR address block used for the destination match. For example: 0.0.0.0/0. Type: String</td>
</tr>
<tr>
<td>gatewayId</td>
<td>The ID of a gateway attached to your VPC. Type: String</td>
</tr>
</tbody>
</table>
### RunningInstancesItemType

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>instanceId</td>
<td>The ID of a NAT instance in your VPC.</td>
</tr>
<tr>
<td>instanceOwnerId</td>
<td>The owner of the instance.</td>
</tr>
<tr>
<td>networkInterfaceId</td>
<td>The network interface ID.</td>
</tr>
<tr>
<td>state</td>
<td>The state of the route. The blackhole state indicates that the route's target isn't available (e.g., the specified gateway isn't attached to the VPC, the specified NAT instance has been terminated, etc.). Valid values: active</td>
</tr>
<tr>
<td>origin</td>
<td>Describes how the route was created.</td>
</tr>
</tbody>
</table>

#### Ancestors

- RunningInstancesSetType

#### Relevant Operations

- DescribeInstances (p. 200)
- RunInstances (p. 417)

#### Contents

The following table describes the elements in this data type.
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>instanceId</td>
<td>The ID of the instance launched.</td>
</tr>
<tr>
<td>imageId</td>
<td>The ID of the AMI used to launch the instance.</td>
</tr>
<tr>
<td>instanceState</td>
<td>The current state of the instance.</td>
</tr>
<tr>
<td>privateDnsName</td>
<td>The private DNS name assigned to the instance. This DNS name can only be used inside the Amazon EC2 network. This element remains empty until the instance enters a running state.</td>
</tr>
<tr>
<td>dnsName</td>
<td>The public DNS name assigned to the instance. This DNS name is contactable from outside the Amazon EC2 network. This element remains empty until the instance enters a running state.</td>
</tr>
<tr>
<td>reason</td>
<td>The reason for the most recent state transition. This might be an empty string.</td>
</tr>
<tr>
<td>keyName</td>
<td>The key pair name, if this instance was launched with an associated key pair.</td>
</tr>
<tr>
<td>amiLaunchIndex</td>
<td>The AMI launch index, which can be used to find this instance in the launch group.</td>
</tr>
<tr>
<td>productCodes</td>
<td>The product codes attached to this instance. Each product code is wrapped in an item element.</td>
</tr>
<tr>
<td>instanceType</td>
<td>The instance type (for example, m1.small).</td>
</tr>
<tr>
<td>launchTime</td>
<td>The time the instance was launched.</td>
</tr>
<tr>
<td>placement</td>
<td>The location where the instance launched.</td>
</tr>
<tr>
<td>kernelId</td>
<td>The kernel associated with this instance.</td>
</tr>
<tr>
<td>ramdiskId</td>
<td>The RAM disk associated with this instance.</td>
</tr>
<tr>
<td>platform</td>
<td>The platform of the instance (e.g., Windows).</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>monitoring</td>
<td>The monitoring information for the instance.</td>
</tr>
<tr>
<td>Type:</td>
<td>InstanceMonitoringStateType (p. 478)</td>
</tr>
<tr>
<td>subnetId</td>
<td>The ID of the subnet in which the instance is running.</td>
</tr>
<tr>
<td>Type:</td>
<td>String</td>
</tr>
<tr>
<td>vpcId</td>
<td>The ID of the VPC in which the instance is running.</td>
</tr>
<tr>
<td>Type:</td>
<td>String</td>
</tr>
<tr>
<td>privateIpAddress</td>
<td>The private IP address assigned to the instance.</td>
</tr>
<tr>
<td>Type:</td>
<td>String</td>
</tr>
<tr>
<td>ipAddress</td>
<td>The IP address of the instance.</td>
</tr>
<tr>
<td>Type:</td>
<td>String</td>
</tr>
<tr>
<td>sourceDestCheck</td>
<td>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, go to NAT Instances in the Amazon Virtual Private Cloud User Guide.</td>
</tr>
<tr>
<td>Type:</td>
<td>Boolean</td>
</tr>
<tr>
<td>groupSet</td>
<td>A list of the security groups for the instance. Each group is wrapped in an item element.</td>
</tr>
<tr>
<td>Type:</td>
<td>GroupItemType (p. 470)</td>
</tr>
<tr>
<td>stateReason</td>
<td>The reason for the most recent state transition. See StateReasonType (p. 524) for a listing of supported state change codes.</td>
</tr>
<tr>
<td>Type:</td>
<td>StateReasonType (p. 524)</td>
</tr>
<tr>
<td>architecture</td>
<td>The architecture of the image.</td>
</tr>
<tr>
<td>Type:</td>
<td>String</td>
</tr>
<tr>
<td>Valid values:</td>
<td>i386</td>
</tr>
<tr>
<td>rootDeviceType</td>
<td>The root device type used by the AMI. The AMI can use an Amazon EBS or instance store root device.</td>
</tr>
<tr>
<td>Type:</td>
<td>String</td>
</tr>
<tr>
<td>Valid values:</td>
<td>ebs</td>
</tr>
<tr>
<td>rootDeviceName</td>
<td>The root device name (e.g., /dev/sda1).</td>
</tr>
<tr>
<td>Type:</td>
<td>String</td>
</tr>
<tr>
<td>blockDeviceMapping</td>
<td>Any block device mapping entries for the instance, each one wrapped in an item element.</td>
</tr>
<tr>
<td>Type:</td>
<td>InstanceBlockDeviceMappingResponseItemType (p. 475)</td>
</tr>
<tr>
<td>instanceLifecycle</td>
<td>Whether this is a Spot Instance.</td>
</tr>
<tr>
<td>Type:</td>
<td>String</td>
</tr>
<tr>
<td>Valid values:</td>
<td>spot</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>spotInstanceRequestId</td>
<td>The ID of the Spot Instance request. Type: String</td>
</tr>
<tr>
<td>virtualizationType</td>
<td>The instance's virtualization type. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: paravirtual</td>
</tr>
<tr>
<td>clientToken</td>
<td>The idempotency token you provided when you launched the instance. Type: String</td>
</tr>
<tr>
<td>tagSet</td>
<td>Any tags assigned to the resource, each one wrapped in an item element. Type: ResourceTagSetItemType (p. 512)</td>
</tr>
<tr>
<td>hypervisor</td>
<td>The instance's hypervisor type. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: ovm</td>
</tr>
<tr>
<td>networkInterfaceSet</td>
<td>The network interfaces for the instance. Type: InstanceNetworkInterfaceSetItemType (p. 481)</td>
</tr>
<tr>
<td>iamInstanceProfile</td>
<td>The IAM Instance Profile (IIP) associated with the instance. Type: IamInstanceProfileResponseType (p. 471)</td>
</tr>
<tr>
<td>ebsOptimized</td>
<td>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: Boolean Default: false</td>
</tr>
</tbody>
</table>

**SecurityGroupIdSetItemType**

The SecurityGroupIdSetItemType data type.

**Ancestors**

- LaunchSpecificationResponseType
- LaunchSpecificationRequestType
- InstanceNetworkInterfaceSetItemRequestType

**Relevant Operations**

- CreateNetworkInterface
- ModifyNetworkInterfaceAttribute
• ModifyInstanceAttribute
• RequestSpotInstances
• DescribeSpotInstanceRequests
• RunInstances

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>groupId</td>
<td>The ID of the security group associated with the network interface. Type: String</td>
</tr>
</tbody>
</table>

SecurityGroupItemType

The SecurityGroupItemType data type.

Ancestors

• SecurityGroupSetType

Relevant Operations

• DescribeSecurityGroups

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ownerId</td>
<td>The AWS account ID of the owner of the security group. Type: String</td>
</tr>
<tr>
<td>groupId</td>
<td>The ID of the security group. Type: String</td>
</tr>
<tr>
<td>groupName</td>
<td>The name of the security group. Type: String</td>
</tr>
<tr>
<td>groupDescription</td>
<td>A description of the security group. Type: String</td>
</tr>
<tr>
<td>vpcId</td>
<td>[VPC] The ID of the VPC for the security group. Type: String</td>
</tr>
</tbody>
</table>
SpotDatafeedSubscriptionType

The SpotDatafeedSubscriptionType data type.

Ancestors

- CreateSpotDatafeedSubscriptionResponseType
- DescribeSpotDatafeedSubscriptionResponseType

Relevant Operations

- CreateSpotDatafeedSubscription
- DescribeSpotDatafeedSubscription

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ownerId</td>
<td>The AWS account ID of the account. Type: String</td>
</tr>
<tr>
<td>bucket</td>
<td>The Amazon S3 bucket where the Spot Instance datafeed is located. Type: String</td>
</tr>
<tr>
<td>prefix</td>
<td>The prefix that is prepended to datafeed files. Type: String</td>
</tr>
<tr>
<td>state</td>
<td>The state of the Spot Instance datafeed subscription. Type: String</td>
</tr>
</tbody>
</table>

Valid values: Active | Inactive
## SpotInstanceRequestSetItemType

The SpotInstanceRequestSetItemType data type.

### Ancestors

- SpotInstanceRequestSetType

### Relevant Operations

- DescribeSpotInstanceRequests
- RequestSpotInstances

### Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>spotInstanceRequestId</td>
<td>The ID of the Spot Instance request. Type: String</td>
</tr>
<tr>
<td>spotPrice</td>
<td>The maximum hourly price for any Spot Instance launched to fulfill the request. Type: String</td>
</tr>
<tr>
<td>type</td>
<td>The Spot Instance request type. Type: String</td>
</tr>
<tr>
<td>state</td>
<td>The state of the Spot Instance request. Type: String</td>
</tr>
<tr>
<td>fault</td>
<td>The fault codes for the Spot Instance request, if any. Type: SpotInstanceStateFaultType (p. 522)</td>
</tr>
<tr>
<td>status</td>
<td>The status code and status message describing the Spot Instance request. Type: SpotInstanceStatusMessageType (p. 523)</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>validFrom</td>
<td>The start date of the request. If this is a one-time request, the request becomes active at this date and time and remains active until all instances launch, the request expires, or the request is canceled. If the request is persistent, the request becomes active at this date and time and remains active until it expires or is canceled. Type: DateTime</td>
</tr>
<tr>
<td>validUntil</td>
<td>The end date of the request. If this is a one-time request, the request 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: DateTime</td>
</tr>
<tr>
<td>launchGroup</td>
<td>The instance launch group. Launch groups are Spot Instances that launch together and terminate together. Type: String</td>
</tr>
<tr>
<td>availabilityZoneGroup</td>
<td>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</td>
</tr>
<tr>
<td>launchedAvailabilityZone</td>
<td>The Availability Zone in which the bid is launched. Type: String</td>
</tr>
<tr>
<td>launchSpecification</td>
<td>Additional information for launching instances. Type: LaunchSpecificationResponseType (p. 493)</td>
</tr>
<tr>
<td>instanceId</td>
<td>The instance ID, if an instance has been launched to fulfill the Spot Instance request. Type: String</td>
</tr>
<tr>
<td>createTime</td>
<td>The time stamp when the Spot Instance request was created. Type: DateTime</td>
</tr>
<tr>
<td>productDescription</td>
<td>The product description associated with the Spot Instance. Type: String</td>
</tr>
<tr>
<td>tagSet</td>
<td>Any tags assigned to the resource, each one wrapped in an item element. Type: ResourceTagSetItemType (p. 512)</td>
</tr>
</tbody>
</table>

**SpotInstanceStateFaultType**

The SpotInstanceStateFaultType data type.

**Ancestors**

- SpotDatafeedSubscriptionType (p. 520)
- SpotInstanceRequestSetItemType (p. 521)
**Relevant Operations**

- CreateSpotDatafeedSubscription
- DescribeSpotDatafeedSubscription
- DescribeSpotInstanceRequests
- RequestSpotInstances

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>code</td>
<td>The reason code for the Spot Instance state change. Type: String</td>
</tr>
<tr>
<td>message</td>
<td>The message for the Spot Instance state change. Type: String</td>
</tr>
</tbody>
</table>

**SpotInstanceStatusMessageType**

The SpotInstanceStatusMessageType data type.

**Ancestors**

- SpotInstanceRequestSetItemType (p. 521)

**Relevant Operations**

- DescribeSpotInstanceRequests

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>code</td>
<td>Status code of the request. Type: String</td>
</tr>
<tr>
<td>updateTime</td>
<td>Time the status was stated. Type: DateTime</td>
</tr>
<tr>
<td>message</td>
<td>The description for the status code for the Spot request. Type: String</td>
</tr>
</tbody>
</table>
SpotPriceHistorySetItemType

The SpotPriceHistorySetItemType data type.

Ancestors

- SpotPriceHistorySetType

Relevant Operations

- DescribeSpotPriceHistory

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>instanceType</td>
<td>The instance type. Type: String</td>
</tr>
<tr>
<td>productDescription</td>
<td>A general description of the AMI. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: Linux/UNIX</td>
</tr>
<tr>
<td>spotPrice</td>
<td>The maximum price you will pay to launch one or more Spot Instances. Type: String</td>
</tr>
<tr>
<td>timestamp</td>
<td>The date and time the request was created. Type: DateTime</td>
</tr>
<tr>
<td>availabilityZone</td>
<td>The Availability Zone. Type: String</td>
</tr>
</tbody>
</table>

StateReasonType

The StateReasonType data type.

Ancestors

- DescribeImagesResponseItemType (p. 452)
- RunningInstancesItemType (p. 515)
Relevant Operations

- DescribeImages
- DescribeInstances
- RunInstances

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>code</td>
<td>The reason code for the state change. See the following table for a list of</td>
</tr>
<tr>
<td></td>
<td>codes. Type: String</td>
</tr>
<tr>
<td>message</td>
<td>The message for the state change. Type: String</td>
</tr>
</tbody>
</table>

The following table lists the currently supported state reason codes.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server.SpotInstanceTermination</td>
<td>A Spot Instance was terminated due to an increase in the market price.</td>
</tr>
<tr>
<td>Server.InternalError</td>
<td>An internal error occurred during instance launch, resulting in termination.</td>
</tr>
<tr>
<td>Server.InsufficientInstanceCapacity</td>
<td>There was insufficient instance capacity to satisfy the launch request.</td>
</tr>
<tr>
<td>Client.InternalError</td>
<td>A client error caused the instance to terminate on launch.</td>
</tr>
<tr>
<td>Client.InstanceInitiatedShutdown</td>
<td>The instance initiated shutdown by a shutdown -h command issued from inside</td>
</tr>
<tr>
<td></td>
<td>the instance.</td>
</tr>
<tr>
<td>Client.UserInitiatedShutdown</td>
<td>The instance was shutdown by a user via an API call.</td>
</tr>
<tr>
<td>Client.VolumeLimitExceeded</td>
<td>The volume limit was exceeded.</td>
</tr>
<tr>
<td>Client.InvalidSnapshot.NotFound</td>
<td>The specified snapshot was not found.</td>
</tr>
</tbody>
</table>

SubnetType

Describes a subnet.

Ancestors

- SubnetSetType
Relevant Operations

- CreateSubnet (p. 101)
- DescribeSubnets (p. 295)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>subnetId</td>
<td>The ID of the subnet.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>state</td>
<td>The current state of the subnet.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: pending</td>
</tr>
<tr>
<td>vpcId</td>
<td>The ID of the VPC the subnet is in.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>cidrBlock</td>
<td>The CIDR block assigned to the subnet.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>availableIpAddressCount</td>
<td>The number of unused IP addresses in the subnet (the IP addresses for any stopped instances are considered unavailable).</td>
</tr>
<tr>
<td></td>
<td>Type: Integer</td>
</tr>
<tr>
<td>availabilityZone</td>
<td>The Availability Zone of the subnet.</td>
</tr>
<tr>
<td></td>
<td>Type: String</td>
</tr>
<tr>
<td>tagSet</td>
<td>Any tags assigned to the resource, each one wrapped in an item element.</td>
</tr>
<tr>
<td></td>
<td>Type: ResourceTagSetItemType (p. 512)</td>
</tr>
</tbody>
</table>

TagSetItemType

The TagSetItemType data type.

Relevant Operations

- DescribeTags

Contents

The following table describes the elements in this data type.
### UserDataType

The UserDataType data type.

**Ancestors**

- LaunchSpecificationRequestType (p. 492)

**Relevant Operations**

- RequestSpotInstances
- DescribeSpotInstanceRequests
- RequestSpotInstances
- RunInstances

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| data     | The Base64-encoded MIME user data made available to the instance(s) in the reservation.  
Type: String |
UserIdGroupPairType

Describes a security group and AWS account ID pair.

Ancestors

• UserIdGroupPairSetType

Relevant Operations

• AuthorizeSecurityGroupEgress
• AuthorizeSecurityGroupIngress
• RevokeSecurityGroupEgress
• RevokeSecurityGroupIngress
• DescribeSecurityGroups

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>userId</td>
<td>The ID of an AWS account. Cannot be used when specifying a CIDR IP address range. Type: String</td>
</tr>
<tr>
<td>groupId</td>
<td>The ID of the security group in the specified AWS account. Cannot be used when specifying a CIDR IP address range. Type: String</td>
</tr>
<tr>
<td>groupName</td>
<td>The name of the security group in the specified AWS account. Cannot be used when specifying a CIDR IP address range. Type: String</td>
</tr>
</tbody>
</table>

VolumeStatusItemType

The VolumeStatusItemType data type.

Ancestors

• VolumeStatusSetType

Relevant Operation

• DescribeVolumeStatus
The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>volumeId</td>
<td>The volume ID. Type: String</td>
</tr>
<tr>
<td>availabilityZone</td>
<td>The Availability Zone of the volume. Type: String</td>
</tr>
<tr>
<td>volumeStatus</td>
<td>The volume status. The status of each volume is wrapped in an item element. Type: VolumeStatusInfoType (p. 529).</td>
</tr>
<tr>
<td>eventSet</td>
<td>A list of events associated with the volume. Each event is wrapped in an item element. Type: VolumeStatusEventItemType (p. 530).</td>
</tr>
<tr>
<td>actionSet</td>
<td>The details of the action. Each action detail is wrapped in an item element. Type: VolumeStatusActionItemType (p. 531).</td>
</tr>
</tbody>
</table>

**VolumeStatusInfoType**

The VolumeStatusInfoType data type.

**Ancestors**

- VolumeStatusItemType

**Relevant Operation**

- DescribeVolumeStatus

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>The status of the volume. Type: String</td>
</tr>
<tr>
<td></td>
<td>Valid values: ok</td>
</tr>
</tbody>
</table>
VolumeStatusDetailsItemType

The VolumeStatusDetailsItemType data type.

Ancestors

- VolumeStatusInfoType

Relevant Operation

- DescribeVolumeStatus

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>The name of the volume's status. Type: String</td>
</tr>
<tr>
<td>status</td>
<td>The intended status of the volume status. Type: String</td>
</tr>
</tbody>
</table>

VolumeStatusEventItemType

The VolumeStatusEventItemType data type.

Ancestors

- VolumeStatusItemType

Relevant Operation

- DescribeVolumeStatus
The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>eventType</td>
<td>The type of this event. Type: String</td>
</tr>
<tr>
<td>eventId</td>
<td>The ID of this event. Type: String</td>
</tr>
<tr>
<td>description</td>
<td>A description of the event. Type: String</td>
</tr>
<tr>
<td>notBefore</td>
<td>The earliest start time of the event. Type: DateTime</td>
</tr>
<tr>
<td>notAfter</td>
<td>The latest end time of the event. Type: DateTime</td>
</tr>
</tbody>
</table>

VolumeStatusActionItemType

The VolumeStatusActionItemType data type.

Ancestors

- VolumeStatusItemType

Relevant Operation

- DescribeVolumeStatus

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>code</td>
<td>The code identifying the action. Type: String</td>
</tr>
<tr>
<td>eventType</td>
<td>The event type associated with this action. Type: String</td>
</tr>
<tr>
<td>eventId</td>
<td>The ID of the event associated with this action. Type: String</td>
</tr>
</tbody>
</table>
VpcType

Describes a VPC.

Ancestors

• VpcSetType

Relevant Operations

• CreateVpc (p. 108)
• DescribeVpcs (p. 316)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>A description of the action. Type: String</td>
</tr>
<tr>
<td>vpcId</td>
<td>The ID of the VPC. Type: String</td>
</tr>
</tbody>
</table>
| state        | The current state of the VPC. Type: String  
**Valid values:** pending | available                                                                 |
| cidrBlock    | The CIDR block for the VPC. Type: String                                                                                   |
| 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 |
| tagSet       | Any tags assigned to the resource, each one wrapped in an item element. Type: `ResourceTagSetItemType (p. 512)`          |
| instanceTenancy | The allowed tenancy of instances launched into the VPC. Type: String                                                      |
VpnConnectionOptionsResponseType

Describes VPN connection options.

**Relevant Operations**

- CreateVpnConnection (p. 111)
- DescribeVpnConnections (p. 319)

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>staticRoutesOnly</td>
<td>Indicates whether the VPN connection uses static routes only. Static routes must be used for devices that don't support BGP. Type: Boolean</td>
</tr>
</tbody>
</table>

VpnConnectionType

Describes a VPN connection.

**Ancestors**

- VpnConnectionSetType

**Relevant Operations**

- CreateVpnConnection (p. 111)
- DescribeVpnConnections (p. 319)

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vpnConnectionId</td>
<td>The ID of the VPN connection. Type: String</td>
</tr>
<tr>
<td>state</td>
<td>The current state of the VPN connection. Type: String Valid values: pending</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| customerGatewayConfiguration | The configuration information for the VPN connection's customer gateway (in the native XML format). This element is always present in the
                                         CreateVpnConnection response; however, it's present in the DescribeVpnConnections response only if the VPN connection
                                         is in the pending or available state. Type: String |
| type                       | The type of VPN connection (ipsec.1). Type: String                                                                                          |
| customerGatewayId          | The ID of the customer gateway at your end of the VPN connection. Type: String                                                              |
| vpnGatewayId               | The ID of the virtual private gateway at the AWS side of the VPN connection. Type: String                                                   |
| tagSet                     | Any tags assigned to the resource, each one wrapped in an item element. Type: ResourceTagSetItemType (p. 512)                               |
| vgwTelemetry               | Information about the virtual private gateway. Each gateway is wrapped in an item element. Type: VpnTunnelTelemetryType (p. 536)           |
| options                    | The option set describing the VPN connection. Type: VpnConnectionOptionsResponseType (p. 533)                                             |
| routes                     | The set of static routes associated with a VPN connection. Type: VpnStaticRouteType (p. 535)                                              |

**VpnGatewayType**

Describes a virtual private gateway.

**Ancestors**

- VpnGatewaySetType

**Relevant Operations**

- CreateVpnGateway (p. 120)
- DescribeVpnGateways (p. 323)

**Contents**

The following table describes the elements in this data type.
VpnStaticRouteType

Describes a static route for a VPN connection.

**Ancestors**
- VpnStaticRoutesSetType

**Relevant Operations**
- CreateVpnConnection (p. 111)
- DescribeVpnConnections (p. 319)

**Contents**

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>destinationCidrBlock</td>
<td>The CIDR block associated with the local subnet of the customer data center. Type: String</td>
</tr>
</tbody>
</table>
VpnTunnelTelemetryType

Describes telemetry for a VPN tunnel.

Ancestors

- VgwTelemetryType

Relevant Operations

- CreateVpnConnection (p. 111)
- DescribeVpnConnections (p. 319)

Contents

The following table describes the elements in this data type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>source</td>
<td>Indicates how the routes were provided. Type: String Valid value: Static</td>
</tr>
<tr>
<td>state</td>
<td>The current state of the static route. Type: String Valid values: pending</td>
</tr>
<tr>
<td>outsideIpAddress</td>
<td>The Internet-routable IP address of the virtual private gateway's outside interface. Type: String</td>
</tr>
<tr>
<td>status</td>
<td>The status of the VPN tunnel. Type: String Valid values: UP</td>
</tr>
<tr>
<td>lastStatusChange</td>
<td>The date and time of the last change in status. Type: DateTime</td>
</tr>
<tr>
<td>statusMessage</td>
<td>If an error occurs, a description of the error. Type: String</td>
</tr>
<tr>
<td>acceptedRouteCount</td>
<td>The number of accepted routes. Type: Integer</td>
</tr>
</tbody>
</table>
Common Query Parameters

All Query actions share a set of common parameters that must be present in each call.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action</strong></td>
<td>Indicates the action to perform. Example: RunInstances</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Version</strong></td>
<td>The API version to use, as specified in the WSDL. Example: 2012-12-01</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>AWSAccessKeyId</strong></td>
<td>The access key ID for the request sender. This identifies the account which will be charged for usage of the service. The account that's associated with the access key ID must be signed up for Amazon EC2, or the request isn't accepted. Example: AKIAIOSFODNN7EXAMPLE</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Timestamp</strong></td>
<td>The date and time at which the request is signed, in the format YYYY-MM-DDThh:mm:ssZ. For more information, see ISO 8601. Example: 2006-07-07T15:04:56Z</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Expires</strong></td>
<td>The date and time at which the signature included in the request expires, in the format YYYY-MM-DDThh:mm:ssZ. Example: 2006-07-07T15:04:56Z</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>SecurityToken</strong></td>
<td>The temporary security token obtained through a call to AWS Security Token Service. For more information, see Using Temporary Security Credentials in the Amazon Elastic Compute Cloud User Guide. Default: None Type: String</td>
<td>No</td>
</tr>
<tr>
<td><strong>Signature</strong></td>
<td>The request signature. For more information, see Signature Version 2 Signing Process in the Amazon Web Services General Reference. Example: Qnp14Qk/7tINHzfXCiT7VEXAMPLE</td>
<td>Yes</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
<td>Required</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>SignatureMethod</td>
<td>The hash algorithm you use to create the request signature. Valid values: HmacSHA256</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SignatureVersion</td>
<td>The signature version you use to sign the request. Set this value to 2. For more information, see Signature Version 2 Signing Process in the Amazon Web Services General Reference. Example: 2</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Note**

The Timestamp parameter can be used instead of Expires. Requests must include either Timestamp or Expires, but cannot contain both.

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.
Error Codes

Overview

There are two types of error codes: client and server.

Client error codes suggest that the error was caused by something the client did, such as an authentication failure or an invalid AMI identifier. In the SOAP API, these error codes are prefixed with Client. For example: Client.AuthFailure. In the Query API, these errors are accompanied by a 400-series HTTP response code.

Server error codes suggest a server-side issue caused the error and should be reported. In the SOAP API, these error codes are prefixed with Server. For example: Server.Unavailable. In the Query API, these errors are accompanied by a 500-series HTTP response code.

Summary of Client Error Codes

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>AddressLimitExceeded</td>
<td>You've reached the limit on the number of elastic IP addresses your account can have.</td>
<td>Each AWS account has an EC2 elastic IP address limit. For new accounts, this limit is 5. If you need more than 5 EC2 elastic IP addresses, please complete the Amazon EC2 Elastic IP Address Request Form. We will ask you to think through your use case and help us understand your need for additional addresses. You have a separate limit for VPC elastic IP addresses (5). To request to increase the limit, complete the Amazon VPC Limits form.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
<td>Notes</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>AttachmentLimitExceeded</td>
<td>You've reached the limit on the number of Amazon EBS volumes that can be</td>
<td>You might be trying to run an AMI for which you do not have permission.</td>
</tr>
<tr>
<td></td>
<td>attached to a single instance.</td>
<td></td>
</tr>
<tr>
<td>AuthFailure</td>
<td>User not authorized.</td>
<td></td>
</tr>
<tr>
<td>Blocked</td>
<td>The account is currently blocked.</td>
<td>Contact <a href="mailto:aws-verification@amazon.com">aws-verification@amazon.com</a> if you have questions.</td>
</tr>
<tr>
<td>CustomerGatewayLimitExceeded</td>
<td>You've reached the limit on the number of customer gateways you can create.</td>
<td></td>
</tr>
<tr>
<td>DependencyViolation</td>
<td>The specified object has dependent resources.</td>
<td></td>
</tr>
<tr>
<td>DiskImageSizeTooLarge</td>
<td>The disk image exceeds the allowed limit (for instance or volume import).</td>
<td></td>
</tr>
<tr>
<td>FilterLimitExceeded</td>
<td>Request uses too many filters or too many total filter values.</td>
<td></td>
</tr>
<tr>
<td>Gateway.NotAttached</td>
<td>Specified gateway isn't attached, so it can't be detached.</td>
<td></td>
</tr>
<tr>
<td>IdempotentParameterMismatch</td>
<td>Request uses the same client token as a previous, but non-identical request.</td>
<td>Do not reuse a client token with different requests, unless the requests are identical.</td>
</tr>
<tr>
<td>IncorrectInstanceState</td>
<td>Instance is in an incorrect state so the attempted action cannot occur.</td>
<td></td>
</tr>
<tr>
<td>IncorrectState</td>
<td>Volume is in an incorrect state.</td>
<td>To attach to an instance, it must be in the 'available' state.</td>
</tr>
<tr>
<td>InstanceLimitExceeded</td>
<td>Account has maximum allowed concurrent running instances.</td>
<td>Each AWS account has a concurrent running instance limit. For new accounts, this limit is 20. If you need more than 20 instances, please complete the Amazon EC2 Instance Request Form and your request will be considered.</td>
</tr>
<tr>
<td>InsufficientInstanceCapacity</td>
<td>There is insufficient capacity available for the requested instance type.</td>
<td>The returned message gives guidance on how to solve the problem.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
<td>Notes</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>InsufficientReservedInstancesCapacity</td>
<td>Insufficient Reserved Instances capacity.</td>
<td></td>
</tr>
<tr>
<td>InternetGatewayLimitExceeded</td>
<td>You've reached the limit on the number of Internet gateways you can create.</td>
<td></td>
</tr>
<tr>
<td>InvalidAMIAttributeItemValue</td>
<td>The value of an item added to, or removed from, an image attribute is invalid.</td>
<td>If you are specifying a userId, check that it is in the form of an AWS account ID.</td>
</tr>
<tr>
<td>InvalidAMIID.Malformed</td>
<td>Specified AMI ID is not valid.</td>
<td></td>
</tr>
<tr>
<td>InvalidAMIID.NotFound</td>
<td>Specified AMI ID does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidAMIID.Unavailable</td>
<td>Specified AMI ID has been deregistered and is no longer available.</td>
<td></td>
</tr>
<tr>
<td>InvalidAssociationID.NotFound</td>
<td>Specified association ID does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidAttachment.NotFound</td>
<td>The instance cannot detach from a volume to which it is not attached.</td>
<td></td>
</tr>
<tr>
<td>InvalidConversionTaskId</td>
<td>Specified conversion task ID (for instance or volume import) is invalid.</td>
<td></td>
</tr>
<tr>
<td>InvalidCustomerGateway.DuplicateIpAddress</td>
<td>Conflict among chosen gateway IP addresses.</td>
<td></td>
</tr>
<tr>
<td>InvalidCustomerGatewayID.NotFound</td>
<td>The specified customer gateway ID does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidDevice.InUse</td>
<td>The device to which you are trying to attach (i.e. /dev/sdh) is already in use on the instance.</td>
<td></td>
</tr>
<tr>
<td>InvalidDhcpOptionsID.NotFound</td>
<td>Specified DHCP options ID does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidFormat</td>
<td>Specified disk format (for instance or volume import) is invalid.</td>
<td></td>
</tr>
<tr>
<td>InvalidFilter</td>
<td>Specified filter is invalid.</td>
<td></td>
</tr>
<tr>
<td>InvalidGatewayID.NotFound</td>
<td>Specified gateway ID does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidGroup.Duplicate</td>
<td>Attempt to create a duplicate group.</td>
<td></td>
</tr>
<tr>
<td>InvalidGroupId.Malformed</td>
<td>Specified group ID is invalid.</td>
<td></td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
<td>Notes</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>InvalidGroup.InUse</td>
<td>Specified group cannot be deleted because it is in use.</td>
<td></td>
</tr>
<tr>
<td>InvalidGroup.NotFound</td>
<td>Specified group name does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidGroup.Reserved</td>
<td>Specified group name is a reserved name.</td>
<td></td>
</tr>
<tr>
<td>InvalidInstanceAttributeValue</td>
<td>The specified instance attribute value is not valid.</td>
<td>This error is most commonly encountered when trying to set the InstanceType--instance-type attribute to an unrecognized value.</td>
</tr>
<tr>
<td>InvalidInstanceID.Malformed</td>
<td>Specified instance ID is not valid.</td>
<td></td>
</tr>
<tr>
<td>InvalidInstanceID.NotFound</td>
<td>Specified instance ID does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidInternetGatewayID.NotFound</td>
<td>Specified Internet gateway ID does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidIPAddress.InUse</td>
<td>Specified IP address is currently in use.</td>
<td></td>
</tr>
<tr>
<td>InvalidKeyPair.Duplicate</td>
<td>Attempt to create a duplicate key pair.</td>
<td></td>
</tr>
<tr>
<td>InvalidKeyPair.Format</td>
<td>Format of the public key you've attempted to import is invalid.</td>
<td></td>
</tr>
<tr>
<td>InvalidKeyPair.NotFound</td>
<td>Specified key pair name does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidManifest</td>
<td>Specified AMI has an unparsable manifest.</td>
<td></td>
</tr>
<tr>
<td>InvalidNetworkAclEntry.NotFound</td>
<td>Specified network ACL entry does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidNetworkAclID.NotFound</td>
<td>Specified network ACL ID does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidParameterCombination</td>
<td>Example: RunInstances was called with both minCount and maxCount set to 0, or minCount &gt; maxCount.</td>
<td></td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
<td>Notes</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>InvalidParameterValue</td>
<td>The value supplied for a parameter was invalid.</td>
<td>Requests that could cause this error include (for example) supplying an invalid image attribute to the DescribeImageAttribute request or an invalid version or encoding value for the userData in a RunInstances request.</td>
</tr>
<tr>
<td>InvalidPermission.Duplicate</td>
<td>Attempt to authorize a permission that has already been authorized.</td>
<td></td>
</tr>
<tr>
<td>InvalidPermission.Malformed</td>
<td>Specified permission is invalid.</td>
<td></td>
</tr>
<tr>
<td>InvalidReservationID.Malformed</td>
<td>Specified reservation ID is invalid.</td>
<td></td>
</tr>
<tr>
<td>InvalidReservationID.NotFound</td>
<td>Specified reservation ID does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidRoute.NotFound</td>
<td>Specified route does not exist in the route table.</td>
<td></td>
</tr>
<tr>
<td>InvalidRouteTableID.NotFound</td>
<td>Specified route table ID does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidSecurity.RequestHasExpired</td>
<td>The difference between the request timestamp and the AWS server time is greater than 5 minutes.</td>
<td>Ensure that your system clock is accurate and configured to use the correct time zone.</td>
</tr>
<tr>
<td>InvalidSnapshotID.Malformed</td>
<td>The snapshot ID that was passed as an argument was malformed.</td>
<td></td>
</tr>
<tr>
<td>InvalidSnapshot.InUse</td>
<td>The snapshot which you are trying to delete is in use by one or more AMIs.</td>
<td></td>
</tr>
<tr>
<td>InvalidSnapshot.NotFound</td>
<td>The specified snapshot does not exist.</td>
<td></td>
</tr>
<tr>
<td>Invalid UserID.Malformed</td>
<td>The user ID is neither in the form of an AWS account ID or one of the special values accepted by the owner or executableBy flags in the DescribeImages call.</td>
<td></td>
</tr>
<tr>
<td>InvalidReservedInstancesId</td>
<td>Reserved Instances ID not found.</td>
<td></td>
</tr>
<tr>
<td>InvalidReservedInstancesOfferingId</td>
<td>Reserved Instances Offering ID not found.</td>
<td></td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
<td>Notes</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>InvalidSubnetID.NotFound</td>
<td>Specified subnet ID does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidVolumeID.Duplicate</td>
<td>Volume already exists in the system.</td>
<td></td>
</tr>
<tr>
<td>InvalidVolumeID.Malformed</td>
<td>Specified volume ID was malformed.</td>
<td></td>
</tr>
<tr>
<td>InvalidVolumeID.ZoneMismatch</td>
<td>Specified volume ID and instance ID are in different Availability Zones.</td>
<td></td>
</tr>
<tr>
<td>InvalidVolume.NotFound</td>
<td>Specified volume does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidVpcID.NotFound</td>
<td>Specified VPC ID does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidVpnConnectionID.NotFound</td>
<td>The specified VPN connection ID does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidVpnGatewayID.NotFound</td>
<td>Specified virtual private gateway ID does not exist.</td>
<td></td>
</tr>
<tr>
<td>InvalidZone.NotFound</td>
<td>The specified zone does not exist.</td>
<td></td>
</tr>
<tr>
<td>LegacySecurityGroup</td>
<td>You must delete the 2009-07-15-default security group before you can attach an Internet gateway.</td>
<td></td>
</tr>
<tr>
<td>MissingParameter</td>
<td>The request is missing a required parameter.</td>
<td></td>
</tr>
<tr>
<td>NetworkAclEntryAlreadyExists</td>
<td>Specified rule number already exists in this network ACL.</td>
<td></td>
</tr>
<tr>
<td>NetworkAclEntryLimitExceeded</td>
<td>You've reached the limit on the number of network ACL entries you can add to the ACL.</td>
<td></td>
</tr>
<tr>
<td>NetworkAclLimitExceeded</td>
<td>You've reached the limit on the number of network ACLs you can create.</td>
<td></td>
</tr>
<tr>
<td>NonEBSInstance</td>
<td>The instance specified does not support EBS.</td>
<td>Please restart the instance and try again. This will ensure that the code is run on an instance with updated code.</td>
</tr>
<tr>
<td>PendingSnapshotLimitExceeded</td>
<td>You've reached the limit on the number of Amazon EBS snapshots you can have in the pending state.</td>
<td></td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
<td>Notes</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>PendingVerification</td>
<td>The account is pending verification.</td>
<td>Contact <a href="mailto:aws-verification@amazon.com">aws-verification@amazon.com</a> if you have questions.</td>
</tr>
<tr>
<td>OptInRequired</td>
<td>The user is not authorized to use the requested product.</td>
<td>This error message can apply to Amazon EC2 or individual AWS Marketplace product codes.</td>
</tr>
<tr>
<td>RequestLimitExceeded</td>
<td>The maximum request rate permitted by the Amazon EC2 APIs has been exceeded for your account.</td>
<td>Retry your request after a few seconds.</td>
</tr>
<tr>
<td>ReservedInstancesLimitExceeded</td>
<td>Your current quota does not allow you to purchase the required number of reserved instances.</td>
<td></td>
</tr>
<tr>
<td>Resource.AlreadyAssociated</td>
<td>Specified gateway is already attached, or specified subnet is already associated with another object.</td>
<td></td>
</tr>
<tr>
<td>ResourceLimitExceeded</td>
<td>Exceeded an EC2 resource limit.</td>
<td>Example: You reached the maximum number of import conversion tasks allowed.</td>
</tr>
<tr>
<td>RouteAlreadyExists</td>
<td>A route for the specified CIDR block already exists in this route table.</td>
<td></td>
</tr>
<tr>
<td>RouteLimitExceeded</td>
<td>You've reached the limit on the number of routes you can add to a route table.</td>
<td></td>
</tr>
<tr>
<td>RouteTableLimitExceeded</td>
<td>You've reached the limit on the number of route tables you can create.</td>
<td></td>
</tr>
<tr>
<td>RulesPerSecurityGroupLimitExceeded</td>
<td>You've reached the limit on the number of rules you can add to a security group.</td>
<td></td>
</tr>
<tr>
<td>SecurityGroupLimitExceeded</td>
<td>You've reached the limit on the number of security groups you can create.</td>
<td></td>
</tr>
<tr>
<td>SecurityGroupsPerInstanceLimitExceeded</td>
<td>You've reached the limit on the number of security groups you can put an instance into.</td>
<td></td>
</tr>
<tr>
<td>SnapshotLimitExceeded</td>
<td>You've reached the limit on the number of Amazon EBS snapshots you can create.</td>
<td></td>
</tr>
</tbody>
</table>
### Summary of Server Error Codes

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SubnetLimitExceeded</td>
<td>You've reached the limit on the number of subnets you can create for the VPC.</td>
<td></td>
</tr>
<tr>
<td>UnknownParameter</td>
<td>An unknown or unrecognized parameter was supplied.</td>
<td>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>UnsupportedOperation</td>
<td>The instance type or feature is not supported in your requested Availability Zone or with the requested configuration.</td>
<td>The returned message gives guidance on how to solve the problem.</td>
</tr>
<tr>
<td>VolumeLimitExceeded</td>
<td>You've reached the limit on the number of Amazon EBS volumes you can create.</td>
<td></td>
</tr>
<tr>
<td>VpcLimitExceeded</td>
<td>You've reached the limit on the number of VPCs you can create.</td>
<td></td>
</tr>
<tr>
<td>VpnConnectionLimitExceeded</td>
<td>You've reached the limit on the number of VPN connections you can create.</td>
<td></td>
</tr>
<tr>
<td>VpnGatewayAttachmentLimitExceeded</td>
<td>You've reached the limit on the number of VPCs that can be attached to the given virtual private gateway.</td>
<td></td>
</tr>
<tr>
<td>VpnGatewayLimitExceeded</td>
<td>You've reached the limit on the number of virtual private gateways you can create.</td>
<td></td>
</tr>
</tbody>
</table>

### Summary of Server Error Codes

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>InsufficientAddressCapacity</td>
<td>Not enough available addresses to satisfy your minimum request.</td>
<td>Reduce the number of addresses you are requesting or wait for additional capacity to become available.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
<td>Notes</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>InsufficientInstanceCapacity</td>
<td>Not enough available instances to satisfy your minimum request.</td>
<td>Reduce the number of instances in your request or wait for additional capacity to become available. The returned message might also give specific guidance on how to solve the problem.</td>
</tr>
<tr>
<td>InsufficientReservedInstanceCapacity</td>
<td>Not enough available Reserved Instances to satisfy your minimum request.</td>
<td>Reduce the number of Reserved Instances in your request or wait for additional capacity to become available.</td>
</tr>
<tr>
<td>InternalError</td>
<td>Internal Error.</td>
<td>This error should not occur. If this persists, please contact us with details by posting a message on the AWS forums.</td>
</tr>
<tr>
<td>Unavailable</td>
<td>The server is overloaded and cannot handle the request.</td>
<td></td>
</tr>
</tbody>
</table>

**Request 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>
```

**Example Error Response Request**

The following shows an example of an error response.

```xml
<Response>
  <Errors>
    <Error>
      <Code>InvalidInstanceID.NotFound</Code>
      <Message>The instance ID 'i-4cbc822a' does not exist</Message>
    </Error>
  </Errors>
</Response>
```
<RequestID>ea966190-f9aa-478e-9ede-cb5432daacc0</RequestID>
</Response>
The following table describes the important changes since the last release of the Amazon EC2 documentation set.

**API version: 2012-12-01.**

**Latest documentation update: September 11, 2012.**

<table>
<thead>
<tr>
<th>Change</th>
<th>Description</th>
<th>Release Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support for Amazon EC2 Reserved Instance Marketplace and a New API Version</td>
<td>Added support for Amazon EC2 Reserved Instance Marketplace and a new API version: 2012-08-15. For information on the calls related to this release, see the following new commands:</td>
<td>11 September 2012</td>
</tr>
<tr>
<td></td>
<td>• CancelReservedInstancesListing (p. 49)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• CreateReservedInstancesListing (p. 85)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• DescribeReservedInstancesListings (p. 254)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In addition, the following calls were updated:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• DescribeReservedInstancesOfferings (p. 258)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• PurchaseReservedInstancesOffering (p. 372)</td>
<td></td>
</tr>
<tr>
<td>Support for AWS Marketplace and a New API Version</td>
<td>Added support for AWS Marketplace AMIs and a new API version: 2012-04-01.</td>
<td>19 April 2012</td>
</tr>
<tr>
<td>Change</td>
<td>Description</td>
<td>Release Date</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
</tbody>
</table>
| Amazon EBS Volume Status Check | Starting with API version 2012-03-01, you can check the operational status of your Amazon EBS volume. The volume status check gives you information about the I/O, also known as read/write, capability of your EBS volumes. The volume status check lets you know when an EBS volume’s data is potentially inconsistent. Amazon Web Services (AWS) gives you options to handle the potentially inconsistent volume. For information on the actions related to this release, see:  
  - DescribeVolumeStatus (p. 311)  
  - ModifyVolumeAttribute (p. 368)  
  - DescribeVolumeAttribute (p. 309)  
  - EnableVolumeIO (p. 343) | 12 March 2012 |
| Instance Status Checks | Starting with API version 2011-12-15, you can use the DescribeInstanceStatus action to retrieve results of automated checks performed by Amazon EC2. These status checks detect problems that may impair an instance’s ability to run your applications. You can use ReportInstanceStatus to send us feedback or report an inaccurate instance status. | 30 December 2011 |
| Elastic Network Interfaces (ENIs) for Amazon EC2 Instances in Amazon Virtual Private Cloud | Starting with API version 2011-12-01, you can attach an elastic network interface (ENI) to an EC2 instance in a VPC. For more information, see:  
  - AttachNetworkInterface (p. 27)  
  - DetachNetworkInterface (p. 329)  
  - CreateNetworkInterface (p. 78)  
  - DeleteNetworkInterface (p. 134)  
  - DescribeNetworkInterfaces (p. 237)  
  - DescribeNetworkInterfaceAttribute (p. 235)  
  - ModifyNetworkInterfaceAttribute (p. 364)  
  - ResetNetworkInterfaceAttribute (p. 407) | 21 December 2011 |
<p>| New Offering Types for Amazon EC2 Reserved Instances | Starting with API version 2011-11-01, you can use the new offering-type parameter of DescribeReservedInstancesOfferings to identify the Reserved Instance offerings that address your projected use: Heavy Utilization, Medium Utilization, and Light Utilization. See DescribeReservedInstancesOfferings (p. 258). | 01 December 2011 |
| Support for Amazon EC2 Instance Status | The Request Parameters (p. 217) API action allows you to view the status of your instances and any upcoming scheduled events. | 14 November 2011 |
| Support for Amazon EC2 Spot Instances in Amazon VPC | The RequestSpotInstances (p. 395) action is updated with the subnet option, which enables you to specify an Amazon VPC subnet into which to launch your Spot Instances. | 11 October 2011 |</p>
<table>
<thead>
<tr>
<th>Change</th>
<th>Description</th>
<th>Release Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support for VHD file format added to the 2011-07-15 API version</td>
<td>We've added VHD as one of the VM file formats supported for import into Amazon EC2. See the API actions ImportInstance and ImportVolume, and the CLI commands ec2-import-instance and ec2-import-volume.</td>
<td>24 August 2011</td>
</tr>
<tr>
<td>Updates for the 2011-07-15 API version</td>
<td>We've added one new data type, VpnTunnelTelemetryType (p. 536), for the 2011-07-15 API release.</td>
<td>03 August 2011</td>
</tr>
<tr>
<td>Temporary Security Credentials</td>
<td>We've added one new common request parameter, SecurityToken, that supports temporary security credentials. For more information, see Common Query Parameters (p. 537) or go to Using Temporary Security Credentials in the Amazon Elastic Compute Cloud User Guide.</td>
<td>03 August 2011</td>
</tr>
<tr>
<td>Spot Instances Availability Zone pricing changes</td>
<td>We've updated several actions that explain API changes for the Spot Instances Availability Zone pricing feature. We've also added new Availability Zone pricing options as part of the information returned by Spot Instance Requests and Spot Price History API calls.</td>
<td>26 May 2011</td>
</tr>
<tr>
<td>Updates for the 2011-05-15 API Version</td>
<td>We've updated several existing actions for the 2011-05-15 API release.</td>
<td>26 May 2011</td>
</tr>
<tr>
<td>Dedicated Instances</td>
<td>As part of the Dedicated Instances feature release, we've added new options related to the tenancy attribute of instances, and the instance tenancy attribute of VPCs.</td>
<td>27 March 2011</td>
</tr>
<tr>
<td>Updates for the 2011-02-28 API version</td>
<td>We've updated several existing actions for the 2011-02-28 API release.</td>
<td>27 March 2011</td>
</tr>
<tr>
<td>Updates for the 2011-01-01 API version</td>
<td>We've added new actions and updated several existing actions for the 2011-01-01 API release. The new and updated actions are related to these Amazon VPC objects: Internet gateways, route tables, network ACLs, VPC security groups, and VPC Elastic IP addresses.</td>
<td>11 March 2011</td>
</tr>
<tr>
<td>Merged Amazon VPC Documentation</td>
<td>We've merged the Amazon VPC actions into this guide.</td>
<td>11 March 2011</td>
</tr>
</tbody>
</table>
| VM Import | Added the following new actions, which allow you to import a virtual machine or volume into Amazon EC2:  
  - ImportInstance (p. 349)  
  - ImportVolume (p. 355)  
  - DescribeConversionTasks (p. 175)  
  - CancelConversionTask (p. 45) | 15 December 2010 |
<p>| Consolidated Documentation | We've consolidated the Query and SOAP API topics. See Actions (p. 9). | 06 December 2010 |</p>
<table>
<thead>
<tr>
<th>Change</th>
<th>Description</th>
<th>Release Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameters for ModifyImageAttribute and ModifyInstanceAttribute</td>
<td>Updated the list of Query parameters for ModifyImageAttribute (p. 358) and for ModifyInstanceAttribute (p. 361).</td>
<td>20 November 2010</td>
</tr>
<tr>
<td>Modifying Block Device Mapping</td>
<td>Removed information from ModifyInstanceAttribute (p. 361) about modifying an instance's block device mapping attribute. You currently can't modify an instance's block device mapping with this action.</td>
<td>20 November 2010</td>
</tr>
<tr>
<td>Filters and Tags</td>
<td>Added information about filters to many of the describe actions. Added information about creating, describing, and deleting tags. For more information about the API actions for tags, see CreateTags (p. 103), DeleteTags (p. 149), and DescribeTags (p. 299).</td>
<td>19 September 2010</td>
</tr>
<tr>
<td>Idempotent Instance Launch</td>
<td>Updated RunInstances to include a ClientToken parameter to ensure idempotency. For more information about the change to RunInstances, see RunInstances (p. 417).</td>
<td>19 September 2010</td>
</tr>
<tr>
<td>Import Key Pair</td>
<td>Added ImportKeyPair. For more information, see ImportKeyPair (p. 353).</td>
<td>19 September 2010</td>
</tr>
<tr>
<td>Placement Groups for Cluster Compute Instances</td>
<td>Added information about placement groups, which you use with cluster compute instances. For more information about the API actions for placement groups, see CreatePlacementGroup (p. 83), DescribePlacementGroups (p. 244), and DeletePlacementGroup (p. 136).</td>
<td>12 July 2010</td>
</tr>
<tr>
<td>Amazon VPC IP Address Designation</td>
<td>Amazon VPC users can now specify the IP address to assign an instance launched in a VPC. For information about using the PrivateIpAddress parameter with the RunInstances action, see RunInstances (p. 417).</td>
<td>12 July 2010</td>
</tr>
<tr>
<td>Error List Update</td>
<td>Updated the list of errors to include ClientBlocked, ClientInsufficientInstanceCapacity, ClientPendingVerification, and ClientUnsupported. For more information, see Error Codes (p. 539).</td>
<td>21 May 2010</td>
</tr>
<tr>
<td>Security Group Permissions</td>
<td>Clarified the information about authorizing security group permissions. For more information, see AuthorizeSecurityGroupIngress (p. 36).</td>
<td>28 April 2010</td>
</tr>
<tr>
<td>New Region</td>
<td>Amazon EC2 now supports the Asia Pacific (Singapore) Region. The new endpoint for requests to this Region is ec2.ap-southeast-1.amazonaws.com.</td>
<td>28 April 2010</td>
</tr>
<tr>
<td>Change</td>
<td>Description</td>
<td>Release Date</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Clarification about Spot Instances</td>
<td>Clarified that you can't stop and start Spot Instances that use an Amazon EBS root device. For more information about stopping instances, see StopInstances (p. 431).</td>
<td>1 February 2010</td>
</tr>
<tr>
<td>Spot Instances</td>
<td>To support customers that use Amazon EC2 instances, but have more flexible usage requirements (e.g., when instances run, how long they run, or whether usage completes within a specific timeframe), Amazon EC2 now provides Spot Instances. A Spot Instance is an instance that Amazon EC2 automatically runs for you when its maximum price is greater than the Spot Price. For conceptual information about Spot Instances, go to the Amazon Elastic Compute Cloud User Guide.</td>
<td>14 December 2009</td>
</tr>
</tbody>
</table>