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# Amazon Elastic Compute Cloud

## API Reference

API Version 2011-12-01



## **Amazon Elastic Compute Cloud: API Reference**

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# Welcome

This is the *Amazon Elastic Compute Cloud API Reference*. This guide provides detailed information about Amazon Elastic Compute Cloud (Amazon EC2) actions, data types, parameters, and errors. For detailed information about Amazon EC2 features and their associated API calls, go to the [Amazon Elastic Compute Cloud User Guide](#).

Amazon EC2 is a web service that provides resizable computing capacity—literally, server instances in Amazon's data centers—that you use to build and host your software systems. With Amazon EC2, you can get access to infrastructure resources using APIs or web tools and utilities.



## Note

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

This reference has a single set of topics for both the Query and SOAP APIs (the actions are the same for both APIs). The topic for a given action shows the Query API request parameters. The XML request elements for the SOAP API have names that are very 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. Therefore you can look at the topic for a given action and see what you need to provide for either the Query API or the SOAP API. You can also see what the XML response looks like (it's the same for both APIs).

<a href="#">Current WSDL (2011-12-01)</a>	Location of the current WSDL
<a href="#">Making API Requests</a>	Information about using the API
<a href="#">List of Actions by Function (p. 3)</a>	List of the Amazon EC2 actions by function
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# AllocateAddress

## Description

This action applies to both EC2 Elastic IP addresses and VPC Elastic IP addresses.

For EC2 addresses: This action acquires an Elastic IP address for use with your Amazon Web Services (AWS) account. For more information about EC2 Elastic IP addresses, go to [Instance Addressing](#) in the *Amazon Elastic Compute Cloud User Guide*.

For VPC addresses: This action acquires an Elastic IP address for use with your VPC. For information about VPC addresses and how they differ from EC2 addresses, go to the [Elastic IP Addresses](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>Domain</i>	Set to <code>vpc</code> to allocate the address to your VPC. Type: String Default: Address is standard (allocated to EC2) Valid Values: <code>vpc</code> Condition: Required when allocating an address to a VPC	Conditional

## Response Elements

The elements in the following table are wrapped in an `AllocateAddressResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>publicIp</code>	Elastic IP address. Type: <code>xsd:string</code>
<code>domain</code>	Whether this Elastic IP address is for instances in EC2 (i.e., standard) or instances in a VPC. Type: <code>xsd:string</code> Valid Values: <code>standard</code>   <code>vpc</code>
<code>allocationId</code>	ID that AWS assigns to represent the allocation of the address for use with Amazon VPC. Returned only for VPC elastic IP addresses. Type: <code>xsd:string</code>

## Examples

### Example Request

This example returns an Elastic IP address for use with the account.

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

### Example Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <publicIp>192.0.2.1</publicIp>
</AllocateAddressResponse>
```

### Example Request

This example returns a VPC Elastic IP address for use with Amazon VPC.

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

### Example Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <publicIp>198.51.100.1</publicIp>
  <domain>vpc</domain>
  <allocationId>eipalloc-5723d13e</allocationId>
</AllocateAddressResponse>
```

## Related Operations

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# AssociateAddress

## Description

This action applies to both EC2 Elastic IP addresses and VPC Elastic IP addresses.

For EC2 addresses: This action associates an Elastic IP address with an instance (not running in a VPC). If the IP address is currently assigned to another instance, the IP address is assigned to the new instance. For more information about EC2 Elastic IP addresses, go to [Instance Addressing](#) in the *Amazon Elastic Compute Cloud User Guide*.

For VPC addresses: This action associates a VPC Elastic IP address with an instance in your VPC. If the IP address is currently assigned to another instance, Amazon EC2 returns an error. For information about VPC addresses and how they differ from EC2 addresses, go to the [Elastic IP Addresses](#) in the *Amazon Virtual Private Cloud User Guide*.

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

## Request Parameters

Name	Description	Required
<i>PublicIp</i>	EC2 Elastic IP address to assign to the instance. Type: String Default: None Condition: Required for EC2 Elastic IP addresses	Conditional
<i>InstanceId</i>	The instance to associate with the IP address. Type: String Default: None	Conditional
<i>AllocationId</i>	The allocation ID that AWS returned when you allocated the Elastic IP address for use with Amazon VPC. Type: String Default: None Condition: Required for VPC Elastic IP addresses.	Conditional
<i>NetworkInterfaceId</i>	The network interface ID to associate with an instance. Association will fail when specifying an instance id unless exactly one interface is attached. Type: String Default: None Condition: Available for VPC Elastic IP addresses only.	No

## Response Elements

The elements in the following table are wrapped in an `AssociateAddressResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
return	Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean
associationId	ID that AWS provides to represent the association of the address with an instance. Returned only for VPC Elastic IP addresses. Type: xsd:string

## Examples

### Example Request

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

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

### Example Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
</AssociateAddressResponse>
```

### Example Request

This example associates a VPC Elastic IP address with an instance in your VPC.

```
https://ec2.amazonaws.com/?Action=AssociateAddress
&InstanceId=i-4fd2431a
&AllocationId=eipalloc-5723d13e
&AUTHPARAMS
```

### Example Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
  <associationId>eipassoc-fc5ca095</associationId>
</AssociateAddressResponse>
```

## Related Operations

- [AllocateAddress](#) (p. 12)
- [DescribeAddresses](#) (p. 133)
- [ReleaseAddress](#) (p. 304)
- [DisassociateAddress](#) (p. 267)

# 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 Amazon VPC, go to [Using DHCP Options in Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>DhcpOptionsId</i>	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	Yes
<i>VpcId</i>	The ID of the VPC you want to associate the DHCP options with. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `AssociateDhcpOptionsResponse` structure.

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

## Examples

### Example Request

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

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

## Example Response

```
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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.

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

## Example Response

```
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>>true</return>
</AssociateDhcpOptionsResponse>
```

## Related Operations

- [CreateDhcpOptions](#) (p. 49)
- [DescribeDhcpOptions](#) (p. 148)
- [DeleteDhcpOptions](#) (p. 95)



# 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, go to [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>RouteTableId</i>	The ID of the route table. Type: String Default: None	Yes
<i>SubnetId</i>	The ID of the subnet. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `AssociateRouteTableResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>associationId</code>	ID that AWS provides to represent the association of the route table and the subnet. Type: String Example: <code>rtbassoc-f8ad4891</code>

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <associationId>rtbassoc-f8ad4891</associationId>
</AssociateRouteTableResponse>
```

## Related Operations

- [CreateRouteTable](#) (p. 70)
- [DisassociateRouteTable](#) (p. 269)
- [DescribeRouteTables](#) (p. 209)
- [ReplaceRouteTableAssociation](#) (p. 313)

# 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, go to the [Amazon Virtual Private Cloud User Guide](#).

## Request Parameters

Name	Description	Required
<i>InternetGatewayId</i>	The ID of the Internet gateway to attach. Type: String Default: None	Yes
<i>VpcId</i>	The ID of the VPC. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `AttachInternetGatewayResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>return</code>	Returns true if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

## 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/2011-12-01/">
```

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

## Related Operations

- [CreateInternetGateway](#) (p. 54)
- [DeleteInternetGateway](#) (p. 97)
- [DetachInternetGateway](#) (p. 259)
- [DescribeInternetGateways](#) (p. 180)

# AttachNetworkInterface

## Description

Attaches a network interface to an instance.

## Request Parameters

Name	Description	Required
<i>networkInterfaceId</i>	The ID of the network interface to attach. Type: String Default: None	Yes
<i>instanceId</i>	The ID of the instance that will be attached to the network interface. Type: String Default: None	Yes
<i>deviceIndex</i>	The index of the device for the network interface attachment on the instance. Type: Integer Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `AttachNetworkInterfaceResponse` structure.

Name	Description
<i>requestId</i>	The ID of the attachment request. Type: String
<i>attachmentId</i>	The ID of the attachment. Type: String

## Examples

### Example Request

This example attaches an elastic network interface (ENI) `eni-ffda3197` to the specified EC2 instance `i-9cc316fe`.

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

## Example Response

```
<AttachNetworkInterfaceResponse xmlns='http://ec2.amazonaws.com/doc/2011-11-15/'>
  <requestId>ace8cd1e-e685-4e44-90fb-92014d907212</requestId>
  <attachmentId>eni-attach-d94b09b0</attachmentId>
</AttachNetworkInterfaceResponse>
```

## Related Operations

- [DetachNetworkInterface](#) (p. 261)
- [CreateNetworkInterface](#) (p. 63)
- [DeleteNetworkInterface](#) (p. 105)
- [DescribeNetworkInterfaceAttribute](#) (p. 191)
- [DescribeNetworkInterfaces](#) (p. 192)
- [ModifyNetworkInterfaceAttribute](#) (p. 290)
- [ResetNetworkInterfaceAttribute](#) (p. 324)

# AttachVolume

## Description

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



### Note

Windows instances currently support devices xvda through xvdp. Device xvda is assigned to drive C:\, and, depending on the instance type, devices xvdb through xvde might be reserved by the ephemeral stores. Any device that is not reserved can be attached to an Amazon EBS volume.

## Request Parameters

Name	Description	Required
<i>VolumeId</i>	The ID of the Amazon EBS volume. The volume and instance must be within the same Availability Zone and the instance must be running. Type: String Default: None	Yes
<i>InstanceId</i>	The ID of the instance to which the volume attaches. The volume and instance must be within the same Availability Zone and the instance must be running. Type: String Default: None	Yes
<i>Device</i>	How the device is exposed to the instance (e.g., /dev/sdh, or xvdh). Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `AttachVolumeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>volumeId</code>	The ID of the volume. Type: xsd:string
<code>instanceId</code>	The ID of the instance. Type: xsd:string
<code>device</code>	The device as it is exposed to the instance (e.g., /dev/sdh, or xvdh). Type: xsd:string

Name	Description
status	Volume state. Type: xsd:string Valid Values: attaching   attached   detaching   detached
attachTime	Time stamp when the attachment initiated. Type: xsd:dateTime

## Examples

### Example Request

This example attaches volume `vol-4d826724` to instance `i-6058a509` and exposes it as `/dev/sdh`. For information on standard storage locations, go to the [Amazon Elastic Compute Cloud User Guide](#).

```
https://ec2.amazonaws.com/?Action=AttachVolume
&VolumeId=vol-4d826724
&InstanceId=i-6058a509
&Device=/dev/sdh
&AUTHPARAMS
```

### Example Response

```
<AttachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-4d826724</volumeId>
  <instanceId>i-6058a509</instanceId>
  <device>/dev/sdh</device>
  <status>attaching</status>
  <attachTime>2008-05-07T11:51:50.000Z</attachTime>
</AttachVolumeResponse>
```

## Related Operations

- [CreateVolume](#) (p. 83)
- [DeleteVolume](#) (p. 123)
- [DescribeVolumes](#) (p. 244)
- [DetachVolume](#) (p. 263)



# AttachVpnGateway

## Description

Attaches a virtual private gateway to a VPC. For more information, go to [Adding an IPsec Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>VpnGatewayId</i>	The ID of the virtual private gateway to attach to the VPC. Type: String Default: None	Yes
<i>VpcId</i>	The ID of the VPC. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `AttachVpnGatewayResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>attachment</code>	Information about the attachment. Type: <a href="#">AttachmentType</a> (p. 355)

## 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/2011-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
```

```
<attachment>
  <vpcId>vpc-1a2b3c4d</vpcId>
  <state>attaching</state>
</attachment>
</AttachVpnGatewayResponse>
```

## Related Operations

- [CreateVpnGateway](#) (p. 91)
- [DescribeVpnGateways](#) (p. 255)
- [DetachVpnGateway](#) (p. 265)
- [CreateVpc](#) (p. 85)
- [CreateVpnConnection](#) (p. 87)

# AuthorizeSecurityGroupEgress

## Description

This action applies only to security groups in a VPC; it's not supported for EC2 security groups. For information about Amazon Virtual Private Cloud and VPC security groups, go to [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*.

The action adds one or more egress rules to a VPC security group. Specifically, this action permits instances in a security group to send traffic to one or more destination CIDR IP address ranges, or to one or more destination security groups in the same VPC.

Each rule consists of the protocol (e.g., 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.



### Important

For VPC security groups: You can have up to 50 rules total per group (covering both ingress and egress).

## Request Parameters

Name	Description	Required
<i>GroupId</i>	ID of the VPC security group to modify. Type: String Default: None	Yes
<i>IpPermissions.n.IpProtocol</i>	IP protocol name or number (go to <a href="#">Protocol Numbers</a> ). When you call <code>DescribeSecurityGroups</code> , the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (e.g., <code>tcp</code> , <code>udp</code> , or <code>icmp</code> ). Type: String Valid Values: <code>tcp</code>   <code>udp</code>   <code>icmp</code> or any protocol number (go to <a href="#">Protocol Numbers</a> ). Use -1 to specify all.	Yes
<i>IpPermissions.n.FromPort</i>	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	Conditional

Name	Description	Required
<i>IpPermissions.n.ToPort</i>	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	Conditional
<i>IpPermissions.n.Groups.m.GroupId</i>	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.	Conditional
<i>IpPermissions.n.IpRanges.m.CidrIp</i>	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.	Conditional

## Response Elements

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

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

## Examples

### Example Request

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

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
```

```
&IpPermissions.1.IpRanges.1.CidrIp=192.0.2.0/24
&IpPermissions.1.IpRanges.2.CidrIp=198.51.100.0/24
&AUTHPARAMS
```

## Example Request

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

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress
&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/2011-
12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AuthorizeSecurityGroupEgressResponse>
```

## Related Operations

- [CreateSecurityGroup](#) (p. 72)
- [DescribeSecurityGroups](#) (p. 213)
- [RevokeSecurityGroupEgress](#) (p. 328)
- [AuthorizeSecurityGroupIngress](#) (p. 32)
- [RevokeSecurityGroupIngress](#) (p. 331)
- [DeleteSecurityGroup](#) (p. 113)

# AuthorizeSecurityGroupIngress

## Description

Adds one or more ingress rules to a security group. This action applies to both EC2 security groups and VPC security groups. For information about VPC security groups and how they differ from EC2 security groups, go to [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*.

For EC2 security groups, 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 in your account. A source group can be in your own AWS account, or another.

For VPC security groups, 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 in your VPC. The groups must all be in the same VPC.

Each rule consists of the protocol (e.g., 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.



### Important

For EC2 security groups: You can have up to 100 rules per group.

For VPC security groups: You can have up to 50 rules total per group (covering both ingress and egress).

## Request Parameters

Name	Description	Required
<i>UserId</i>	Deprecated	No
<i>GroupId</i>	ID of the EC2 or VPC security group to modify. The group must belong to your account. Type: String Default: None Condition: Required for VPC security groups; can be used instead of <code>GroupName</code> for EC2 security groups	Conditional
<i>GroupName</i>	Name of the EC2 security group to modify. Type: String Default: None Condition: Can be used instead of <code>GroupId</code> for EC2 security groups	Conditional

**Amazon Elastic Compute Cloud API Reference**  
**Request Parameters**

Name	Description	Required
<i>IpPermissions.n.IpProtocol</i>	<p>IP protocol name or number (go to <a href="#">Protocol Numbers</a>). EC2 security groups can have rules only for TCP, UDP, and ICMP, whereas VPC security groups can have rules assigned to any protocol number.</p> <p>When you call <code>DescribeSecurityGroups</code>, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (e.g., <code>tcp</code>, <code>udp</code>, or <code>icmp</code>).</p> <p>Type: String</p> <p>Valid Values for EC2 security groups: <code>tcp</code>   <code>udp</code>   <code>icmp</code> or the corresponding protocol number (6   17   1).</p> <p>Valid Values for VPC groups: <code>tcp</code>   <code>udp</code>   <code>icmp</code> or any protocol number (go to <a href="#">Protocol Numbers</a>). Use <code>-1</code> to specify all.</p>	Required
<i>IpPermissions.n.FromPort</i>	<p>Start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, you can use <code>-1</code> to specify all ICMP types.</p> <p>Type: Integer</p> <p>Default: None</p> <p>Default: Required for ICMP and any protocol that uses ports</p>	Conditional
<i>IpPermissions.n.ToPort</i>	<p>End of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, you can use <code>-1</code> to specify all ICMP codes for the given ICMP type.</p> <p>Type: Integer</p> <p>Default: None</p> <p>Default: Required for ICMP and any protocol that uses ports</p>	Conditional
<i>IpPermissions.n.Groups.m.UserId</i>	<p>AWS account ID that owns the source security group. Cannot be used when specifying a CIDR IP address.</p> <p>Type: String</p> <p>Default: None</p> <p>Condition: For EC2 security groups only. Required if modifying access for one or more source security groups.</p>	Conditional
<i>IpPermissions.n.Groups.m.GroupName</i>	<p>Name of the source security group. Cannot be used when specifying a CIDR IP address.</p> <p>Type: String</p> <p>Default: None</p> <p>Condition: Required if modifying access for one or more source security groups.</p>	Conditional
<i>IpPermissions.n.Groups.m.GroupId</i>	<p>ID of the source security group. Cannot be used when specifying a CIDR IP address.</p> <p>Type: String</p> <p>Default: None</p> <p>Condition: For VPC security groups only. Required if modifying access for one or more source security groups.</p>	Conditional

Name	Description	Required
<i>IpPermissions.n.IpRanges.m.CidrIp</i>	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.	Conditional

## Response Elements

The elements in the following table are wrapped in an `AuthorizeSecurityGroupIngressResponse` structure.

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

## 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 `webserv` security group on TCP port 80.

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupName=webserv
&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 999988887777) to your `webserv` security group.

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



```
&IpPermissions.1.Groups.1.UserId=999988887777  
&AUTHPARAMS
```

## Example Request

This example is for a VPC security group. The request grants TCP port 80 access from the source group called *OtherGroupInMyVPC* (sg-0a5d8e02) to your *VpcWebServers* security group (sg-140ba4c8). The request requires the group IDs and not the group names. Your AWS account ID is 111122223333.

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress  
&GroupId=sg-140ba4c8  
&IpPermissions.1.IpProtocol=tcp  
&IpPermissions.1.FromPort=80  
&IpPermissions.1.ToPort=80  
&IpPermissions.1.Groups.1.GroupId=sg-0a5d8e02  
&IpPermissions.1.Groups.1.UserId=111122223333  
&AUTHPARAMS
```

## Example Response

```
<AuthorizeSecurityGroupIngressResponse xmlns="http://ec2.amazonaws.com/doc/2011-  
12-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</AuthorizeSecurityGroupIngressResponse>
```

## Related Operations

- [CreateSecurityGroup](#) (p. 72)
- [DescribeSecurityGroups](#) (p. 213)
- [RevokeSecurityGroupIngress](#) (p. 331)
- [DeleteSecurityGroup](#) (p. 113)

# BundleInstance

## Description

Bundles an Amazon instance store-backed Windows instance.



### Note

During bundling, only the root store (C:\) is bundled. Data on the instance store is not preserved. For step-by-step instructions to bundle an instance store-backed Windows instance, go to [Bundling Amazon EC2 instance store-backed Windows AMIs](#).

This procedure is not applicable for Linux and UNIX instances or Windows instances that use Amazon EBS volumes as their root devices.

## Request Parameters

Name	Description	Required
<i>InstanceId</i>	The ID of the instance to bundle. Type: String Default: None	Yes
<i>Storage.S3.Bucket</i>	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 Default: None	Yes
<i>Storage.S3.Prefix</i>	The beginning of the file name of the AMI. Type: String Default: None	Yes
<i>Storage.S3.AWSAccessKeyId</i>	The Access Key ID of the owner of the Amazon S3 bucket. Type: String Default: None	Yes
<i>Storage.S3.UploadPolicy</i>	A Base64-encoded Amazon S3 upload policy that gives Amazon EC2 permission to upload items into Amazon S3 on your behalf. Type: String Default: None	Yes
<i>Storage.S3.UploadPolicySignature</i>	The signature of the Base64 encoded JSON document. Type: String Default: None	Yes

## 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, go to the sections about policy construction and signatures in the [Amazon Simple Storage Service Developer Guide](#).

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

## Response Elements

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

Name	Description
requestId	The ID of the request. Type: <code>xsd:string</code>
bundleInstanceTask	Bundle task. Type: <a href="#">BundleInstanceTaskType</a> (p. 359)

## Examples

### Example Request

This example bundles the `i-e468cd8d` instance.

```
https://ec2.amazonaws.com/?Action=BundleInstance
&InstanceId=i-e468cd8d
&Storage.S3.AWSAccessKeyId=10QMXFEV71ZS32XQFTR2
&Storage.S3.Bucket=my-bucket
&Storage.S3.Prefix=winami
&Storage.S3.UploadPolicy=eyJleHBpcmF0aW9uIjogIjIwMDgtMDgtMzBUMDg6NDk6MDlaIiwiaWY29uZGl0aW9ucyI6IFt7ImJlY2tldCI6ICJteS1idWNrZXQifSxbInN0YXJ0cy13aXRoIiwgIiRrZXkiLCAibXktbmV3LWltYWdlIl0seyJhY2wiOiAiZWMyLWJlbnRsZS1yZWFKInl0dfQ%3D%3D
&Storage.S3.UploadPolicySignature=fh5tyyyQD8W4COEthj3nlgNtJMU%3D
&AUTHPARAMS
```

## Example Response

```
<BundleInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTask>
    <instanceId>i-12345678</instanceId>
    <bundleId>bun-c1a540a8</bundleId>
    <state>bundling</state>
    <startTime>2008-10-07T11:41:50.000Z</startTime>
    <updateTime>2008-10-07T11:51:50.000Z</updateTime>
    <progress>70%</progress>
    <storage>
      <S3>
        <bucket>my-bucket</bucket>
        <prefix>winami</prefix>
      </S3>
    </storage>
  </bundleInstanceTask>
</BundleInstanceResponse>
```

## Related Operations

- [CancelBundleTask](#) (p. 39)
- [DescribeBundleTasks](#) (p. 140)
- [CreateImage](#) (p. 52)

# CancelBundleTask

## Description

Cancels a bundling operation for an Amazon S3-backed Windows instance (see [BundleInstance](#) (p. 36)).

## Request Parameters

Name	Description	Required
<i>BundleId</i>	The ID of the bundle task to cancel. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `CancelBundleTaskResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>bundleInstanceTask</code>	Bundle task to cancel. Type: <a href="#">BundleInstanceTaskType</a> (p. 359)

## Examples

### Example Request

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

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

### Example Response

```
<CancelBundleTaskResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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>my-bucket</bucket>
    <prefix>my-new-image</prefix>
  </S3>
</storage>
</bundleInstanceTask>
</CancelBundleTaskResponse>
```

## Related Operations

- [BundleInstance](#) (p. 36)
- [DescribeBundleTasks](#) (p. 140)

# CancelConversionTask

## Description

Cancels an active conversion task. The task can be the import of an instance or volume. The command 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, go to [Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>ConversionTaskId</i>	The ID of the task you want to cancel. Type: String Default: None	Yes

## Response Elements

Name	Description
<i>requestId</i>	ID of the request. Type: string
<i>return</i>	Specifies whether the cancellation was successful or not. Type: Boolean

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CancelConversionTaskResponse>
```

## Related Operations

- [ImportInstance](#) (p. 275)
- [ImportVolume](#) (p. 281)
- [DescribeConversionTasks](#) (p. 143)



# 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, go to [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

Name	Description	Required
<i>SpotInstanceRequestIds</i>	One or more Spot Instance request IDs. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `CancelSpotInstanceRequestsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>spotInstanceRequestSet</code>	A list of Spot Instance requests. Each request is wrapped in an <code>item</code> element. Type: <a href="#">CancelSpotInstanceRequestsResponseSetItemType</a> (p. 360)

## Examples

### Example Request

This example cancels a Spot Instance request.

```
https://ec2.amazonaws.com/?Action=CancelSpotInstanceRequests
&SpotInstanceRequestId.1=sir-e95fae02
&AUTHPARAMS
```

## Example Response

```
<CancelSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-e95fae02</spotInstanceRequestId>
      <state>cancelled</state>
    </item>
  </spotInstanceRequestSet></CancelSpotInstanceRequestsResponse>
```

## Related Operations

- [DescribeSpotInstanceRequests](#) (p. 226)
- [RequestSpotInstances](#) (p. 315)
- [DescribeSpotPriceHistory](#) (p. 231)

# ConfirmProductInstance

## Description

Verifies whether an Amazon DevPay product code is associated with an instance. This can only be executed by the owner of the AMI and is useful when an AMI owner wants to verify whether another EC2 user's instance is eligible for support.

## Request Parameters

Name	Description	Required
<i>ProductCode</i>	The product code to confirm. Type: String Default: None	Yes
<i>InstanceId</i>	The instance to confirm. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `ConfirmProductInstanceResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>return</code>	Returns true if the product code is attached to the instance. Otherwise, returns an error. Type: xsd:boolean
<code>ownerId</code>	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 describes the confirms the product code is associated with the instance.

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

## Example Response

```
<ConfirmProductInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <ownerId>254933287430</ownerId>
</ConfirmProductInstanceResponse>
```

## Related Operations

- [DescribeInstances](#) (p. 165)
- [RunInstances](#) (p. 334)

# 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 (compared to the virtual private gateway, which is the device at the AWS side of the VPN connection).

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 also provide the device's Border Gateway Protocol (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 US East, and 9059, which is reserved in EU West.

For more information about ASNs, go to the [Wikipedia article](#).

For more information about Amazon Virtual Private Cloud and VPN customer gateways, go to [Adding an IPsec Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>Type</i>	The type of VPN connection this customer gateway supports. Type: String Default: None Valid Values: <code>ipsec.1</code>	Yes
<i>IpAddress</i>	The Internet-routable IP address for the customer gateway's outside interface. The address must be static. Type: String Default: None	Yes
<i>BgpAsn</i>	The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN). Type: Integer Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `CreateCustomerGatewayResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
customerGateway	Information about the customer gateway. Type: <a href="#">CustomerGatewayType</a> (p. 363)

## Examples

### Example Request

This example passes information to AWS about the VPN customer gateway with IP address 12.1.2.3 and 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/2011-12-01/">
  <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. 145)
- [DeleteCustomerGateway](#) (p. 93)

# CreateDhcpOptions

## Description

Creates a set of DHCP options for your VPC. After creating the new set, you must then 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, go to [RFC 2132](#).

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



### 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 Amazon Virtual Private Cloud and DHCP options, go to [Using DHCP Options in Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

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

## Response Elements

The elements in the following table are wrapped in an `CreateDhcpOptionsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>dhcpOptions</code>	Set of DHCP options. Type: <a href="#">DhcpOptionsType</a> (p. 372)

## Examples

### Example Request

This example creates a new set of DHCP options with a domain name `mydomain.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=mydomain.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/2011-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <dhcpOptions>
    <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
    <dhcpConfigurationSet>
      <item>
        <key>domain-name</key>
        <valueSet>
          <item>
            <value>mydomain.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>
  </dhcpOptions>
</CreateDhcpOptionsResponse>
```



```
    </item>  
  </dhcpConfigurationSet>  
  <tagSet/>  
</dhcpOptions>  
</CreateDhcpOptionsResponse>
```

## Related Operations

- [AssociateDhcpOptions](#) (p. 17)
- [DescribeDhcpOptions](#) (p. 148)
- [DeleteDhcpOptions](#) (p. 95)

# CreateImage

## Description

Creates an Amazon EBS-backed AMI from an Amazon EBS-backed instance that is in either the `running` or `stopped` state. For more information about Amazon EBS-backed AMIs, go to [Using Amazon EBS-Backed AMIs and Instances](#).



### Note

If you customized your instance with ephemeral storage devices or additional EBS volumes besides the root device, the new AMI contains block device mapping information for those storage devices and volumes. When you then launch an instance from your new AMI, the instance automatically launches with the additional devices and volumes.

## Request Parameters

Name	Description	Required
<i>InstanceId</i>	The ID of the instance. Type: String Default: None	Yes
<i>Name</i>	A name for the new image you're creating. Type: String Default: None Constraints: 3-128 alphanumeric characters, parenthesis (()), commas (,), slashes (/), dashes (-), or underscores(_)	Yes
<i>Description</i>	A description of the new image. Type: String Default: None Constraints: Up to 255 characters	No
<i>NoReboot</i>	By default this parameter is set to <code>false</code> , which means Amazon EC2 attempts to cleanly shut down the instance before image creation and reboots the instance afterwards. When the parameter is set to <code>true</code> , Amazon EC2 does not shut down the instance before creating the image. When this option is used, file system integrity on the created image cannot be guaranteed. Type: Boolean Default: <code>false</code>	No

## Response Elements

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

Name	Description
requestId	The ID of the request. Type: xsd:string
imageId	The ID of the AMI. Type: xsd:string

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-4fa54026</imageId>
</CreateImageResponse>
```

## Related Operations

- [RunInstances](#) (p. 334)
- [DescribeInstances](#) (p. 165)
- [TerminateInstances](#) (p. 348)

# CreateInternetGateway

## Description

Creates a new Internet gateway in your AWS account. After creating the Internet gateway, you then attach it to a VPC using `AttachInternetGateway`. For more information about your VPC and Internet gateway, go to [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` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>internetGateway</code>	Information about the Internet gateway Type: <a href="#">InternetGatewayType</a> (p. 391)

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <internetGateway>
    <internetGatewayId>igw-eaad4883</internetGatewayId>
    <attachmentSet/>
    <tagSet/>
  </internetGateway>
</CreateInternetGatewayResponse>
```

## Related Operations

- [DeleteInternetGateway](#) (p. 97)

- [AttachInternetGateway](#) (p. 21)
- [DetachInternetGateway](#) (p. 259)
- [DescribeInternetGateways](#) (p. 180)

# 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. If you'd like to create a key pair that works in all Regions, see [ImportKeyPair \(p. 279\)](#).

## Request Parameters

Name	Description	Required
<i>KeyName</i>	A unique name for the key pair. Type: String Default: None Constraints: Accepts alphanumeric characters, spaces, dashes, and underscores.	Yes

## Response Elements

The elements in the following table are wrapped in a `CreateKeyPairResponse` structure.

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

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <keyName>gsg-keypair</keyName>
  <keyFingerprint>
    1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f
  </keyFingerprint>
  <keyMaterial>-----BEGIN RSA PRIVATE KEY-----
MIIEoQIBAAKCAQBULFg5ujHrtmljnutSuo08Xe56LlT+HM8v/xkaa39EstM3/aFXTHgElQiJLChp
HungXQ29VTc8rc1bw0lkdi23OH5eqkMHGhvEwqa0HWASUM114o3o/IX+0f2UcPoKCOVUR+jx71Sg
5AU52EQfanIn3ZQ81FW7Edp5a3q4DhjG1UKToHVbicL5E+g45zfb95wIyywWZfeW/UUF3LpGZyq/
ebIUlq1qTbHkLbCC2r7RTn8vpQWp47BGVYgtGSBMPTRP5hnbzzuqj3itkiLHjU39S2sJJCJ0TrJx5
i8BygR4s3mHKBj81+ePQxG1kGbF6R4yg6sECmXn17MRQVXODNHZbAgMBAAECggEAY1tsiUsIwD15
91CXirkYGuVfLyLflXenxfI50mDFms/mumTqloHO7tr0oriHDR5K7wMcY/YY5YkcXNo7mvUVDlpM
ZNUJs7rw9gZRTrf7LylaJ58kOcyajw8Tsc4e4LPbFaHwSld6K8rXh64o6WgW4SrsB6ICmr1kGQI7
3wcfgt5ecIu4TZf00E9IHjn+2eRlrsjBdeORi7KiUNC/PAG23I6MdDOFEQRcCSigCj+4/mciFUSA
SWS4dMbrpb9FNSIcf9dcLxVM7/6KxgJNfZc9XWzUw77Jg8x92Zd0fVhHoux5IzC+UvSKWB4dyfcI
tE8C3p9bbU9VGyY5vLCAiIb4qQKBgQDLiO24GXrIkswF32YtBBMuVgLGcWU9h9H1O9mKAc2m8Cm1
jUE5IpzRjTcdc9I2qiIMUTwtgnw42auSCzbUeYMURPtDqyQ7p6AjMuJp9EPemcSVOK9vXYL0Ptco
xW9MC0dtV6iPkCN7gOqiZXPRKaFbWADp16p8UAIVS/a5XXk5jwKBgQCKkphi2EiShluRkxhljyWC
iDCiK6JBRsMvpLbc0v5dKwP5alo1fmdR5PJaV2qvZSj5CYNpMay1/EDNTY5OSIJU+0KFmQbyhsbm
rdLNLDL4+TcnT7c62/aH01ohYaf/VCbRhtLlBfqGoQc7+sAc8vmKkesnF7CqCEKdyF/dhrxYdQKB
gC0iZzzNAapayz1+JcVTwwEid6j9JqNXbBc+Z2YwMi+T0Fv/P/hwkX/ypeOXnIUcw0Ih/YtGBVAC
DQbsz7LcY1HqXiHKYNWNvXgww0+oiChjxvEkSdsTTIfnK4VSCvU9BxDbQHjdiNDJbL6oar92UN7V
rBYvChJZF7LvUH4YmVpHAoGAbZ2X7XvoeEO+uZ58/BGKOIGHBYHBDiXtzMhdJr15HTYjxK7OgTZm
gK+8zp4L9IbvLGDMJO8vft32XPEWuvI8twCzFH+CsWLQADZMZKSsBasOZ/h1FwhdMgCMcY+Q1zd4
JZKjTSu3i7vhvx6RzdSedXEMNTZWN4qlIx3kR5aHcukCgYA9T+ZrvmlF0seQPbLknn7EqhXIjBaT
P8TTvW/6bdPi23ExzxZn7K0drfclYRphlLHMPaONv/x2xALIf91UB+v5ohyloDoasL0gi1houRe
2ERKKdWz0ZL9SWq6VTdhr/5G994CK72fy5WhyERbdjUIIdHaK3M849Jjuf8cSrvSb4g==
-----END RSA PRIVATE KEY-----</keyMaterial>
</CreateKeyPairResponse>
```

## Related Operations

- [RunInstances](#) (p. 334)
- [DescribeKeyPairs](#) (p. 183)
- [DeleteKeyPair](#) (p. 99)

# CreateNetworkAcl

## Description

Creates a new 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, go to [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>VpcId</i>	The ID of the VPC where the network ACL will be created. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `CreateNetworkAclResponse` structure.

Name	Description
<i>requestId</i>	The ID of the request. Type: String
<i>networkAcl</i>	Information about the new network ACL. Type: <a href="#">NetworkAclType</a> (p. 399)

## 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 Amazon VPC processes 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/2011-12-01/">
  <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. 101)
- [DescribeNetworkAcls](#) (p. 186)
- [ReplaceNetworkAclAssociation](#) (p. 306)

# CreateNetworkAclEntry

## Description

Creates an entry (i.e., rule) in a network ACL with a rule number you specify. 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, Amazon VPC processes the entries in the ACL according to the rule numbers, in ascending order.



### Important

We recommend that you leave room between the rule numbers (e.g., 100, 110, 120, etc.), and not number them one right after the other (e.g., 101, 102, 103, etc.). This allows you to easily 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, go to [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
NetworkAclId	ID of the ACL where the entry will be created. Type: String Default: None	Yes
RuleNumber	Rule number to assign to the entry (e.g., 100). ACL entries are processed in ascending order by rule number. Type: Integer Default: None Constraints: Positive integer from 1 to 32766	Yes
Protocol	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 <a href="#">Protocol Numbers</a> ).	Yes
RuleAction	Whether to allow or deny traffic that matches the rule. Type: String Default: None Valid Values: allow   deny	Yes

Name	Description	Required
<code>Egress</code>	Whether this rule applies to egress traffic from the subnet ( <code>true</code> ) or ingress traffic to the subnet ( <code>false</code> ). Type: Boolean Default: <code>false</code> Valid Values: <code>true</code>   <code>false</code>	No
<code>CidrBlock</code>	The CIDR range to allow or deny, in CIDR notation (e.g., <code>172.16.0.0/24</code> ). Type: String Default: None	Yes
<code>Icmp.Code</code>	For the ICMP protocol, the ICMP code. You can use <code>-1</code> to specify all ICMP codes for the given ICMP type. Type: Integer Default: None Condition: Required if specifying <code>1</code> (ICMP) for the protocol.	Conditional
<code>Icmp.Type</code>	For the ICMP protocol, the ICMP type. You can use <code>-1</code> to specify all ICMP types. Type: Integer Default: None Condition: Required if specifying <code>1</code> (ICMP) for the protocol.	Conditional
<code>PortRange.From</code>	The first port in the range. Type: Integer Default: None Condition: Required if specifying <code>6</code> (TCP) or <code>17</code> (UDP) for the protocol.	Conditional
<code>PortRange.To</code>	The last port in the range. Type: Integer Default: None Condition: Required if specifying <code>6</code> (TCP) or <code>17</code> (UDP) for the protocol.	Conditional

## Response Elements

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

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>return</code>	Returns true if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
</CreateNetworkAclEntryResponse>
```

## Related Operations

- [DeleteNetworkAclEntry](#) (p. 103)
- [ReplaceNetworkAclEntry](#) (p. 308)
- [DescribeNetworkAcls](#) (p. 186)

# CreateNetworkInterface

## Description

Creates a network interface in the specified subnet.

## Request Parameters

Name	Description	Required
<i>subnetId</i>	The ID of the subnet to associate with the network interface. Type: String Default: None	Yes
<i>privateIpAddress</i>	The private IP address of the network interface. Type: String Default: None	No
<i>description</i>	The description of the network interface. Type: String Default: None	No
<i>groupSet</i>	Lists the group IDs for use by the network interface. Type: <a href="#">SecurityGroupIdSetItemType</a> (p. 414) Default: None	No

## Response Elements

The elements in the following table are wrapped in an `CreateNetworkInterface` structure.

Name	Description
<i>requestId</i>	The ID of the request to create a network interface. Type: String
<i>networkInterface</i>	The network interface that was created. Type: <a href="#">NetworkInterfaceType</a> (p. 401)

## Examples

### Example Request

This example creates an elastic network interface (ENI) in the specified subnet.

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

## Example Response

```
<CreateNetworkInterfaceResponse xmlns='http://ec2.amazonaws.com/doc/2011-11-15/'>
  <requestId>86c6c651-be3a-4bec-83d7-711ee24c515f</requestId>
  <networkInterface>
    <networkInterfaceId>eni-ffda3197</networkInterfaceId>
    <subnetId>subnet-b2a249da</subnetId>
    <vpcId>vpc-1ea24976</vpcId>
    <availabilityZone>us-east-1b</availabilityZone>
    <description/>
    <ownerId>602767649040</ownerId>
    <requesterManaged>>false</requesterManaged>
    <status>pending</status>
    <macAddress>06:01:92:a4:43:77</macAddress>
    <privateIpAddress>10.0.0.182</privateIpAddress>
    <sourceDestCheck>>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-050c1369</groupId>
        <groupName>default</groupName>
      </item>
    </groupSet>
    <tagSet/>
  </networkInterface>
</CreateNetworkInterfaceResponse>
```

## Related Operations

- [AttachNetworkInterface](#) (p. 23)
- [DetachNetworkInterface](#) (p. 261)
- [DeleteNetworkInterface](#) (p. 105)
- [DescribeNetworkInterfaceAttribute](#) (p. 191)
- [DescribeNetworkInterfaces](#) (p. 192)
- [ModifyNetworkInterfaceAttribute](#) (p. 290)
- [ResetNetworkInterfaceAttribute](#) (p. 324)

# 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, go to [Using Cluster Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

Name	Description	Required
GroupName	A name for the placement group. Type: string Default: None	Yes
Strategy	The placement group strategy. Type: string Valid Values: cluster	Yes

## Response Elements

The elements in the following table are wrapped in a `CreatePlacementGroupResponse` structure.

Name	Description
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 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/2011-12-01/">
```

```
<requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>  
<return>>true</return>  
</CreatePlacementGroupResponse>
```

## Related Operations

- [DeletePlacementGroup](#) (p. 107)
- [DescribePlacementGroups](#) (p. 195)



# CreateRoute

## Description

Creates a new 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, go to [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>RouteTableId</i>	The ID of the route table where the route will be added. Type: String Default: None	Yes
<i>DestinationCidrBlock</i>	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	Yes
<i>GatewayId</i>	The ID of a gateway attached to your VPC. Type: String Default: None Condition: You must provide either <i>GatewayId</i> or <i>InstanceId</i> , but not both.	Conditional
<i>InstanceId</i>	The ID of a NAT instance in your VPC. Type: String Default: None Condition: You must provide either <i>GatewayId</i> or <i>InstanceId</i> , but not both.	Conditional

Name	Description	Required
<i>NetworkInterfaceId</i>	Allows the routing of network interface IDs. Exactly one interface must be attached when specifying an instance ID or it will fail. Type: String Default: None Condition:	Conditional

## Response Elements

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

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>return</code>	Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean

## 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`.

```
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`.

```
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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CreateRouteResponse>
```

## Related Operations

- [DeleteRoute](#) (p. 109)
- [ReplaceRoute](#) (p. 311)
- [DescribeRouteTables](#) (p. 209)

# CreateRouteTable

## Description

Creates a new 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, go to [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>VpcId</i>	The ID of the VPC where the route table will be created. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `CreateRouteTableResponse` structure.

Name	Description
<code>requestId</code>	Unique identifier for the request received. Type: String
<code>routeTable</code>	Information about the newly created route table. Type: <a href="#">RouteTableType</a> (p. 409)

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <routeTable>
```

```
<routeTableId>rtb-f9ad4890</routeTableId>
<vpcId>vpc-11ad4878</vpcId>
<routeSet>
  <item>
    <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
    <gatewayId>local</gatewayId>
    <state>active</state>
  </item>
</routeSet>
<associationSet/>
<tagSet/>
</routeTable>
</CreateRouteTableResponse>
```

## Related Operations

- [AssociateRouteTable](#) (p. 19)
- [DisassociateRouteTable](#) (p. 269)
- [DescribeRouteTables](#) (p. 209)
- [DeleteRouteTable](#) (p. 111)
- [ReplaceRouteTableAssociation](#) (p. 313)
- [CreateRoute](#) (p. 67)

# CreateSecurityGroup

## Description

Creates a new security group. You can create either an EC2 security group (which works only with EC2), or a VPC security group (which works only with Amazon Virtual Private Cloud). The two types of groups have different capabilities. For information about VPC security groups and how the two types of groups differ, go to [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*. For information about EC2 security groups, go to [Using Security Groups](#) in the *Amazon Elastic Compute Cloud User Guide*.

When you create a security group, you give it a friendly name of your choice. You can have an EC2 security group with the same name as a VPC security group (each group has a unique security group ID separate from the name). Two standard groups can't have the same name, and two VPC groups can't have the same name.

If you don't specify a security group when you launch an instance, the instance is launched into the default security group. This group (and only this group) includes a default rule that gives the instances in the group unrestricted network access to each other. You have a default EC2 security group for instances you launch with EC2 (i.e., outside a VPC), and a default VPC security group for instances you launch in your VPC.

You can add or remove rules from your security groups (i.e., authorize or revoke permissions) using the `AuthorizeSecurityGroupIngress`, `AuthorizeSecurityGroupEgress`, `RevokeSecurityGroupIngress`, and `RevokeSecurityGroupEgress` actions.



### Important

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

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

## Request Parameters

Name	Description	Required
<i>GroupName</i>	Name of the security group. Type: String Default: None Constraints: Accepts alphanumeric characters, spaces, dashes, and underscores.	Yes
<i>GroupDescription</i>	Description of the group. This is informational only. Type: String Default: None Constraints: Accepts alphanumeric characters, spaces, dashes, and underscores.	Yes
<i>VpcId</i>	ID of the VPC. Type: String Default: None Condition: Required for VPC security groups	Conditional

## Response Elements

The elements in the following table are wrapped in a `CreateSecurityGroupResponse` structure.

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

## Examples

### Example Request

This example creates the `webserv` security group.

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

### Example Response

```
<CreateSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <groupId>sg-1a2b3c4d</groupId>
</CreateSecurityGroupResponse>
```

## Related Operations

- [RunInstances](#) (p. 334)
- [DescribeSecurityGroups](#) (p. 213)
- [AuthorizeSecurityGroupIngress](#) (p. 32)
- [RevokeSecurityGroupIngress](#) (p. 331)
- [DeleteSecurityGroup](#) (p. 113)

# CreateSnapshot

## Description

Creates a snapshot of an Amazon EBS volume and stores it in Amazon S3. You can use snapshots for backups, to make identical copies of instance devices, and to save data before shutting down an instance. For more information about Amazon EBS, go to the [Using Amazon Elastic Block Store](#).

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.

```
umount -d device_name
```

For example:

```
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

Name	Description	Required
<i>VolumeId</i>	The ID of the Amazon EBS volume of which to take a snapshot. Type: String Default: None	Yes
<i>Description</i>	Description of the Amazon EBS snapshot. Type: String Default: None Constraints: Up to 255 characters	No

## Response Elements

The elements in the following table are wrapped in a `CreateSnapshotResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>snapshotId</code>	The ID of the snapshot. Type: xsd:string



Name	Description
volumeId	The ID of the volume. Type: xsd:string
status	Snapshot state Type: xsd:string Valid Values: pending   completed   error
startTime	Time stamp when the snapshot was initiated. Type: xsd:dateTime
progress	The progress of the snapshot, in percentage. Type: xsd:string
ownerId	The AWS account ID of the Amazon EBS snapshot owner. Type: xsd:string
volumeSize	The size of the volume, in GiB. Type: xsd:string
description	Description of the snapshot. Type: xsd:string

## Examples

### Example Request

This example creates a snapshot of volume `vol-4d826724`.

```
https://ec2.amazonaws.com/?Action=CreateSnapshot
&VolumeId=vol-4d826724
&Description=Daily+Backup
&AUTHPARAMS
```

### Example Response

```
<CreateSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotId>snap-78a54011</snapshotId>
  <volumeId>vol-4d826724</volumeId>
  <status>pending</status>
  <startTime>2008-05-07T12:51:50.000Z</startTime>
  <progress>60%</progress>
  <ownerId>213457642086</ownerId>
  <volumeSize>10</volumeSize>
  <description>Daily Backup</description>
</CreateSnapshotResponse>
```

## Related Operations

- [DeleteSnapshot](#) (p. 115)
- [DescribeSnapshots](#) (p. 219)

# 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, go to [Spot Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

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

## Response Elements

The elements in the following table are wrapped in a `CreateSpotDatafeedSubscriptionResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>spotDatafeedSubscription</code>	Datafeed subscription. Type: <a href="#">SpotDatafeedSubscriptionType</a> (p. 415)

## Examples

### Example Request

This example creates the data feed for the account.

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

## Example Response

```
<CreateSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>254933287430</ownerId>
    <bucket>my-bucket</bucket>
    <prefix/>
    <state>Active</state>
  </spotDatafeedSubscription>
</CreateSpotDatafeedSubscriptionResponse>
```

## Related Operations

- [DeleteSpotDatafeedSubscription](#) (p. 117)
- [DescribeSpotDatafeedSubscription](#) (p. 224)

# 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 feel 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.



### Important

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, go to [AMI Basics](#) in the *Amazon Elastic Compute Cloud User Guide*.

For more information about Amazon Virtual Private Cloud and subnets, go to the [Amazon Virtual Private Cloud User Guide](#).

## Request Parameters

Name	Description	Required
<i>VpcId</i>	The ID of the VPC where you want to create the subnet. Type: String Default: None	Yes
<i>CidrBlock</i>	The CIDR block you want the subnet to cover (e.g., 10.0.0.0/24). Type: String Default: None	Yes
<i>AvailabilityZone</i>	The Availability Zone you want the subnet in. Type: String Default: AWS selects a zone for you (recommended)	No

## Response Elements

The elements in the following table are wrapped in an `CreateSubnetResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>subnet</code>	Information about the subnet. Type: <a href="#">SubnetType</a> (p. 420)

## 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/2011-12-01/">
  <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>250</availableIpAddressCount>
    <availabilityZone>us-east-1a</availabilityZone>
    <tagSet/>
  </subnet>
</CreateSubnetResponse>
```

## Related Operations

- [DescribeSubnets](#) (p. 235)
- [DeleteSubnet](#) (p. 118)

## CreateTags

### Description

Adds or overwrites one or more tags for the specified 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, go to [Using Tags](#) in the *Amazon Elastic Compute Cloud User Guide*.

### Request Parameters

Name	Description	Required
<i>ResourceId.n</i>	ID of a resource to tag. For example, ami-1a2b3c4d. You can specify multiple resources to assign the tags to. Type: String Default: None	Yes
<i>Tag.n.Key</i>	Key for a tag. Type: String Default: None Constraints: Tag keys are case sensitive and accept a maximum of 128 Unicode characters.	Yes
<i>Tag.n.Value</i>	Value for a tag. If you don't want the tag to have a value, specify the parameter with no value, and we will 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.	Yes

### Response Elements

The elements in the following table are wrapped in a `CreateTagsResponse` structure.

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

## 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/2011-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>>true</return>
</CreateTagsResponse>
```

## Related Operations

- [DescribeTags](#) (p. 239)
- [DeleteTags](#) (p. 120)



# CreateVolume

## Description

Creates a new Amazon EBS volume that any Amazon EC2 instance in the same Availability Zone can attach to. For more information about Amazon EBS, go to the [Amazon Elastic Block Store](#).



### Note

You must specify an Availability Zone when creating a volume. The volume and the instance to which it attaches must be in the same Availability Zone.

## Request Parameters

Name	Description	Required
<i>Size</i>	The size of the volume, in GiBs. Type: String Valid Values: 1-1024 Default: If you're creating a volume from a snapshot and don't specify a size, the default is the snapshot size. Condition: Required if you're not creating a volume from a snapshot.	Conditional
<i>SnapshotId</i>	The snapshot from which to create the new volume. Type: String Default: None Condition: Required if you are creating a volume from a snapshot.	Conditional
<i>AvailabilityZone</i>	The Availability Zone in which to create the new volume. Use <a href="#">DescribeAvailabilityZones (p. 137)</a> to display Availability Zones that are currently available to your account. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `CreateVolumeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>volumeId</code>	The ID of the volume. Type: xsd:string

Name	Description
size	The size of the volume, in GiBs. Type: xsd:string
snapshotId	Snapshot from which the volume was created, if applicable. Type: xsd:string
availabilityZone	Availability Zone in which the volume was created. Type: xsd:string
status	Volume state. Type: xsd:string Valid Values: creating   available   in-use   deleting   deleted   error
createTime	Time stamp when volume creation was initiated. Type: xsd:dateTime

## 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

```
<CreateVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-4d826724</volumeId>
  <size>80</size>
  <snapshotId/>
  <availabilityZone>us-east-1a</availabilityZone>
  <status>creating</status>
  <createTime>2008-05-07T11:51:50.000Z</createTime>
</CreateVolumeResponse>
```

## Related Operations

- [DeleteVolume](#) (p. 123)
- [DescribeVolumes](#) (p. 244)
- [AttachVolume](#) (p. 25)
- [DetachVolume](#) (p. 263)
- [DescribeAvailabilityZones](#) (p. 137)

# CreateVpc

## Description

Creates a VPC with the CIDR block you specify. 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, go to [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 Amazon Virtual Private Cloud and DHCP options, go to [Using DHCP Options in Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>CidrBlock</i>	The CIDR block you want the VPC to cover (e.g., 10.0.0.0/16). Type: String Default: None	Yes
<i>instanceTenancy</i>	The allowed tenancy of instances launched into the VPC. A value of <code>default</code> means instances can be launched with any tenancy; a value of <code>dedicated</code> means instances must be launched with tenancy as dedicated. Type: String Default: default	No

## Response Elements

The elements in the following table are wrapped in an `CreateVpcResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>vpc</code>	Information about the VPC. Type: <a href="#">VpcType</a> (p. 424)

## Examples

### Example Request

This example creates a VPC with CIDR block 10.0.0.0/24.

```
https://ec2.amazonaws.com/?Action=CreateVpc  
&CidrBlock=10.0.0.0/24  
&AUTHPARAMS
```

## Example Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <vpc>  
    <vpcId>vpc-1a2b3c4d</vpcId>  
    <state>pending</state>  
    <cidrBlock>10.0.0.0/24</cidrBlock>  
    <dhcpOptionsId>default</dhcpOptionsId>  
    <tagSet/>  
  </vpc>  
</CreateVpcResponse>
```

## Related Operations

- [DescribeVpcs](#) (p. 248)
- [DeleteVpc](#) (p. 125)
- [CreateDhcpOptions](#) (p. 49)
- [AssociateDhcpOptions](#) (p. 17)

# CreateVpnConnection

## Description

Creates a new 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 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, go to [ec2-create-vpn-connection](#) in the *Amazon Elastic Compute Cloud Command Line Reference*.



### Important

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

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

For more information about Amazon Virtual Private Cloud and VPN connections, go to [Adding an IPsec Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>Type</i>	The type of VPN connection. Type: String Default: None Valid Values: <code>ipsec.1</code>	Yes
<i>CustomerGatewayId</i>	The ID of the customer gateway. Type: String Default: None	Yes
<i>VpnGatewayId</i>	The ID of the virtual private gateway. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `CreateVpnConnectionResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>

Name	Description
vpnConnection	Information about the VPN connection. Type: <a href="#">VpnConnectionType</a> (p. 425)

## Examples

### Example Request

This example creates a VPN connection between the virtual private gateway 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

```
<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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>
            <bgp>
              <asn>YOUR_BGP_ASN</asn>
              <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_en
cryptio>
  <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>
<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>
      <mode>tunnel</mode>
      <clear_df_bit>true</clear_df_bit>
      <fragmentation_before_encryption>true</fragmentation_before_en
cryptio>
      <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>
```

## Related Operations

- [DescribeVpnConnections](#) (p. 251)
- [DeleteVpnConnection](#) (p. 127)
- [CreateVpc](#) (p. 85)
- [CreateSubnet](#) (p. 79)
- [AttachVpnGateway](#) (p. 27)



# CreateVpnGateway

## Description

Creates a new 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 Amazon Virtual Private Cloud and virtual private gateways, go to [Adding an IPsec Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>Type</i>	The type of VPN connection this virtual private gateway supports. Type: String Default: None Valid Values: ipsec.1	Yes
<i>AvailabilityZone</i>	The Availability Zone where you want the virtual private gateway. Type: String Default: AWS selects a zone for you (recommended)	No

## Response Elements

The elements in the following table are wrapped in an `CreateVpnGatewayResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>vpnGateway</code>	Information about the virtual private gateway. Type: <a href="#">VpnGatewayType</a> (p. 426)

## Examples

### Example Request

This example creates a virtual private gateway.

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

## Example Response

```
<CreateVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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. 255)
- [DeleteVpnGateway](#) (p. 129)
- [AttachVpnGateway](#) (p. 27)
- [DetachVpnGateway](#) (p. 265)

# DeleteCustomerGateway

## Description

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

For more information about Amazon Virtual Private Cloud and VPN customer gateways, go to [Adding an IPsec Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>CustomerGatewayId</i>	The ID of the customer gateway you want to delete. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `DeleteCustomerGatewayResponse` structure.

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

## 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

```
<DeleteCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
```

```
<return>true</return>  
</DeleteCustomerGatewayResponse>
```

## Related Operations

- [CreateCustomerGateway](#) (p. 47)
- [DescribeCustomerGateways](#) (p. 145)

# DeleteDhcpOptions

## Description

Deletes a set of DHCP options that you specify. Amazon VPC 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 Amazon Virtual Private Cloud and DHCP options sets, go to [Using DHCP Options in Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>DhcpOptionsId</i>	The ID of the DHCP options set you want to delete. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `DeleteDhcpOptionsResponse` structure.

Name	Description
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 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/2011-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
```

```
<return>true</return>  
</DeleteDhcpOptionsResponse>
```

## Related Operations

- [AssociateDhcpOptions](#) (p. 17)
- [CreateDhcpOptions](#) (p. 49)
- [DescribeDhcpOptions](#) (p. 148)

# 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, go to [Amazon Virtual Private Cloud User Guide](#).

## Request Parameters

Name	Description	Required
<i>InternetGatewayId</i>	The ID of the Internet gateway to be deleted. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `DeleteInternetGatewayResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>return</code>	Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteInternetGatewayResponse>
```

## Related Operations

- [CreateInternetGateway](#) (p. 54)
- [AttachInternetGateway](#) (p. 21)
- [DetachInternetGateway](#) (p. 259)
- [DescribeInternetGateways](#) (p. 180)



# DeleteKeyPair

## Description

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

## Request Parameters

Name	Description	Required
<i>KeyName</i>	Name of the key pair to delete. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `DeleteKeyPairResponse` structure.

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

## Examples

### Example Request

This example deletes the `gsg-keypair` key pair.

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

### Example Response

```
<DeleteKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteKeyPairResponse>
```

## Related Operations

- [CreateKeyPair](#) (p. 56)

- [DescribeKeyPairs](#) (p. 183)
- [ImportKeyPair](#) (p. 279)

# 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, go to [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>NetworkAclId</i>	The ID of the network ACL to be deleted. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `DeleteNetworkAclResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>return</code>	Returns true if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteNetworkAclResponse>
```

## Related Operations

- [DeleteNetworkAcl](#) (p. 101)
- [DescribeNetworkAcls](#) (p. 186)
- [ReplaceNetworkAclAssociation](#) (p. 306)

# DeleteNetworkAclEntry

## Description

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

## Request Parameters

Name	Description	Required
NetworkAclId	ID of the network ACL. Type: string Default: none	Yes
RuleNumber	Rule number for the entry to delete. Type: Number Default: none	Yes
Egress	Whether the rule to delete is an egress rule ( <code>true</code> ) or ingress rule ( <code>false</code> ). Type: Boolean Default: <code>false</code> Valid Values: <code>true</code>   <code>false</code>	No

## Response Elements

The elements in the following table are wrapped in a `ReplaceNetworkAclEntryResponse` structure.

Name	Description
requestId	The ID of the request. Type: String
return	Returns true if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

## 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

```
<DeleteNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteNetworkAclEntryResponse>
```

## Related Operations

- [CreateNetworkAclEntry](#) (p. 60)
- [ReplaceNetworkAclEntry](#) (p. 308)
- [DescribeNetworkAcls](#) (p. 186)

# DeleteNetworkInterface

## Description

Deletes the specified network interface.

## Request Parameters

Name	Description	Required
networkInterfaceId	The ID of the network interface to delete. Type: string Default: None	Yes

## Response Elements

Name	Description
requestId	The ID of the request to delete the network interface. Type: xsd:string
return	Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean

## 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

```
<DeleteNetworkInterfaceResponse xmlns='http://ec2.amazonaws.com/doc/2011-11-15/'>
  <requestId>e1c6d73b-edaa-4e62-9909-6611404e1739</requestId>
  <return>true</return>
</DeleteNetworkInterfaceResponse>
```

## Related Operations

- [AttachNetworkInterface](#) (p. 23)
- [DetachNetworkInterface](#) (p. 261)

- [CreateNetworkInterface](#) (p. 63)
- [DescribeNetworkInterfaceAttribute](#) (p. 191)
- [DescribeNetworkInterfaces](#) (p. 192)
- [ModifyNetworkInterfaceAttribute](#) (p. 290)
- [ResetNetworkInterfaceAttribute](#) (p. 324)



# 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, go to [Using Cluster Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

Name	Description	Required
GroupName	The name of the placement group to delete. Type: string Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `DeletePlacementGroupResponse` structure.

Name	Description
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 placement group named XYZ-cluster.

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

### Example Response

```
<DeletePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <return>true</return>
</DeletePlacementGroupResponse>
```

## Related Operations

- [CreatePlacementGroup](#) (p. 65)
- [DescribePlacementGroups](#) (p. 195)

# DeleteRoute

## Description

Deletes a route from a route table in a VPC. For more information about route tables, go to [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>RouteTableId</i>	The ID of the route table where the route will be deleted. Type: String Default: None	Yes
<i>DestinationCidrBlock</i>	The CIDR range for the route you want to delete. The value you specify must exactly match the CIDR for the route you want to delete. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `ReplaceRouteResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>return</code>	Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean

## 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/2011-12-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteRouteResponse>
```

## Related Operations

- [CreateRoute](#) (p. 67)
- [ReplaceRoute](#) (p. 311)
- [DescribeRouteTables](#) (p. 209)

# 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, go to [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<code>RouteTableId</code>	The ID of the route table to be deleted. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `DeleteRouteTableResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>return</code>	Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean Type: Boolean

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteRouteTableResponse>
```

## Related Operations

- [AssociateRouteTable](#) (p. 19)
- [DisassociateRouteTable](#) (p. 269)
- [DescribeRouteTables](#) (p. 209)
- [CreateRouteTable](#) (p. 70)
- [ReplaceRouteTableAssociation](#) (p. 313)

# DeleteSecurityGroup

## Description

Deletes a security group. This action applies to both EC2 security groups and VPC security groups. For information about VPC security groups and how they differ from EC2 security groups, go to [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*.



### Note

If you attempt to delete a security group that contains instances, or attempt to delete a security group that is referenced by another security group, an error is returned. For example, if security group B has a rule that allows access from security group A, security group A cannot be deleted until the rule is removed.

The fault returned is `InvalidGroup.InUse` for EC2 security groups, or `DependencyViolation` for VPC security groups.

## Request Parameters

Name	Description	Required
<i>GroupName</i>	Name of the security group to delete. Type: String Default: None Condition: Either <i>GroupName</i> or <i>GroupId</i> is required	Conditional
<i>GroupId</i>	ID of the security group to delete. Type: String Default: None Condition: Required for a VPC security group; for an EC2 security group, either <i>GroupName</i> or <i>GroupId</i> is required	Conditional

## Response Elements

The elements in the following table are wrapped in a `DeleteSecurityGroupResponse` structure.

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

## Examples

### Example Request

This example deletes the EC2 security group named webserv.

```
https://ec2.amazonaws.com/?Action=DeleteSecurityGroup
&GroupName=webserv
&AUTHPARAMS
```

### Example Request

This example deletes the VPC security group with ID sg-77d0f5a2.

```
https://ec2.amazonaws.com/?Action=DeleteSecurityGroup
&GroupId=sg-77d0f5a2
&AUTHPARAMS
```

### Example Response

```
<DeleteSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSecurityGroupResponse>
```

## Related Operations

- [CreateSecurityGroup](#) (p. 72)
- [DescribeSecurityGroups](#) (p. 213)
- [AuthorizeSecurityGroupIngress](#) (p. 32)
- [RevokeSecurityGroupIngress](#) (p. 331)



# 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

Name	Description	Required
<i>SnapshotId</i>	The ID of the Amazon EBS snapshot to delete. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `DeleteSnapshotResponse` structure.

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

## Examples

### Example Request

This example deletes snapshot `snap-78a54011`.

```
https://ec2.amazonaws.com/?Action=DeleteSnapshot
&SnapshotId.1=snap-78a54011
&AUTHPARAMS
```

## Example Response

```
<DeleteSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteSnapshotResponse>
```

## Related Operations

- [CreateSnapshot](#) (p. 74)
- [DescribeSnapshots](#) (p. 219)

# DeleteSpotDatafeedSubscription

## Description

Deletes the datafeed for Spot Instances. For more information about Spot Instances, go to [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` structure.

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

## Examples

### Example Request

This example deletes the data feed for the account.

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

### Example Response

```
<DeleteSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSpotDatafeedSubscriptionResponse>
```

## Related Operations

- [CreateSpotDatafeedSubscription](#) (p. 77)
- [DescribeSpotDatafeedSubscription](#) (p. 224)

# DeleteSubnet

## Description

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

## Request Parameters

Name	Description	Required
<i>SubnetId</i>	The ID of the subnet you want to delete. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `DeleteSubnetResponse` structure.

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

## 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/2011-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteSubnetResponse>
```

## Related Operations

- [CreateSubnet](#) (p. 79)
- [DescribeSubnets](#) (p. 235)

# 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, go to [Using Tags](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

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

## Response Elements

The elements in the following table are wrapped in a `DeleteTagsResponse` structure.

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

## Examples

### Example Request

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

```
https://ec2.amazonaws.com/?Action=DescribeTags
&ResourceId.1=ami-1a2b3c4d
&AUTHPARAMS
```

Sample response:

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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.

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=ami-1a2b3c4d
&Tag.1.Key=webserver
&Tag.2.Key=stack
&AUTHPARAMS
```

Sample response:

```
<DeleteTagsResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteTagsResponse>
```

## Example Request

This example deletes the stack tag from two particular instances.

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

## Example Request

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

```
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

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=Purpose
&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. 81)
- [DescribeTags](#) (p. 239)



# 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, go to [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

Name	Description	Required
<i>VolumeId</i>	The ID of the volume to delete. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `DeleteVolumeResponse` structure.

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

## Examples

### Example Request

This example deletes volume `vol-4282672b`.

```
https://ec2.amazonaws.com/?Action=DeleteVolume
&VolumeId=vol-4282672b
&AUTHPARAMS
```

### Example Response

```
<DeleteVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<return>true</return>  
</DeleteVolumeResponse>
```

## Related Operations

- [CreateVolume](#) (p. 83)
- [DescribeVolumes](#) (p. 244)
- [AttachVolume](#) (p. 25)
- [DetachVolume](#) (p. 263)

# 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 VPC security groups (except the default), delete all the route tables (except the default), etc.

For more information about Amazon Virtual Private Cloud and VPCs, go to the [Amazon Virtual Private Cloud User Guide](#).

## Request Parameters

Name	Description	Required
<i>VpcId</i>	The ID of the VPC you want to delete. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `DeleteVpcResponse` structure.

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

## 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/2011-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
```

```
<return>true</return>  
</DeleteVpcResponse>
```

## Related Operations

- [CreateVpc](#) (p. 85)
- [DescribeVpcs](#) (p. 248)

# 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 Amazon Virtual Private Cloud and VPN connections, go to [Adding an IPsec Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>VpnConnectionId</i>	The ID of the VPN connection you want to delete. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `DeleteVpnConnectionResponse` structure.

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

## 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

```
<DeleteVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpnConnectionResponse>
```

## Related Operations

- [CreateVpnConnection](#) (p. 87)
- [DescribeVpnConnections](#) (p. 251)
- [DetachVpnGateway](#) (p. 265)
- [DeleteVpc](#) (p. 125)

# 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 Amazon Virtual Private Cloud and virtual private gateways, go to [Adding an IPsec Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>VpnGatewayId</i>	The ID of the virtual private gateway you want to delete. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `DeleteVpnGatewayResponse` structure.

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

## 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/2011-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpnGatewayResponse>
```

## Related Operations

- [CreateVpnGateway](#) (p. 91)
- [DescribeVpnGateways](#) (p. 255)
- [DeleteVpnConnection](#) (p. 127)



# 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

Name	Description	Required
<i>ImageId</i>	ID of the AMI to deregister. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `DeregisterImageResponse` structure.

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

## Examples

### Example Request

This example deregisters the `ami-4fa54026` AMI.

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

### Example Response

```
<DeregisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeregisterImageResponse>
```

## Related Operations

- [RegisterImage](#) (p. 300)
- [DescribeImages](#) (p. 155)

# DescribeAddresses

## Description

Gives information about Elastic IP addresses allocated to your account. This includes both EC2 and VPC Elastic IP addresses. For information about VPC addresses and how they differ from EC2 addresses, go to [Elastic IP Addresses](#) in the *Amazon Virtual Private Cloud User Guide*.

You can filter the results to return information only about Elastic IP addresses that match criteria you specify. For example, you could get information only about addresses tagged with a certain value. You can specify multiple values for a filter. An address must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the address is a particular value, and is tagged with a certain value). The result includes information for an address 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 with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
domain	Whether the address is a EC2 address, or a VPC address. Type: String Valid Values: <code>standard</code>   <code>vpc</code>
instance-id	Instance the address is associated with (if any). Type: String
public-ip	The Elastic IP address. Type: String
allocation-id	Allocation ID for the address (for VPC addresses only). Type: String
association-id	Association ID for the address (for VPC addresses only). Type: String

## Request Parameters

Name	Description	Required
<code>PublicIp.n</code>	One or more Elastic IP addresses. Applies only to standard (EC2) addresses. Type: String Default: None	No

Name	Description	Required
<i>AllocationId.n</i>	One or more allocation IDs corresponding to the address or addresses to describe. Applies only to VPC addresses. Type: String Default: None	No
<i>Filter.n.Name</i>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

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

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>addressesSet</code>	A list of IP addresses. Each IP address's information is wrapped in an <code>item</code> element. Type: <a href="#">DescribeAddressesResponseItemType</a> (p. 363)

## 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/2011-12-01/">
  <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>
  <instanceId/>
</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-5723d13e
&AUTHPARAMS
```

## Example Response

```
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <addressesSet>
    <item>
      <publicIp>203.0.113.1</publicIp>
      <allocationId>eipalloc-5723d13e</allocationId>
      <domain>vpc</domain>
      <instanceId>i-9e9da4e9</instanceId>
      <associationId>eipassoc-ba03f1d3</associationId>
    </item>
  </addressesSet>
</DescribeAddressesResponse>
```

## Example Request

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

```
https://ec2.amazonaws.com/?Action=DescribeAddresses
&Filter.1.Name=allocation-id
&Filter.1.Value.1=*
&AUTHPARAMS
```

## Example Response

```
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <addressesSet>
    <item>
```

```
<publicIp>198.51.100.9</publicIp>
<allocationId>eipalloc-5723d13e</allocationId>
<domain>vpc</domain>
<instanceId>i-9e9da4e9</instanceId>
<associationId>eipassoc-ba03f1d3</associationId>
</item>
<item>
  <publicIp>203.0.113.4</publicIp>
  <allocationId>eipalloc-993dd4a2</allocationId>
  <domain>vpc</domain>
  <instanceId>i-225fg8a</instanceId>
  <associationId>eipassoc-85d2a3d</associationId>
</item>
</addressesSet>
</DescribeAddressesResponse>
```

## Related Operations

- [AllocateAddress](#) (p. 12)
- [ReleaseAddress](#) (p. 304)
- [AssociateAddress](#) (p. 14)
- [DisassociateAddress](#) (p. 267)

# DescribeAvailabilityZones

## Description

Displays 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.

You can filter the results to return information only about zones that match criteria you specify. For example, you could filter the results to return only the zones whose state is `available`. You can specify multiple filters (e.g., the zone is in a particular Region, and the state is `available`). The result includes information for a particular zone 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 with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>message</code>	Message giving information about the Availability Zone. Type: String
<code>region-name</code>	Region the Availability Zone is in (e.g., <code>us-east-1</code> ). Type: String
<code>state</code>	State of the Availability Zone Type: String Valid Values: <code>available</code>
<code>zone-name</code>	Name of the zone. Type: String

## Request Parameters

Name	Description	Required
<code>ZoneName . n</code>	One or more Availability Zones. Type: String Default: None	No

Name	Description	Required
<i>Filter.n.Name</i>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

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

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>availabilityZoneInfo</code>	A list of Availability Zones. Each zone's information is wrapped in an <code>item</code> element. Type: <a href="#">AvailabilityZoneItemType</a> (p. 355)

## 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

```
<DescribeAvailabilityZonesResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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>
<messageSet/>
</item>
<item>
  <zoneName>us-east-1c</zoneName>
  <zoneState>available</zoneState>
  <regionName>us-east-1</regionName>
  <messageSet/>
</item>
<item>
  <zoneName>us-east-1d</zoneName>
  <zoneState>available</zoneState>
  <regionName>us-east-1</regionName>
  <messageSet/>
</item>
</availabilityZoneInfo>
</DescribeAvailabilityZonesResponse>
```

## Related Operations

- [RunInstances](#) (p. 334)
- [DescribeRegions](#) (p. 198)

# DescribeBundleTasks

## Description

Describes current bundling tasks for Amazon S3-backed Windows instances.



### 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.

You can filter the results to return information only about tasks that match criteria you specify. For example, you could filter the results to return only the tasks whose state is `complete`. You can specify multiple values for a filter. A bundle task must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the bundle is stored in a particular Amazon S3 bucket and the state is `complete`). The result includes information for a particular bundle task 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 with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>bundle-id</code>	ID of the bundle task. Type: String
<code>error-code</code>	If the task failed, the error code returned. Type: String
<code>error-message</code>	If the task failed, the error message returned. Type: String
<code>instance-id</code>	ID of the instance that was bundled. Type: String
<code>progress</code>	Level of task completion, in percent (e.g., 20%). Type: String
<code>s3-bucket</code>	Amazon S3 bucket where the AMI will be stored. Type: String
<code>s3-prefix</code>	Beginning of the AMI name. Type: String
<code>start-time</code>	Time the task started, e.g., 2008-09-15T17:15:20.000Z. Type: <code>xsd:dateTime</code>

Filter Name	Description
state	State of the task. Type: String Valid Values: pending   waiting-for-shutdown   bundling   storing   cancelling   complete   failed
update-time	Time of the most recent update for the task, e.g., 2008-09-15T17:15:20.000Z. Type: xsd:dateTime

## Request Parameters

Name	Description	Required
<i>BundleId.n</i>	One or more bundle task IDs. Type: String Default: If no ID is specified, all bundle tasks are described.	No
<i>Filter.n.Name</i>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

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

Name	Description
requestId	The ID of the request. Type: xsd:string
bundleInstanceTasksSet	A list of bundle tasks. Each task's information is wrapped in an <code>item</code> element. Type: <a href="#">BundleInstanceTaskType</a> (p. 359)

## Examples

### Example Request

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

```
https://ec2.amazonaws.com/?Action=DescribeBundleTasks
&bundleId.1=bun-cla540a8
&AUTHPARAMS
```

## Example Response

```
<DescribeBundleTasksResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTasksSet>
    <item>
      <instanceId>i-12345678</instanceId>
      <bundleId>bun-cla540a8</bundleId>
      <state>cancelling</state>
      <startTime>2008-10-07T11:41:50.000Z</startTime>
      <updateTime>2008-10-07T11:51:50.000Z</updateTime>
      <storage>
        <S3>
          <bucket>mybucket</bucket>
          <prefix>winami</prefix>
        </S3>
      </storage>
      <progress>20%</progress>
    </item>
  </bundleInstanceTasksSet>
</DescribeBundleTasksResponse>
```

## Example Request

This example filters the results to display only bundle tasks whose state is either `complete` or `failed`, and in addition are targeted for the Amazon S3 bucket called `mybucket`.

```
https://ec2.amazonaws.com/?Action=DescribeBundleTasks
&Filter.1.Name=s3-bucket
&Filter.1.Value.1=mybucket
&Filter.2.Name=state
&Filter.2.Name.1=complete
&Filter.2.Name.2=failed
&AUTHPARAMS
```

## Related Operations

- [BundleInstance](#) (p. 36)
- [CancelBundleTask](#) (p. 39)

# DescribeConversionTasks

## Description

Describes your conversion tasks. For more information, go to [Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>ConversionTaskId.n</i>	One or more conversion task IDs. Type: String	No

## Response Elements

The elements in the following table are wrapped in a `DescribeConversionTasksResponse` structure.

Name	Description
<code>conversionTasks</code>	A list of conversion tasks. Each task's information is wrapped in an <code>item</code> element. Type: <a href="#">ConversionTaskType</a> (p. 361)

## Examples

### Example Request

This example describes all your conversion tasks.

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

### Example Response

```
<DescribeConversionTasksResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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/MyImportBucket/a3a5e1b6-590d-43cc-
97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAc
cessKeyId=AKIAIR2I45FHYEXAMPLE&Expires=1294855591&Signature=5snej01T1TtL0uR7KEx
tEXAMPLE%3D
        </importManifestUrl>
      </image>
      <volume>
        <size>8</size>
        <id>vol-34d8a2ff</id>
      </volume>
    </importVolume>
    <state>active</state>
    <statusMessage/>
  </conversionTask>
</item>
</conversionTasks>
</DescribeConversionTasksResponse>
```

## Related Operations

- [ImportInstance](#) (p. 275)
- [ImportVolume](#) (p. 281)
- [CancelConversionTask](#) (p. 41)

# DescribeCustomerGateways

## Description

Gives you information about your VPN customer gateways. You can filter the results to return information only about customer gateways that match criteria you specify. For example, you could get information only about gateways whose state is `pending` or `available`. The customer gateway must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the customer gateway has a particular IP address for the Internet-routable external interface, and the gateway's state is `pending` or `available`). The result includes information for a particular customer gateway only if the gateway matches *all* your filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>bgp-asn</code>	The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN). Type: String
<code>customer-gateway-id</code>	ID of the customer gateway. Type: String
<code>ip-address</code>	The IP address of the customer gateway's Internet-routable external interface (e.g., 12.1.2.3). Type: String
<code>state</code>	The state of the customer gateway. Type: String Valid Values: <code>pending</code>   <code>available</code>   <code>deleting</code>   <code>deleted</code>
<code>type</code>	The type of customer gateway. Currently the only supported type is <code>ipsec.1</code> . Type: String Valid Values: <code>ipsec.1</code>
<code>tag-key</code>	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 <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , 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=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, go to <a href="#">Using Tags</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
<code>tag-value</code>	Value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String

Filter Name	Description
<code>tag: <i>key</i></code>	Filters the results based on a specific tag/value combination. Example: To list just the resources assigned tag Purpose=X, then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> Example: To list just resources assigned tag Purpose=X OR Purpose=Y, then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> <code>Filter.1.Value.2=Y</code>

For more information about Amazon Virtual Private Cloud and VPN customer gateways, go to [Adding an IPsec Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<code>CustomerGatewayId.n</code>	A customer gateway ID. You can specify more than one in the request. Type: String Default: Returns information about all your customer gateways	No
<code>Filter.n.Name</code>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: Returns information about all your customer gateways or those you specify by ID.	No
<code>Filter.n.Value.m</code>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in an `DescribeCustomerGatewaysResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>customerGatewaySet</code>	A list of customer gateways. Each customer gateway's information is wrapped in an <code>element</code> . Type: <a href="#">CustomerGatewayType</a> (p. 363)



## 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/2011-12-01/" >
  <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. 47)
- [DeleteCustomerGateway](#) (p. 93)

# DescribeDhcpOptions

## Description

Gives you information about one or more sets of DHCP options. You can specify one or more DHCP options set IDs, or no IDs (to describe all your sets of DHCP options).

You can filter the results to return information only about sets of options that match criteria you specify. For example, you could get information for sets that have a certain value for the `domain-name` option. You can specify multiple values for the filter. The option must match at least one of the specified values for the options set to be included in the results.

You can specify multiple filters (e.g., a certain value for `domain-name`, and a tag with a certain value). The result includes information for a set of options only if the specified option matches *all* your filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>dchp-options-id</code>	The ID of a set of DHCP options. Type: String
<code>key</code>	The key for one of the options (e.g., <code>domain-name</code> ). Type: String
<code>value</code>	The value for one of the options. Type: String
<code>tag-key</code>	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 <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , 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=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, go to <a href="#">Using Tags</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
<code>tag-value</code>	Value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String

Filter Name	Description
<code>tag: <i>key</i></code>	<p>Filters the results based on a specific tag/value combination.</p> <p>Example: To list just the resources assigned tag Purpose=X, then specify:  <code>Filter.1.Name=tag:Purpose</code>  <code>Filter.1.Value.1=X</code></p> <p>Example: To list just resources assigned tag Purpose=X OR Purpose=Y, then specify:  <code>Filter.1.Name=tag:Purpose</code>  <code>Filter.1.Value.1=X</code>  <code>Filter.1.Value.2=Y</code></p>

For more information about Amazon Virtual Private Cloud and DHCP options sets, go to [Using DHCP Options in Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<code>DhcpOptionsId.n</code>	<p>A DHCP options set ID. You can specify more than one in the request.</p> <p>Type: String</p> <p>Default: Returns information about all your sets of DHCP options, or only those otherwise specified.</p>	No
<code>Filter.n.Name</code>	<p>Name of a filter. See the preceding table for a list of allowed filter names.</p> <p>Type: String</p> <p>Default: Returns information about all your sets of DHCP options, or only those you otherwise specify.</p>	No
<code>Filter.n.Value.m</code>	<p>A value for the filter. See the preceding table for a list of allowed values for each filter.</p> <p>Type: String</p> <p>Default: None</p>	No

## Response Elements

The elements in the following table are wrapped in a `DescribeDhcpOptionsResponse` structure.

Name	Description
<code>requestId</code>	<p>The ID of the request.</p> <p>Type: <code>xsd:string</code></p>

Name	Description
dhcpOptionsSet	A list of DHCP options sets. Each set's information is wrapped in an <code>item</code> element. Type: <a href="#">DhcpOptionsType</a> (p. 372) Ancestor: <code>DescribeDhcpOptionsResponse</code> Children: <code>item</code>

## 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

```
<DescribeDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <dhcpOptionsSet>
    <item>
      <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
      <dhcpConfigurationSet>
        <item>
          <key>domain-name</key>
          <valueSet>
            <item>
              <value>mydomain.com</value>
            </item>
          </valueSet>
        </item>
        <item>
          <key>domain-name-servers</key>
          <valueSet>
            <item>
              <value>10.2.5.1</value>
            </item>
          </valueSet>
        </item>
        <item>
          <key>domain-name-servers</key>
          <valueSet>
            <item>
              <value>10.2.5.2</value>
            </item>
          </valueSet>
        </item>
      </dhcpConfigurationSet>
    </item>
  </dhcpOptionsSet>
</tagSet/>
```

```
</item>  
</dhcpOptionsSet>  
</DescribeDhcpOptionsResponse>
```

## 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`.

```
https://ec2.amazonaws.com/?Action=DescribeDhcpOptions  
&Filter.1.Name=key  
&Filter.1.Value.1=domain-name  
&Filter.2.Name=value  
&Filter.2.Value.1=*example*  
&AUTHPARAMS
```

## Related Operations

- [CreateDhcpOptions](#) (p. 49)
- [AssociateDhcpOptions](#) (p. 17)
- [DeleteDhcpOptions](#) (p. 95)

# DescribeImageAttribute

## Description

Returns information about an attribute of an AMI. You can get information about only one attribute per call. 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 code associated with the AMI (if any)
- **blockDeviceMapping**—Block device mapping of the AMI

## Request Parameters

Name	Description	Required
<i>ImageId</i>	The AMI ID. Type: String Default: None	Yes
<i>Attribute</i>	The AMI attribute to get. Type: String Default: None Valid Values: <code>description   kernel   ramdisk   launchPermission   productCodes   blockDeviceMapping</code>	Yes

## Response Elements

The elements in the following table are wrapped in a `DescribeImageAttributeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>imageId</code>	The ID of the AMI. Type: <code>xsd:string</code>
<code>launchPermission</code>	A list of launch permissions. Each launch permission's information is wrapped in an <code>item</code> element. Type: <a href="#">LaunchPermissionItemType (p. 393)</a>
<code>productCodes</code>	A list of product codes. Each product code's information is wrapped in an <code>item</code> element. Type: <a href="#">ProductCodeItemType (p. 405)</a>

Name	Description
kernel	Kernel ID, wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
ramdisk	RAM disk ID, wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
description	User-created description of the AMI, wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
blockDeviceMapping	List of block device mappings. Each mapping's information is wrapped in an <code>item</code> element. Type: <a href="#">BlockDeviceMappingItemType</a> (p. 357)

## 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/2011-12-01/">
  <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

```
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-2bb65342</imageId>
  <productCodes>
    <item>
      <productCode>774F4FF8</productCode>
    </item>
  </productCodes>
</DescribeImageAttributeResponse>
```

## Related Operations

- [DescribeImages](#) (p. 155)
- [ModifyImageAttribute](#) (p. 284)
- [ResetImageAttribute](#) (p. 320)



# DescribelImages

## Description

Returns information about AMIs, AKIs, and ARIs. 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:

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

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.

If you specify a list of executable users, 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.

You can filter the results to return information only about images that match criteria you specify. For example, you could get information only about images that use a certain kernel. You can specify multiple values for a filter (e.g., the image uses either kernel `aki-1a2b3c4d` or kernel `aki-9b8c7d6f`). An image must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the image uses a certain kernel, and uses an Amazon EBS volume as the root device). The result includes information for a particular image 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 with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

**Amazon Elastic Compute Cloud API Reference  
Description**

<b>Filter Name</b>	<b>Description</b>
<code>architecture</code>	Image architecture. Type: String Valid Values: <code>i386</code>   <code>x86_64</code>
<code>block-device-mapping.delete-on-termination</code>	Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean
<code>block-device-mapping.device-name</code>	Device name (e.g., <code>/dev/sdh</code> ) for an Amazon EBS volume mapped to the image. Type: String
<code>block-device-mapping.snapshot-id</code>	Snapshot ID for an Amazon EBS volume mapped to the image. Type: String
<code>block-device-mapping.volume-size</code>	Volume size for an Amazon EBS volume mapped to the image. Type: Integer
<code>description</code>	Description of the AMI (provided during image creation). Type: String
<code>image-id</code>	ID of the image. Type: String
<code>image-type</code>	Type of image. Type: String Valid Values: <code>machine</code>   <code>kernel</code>   <code>ramdisk</code>
<code>is-public</code>	Whether the image is public. Type: Boolean
<code>kernel-id</code>	Kernel ID. Type: String
<code>manifest-location</code>	Location of the image manifest. Type: String
<code>name</code>	Name of the AMI (provided during image creation). Type: String
<code>owner-alias</code>	AWS account alias (e.g., <code>amazon</code> ) or AWS account ID that owns the AMI. Type: String
<code>owner-id</code>	AWS account ID of the image owner. Type: String

**Amazon Elastic Compute Cloud API Reference**  
**Description**

Filter Name	Description
platform	Use <code>windows</code> if you have Windows based AMIs; otherwise leave blank. Type: String Valid Value: <code>windows</code>
product-code	Product code associated with the AMI. Type: String
ramdisk-id	RAM disk ID. Type: String
root-device-name	Root device name of the AMI (e.g., <code>/dev/sda1</code> ). Type: String
root-device-type	Root device type the AMI uses. Type: String Valid Values: <code>ebs</code>   <code>instance-store</code>
state	State of the image. Type: String Valid Values: <code>available</code>   <code>pending</code>   <code>failed</code>
state-reason-code	Reason code for the state change. Type: String
state-reason-message	Message for the state change. Type: String
tag-key	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 <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , 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=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, go to <a href="#">Using Tags</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
tag-value	Value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String

Filter Name	Description
<code>tag:<i>key</i></code>	Filters the results based on a specific tag/value combination. Example: To list just the resources assigned tag Purpose=X, then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> Example: To list just resources assigned tag Purpose=X OR Purpose=Y, then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> <code>Filter.1.Value.2=Y</code>
<code>virtualization-type</code>	Virtualization type of the image. Type: String Valid Values: <code>paravirtual</code>   <code>hvm</code>
<code>hypervisor</code>	Hypervisor type of the image. Type: String Valid Values: <code>ovm</code>   <code>xen</code>

## Request Parameters

Name	Description	Required
<code>ExecutableBy.n</code>	Returns AMIs for which the specified user ID has explicit launch permissions. The user ID can be an AWS account ID, <code>self</code> to return AMIs for which the sender of the request has explicit launch permissions, or <code>all</code> to return AMIs with public launch permissions. Type: String Default: None	No
<code>ImageId.n</code>	One or more AMI IDs. Type: String Default: Returns all AMIs, or only those otherwise specified.	No
<code>Owner.n</code>	Returns AMIs owned by the specified owner. Multiple owner values can be specified. The IDs <code>amazon</code> and <code>self</code> can be used to include AMIs owned by Amazon or AMIs owned by you, respectively. Type: String Default: None	No
<code>Filter.n.Name</code>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No

Name	Description	Required
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in a `DescribeImagesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>imagesSet</code>	A list of images. Each image's information is wrapped in an <code>item</code> element. Type: <a href="#">DescribeImagesResponseItemType</a> (p. 364)

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-be3adfd7</imageId>
      <imageLocation>amazon/getting-started</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>206029621532</imageOwnerId>
      <isPublic>true</isPublic>
      <architecture>i386</architecture>
      <imageType>machine</imageType>
      <kernelId>aki-d3376696</kernelId>
      <ramdiskId>ari-e73766a2</ramdiskId>
      <imageOwnerAlias>amazon</imageOwnerAlias>
      <name>getting-started</name>
      <description>Fedora 8 v1.11 i386 lvm-rootVG-rootFS ext3 ec2pnp enabled</de
scription>
      <rootDeviceType>ebs</rootDeviceType>
```

```
<rootDeviceName>/dev/sda</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sda</deviceName>
    <ebs>
      <snapshotId>snap-32885f5a</snapshotId>
      <volumeSize>15</volumeSize>
      <deleteOnTermination>>false</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping>
<virtualizationType>paravirtual</virtualizationType>
<tagSet/>
<hypervisor>xen</hypervisor>
</item>
</imagesSet>
</DescribeImagesResponse>
```

## Example Request

This example filters the results to display 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-dd20c3b4</imageId>
      <imageLocation>ec2-public-windows-images/Server2003r2-x86_64-Win-
v1.07.manifest.xml</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>206029621532</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>
```

```
</imagesSet>  
</DescribeImagesResponse>
```

## Related Operations

- [DescribeInstances](#) (p. 165)
- [DescribeImageAttribute](#) (p. 152)

# DescribeInstanceAttribute

## Description

Returns information about an attribute of an instance. You can get information about only one attribute per call. These are the available attributes:

- **instanceType**—Instance type (e.g., m1.small)
- **kernel**—ID of the kernel associated with the instance
- **ramdisk**—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**—Root device name of the instance (e.g., `/dev/sda1`, or `xvda`)
- **blockDeviceMapping**—Block device mapping of the instance
- **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**—Security groups the instance belongs to

## Request Parameters

Name	Description	Required
<i>InstanceId</i>	The instance ID. Type: String Default: None	Yes
<i>Attribute</i>	The instance attribute to get. Type: String Default: None Valid Values: <code>instanceType</code>   <code>kernel</code>   <code>ramdisk</code>   <code>userData</code>   <code>disableApiTermination</code>   <code>instanceInitiatedShutdownBehavior</code>   <code>rootDeviceName</code>   <code>blockDeviceMapping</code>   <code>sourceDestCheck</code>   <code>groupSet</code>	Yes

## Response Elements

The elements in the following table are wrapped in a `DescribeInstanceAttributeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>



**Amazon Elastic Compute Cloud API Reference**  
**Response Elements**

Name	Description
<code>instanceId</code>	The ID of the instance. Type: <code>xsd:string</code>
<code>instanceType</code>	The instance type (e.g., <code>m1.small</code> ), wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
<code>kernel</code>	The kernel ID, wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
<code>ramdisk</code>	The RAM disk ID, wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
<code>userData</code>	MIME, Base64-encoded user data, wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
<code>disableApiTermination</code>	Boolean indicating whether the instance can be terminated through the Amazon EC2 API. The value is wrapped in a <code>value</code> element. A value of <code>true</code> means you can't terminate the instance using the API (i.e., the instance is "locked"); a value of <code>false</code> means you can. You must modify this attribute before you can terminate any "locked" instances using the API. Type: <code>xsd:boolean</code>
<code>instanceInitiatedShutdownBehavior</code>	If an instance shutdown is initiated, this determines whether the instance stops or terminates. The value is wrapped in a <code>value</code> element. Type: <code>xsd:string</code> Valid Values: <code>stop</code>   <code>terminate</code>
<code>rootDeviceName</code>	The root device name (e.g., <code>/dev/sda1</code> ), wrapped in a <code>value</code> element. Type: <code>xsd:string</code>
<code>blockDeviceMapping</code>	List of block device mappings for the instance. Each mapping's information is wrapped in an <code>item</code> element. Type: <a href="#">InstanceBlockDeviceMappingResponseItemType (p. 381)</a>
<code>sourceDestCheck</code>	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 <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, go to <a href="#">NAT Instances</a> in the <i>Amazon Virtual Private Cloud User Guide</i> . Type: <code>xsd:boolean</code>
<code>groupSet</code>	Security groups the instance belongs to. Each group's information is wrapped in an <code>item</code> element. Type: <a href="#">GroupItemType (p. 376)</a>

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-10a64379</instanceId>
  <kernel>
    <value>aki-f70657b2</value>
  </kernel>
</DescribeInstanceAttributeResponse>
```

## Related Operations

- [DescribeInstances](#) (p. 165)
- [ModifyInstanceAttribute](#) (p. 287)
- [ResetInstanceAttribute](#) (p. 322)

# DescribeInstances

## Description

Returns information about instances that you own.

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 will not be included in the returned results.

Recently terminated instances might appear in the returned results. This interval is usually less than one hour.

You can filter the results to return information only about instances that match criteria you specify. For example, you could get information about only instances launched with a certain key pair. You can specify multiple values for a filter (e.g., the instance was launched with either key pair A or key pair B). An instance must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the instance was launched with a certain key pair and uses an Amazon EBS volume as the root device). An instance must match *all* the filters for it to be included in the results. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: \* matches zero or more characters, and ? 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 shows the available filters.

Filter Name	Description
<code>architecture</code>	Instance architecture. Type: String Valid Values: <code>i386</code>   <code>x86_64</code>
<code>availability-zone</code>	Instance's Availability Zone. Type: String
<code>block-device-mapping.attach-time</code>	Attach time for an Amazon EBS volume mapped to the instance, e.g., 2010-09-15T17:15:20.000Z Type: <code>xsd:dateTime</code>
<code>block-device-mapping.delete-on-termination</code>	Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean
<code>block-device-mapping.device-name</code>	Device name (e.g., <code>/dev/sdh</code> ) for an Amazon EBS volume mapped to the instance. Type: String
<code>block-device-mapping.status</code>	Status for an Amazon EBS volume mapped to the instance. Type: String Valid Values: <code>attaching</code>   <code>attached</code>   <code>detaching</code>   <code>detached</code>

**Amazon Elastic Compute Cloud API Reference  
Description**

---

<b>Filter Name</b>	<b>Description</b>
<code>block-device-mapping.volume-id</code>	ID for an Amazon EBS volume mapped to the instance. Type: String
<code>client-token</code>	Idempotency token you provided when you launched the instance. Type: String
<code>dns-name</code>	Public DNS name of the instance. Type: String
<code>group-id</code>	ID of a EC2 security group the instance is in. This filter does not work for VPC security groups (instead, use <code>instance.group-id</code> ). Type: String
<code>group-name</code>	Name of a EC2 security group the instance is in. This filter does not work for VPC security groups (instead, use <code>instance.group-name</code> ). Type: String
<code>image-id</code>	ID of the image used to launch the instance. Type: String
<code>instance-id</code>	ID of the instance. Type: String
<code>instance-lifecycle</code>	Whether this is a Spot Instance. Type: String Valid Values: <code>spot</code>
<code>instance-state-code</code>	Code identifying the instance's state. A 16-bit unsigned integer. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented Type: Integer Valid Values: 0 (pending)   16 (running)   32 (shutting-down)   48 (terminated)   64 (stopping)   80 (stopped)
<code>instance-state-name</code>	Instance's state. Type: String Valid Values: <code>pending</code>   <code>running</code>   <code>shutting-down</code>   <code>terminated</code>   <code>stopping</code>   <code>stopped</code>
<code>instance-type</code>	Type of instance (e.g., <code>m1.small</code> ). Type: String

**Amazon Elastic Compute Cloud API Reference**  
**Description**

Filter Name	Description
<code>instance.group-id</code>	ID of a VPC security group the instance is in. This filter does not work for EC2 security groups (instead, use <code>group-id</code> ). Type: String
<code>instance.group-name</code>	Name of a VPC security group the instance is in. This filter does not work for EC2 security groups (instead, use <code>group-name</code> ). Type: String
<code>ip-address</code>	Public IP address of the instance. Type: String
<code>kernel-id</code>	Kernel ID. Type: String
<code>key-name</code>	Name of the key pair used when the instance was launched. Type: String
<code>launch-index</code>	When launching multiple instances at once, this is the index for the instance in the launch group (e.g., 0, 1, 2, etc.). Type: String
<code>launch-time</code>	Time instance was launched, e.g., 2010-08-07T11:54:42.000Z. Type: <code>xsd:dateTime</code>
<code>monitoring-state</code>	Whether monitoring is enabled for the instance. Type: String Valid Values: <code>disabled</code>   <code>enabled</code>
<code>owner-id</code>	AWS account ID of the instance owner. Type: String
<code>placement-group-name</code>	Name of the placement group the instance is in. Type: String
<code>platform</code>	Use <code>windows</code> if you have Windows based instances; otherwise, leave blank. Type: String Valid Value: <code>windows</code>
<code>private-dns-name</code>	Private DNS name of the instance. Type: String
<code>private-ip-address</code>	Private IP address of the instance. Type: String

**Amazon Elastic Compute Cloud API Reference  
Description**

<b>Filter Name</b>	<b>Description</b>
<code>product-code</code>	Product code associated with the AMI used to launch the instance. Type: String
<code>ramdisk-id</code>	RAM disk ID. Type: String
<code>reason</code>	Reason for the instance's current state (e.g., shows "User Initiated [date]" when you stop or terminate the instance). Similar to the state-reason-code filter. Type: String
<code>requester-id</code>	ID of the entity that launched the instance on your behalf (e.g., AWS Management Console, Auto Scaling, etc.) Type: String
<code>reservation-id</code>	ID of the instance's reservation. Type: String
<code>root-device-name</code>	Root device name of the instance (e.g., /dev/sda1). Type: String
<code>root-device-type</code>	Root device type the instance uses. Type: String Valid Values: <code>ebs</code>   <code>instance-store</code>
<code>source-dest-check</code>	Whether the instance 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 instance to perform Network Address Translation (NAT) in your VPC. Type: Boolean
<code>spot-instance-request-id</code>	ID of the Spot Instance request. Type: String
<code>state-reason-code</code>	Reason code for the state change. Type: String
<code>state-reason-message</code>	Message for the state change. Type: String
<code>subnet-id</code>	ID of the subnet the instance is in (if using Amazon Virtual Private Cloud). Type: String

Filter Name	Description
tag-key	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=X, see the tag:key filter later in this table. For more information about tags, go to <a href="#">Using Tags</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
tag-value	Value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String
tag:key	Filters the results based on a specific tag/value combination. Example: To list just the resources assigned tag Purpose=X, then specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources assigned tag Purpose=X OR Purpose=Y, then specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y
virtualization-type	Virtualization type of the instance. Type: String Valid Values: paravirtual   hvm
vpc-id	ID of the VPC the instance is in (if using Amazon Virtual Private Cloud). Type: String
hypervisor	Hypervisor type of the instance. Type: String Valid Values: ovm   xen

## Request Parameters

Name	Description	Required
InstanceId.n	One or more instance IDs. Type: String Default: Returns all instances, or only those otherwise specified.	No

Name	Description	Required
<i>Filter.n.Name</i>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

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

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>reservationSet</code>	A list of reservations. Each reservation's information is wrapped in an <code>item</code> element. Type: <a href="#">ReservationInfoType</a> (p. 407)

## 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/2011-11-15/' >
  <requestId>d70b71d8-33ee-420f-a9a6-aa8eb76976bf</requestId>
  <reservationSet>
    <item>
      <reservationId>r-93933bf2</reservationId>
      <ownerId>602767649040</ownerId>
      <groupSet/>
      <instancesSet>
        <item>
          <instanceId>i-9cc316fe</instanceId>
          <imageId>ami-31814f58</imageId>
          <instanceState>
            <code>272</code>
            <name>running</name>
```



```
</instanceState>
<privateDnsName/>
<dnsName/>
<reason/>
<amiLaunchIndex>0</amiLaunchIndex>
<productCodes/>
<instanceType>m1.small</instanceType>
<launchTime>2011-12-20T07:48:20.000Z</launchTime>
<placement>
  <availabilityZone>us-east-1b</availabilityZone>
  <groupName/>
  <tenancy>default</tenancy>
</placement>
<kernelId>aki-805ea7e9</kernelId>
<monitoring>
  <state>disabled</state>
</monitoring>
<subnetId>subnet-b2a249da</subnetId>
<vpcId>vpc-1ea24976</vpcId>
<privateIpAddress>10.0.0.4</privateIpAddress>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-050c1369</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<architecture>i386</architecture>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sda1</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sda1</deviceName>
    <ebs>
      <volumeId>vol-37d5b75a</volumeId>
      <status>attached</status>
      <attachTime>2011-12-20T07:49:00.000Z</attachTime>

      <deleteOnTermination>true</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping>
<virtualizationType>paravirtual</virtualizationType>
<clientToken/>
<hypervisor>xen</hypervisor>
<networkInterfaceSet>
  <item>
    <networkInterfaceId>eni-21a04b49</networkInterfaceId>

    <subnetId>subnet-b2a249da</subnetId>
    <vpcId>vpc-1ea24976</vpcId>
    <description/>
    <ownerId>602767649040</ownerId>
    <status>in-use</status>
    <privateIpAddress>10.0.0.4</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
```



```
<architecture>i386</architecture>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sda1</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sda1</deviceName>
    <ebs>
      <volumeId>vol-b52a47d8</volumeId>
      <status>attached</status>
      <attachTime>2011-12-20T08:30:21.000Z</attachTime>

      <deleteOnTermination>true</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping>
<virtualizationType>paravirtual</virtualizationType>
<clientToken/>
<hypervisor>xen</hypervisor>
<networkInterfaceSet>
  <item>
    <networkInterfaceId>eni-c6bb50ae</networkInterfaceId>

    <subnetId>subnet-b2a249da</subnetId>
    <vpcId>vpc-1ea24976</vpcId>
    <description/>
    <ownerId>602767649040</ownerId>
    <status>in-use</status>
    <privateIpAddress>10.0.0.142</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-050c1369</groupId>
        <groupName>default</groupName>
      </item>
    </groupSet>
    <attachment>
      <attachmentId>eni-attach-0326646a</attachmentId>

      <deviceIndex>0</deviceIndex>
      <status>attached</status>
      <attachTime>2011-12-20T08:29:31.000Z</attachTime>

      <deleteOnTermination>true</deleteOnTermination>
    </attachment>
  </item>
</networkInterfaceSet>
</instancesSet>
</item>
</reservationSet>
</DescribeInstancesResponse>
```

## Example Request

This example filters the results to display 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservationSet>
    <item>
      <reservationId>r-bc7e30d7</reservationId>
      <ownerId>999988887777</ownerId>
      <groupSet>
        <item>
          <groupId>sg-2eac845a</groupId>
          <groupName>default</groupName>
        </item>
      </groupSet>
      <instancesSet>
        <item>
          <instanceId>i-c7cd56ad</instanceId>
          <imageId>ami-b232d0db</imageId>
          <instanceState>
            <code>l6</code>
            <name>running</name>
          </instanceState>
          <privateDnsName>domU-12-31-39-01-76-06.compute-1.intern
al</privateDnsName>
          <dnsName>ec2-72-44-52-124.compute-1.amazonaws.com</dnsName>
          <keyName>GSG_Keypair</keyName>
          <amiLaunchIndex>0</amiLaunchIndex>
          <productCodes/>
          <instanceType>m1.small</instanceType>
          <launchTime>2010-08-17T01:15:16.000Z</launchTime>
          <placement>
            <availabilityZone>us-east-1b</availabilityZone>
          </placement>
          <kernelId>aki-94c527fd</kernelId>
          <ramdiskId>ari-96c527ff</ramdiskId>
          <monitoring>
            <state>disabled</state>
          </monitoring>
          <privateIpAddress>10.255.121.240</privateIpAddress>
          <ipAddress>72.44.52.124</ipAddress>
          <sourceDestCheck>true</sourceDestCheck>
```

```
<groupSet>
  <item>
    <groupId>sg-2eac845a</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<architecture>i386</architecture>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sda1</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sda1</deviceName>
    <ebs>
      <volumeId>vol-a482c1cd</volumeId>
      <status>attached</status>
      <attachTime>2010-08-17T01:15:26.000Z</attachTime>
      <deleteOnTermination>true</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping/>
<virtualizationType>paravirtual</virtualizationType>
<clientToken/>
<tagSet/>
<hypervisor>xen</hypervisor>
</item>
</instancesSet>
</item>
</reservationSet>
</DescribeInstancesResponse>
```

## Related Operations

- [RunInstances](#) (p. 334)
- [StopInstances](#) (p. 346)
- [StartInstances](#) (p. 344)
- [TerminateInstances](#) (p. 348)

# DescribeInstanceStatus

## Description

Describes the status of an Amazon Elastic Compute Cloud (Amazon EC2) instance. Instance status provides information about two 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.
- **Scheduled Retirement:** When Amazon EC2 determines that an instance must be shut down, the instance's status will return 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're also notified by email if one of your instances is set to retiring. The email message indicates when your instance will be permanently retired.

If your instance is permanently retired, it will not be restarted. You can avoid retirement by manually restarting your instance when its event code is `instance-retirement`. This ensures that your instance is started on a healthy host.

`DescribeInstanceStatus` returns information only for instances in the `running` state.

You can filter the results to return information only about instances that match criteria you specify. For example, you could get information about instances in a specific Availability Zone. You can specify multiple values for a filter (e.g., more than one Availability Zone). An instance must match at least one of the specified values for it to be included in the results.

You can specify multiple filters. An instance must match *all* the filters for it to be included in the results. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>availability-zone</code>	Instance's Availability Zone. Type: String
<code>event.code</code>	Code identifying the type of event. Type: String Valid Values: <code>instance-reboot</code>   <code>system-reboot</code>   <code>instance-retirement</code>
<code>event.description</code>	A description of the event. Type: String
<code>event.not-after</code>	The latest end time for the scheduled event. Type: <code>dateType</code>

Filter Name	Description
<code>event.not-before</code>	The earliest start time for the scheduled event. Type: <code>dateType</code>
<code>instance-state-name</code>	Intended state of the instance, e.g., <code>running</code> Type: <code>String</code>
<code>instance-state-code</code>	Code identifying the instance's state, e.g., <code>16</code> . Type: <code>Integer</code> Valid Values: <code>0</code> ( <code>pending</code> )   <code>16</code> ( <code>running</code> )   <code>32</code> ( <code>shutting-down</code> )   <code>48</code> ( <code>terminated</code> )   <code>64</code> ( <code>stopping</code> )   <code>80</code> ( <code>stopped</code> )

## Request Parameters

Name	Description	Required
<i>InstanceId</i>	The list of instance IDs. If not specified, all instances are described. Type: <code>String</code> Default: <code>None</code>	No
<i>MaxResults</i>	The maximum number of paginated instance items per response. Type: <code>Integer</code> Default: <code>None</code>	No
<i>NextToken</i>	A string specifying the next paginated set of results to return. Type: <code>String</code> Default: <code>None</code>	No

## Response Elements

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

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>String</code>
<code>InstanceStatusSet</code>	Attributes that describe the instance status and scheduled events. Type: <code>Collection</code>
<i>NextToken</i>	A string specifying the next paginated set of results to return. Type: <code>String</code>

## Examples

### Example Request

This example API action returns instance status descriptions for all instances.

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&Version=2011-11-01
&AuthParams
```

### Example Request

This example API action returns instance status descriptions for the specified instances.

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&InstanceId.0=i-0cf27c63
&InstanceId.1=i-283f9f47
&Version=2011-11-01
&AuthParams
```

### Example Request

This example API action returns instance status descriptions for all instances specified by with an event code for an instance reboot.

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&Filter.0.Name=event.code
&Filter.0.Value.1=instance-reboot
&Version=2011-11-01
&AuthParams
```

### Example Response

```
<DescribeInstanceStatusResponse xmlns="http://ec2.amazonaws.com/doc/2011-
11-01/">
  <requestId>5fccb074-37ed-4104-8671-a78ee36bf1cb</requestId>
  <instanceStatusSet>
    <item>
      <instanceId>i-6d9eaa0c</instanceId>
      <availabilityZone>us-east-1d</availabilityZone>
      <eventsSet>
        <item>
          <code>instance-reboot</code>
          <description>Maintenance software update.</description>
          <notBefore>2011-12-05T13:00:00.000Z</notBefore>
          <notAfter>2011-12-06T13:00:00.000Z</notAfter>
        </item>
      </eventsSet>
    </item>
  </instanceStatusSet>
</DescribeInstanceStatusResponse>
```



```
<instanceState>
  <code>16</code>
  <name>running</name>
</instanceState>
</item>
<item>
  <instanceId>i-ee7e508e</instanceId>
  <availabilityZone>us-east-1c</availabilityZone>
  <eventsSet>
    <item>
      <code>instance-reboot</code>
      <description>Maintenance software update.</description>
      <notBefore>2011-12-06T13:00:00.000Z</notBefore>
      <notAfter>2011-12-07T13:00:00.000Z</notAfter>
    </item>
  </eventsSet>
  <instanceState>
    <code>16</code>
    <name>running</name>
  </instanceState>
</item>
<item>
  <instanceId>i-1c654d7c</instanceId>
  <availabilityZone>us-east-1a</availabilityZone>
  <eventsSet>
    <item>
      <code>instance-reboot</code>
      <description>Maintenance software update.</description>
      <notBefore>2011-12-07T13:00:00.000Z</notBefore>
      <notAfter>2011-12-08T13:00:00.000Z</notAfter>
    </item>
  </eventsSet>
  <instanceState>
    <code>16</code>
    <name>running</name>
  </instanceState>
</item>
<item>
  <instanceId>i-893eb0ea</instanceId>
  <availabilityZone>us-east-1d</availabilityZone>
  <eventsSet>
    <item>
      <code>instance-reboot</code>
      <description>Maintenance software update.</description>
      <notBefore>2011-12-07T13:00:00.000Z</notBefore>
      <notAfter>2011-12-08T13:00:00.000Z</notAfter>
    </item>
  </eventsSet>
  <instanceState>
    <code>16</code>
    <name>running</name>
  </instanceState>
</item>
</instanceStatusSet>
</DescribeInstanceStatusResponse>
```

# DescribeInternetGateways

## Description

Gives you information about your Internet gateways. You can filter the results to return information only about Internet gateways that match criteria you specify. For example, you could get information only about gateways with particular tags. The Internet gateway must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the Internet gateway is attached to a particular VPC and is tagged with a particular value). The result includes information for a particular Internet gateway only if the gateway matches *all* your filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>attachment.state</code>	Current state of the attachment between the gateway and the VPC. Type: String Valid Values: <code>attaching</code>   <code>attached</code>   <code>detaching</code>   <code>detached</code>
<code>attachment.vpc-id</code>	ID of an attached VPC. Type: String
<code>internet-gateway-id</code>	ID of the Internet gateway. Type: String
<code>tag-key</code>	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 <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , 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=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, go to <a href="#">Using Tags</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
<code>tag-value</code>	Value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String

Filter Name	Description
<code>tag:<i>key</i></code>	Filters the results based on a specific tag/value combination. Example: To list just the resources assigned tag Purpose=X, then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> Example: To list just resources assigned tag Purpose=X OR Purpose=Y, then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> <code>Filter.1.Value.2=Y</code>

For more information about Amazon Virtual Private Cloud and Internet gateways, go to the [Amazon Virtual Private Cloud User Guide](#).

## Request Parameters

Name	Description	Required
<code>InternetGatewayId.n</code>	One or more Internet gateway IDs. Type: String Default: None	No
<code>Filter.n.Name</code>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<code>Filter.n.Value.m</code>	A value for the filter. See the preceding table for a list of allowed filter values for each filter. Type: String Default: None	No

## Response Elements

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

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>internetGatewaysSet</code>	A list of Internet gateways. Each gateway's information is wrapped in an <code>item</code> element. Type: <a href="#">InternetGatewayType</a> (p. 391)

## Examples

### Example Request

This example describes your Internet gateways.

```
https://ec2.amazonaws.com/?Action=DescribeInternetGateways
```

### Example Response

```
<DescribeInternetGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <internetGatewaySet>
    <item>
      <internetGatewayId>igw-eaad4883</internetGatewayId>
      <attachmentSet>
        <item>
          <vpcId>vpc-11ad4878</vpcId>
          <state>available</state>
        </item>
      </attachmentSet>
      <tagSet/>
    </item>
  </internetGatewaySet>
</DescribeInternetGatewaysResponse>
```

## Related Operations

- [CreateInternetGateway](#) (p. 54)
- [DeleteInternetGateway](#) (p. 97)
- [DetachInternetGateway](#) (p. 21)
- [DetachInternetGateway](#) (p. 259)

# DescribeKeyPairs

## Description

Returns information about key pairs available to you. If you specify key pairs, information about those key pairs is returned. Otherwise, information for all your key pairs is returned.

You can filter the results to return information only about key pairs that match criteria you specify. For example, you could filter the results to return only the key pairs whose names include the string `Dave`. You can specify multiple values for a filter. A key pair must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the key pair name includes the string `Dave`, and the fingerprint equals a certain value). The result includes information for a particular key pair 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 with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>fingerprint</code>	Fingerprint of the key pair. Type: String
<code>key-name</code>	Name of the key pair. Type: String

## Request Parameters

Name	Description	Required
<code>KeyName.n</code>	One or more key pair names. Type: String Default: Describes all key pairs you own, or only those otherwise specified.	No
<code>Filter.n.Name</code>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<code>Filter.n.Value.m</code>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in a `DescribeKeyPairsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>keySet</code>	List of key pairs. Each key pair's information is wrapped in an <code>item</code> element. Type: <a href="#">DescribeKeyPairsResponseItemType</a> (p. 366)

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <keySet>
    <item>
      <keyName>gsg-keypair</keyName>
      <keyFingerprint>
        1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f
      </keyFingerprint>
    </item>
  </keySet>
</DescribeKeyPairsResponse>
```

### Example Request

This example filters the results to display 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. 56)
- [ImportKeyPair](#) (p. 279)

- [DeleteKeyPair](#) (p. 99)

# DescribeNetworkAcls

## Description

Gives you information about the network ACLs in your VPC.

You can filter the results to return information only about ACLs that match criteria you specify. For example, you could get information only about the ACL associated with a particular subnet. The ACL must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the ACL is associated with a particular subnet and has an egress entry that denies traffic to a particular port). The result includes information for a particular ACL 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 with the filter values: \* matches zero or more characters, and ? 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 shows the available filters.

Filter Name	Description
<code>association.association-id</code>	ID of an association ID for the ACL. Type: String
<code>association.network-acl-id</code>	ID of the network ACL involved in the association. Type: String
<code>association.subnet-id</code>	ID of the subnet involved in the association. Type: String
<code>default</code>	Whether the ACL is the default network ACL in the VPC. Type: Boolean
<code>entry.cidr</code>	CIDR range specified in the entry. Type: String
<code>entry.egress</code>	Whether the entry applies to egress traffic. Type: Boolean
<code>entry.icmp.code</code>	The ICMP code specified in the entry, if any. Type: Integer
<code>entry.icmp.type</code>	The ICMP type specified in the entry, if any. Type: Integer
<code>entry.port-range.from</code>	Start of port range specified in the entry. Type: Integer
<code>entry.port-range.to</code>	End of port range specified in the entry. Type: Integer



**Amazon Elastic Compute Cloud API Reference**  
**Description**

Filter Name	Description
<code>entry.protocol</code>	Protocol specified in the entry. Type: String Valid Values: <code>tcp</code>   <code>udp</code>   <code>icmp</code> or a protocol number
<code>entry.rule-action</code>	Whether the entry allows or denies the matching traffic. Type: String Valid Values: <code>allow</code>   <code>deny</code>
<code>entry.rule-number</code>	Number of an entry (i.e., rule) in the ACL's set of entries. Type: Integer
<code>network-acl-id</code>	ID of the network ACL. Type: String
<code>tag-key</code>	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 <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , 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=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, go to <a href="#">Using Tags</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
<code>tag-value</code>	Value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String
<code>tag:key</code>	Filters the results based on a specific tag/value combination. Example: To list just the resources assigned tag <code>Purpose=X</code> , then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> Example: To list just resources assigned tag <code>Purpose=X</code> OR <code>Purpose=Y</code> , then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> <code>Filter.1.Value.2=Y</code>
<code>vpc-id</code>	The ID of the VPC the network ACL is in. Type: String

For more information about Amazon Virtual Private Cloud and network ACLs, go to [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>NetworkAclId.n</i>	One or more network ACL IDs. Type: string Default: None	No
<i>Filter.n.Name</i>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed filter values for each filter. Type: String Default: None	No

## Response Elements

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

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>networkAclSet</code>	A list of network ACLs. Each network ACL's information is wrapped in an <code>item</code> element. Type: <a href="#">NetworkAclType</a> (p. 399)

## 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.

```
<DescribeNetworkAclsResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <networkAclSet>
    <item>
```

```
<networkAclId>acl-5566953c</networkAclId>
<vpcId>vpc-5266953b</vpcId>
<default>true</default>
<entrySet>
  <item>
    <ruleNumber>100</ruleNumber>
    <protocol>all</protocol>
    <ruleAction>allow</ruleAction>
    <egress>true</egress>
    <cidrBlock>0.0.0.0/0</cidrBlock>
  </item>
  <item>
    <ruleNumber>32767</ruleNumber>
    <protocol>all</protocol>
    <ruleAction>deny</ruleAction>
    <egress>true</egress>
    <cidrBlock>0.0.0.0/0</cidrBlock>
  </item>
  <item>
    <ruleNumber>100</ruleNumber>
    <protocol>all</protocol>
    <ruleAction>allow</ruleAction>
    <egress>false</egress>
    <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>
  <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>
  </entrySet>
</item>
```

```
</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-c26596ab</networkAclAssociationId>
    <networkAclId>acl-5d659634</networkAclId>
    <subnetId>subnet-f0669599</subnetId>
  </item>
</associationSet>
<tagSet/>
</item>
</networkAclSet>
</DescribeNetworkAclsResponse>
```

## Related Operations

- [CreateNetworkAcl](#) (p. 58)
- [DeleteNetworkAcl](#) (p. 101)
- [ReplaceNetworkAclAssociation](#) (p. 306)
- [CreateNetworkAclEntry](#) (p. 60)
- [DeleteNetworkAclEntry](#) (p. 103)
- [ReplaceNetworkAclEntry](#) (p. 308)

# DescribeNetworkInterfaceAttribute

## Description

Describes a network interface attribute. Only one attribute can be specified per call.

## Request Parameters

Name	Description	Required
<i>NetworkInterfaceId</i>	The ID of the network interface. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `DescribeNetworkInterfaceAttribute` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>networkInterfaceId</code>	The ID of the network interface. Type: xsd:string

## Examples

### Example Request

This example

### Example Response

## Related Operations

- [AttachNetworkInterface](#) (p. 23)
- [DetachNetworkInterface](#) (p. 261)
- [CreateNetworkInterface](#) (p. 63)
- [DeleteNetworkInterface](#) (p. 105)
- [DescribeNetworkInterfaces](#) (p. 192)
- [ModifyNetworkInterfaceAttribute](#) (p. 290)
- [ResetNetworkInterfaceAttribute](#) (p. 324)

# DescribeNetworkInterfaces

## Description

Provides information about one or more network interfaces.

## Request Parameters

Name	Description	Required
networkInterfaceIdSet	The group ID or name to use when launching a network interface. Type: NetworkInterfaceIdSetType Default: None	No
Owner.n	The set of owner IDs you can filter by. Type: string Default: None	No
Filter.n.Name	The filter name to use. Type: string Default: None	No
Filter.n.Value.n	The filter value to use. Type: string Default: None	No

## Response Elements

The elements in the following table are wrapped in a `DeletePlacementGroupResponse` structure.

Name	Description
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 describes network interfaces.

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

## Example Response

```
<DescribeNetworkInterfacesResponse xmlns='http://ec2.amazonaws.com/doc/2011-11-15/'>
  <requestId>8ac55c54-792d-415b-a14c-3dffbc0aed2e</requestId>
  <networkInterfaceSet>
    <item>
      <networkInterfaceId>eni-ffda3197</networkInterfaceId>
      <subnetId>subnet-b2a249da</subnetId>
      <vpcId>vpc-1ea24976</vpcId>
      <availabilityZone>us-east-1b</availabilityZone>
      <description/>
      <ownerId>602767649040</ownerId>
      <requesterManaged>>false</requesterManaged>
      <status>available</status>
      <macAddress>06:01:92:a4:43:77</macAddress>
      <privateIpAddress>10.0.0.182</privateIpAddress>
      <sourceDestCheck>>true</sourceDestCheck>
      <groupSet>
        <item>
          <groupId>sg-050c1369</groupId>
          <groupName>default</groupName>
        </item>
      </groupSet>
      <tagSet/>
    </item>
    <item>
      <networkInterfaceId>eni-21a04b49</networkInterfaceId>
      <subnetId>subnet-b2a249da</subnetId>
      <vpcId>vpc-1ea24976</vpcId>
      <availabilityZone>us-east-1b</availabilityZone>
      <description/>
      <ownerId>602767649040</ownerId>
      <requesterManaged>>false</requesterManaged>
      <status>in-use</status>
      <macAddress>06:01:92:94:7d:52</macAddress>
      <privateIpAddress>10.0.0.4</privateIpAddress>
      <sourceDestCheck>>true</sourceDestCheck>
      <groupSet>
        <item>
          <groupId>sg-050c1369</groupId>
          <groupName>default</groupName>
        </item>
      </groupSet>
      <attachment>
        <attachmentId>eni-attach-0720626e</attachmentId>
        <instanceId>i-9cc316fe</instanceId>
        <instanceOwnerId>602767649040</instanceOwnerId>
        <deviceIndex>0</deviceIndex>
        <status>attached</status>
        <attachTime>2011-12-20T07:48:20.000Z</attachTime>
        <deleteOnTermination>>true</deleteOnTermination>
      </attachment>
      <tagSet/>
    </item>
    <item>
      <networkInterfaceId>eni-c6bb50ae</networkInterfaceId>
```

```
<subnetId>subnet-b2a249da</subnetId>
<vpcId>vpc-1ea24976</vpcId>
<availabilityZone>us-east-1b</availabilityZone>
<description/>
<ownerId>602767649040</ownerId>
<requesterManaged>>false</requesterManaged>
<status>in-use</status>
<macAddress>06:01:92:a7:f4:5c</macAddress>
<privateIpAddress>10.0.0.142</privateIpAddress>
<sourceDestCheck>>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-050c1369</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<attachment>
  <attachmentId>eni-attach-0326646a</attachmentId>
  <instanceId>i-0ee0356c</instanceId>
  <instanceOwnerId>602767649040</instanceOwnerId>
  <deviceIndex>0</deviceIndex>
  <status>attached</status>
  <attachTime>2011-12-20T08:29:31.000Z</attachTime>
  <deleteOnTermination>>true</deleteOnTermination>
</attachment>
<tagSet/>
</item>
</networkInterfaceSet>
</DescribeNetworkInterfacesResponse>
```

## Related Operations

- [AttachNetworkInterface](#) (p. 23)
- [DetachNetworkInterface](#) (p. 261)
- [CreateNetworkInterface](#) (p. 63)
- [DeleteNetworkInterface](#) (p. 105)
- [DescribeNetworkInterfaceAttribute](#) (p. 191)
- [ModifyNetworkInterfaceAttribute](#) (p. 290)
- [ResetNetworkInterfaceAttribute](#) (p. 324)



# DescribePlacementGroups

## Description

Returns information about one or more placement groups in your account. For more information about placement groups and cluster instances, go to [Using Cluster Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

You can filter the results to return information only about placement groups that match criteria you specify. For example, you could filter the results to return only the groups whose state is `deleted`. You can specify multiple values for a filter. A placement group must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the group's state is `deleted` and the name includes the string `Project`). The result includes information for a particular 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 with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>group-name</code>	Name of the placement group. Type: String
<code>state</code>	Placement group's state. Type: String Valid Values: <code>pending</code>   <code>available</code>   <code>deleting</code>   <code>deleted</code>
<code>strategy</code>	Placement group's strategy. Type: String Valid Value: <code>cluster</code>

## Request Parameters

Name	Description	Required
<code>GroupName.n</code>	One or more placement group names. Type: string Default: Describes all your placement groups, or only those otherwise specified.	No
<code>Filter.n.Name</code>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No

Name	Description	Required
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

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

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>placementGroupSet</code>	A list of placement groups. Each group's information is wrapped in an <code>item</code> element. Type: <a href="#">PlacementGroupInfoType</a> (p. 402)

## 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

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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 results to display only placement groups that include the string `Project` in the name.

```
https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&Filter.1.Name=group-name
&Filter.1.Value=*Project*
&AUTHPARAMS
```

## Related Operations

- [CreatePlacementGroup](#) (p. 65)
- [DeletePlacementGroup](#) (p. 107)

# DescribeRegions

## Description

Describes Regions that are currently available to the account.

You can use filters with this call just as you can with other "describe" calls.

You can use wildcards with the filter values: \* matches zero or more characters, and ? 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 shows the available filters.

Filter Name	Description
endpoint	Region's endpoint (e.g., ec2.us-east-1.amazonaws.com). Type: String
region-name	Name of the Region. Type: String

## Request Parameters

Name	Description	Required
<i>RegionName.n</i>	One or more Region names. Type: String Default: Describes all Regions available to the account.	No
<i>Filter.n.Name</i>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in a `DescribeRegionsResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string

Name	Description
regionInfo	List of Regions. Each Region's information is wrapped in an <code>item</code> element. Type: <a href="#">RegionItemType</a> (p. 406)

## Examples

### Example Request

This example displays information about all Regions.

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

### 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
&AUTHPARAMS
```

### Example Response

```
<DescribeRegionsResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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*
&AUTHPARAMS
```

## Example Response

```
<DescribeRegionsResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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. 137)
- [RunInstances](#) (p. 334)

# DescribeReservedInstances

## Description

Describes 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, go to [Reserved Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

You can filter the results to return information about Reserved Instances that matches criteria you specify. For example, you could get information about Reserved Instances in a particular Availability Zone. Or you can specify multiple values for a filter. A Reserved Instance must match at least one of the specified values for it to be included in the results.

You can specify multiple filters as well. For example, you could specify that your Reserved Instance must be in a particular Availability Zone and must be tagged with a particular value. The result includes information for a particular instance only if it matches *all* of your filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>availability-zone</code>	Availability Zone where the Reserved Instance can be used. Type: String
<code>duration</code>	Duration of the Reserved Instance (one year or three years), in seconds. Type: <code>xs:long</code> Valid Values: <code>31536000</code>   <code>94608000</code>
<code>fixed-price</code>	Purchase price of the Reserved Instance (e.g., <code>9800.0</code> ) Type: <code>xs:double</code>
<code>instance-type</code>	Instance type on which the Reserved Instance can be used. Type: String
<code>product-description</code>	Reserved Instance description. Type: String Valid Values: <code>Linux/UNIX</code>   <code>Linux/UNIX (Amazon VPC)</code>   <code>Windows</code>   <code>Windows (Amazon VPC)</code>

Filter Name	Description
reserved-instances-id	Reserved Instance's ID. Type: String
start	Time the Reserved Instance purchase request was placed, e.g., 2010-08-07T11:54:42.000Z. Type: xsd:dateTime
state	State of the Reserved Instance. Type: String Valid Values: pending-payment   active   payment-failed   retired
tag-key	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=X, see the tag:key filter later in this table. For more information about tags, go to <a href="#">Using Tags</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
tag-value	Value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String
tag:key	Filters the results based on a specific tag/value combination. Example: To list just the resources assigned tag Purpose=X, then specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources assigned tag Purpose=X OR Purpose=Y, then specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y
usage-price	Usage price of the Reserved Instance, per hour (e.g., 0.84) Type: xs:double

## Request Parameters

Name	Description	Required
<i>ReservedInstancesId</i> . <i>n</i>	One or more Reserved Instance IDs. Type: String Default: Describes all your Reserved Instances, or only those otherwise specified.	No



Name	Description	Required
<i>Filter.n.Name</i>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No
<i>offeringType</i>	The Reserved Instance offering type. Type: String Valid Values: Heavy Utilization   Medium Utilization   Light Utilization	No

## Response Elements

The elements in the following table are wrapped in a `DescribeReservedInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>reservedInstancesSet</code>	A list of Reserved Instances. Each Reserved Instance's information is wrapped in an <code>item</code> element. Type: <a href="#">DescribeReservedInstancesResponseSetItemType</a> (p. 368)

## Examples

### Example Request

This example describes Reserved Instances owned by your account.

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

### Example Response

```
<DescribeReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesSet>
    <item>
      <reservedInstancesId>4b2293b4-5813-4cc8-9ce3-1957fc1dcfc8</reservedInstancesId>
      <instanceType>m1.xlarge</instanceType>
```

```
<availabilityZone>us-east-1a</availabilityZone>
<duration>31536000</duration>
<fixedPrice>1820.0</fixedPrice>
<usagePrice>0.24</usagePrice>
<instanceCount>3</instanceCount>
<productDescription>Linux/UNIX</productDescription>
<state>active</state>
<tagSet/>
</item>
</reservedInstancesSet>
</DescribeReservedInstancesResponse>
```

## Example Request

This example filters the results to display only one-year, m1.small Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with Amazon 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. 296)
- [DescribeReservedInstancesOfferings](#) (p. 205)

# 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 (without getting insufficient capacity errors) and pay a lower usage rate 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 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 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 more information about Reserved Instances, go to [Reserved Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

Our policy is to provide filters for all *describe* calls so you can limit the results to your specified criteria. Therefore, you can use filters to limit the results when describing Reserved Instances offerings, even though you can use the regular request parameters to do something similar.

For example, you could use the regular request parameters or a filter to get the offerings for a particular instance type. You can specify multiple request parameters or multiple filters (e.g., limit the results to the `m2.xlarge` instance type, and only for Windows instances). The result includes information for a particular offering only if it matches *all* your request parameters or filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>availability-zone</code>	Availability Zone where the Reserved Instance can be used. Type: String
<code>duration</code>	Duration of the Reserved Instance (e.g., one year or three years), in seconds. Type: <code>xs:long</code> Valid Values: 31536000   94608000
<code>fixed-price</code>	Purchase price of the Reserved Instance (e.g., 9800.0) Type: <code>xs:double</code>
<code>instance-type</code>	Instance type on which the Reserved Instance can be used. Type: String

Filter Name	Description
product-description	Reserved Instance description. Type: String Valid Values: Linux/UNIX   Linux/UNIX (Amazon VPC)   Windows   Windows (Amazon VPC)
reserved-instances-offering-id	Reserved Instances offering ID. Type: String
usage-price	Usage price of the Reserved Instance, per hour (e.g., 0.84) Type: xs:double

## Request Parameters

Name	Description	Required
<i>ReservedInstancesOfferingId.n</i>	One or more Reserved Instances offering IDs. Type: String Default: None	No
<i>InstanceType</i>	The instance type on which the Reserved Instance can be used. Type: String Default: None	No
<i>AvailabilityZone</i>	The Availability Zone in which the Reserved Instance can be used. Type: String Default: None	No
<i>ProductDescription</i>	The Reserved Instance description. Instances that include (Amazon VPC) in the description are for use with Amazon VPC. Type: String Valid Values: Linux/UNIX   Linux/UNIX (Amazon VPC)   Windows   Windows (Amazon VPC) Default: None	No
<i>Filter.n.Name</i>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

Name	Description	Required
<i>instanceTenancy</i>	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   dedicated Default: default	No
<i>offeringType</i>	The Reserved Instance offering type. Type: String Valid Values: Heavy Utilization   Medium Utilization   Light Utilization Default: none	No

## Response Elements

The elements in the following table are wrapped in a `DescribeReservedInstancesOfferingsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>reservedInstancesOfferingsSet</code>	A list of Reserved Instances offerings. Each offering's information is wrapped in an <code>item</code> element. Type: <a href="#">DescribeReservedInstancesOfferingsResponseSetItemType</a> (p. 367)

## Examples

### 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/2011-12-01/">
  <requestId>48692a1d-3036-48fd-8c0e-d34681b97efd</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>248e7b75-c83a-48c1-bcf7-
b7f03e9c43fe</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 results to display only one-year, m1.small or m1.large Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with Amazon VPC, set the product description to Linux/UNIX (Amazon VPC).

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.1.Name=duration
&Filter.1.Value.1=31536000
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
&Filter.2.Value.2=m1.large
&Filter.3.Name=product-description
&Filter.3.Value.1=Linux/UNIX
&AUTHPARAMS
```

## Related Operations

- [PurchaseReservedInstancesOffering](#) (p. 296)
- [DescribeReservedInstances](#) (p. 201)

# DescribeRouteTables

## Description

Gives you information about your route tables. You can filter the results to return information only about tables that match criteria you specify. For example, you could get information only about a table associated with a particular subnet. You can specify multiple values for the filter. The table must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the table has a particular route, and is associated with a particular subnet). The result includes information for a particular table 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 with the filter values: \* matches zero or more characters, and ? 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 shows the available filters.

Filter Name	Description
<code>association.route-table-association-id</code>	ID of an association ID for the route table. Type: String
<code>association.route-table-id</code>	ID of the route table involved in the association. Type: String
<code>association.subnet-id</code>	ID of the subnet involved in the association. Type: String
<code>association.main</code>	Whether the route table is the main route table in the VPC. Type: Boolean
<code>route-table-id</code>	ID of the route table. Type: String
<code>route.destination-cidr-block</code>	CIDR range specified in a route in the table. Type: String
<code>route.gateway-id</code>	ID of a gateway specified in a route in the table. Type: String
<code>route.instance-id</code>	ID of an instance specified in a route in the table. Type: String
<code>route.state</code>	State of a route in the route table. The <code>blackhole</code> 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.). Type: String Valid Values: <code>active</code>   <code>blackhole</code>

Filter Name	Description
tag-key	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=X, see the tag:key filter later in this table. For more information about tags, go to <a href="#">Using Tags</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
tag-value	Value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String
tag:key	Filters the results based on a specific tag/value combination. Example: To list just the resources assigned tag Purpose=X, then specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources assigned tag Purpose=X OR Purpose=Y, then specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y
vpc-id	The ID of the VPC the route table is in. Type: String

For more information about Amazon Virtual Private Cloud and route tables, go to [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>RouteTableId.n</i>	One or more route table IDs. Type: string Default: Returns all route tables, or only those otherwise specified.	No
<i>Filter.n.Name</i>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No



Name	Description	Required
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed filter values for each filter. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in a `DescribeRouteTablesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>routeTableSet</code>	A list of route tables. Each table's information is wrapped in an <code>item</code> element. Type: <a href="#">RouteTableType</a> (p. 409)

## 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

```
DescribeRouteTablesResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>6f570b0b-9c18-4b07-bdec-73740dcf861a</requestId>
  <routeTableSet>
    <item>
      <routeTableId>rtb-13ad487a</routeTableId>
      <vpcId>vpc-11ad4878</vpcId>
      <routeSet>
        <item>
          <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
          <gatewayId>local</gatewayId>
          <state>active</state>
        </item>
      </routeSet>
      <associationSet>
        <item>
          <routeTableAssociationId>rtbassoc-12ad487b</routeTableAssoci
ationId>
```

```
        <routeTableId>rtb-13ad487a</routeTableId>
        <main>true</main>
      </item>
    </associationSet>
  </tagSet/>
</item>
<item>
  <routeTableId>rtb-f9ad4890</routeTableId>
  <vpcId>vpc-11ad4878</vpcId>
  <routeSet>
    <item>
      <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
      <gatewayId>local</gatewayId>
      <state>active</state>
    </item>
    <item>
      <destinationCidrBlock>0.0.0.0/0</destinationCidrBlock>
      <gatewayId>igw-eaad4883</gatewayId>
      <state>active</state>
    </item>
  </routeSet>
  <associationSet>
    <item>
      <routeTableAssociationId>rtbassoc-faad4893</routeTableAssoci
ationId>
      <routeTableId>rtb-f9ad4890</routeTableId>
      <subnetId>subnet-15ad487c</subnetId>
    </item>
  </associationSet>
  </tagSet/>
</item>
</routeTableSet>
</DescribeRouteTablesResponse>
```

## Related Operations

- [AssociateRouteTable](#) (p. 19)
- [DisassociateRouteTable](#) (p. 269)
- [DeleteRouteTable](#) (p. 111)
- [CreateRouteTable](#) (p. 70)
- [ReplaceRouteTableAssociation](#) (p. 313)

# DescribeSecurityGroups

## Description

Returns information about security groups in your account. This includes both EC2 security groups and VPC security groups. For information about how the two types of groups differ, go to [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*.

You can filter the results to return information only about security groups that match criteria you specify. For example, you could get information about groups whose name contains a particular string. You can specify multiple values for a filter. A security group must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the group's name contains a particular string, and the group gives permission to another security group with a different string in its name). The result includes information for a particular group only if it matches *all* your filters. 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, let's say you want to get all groups that have access on port 22. And let's say 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), GroupA will not be returned in the results. It will only be returned in the results if you specify `ip-permission.from-port=20` or `ip-permission.to-port=30` (or both).

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>description</code>	Description of the security group. Type: String
<code>group-id</code>	ID of the security group. Type: String
<code>group-name</code>	Name of the security group. Type: String
<code>ip-permission.cidr</code>	CIDR range that has been granted the permission. Type: String
<code>ip-permission.from-port</code>	Start of port range for the TCP and UDP protocols, or an ICMP type number. Type: String

Filter Name	Description
<code>ip-permission.group-name</code>	Name of security group that has been granted the permission. Type: String
<code>ip-permission.protocol</code>	IP protocol for the permission. Type: String Valid Values: <code>tcp</code>   <code>udp</code>   <code>icmp</code> or a protocol number
<code>ip-permission.to-port</code>	End of port range for the TCP and UDP protocols, or an ICMP code. Type: String
<code>ip-permission.user-id</code>	ID of AWS account that has been granted the permission. Type: String
<code>owner-id</code>	AWS account ID of the owner of the security group. Type: String
<code>tag-key</code>	Key of a tag assigned to the security group. Type: String
<code>tag-value</code>	Value of a tag assigned to the security group. Type: String

## Request Parameters

Name	Description	Required
<i>GroupName.n</i>	One or more security group names. Type: String Default: Describes all groups you own, or only those otherwise specified.	No
<i>GroupId.n</i>	One or more security group IDs. Type: String Default: Describes all groups you own, or only those otherwise specified.	No
<i>Filter.n.Name</i>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in a `DescribeSecurityGroupsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>securityGroupInfo</code>	List of security groups. Each group's information is wrapped in an <code>item</code> element. Type: <a href="#">SecurityGroupItemType</a> (p. 414)

## 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

```
<DescribeSecurityGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <securityGroupInfo>
    <item>
      <ownerId>999988887777</ownerId>
      <groupId>sg-443d0a12</groupId>
      <groupName>WebServers</groupName>
      <groupDescription>Web Servers</groupDescription>
      <vpcId/>
      <ipPermissions>
        <item>
          <ipProtocol>tcp</ipProtocol>
          <fromPort>80</fromPort>
          <toPort>80</toPort>
          <groups/>
          <ipRanges>
            <item>
              <cidrIp>0.0.0.0/0</cidrIp>
            </item>
          </ipRanges>
        </item>
      </ipPermissions>
      <ipPermissionsEgress/>
      <tagSet/>
    </item>
```

```
<item>
  <ownerId>999988887777</ownerId>
  <groupId>sg-5ff8a023</groupId>
  <groupName>RangedPortsBySource</groupName>
  <groupDescription>Group A</groupDescription>
  <ipPermissions>
    <item>
      <ipProtocol>tcp</ipProtocol>
      <fromPort>6000</fromPort>
      <toPort>7000</toPort>
      <groups>
        <item>
          <userId>999988887777</userId>
          <groupId>sg-99gh4012</groupId>
          <groupName>Group B</groupName>
        </item>
      </groups>
      <ipRanges/>
    </item>
  </ipPermissions>
  <ipPermissionsEgress/>
  <tagSet/>
</item>
</securityGroupInfo>
</DescribeSecurityGroupsResponse>
```

## 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`.

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&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. 72)
- [AuthorizeSecurityGroupIngress](#) (p. 32)
- [RevokeSecurityGroupIngress](#) (p. 331)
- [DeleteSecurityGroup](#) (p. 113)

# DescribeSnapshotAttribute

## Description

Returns information about an attribute of a snapshot. You can get information about only one attribute per call. Currently the only attribute you can get describes who has permission to create a volume from the snapshot.

## Request Parameters

Name	Description	Required
<i>SnapshotId</i>	The ID of the Amazon EBS snapshot. Type: String Default: None	Yes
<i>Attribute</i>	The attribute to get. Type: String Default: None Valid Value: <code>createVolumePermission</code>	Yes

## Response Elements

The elements in the following table are wrapped in a `DescribeSnapshotAttributeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>snapshotId</code>	The ID of the Amazon EBS snapshot. Type: <code>xsd:string</code>
<code>createVolumePermission</code>	List of permissions for creating volumes from the snapshot. Each permission is wrapped in an <code>item</code> element. Type: <a href="#">CreateVolumePermissionItemType</a> (p. 362)

## Examples

### Example Request

This example describes permissions for the `snap-78a54011` snapshot.

```
https://ec2.amazonaws.com/?Action=DescribeSnapshotAttribute
&SnapshotId=snap-78a54011
&Attribute=createVolumePermission
&AUTHPARAMS
```

## Example Response

```
<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotId>snap-78a54011</snapshotId>
  <createVolumePermission>
    <item>
      <group>all</group>
    </item>
  </createVolumePermission>
</DescribeSnapshotAttributeResponse>
```

## Related Operations

- [ModifySnapshotAttribute](#) (p. 292)
- [DescribeSnapshots](#) (p. 219)
- [ResetSnapshotAttribute](#) (p. 326)
- [CreateSnapshot](#) (p. 74)



# DescribeSnapshots

## Description

Returns information about 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:

Permission	Description
public	The owner of the snapshot granted create volume permissions for the snapshot to the <code>all</code> group. All AWS accounts have create volume permissions for these snapshots.
explicit	The owner of the snapshot granted create volume permissions to a specific AWS account.
implicit	An AWS account has implicit create volume permissions for all snapshots it owns.

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

If you specify one or more snapshot IDs, only snapshots that have the specified IDs are returned. If you specify an invalid snapshot ID, an error is returned. If you specify a snapshot ID for which you do not have access, it 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.

You can filter the results to return information only about snapshots that match criteria you specify. For example, you could get information about snapshots whose status is `pending`. You can specify multiple values for a filter (e.g., the snapshot's status is either `pending` or `completed`). A snapshot must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the snapshot's status is `pending`, and it is tagged with a particular value). The result includes information for a particular snapshot 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 with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

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Description**

Filter Name	Description
description	Description of the snapshot. Type: String
owner-alias	The AWS account alias (e.g., amazon) that owns the snapshot. Type: String
owner-id	ID of the AWS account that owns the snapshot. Type: String
progress	The progress of the snapshot, in percentage (e.g., 80%). Type: String
snapshot-id	Snapshot ID. Type: String
start-time	Time stamp when the snapshot was initiated. Type: xsd:dateTime
status	Status of the snapshot. Type: String Valid Values: pending   completed   error
tag-key	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=X, see the tag:key filter later in this table. For more information about tags, go to <a href="#">Using Tags</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
tag-value	Value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String
tag:key	Filters the results based on a specific tag/value combination. Example: To list just the resources assigned tag Purpose=X, then specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources assigned tag Purpose=X OR Purpose=Y, then specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y
volume-id	ID of the volume the snapshot is for. Type: String
volume-size	The size of the volume, in GiB (e.g., 20). Type: String

## Request Parameters

Name	Description	Required
<i>SnapshotId.n</i>	One or more snapshot IDs. Type: String Default: Describes snapshots for which you have launch permissions.	No
<i>Owner.n</i>	Returns snapshots owned by the specified owner. Multiple owners can be specified. Type: String Valid Values: <code>self</code>   <code>amazon</code>   AWS Account ID Default: None	No
<i>RestorableBy.n</i>	One or more AWS accounts IDs that can create volumes from the snapshot. Type: String Default: None	No
<i>Filter.n.Name</i>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in a `DescribeSnapshotsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>snapshotSet</code>	List of snapshots. Each snapshot's information is wrapped in an <code>item</code> element. Type: <a href="#">DescribeSnapshotsSetItemResponseType</a> (p. 369)

## Examples

### Example Request

This example describes snapshot `snap-78a54011`.

```
https://ec2.amazonaws.com/?Action=DescribeSnapshots
&SnapshotId=snap-78a54011
&AUTHPARAMS
```

## Example Response

```
<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotSet>
    <item>
      <snapshotId>snap-78a54011</snapshotId>
      <volumeId>vol-4d826724</volumeId>
      <status>pending</status>
      <startTime>2008-05-07T12:51:50.000Z</startTime>
      <progress>80&#x0025;</progress>
      <ownerId>&exampleuid;</ownerId>
      <volumeSize>10</volumeSize>
      <description>Daily Backup</description>
      <tagSet/>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

## Example Request

This example filters the results to display 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotSet>
    <item>
      <snapshotId>snap-1a2b3c4d</snapshotId>
      <volumeId>vol-8875daef</volumeId>
      <status>pending</status>
      <startTime>2010-07-29T04:12:01.000Z</startTime>
      <progress>30%</progress>
      <ownerId>&exampleuid;</ownerId>
      <volumeSize>15</volumeSize>
      <description>Daily Backup</description>
      <tagSet>
        <item>
          <key>Purpose</key>
          <value>demo_db_14_backup</value>
        </item>
      </tagSet>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

```
        </item>  
      </tagSet>  
    </item>  
  </snapshotSet>  
</DescribeSnapshotsResponse>
```

## Related Operations

- [CreateSnapshot](#) (p. 74)
- [DeleteSnapshot](#) (p. 115)

# DescribeSpotDatafeedSubscription

## Description

Describes the datafeed for Spot Instances. For more information about Spot Instances, go to [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` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>spotDatafeedSubscription</code>	The Spot Instance datafeed subscription. Type: <a href="#">SpotDatafeedSubscriptionType</a> (p. 415)

## Examples

### Example Request

This example describes the datafeed for the account.

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

### Example Response

```
<DescribeSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazon
aws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>&exampleuid;</ownerId>
    <bucket>mybucket</bucket>
    <prefix>spotdata</prefix>
    <state>Active</state>
  </spotDatafeedSubscription>
</DescribeSpotDatafeedSubscriptionResponse>
```

## Related Operations

- [CreateSpotDatafeedSubscription](#) (p. 77)

- [DeleteSpotDatafeedSubscription](#) (p. 117)

# 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, go to [Spot Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

You can filter the results to return information only about Spot Instance requests that match criteria you specify. For example, you could get information about requests where the Spot Price you specified is a certain value (however, you can't use greater than or less than comparison, but you can use \* and ? wildcards). You can specify multiple values for a filter. A Spot Instance request must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the Spot Price is equal to a particular value, and the instance type is m1.small). The result includes information for a particular request 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 with the filter values: \* matches zero or more characters, and ? 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 shows the available filters.

Filter Name	Description
<code>availability-zone-group</code>	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
<code>create-time</code>	Time stamp when the Spot Instance request was created. Type: String
<code>fault-code</code>	Fault code related to the request. Type: String
<code>fault-message</code>	Fault message related to the request. Type: String
<code>instance-id</code>	ID of the instance that fulfilled the request. Type: String
<code>launch-group</code>	Spot Instance launch group. Launch groups are Spot Instances that launch together and terminate together. Type: String
<code>launch.block-device-mapping.delete-on-termination</code>	Whether an Amazon EBS volume mapped to the instance is deleted on instance termination. Type: Boolean



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Filter Name	Description
<code>launch.block-device-mapping.device-name</code>	Device name (e.g., <code>/dev/sdh</code> ) for an Amazon EBS volume mapped to the instance. Type: String
<code>launch.block-device-mapping.snapshot-id</code>	ID for a snapshot mapped to the instance. Type: String
<code>launch.block-device-mapping.volume-size</code>	Size of an Amazon EBS volume mapped to the instance (in GiB). Type: String
<code>launch.group-id</code>	A security group the instance is in. Type: String
<code>launch.image-id</code>	The AMI ID. Type: String
<code>launch.instance-type</code>	Type of instance (e.g., <code>m1.small</code> ). Type: String
<code>launch.kernel-id</code>	Kernel ID. Type: String
<code>launch.key-name</code>	Name of the key pair the instance launched with. Type: String
<code>launch.monitoring-enabled</code>	Whether monitoring is enabled for the Spot Instance. Type: Boolean
<code>launch.ramdisk-id</code>	RAM disk ID. Type: String
<code>product-description</code>	Product description associated with the instance. Type: String Valid Values: <code>Linux/UNIX</code>   <code>Windows</code>
<code>spot-instance-request-id</code>	Spot Instance request ID. Type: String
<code>spot-price</code>	Maximum hourly price for any Spot Instance launched to fulfill the request. Type: String
<code>state</code>	State of the Spot Instance request. Type: String Valid Values: <code>active</code>   <code>cancelled</code>   <code>open</code>   <code>closed</code>   <code>failed</code>

**Amazon Elastic Compute Cloud API Reference  
Description**

Filter Name	Description
tag-key	<p>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=X, see the tag:key filter later in this table.</p> <p>For more information about tags, go to <a href="#">Using Tags</a> in the <i>Amazon Elastic Compute Cloud User Guide</i>.</p> <p>Type: String</p>
tag-value	<p>Value of a tag assigned to the resource. This filter is independent of the tag-key filter.</p> <p>Type: String</p>
tag:key	<p>Filters the results based on a specific tag/value combination.</p> <p>Example: To list just the resources assigned tag Purpose=X, then specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X</pre> <p>Example: To list just resources assigned tag Purpose=X OR Purpose=Y, then specify:</p> <pre>Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y</pre>
type	<p>Type of Spot Instance request.</p> <p>Type: String</p> <p>Valid Values: one-time   persistent</p>
launched-availability-zone	<p>The Availability Zone in which the bid is launched.</p> <p>Type: String</p> <p>Valid Values: us-east-1a, etc.</p>
valid-from	<p>Start date of the request.</p> <p>Type: xsd:dateTime</p>
valid-until	<p>End date of the request.</p> <p>Type: xsd:dateTime</p>

## Request Parameters

Name	Description	Required
<i>SpotInstanceRequestIds.n</i>	One or more Spot Instance request IDs. Type: String Default: None	No
<i>Filter.n.Name</i>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in a `DescribeSpotInstanceRequestsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>spotInstanceRequestSet</code>	A list of Spot Instance requests. Each request's information is wrapped in an <code>item</code> element. Type: <a href="#">SpotInstanceRequestSetItemType</a> (p. 416)

## 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/2011-12-01/"
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
```

```
<spotInstanceRequestId>sir-e1471206</spotInstanceRequestId>
<spotPrice>0.09</spotPrice>
<type>one-time</type>
<state>active</state>
<launchSpecification>
  <imageId>ami-813968c4</imageId>
  <keyName>MyKey</keyName>
  <groupSet>
    <item>
      <groupId>default</groupId>
    </item>
  </groupSet>
  <instanceType>m1.small</instanceType>
  <blockDeviceMapping/>
  <monitoring>
    <enabled>>false</enabled>
  </monitoring>
</launchSpecification>
<instanceId>i-992cf7dd</instanceId>
<createTime>2010-09-13T23:50:44.000Z</createTime>
<productDescription>Linux/UNIX</productDescription>
<launchedAvailabilityZone>us-east-1c</launchedAvailabilityZone>
</item>
<spotInstanceRequestSet/>
<DescribeSpotInstanceRequestsResponse>
```

## 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. 315)
- [CancelSpotInstanceRequests](#) (p. 43)
- [DescribeSpotPriceHistory](#) (p. 231)

# 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, go to [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 will be listed in chronological order — from the oldest to the most recent.



### Note

Our policy is to provide filters for all "describe" calls so you can limit the results to your specified criteria. Therefore, you can use filters to limit the results when describing Spot Price histories, even though you can use the regular request parameters to do something similar.

For example, you could use the regular request parameters or a filter to get the history for a particular instance type. You can specify multiple request parameters or multiple filters (e.g., limit the results to the `m2.xlarge` instance type, and only for Windows instances). The result includes information for a particular price history only if it matches *all* your request parameters or filters. If there's no match, no special message is returned; the response is simply empty.

You can use wildcards with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>instance-type</code>	Type of instance (e.g., <code>m1.small</code> ). Type: String
<code>product-description</code>	Product description for the Spot Price. Type: String Valid Values: <code>Linux/UNIX   SUSE Linux   Windows   Linux/UNIX (Amazon VPC)   SUSE Linux (Amazon VPC)   Windows (Amazon VPC)</code>
<code>spot-price</code>	Spot Price. The value must match exactly (or use wildcards; greater than or less than comparison is not supported). Type: String
<code>timestamp</code>	Timestamp of the Spot Price history, e.g., <code>2010-08-16T05:06:11.000Z</code> . You can use wildcards ( <code>*</code> and <code>?</code> ). Greater than or less than comparison is not supported. Type: <code>xsd:dateTime</code>

Filter Name	Description
availability-zone	The Availability Zone for which prices should be returned. Type: String

## Request Parameters

Name	Description	Required
<i>StartTime</i>	Start date and time of the Spot Instance price history data. Type: DateTime Default: None	No
<i>EndTime</i>	End date and time of the Spot Instance price history data. Type: DateTime Default: None	No
<i>InstanceType.n</i>	The instance type to return. Type: String Valid Values: m1.small   m1.large   m1.xlarge   c1.medium   c1.xlarge   m2.xlarge   m2.2xlarge   m2.4xlarge   t1.micro Default: None	No
<i>ProductDescription.n</i>	Filters the results by basic product description. Type: String Valid Values: Linux/UNIX   SUSE Linux   Windows   Linux/UNIX (Amazon VPC)   SUSE Linux (Amazon VPC)   Windows (Amazon VPC) Default: Returns all information	No
<i>Filter.n.Name</i>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No
<i>AvailabilityZone</i>	Filters the results by availability zone. Type: String Valid Values: us-east-1a, etc. Default: None	No
<i>MaxResults</i>	Specifies the number of rows to return. Type: int Valid Values: >0 Default: None	No

Name	Description	Required
<i>NextToken</i>	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	No

## Response Elements

The elements in the following table are wrapped in a `DescribeSpotPriceHistoryResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
spotPriceHistorySet	List of historical Spot Prices. Each price's information is wrapped in an item element. Type: <a href="#">SpotPriceHistorySetItemType</a> (p. 418)
nextToken	The string marking the next set of results returned. Displays empty if there are no more results to be returned. Type: xsd:string

## 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
&Filter.2.Value.1=us-east-1a
&AUTHPARAMS
```

## Example Response

```
<DescribeSpotPriceHistoryResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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. 226)
- [RequestSpotInstances](#) (p. 315)
- [CancelSpotInstanceRequests](#) (p. 43)



# DescribeSubnets

## Description

Gives you information about your subnets. You can filter the results to return information only about subnets that match criteria you specify. For example, you could get information only about subnets whose state is `available`. You can specify multiple values for the filter. The subnet must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the subnet is in a particular VPC, and the subnet's state is `available`). The result includes information for a particular subnet 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 with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>availability-zone</code>	The Availability Zone the subnet is in. Type: String
<code>available-ip-address-count</code>	Number of IP addresses in the subnet that are available. Type: String
<code>cidr</code>	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 (e.g., <code>/28</code> )
<code>state</code>	The state of the subnet. Type: String Valid Values: <code>pending</code>   <code>available</code>
<code>subnet-id</code>	The ID of the subnet. Type: String
<code>tag-key</code>	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 <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , 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=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, go to <a href="#">Using Tags</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
<code>tag-value</code>	Value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String

Filter Name	Description
<code>tag:key</code>	Filters the results based on a specific tag/value combination. Example: To list just the resources assigned tag Purpose=X, then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> Example: To list just resources assigned tag Purpose=X OR Purpose=Y, then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> <code>Filter.1.Value.2=Y</code>
<code>vpc-id</code>	The ID of the VPC the subnet is in. Type: String

For more information about Amazon Virtual Private Cloud and subnets, go to the [Amazon Virtual Private Cloud User Guide](#).

## Request Parameters

Name	Description	Required
<code>SubnetId.n</code>	A subnet ID. You can specify more than one in the request. Type: String Default: Returns information about all your subnets	No
<code>Filter.n.Name</code>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: Returns information about all your subnets or those you specify by ID.	No
<code>Filter.n.Value.m</code>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in an `DescribeSubnetsResponsestructure`.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>subnetSet</code>	A list of subnets. Each subnet's information is wrapped in an <code>item</code> element. Type: <a href="#">SubnetType</a> (p. 420)

## 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/2011-12-01/">
  <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>250</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>250</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
&Filter.2.Name=state
&Filter.2.Value.1=available
&AUTHPARAMS
```

## Related Operations

- [CreateSubnet](#) (p. 79)

- [DeleteSubnet \(p. 118\)](#)

# DescribeTags

## Description

Lists your tags. For more information about tags, go to [Using Tags](#) in the *Amazon Elastic Compute Cloud User Guide*.

You can use filters to limit the results when describing tags. For example, you could get only the tags for a particular resource type. You can specify multiple values for a filter. A tag must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., limit the results to a specific resource type, and get only tags with values that contain the string `database`). The result includes information for a particular tag 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 with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
key	Tag key. Type: String
resource-id	Resource ID. Type: String
resource-type	Resource type. Type: String Valid Values: customer-gateway   dhcp-options   image   instance   internet-gateway   network-acl   reserved-instances   route-table   security-group   snapshot   spot-instances-request   subnet   volume   vpc   vpn-connection   vpn-gateway
value	Tag value. Type: String

## Request Parameters

Name	Description	Required
<i>Filter.n.Name</i>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in a `DescribeTagsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>tagSet</code>	List of tags. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">TagSetItem Type (p. 421)</a>

## Examples

### Example Request

This example describes all the tags in your account.

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

Sample response:

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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>
    <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 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/2011-12-01/">
  <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
&Filter.1.Value.1=instance
&AUTHPARAMS
```

Sample response:

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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:

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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/2011-12-01/">
  <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. 81)
- [DeleteTags](#) (p. 120)

# DescribeVolumes

## Description

Describes your Amazon EBS volumes. For more information about Amazon EBS, go to [Using Amazon Elastic Block Store](#) in the *Amazon Elastic Compute Cloud User Guide*.

You can filter the results to return information only about volumes that match criteria you specify. For example, you could get information about volumes whose status is `available`. You can specify multiple values for a filter (e.g., the volume's status is either `available` or `in-use`). A volume must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the volume's status is `available`, and it is tagged with a particular value). The result includes information for a particular volume 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 with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>attachment.attach-time</code>	Time stamp when the attachment initiated. Type: <code>xsd:dateTime</code>
<code>attachment.delete-on-termination</code>	Whether the volume will be deleted on instance termination. Type: <code>Boolean</code>
<code>attachment.device</code>	How the volume is exposed to the instance (e.g., <code>/dev/sda1</code> ). Type: <code>String</code>
<code>attachment.instance-id</code>	ID of the instance the volume is attached to. Type: <code>String</code>
<code>attachment.status</code>	Attachment state. Type: <code>String</code> Valid Values: <code>attaching</code>   <code>attached</code>   <code>detaching</code>   <code>detached</code>
<code>availability-zone</code>	Availability Zone in which the volume was created. Type: <code>String</code>
<code>create-time</code>	Time stamp when the volume was created. Type: <code>xsd:dateTime</code>
<code>size</code>	Size of the volume, in GiB (e.g., 20). Type: <code>String</code>
<code>snapshot-id</code>	Snapshot from which the volume was created. Type: <code>String</code>

Filter Name	Description
status	Status of the volume. Type: String Valid Values: creating   available   in-use   deleting   deleted   error
tag-key	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=X, see the tag:key filter later in this table. For more information about tags, go to <a href="#">Using Tags</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
tag-value	Value of a tag assigned to the resource. This filter is independent of the tag-key filter. Type: String
tag:key	Filters the results based on a specific tag/value combination. Example: To list just the resources assigned tag Purpose=X, then specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Example: To list just resources assigned tag Purpose=X OR Purpose=Y, then specify: Filter.1.Name=tag:Purpose Filter.1.Value.1=X Filter.1.Value.2=Y
volume-id	Volume ID. Type: String

## Request Parameters

Name	Description	Required
VolumeId.n	One or more volume IDs. Type: String Default: Describes all volumes that you own, or only those otherwise specified.	No

Name	Description	Required
<i>Filter.n.Name</i>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: None	No
<i>Filter.n.Value.m</i>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in a `DescribeVolumesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>volumeSet</code>	A list of volumes. Each volume's information is wrapped in an <code>item</code> element. Type: <a href="#">DescribeVolumesSetItemResponseType</a> (p. 370)

## Examples

### Example Request

This example describes all volumes associated with your account.

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

### Example Response

```
<DescribeVolumesResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeSet>
    <item>
      <volumeId>vol-4282672b</volumeId>
      <size>80</size>
      <snapshotId/>
      <availabilityZone>us-east-1a</availabilityZone>
      <status>in-use</status>
      <createTime>2008-05-07T11:51:50.000Z</createTime>
      <attachmentSet>
        <item>
          <volumeId>vol-4282672b</volumeId>
          <instanceId>i-6058a509</instanceId>
```

```
        <device>/dev/sdh</device>
        <status>attached</status>
        <attachTime>2008-05-07T12:51:50.000Z</attachTime>
        <deleteOnTermination>>false</deleteOnTermination>
    </item>
  </attachmentSet>
  <tagSet/>
</item>
</volumeSet>
</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. 83)
- [DeleteVolume](#) (p. 123)
- [AttachVolume](#) (p. 25)
- [DetachVolume](#) (p. 263)

# DescribeVpcs

## Description

Gives you information about your VPCs. You can filter the results to return information only about VPCs that match criteria you specify. For example, you could get information only about VPCs whose state is `available`. You can specify multiple values for the filter. A VPC must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the VPC uses one of several sets of DHCP options, and the VPC's state is `available`). The result includes information for a particular VPC 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 with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>cidr</code>	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 (e.g., <code>/28</code> )
<code>dchp-options-id</code>	The ID of a set of DHCP options. Type: String
<code>state</code>	The state of the VPC. Type: String Valid Values: <code>pending</code>   <code>available</code>
<code>tag-key</code>	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 <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , 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=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, go to <a href="#">Using Tags</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
<code>tag-value</code>	Value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String

Filter Name	Description
<code>tag:key</code>	Filters the results based on a specific tag/value combination. Example: To list just the resources assigned tag Purpose=X, then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> Example: To list just resources assigned tag Purpose=X OR Purpose=Y, then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> <code>Filter.1.Value.2=Y</code>
<code>vpc-id</code>	ID of the VPC. Type: String

For more information about Amazon Virtual Private Cloud and VPCs, go to the [Amazon Virtual Private Cloud User Guide](#).

## Request Parameters

Name	Description	Required
<code>VpcId.n</code>	The ID of a VPC you want information about. Type: String Default: Returns information about all your VPCs, or only those otherwise specified	No
<code>Filter.n.Name</code>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: Returns information about all your VPCs, or only those otherwise specified.	No
<code>Filter.n.Value.m</code>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in an `DescribeVpcsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>vpcSet</code>	A list of VPCs. Each VPC's information is wrapped in an <code>item</code> element. Type: <a href="#">VpcType</a> (p. 424)

## 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/2011-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcSet>
    <item>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <state>available</state>
      <cidrBlock>10.0.0.0/23</cidrBlock>
      <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
      <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. 85)
- [DeleteVpc](#) (p. 125)
- [CreateDhcpOptions](#) (p. 49)
- [AssociateDhcpOptions](#) (p. 17)



# DescribeVpnConnections

## Description

Gives you information about your VPN connections.



### Important

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

You can filter the results to return information only about VPN connections that match criteria you specify. For example, you could get information only about VPN connections whose state is `pending` or `available`. You can specify multiple values for the filter. A VPN connection must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the VPN connection is associated with a particular virtual private gateway, and the gateway's state is `pending` or `available`). The result includes information for a particular VPN connection 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 with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>customer-gateway-configuration</code>	Configuration information for the customer gateway. Type: String
<code>customer-gateway-id</code>	The ID of a customer gateway associated with the VPN connection. Type: String
<code>state</code>	The state of the VPN connection. Type: String Valid Values: <code>pending</code>   <code>available</code>   <code>deleting</code>   <code>deleted</code>
<code>tag-key</code>	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 <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , 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=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, go to <a href="#">Using Tags</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
<code>tag-value</code>	Value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String

Filter Name	Description
<code>tag:key</code>	Filters the results based on a specific tag/value combination. Example: To list just the resources assigned tag Purpose=X, then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> Example: To list just resources assigned tag Purpose=X OR Purpose=Y, then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> <code>Filter.1.Value.2=Y</code>
<code>type</code>	The type of VPN connection. Currently the only supported type is <code>ipsec.1</code> . Type: String Valid Values: <code>ipsec.1</code>
<code>vpn-connection-id</code>	ID of the VPN connection. Type: String
<code>vpn-gateway-id</code>	The ID of a virtual private gateway associated with the VPN connection. Type: String

For more information about Amazon Virtual Private Cloud and VPN connections, go to [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, go to [ec2-describe-vpn-connections](#) in the *Amazon Virtual Private Cloud Command Line Reference*.

## Request Parameters

Name	Description	Required
<code>VpnConnectionId.n</code>	A VPN connection ID. You can specify more than one in the request. Type: String Default: Returns information about all your VPN connections	No
<code>Filter.n.Name</code>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: Returns information about all your VPN connections or those you specify by ID.	No
<code>Filter.n.Value.m</code>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in an `DescribeVpnConnectionsResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>vpnConnectionSet</code>	A list of VPN connections. Each VPN connection's information is wrapped in an <code>item</code> element. Type: <a href="#">VpnConnectionType</a> (p. 425)

## Examples

### Example Request

This example gives a description of the VPN connection with ID `vpn-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/2011-12-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnConnectionSet>
    <item>
      <vpnConnectionId>vpn-44a8938f</vpnConnectionId>
      <state>available</state>
      <CustomerGatewayConfiguration>
        Customer gateway configuration data in escaped XML format...
        ...
      </CustomerGatewayConfiguration>
      <type>ipsec.1</type>
      <customerGatewayId>cgw-b4dc3961</customerGatewayId>
      <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
      <tagSet/>
    </item>
  </vpnConnectionSet>
</DescribeVpnConnectionsResponse>
```

### Example Request

This example gives a description of any VPN connection you own 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. 87)
- [DeleteVpnConnection](#) (p. 127)

# DescribeVpnGateways

## Description

Gives you information about your virtual private gateways. You can filter the results to return information only about virtual private gateways that match criteria you specify. For example, you could get information only about virtual private gateways whose state is `pending` or `available`. You can specify multiple values for the filter. A virtual private gateway must match at least one of the specified values for it to be included in the results.

You can specify multiple filters (e.g., the virtual private gateway is in a particular Availability Zone and the gateway's state is `pending` or `available`). The result includes information for a particular virtual private gateway 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 with the filter values: `*` matches zero or more characters, and `?` 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 shows the available filters.

Filter Name	Description
<code>attachment.state</code>	Current state of the attachment between the gateway and the VPC. Type: String Valid Values: <code>attaching</code>   <code>attached</code>   <code>detaching</code>   <code>detached</code>
<code>attachment.vpc-id</code>	ID of an attached VPC. Type: String
<code>availability-zone</code>	The Availability Zone the virtual private gateway is in. Type: String
<code>state</code>	The state of the virtual private gateway. Type: String Valid Values: <code>pending</code>   <code>available</code>   <code>deleting</code>   <code>deleted</code>
<code>tag-key</code>	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 <code>tag-key=Purpose</code> and the filter <code>tag-value=X</code> , 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=X</code> , see the <code>tag:key</code> filter later in this table. For more information about tags, go to <a href="#">Using Tags</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String
<code>tag-value</code>	Value of a tag assigned to the resource. This filter is independent of the <code>tag-key</code> filter. Type: String

Filter Name	Description
<code>tag: <i>key</i></code>	Filters the results based on a specific tag/value combination. Example: To list just the resources assigned tag Purpose=X, then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> Example: To list just resources assigned tag Purpose=X OR Purpose=Y, then specify: <code>Filter.1.Name=tag:Purpose</code> <code>Filter.1.Value.1=X</code> <code>Filter.1.Value.2=Y</code>
<code>type</code>	The type of virtual private gateway. Currently the only supported type is <code>ipsec.1</code> . Type: String Valid Values: <code>ipsec.1</code>
<code>vpn-gateway-id</code>	ID of the virtual private gateway. Type: String

For more information about Amazon Virtual Private Cloud and virtual private gateways, go to [Adding an IPsec Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<code>VpnGatewayId.n</code>	A virtual private gateway ID. You can specify more than one in the request. Type: String Default: Returns information about all your virtual private gateways.	No
<code>Filter.n.Name</code>	Name of a filter. See the preceding table for a list of allowed filter names. Type: String Default: Returns information about all your virtual private gateways or those you specify by ID.	No
<code>Filter.n.Value.m</code>	A value for the filter. See the preceding table for a list of allowed values for each filter. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in an `DescribeVpnGatewaysResponsestructure`.

Name	Description
requestId	The ID of the request. Type: xsd:string
vpnGatewaySet	A list of virtual private gateways. Each virtual private gateway's information is wrapped in an <code>item</code> element. Type: <a href="#">VpnGatewayType</a> (p. 426)

## 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
&AUTHPARAMS
```

### Example Response

```
<DescribeVpnGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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
```

```
&Filter.2.Value.2=available  
&AUTHPARAMS
```

## Related Operations

- [CreateVpnGateway](#) (p. 91)
- [DeleteVpnGateway](#) (p. 129)



# 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. For more information about your VPC and Internet gateway, go to the [Amazon Virtual Private Cloud User Guide](#).

For more information about Amazon Virtual Private Cloud and Internet gateways, go to the [Amazon Virtual Private Cloud User Guide](#).

## Request Parameters

Name	Description	Required
<i>InternetGatewayId</i>	The ID of the Internet gateway to detach. Type: String Default: None	Yes
<i>VpcId</i>	The ID of the VPC. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `DetachInternetGatewayResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>return</code>	Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DetachInternetGatewayResponse>
```

## Related Operations

- [CreateInternetGateway](#) (p. 54)
- [DeleteInternetGateway](#) (p. 97)
- [DetachInternetGateway](#) (p. 21)
- [DescribeInternetGateways](#) (p. 180)

# DetachNetworkInterface

## Description

Detaches a network interface from an instance.

## Request Parameters

Name	Description	Required
AttachmentId	The ID of the attachment to detach. Type: String Default: None	Yes
Force	Set to true to force a detachment. Type: Boolean Default: None	No

## Response Elements

The elements in the following table are wrapped in a `DetachNetworkInterface` structure.

Name	Description
requestId	The ID of the request to detach the network interface. Type: String
return	Type: Boolean

## 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

```
<DetachNetworkInterfaceResponse xmlns='http://ec2.amazonaws.com/doc/2011-11-15/'>
  <requestId>ce540707-0635-46bc-97da-33a8a362a0e8</requestId>
  <return>true</return>
</DetachNetworkInterfaceResponse>
```

## Related Operations

- [AttachNetworkInterface](#) (p. 23)
- [CreateNetworkInterface](#) (p. 63)
- [DeleteNetworkInterface](#) (p. 105)
- [DescribeNetworkInterfaceAttribute](#) (p. 191)
- [DescribeNetworkInterfaces](#) (p. 192)
- [ModifyNetworkInterfaceAttribute](#) (p. 290)
- [ResetNetworkInterfaceAttribute](#) (p. 324)

# 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, go to [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.

## Request Parameters

Name	Description	Required
<i>VolumeId</i>	The ID of the volume. Type: String Default: None	Yes
<i>InstanceId</i>	The ID of the instance. Type: String Default: None	No
<i>Device</i>	The device name. Type: String Default: None	No
<i>Force</i>	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 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. Type: Boolean Default: None	No

## Response Elements

The elements in the following table are wrapped in a `DetachVolumeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string

Name	Description
volumeId	The ID of the volume. Type: xsd:string
instanceId	The ID of the instance. Type: xsd:string
device	The device as it is exposed to the instance. Type: xsd:string
status	Attachment state. Type: xsd:string Valid Values: attaching   attached   detaching   detached
attachTime	Time stamp when the attachment initiated. Type: xsd:dateTime

## Examples

### Example Request

This example detaches volume `vol-4d826724`.

```
https://ec2.amazonaws.com/?Action=DetachVolume
&VolumeId=vol-4d826724
&InstanceId=i-6058a509
&AUTHPARAMS
```

### Example Response

```
<DetachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-4d826724</volumeId>
  <instanceId>i-6058a509</instanceId>
  <device>/dev/sdh</device>
  <status>detaching</status>
  <attachTime>2008-05-08T11:51:50.000Z</attachTime>
</DetachVolumeResponse>
```

## Related Operations

- [CreateVolume](#) (p. 83)
- [DeleteVolume](#) (p. 123)
- [DescribeVolumes](#) (p. 244)
- [AttachVolume](#) (p. 25)

# 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 Amazon Virtual Private Cloud and virtual private gateways, go to [Adding an IPsec Hardware Virtual Private Gateway to Your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>VpnGatewayId</i>	The ID of the virtual private gateway you want to detach from the VPC. Type: String Default: None	Yes
<i>VpcId</i>	The ID of the VPC you want to detach the virtual private gateway from. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `DetachVpnGatewayResponse` structure.

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

## 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  
&VpcId=vpc-1a2b3c4d  
&AUTHPARAMS
```

## Example Response

```
<DetachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <return>true</return>  
</DetachVpnGatewayResponse>
```

## Related Operations

- [AttachVpnGateway](#) (p. 27)
- [DescribeVpnGateways](#) (p. 255)



# DisassociateAddress

## Description

Disassociates an Elastic IP address from the instance it's assigned to.

This action applies to both EC2 Elastic IP addresses and VPC Elastic IP addresses. For information about VPC addresses and how they differ from EC2 addresses, go to [Elastic IP Addresses](#) in the *Amazon Virtual Private Cloud User Guide*.

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

## Request Parameters

Name	Description	Required
<i>PublicIp</i>	EC2 Elastic IP address you want to disassociate. Type: String Default: None Condition: Required for EC2 Elastic IP addresses	Conditional
<i>AssociationId</i>	Association ID corresponding to the VPC Elastic IP address you want to disassociate. Type: String Default: None Condition: Required for VPC Elastic IP addresses	Conditional

## Response Elements

The elements in the following table are wrapped in a `DisassociateAddressResponse` structure.

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

## 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
```

## Example Request

This example disassociates the VPC Elastic IP address with association ID eipassoc-aa7486c3 from the VPC instance to which it is assigned.

```
https://ec2.amazonaws.com/?Action=DisassociateAddress  
&AssociationID=eipassoc-aa7486c3  
&AUTHPARAMS
```

## Example Response

```
<DisassociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DisassociateAddressResponse>
```

## Related Operations

- [AllocateAddress](#) (p. 12)
- [DescribeAddresses](#) (p. 133)
- [ReleaseAddress](#) (p. 304)
- [AssociateAddress](#) (p. 14)

# 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, go to [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>AssociationId</i>	The association ID representing the current association between the route table and subnet. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `DisassociateRouteTableResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>return</code>	Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean

## 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/2011-12-01/">
```

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

## Related Operations

- [CreateRouteTable](#) (p. 70)
- [AssociateRouteTable](#) (p. 19)
- [DeleteRouteTable](#) (p. 111)
- [DescribeRouteTables](#) (p. 209)
- [ReplaceRouteTableAssociation](#) (p. 313)

# 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

Name	Description	Required
<i>InstanceId</i>	ID of the instance. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `GetConsoleOutputResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>instanceId</code>	The instance ID. Type: xsd:string
<code>timestamp</code>	The time the output was last updated. Type: xsd:dateTime
<code>output</code>	The console output, Base64 encoded. Type: xsd:string

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-28a64341</instanceId>
  <timestamp>2010-10-14T01:12:41.000Z</timestamp>
  <output>TGludXggdmVyc2lubiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hb
WF6b25zYSkgKGdj
YyB2ZXJzaW9uIDQuMC4xIDIwMDUwNzI3IChSZWQgSGF0IDQuMC4xLTUpKSAjMSBTTVAgVGh1IE9j
dCAyNiAwODo0MToyNiBTQVNUIDlwMDYKQklPUy1wcm92aWRlZCBwaHlzaWNhbCBSQU0gbWFWOgpY
ZW46IDAwMDAwMDAwMDAwMDAwMDAgLSAwMDAwMDAwMDZhNDAwMDAwIChlc2FibGUpcjk4ME1CIEhJ
R0hNRU0gYXZhaWxhYmxlLGo3MjdNQiBMTldNRU0gYXZhaWxhYmxlLgpoWCAoRXhlY3V0ZSBEaXNh
YmxlKSBwcm90ZWNoaW9uOiBhY3RpdmUKSVJRIGxvY2t1cCBkZXRLY3Rpb24gZGlzYWJsZWQKQnVp
bHQgMSB6b25lbGlzdHMKS2VybVVsIGNvbW1hbmQgbGluZTogcm9vdD0vZGV2L3NkYTEgcm8gNApF
bmFibGluZyBmYXN0IEZQVSBzYXZlIGFuZCBzZXN0b3JlLi4uIGRvbmUuCG==</output>
</GetConsoleOutputResponse>
```

## Related Operations

- [RunInstances](#) (p. 334)

# 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

Name	Description	Required
<i>InstanceId</i>	A Windows instance ID. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `GetPasswordDataResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>instanceId</code>	The ID of the instance. Type: <code>xsd:string</code>
<code>timestamp</code>	The time the data was last updated. Type: <code>xsd:dateTime</code>
<code>passwordData</code>	The password of the instance. Type: <code>xsd:string</code>

## 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

```
<GetPasswordDataResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-2574e22a</instanceId>
  <timestamp>2009-10-24 15:00:00</timestamp>
  <passwordData>TGludXggdmVyc2lvbiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hb
WF6b25zYSkgKGdj</passwordData>
</GetPasswordDataResponse>
```

## Related Operations

- [RunInstances](#) (p. 334)



# 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, go to [Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>Description</i>	Description of the instance being imported Type: String Default: None	No
<i>Architecture</i>	Architecture of the instance. Type: String Default: None Valid Values: i386   x86_64	Yes
<i>SecurityGroup.n</i>	One or more security group names. Type: String Default: None	No
<i>UserData</i>	User data to be made available to the instance. Type: String Default: None	No
<i>InstanceType</i>	The instance type. Type: String Valid Values: m1.small   m1.large   m1.xlarge   c1.medium   c1.xlarge   m2.xlarge   m2.2xlarge   m2.4xlarge   t1.micro Default: m1.small	Yes
<i>Placement.AvailabilityZone</i>	The Availability Zone you want to launch the instance into. Type: xsd:string Default: EC2 chooses a zone for you	No
<i>Monitoring.Enabled</i>	Enables detailed monitoring for the instance. Type: Boolean Default: false	No
<i>SubnetId</i>	If you're using Amazon Virtual Private Cloud, this specifies the ID of the subnet you want to launch the instance into. Type: String Default: None	No

**Amazon Elastic Compute Cloud API Reference  
Response Elements**

Name	Description	Required
<i>InstanceInitiatedShutdownBehavior</i>	Determines whether the instance stops or terminates on instance-initiated shutdown. Type: String Valid Values: <code>stop</code>   <code>terminate</code> Default: <code>stop</code>	No
<i>PrivateIpAddress</i>	If you're using Amazon Virtual Private Cloud, you can optionally use this parameter to assign the instance a specific available IP address from the subnet (e.g., 10.0.0.25). Type: String Default: Amazon VPC selects an IP address from the subnet for the instance	No
<i>DiskImage.n.Image.Format</i>	File format of the disk image. Type: String Default: None Valid Values: <code>VMDK</code>   <code>RAW</code>   <code>VHD</code>	Yes
<i>DiskImage.n.Image.Bytes</i>	Number of bytes in the disk image. Type: <code>xsd:long</code> Default: None	Yes
<i>DiskImage.n.Image.ImportManifestUrl</i>	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 "Signing and Authenticating REST Requests" section of the <a href="#">Signing and Authenticating REST Requests</a> topic in the <i>Amazon Simple Storage Service Developer Guide</i> . Type: String Default: None	Yes
<i>DiskImage.n.Image.Description</i>	Optional description of the disk image. Type: String Default: None	No
<i>DiskImage.n.Volume.Size</i>	The size, in GB (2 <sup>30</sup> bytes), of the Amazon EBS volume that will hold the converted image. Type: Integer Default: None	Yes
<i>Platform</i>	The EC2 instance operating system. Type: String Default: None Valid Value: <code>Windows</code>	Yes

## Response Elements

The elements in the following table are wrapped in an `ImportInstanceResponse` structure.

Name	Description
conversionTask	Information about the import instance task. Type: <a href="#">ConversionTaskType</a> (p. 361)

## 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
&Architecture=x86_64
&InstanceType=m1.xlarge
&DiskImage.1.Image.Format=VMDK
&DiskImage.1.Image.Bytes=1179593728
&DiskImage.1.Image.ImportManifestUrl=https://s3.amazonaws.com/MyImportBucket/
a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.
vmdkmanifest.xml?AWSAccessKeyId=AKIAIR2I45FHYEXAMPLE&Expires=1294855591&Signa
ture=5snej01TtL0uR7KExtEXAMPLE%3D
&DiskImage.1.Volume.Size=12
&Platform=Windows
&AUTHPARAMS
```

### Example Response

```
<ImportInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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/MyImportBucket/a3a5e1b6-590d-43cc-
              97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAc
              cessKeyId=AKIAIR2I45FHYEXAMPLE&Expires=1294855591&Signature=5snej01TtL0uR7KEx
              tEXAMPLE%3D
            </importManifestUrl>
          </image>
          <description/>
          <volume>
            <size>12</size>
            <id>vol-1a2b3c4d</id>
          </volume>
          <status>active</status>
          <statusMessage/>
        </item>
      </volumes>
    </importInstance>
  </conversionTask>
</ImportInstanceResponse>
```

```
        </item>
      </volumes>
      <instanceId>i-12655a7f</instanceId>
      <description/>
    </importInstance>
  </conversionTask>
</ImportInstanceResponse>
```

## Related Operations

- [ImportVolume](#) (p. 281)
- [DescribeConversionTasks](#) (p. 143)
- [CancelConversionTask](#) (p. 41)

# 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

Name	Description	Required
<i>KeyName</i>	A unique name for the key pair. Type: String Default: None Constraints: Accepts alphanumeric characters, spaces, dashes, and underscores.	Yes
<i>PublicKeyMaterial</i>	The public key. You must base64 encode the public key material before sending it to AWS. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `ImportKeyPairResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>keyName</code>	The key pair name you provided. Type: <code>xsd:string</code>



# 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, go to [Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>AvailabilityZone</i>	Availability Zone where the resulting Amazon EBS volume will reside. Type: String Default: None	Yes
<i>Image.Format</i>	The file format of the disk image. Type: String Default: None Valid Values: VMDK   RAW   VHD	Yes
<i>Image.Bytes</i>	Number of bytes in the disk image. Type: xs:long Default: None	Yes
<i>Image.ImportManifestUrl</i>	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 "Signing and Authenticating REST Requests" section of the <a href="#">Signing and Authenticating REST Requests</a> topic in the <i>Amazon Simple Storage Service Developer Guide</i> . Type: String Default: None	Yes
<i>Description</i>	Optional description of the volume being imported. Type: String Default: None	No
<i>Volume.Size</i>	The size, in GB (2 <sup>30</sup> bytes), of an Amazon EBS volume that will hold the converted image. Type: Integer Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `ImportVolumeResponse` structure.

Name	Description
conversionTask	Information about the import volume task. Type: <a href="#">ConversionTaskType</a> (p. 361)

## 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.

```
https://ec2.amazonaws.com/?Action=ImportVolume
&AvailabilityZone=us-east-1c
&Image.Format=VMDK
&Image.Bytes=128696320
&Image.ImportManifestUrl=https://s3.amazonaws.com/MyImportBucket/a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccessKeyId=AKIAIR2I45FHYEXAMPLE&Expires=1294855591&Signature=5snej01TlTtL0uR7KExtEXAMPLE%3D
&VolumeSize=8
&AUTHPARAMS
```

### Example Response

```
<ImportVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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/MyImportBucket/a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccessKeyId=AKIAIR2I45FHYEXAMPLE&Expires=1294855591&Signature=5snej01TlTtL0uR7KExtEXAMPLE%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. 275)
- [DescribeConversionTasks](#) (p. 143)
- [CancelConversionTask](#) (p. 41)

# ModifyImageAttribute

## Description

Modifies an attribute of an AMI.

## Request Parameters

Name	Description	Required
<i>ImageId</i>	The AMI ID. Type: String Default: None	Yes
<i>LaunchPermission.Add.n.UserId</i>	Adds the specified AWS account ID to the AMI's list of launch permissions. Type: String Default: None	No
<i>LaunchPermission.Remove.n.UserId</i>	Removes the specified AWS account ID from the AMI's list of launch permissions. Type: String Default: None	No
<i>LaunchPermission.Add.n.Group</i>	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	No
<i>LaunchPermission.Remove.n.Group</i>	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	No
<i>ProductCode.n</i>	Adds the specified product code to the specified Amazon S3-backed AMI. Once you add a product code to an AMI, it can't be removed. Type: String Default: None	No
<i>Description.Value</i>	Changes the AMI's description to the specified value. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in a `ModifyImageAttributeResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
return	Returns true if successful. Otherwise, returns an error. Type: xsd:boolean

## Examples

### Example Request

This example makes the AMI public (i.e., so any AWS account can launch it).

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Add.1.Group=all
&AUTHPARAMS
```

### Example Request

This example makes the AMI private (i.e., so only you as the owner can launch it).

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Remove.1.Group=all
&AUTHPARAMS
```

### 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.l=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/2011-12-01/">
  <return>true</return>
</ModifyImageAttributeResponse>
```

## Related Operations

- [ResetImageAttribute](#) (p. 320)
- [DescribeImageAttribute](#) (p. 152)

# ModifyInstanceAttribute

## Description

Modifies an attribute of an instance.



### Note

To modify some attributes, the instance must be stopped. For more information, see [Using Instance Metadata](#) in the *Amazon Elastic Compute Cloud User's Guide*.



### Note

If you want to add ephemeral storage to an Amazon EBS-backed instance, you must add the ephemeral storage at the time you launch the instance. For more information, go to [Overriding the AMI's Block Device Mapping](#) in the *Amazon Elastic Compute Cloud User Guide*, or to [Using Amazon EC2 Instance Storage](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>InstanceId</i>	The ID of the instance. Type: String Default: None	Yes
<i>InstanceType.Value</i>	Changes the instance type to the specified value. Type: String Default: None	No
<i>Kernel.Value</i>	Changes the instance's kernel to the specified value. Type: String Default: None	No
<i>Ramdisk.Value</i>	Changes the instance's RAM disk to the specified value. Type: String Default: None	No
<i>UserData.Value</i>	Changes the instance's user data to the specified value. Type: String Default: None	No
<i>DisableApiTermination.Value</i>	Changes the instance's <code>DisableApiTermination</code> flag to the specified value. A value of <code>true</code> means you can't terminate the instance using the API (i.e., the instance is "locked"); a value of <code>false</code> means you can. You must modify this attribute before you can terminate any "locked" instances using the API. Type: Boolean Default: None	No

Name	Description	Required
<i>InstanceInitiatedShutdownBehavior.Value</i>	Changes the instance's InstanceInitiatedShutdownBehavior flag to the specified value. Type: String Default: None Valid Values: stop   terminate	No
<i>SourceDestCheck.Value</i>	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, go to <a href="#">NAT Instances</a> in the <i>Amazon Virtual Private Cloud User Guide</i> . Type: Boolean Default: None	No
<i>GroupId.n</i>	This attribute is applicable only to instances running in a VPC. Use this parameter when you want to change 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. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in a `ModifyInstanceAttributeResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
return	Returns true if successful. Otherwise, returns an error. Type: xsd:boolean

## 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

```
<ModifyInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-
01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>
```

## Related Operations

- [ResetInstanceAttribute](#) (p. 322)
- [DescribeInstanceAttribute](#) (p. 162)

# ModifyNetworkInterfaceAttribute

## Description

Modifies a network interface attribute. Only one attribute can be specified per call.

## Request Parameters

Name	Description	Required
<i>networkInterfaceId</i>	The ID of the network interface with the attributes that you want to modify. Type: String Default: None	Yes
<i>description</i>	The description of the network interface. Type: NullableAttributeValueType Default: None	No
<i>groupSet</i>	The full set of group IDs to associate with the network interface. Type: SecurityGroupIdType Default: None	No
<i>sourceDestCheck</i>	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 <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, go to <a href="#">NAT Instances</a> in the <i>Amazon Virtual Private Cloud User Guide</i> . Type: AttributeBooleanValueType Default: None	No
<i>attachment</i>	The attachment ID to modify. Type: ModifyNetworkInterfaceAttachmentType Default: None	No

## Response Elements

The elements in the following table are wrapped in a `ModifyNetworkInterfaceAttribute` structure.

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



## 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

```
<ModifyNetworkInterfaceAttributeResponse xmlns='http://ec2.amazon
aws.com/doc/2011-11-15/'>
  <requestId>657a4623-5620-4232-b03b-427e852d71cf</requestId>
  <return>>true</return>
</ModifyNetworkInterfaceAttributeResponse>
```

## Related Operations

- [AttachNetworkInterface](#) (p. 23)
- [DetachNetworkInterface](#) (p. 261)
- [CreateNetworkInterface](#) (p. 63)
- [DeleteNetworkInterface](#) (p. 105)
- [DescribeNetworkInterfaceAttribute](#) (p. 191)
- [DescribeNetworkInterfaces](#) (p. 192)
- [ResetNetworkInterfaceAttribute](#) (p. 324)

# ModifySnapshotAttribute

## Description

Adds or remove permission settings for the specified snapshot.

## Request Parameters

Name	Description	Required
<i>SnapshotId</i>	The ID of the snapshot. Type: String Default: None	Yes
<i>CreateVolumePermission.Add.n.UserId</i>	Adds the specified AWS account ID to the volume's list of create volume permissions. Type: String Default: None	Yes
<i>CreateVolumePermission.Add.n.Group</i>	Adds the specified group to the volume's list of create volume permissions. The only valid value is <code>all</code> . Type: String Default: None	Yes
<i>CreateVolumePermission.Remove.n.UserId</i>	Removes the specified AWS account ID from the volume's list of create volume permissions. Type: String Default: None	No
<i>CreateVolumePermission.Remove.n.Group</i>	Removes the specified group from the volume's list of create volume permissions. Type: String Default: None	No

## Response Elements

The elements in the following table are wrapped in a `ModifySnapshotAttributeResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns true if successful. Otherwise, returns an error. Type: <code>xsd:boolean</code>

## Examples

### Example Request

This example makes the snap-78a54011 snapshot public, and gives the account with ID 495219933132 permission to create volumes from the snapshot.

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&snapshotId=snap-78a54011
&CreateVolumePermission.Add.1.UserId=495219933132
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

This example makes the snap-78a54011 snapshot public, and removes the account with ID 495219933132 from the list of users with permission to create volumes from the snapshot.

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&snapshotId=snap-78a54011
&CreateVolumePermission.Remove.1.UserId=495219933132
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

### Example Response

```
<ModifySnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifySnapshotAttributeResponse>
```

## Related Operations

- [DescribeSnapshotAttribute](#) (p. 217)
- [DescribeSnapshots](#) (p. 219)
- [ResetSnapshotAttribute](#) (p. 326)
- [CreateSnapshot](#) (p. 74)

# MonitorInstances

## Description

Enables monitoring for a running instance. For more information about monitoring instances, go to [Monitoring Your Instances and Volumes](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>InstanceId.n</i>	One or more instance IDs. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `MonitorInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>instancesSet</code>	List of instances. Each instance's information is wrapped in an <code>item</code> element. Type: <code>MonitorInstancesResponseSetItemType</code> (p. 397)

## 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/2011-12-01/" >
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-43a4412a</instanceId>
      <monitoring>
```

```
        <state>pending</state>
      </monitoring>
    </item>
    <item>
      <instanceId>i-23a3397d</instanceId>
      <monitoring>
        <state>pending</state>
      </monitoring>
    </item>
  </instancesSet>
</MonitorInstancesResponse>
```

## Related Operations

- [UnmonitorInstances](#) (p. 350)
- [RunInstances](#) (p. 334)

# PurchaseReservedInstancesOffering

## Description

Purchases a Reserved Instance for use with your account. With Amazon EC2 Reserved Instances, you purchase the right to launch Amazon EC2 instances for a period of time (without getting insufficient capacity errors) and pay a lower usage rate 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 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 when calling `DescribeReservedInstancesOfferings`. After you've identified the Reserved Instance with the offering type you want, specify its *ReservedInstancesOfferingId* when you call `PurchaseReservedInstancesOffering`.

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 more information about Reserved Instances, go to [Reserved Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>ReservedInstancesOfferingId</i>	ID of the Reserved Instance offering you want to purchase. Type: String Default: None	Yes
<i>InstanceCount</i>	The number of Reserved Instances to purchase. Type: Integer Default: 1	No

## Response Elements

The elements in the following table are wrapped in a `PurchaseReservedInstancesOfferingResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>reservedInstancesId</code>	The IDs of the purchased Reserved Instances. Type: xsd:string

## Examples

### Example Request

This example illustrates a purchase of a Reserved Instances offering.

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fc1dcfc8
&InstanceCount=2
&AUTHPARAMS
```

### Example Response

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon
aws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>af9f760e-c1c1-449b-8128-1342d3a6927a</reservedIn
stancesId>
</PurchaseReservedInstancesOfferingResponse>
```

## Related Operations

- [DescribeReservedInstancesOfferings](#) (p. 205)
- [DescribeReservedInstances](#) (p. 201)

# 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

Name	Description	Required
<i>InstanceId.n</i>	One or more instance IDs. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `RebootInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>return</code>	Returns true if successful. Otherwise, returns an error. Type: <code>xsd:boolean</code>

## Examples

### Example Request

This example reboots two instances.

```
https://ec2.amazonaws.com/?Action=RebootInstances
&InstanceId.1=i-1a2b3c4d
&InstanceId.2=i-4d3acf62
&AUTHPARAMS
```



## Example Response

```
<RebootInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</RebootInstancesResponse>
```

## Related Operations

- [RunInstances](#) (p. 334)

# 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, go to [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, go to [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 Amazon S3 invalidates its registration. If you make changes to an image, deregister the previous image and register the new image.

## Request Parameters

Name	Description	Required
<i>ImageLocation</i>	Full path to your AMI manifest in Amazon S3 storage. Type: String Default: None Condition: Required if registering an Amazon-S3 backed AMI	Conditional
<i>Name</i>	A name for your AMI. Type: String Default: None Constraints: 3-128 alphanumeric characters, parenthesis (()), commas (,), slashes (/), dashes (-), or underscores(_)	Yes
<i>Description</i>	The description of the AMI. Type: String Default: None Constraints: Up to 255 characters.	No
<i>Architecture</i>	The architecture of the image. Type: String Valid Values: <code>i386</code>   <code>x86_64</code> Default: <code>i386</code> for EBS backed AMIs. Instance store-backed AMIs will try to use the architecture specified in the manifest file.	No

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Request Parameters**

<b>Name</b>	<b>Description</b>	<b>Required</b>
<i>KernelId</i>	The ID of the kernel to select. Type: String Default: None	No
<i>RamdiskId</i>	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. To find kernel requirements, refer to the Resource Center and search for the kernel ID. Type: String Default: None	No
<i>RootDeviceName</i>	The root device name (e.g., /dev/sda1, or xvda). Type: String Default: None Condition: Required if registering an Amazon EBS-backed AMI	Conditional
<i>BlockDeviceMapping.n.DeviceName</i>	The device name (e.g., /dev/sdh, or xvdh). Type: String Default: None Condition: If registering an Amazon EBS-backed AMI from a snapshot, you must at least specify this field with the root device name (e.g., /dev/sda1, or xvda), and <i>BlockDeviceMapping.n.Ebs.SnapshotId</i> with the snapshot ID	Conditional
<i>BlockDeviceMapping.n.VirtualName</i>	The virtual device name. Type: String Default: None	No
<i>BlockDeviceMapping.n.Ebs.SnapshotId</i>	The ID of the snapshot. Type: String Default: None Condition: If registering an Amazon EBS-backed AMI from a snapshot, you must at least specify this field with the snapshot ID, and <i>BlockDeviceMapping.n.DeviceName</i> with the root device name	Conditional
<i>BlockDeviceMapping.n.Ebs.VolumeSize</i>	The size of the volume, in GiBs. Type: Integer Default: None Condition: Required if you are not creating a volume from a snapshot.	Conditional
<i>BlockDeviceMapping.n.Ebs.NoDevice</i>	Specifies that no device should be mapped. Type: Boolean Default: true	No

Name	Description	Required
<i>BlockDeviceMapping.n.Ebs.DeleteOnTermination</i>	Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean Default: true	No

## Response Elements

The elements in the following table are wrapped in a `RegisterImageResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>imageId</code>	Unique ID of the newly registered machine image. Type: xsd:string

## Examples

### Example Request

This example registers the AMI specified in the `my-new-image.manifest.xml` manifest file, located in the bucket called `mybucket`.

```
https://ec2.amazonaws.com/?Action=RegisterImage
&ImageLocation=mybucket/my-new-image.manifest.xml
&AUTHPARAMS
```

### Example Request

This example registers an Amazon EBS snapshot to create an AMI backed by Amazon EBS.

```
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-6eba6e06
&Name=MyImage
&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.

```
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
```

```
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-6eba6e06  
&BlockDeviceMapping.2.DeviceName=/dev/sdb  
&BlockDeviceMapping.2.Ebs.SnapshotId=snap-823ea6df  
&BlockDeviceMapping.3.DeviceName=/dev/sdc  
&BlockDeviceMapping.3.Ebs.VolumeSize=100  
&Name=MyImage  
&AUTHPARAMS
```

## Example Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <imageId>ami-78a54043</imageId>  
</RegisterImageResponse>
```

## Related Operations

- [DescribeImages](#) (p. 155)
- [DeregisterImage](#) (p. 131)

# ReleaseAddress

## Description

Releases an Elastic IP address allocated to your account.

This action applies to both EC2 Elastic IP addresses and VPC Elastic IP addresses. For information about VPC addresses and how they differ from EC2 addresses, go to [Elastic IP Addresses](#) in the *Amazon Virtual Private Cloud User Guide*.

If you run this action on an Elastic IP address that is already released, the address might be assigned to another account, which will cause Amazon EC2 to return an error (`AuthFailure`).



### Note

For EC2 addresses only: Releasing an IP address automatically disassociates it from any instance it's associated with. To disassociate an IP address without releasing it, use the `DisassociateAddress` action.

If you try to release a VPC address that's associated with an instance, Amazon EC2 returns an error (`InvalidIPAddress.InUse`).



### Important

After releasing an Elastic IP address, it is released to the IP address pool and might be unavailable to your account. Make sure to update your DNS records and any servers or devices that communicate with the address.

## Request Parameters

Name	Description	Required
<i>PublicIp</i>	The EC2 Elastic IP address to release. Type: String Default: None Condition: Required for EC2 Elastic IP addresses	Conditional
<i>AllocationId</i>	The allocation ID that AWS provided when you allocated the address for use with Amazon VPC. Type: String Default: None Condition: Required for VPC Elastic IP addresses	Conditional

## Response Elements

The elements in the following table are wrapped in a `ReleaseAddressResponse` structure.

Name	Description
requestId	The ID of the request. Type: xsd:string
return	Returns true if successful. Otherwise, returns an error. Type: xsd:boolean

## Examples

### Example Request

This example releases an EC2 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 VPC 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReleaseAddressResponse>
```

## Related Operations

- [AllocateAddress](#) (p. 12)
- [DescribeAddresses](#) (p. 133)
- [AssociateAddress](#) (p. 14)
- [DisassociateAddress](#) (p. 267)

# 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, go to [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>AssociationId</i>	The ID representing the current association between the original network ACL and the subnet. Type: String Default: None	Yes
<i>NetworkAclId</i>	The ID of the new ACL to associate with the subnet. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `ReplaceNetworkAclAssociationResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>newAssociationId</code>	The ID representing the new association. Type: String

## Examples

### Example Request

This example starts with a network ACL associated with a subnet, and a corresponding association ID `aassoc-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=aassoc-e5b95c8c
&NetworkAclId=acl-5fb85d36
&AUTHPARAMS
```



## Example Response

```
<ReplaceNetworkAclAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>aassoc-17b85d7e</newAssociationId>
</ReplaceNetworkAclAssociationResponse>
```

## Related Operations

- [CreateNetworkAcl](#) (p. 58)
- [DeleteNetworkAcl](#) (p. 101)
- [DescribeNetworkAcls](#) (p. 186)

# ReplaceNetworkAclEntry

## Description

Replaces an entry (i.e., rule) in a network ACL. For more information about network ACLs, go to [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
NetworkAclId	ID of the ACL where the entry will be replaced. Type: String Default: None	Yes
RuleNumber	Rule number of the entry to replace. Type: Integer Default: None	Yes
Protocol	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 <a href="#">Protocol Numbers</a> ).	Yes
RuleAction	Whether to allow or deny traffic that matches the rule. Type: String Default: None Valid Values: allow   deny	Yes
Egress	Whether this rule applies to egress traffic from the subnet ( <code>true</code> ) or ingress traffic to the subnet ( <code>false</code> ). Type: Boolean Default: <code>false</code> Valid Values: <code>true</code>   <code>false</code>	No
CidrBlock	The CIDR range to allow or deny, in CIDR notation (e.g., 172.16.0.0/24). Type: String Default: None	Yes
Icmp.Code	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.	Conditional

Name	Description	Required
<code>Icmp.Type</code>	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.	Conditional
<code>PortRange.From</code>	The first port in the range. Type: Integer Default: None Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.	Conditional
<code>PortRange.To</code>	The last port in the range. Type: Integer Default: None Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.	Conditional

## Response Elements

The elements in the following table are wrapped in a `ReplaceNetworkAclEntryResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>return</code>	Returns true if the request succeeds. Otherwise, returns an error. Type: <code>xsd:boolean</code>

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReplaceNetworkAclEntryResponse>
```

## Related Operations

- [CreateNetworkAclEntry](#) (p. 60)
- [DeleteNetworkAclEntry](#) (p. 103)
- [DescribeNetworkAcls](#) (p. 186)

# ReplaceRoute

## Description

Replaces an existing route within a route table in a VPC. For more information about route tables, go to [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>RouteTableId</i>	The ID of the route table where the route will be replaced. Type: String Default: None	Yes
<i>DestinationCidrBlock</i>	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. Type: String Default: None	Yes
<i>GatewayId</i>	The ID of a gateway attached to your VPC. Type: String Default: None Condition: You must provide either <i>GatewayId</i> or <i>InstanceId</i> , but not both.	Conditional
<i>InstanceId</i>	The ID of a NAT instance in your VPC. Type: String Default: None Condition: You must provide either <i>GatewayId</i> or <i>InstanceId</i> , but not both.	Conditional
<i>NetworkInterfaceId</i>	Allow routing to network interface attachments. Type: String Default: None Condition: You must provide only one of the following: <i>GatewayId</i> , <i>InstanceId</i> , or <i>NetworkInterfaceId</i> .	Conditional

## Response Elements

The elements in the following table are wrapped in a `ReplaceRouteResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String

Name	Description
return	Returns true if the request succeeds. Otherwise, returns an error. Type: xsd:boolean

## 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`.

```
https://ec2.amazonaws.com/?Action=ReplaceRoute
&RouteTableId=rtb-e4ad488d
&DestinationCidrBlock=10.0.0.0/8
&GatewayId=vgw-1d00376e
&AUTHPARAMS
```

### Example Response

```
<ReplaceRouteResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReplaceRouteResponse>
```

## Related Operations

- [DeleteRoute](#) (p. 109)
- [CreateRoute](#) (p. 67)
- [DescribeRouteTables](#) (p. 209)

# 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, go to [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

Name	Description	Required
<i>AssociationId</i>	The ID representing the current association between the original route table and the subnet. Type: String Default: None	Yes
<i>RouteTableId</i>	The ID of the new route table to associate with the subnet. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `ReplaceRouteTableAssociationResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: String
<code>newAssociationId</code>	The ID representing the new association. Type: String

## 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.

```
https://ec2.amazonaws.com/?Action=ReplaceRouteTableAssociation
&AssociationId=rtbassoc-f8ad4891
&RouteTableId=rtb-f9ad4890
&AUTHPARAMS
```

## Example Response

```
<ReplaceRouteTableAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2011-
12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>rtbassoc-faad4893</newAssociationId>
</ReplaceRouteTableAssociationResponse>
```

## Related Operations

- [CreateRouteTable](#) (p. 70)
- [DisassociateRouteTable](#) (p. 269)
- [DeleteRouteTable](#) (p. 111)
- [DescribeRouteTables](#) (p. 209)
- [AssociateRouteTable](#) (p. 19)



# 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, go to [Using Spot Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>SpotPrice</i>	The maximum hourly price for any Spot Instance launched to fulfill the request. Type: String Default: None	Yes
<i>InstanceCount</i>	The maximum number of Spot Instances to launch. Type: xs:integer Default: 1	No
<i>Type</i>	The Spot Instance request type. Type: String Valid Values: <code>one-time</code>   <code>persistent</code> Default: <code>one-time</code>	No
<i>ValidFrom</i>	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	No
<i>ValidUntil</i>	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	No
<i>Subnet</i>	The ID of the Amazon VPC subnet in which to launch the Spot Instance. Type: String Default: None	No

**Amazon Elastic Compute Cloud API Reference  
Request Parameters**

<b>Name</b>	<b>Description</b>	<b>Required</b>
<i>LaunchGroup</i>	The instance launch group. Launch groups are Spot Instances that launch together and terminate together. Type: String Default: Instances are launched and terminated individually	No
<i>AvailabilityZoneGroup</i>	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 Default: Instances are launched in any available Availability Zone.	No
<i>Placement.GroupName</i>	The name of an existing placement group you want to launch the instance into (for cluster instances). Type: String Default: None.	No
<i>LaunchSpecification.ImageId</i>	The AMI ID. Type: String Default: None	Yes
<i>LaunchSpecification.KeyName</i>	The name of the key pair. Type: String Default: None	No
<i>LaunchSpecification.SecurityGroupId.n</i>	ID of the security group. You can use either this field or the next to specify a 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 <i>LaunchSpecification.SecurityGroupId.n</i> or <i>LaunchSpecification.SecurityGroup.n</i> .	Conditional
<i>LaunchSpecification.SecurityGroup.n</i>	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 <i>LaunchSpecification.SecurityGroupId.n</i> or <i>LaunchSpecification.SecurityGroup.n</i> .	Conditional
<i>LaunchSpecification UserData</i>	MIME, Base64-encoded user data to make available to the instances. Type: String Default: None	No

**Amazon Elastic Compute Cloud API Reference  
Request Parameters**

<b>Name</b>	<b>Description</b>	<b>Required</b>
<i>LaunchSpecification.AddressingType</i>	Deprecated. Type: String Default: None	No
<i>LaunchSpecification.InstanceType</i>	The instance type. Type: String Valid Values: m1.small   m1.large   m1.xlarge   c1.medium   c1.xlarge   m2.xlarge   m2.2xlarge   m2.4xlarge   t1.micro Default: m1.small	Yes
<i>LaunchSpecification.Placement.AvailabilityZone</i>	The placement constraints (Availability Zone) for launching the instances. Type: String Default: Amazon EC2 selects an Availability Zone.	No
<i>LaunchSpecification.KernelId</i>	The ID of the kernel to select. Type: String Default: None	No
<i>LaunchSpecification.RamdiskId</i>	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 Default: None	No
<i>LaunchSpecification.BlockDeviceMapping.n.DeviceName</i>	Describes the mapping that defines native device names to use when exposing virtual devices. Type: String Default: None	No
<i>LaunchSpecification.BlockDeviceMapping.n.VirtualName</i>	The virtual device name. Type: String Default: None	No
<i>LaunchSpecification.BlockDeviceMapping.n.Ebs.SnapshotId</i>	The ID of the snapshot. Type: String Default: None	No
<i>LaunchSpecification.BlockDeviceMapping.n.Ebs.VolumeSize</i>	The size of the volume, in GiBs. Required if you are not creating a volume from a snapshot. Type: Integer Default: None	No
<i>LaunchSpecification.BlockDeviceMapping.n.Ebs.NoDevice</i>	Specifies that no device should be mapped. Type: Boolean Default: true	No

Name	Description	Required
<i>LaunchSpecification.BlockDeviceMapping.n.Ebs.DeleteOnTermination</i>	Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean Default: true	No
<i>LaunchSpecification.Monitoring.Enabled</i>	Enables monitoring for the instance. Type: String Default: Disabled	No

## Response Elements

The elements in the following table are wrapped in a `RequestSpotInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>spotInstanceRequestSet</code>	Information about the Spot Instance request, wrapped in an <code>item</code> element. Type: <a href="#">SpotInstanceRequestSetItemType</a> (p. 416)

## Examples

### Example Request

This example creates a Spot Instances request for ten `m1.small` instances.

```
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&SpotPrice=0.50
&InstanceCount=2
&Type=one-time
&AvailabilityZoneGroup=MyAzGroup
&LaunchSpecification.ImageId=ami-43a4412a
&LaunchSpecification.KeyName=MyKeypair
&LaunchSpecification.Group.1=webserv
&LaunchSpecification.InstanceType=m1.small
&AUTHPARAMS
```

### Example Response

```
<RequestSpotInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-83d64e02</spotInstanceRequestId>
      <spotPrice>0.5</spotPrice>
    </item>
  </spotInstanceRequestSet>
</RequestSpotInstancesResponse>
```

```
<type>one-time</type>
<state>open</state>
<availabilityZoneGroup>MyAzGroup</availabilityZoneGroup>
<launchSpecification>
  <imageId>ami-43a4412a</imageId>
  <keyName>MyKeypair</keyName>
  <groupSet>
    <item>
      <groupId>websrv</groupId>
    </item>
  </groupSet>
  <instanceType>m1.small</instanceType>
  <blockDeviceMapping/>
  <monitoring>
    <enabled>>false</enabled>
  </monitoring>
</launchSpecification>
<createTime>2010-10-20T18:23:41.000Z</createTime>
<productDescription>Linux/UNIX</productDescription>
</item>
<item>
  ...
</item>
</spotInstanceRequestSet>
</RequestSpotInstancesResponse>
```

## Related Operations

- [DescribeSpotInstanceRequests](#) (p. 226)
- [CancelSpotInstanceRequests](#) (p. 43)
- [DescribeSpotPriceHistory](#) (p. 231)

# ResetImageAttribute

## Description

Resets an attribute of an AMI to its default value.



### Note

The productCodes attribute cannot be reset.

## Request Parameters

Name	Description	Required
<i>ImageId</i>	ID of the AMI. Type: String Default: None	Yes
<i>Attribute</i>	Attribute to reset (currently you can only reset the launch permission attribute). Type: String Default: None Valid Value: launchPermission	Yes

## Response Elements

The elements in the following table are wrapped in a `ResetImageAttributeResponse` structure.

Name	Description
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 `launchPermission` attribute for the specified AMI.

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

## Example Response

```
<ResetImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</ResetImageAttributeResponse>
```

## Related Operations

- [ModifyImageAttribute](#) (p. 284)
- [DescribeImageAttribute](#) (p. 152)

# 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, go to [NAT Instances](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>InstanceId</i>	ID of the instance. Type: String Default: None	Yes
<i>Attribute</i>	Attribute to reset. Type: String Default: None Valid Values: <code>kernel</code>   <code>ramdisk</code>   <code>sourceDestCheck</code>	Yes

## Response Elements

The elements in the following table are wrapped in a `ResetInstanceAttributeResponse` structure.

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

## Examples

### Example Request

This example resets the `kernel` attribute.

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



## Example Response

```
<ResetInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetInstanceAttributeResponse>
```

## Related Operations

- [ModifyInstanceAttribute](#) (p. 287)
- [DescribeInstanceAttribute](#) (p. 162)

# ResetNetworkInterfaceAttribute

## Description

Resets a network interface attribute. Only one attribute can be specified per call.

## Request Parameters

Name	Description	Required
<i>NetworkInterfaceId</i>	The ID of the network interface with the attributes that you want to reset. Type: String Default: None	Yes
<i>Attribute=[sourceDestCheck]</i>	The name of the attribute to reset, sourceDestCheck defaults to true. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `ResetNetworkInterfaceAttribute` structure.

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

## Examples

### Example Request

This example resets the attributes for an elastic network interface (ENI) `eni-ffda3197`.

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

### Example Response

```
<ResetNetworkInterfaceAttributeResponse xmlns='http://ec2.amazonaws.com/doc/2011-11-15/'>
  <requestId>5187642e-3f16-44a3-b05f-24c3848b5162</requestId>
```

```
<return>true</return>  
</ResetNetworkInterfaceAttributeResponse>
```

## Related Operations

- [AttachNetworkInterface](#) (p. 23)
- [DetachNetworkInterface](#) (p. 261)
- [CreateNetworkInterface](#) (p. 63)
- [DeleteNetworkInterface](#) (p. 105)
- [DescribeNetworkInterfaceAttribute](#) (p. 191)
- [DescribeNetworkInterfaces](#) (p. 192)
- [ModifyNetworkInterfaceAttribute](#) (p. 290)

# ResetSnapshotAttribute

## Description

Resets permission settings for the specified snapshot.

## Request Parameters

Name	Description	Required
<i>SnapshotId</i>	The ID of the snapshot. Type: String Default: None	Yes
<i>Attribute</i>	Attribute to reset (currently only the attribute for permission to create volumes can be reset) Type: String Default: None Valid Value: <code>createVolumePermission</code>	Yes

## Response Elements

The elements in the following table are wrapped in a `ResetSnapshotAttributeResponse` structure.

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

## Examples

### Example Request

This example resets the permissions for `snap-78a54011`, making it a private snapshot that can only be used by the account that created it.

```
https://ec2.amazonaws.com/?Action=ResetSnapshotAttribute
&SnapshotId=snap-78a54011
&Attribute=createVolumePermission
&AUTHPARAMS
```

## Example Response

```
<ResetSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetSnapshotAttributeResponse>
```

## Related Operations

- [ModifySnapshotAttribute](#) (p. 292)
- [DescribeSnapshotAttribute](#) (p. 217)
- [DescribeSnapshots](#) (p. 219)
- [CreateSnapshot](#) (p. 74)

# RevokeSecurityGroupEgress

## Description

This action applies only to security groups in a VPC. It doesn't work with EC2 security groups. For information about Amazon Virtual Private Cloud and VPC security groups, go to [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*.

The action removes one or more egress rules from a VPC security group. The values that you specify in the revoke request (e.g., ports, etc.) 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.

## Request Parameters

Name	Description	Required
<i>GroupId</i>	ID of the VPC security group to modify. Type: String Default: None	Yes
<i>IpPermissions.n.IpProtocol</i>	IP protocol name or number (go to <a href="#">Protocol Numbers</a> ). When you call <code>DescribeSecurityGroups</code> , the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (e.g., <code>tcp</code> , <code>udp</code> , or <code>icmp</code> ). Type: String Valid Values: <code>tcp</code>   <code>udp</code>   <code>icmp</code> or any protocol number (go to <a href="#">Protocol Numbers</a> ). Use <code>-1</code> to specify all.	Yes
<i>IpPermissions.n.FromPort</i>	Start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, you can use <code>-1</code> to specify all ICMP types. Type: Integer Default: None Default: Required for ICMP and any protocol that uses ports	Conditional
<i>IpPermissions.n.ToPort</i>	End of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, you can use <code>-1</code> to specify all ICMP codes for the given ICMP type. Type: Integer Default: None Default: Required for ICMP and any protocol that uses ports	Conditional

Name	Description	Required
<i>IpPermissions.n.Groups.m.GroupId</i>	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.	Conditional
<i>IpPermissions.n.IpRanges.m.CidrIp</i>	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.	Conditional

## Response Elements

The elements in the following table are wrapped in a `RevokeSecurityGroupEgressResponse` structure.

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

## Examples

### Example Request

This example revokes the access that the `webserv` VPC security group (with ID `sg-1a2b3c4d`) has to the `205.192.0.0/16` and `205.159.0.0/16` address ranges on TCP port 80.

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupEgress
&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 VPC security group with ID `sg-1a2b3c4d` has to the VPC security group with ID `sg-9a8d7f5c` on TCP port 1433.

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupEgress
&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

```
<RevokeSecurityGroupEgressResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RevokeSecurityGroupEgressResponse>
```

## Related Operations

- [CreateSecurityGroup](#) (p. 72)
- [DescribeSecurityGroups](#) (p. 213)
- [AuthorizeSecurityGroupEgress](#) (p. 29)
- [AuthorizeSecurityGroupIngress](#) (p. 32)
- [AuthorizeSecurityGroupIngress](#) (p. 331)
- [DeleteSecurityGroup](#) (p. 113)



# RevokeSecurityGroupIngress

## Description

This action applies to both EC2 security groups and VPC security groups. For information about VPC security groups and how they differ from EC2 security groups, go to [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*.

This action removes one or more ingress rules from a security group. The values that you specify in the revoke request (e.g., ports, etc.) must match the existing rule's values for the rule to be removed.

Each rule consists of the protocol and the CIDR range or source security group. For the TCP and UDP protocols, you must also specify the destination port or range of ports. For the ICMP protocol, you must also specify the ICMP type and code.

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

## Request Parameters

Name	Description	Required
<i>UserId</i>	Deprecated	No
<i>GroupId</i>	ID of the EC2 or VPC security group to modify. The group must belong to your account. Type: String Default: None Condition: Required for VPC security groups; can be used instead of <i>GroupName</i> for EC2 security groups	Conditional
<i>GroupName</i>	Name of the EC2 security group to modify. Type: String Default: None Condition: Can be used instead of <i>GroupId</i> for EC2 security groups	Conditional
<i>IpPermissions.n.IpProtocol</i>	IP protocol name or number (go to <a href="#">Protocol Numbers</a> ). 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 <i>DescribeSecurityGroups</i> , the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (e.g., <i>tcp</i> , <i>udp</i> , or <i>icmp</i> ). Type: String Valid Values for EC2 security groups: <i>tcp</i>   <i>udp</i>   <i>icmp</i> or the corresponding protocol number (6   17   1). Valid Values for VPC groups: <i>tcp</i>   <i>udp</i>   <i>icmp</i> or any protocol number (go to <a href="#">Protocol Numbers</a> ). Use <i>-1</i> to specify all.	Required

Name	Description	Required
<i>IpPermissions.n.FromPort</i>	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	Conditional
<i>IpPermissions.n.ToPort</i>	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	Conditional
<i>IpPermissions.n.Groups.m.UserId</i>	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.	Conditional
<i>IpPermissions.n.Groups.m.GroupName</i>	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.	Conditional
<i>IpPermissions.n.Groups.m.GroupId</i>	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.	Conditional
<i>IpPermissions.n.IpRanges.m.CidrIp</i>	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.	Conditional

## Response Elements

The elements in the following table are wrapped in a `RevokeSecurityGroupIngressResponse` structure.

Name	Description
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 revokes TCP port 80 access from the 205.192.0.0/16 address range for the webserv security group. Note that if the security group were a VPC security group, the ID of the security group would instead be required in the request.

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupIngress
&GroupName=webserv
&IpProtocol=tcp
&FromPort=80
&ToPort=80
&CidrIp=205.192.0.0/16
&AUTHPARAMS
```

### Example Response

```
<RevokeSecurityGroupIngressResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RevokeSecurityGroupIngressResponse>
```

## Related Operations

- [CreateSecurityGroup](#) (p. 72)
- [DescribeSecurityGroups](#) (p. 213)
- [AuthorizeSecurityGroupIngress](#) (p. 32)
- [DeleteSecurityGroup](#) (p. 113)

# RunInstances

## Description

Launches a specified number of instances of an AMI for which you have permissions.

If Amazon EC2 cannot launch the minimum number of instances you request, no instances will be launched. If there is insufficient capacity to launch the maximum number of instances you request, Amazon EC2 launches the minimum number specified and allocates the remaining available instances using round robin.



### 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, go to [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

Name	Description	Required
<i>ImageId</i>	ID of the AMI you want to launch. Type: String Default: None	Yes

**Amazon Elastic Compute Cloud API Reference  
Request Parameters**

<b>Name</b>	<b>Description</b>	<b>Required</b>
<i>MinCount</i>	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 (default: 20).	Yes
<i>MaxCount</i>	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 (default: 20).	Yes
<i>KeyName</i>	The name of the key pair to use. Type: String Default: None	No
<i>SecurityGroupId.n</i>	One or more security group IDs. Type: String Default: None Condition: Required for VPC security groups; optional for EC2 security groups	Conditional
<i>SecurityGroup.n</i>	One or more security group names. Type: String Default: None Condition: Valid only for EC2 security groups; for EC2 groups either a group ID or a group name is accepted	Conditional
<i>UserData</i>	Base64-encoded MIME user data to be made available to the instance(s) in this reservation. Type: String Default: None	No
<i>AddressingType</i>	This parameter is deprecated. Type: String Default: None	No
<i>InstanceType</i>	The instance type. Type: String Valid Values: m1.small   m1.large   m1.xlarge   c1.medium   c1.xlarge   m2.xlarge   m2.2xlarge   m2.4xlarge   cc1.4xlarge   cg1.4xlarge   t1.micro Default: m1.small	No
<i>Placement.AvailabilityZone</i>	The Availability Zone you want to launch the instance into. Type: xsd:string Default: EC2 chooses a zone for you	No

**Amazon Elastic Compute Cloud API Reference**  
**Request Parameters**

Name	Description	Required
<i>Placement.GroupName</i>	The name of an existing placement group you want to launch the instance into (for cluster instances). Type: xsd:string Default: None	No
<i>Placement.Tenancy</i>	The tenancy of the instance you want to launch. An instance with a tenancy of <code>dedicated</code> runs on single-tenant hardware and can only be launched into a VPC. Type: xsd:string Default: default	No
<i>KernelId</i>	The ID of the kernel with which to launch the instance. Type: String Default: None	No
<i>RamdiskId</i>	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. To find kernel requirements, refer to the Resource Center and search for the kernel ID. Type: String Default: None	No
<i>BlockDeviceMapping.n.DeviceName</i>	The device name (e.g., <code>/dev/sdh</code> , or <code>xvdh</code> ). The device can be mapped to an EBS volume, a virtual device, or to nothing. If you are using this device to map an EBS volume, follow this with the EBS volume specific parameters. For information about block device mapping, go to <a href="#">Block Device Mapping</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String Default: None	No
<i>BlockDeviceMapping.n.NoDevice</i>	Specifies that no device should be mapped. This parameter takes an empty string as input. Type: Empty String Default: None	No
<i>BlockDeviceMapping.n.VirtualName</i>	The virtual device name (e.g., <code>/ephemeral0</code> , <code>/ephemeral1</code> etc). The count following ephemeral goes up based on your instance type. For a small image, it has an <code>ephemeral0</code> (ext3, 15GB) and an <code>ephemeral1</code> (swap, 1GB). For information about block device mapping, go to <a href="#">Block Device Mapping</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String Default: None	No
<i>BlockDeviceMapping.n.Ebs.SnapshotId</i>	The ID of the snapshot. Type: String Default: None	No

**Amazon Elastic Compute Cloud API Reference**  
**Request Parameters**

<b>Name</b>	<b>Description</b>	<b>Required</b>
<i>BlockDeviceMapping.n.Ebs.VolumeSize</i>	The size of the volume, in GiBs. Required if you are not creating a volume from a snapshot. Type: Integer Default: None	No
<i>BlockDeviceMapping.n.Ebs.DeleteOnTermination</i>	Whether the Amazon EBS volume is deleted on instance termination. Type: Boolean Default: true	No
<i>Monitoring.Enabled</i>	Enables monitoring for the instance. Type: Boolean Default: false	No
<i>SubnetId</i>	If you're using Amazon Virtual Private Cloud, this specifies the ID of the subnet you want to launch the instance into. Type: String Default: None	No
<i>DisableApiTermination</i>	Specifies whether you can terminate the instance using the EC2 API. A value of <code>true</code> means you can't terminate the instance using the API (i.e., the instance is "locked"); a value of <code>false</code> means you can. If you set this to <code>true</code> , and you later want to terminate the instance, you must first change the <code>disableApiTermination</code> attribute's value to <code>false</code> using <code>ModifyInstanceAttribute</code> . Type: Boolean Default: false	No
<i>InstanceInitiatedShutdownBehavior</i>	Determines whether the instance stops or terminates on instance-initiated shutdown. Type: String Valid Values: <code>stop</code>   <code>terminate</code> Default: <code>stop</code>	No
<i>PrivateIpAddress</i>	If you're using Amazon Virtual Private Cloud, you can optionally use this parameter to assign the instance a specific available IP address from the subnet (e.g., 10.0.0.25). Type: String Default: Amazon VPC selects an IP address from the subnet for the instance	No
<i>ClientToken</i>	Unique, case-sensitive identifier you provide to ensure idempotency of the request. For more information, go to <a href="#">How to Ensure Idempotency</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Type: String Default: None Constraints: Maximum 64 ASCII characters	No

Name	Description	Required
<i>NetworkInterface.n.NetworkInterfaceId</i>	Attaches an existing interface to a single instance. Requires n=1 instances. Type: String Default:	No
<i>NetworkInterface.n.DeviceIndex</i>	Applies to both attaching existing network interfaces and when creating new network interfaces. Type: Integer Default:	No
<i>NetworkInterface.n.SubnetId</i>	Applies only when creating new network interfaces. Type: String Default:	No
<i>NetworkInterface.n.Description</i>	Applies only when creating new network interfaces. Type: String Default:	No
<i>NetworkInterface.n.PrivateIpAddress</i>	Applies only when creating new network interfaces. Requires n=1 network interfaces in launch. Type: String Default:	No
<i>NetworkInterface.n.SecurityGroupId.n</i>	Applies only when creating new network interfaces. Type: String Default:	No
<i>NetworkInterface.n.DeleteOnTermination</i>	Applies to all network interfaces. Type: Boolean Default:	No

## Response Elements

The elements in the following table are wrapped in a `RunInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: xsd:string
<code>reservationId</code>	Unique ID of the reservation. Type: xsd:string
<code>ownerId</code>	ID of the AWS account that owns the reservation. Type: xsd:string
<code>groupSet</code>	List of security groups the instance belongs to. Each group's information is wrapped in an <code>item</code> element. Type: <a href="#">GroupItemType</a> (p. 376)



Name	Description
instancesSet	A list of instances. Each instance's information is wrapped in an <code>item</code> element. Type: <a href="#">RunningInstancesItemType</a> (p. 411)
requesterId	ID of the requester that launched the instances on your behalf (e.g., AWS Management Console, Auto Scaling). Type: <code>xsd:string</code>

## 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

```
<RunInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservationId>r-47a5402e</reservationId>
  <ownerId>999988887777</ownerId>
  <groupSet>
    <item>
      <groupId>sg-245f6a01</groupId>
      <groupName>default</groupName>
    </item>
  </groupSet>
  <instancesSet>
    <item>
      <instanceId>i-2ba64342</instanceId>
      <imageId>ami-60a54009</imageId>
      <instanceState>
        <code>0</code>
        <name>pending</name>
      </instanceState>
      <privateDnsName></privateDnsName>
      <dnsName></dnsName>
      <keyName>example-key-name</keyName>
      <amiLaunchIndex>0</amiLaunchIndex>
      <instanceType>m1.small</instanceType>
      <launchTime>2007-08-07T11:51:50.000Z</launchTime>
      <placement>
        <availabilityZone>us-east-1b</availabilityZone>
      </placement>
    </item>
  </instancesSet>
</RunInstancesResponse>
```

```
<monitoring>
  <enabled>>true</enabled>
</monitoring>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-245f6a01</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<virtualizationType>paravirtual</virtualizationType>
<clientToken/>
<tagSet/>
<hypervisor>xen</hypervisor>
</item>
<item>
  <instanceId>i-2bc64242</instanceId>
  <imageId>ami-60a54009</imageId>
  <instanceState>
    <code>0</code>
    <name>pending</name>
  </instanceState>
  <privateDnsName></privateDnsName>
  <dnsName></dnsName>
  <keyName>example-key-name</keyName>
  <amiLaunchIndex>1</amiLaunchIndex>
  <instanceType>m1.small</instanceType>
  <launchTime>2007-08-07T11:51:50.000Z</launchTime>
  <placement>
    <availabilityZone>us-east-1b</availabilityZone>
  </placement>
  <monitoring>
    <enabled>true</enabled>
  </monitoring>
  <sourceDestCheck>true</sourceDestCheck>
  <groupSet>
    <item>
      <groupId>sg-245f6a01</groupId>
      <groupName>default</groupName>
    </item>
  </groupSet>
  <virtualizationType>paravirtual</virtualizationType>
  <clientToken/>
  <tagSet/>
  <hypervisor>xen</hypervisor>
</item>
<item>
  <instanceId>i-2be64332</instanceId>
  <imageId>ami-60a54009</imageId>
  <instanceState>
    <code>0</code>
    <name>pending</name>
  </instanceState>
  <privateDnsName></privateDnsName>
  <dnsName></dnsName>
  <keyName>example-key-name</keyName>
  <amiLaunchIndex>2</amiLaunchIndex>
  <instanceType>m1.small</instanceType>
  <launchTime>2007-08-07T11:51:50.000Z</launchTime>
```

```
<placement>
  <availabilityZone>us-east-1b</availabilityZone>
</placement>
<monitoring>
  <enabled>true</enabled>
</monitoring>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-245f6a01</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<virtualizationType>paravirtual</virtualizationType>
<clientToken/>
<tagSet/>
<hypervisor>xen</hypervisor>
</item>
</instancesSet>
</RunInstancesResponse>
```

## Example Request

This example launches an instance of the `ami-31814f58` AMI and attaches an elastic network interface to it.

```
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

```
<RunInstancesResponse xmlns='http://ec2.amazonaws.com/doc/2011-11-15/'>
  <requestId>e86ff3c8-2400-45e3-a4e7-f158a69283d4</requestId>
  <reservationId>r-157ad274</reservationId>
  <ownerId>602767649040</ownerId>
  <groupSet/>
  <instancesSet>
    <item>
      <instanceId>i-0ee0356c</instanceId>
      <imageId>ami-31814f58</imageId>
      <instanceState>
        <code>0</code>
        <name>pending</name>
      </instanceState>
      <privateDnsName/>
      <dnsName/>
      <reason/>
      <amiLaunchIndex>0</amiLaunchIndex>
      <productCodes/>
```

```
<instanceType>m1.small</instanceType>
<launchTime>2011-12-20T08:29:31.000Z</launchTime>
<placement>
  <availabilityZone>us-east-1b</availabilityZone>
  <groupName/>
  <tenancy>default</tenancy>
</placement>
<kernelId>aki-805ea7e9</kernelId>
<monitoring>
  <state>disabled</state>
</monitoring>
<subnetId>subnet-b2a249da</subnetId>
<vpcId>vpc-1ea24976</vpcId>
<privateIpAddress>10.0.0.142</privateIpAddress>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-050c1369</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<stateReason>
  <code>pending</code>
  <message>pending</message>
</stateReason>
<architecture>i386</architecture>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sda1</rootDeviceName>
<blockDeviceMapping/>
<virtualizationType>paravirtual</virtualizationType>
<clientToken/>
<hypervisor>xen</hypervisor>
<networkInterfaceSet>
  <item>
    <networkInterfaceId>eni-c6bb50ae</networkInterfaceId>
    <subnetId>subnet-b2a249da</subnetId>
    <vpcId>vpc-1ea24976</vpcId>
    <description/>
    <ownerId>602767649040</ownerId>
    <status>in-use</status>
    <privateIpAddress>10.0.0.142</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-050c1369</groupId>
        <groupName>default</groupName>
      </item>
    </groupSet>
    <attachment>
      <attachmentId>eni-attach-0326646a</attachmentId>
      <deviceIndex>0</deviceIndex>
      <status>attaching</status>
      <attachTime>2011-12-20T08:29:31.000Z</attachTime>
      <deleteOnTermination>true</deleteOnTermination>
    </attachment>
  </item>
</networkInterfaceSet>
</item>
```

```
</instancesSet>  
</RunInstancesResponse>
```

## Related Operations

- [DescribeInstances](#) (p. 165)
- [StopInstances](#) (p. 346)
- [StartInstances](#) (p. 344)
- [TerminateInstances](#) (p. 348)
- [AuthorizeSecurityGroupIngress](#) (p. 32)
- [RevokeSecurityGroupIngress](#) (p. 331)
- [DescribeSecurityGroups](#) (p. 213)
- [CreateSecurityGroup](#) (p. 72)
- [CreateKeyPair](#) (p. 56)
- [ImportKeyPair](#) (p. 279)

# 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, go to [Using Amazon EBS-Backed AMIs and Instances](#).

## Request Parameters

Name	Description	Required
<i>InstanceId.n</i>	One or more instance IDs. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `StartInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>instancesSet</code>	List of instance state changes. Each change's information is wrapped in an <code>item</code> element. Type: <a href="#">InstanceStateChangeType</a> (p. 389)

## Examples

### Example Request

This example starts the i-10a64379 instance.

```
https://ec2.amazonaws.com/?Action=StartInstances
&InstanceId.1=i-10a64379
&AUTHPARAMS
```

## Example Response

```
<StartInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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. 346)
- [RunInstances](#) (p. 334)
- [DescribeInstances](#) (p. 165)
- [TerminateInstances](#) (p. 348)

# 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

Name	Description	Required
<i>InstanceId.n</i>	One or more instance IDs. Type: String Default: None	Yes
<i>Force</i>	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	No



## Response Elements

The elements in the following table are wrapped in a `StopInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>instancesSet</code>	List of instance state changes. Each change's information is wrapped in an <code>item</code> element. Type: <a href="#">InstanceStateChangeType</a> (p. 389)

## 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/2011-12-01/">
  <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. 344)
- [RunInstances](#) (p. 334)
- [DescribeInstances](#) (p. 165)
- [TerminateInstances](#) (p. 348)

# 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

Name	Description	Required
<i>InstanceIds</i>	One or more instance IDs. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in a `TerminateInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>instancesSet</code>	List of instance state changes. Each change's information is wrapped in an <code>item</code> element. Type: <a href="#">InstanceStateChangeType</a> (p. 389)

## Examples

### Example Request

This example terminates the `i-3ea74257` instance.

```
https://ec2.amazonaws.com/?Action=TerminateInstances
&InstanceId.1=i-3ea74257
&AUTHPARAMS
```

## Example Response

```
<TerminateInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2011-12-01/">
  <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. 165)
- [RunInstances](#) (p. 334)
- [StopInstances](#) (p. 346)
- [StartInstances](#) (p. 344)

# UnmonitorInstances

## Description

Disables monitoring for a running instance. For more information about monitoring instances, go to [Monitoring Your Instances and Volumes](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

Name	Description	Required
<i>InstanceId.n</i>	One or more instance IDs. Type: String Default: None	Yes

## Response Elements

The elements in the following table are wrapped in an `UnmonitorInstancesResponse` structure.

Name	Description
<code>requestId</code>	The ID of the request. Type: <code>xsd:string</code>
<code>instancesSet</code>	List of monitoring information for one or more instances. Each set of information is wrapped in an <code>item</code> element. Type: <a href="#">MonitorInstancesResponseSetItemType</a> (p. 397)

## 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/2011-12-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-43a4412a</instanceId>
      <monitoring>
```

```
        <state>disabled</state>
      </monitoring>
    </item>
    <item>
      <instanceId>i-23a3397d</instanceId>
      <monitoring>
        <state>disabled</state>
      </monitoring>
    </item>
  </instancesSet>
</UnmonitorInstancesResponse>
```

## Related Operations

- [MonitorInstances](#) (p. 294)
- [RunInstances](#) (p. 334)

# Data Types

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## Topics

- [AttachmentSetItemResponseType](#) (p. 354)
- [AttachmentType](#) (p. 355)
- [AvailabilityZoneItemType](#) (p. 355)
- [AvailabilityZoneMessageType](#) (p. 356)
- [BlockDeviceMappingItemType](#) (p. 357)
- [BundleInstanceS3StorageType](#) (p. 357)
- [BundleInstanceTaskErrorType](#) (p. 358)
- [BundleInstanceTaskStorageType](#) (p. 359)
- [BundleInstanceTaskType](#) (p. 359)
- [CancelSpotInstanceRequestsResponseSetItemType](#) (p. 360)
- [ConversionTaskType](#) (p. 361)
- [CreateVolumePermissionItemType](#) (p. 362)
- [CustomerGatewayType](#) (p. 363)
- [DescribeAddressesResponseItemType](#) (p. 363)
- [DescribeImagesResponseItemType](#) (p. 364)
- [DescribeKeyPairsResponseItemType](#) (p. 366)
- [DescribeReservedInstancesOfferingsResponseSetItemType](#) (p. 367)
- [DescribeReservedInstancesResponseSetItemType](#) (p. 368)
- [DescribeSnapshotsSetItemResponseType](#) (p. 369)
- [DescribeVolumesSetItemResponseType](#) (p. 370)
- [DhcpConfigurationItemType](#) (p. 371)
- [DhcpOptionsType](#) (p. 372)
- [DhcpValueType](#) (p. 373)
- [DiskImageDescriptionType](#) (p. 373)
- [DiskImageVolumeDescriptionType](#) (p. 374)
- [EbsBlockDeviceType](#) (p. 375)
- [EbsInstanceBlockDeviceMappingResponseType](#) (p. 375)
- [GroupItemType](#) (p. 376)
- [IcmpTypeCodeType](#) (p. 377)
- [ImportInstanceTaskDetailsType](#) (p. 377)

- [ImportInstanceVolumeDetailItemType](#) (p. 378)
- [ImportVolumeTaskDetailsType](#) (p. 379)
- [InstanceBlockDeviceMappingItemType](#) (p. 380)
- [InstanceBlockDeviceMappingResponseItemType](#) (p. 381)
- [InstanceEbsBlockDeviceType](#) (p. 381)
- [InstanceStateEventsSetType](#) (p. 382)
- [InstanceStateEventType](#) (p. 382)
- [InstanceStateItemType](#) (p. 383)
- [InstanceStateSetType](#) (p. 384)
- [InstanceMonitoringStateType](#) (p. 384)
- [InstanceNetworkInterfaceAssociationType](#) (p. 385)
- [InstanceNetworkInterfaceSetItemRequestType](#) (p. 385)
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- [InternetGatewayAttachmentType](#) (p. 391)
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- [IpPermissionType](#) (p. 392)
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- [MonitoringInstanceType](#) (p. 396)
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- [SecurityGroupItemType](#) (p. 414)
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- [VpnTunnelTelemetryType](#) (p. 427)

## AttachmentSetItemResponseType

The AttachmentSetItemResponseType data type.

### Ancestors

- [AttachmentSetResponseType](#)

### Relevant Operations

- [DescribeVolumes](#)

### Contents

The following table describes the elements contained in AttachmentSetItemResponseType.

Name	Description
volumeId	The ID of the volume. Type: xsd:string
instanceId	The ID of the instance. Type: xsd:string
device	How the device is exposed to the instance (e.g., /dev/sdh). Type: xsd:string
status	Attachment state. Type: xsd:string Valid Values: attaching   attached   detaching   detached



Name	Description
attachTime	Time stamp when the attachment initiated. Type: xsd:dateTime
deleteOnTermination	Whether the Amazon EBS volume is deleted on instance termination. Type: xsd:boolean

## AttachmentType

The AttachmentType data type.

### Ancestors

- AttachmentSetType
- AttachVpnGatewayResponse

### Relevant Operations

- CreateVpnGateway
- DescribeVpnGateways
- AttachVpnGateway

### Contents

The following table describes the elements contained in AttachmentType.

Name	Description
vpcId	The ID of the VPC the virtual private gateway is attached to. Type: String
state	The current state of the attachment. Type: String Valid Values: attaching   attached   detaching   detached

## AvailabilityZoneItemType

The AvailabilityZoneItemType data type.

### Ancestors

- AvailabilityZoneSetType

## Relevant Operations

- DescribeAvailabilityZones

## Contents

The following table describes the elements contained in AvailabilityZoneItemType.

Name	Description
zoneName	Name of the Availability Zone. Type: xsd:string
zoneState	State of the Availability Zone. Type: xsd:string
regionName	Name of the Region. Type: xsd:string
messageSet	A list of messages about the Availability Zone. Each message is wrapped in an <code>item</code> element. Type: <a href="#">AvailabilityZoneMessageType</a> (p. 356)

## AvailabilityZoneMessageType

The AvailabilityZoneMessageType data type.

## Ancestors

- AvailabilityZoneMessageSetType

## Relevant Operations

- DescribeAvailabilityZones

## Contents

The following table describes the elements contained in AvailabilityZoneMessageType.

Name	Description
message	The Availability Zone message. Type: xsd:string

## BlockDeviceMappingItemType

The BlockDeviceMappingItemType data type.

### Ancestors

- BlockDeviceMappingType

### Relevant Operations

- DescribeImageAttribute
- DescribeImages
- RequestSpotInstances
- DescribeSpotInstanceRequests
- RequestSpotInstances
- RegisterImage
- RunInstances

### Contents

The following table describes the elements contained in BlockDeviceMappingItemType.

Name	Description
deviceName	The device name (e.g., /dev/sdh). Type: xsd:string
virtualName	The virtual device name. Type: xsd:string
ebs	Parameters used to automatically set up Amazon EBS volumes when the instance is launched. Type: <a href="#">EbsBlockDeviceType (p. 375)</a>
noDevice	Include this empty element to indicate that you want to suppress the specified device from the mapping.

## BundleInstanceS3StorageType

The BundleInstanceS3StorageType data type.

### Ancestors

- [BundleInstanceTaskStorageType \(p. 359\)](#)

## Relevant Operations

- [BundleInstance](#)
- [DescribeBundleTasks](#)
- [CancelBundleTask](#)
- [BundleInstance](#)

## Contents

The following table describes the elements contained in `BundleInstanceS3StorageType`.

Name	Description
<code>awsAccessKeyId</code>	The Access Key ID of the owner of the Amazon S3 bucket. Type: <code>xsd:string</code>
<code>bucket</code>	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: <code>xsd:string</code>
<code>prefix</code>	The beginning of the file name of the AMI. Type: <code>xsd:string</code>
<code>uploadPolicy</code>	A Base64-encoded Amazon S3 upload policy that gives Amazon EC2 permission to upload items into Amazon S3 on the user's behalf. Type: <code>xsd:string</code>
<code>uploadPolicySignature</code>	The signature of the Base64 encoded JSON document. Type: <code>xsd:string</code>

## BundleInstanceTaskErrorType

The `BundleInstanceTaskErrorType` data type.

### Ancestors

- [BundleInstanceTaskType](#) (p. 359)

## Relevant Operations

- [BundleInstance](#)
- [DescribeBundleTasks](#)
- [CancelBundleTask](#)

## Contents

The following table describes the elements contained in `BundleInstanceTaskErrorType`.

Name	Description
code	Error code. Type: xsd:string
message	Error message. Type: xsd:string

## BundleInstanceTaskStorageType

The `BundleInstanceTaskStorageType` data type.

### Ancestors

- [BundleInstanceTaskType](#) (p. 359)
- `BundleInstanceType`

### Relevant Operations

- `BundleInstance`
- `DescribeBundleTasks`
- `CancelBundleTask`
- `BundleInstance`

### Contents

The following table describes the elements contained in `BundleInstanceTaskStorageType`.

Name	Description
S3	Amazon S3 storage location. Type: <a href="#">BundleInstanceS3StorageType</a> (p. 357)

## BundleInstanceTaskType

The `BundleInstanceTaskType` data type.

### Ancestors

- `BundleInstanceResponseType`

- BundleInstanceTasksSetType
- CancelBundleTaskResponseType

## Relevant Operations

- BundleInstance
- DescribeBundleTasks
- CancelBundleTask

## Contents

The following table describes the elements contained in BundleInstanceTaskType.

Name	Description
instanceId	Instance associated with this bundle task. Type: xsd:string
bundleId	Identifier for this task. Type: xsd:string
state	The state of the task. Type: xsd:string Valid Values: pending   waiting-for-shutdown   bundling   storing   cancelling   complete   failed
startTime	The time this task started. Type: xsd:dateTime
updateTime	The time of the most recent update for the task. Type: xsd:dateTime
storage	Amazon S3 storage locations. Type: <a href="#">BundleInstanceTaskStorageType</a> (p. 359)
progress	The level of task completion, in percent (e.g., 20%). Type: xsd:string
error	If the task fails, a description of the error. Type: <a href="#">BundleInstanceTaskErrorType</a> (p. 358)

## CancelSpotInstanceRequestsResponseSetItemType

The CancelSpotInstanceRequestsResponseSetItemType data type.

### Ancestors

- CancelSpotInstanceRequestsResponseSetType

## Relevant Operations

- CancelSpotInstanceRequests

## Contents

The following table describes the elements contained in CancelSpotInstanceRequestsResponseSetItem type.

Name	Description
spotInstanceRequestId	The ID of the Spot Instance request. Type: xsd:string
state	The state of the Spot Instance request. Type: xsd:string Valid Values: active   open   closed   cancelled   failed

## ConversionTaskType

The ConversionTaskType data type.

## Ancestors

- ConversionTaskSetType
- ImportInstanceResponse
- ImportVolumeResponse

## Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume

## Contents

The following table describes the elements contained in ConversionTaskType.

Name	Description
conversionTaskId	ID of the conversion task Type: xs:string

Name	Description
expirationTime	When the task expires. If the upload isn't complete before the expiration time, we automatically cancel the task. Type: xs:string
importVolume	If the task is for importing a volume, this contains information about the import volume task. Type: <a href="#">ImportVolumeTaskDetailsType</a> (p. 379)
importInstance	If the task is for importing an instance, this contains information about the import instance task. Type: <a href="#">ImportInstanceTaskDetailsType</a> (p. 377)
state	State of the conversion task. Type: xs:string Valid Values: active   cancelling   cancelled   completed
statusMessage	Status message related to the conversion task. Type: xs:string

## CreateVolumePermissionItemType

The CreateVolumePermissionItemType data type.

### Ancestors

- CreateVolumePermissionListType

### Relevant Operations

- ModifySnapshotAttribute
- DescribeSnapshotAttribute

### Contents

The following table describes the elements contained in CreateVolumePermissionItemType.

Name	Description
userId	ID of an AWS account that can create volumes from the snapshot. Type: xsd:string
group	Group that is allowed to create volumes from the snapshot. Type: xsd:string Valid Value: all



## CustomerGatewayType

The CustomerGatewayType data type.

### Ancestors

- CreateCustomerGatewayResponse
- CustomerGatewaySetType

### Relevant Operations

- CreateCustomerGateway
- DescribeCustomerGateways

### Contents

The following table describes the elements contained in CustomerGatewayType.

Name	Description
customerGatewayId	The ID of the customer gateway. Type: String
state	The current state of the customer gateway. Type: String Valid Values: <code>pending</code>   <code>available</code>   <code>deleting</code>   <code>deleted</code>
type	The type of VPN connection the customer gateway supports (ipsec.1). Type: String
ipAddress	The Internet-routable IP address of the customer gateway's outside interface. Type: String
bgpAsn	The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN). Type: Integer
tagSet	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 408)

## DescribeAddressesResponseItem

The DescribeAddressesResponseItem data type.

## Ancestors

- DescribeAddressesResponseInfoType

## Relevant Operations

- DescribeAddresses

## Contents

The following table describes the elements contained in DescribeAddressesResponseItem type.

Name	Description
publicIp	The public IP address. Type: xsd:string
allocationId	The ID representing the allocation of the address for use with Amazon VPC. Type: xsd:string
domain	Whether this Elastic IP address is for EC2 instances (i.e., standard) or VPC instances. Type: xsd:string Valid Values: <code>standard</code>   <code>vpc</code>
instanceId	The ID of the instance the address is associated with (if any). Type: xsd:string
associationId	The ID representing the association of a VPC Elastic IP address with an instance in a VPC. Type: xsd:string
networkInterfaceId	The ID of the network interface. Type: xsd:string
networkInterfaceOwnerId	The ID of the AWS account that owns the network interface. Type: xsd:string

## DescribeImagesResponseItem type

The DescribeImagesResponseItem data type.

## Ancestors

- DescribeImagesResponseInfoType

## Relevant Operations

- DescribeImages

## Contents

The following table describes the elements contained in DescribeImagesResponseItem type.

Name	Description
imageId	The ID of the AMI. Type: xsd:string
imageLocation	The location of the AMI. Type: xsd:string
imageState	Current state of the AMI. If the operation returns <code>available</code> , the image is successfully registered and available for launching. Type: xsd:string <code>available   pending   failed</code>
imageOwnerId	AWS account ID of the image owner. Type: xsd:string
isPublic	Returns <code>true</code> if this image has public launch permissions. Returns <code>false</code> if it only has implicit and explicit launch permissions. Type: xsd:boolean
productCodes	Product codes associated with the AMI. Each code's information is wrapped in an <code>item</code> element. Type: <a href="#">ProductCodesSetItemType (p. 405)</a>
architecture	The architecture of the image. Type: xsd:string
imageType	The type of image (machine, kernel, or RAM disk). Type: xsd:string
kernelId	The kernel associated with the image, if any. Only applicable for machine images. Type: xsd:string
ramdiskId	The RAM disk associated with the image, if any. Only applicable for machine images. Type: xsd:string
platform	Value is <code>Windows</code> for Windows AMIs; otherwise blank. Type: xsd:string
stateReason	The reason for the state change. See <a href="#">StateReasonType (p. 419)</a> for a list of supported state change codes. Type: <a href="#">StateReasonType (p. 419)</a>

Name	Description
imageOwnerAlias	The AWS account alias (e.g., <code>amazon</code> , <code>self</code> , etc.) or AWS account ID that owns the AMI. Type: <code>xsd:string</code>
name	The name of the AMI that was provided during image creation. Type: <code>xsd:string</code>
description	The description of the AMI that was provided during image creation. Type: <code>xsd:string</code>
rootDeviceType	The root device type used by the AMI. The AMI can use an Amazon EBS or instance store root device. Type: <code>xsd:string</code> Valid Values: <code>ebs</code>   <code>instance-store</code>
rootDeviceName	The root device name (e.g., <code>/dev/sda1</code> , or <code>xvda</code> ). Type: <code>xsd:string</code>
blockDeviceMapping	A list of block device mappings for the image. Each mapping's information is wrapped in an <code>item</code> element. Type: <a href="#">BlockDeviceMappingItemType (p. 357)</a>
virtualizationType	The type of virtualization of the AMI. Type: <code>xsd:string</code> Valid Values: <code>paravirtual</code>   <code>hvm</code>
tagSet	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType (p. 408)</a>
hypervisor	The image's hypervisor type. Type: <code>xsd:string</code> Valid Values: <code>ovm</code>   <code>xen</code>

## DescribeKeyPairsResponseItem

The DescribeKeyPairsResponseItem data type.

### Ancestors

- DescribeKeyPairsResponseInfoType

### Relevant Operations

- DescribeKeyPairs

## Contents

The following table describes the elements contained in DescribeKeyPairsResponseSetItemType.

Name	Description
keyName	Name of the key pair. Type: xsd:string
keyFingerprint	If you used <code>CreateKeyPair</code> to create the key pair, this is the SHA-1 digest of the DER encoded private key. If you used <code>ImportKeyPair</code> to provide AWS the public key, this is the MD5 public key fingerprint as specified in section 4 of <a href="#">RFC4716</a> . Type: xsd:string

## DescribeReservedInstancesOfferingsResponseSetItemType

The DescribeReservedInstancesOfferingsResponseSetItemType data type.

### Ancestors

- DescribeReservedInstancesOfferingsResponseSetType

### Relevant Operations

- DescribeReservedInstancesOfferings

## Contents

The following table describes the elements contained in DescribeReservedInstancesOfferingsResponseSetItemType.

Name	Description
reservedInstancesOfferingId	The ID of the Reserved Instance offering. Type: xsd:string
instanceType	The instance type on which the Reserved Instance can be used. Type: xsd:string
availabilityZone	The Availability Zone in which the Reserved Instance can be used. Type: xsd:string
duration	The duration of the Reserved Instance, in seconds. Type: xs:long
fixedPrice	The purchase price of the Reserved Instance. Type: xs:double

Name	Description
usagePrice	The usage price of the Reserved Instance, per hour. Type: xs:double
productDescription	The Reserved Instance description. Type: xsd:string Valid Values: Linux/UNIX   Linux/UNIX (Amazon VPC)   Windows   Windows (Amazon VPC)
instanceTenancy	The tenancy of the reserved instance. Type: xs:string
currencyCode	The currency of the Reserved Instance offering you are purchasing. It's specified using ISO 4217 standard currency codes (e.g., USD, JPY). Type: xs:string

## DescribeReservedInstancesResponseSetItem

The DescribeReservedInstancesResponseSetItem data type.

### Ancestors

- DescribeReservedInstancesResponseSetType

### Relevant Operations

- DescribeReservedInstances

### Contents

The following table describes the elements contained in DescribeReservedInstancesResponseSetItem.

Name	Description
reservedInstancesId	The ID of the Reserved Instance. Type: xsd:string
instanceType	The instance type on which the Reserved Instance can be used. Type: xsd:string
availabilityZone	The Availability Zone in which the Reserved Instance can be used. Type: xsd:string
start	The date and time the Reserved Instance started. Type: xsd:dateTime

Name	Description
duration	The duration of the Reserved Instance, in seconds. Type: xs:long
fixedPrice	The purchase price of the Reserved Instance. Type: xs:double
usagePrice	The usage price of the Reserved Instance, per hour. Type: xs:double
instanceCount	The number of Reserved Instances purchased. Type: xs:integer
productDescription	The Reserved Instance description. Type: xs:string Valid Values: Linux/UNIX   Linux/UNIX (Amazon VPC)   Windows   Windows (Amazon VPC)
state	The state of the Reserved Instance purchase. Type: xs:string Valid Values: payment-pending   active   payment-failed   retired
tagSet	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType (p. 408)</a>
instanceTenancy	The tenancy of the reserved instance. Type: xs:string Valid Values: default   dedicated
currencyCode	The currency of the Reserved Instance. It's specified using ISO 4217 standard currency codes. Type: xs:string Valid Values: As specified in ISO 4217 (e.g., USD, JPY)

## DescribeSnapshotsSetItemResponseType

The DescribeSnapshotsSetItemResponseType data type.

### Ancestors

- DescribeSnapshotsSetResponseType

### Relevant Operations

- DescribeSnapshots

## Contents

The following table describes the elements contained in DescribeSnapshotsSetItemResponseType.

Name	Description
snapshotId	The ID of the snapshot. Type: xsd:string
volumeId	The ID of the volume. Type: xsd:string
status	Snapshot state. Type: xsd:string Valid Values: pending   completed   error
startTime	Time stamp when the snapshot was initiated. Type: xsd:dateTime
progress	The progress of the snapshot, in percentage. Type: xsd:string
ownerId	ID of the AWS account that owns the snapshot. Type: xsd:string
volumeSize	The size of the volume, in GiB. Type: xsd:string
description	Description of the snapshot. Type: xsd:string
ownerAlias	The AWS account alias (amazon, self, etc.) or AWS account ID that owns the AML. Type: xsd:string
tagSet	Tags assigned to the resource. Each tag's information is wrapped in an item element. Type: <a href="#">ResourceTagSetItem</a> (p. 408)

## DescribeVolumesSetItemResponseType

The DescribeVolumesSetItemResponseType data type.

### Ancestors

- ItemType-DescribeVolumesSetResponse

### Relevant Operations

- DescribeVolumes



## Contents

The following table describes the elements contained in `DescribeVolumesSetItemResponseType`.

Name	Description
<code>volumeId</code>	The ID of the volume. Type: <code>xsd:string</code>
<code>size</code>	The size of the volume, in GiBs. Type: <code>xsd:string</code>
<code>snapshotId</code>	Snapshot from which the volume was created (optional). Type: <code>xsd:string</code>
<code>availabilityZone</code>	Availability Zone in which the volume was created. Type: <code>xsd:string</code>
<code>status</code>	State of the volume. Type: <code>xsd:string</code> Valid Values: <code>creating</code>   <code>available</code>   <code>in-use</code>   <code>deleting</code>   <code>deleted</code>   <code>error</code>
<code>createTime</code>	Time stamp when volume creation was initiated. Type: <code>xsd:dateTime</code>
<code>attachmentSet</code>	Volume attachment information, wrapped in an <code>item</code> element. Type: <a href="#">AttachmentSetItemResponseType (p. 354)</a>
<code>tagSet</code>	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType (p. 408)</a>

## DhcpConfigurationItemType

The `DhcpConfigurationItemType` data type.

### Ancestors

- `DhcpConfigurationItemSetType`

### Relevant Operations

- `CreateDhcpOptions`
- `CreateDhcpOptions`
- `DescribeDhcpOptions`

## Contents

The following table describes the elements contained in `DhcpConfigurationItemType`.

Name	Description
<code>key</code>	The name of a DHCP option. Type: String
<code>valueSet</code>	A set of values for a DHCP option. Each value is wrapped in an <code>item</code> element. Type: <a href="#">DhcpValueType</a> (p. 373)

## DhcpOptionsType

The `DhcpOptionsType` data type.

### Ancestors

- `CreateDhcpOptionsResponse`
- `DhcpOptionsSetType`

### Relevant Operations

- `CreateDhcpOptions`
- `DescribeDhcpOptions`

## Contents

The following table describes the elements contained in `DhcpOptionsType`.

Name	Description
<code>dhcpOptionsId</code>	The ID of the set of DHCP options. Type: String
<code>dhcpConfigurationSet</code>	The list of options in the set. Each option's key and set of values are wrapped in an <code>item</code> element. Type: <a href="#">DhcpConfigurationItemType</a> (p. 371)
<code>tagSet</code>	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 408)

## DhcpValueType

The DhcpValueType data type.

### Ancestors

- DhcpValueSetType

### Relevant Operations

- CreateDhcpOptions
- CreateDhcpOptions
- DescribeDhcpOptions

### Contents

The following table describes the elements contained in DhcpValueType.

Name	Description
value	A value for the DHCP option. Type: String

## DiskImageDescriptionType

The DiskImageDescriptionType data type.

### Ancestors

- ImportInstanceVolumeDetailItemType (p. 378)
- ImportVolumeTaskDetailsType (p. 379)

### Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume

### Contents

The following table describes the elements contained in DiskImageDescriptionType.

Name	Description
format	Disk image format. Type: xs:string
size	Size of the disk image. Type: xs:long
importManifestUrl	A presigned URL for the import manifest stored in Amazon S3. For information about creating a presigned URL for an Amazon S3 object, read the "Query String Request Authentication Alternative" section of the <a href="#">Authenticating REST Requests</a> topic in the <i>Amazon Simple Storage Service Developer Guide</i> . Type: xs:string
checksum	Checksum computed for the disk image. Type: xs:string

## DiskImageVolumeDescriptionType

The DiskImageVolumeDescriptionType data type.

### Ancestors

- [ImportInstanceVolumeDetailItemType](#) (p. 378)
- [ImportVolumeTaskDetailsType](#) (p. 379)

### Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume

### Contents

The following table describes the elements contained in DiskImageVolumeDescriptionType.

Name	Description
size	Size of the volume. Type: xs:integer
id	Volume identifier. Type: xs:string

## EbsBlockDeviceType

The EbsBlockDeviceType data type.

### Ancestors

- [BlockDeviceMappingItemType](#) (p. 357)

### Relevant Operations

- DescribeImageAttribute
- DescribeImages
- RequestSpotInstances
- DescribeSpotInstanceRequests
- RequestSpotInstances
- RegisterImage
- RunInstances

### Contents

The following table describes the elements contained in EbsBlockDeviceType.

Name	Description
snapshotId	The ID of the snapshot. Type: xsd:string
volumeSize	The size of the volume, in GiBs. If you're specifying a block device mapping, this is required if you're not creating a volume from a snapshot. Type: integer
deleteOnTermination	Whether the Amazon EBS volume is deleted on instance termination. Type: xsd:boolean

## EbsInstanceBlockDeviceMappingResponseType

The EbsInstanceBlockDeviceMappingResponseType data type.

### Ancestors

- [InstanceBlockDeviceMappingResponseItemType](#) (p. 381)

## Relevant Operations

- DescribeInstanceAttribute
- DescribeInstances
- RunInstances

## Contents

The following table describes the elements contained in EbsInstanceBlockDeviceMappingResponseType.

Name	Description
volumeId	The ID of the Amazon EBS volume. Type: xsd:string
status	Attachment state. Type: xsd:string Valid Values: attaching   attached   detaching   detached
attachTime	Time stamp when the attachment initiated. Type: xsd:dateTime
deleteOnTermination	Whether the Amazon EBS volume is deleted on instance termination. Type: xsd:boolean

## GroupItem Type

The GroupItem Type data type.

## Ancestors

- GroupSetType

## Relevant Operations

- DescribeInstanceAttribute
- DescribeInstances
- RequestSpotInstances
- DescribeSpotInstanceRequests
- RequestSpotInstances
- RunInstances
- CreateNetworkInterface

## Contents

The following table describes the elements contained in GroupItem type.

Name	Description
groupId	ID of the security group. In API versions before 2011-01-01, this field returned the name of the security group. Type: xsd:string
groupName	Name of the security group. Type: xsd:string

## IcmpTypeCodeType

The IcmpTypeCodeType data type.

### Ancestors

- NetworkAclEntryType

### Relevant Operations

- CreateNetworkAcl
- DescribeNetworkAcls

## Contents

The following table describes the elements contained in IcmpTypeCodeType.

Name	Description
code	The ICMP code. A value of -1 means all codes for the given ICMP type. Type: Integer
type	The ICMP type. A value of -1 means all types. Type: Integer

## ImportInstanceTaskDetailsType

The ImportInstanceTaskDetailsType data type.

## Ancestors

- [ConversionTaskType](#) (p. 361)

## Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume

## Contents

The following table describes the elements contained in `ImportInstanceTaskDetailsType`.

Name	Description
<code>volumes</code>	A list of instance volumes for import. Each volume's information is wrapped in an <code>item</code> element. Type: <a href="#">ImportInstanceVolumeDetailItemType</a> (p. 378)
<code>instanceId</code>	The ID of the resulting instance in Amazon EC2. Type: <code>xs:string</code>
<code>platform</code>	Instance operating system. Type: <code>xs:string</code> Valid Value: <code>windows</code>
<code>description</code>	Optional description of the instance. Type: <code>xs:string</code>

## ImportInstanceVolumeDetailItemType

The `ImportInstanceVolumeDetailItemType` data type.

## Ancestors

- [ImportInstanceVolumeDetailSetType](#)

## Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume



## Contents

The following table describes the elements contained in `ImportInstanceVolumeDetailItemType`.

Name	Description
<code>bytesConverted</code>	Number of bytes converted so far. Type: <code>xs:long</code>
<code>availabilityZone</code>	The Availability Zone where the resulting instance will reside. Type: <code>xs:string</code>
<code>image</code>	Information about the image. Type: <a href="#">DiskImageDescriptionType</a> (p. 373)
<code>description</code>	Description you provided when starting the import instance task. Type: <code>xs:string</code>
<code>volume</code>	Information about the volume. Type: <a href="#">DiskImageVolumeDescriptionType</a> (p. 374)
<code>status</code>	Status of the import of this particular disk image. Type: <code>xs:string</code>
<code>statusMessage</code>	Status information or errors related to the disk image. Type: <code>xs:string</code>

## ImportVolumeTaskDetailsType

The `ImportVolumeTaskDetailsType` data type.

### Ancestors

- [ConversionTaskType](#) (p. 361)

### Relevant Operations

- `DescribeConversionTasks`
- `ImportInstance`
- `ImportVolume`

### Contents

The following table describes the elements contained in `ImportVolumeTaskDetailsType`.

Name	Description
bytesConverted	Number of bytes converted so far. Type: xs:long
availabilityZone	The Availability Zone where the resulting volume will reside. Type: xs:string
description	Description you provided when starting the import volume task. Type: xs:string
image	Information about the image. Type: <a href="#">DiskImageDescriptionType</a> (p. 373)
volume	Information about the volume. Type: <a href="#">DiskImageVolumeDescriptionType</a> (p. 374)

## InstanceBlockDeviceMappingItemType

The InstanceBlockDeviceMappingItemType data type.

### Ancestors

- InstanceBlockDeviceMappingType

### Relevant Operations

- ModifyInstanceAttribute

### Contents

The following table describes the elements contained in InstanceBlockDeviceMappingItemType.

Name	Description
deviceName	The device name (e.g., /dev/sdh, or xvdh). Type: xsd:string
virtualName	The virtual device name. Type: xsd:string
ebs	Parameters used to automatically set up Amazon EBS volumes when the instance is launched. Type: <a href="#">InstanceEbsBlockDeviceType</a> (p. 381)
noDevice	Include this empty element to indicate that you want to suppress the specified device from the mapping.

## InstanceBlockDeviceMappingResponseItemType

The InstanceBlockDeviceMappingResponseItemType data type.

### Ancestors

- InstanceBlockDeviceMappingResponseType

### Relevant Operations

- DescribeInstanceAttribute
- DescribeInstances
- RunInstances

### Contents

The following table describes the elements contained in InstanceBlockDeviceMappingResponseItemType.

Name	Description
deviceName	How the device is exposed to the instance (e.g., /dev/sdh, or xvdh). Type: xsd:string
ebs	Parameters used to automatically set up Amazon EBS volumes when the instance is launched. Type: <a href="#">EbsInstanceBlockDeviceMappingResponseType</a> (p. 375)

## InstanceEbsBlockDeviceType

The InstanceEbsBlockDeviceType data type.

### Ancestors

- InstanceBlockDeviceMappingItemType (p. 380)

### Relevant Operations

- ModifyInstanceAttribute

### Contents

The following table describes the elements contained in InstanceEbsBlockDeviceType.

Name	Description
<code>deleteOnTermination</code>	Whether the Amazon EBS volume is deleted on instance termination. Type: <code>xsd:boolean</code>
<code>volumeId</code>	The ID of the Amazon EBS volume. Type: <code>xsd:string</code>

## InstanceStatusEventsSetType

The InstanceStatusEventsSetType data type.

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 176)

### Contents

The following table describes the elements contained in InstanceStatusEventsSetType.

Name	Description
<code>item</code>	Information about scheduled events for the instance. Type: InstanceStatusEventType

## InstanceStatusEventType

The InstanceStatusEventType data type.

### Ancestors

- [DescribeInstanceStatus](#)  
InstanceStatusEventsSetType

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 176)

### Contents

The following table describes the elements contained in InstanceStatusEventType.

Name	Description
code	The associated code of the event. Type: String Valid parameters: <code>instance-reboot</code>   <code>system-reboot</code>   <code>instance-retirement</code>
description	A description of the event. Type: String
notBefore	The earliest scheduled start time for the event. Type: <code>dateType</code>
notAfter	The latest scheduled end time for the event. Type: <code>dateType</code>

## InstanceStatusItemType

The InstanceStatusItemType data type.

### Ancestors

- DescribeInstanceStatus
- InstanceStatusSetType

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 176)

### Contents

The following table describes the elements contained in InstanceStatusItemType.

Name	Description
instanceId	The ID of the Amazon EC2 instance. Type: String
availabilityZone	The Amazon EC2 instance's availability zone. Type: String
eventsSet	Extra information regarding events associated with the instance. Type: InstanceStatusEventsSetType
instanceState	The intended state of the instance. Calls to <code>DescribeInstanceStatus</code> require that an instance be in the running state. Type: <a href="#">InstanceStateType</a> (p. 390)

## InstanceStatusSetType

The InstanceStatusSetType data type.

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 176)

### Contents

The following table describes the elements contained in InstanceStatusSetType.

Name	Description
item	Information about the status of the instance. Type: InstanceStatusItemType

## InstanceMonitoringStateType

The InstanceMonitoringStateType data type.

### Ancestors

- [MonitorInstancesResponseSetItemType](#) (p. 397)
- [RunningInstancesItemType](#) (p. 411)

### Relevant Operations

- [MonitorInstances](#)
- [UnmonitorInstances](#)
- [DescribeInstances](#)
- [RunInstances](#)

### Contents

The following table describes the elements contained in InstanceMonitoringStateType.

Name	Description
state	State of monitoring for the instance. The <code>disabled</code> state means that Detailed Monitoring is disabled for the instance. The <code>enabled</code> state means that Detailed Monitoring is enabled for the instance. The <code>pending</code> state means that the instance is launching or that you recently enabled Detailed Monitoring for the instance. Type: <code>xsd:string</code> Valid Values: <code>disabled</code>   <code>enabled</code>   <code>pending</code>

## InstanceNetworkInterfaceAssociationType

The InstanceNetworkInterfaceAssociationType data type.

### Ancestors

- InstanceNetworkInterfaceSetItemType

### Relevant Operations

- RunInstances
- DescribeInstances

### Contents

The following table describes the elements contained in InstanceNetworkInterfaceSetItemType.

Name	Description
publicIp	The address of the Elastic IP address bound to the network interface. Type: <code>xsd:string</code>
ipOwnerId	The ID of the Elastic IP address owner. Type: <code>xsd:string</code>

## InstanceNetworkInterfaceSetItemRequestType

The InstanceNetworkInterfaceSetItemRequestType data type.

### Ancestors

- DescribeSpotInstanceRequests
- RequestSpotInstances

## Contents

The following table describes the elements contained in InstanceNetworkInterfaceSetItemRequestType.

Name	Description
networkInterfaceId	The ID of the network interface. Type: xsd:string
deviceIndex	Required. The index of the device on the instance for the network interface attachment. Type: int
subnetId	The ID of the subnet associated with the network string. Type: xsd:string
description	The description of the network interface. Type: xsd:string
privateIpAddress	The private IP address of the network interface. Type: xsd:string
groupSet	The group IDs for use by the network interface. Type: <a href="#">SecurityGroupIdSetItemType</a> (p. 414)
deleteOnTermination	If set to true, the interface will be deleted when the instance is terminated. Type: Boolean

## InstanceNetworkInterfaceSetItemType

The InstanceNetworkInterfaceSetItemType data type.

### Contents

The following table describes the elements contained in InstanceNetworkInterfaceSetItemType.

Name	Description
networkInterfaceId	The ID of the network interface. Type: xsd:string
subnetId	The ID of the subnet. Type: xsd:string
vpcId	The ID of the VPC. Type: xsd:string
description	The description of the network interface. Type: xsd:string



Name	Description
ownerId	The ID of the customer who created the network interface. Type: xsd:string
status	The network interface's status listed as "available" or "in-use". Type: xsd:string
privateIpAddress	The IP address of the network interface within the subnet. Type: xsd:string
privateDnsName	The private DNS name assigned to the instance. Type: xsd:string
sourceDestCheck	Flag indicating whether to validate network traffic to or from this network interface. Type: xsd:boolean
groupSet	Type: <a href="#">GroupItemType</a> (p. 376)
attachment	Type: ???
association	Type: <a href="#">InstanceNetworkInterfaceAssociationType</a> (p. 385)

## InstanceNetworkInterfaceSetRequestType

The InstanceNetworkInterfaceSetRequestType data type.

### Contents

The following table describes the elements contained in InstanceNetworkInterfaceSetRequestType.

Name	Description
networkInterfaceId	The ID of the network interface. Type: xsd:string
deviceIndex	The index of the device. Type: int
subnetId	The ID of the subnet. Type: xsd:string
description	The description. Type: xsd:string
privateIpAddress	The private IP address. Type: xsd:string
groupSet	Contains security group information. Type: SecurityGroupIdType

Name	Description
<code>deleteOnTermination</code>	Whether to delete the network interface when the instance is terminated. Type: boolean

## InstanceNetworkInterfaceSetType

The InstanceNetworkInterfaceSetType data type.

### Ancestors

- [InstanceNetworkInterfaceSetType \(p. 388\)](#)

### Relevant Operations

- [DescribeInstances](#)
- [RunInstances](#)

### Contents

The following table describes the elements contained in InstanceNetworkInterfaceSetType.

Name	Description
<code>networkInterfaceId</code>	The ID of the network interface. Type: xsd:string
<code>subnetId</code>	The ID of the subnet. Type: xsd:string
<code>vpcId</code>	The ID of the VPC. Type: xsd:string
<code>description</code>	The description. Type: xsd:string
<code>ownerId</code>	The ID of the customer who created the network interface. Type: xsd:string
<code>status</code>	The network interface's status listed as "available" or "in-use". Type: xsd:string
<code>privateIpAddress</code>	The IP address of the network interface within the subnet. Type: xsd:string
<code>privateDnsName</code>	The private DNS name. Type: xsd:string

Name	Description
sourceDestCheck	Flag to indicate whether to validate network traffic to or from this network interface. Type: xsd:boolean
groupSet.item	Type: GroupItemType
attachment	Type: InstanceNetworkInterfaceAttachmentType
association	Type: <a href="#">InstanceNetworkInterfaceAssociationType</a> (p. 385)
publicIp	The address of the elastic IP address bound to the network interface. Type: xsd:string
ipOwnerId	The ID of the Elastic IP address owner. Type: xsd:string

## InstanceStateChangeType

The InstanceStateChangeType data type.

### Ancestors

- InstanceStateChangeSetType

### Relevant Operations

- StartInstances
- StopInstances
- TerminateInstances

### Contents

The following table describes the elements contained in InstanceStateChangeType.

Name	Description
instanceId	The instance ID. Type: xsd:string
currentState	The current state of the instance. Type: <a href="#">InstanceStateType</a> (p. 390)
previousState	The previous state of the instance. Type: <a href="#">InstanceStateType</a> (p. 390)

# InstanceStateType

The InstanceStateType data type.

## Ancestors


- [InstanceStateChangeType](#) (p. 389)
- [InstanceStateChangeType](#) (p. 389)
- [RunningInstancesItemType](#) (p. 411)

## Relevant Operations

- StartInstances
- StopInstances
- TerminateInstances
- DescribeInstances
- RunInstances

## Contents

The following table describes the elements contained in InstanceStateType.

Name	Description
code	<p>A 16-bit unsigned integer. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented.</p> <p>Type: integer</p> <p>Valid Values: 0 (pending)   16 (running)   32 (shutting-down)   48 (terminated)   64 (stopping)   80 (stopped)</p> <p> <b>Note</b></p> <p>A code of 272 typically indicates a problem with the host running the instance. A reboot might resolve the problem (be aware that for a Windows system, a reboot is a hard reboot that might result in data corruption). If a reboot doesn't work, post a message to the <a href="#">EC2 forums</a> with the instance ID. Typically someone from the EC2 team can get your instance back to a normal state.</p>
name	<p>The current state of the instance.</p> <p>Type: xsd:string</p> <p>Valid Values: pending   running   shutting-down   terminated   stopping   stopped</p>

# InternetGatewayAttachmentType

The InternetGatewayAttachmentType data type.

## Ancestors

- InternetGatewayAttachmentSetType
- AttachInternetGatewayResponse

## Relevant Operations

- CreateInternetGateway
- DescribeInternetGateways
- AttachInternetGateway

## Contents

The following table describes the elements contained in InternetGatewayAttachmentType.

Name	Description
vpcId	The ID of the VPC the Internet gateway is attached to. Type: String
state	The current state of the attachment. Type: String Valid Values: attaching   attached   detaching   detached

# InternetGatewayType

The VpnGatewayType data type.

## Ancestors

- CreateInternetGatewayResponse
- InternetGatewaySetType

## Relevant Operations

- CreateInternetGateway
- DescribeInternetGateways

## Contents

The following table describes the elements contained in `InternetGatewayType`.

Name	Description
<code>internetGatewayId</code>	The ID of the Internet gateway. Type: String
<code>attachmentSet</code>	A list of VPCs attached to the Internet gateway. Each VPC's information is wrapped in an <code>item</code> element. Type: <a href="#">InternetGatewayAttachmentType (p. 391)</a>
<code>tagSet</code>	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType (p. 408)</a>

## IpPermissionType

The `IpPermissionType` data type.

### Ancestors

- `IpPermissionSetType`

### Relevant Operations

- `AuthorizeSecurityGroupIngress`
- `RevokeSecurityGroupIngress`
- `DescribeSecurityGroups`

## Contents

The following table describes the elements contained in `IpPermissionType`.

Name	Description
<code>ipProtocol</code>	Protocol. When you call <code>DescribeSecurityGroups</code> , the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (e.g., <code>tcp</code> , <code>udp</code> , or <code>icmp</code> ). For a list of protocol numbers, go to <a href="#">Protocol Numbers</a> . Type: <code>xsd:string</code>
<code>fromPort</code>	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

Name	Description
toPort	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
groups	A list of security group and AWS account ID pairs. Each pair is wrapped in an <code>item</code> element. Type: <a href="#">UserIdGroupPairType</a> (p. 422)
ipRanges	A list of IP ranges. Each range is wrapped in an <code>item</code> element. Type: <a href="#">IpRangeItemType</a> (p. 393)

## IpRangeItemType

The IpRangeItemType data type.

### Ancestors

- IpRangeSetType

### Relevant Operations

- AuthorizeSecurityGroupIngress
- RevokeSecurityGroupIngress
- DescribeSecurityGroups

### Contents

The following table describes the elements contained in IpRangeItemType.

Name	Description
cidrIp	CIDR range. Cannot be used when specifying a source security group. Type: xsd:string

## LaunchPermissionItemType

The LaunchPermissionItemType data type.

### Ancestors

- LaunchPermissionListType

## Relevant Operations

- DescribeImageAttribute
- ModifyImageAttribute

## Contents

The following table describes the elements contained in LaunchPermissionItemType.

Name	Description
group	Name of the group. Type: xsd:string Valid Value: all
userId	AWS account ID. Type: xsd:string

## LaunchSpecificationRequestType

The LaunchSpecificationRequestType data type.

## Ancestors

- RequestSpotInstancesType

## Relevant Operations

- RequestSpotInstances

## Contents

The following table describes the elements contained in LaunchSpecificationRequestType.

Name	Description
imageId	The AMI ID. Type: xsd:string
keyName	The name of the key pair. Type: xsd:string
groupSet	A list of security groups. Each group's information is wrapped in an <code>item</code> element. Type: <a href="#">GroupItemType</a> (p. 376)



Name	Description
userData	Base64-encoded MIME user data made available to the instance(s) in the reservation. Type: <a href="#">UserData</a> (p. 422)
addressingType	Deprecated. Type: xsd:string
instanceType	The instance type. Type: xsd:string
placement	Placement information for the instance. Type: <a href="#">PlacementRequestType</a> (p. 403)
kernelId	The ID of the kernel to select. Type: xsd:string
ramdiskId	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: xsd:string
blockDeviceMapping	A list of block device mappings for the instance. Each mapping's information is wrapped in an <code>item</code> element. Type: <a href="#">BlockDeviceMappingItemType</a> (p. 357)
monitoring	Whether to enable monitoring for the instance. Type: <a href="#">MonitoringInstanceType</a> (p. 396)
subnetId	The Amazon VPC subnet ID within which to launch the instance(s) for Amazon Virtual Private Cloud. Type: xsd:string
networkInterfaceSet	Type: <a href="#">InstanceNetworkInterfaceSetRequestType</a> (p. 387)

## LaunchSpecificationResponseType

The LaunchSpecificationResponseType data type.

### Ancestors

- [SpotInstanceRequestSetItemType](#) (p. 416)

### Relevant Operations

- [DescribeSpotInstanceRequests](#)

## Contents

The following table describes the elements contained in `LaunchSpecificationResponseType`.

Name	Description
<code>imageId</code>	The AMI ID. Type: <code>xsd:string</code>
<code>keyName</code>	The name of the key pair. Type: <code>xsd:string</code>
<code>groupSet</code>	A list of security groups. Each group's information is wrapped in an <code>item</code> element. Type: <a href="#">GroupItemType</a> (p. 376)
<code>addressingType</code>	Deprecated. Type: <code>xsd:string</code>
<code>instanceType</code>	The instance type. Type: <code>xsd:string</code>
<code>placement</code>	Placement information for the instance. Type: <a href="#">PlacementRequestType</a> (p. 403)
<code>kernelId</code>	The ID of the kernel to select. Type: <code>xsd:string</code>
<code>ramdiskId</code>	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: <code>xsd:string</code>
<code>blockDeviceMapping</code>	A list of block device mappings for the instance. Each mapping's information is wrapped in an <code>item</code> element. Type: <a href="#">BlockDeviceMappingItemType</a> (p. 357)
<code>monitoring</code>	Whether to enable monitoring for the instance. Type: <a href="#">MonitoringInstanceType</a> (p. 396)
<code>subnetId</code>	The Amazon VPC subnet ID within which to launch the instance(s) for Amazon Virtual Private Cloud. Type: <code>xsd:string</code>
<code>networkInterfaceSet</code>	Type: <a href="#">InstanceNetworkInterfaceSetRequestType</a> (p. 387)

## MonitoringInstanceType

The `MonitoringInstanceType` data type.

## Ancestors

- [LaunchSpecificationRequestType](#) (p. 394)
- [LaunchSpecificationResponseType](#) (p. 395)
- [RunInstancesType](#)

## Relevant Operations

- [RequestSpotInstances](#)
- [DescribeSpotInstanceRequests](#)
- [RequestSpotInstances](#)
- [RunInstances](#)

## Contents

The following table describes the elements contained in [MonitoringInstanceType](#).

Name	Description
enabled	Whether monitoring is enabled for the instance. Type: xsd:boolean

## MonitorInstancesResponseSetItemType

The [MonitorInstancesResponseSetItemType](#) data type.

## Ancestors

- [MonitorInstancesResponseType](#)

## Relevant Operations

- [MonitorInstances](#)
- [UnmonitorInstances](#)

## Contents

The following table describes the elements contained in [MonitorInstancesResponseSetItemType](#).

Name	Description
instanceId	Instance ID. Type: xsd:string

Name	Description
monitoring	Monitoring information. Type: <a href="#">InstanceMonitoringStateType</a> (p. 384)

## NetworkAclEntryType

The NetworkAclEntryType data type.

### Ancestors

- NetworkAclEntrySetType

### Relevant Operations

- CreateNetworkAcl
- DescribeNetworkAcls

### Contents

The following table describes the elements contained in NetworkAclEntryType.

Name	Description
ruleNumber	Specific rule number for the entry. ACL entries are processed in ascending order by rule number. Type: Integer
protocol	Protocol. A value of -1 means all protocols. Type: Integer Valid Values: Any protocol number (go to <a href="#">Protocol Numbers</a> ).
ruleAction	Whether to allow or deny the traffic that matches the rule. Type: string
egress	Boolean flag to indicate an egress rule (rule is applied to traffic leaving the subnet). Value of <code>true</code> indicates egress. Type: boolean
cidrBlock	The network range to allow or deny, in CIDR notation. Type: String
icmpTypeCode	For the ICMP protocol, this is the ICMP type and code. Type: <a href="#">IcmpTypeCodeType</a> (p. 377)
portRange	For the TCP or UDP protocols, the range of ports the rule applies to. Type: <a href="#">PortRangeType</a> (p. 404)

## NetworkACLType

The NetworkACLType data type.

### Ancestors

- CreateNetworkACLResponse
- NetworkACLSetType

### Relevant Operations

- CreateNetworkACL
- DescribeNetworkACLs

### Contents

The following table describes the elements contained in NetworkACLType.

Name	Description
networkACLId	The network ACL's ID. Type: String
vpcId	The ID of the VPC the network ACL is in. Type: String
default	Whether this is the default network ACL in the VPC. Type: Boolean Valid Values: <code>true</code>   <code>false</code>
entrySet	A list of entries (rules) in the network ACL. Each entry's information is wrapped in an <code>item</code> element. Type: <a href="#">NetworkACLEntryType (p. 398)</a>
associationSet	A list of associations between the network ACL and one or more subnets. Each association's information is wrapped in an <code>item</code> element. Type: <a href="#">NetworkACLAssociationType (p. 399)</a>
tagSet	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType (p. 408)</a>

## NetworkACLAssociationType

The NetworkACLAssociationType data type.

## Ancestors

- NetworkAclAssociationSetType

## Relevant Operations

- CreateNetworkAcl
- DescribeNetworkAcls

## Contents

The following table describes the elements contained in NetworkAclAssociationType.

Name	Description
networkAclAssociationId	An identifier representing the association between a network ACL and a subnet. Type: xsd:string
networkAclId	The ID of the network ACL in the association. Type: xsd:string
subnetId	The ID of the subnet in the association. Type: xsd:string

## NetworkInterfaceSet

The NetworkInterfaceSet data type.

## Ancestors

- InstanceNetworkInterfaceSetType

## Relevant Operations

- DescribeInstances
- DescribeNetworkInterfaces
- RequestSpotInstances

## Contents

The following table describes the elements contained in NetworkInterfaceSet.

Name	Description
networkInterfaceId	The ID of the network interface. Type: xsd:string
subnetId	The ID of the subnet. Type: xsd:string
vpcId	The ID of the VPC. Type: xsd:string
description	The description. Type: xsd:string
ownerId	The ID of the customer who created the interface. Type: xsd:string
status	"available" or "in-use" Type: xsd:string
privateIpAddress	IP address of the interface within the subnet. Type: xsd:string
privateDnsName	The private DNS name. Type: xsd:string
sourceDestCheck	Flag indicating whether traffic to or from the instance is validated. Type: Boolean
groupSet	Type: GroupItemType
attachment	Type: ???
association	Type: <a href="#">InstanceNetworkInterfaceAssociationType</a> (p. 385)

## NetworkInterfaceType

The NetworkInterfaceType data type.

### Relevant Operations

- DescribeNetworkInterfaces

### Contents

The following table describes the elements contained in NetworkInterfaceType.

Name	Description
networkInterfaceId	The ID of the network interface. Type: xsd:string

Name	Description
subnetId	The ID of the subnet. Type: xsd:string
vpcId	The ID of the VPC. Type: xsd:string
availabilityZone	The availability zone. Type: xsd:string
description	The description. Type: xsd:string
ownerId	The ID of the customer who created the interface. Type: xsd:string
requesterId	ID of the entity that launched the instance on your behalf (e.g., AWS Management Console, Auto Scaling, etc.) Type: xsd:string
requesterManaged	Type: xsd:string
status	"available" or "in-use" Type: xsd:string
macAddress	Type: xsd:string
privateIpAddress	IP address of the interface within the subnet. Type: xsd:string
privateDnsName	The private DNS name. Type: xsd:string
sourceDestCheck	Flag indicating whether traffic to or from the instance is validated. Type: Boolean
groupSet	Type: GroupSetType
attachment	Type: InstanceNetworkInterfaceAttachmentType
association	Type: <a href="#">InstanceNetworkInterfaceAssociationType</a> (p. 385)
tagSet	Type: ResourceTagSetType

## PlacementGroupInfoType

### Relevant Operations

- DescribePlacementGroups



## Contents

The following table describes the elements contained in PlacementGroupInfoType.

Name	Description
groupName	Name of the placement group. Type: xsd:string
strategy	The placement strategy. Type: xsd:string Valid Values: cluster
state	Status of the placement group. Type: xsd:string Valid Values: pending   available   deleting   deleted

## PlacementRequestType

The PlacementRequestType data type.

### Ancestors

- [LaunchSpecificationRequestType](#) (p. 394)
- [LaunchSpecificationResponseType](#) (p. 395)
- RunInstancesType

### Relevant Operations

- RequestSpotInstances
- DescribeSpotInstanceRequests
- RequestSpotInstances
- RunInstances

## Contents

The following table describes the elements contained in PlacementRequestType.

Name	Description
availabilityZone	Availability Zone for launching the instance. Type: xsd:string
groupName	The name of a placement group for the instance. Type: xsd:string

## PlacementResponseType

The PlacementResponseType data type.

### Ancestors

- [RunningInstancesItemType](#) (p. 411)

### Relevant Operations

- DescribeInstances
- RunInstances

### Contents

The following table describes the elements contained in PlacementResponseType.

Name	Description
availabilityZone	The Availability Zone of the instance. Type: xsd:string
groupName	The name of the placement group the instance is in (for cluster compute instances). Type: xsd:string
tenancy	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: xsd:string

## PortRangeType

The PortRangeType data type.

### Ancestors

- NetworkAclEntryType

### Relevant Operations

- DescribeNetworkAcls

## Contents

The following table describes the elements contained in PortRangeType.

Name	Description
from	The first port in the range. Type: xsd:integer
to	The last port in the range. Type: xsd:integer

## ProductCodeItemType

The ProductCodeItemType data type.

### Ancestors

- ProductCodeListType

### Relevant Operations

- DescribeImageAttribute
- ModifyImageAttribute

## Contents

The following table describes the elements contained in ProductCodeItemType.

Name	Description
productCode	Product code. Type: xsd:string

## ProductCodesSetItemType

The ProductCodesSetItemType data type.

### Ancestors

- ProductCodesSetType

## Relevant Operations

- DescribeImages
- DescribeInstances
- RunInstances

## Contents

The following table describes the elements contained in ProductCodesSetItemType.

Name	Description
productCode	Product code. Type: xsd:string

## ProductDescriptionSetItemType

The ProductDescriptionSetItemType data type.

## Ancestors

- ProductDescriptionSetType

## Relevant Operations

- DescribeSpotPriceHistory

## Contents

The following table describes the elements contained in ProductDescriptionSetItemType.

Name	Description
productDescription	The description of the AMI. Type: xsd:string Valid Values: Linux/UNIX   SUSE Linux   Windows

## RegionItemType

The RegionItemType data type.

## Ancestors

- RegionSetType

## Relevant Operations

- DescribeRegions

## Contents

The following table describes the elements contained in RegionItemType.

Name	Description
regionName	Name of the Region. Type: xsd:string
regionEndpoint	Region service endpoint. Type: xsd:string

## ReservationInfoType

The ReservationInfoType data type.

## Ancestors

- ReservationSetType

## Relevant Operations

- DescribeInstances

## Contents

The following table describes the elements contained in ReservationInfoType.

Name	Description
reservationId	Unique ID of the reservation. Type: xsd:string
ownerId	ID of the AWS account that owns the reservation. Type: xsd:string
groupSet	A list of security groups. Each group's information is wrapped in an <code>item</code> element. Type: <a href="#">GroupItemType</a> (p. 376)
instancesSet	A list of instances. Each instance's information is wrapped in an <code>item</code> element. Type: <a href="#">RunningInstancesItemType</a> (p. 411)

Name	Description
requesterId	ID of the requester that launched the instances on your behalf (e.g., AWS Management Console, Auto Scaling). Type: xsd:string

## ResourceTagSetItemType

The ResourceTagSetItemType data type.

### Relevant Operations

- DescribeImages
- DescribeInstances
- DescribeVolumes
- DescribeSnapshots
- DescribeSpotInstanceRequests

### Contents

The following table describes the elements contained in ResourceTagSetItemType.

Name	Description
key	Tag key. Type: xsd:string
value	Tag value. Type: xsd:string

## RouteTableAssociationType

The RouteTableAssociationType data type.

### Ancestors

- RouteTableAssociationSetType

### Relevant Operations

- CreateRouteTable
- DescribeRouteTables

## Contents

The following table describes the elements contained in NetworkAclAssociationType.

Name	Description
routeTableAssociationId	An identifier representing the association between a route table and a subnet. Type: xsd:string
routeTableId	The ID of the route table in the association. Type: xsd:string
subnetId	The ID of the subnet in the association. Type: xsd:string
main	Whether this is the main route table. Type: xsd:boolean

## RouteTableType

The RouteTableType data type.

### Ancestors

- CreateRouteTableResponse
- RouteTableSetType

### Relevant Operations

- CreateRouteTable
- DescribeRouteTables

## Contents

The following table describes the elements contained in RouteTableType.

Name	Description
routeTableId	The route table's ID. Type: String
vpcId	The ID of the VPC the route table is in. Type: String
routeSet	A list of routes in the route table. Each route's information is wrapped in an <code>item</code> element. Type: <a href="#">RouteType (p. 410)</a>

Name	Description
<code>associationSet</code>	A list of associations between the route table and one or more subnets. Each association's information is wrapped in an <code>item</code> element. Type: <a href="#">RouteTableAssociationType</a> (p. 408)
<code>tagSet</code>	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 408)

## RouteType

The RouteType data type.

### Ancestors

- [RouteSetType](#)

### Relevant Operations

- [CreateRouteTable](#)
- [DescribeRouteTables](#)

### Contents

The following table describes the elements contained in RouteType.

Name	Description
<code>destinationCidrBlock</code>	The CIDR address block used for the destination match. For example: 0.0.0.0/0. Type: String
<code>gatewayId</code>	The ID of a gateway attached to your VPC. Type: String
<code>instanceId</code>	The ID of a NAT instance in your VPC. Type: String
<code>instanceOwnerId</code>	The owner of the instance. Type: String
<code>networkInterfaceId</code>	The network interface ID. Type: String



Name	Description
<code>state</code>	The state of the route. The <code>blackhole</code> 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.). Type: String Valid Values: <code>active</code>   <code>blackhole</code>

## RunningInstancesItemType

The RunningInstancesItemType data type.

### Ancestors

- RunningInstancesSetType

### Relevant Operations

- DescribeInstances
- RunInstances

### Contents

The following table describes the elements contained in RunningInstancesItemType.

Name	Description
<code>instanceId</code>	Unique ID of the instance launched. Type: <code>xsd:string</code>
<code>imageId</code>	Image ID of the AMI used to launch the instance. Type: <code>xsd:string</code>
<code>instanceState</code>	The current state of the instance. Type: <a href="#">InstanceStateType</a> (p. 390)
<code>privateDnsName</code>	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. Type: <code>xsd:string</code>
<code>dnsName</code>	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. Type: <code>xsd:string</code>
<code>reason</code>	Reason for the most recent state transition. This might be an empty string. Type: <code>xsd:string</code>

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Name	Description
keyName	If this instance was launched with an associated key pair, this displays the key pair name. Type: xsd:string
amiLaunchIndex	The AMI launch index, which can be used to find this instance within the launch group. Type: xsd:string
productCodes	Product codes attached to this instance. Each product code's information is wrapped in an <code>item</code> element. Type: <a href="#">ProductCodesSetItemType</a> (p. 405)
instanceType	The instance type (e.g., m1.small). Type: xsd:string
launchTime	The time the instance launched. Type: xsd:dateTime
placement	The location where the instance launched. Type: <a href="#">PlacementResponseType</a> (p. 404)
kernelId	Kernel associated with this instance. Type: xsd:string
ramdiskId	RAM disk associated with this instance. Type: xsd:string
platform	Platform of the instance (e.g., Windows). Type: xsd:string
monitoring	Whether monitoring is enabled for the instance. Type: <a href="#">InstanceMonitoringStateType</a> (p. 384)
subnetId	The Amazon VPC subnet ID in which the instance is running. Type: xsd:string
vpcId	The Amazon VPC in which the instance is running. Type: xsd:string
privateIpAddress	The private IP address assigned to the instance. Type: xsd:string
ipAddress	The IP address of the instance. Type: xsd:string

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Name	Description
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 <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, go to <a href="#">NAT Instances</a> in the <i>Amazon Virtual Private Cloud User Guide</i> . Type: <code>xsd:boolean</code>
groupSet	A list of VPC security groups the instance is in. Each group's information is wrapped in an <code>item</code> element. Type: <a href="#">GroupItemType</a> (p. 376)
stateReason	The reason for the most recent state transition. See <a href="#">StateReasonType</a> (p. 419) for a listing of supported state change codes. Type: <a href="#">StateReasonType</a> (p. 419)
architecture	The architecture of the image. Type: <code>xsd:string</code> Valid Values: <code>i386</code>   <code>x86_64</code>
rootDeviceType	The root device type used by the AMI. The AMI can use an Amazon EBS or instance store root device. Type: <code>xsd:string</code> Valid Values: <code>ebs</code>   <code>instance-store</code>
rootDeviceName	The root device name (e.g., <code>/dev/sda1</code> ). Type: <code>xsd:string</code>
blockDeviceMapping	A list of block device mappings for the instance. Each mapping's information is wrapped in an <code>item</code> element. Type: <a href="#">InstanceBlockDeviceMappingResponseItemType</a> (p. 381)
instanceLifecycle	Whether this is a Spot Instance. Type: <code>xsd:string</code> Valid Values: <code>spot</code>   blank (no value)
spotInstanceRequestId	The ID of the Spot Instance request. Type: <code>xsd:string</code>
virtualizationType	The instance's virtualization type. Type: <code>xsd:string</code> Valid Values: <code>paravirtual</code>   <code>hvm</code>
clientToken	Idempotency token you provided when you launched the instance. Type: <code>xsd:string</code>
tagSet	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 408)

Name	Description
hypervisor	The instance's hypervisor type. Type: xsd:string Valid Values: ovm   xen
networkInterfaceSet	Type: <a href="#">InstanceNetworkInterfaceSetType</a> (p. 388)

## SecurityGroupIdSetItemType

The SecurityGroupIdSetItemType data type.

### Ancestors

- LaunchSpecificationResponseType
- LaunchSpecificationRequestType
- InstanceNetworkInterfaceSetItemRequestType

### Relevant Operations

- CreateNetworkInterface
- ModifyNetworkInterfaceAttribute
- ModifyInstanceAttribute
- RequestSpotInstances
- DescribeSpotInstanceRequests
- RunInstances

### Contents

The following table describes the elements contained in SecurityGroupItemtype.

Name	Description
groupId	ID of the security group associated with the network interface. Type: xsd:string

## SecurityGroupItemtype

The SecurityGroupItemtype data type.

### Ancestors

- SecurityGroupSetType

## Relevant Operations

- DescribeSecurityGroups

## Contents

The following table describes the elements contained in SecurityGroupItemType.

Name	Description
ownerId	AWS account ID of the owner of the security group. Type: xsd:string
groupId	ID of the security group. Type: xsd:string
groupName	Name of the security group. Type: xsd:string
groupDescription	Description of the security group. Type: xsd:string
vpcId	ID of the VPC the security group is in (for VPC security groups). Type: xsd:string
ipPermissions	A list of inbound rules associated with the security group. Each permission is wrapped in an <code>item</code> element. Type: <a href="#">IpPermissionType</a> (p. 392)
ipPermissionsEgress	A list of outbound rules associated with the security group (for VPC security groups). Each permission is wrapped in an <code>item</code> element. Type: <a href="#">IpPermissionType</a> (p. 392)
tagSet	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 408)

## SpotDatafeedSubscriptionType

The SpotDatafeedSubscriptionType data type.

## Ancestors

- CreateSpotDatafeedSubscriptionResponseType
- DescribeSpotDatafeedSubscriptionResponseType

## Relevant Operations

- [CreateSpotDatafeedSubscription](#)
- [DescribeSpotDatafeedSubscription](#)

## Contents

The following table describes the elements contained in `SpotDatafeedSubscriptionType`.

Name	Description
<code>ownerId</code>	The AWS account ID of the account. Type: <code>xsd:string</code>
<code>bucket</code>	The Amazon S3 bucket where the Spot Instance datafeed is located. Type: <code>xsd:string</code>
<code>prefix</code>	Prefix that is prepended to datafeed files. Type: <code>xsd:string</code>
<code>state</code>	The state of the Spot Instance datafeed subscription. Type: <code>xsd:string</code> Valid Values: <code>Active</code>   <code>Inactive</code>
<code>fault</code>	Fault codes for the Spot Instance request, if any. Type: <a href="#">SpotInstanceStateFaultType</a> (p. 418)

## SpotInstanceRequestSetItemType

The `SpotInstanceRequestSetItemType` data type.

## Ancestors

- [SpotInstanceRequestSetType](#)

## Relevant Operations

- [DescribeSpotInstanceRequests](#)
- [RequestSpotInstances](#)

## Contents

The following table describes the elements contained in `SpotInstanceRequestSetItemType`.

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Name	Description
spotInstanceRequestId	The ID of the Spot Instance request. Type: xsd:string
spotPrice	The maximum hourly price for any Spot Instance launched to fulfill the request. Type: xsd:string
type	The Spot Instance request type. Type: xsd:string Valid Values: one-time   persistent
state	The state of the Spot Instance request. Type: xsd:string Valid Values: open   closed   cancelled   failed
fault	Fault codes for the Spot Instance request, if any. Type: <a href="#">SpotInstanceStateFaultType (p. 418)</a>
validFrom	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: xsd:dateTime
validUntil	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: xsd:dateTime
launchGroup	The instance launch group. Launch groups are Spot Instances that launch together and terminate together. Type: xsd:string
availabilityZoneGroup	The Availability Zone group. If you specify the same Availability Zone group for all Spot Instance requests, all Spot Instances are launched in the same Availability Zone. Type: xsd:string
launchedAvailabilityZone	The Availability Zone in which the bid is launched. Type: xsd:string
launchSpecification	Additional information for launching instances. Type: <a href="#">LaunchSpecificationResponseType (p. 395)</a>
instanceId	The instance ID, if an instance has been launched to fulfill the Spot Instance request. Type: xsd:string
createTime	Time stamp when the Spot Instance request was created. Type: xsd:dateTime

Name	Description
productDescription	The product description associated with the Spot Instance. Type: xsd:string
tagSet	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 408)

## SpotInstanceStateFaultType

The SpotInstanceStateFaultType data type.

### Ancestors

- [SpotDatafeedSubscriptionType](#) (p. 415)
- [SpotInstanceRequestSetItemType](#) (p. 416)

### Relevant Operations

- [CreateSpotDatafeedSubscription](#)
- [DescribeSpotDatafeedSubscription](#)
- [DescribeSpotInstanceRequests](#)
- [RequestSpotInstances](#)

### Contents

The following table describes the elements contained in SpotInstanceStateFaultType.

Name	Description
code	Reason code for the Spot Instance state change. Type: xsd:string
message	Message for the Spot Instance state change. Type: xsd:string

## SpotPriceHistorySetItemType

The SpotPriceHistorySetItemType data type.

### Ancestors

- [SpotPriceHistorySetType](#)



## Relevant Operations

- [DescribeSpotPriceHistory](#)

## Contents

The following table describes the elements contained in `SpotPriceHistorySetItemType`.

Name	Description
<code>instanceType</code>	The instance type. Type: <code>xsd:string</code>
<code>productDescription</code>	General description of the AMI. Type: <code>xsd:string</code> Valid Values: <code>Linux/UNIX   SUSE Linux   Windows</code>
<code>spotPrice</code>	The maximum price you will pay to launch one or more Spot Instances. Type: <code>xsd:string</code>
<code>timestamp</code>	The date and time the request was created. Type: <code>xsd:dateTime</code>
<code>availabilityZone</code>	The Availability Zone. Type: <code>xsd:string</code>

## StateReasonType

The `StateReasonType` data type.

## Ancestors

- [DescribeImagesResponseItemType](#) (p. 364)
- [RunningInstancesItemType](#) (p. 411)

## Relevant Operations

- [DescribeImages](#)
- [DescribeInstances](#)
- [RunInstances](#)

## Contents

The following table describes the elements contained in `StateReasonType`.

Name	Description
code	Reason code for the state change. See the following table for a list of codes. Type: xsd:string
message	Message for the state change. Type: xsd:string

The following table lists the currently supported state reason codes.

Code	Description
Server.SpotInstanceTermination	A Spot Instance was terminated due to an increase in the market price.
Server.InternalError	An internal error occurred during instance launch, resulting in termination.
Server.InsufficientInstanceCapacity	There was insufficient instance capacity to satisfy the launch request.
Client.InternalError	A client error caused the instance to terminate on launch.
Client.InstanceInitiatedShutdown	The instance initiated shutdown by a shutdown -h command issued from inside the instance.
Client.UserInitiatedShutdown	The instance was shutdown by a user via an API call.
Client.VolumeLimitExceeded	The volume limit was exceeded.
Client.InvalidSnapshot.NotFound	The specified snapshot was not found.

## SubnetType

The SubnetType data type.

### Ancestors

- CreateSubnetResponse
- SubnetSetType

### Relevant Operations

- CreateSubnet
- DescribeSubnets

## Contents

The following table describes the elements contained in SubnetType.

Name	Description
subnetId	The subnet's ID. Type: String
state	The current state of the subnet. Type: String Valid Values: pending   available
vpcId	The ID of the VPC the subnet is in. Type: String
cidrBlock	The CIDR block assigned to the subnet. Type: String
availableIpAddressCount	The number of unused IP addresses in the subnet (the IP addresses for any stopped instances are considered unavailable). Type: Integer
availabilityZone	The Availability Zone the subnet is in. Type: String
tagSet	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 408)

## TagSetItemType

The TagSetItemType data type.

## Relevant Operations

- DescribeTags

## Contents

The following table describes the elements contained in TagSetItemType.

Name	Description
resourceId	The resource's ID. For example, ami-1a2b3c4d. Type: String

Name	Description
resourceType	Type of resource. Type: String Valid Values: customer-gateway   dhcp-options   image   instance   internet-gateway   network-acl   reserved-instances   route-table   security-group   snapshot   spot-instances-request   subnet   volume   vpc   vpn-connection   vpn-gateway
key	The tag's key. Type: String
value	The tag's value. Type: String

## UserDataType

The UserData type data type.

### Ancestors

- [LaunchSpecificationRequestType](#) (p. 394)
- [RunInstancesType](#)

### Relevant Operations

- [RequestSpotInstances](#)
- [DescribeSpotInstanceRequests](#)
- [RequestSpotInstances](#)
- [RunInstances](#)

### Contents

The following table describes the elements contained in UserData type.

Name	Description
data	Base64-encoded MIME user data made available to the instance(s) in the reservation. Type: xsd:string

## UserGroupIdPairType

The UserGroupIdPairType data type.

## Ancestors

- UserIdGroupPairSetType

## Relevant Operations

- AuthorizeSecurityGroupEgress
- AuthorizeSecurityGroupIngress
- RevokeSecurityGroupEgress
- RevokeSecurityGroupIngress
- DescribeSecurityGroups

## Contents

The following table describes the elements contained in UserIdGroupPairType.

Name	Description
userId	ID of an AWS account. Cannot be used when specifying a CIDR IP address range. Type: xsd:string
groupId	ID of the security group in the specified AWS account. Cannot be used when specifying a CIDR IP address range. Type: xsd:string
groupName	Name of the security group in the specified AWS account. Cannot be used when specifying a CIDR IP address range. Type: xsd:string

## ValueType

The ValueType data type.

## Ancestors

- ValueSetType

## Relevant Operations

- DescribeVpcs
- DescribeSubnets
- DescribeVpnGateways
- DescribeCustomerGateways

- DescribeVpnConnections

## Contents

The following table describes the elements contained in ValueType.

Name	Description
value	An individual value. Type: String

## VpcType

The VpcType data type.

### Ancestors

- CreateVpcResponse
- VpcSetType

## Relevant Operations

- CreateVpc
- DescribeVpcs

## Contents

The following table describes the elements contained in VpcType.

Name	Description
vpcId	The VPC's ID. Type: String
state	The current state of the VPC. Type: String Valid Values: <code>pending</code>   <code>available</code>
cidrBlock	The CIDR block the VPC covers. 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

Name	Description
tagSet	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 408)
instanceTenancy	The allowed tenancy of instances launched into the VPC. Type: String

## VpnConnectionType

The VpnConnectionType data type.

### Ancestors

- [CreateVpnConnectionResponse](#)
- [VpnConnectionSetType](#)

### Relevant Operations

- [CreateVpnConnection](#)
- [DescribeVpnConnections](#)

### Contents

The following table describes the elements contained in VpnConnectionType.

Name	Description
vpnConnectionId	The ID of the VPN connection. Type: String
state	The current state of the VPN connection. Type: String Valid Values: <code>pending</code>   <code>available</code>   <code>deleting</code>   <code>deleted</code>
customerGatewayConfiguration	Configuration information for the VPN connection's customer gateway (in the native XML format). This element is always present in the <code>CreateVpnConnection</code> response; however, it's present in the <code>DescribeVpnConnections</code> response only if the VPN connection is in the <code>pending</code> or <code>available</code> state. Type: String
type	The type of VPN connection ( <code>ipsec.1</code> ). Type: String
customerGatewayId	ID of the customer gateway at your end of the VPN connection. Type: String

Name	Description
<code>vpnGatewayId</code>	ID of the virtual private gateway at the VPC end of the VPN connection. Type: String
<code>tagSet</code>	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 408)
<code>vgwTelemetry</code>	Information about the virtual private gateway. Each gateway's information is wrapped in an <code>item</code> element. Type: <a href="#">VpnTunnelTelemetryType</a> (p. 427)

## VpnGatewayType

The `VpnGatewayType` data type contains information about a virtual private gateway.

### Ancestors

- `CreateVpnGatewayResponse`
- `VpnGatewaySetType`

### Relevant Operations

- `CreateVpnGateway`
- `DescribeVpnGateways`

### Contents

The following table describes the elements contained in `VpnGatewayType`.

Name	Description
<code>vpnGatewayId</code>	The ID of the virtual private gateway. Type: String
<code>state</code>	The current state of the virtual private gateway. Type: String Valid Values: <code>pending</code>   <code>available</code>   <code>deleting</code>   <code>deleted</code>
<code>type</code>	The type of VPN connection the virtual private gateway supports (ipsec.1). Type: String
<code>availabilityZone</code>	The Availability Zone where the virtual private gateway was created. Type: String



Name	Description
attachments	A list of VPCs attached to the virtual private gateway. Each VPC's information is wrapped in an <code>item</code> element. Type: <a href="#">AttachmentType</a> (p. 355)
tagSet	Tags assigned to the resource. Each tag's information is wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItem</a> (p. 408)

## VpnTunnelTelemetryType

The VpnTunnelTelemetryType data type.

### Ancestors

- [VgwTelemetryType](#)

### Relevant Operations

- [CreateVpnConnection](#)
- [DescribeVpnConnections](#)

### Contents

The following table describes the elements contained in VpnTunnelTelemetryType.

Name	Description
outsideIpAddress	The Internet-routable IP address of the virtual private gateway's outside interface. Type: String
status	The status of the VPN tunnel. Type: String Valid Values: UP   DOWN
lastStatusChange	The date and time of the last change in status. Type: dateTime
statusMessage	If an error occurs, a description of the error. Type: String
acceptedRouteCount	The number of accepted routes. Type: int

# Common Query Parameters

All Query actions share a set of common parameters that must be present in each call.

Name	Description	Required
<i>Action</i>	Indicates the action to perform. Example: RunInstances	Yes
<i>Version</i>	The API version to use, as specified in the WSDL. Example: 2011-12-01	Yes
<i>AWSAccessKeyId</i>	The Access Key ID for the request sender. This identifies the account which will be charged for usage of the service. The account with which the Access Key ID is associated must be signed up for Amazon EC2, or requests will not be accepted. AKIADQKE4SARGYLE	Yes
<i>Timestamp</i>	The date and time at which the request is signed, in the format YYYY-MM-DDThh:mm:ssZ. For more information, go to <a href="#">ISO 8601</a> . Example: 2006-07-07T15:04:56Z	Yes
<i>Expires</i>	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	Yes
<i>SecurityToken</i>	The temporary security token obtained through a call to AWS Security Token Service. For more information, go to <a href="#">Using Temporary Security Credentials</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Default: None Type: String	No
<i>Signature</i>	The request signature. For more information, go to <a href="#">Making Query Requests</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Example: Qnp14Qk/7tINHzfXCiT7VbBatDA=	Yes

Name	Description	Required
<i>SignatureMethod</i>	The hash algorithm you use to create the request signature. Valid values: <code>HmacSHA256</code>   <code>HmacSHA1</code> . For more information, go to <a href="#">Making Query Requests</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Example: <code>HmacSHA256</code>	Yes
<i>SignatureVersion</i>	The signature version you use to sign the request. Set this value to 2. For more information, go to <a href="#">Making Query Requests</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> . Example: 2	Yes

**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

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## 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

Error Code	Description	Notes
<code>AddressLimitExceeded</code>	You've reached the limit on the number of elastic IP addresses your account can have.	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 <a href="#">Amazon EC2 Elastic IP Address Request Form</a> . 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 <a href="#">Amazon VPC Limits form</a> .

**Amazon Elastic Compute Cloud API Reference  
Summary of Client Error Codes**

<b>Error Code</b>	<b>Description</b>	<b>Notes</b>
AttachmentLimitExceeded	You've reached the limit on the number of Amazon EBS volumes that can be attached to a single instance.	
AuthFailure	User not authorized.	You might be trying to run an AMI for which you do not have permission.
Blocked	The account is currently blocked.	Contact <a href="mailto:aws-verification@amazon.com">aws-verification@amazon.com</a> if you have questions.
CustomerGatewayLimitExceeded	You've reached the limit on the number of customer gateways you can create.	
DependencyViolation	The specified object has dependent resources.	
DiskImageSizeTooLarge	The disk image exceeds the allowed limit (for instance or volume import).	
FilterLimitExceeded	Request uses too many filters or too many total filter values.	
Gateway.NotAttached	Specified gateway isn't attached, so it can't be detached.	
IdempotentParameterMismatch	Request uses the same client token as a previous, but non-identical request.	Do not reuse a client token with different requests, unless the requests are identical.
IncorrectInstanceState	Instance is in an incorrect state so the attempted action cannot occur.	
IncorrectState	Volume is in an incorrect state.	To attach to an instance, it must be in the 'available' state.
InstanceLimitExceeded	Account has maximum allowed concurrent running instances.	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 <a href="#">Amazon EC2 Instance Request Form</a> and your request will be considered.
InsufficientInstanceCapacity	There is insufficient capacity available for the requested instance type.	The returned message gives guidance on how to solve the problem.

**Amazon Elastic Compute Cloud API Reference  
Summary of Client Error Codes**

<b>Error Code</b>	<b>Description</b>	<b>Notes</b>
<code>InsufficientReservedInstancesCapacity</code>	Insufficient Reserved Instances capacity.	
<code>InternetGatewayLimitExceeded</code>	You've reached the limit on the number of Internet gateways you can create.	
<code>InvalidAMIAttributeItemValue</code>	The value of an item added to, or removed from, an image attribute is invalid.	If you are specifying a <code>userId</code> , check that it is in the form of an AWS account ID.
<code>InvalidAMIID.Malformed</code>	Specified AMI ID is not valid.	
<code>InvalidAMIID.NotFound</code>	Specified AMI ID does not exist.	
<code>InvalidAMIID.Unavailable</code>	Specified AMI ID has been deregistered and is no longer available.	
<code>InvalidAssociationID.NotFound</code>	Specified association ID does not exist.	
<code>InvalidAttachment.NotFound</code>	The instance cannot detach from a volume to which it is not attached.	
<code>InvalidConversionTaskId</code>	Specified conversion task ID (for instance or volume import) is invalid.	
<code>InvalidCustomerGateway.DuplicateIpAddress</code>	Conflict among chosen gateway IP addresses.	
<code>InvalidCustomerGatewayID.NotFound</code>	The specified customer gateway ID does not exist.	
<code>InvalidDevice.InUse</code>	The device to which you are trying to attach (i.e. <code>/dev/sdh</code> ) is already in use on the instance.	
<code>InvalidDhcpOptionsID.NotFound</code>	Specified DHCP options ID does not exist.	
<code>InvalidFormat</code>	Specified disk format (for instance or volume import) is invalid.	
<code>InvalidFilter</code>	Specified filter is invalid.	
<code>InvalidGatewayID.NotFound</code>	Specified gateway ID does not exist.	
<code>InvalidGroup.Duplicate</code>	Attempt to create a duplicate group.	
<code>InvalidGroupId.Malformed</code>	Specified group ID is invalid.	

**Amazon Elastic Compute Cloud API Reference  
Summary of Client Error Codes**

<b>Error Code</b>	<b>Description</b>	<b>Notes</b>
<code>InvalidGroup.InUse</code>	Specified group cannot be deleted because it is in use.	
<code>InvalidGroup.NotFound</code>	Specified group name does not exist.	
<code>InvalidGroup.Reserved</code>	Specified group name is a reserved name.	
<code>InvalidInstanceID.Malformed</code>	Specified instance ID is not valid.	
<code>InvalidInstanceID.NotFound</code>	Specified instance ID does not exist.	
<code>InvalidInternetGatewayID.NotFound</code>	Specified Internet gateway ID does not exist.	
<code>InvalidIPAddress.InUse</code>	Specified IP address is currently in use.	
<code>InvalidKeyPair.Duplicate</code>	Attempt to create a duplicate key pair.	
<code>InvalidKeyPair.Format</code>	Format of the public key you've attempted to import is invalid.	
<code>InvalidKeyPair.NotFound</code>	Specified key pair name does not exist.	
<code>InvalidManifest</code>	Specified AMI has an unparsable manifest.	
<code>InvalidNetworkAclEntry.NotFound</code>	Specified network ACL entry does not exist.	
<code>InvalidNetworkAclID.NotFound</code>	Specified network ACL ID does not exist.	
<code>InvalidParameterCombination</code>	Example: <code>RunInstances</code> was called with both <code>minCount</code> and <code>maxCount</code> set to 0, or <code>minCount &gt; maxCount</code> .	
<code>InvalidParameterValue</code>	The value supplied for a parameter was invalid.	Requests that could cause this error include (for example) supplying an invalid image attribute to the <code>DescribeImageAttribute</code> request or an invalid version or encoding value for the <code>userData</code> in a <code>RunInstances</code> request.
<code>InvalidPermission.Duplicate</code>	Attempt to authorize a permission that has already been authorized.	

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

<b>Error Code</b>	<b>Description</b>	<b>Notes</b>
<code>InvalidPermission.Malformed</code>	Specified permission is invalid.	
<code>InvalidReservationID.Malformed</code>	Specified reservation ID is invalid.	
<code>InvalidReservationID.NotFound</code>	Specified reservation ID does not exist.	
<code>InvalidRoute.NotFound</code>	Specified route does not exist in the route table.	
<code>InvalidRouteTableID.NotFound</code>	Specified route table ID does not exist.	
<code>InvalidSecurity.RequestHasExpired</code>	The difference between the request timestamp and the AWS server time is greater than 5 minutes.	Ensure that your system clock is accurate and configured to use the correct time zone.
<code>InvalidSnapshotID.Malformed</code>	The snapshot ID that was passed as an argument was malformed.	
<code>InvalidSnapshot.NotFound</code>	The specified snapshot does not exist.	
<code>InvalidUserID.Malformed</code>	The user ID is neither in the form of an AWS account ID or one of the special values accepted by the <code>owner</code> or <code>executableBy</code> flags in the <code>DescribeImages</code> call.	
<code>InvalidReservedInstancesId</code>	Reserved Instances ID not found.	
<code>InvalidReservedInstancesOfferingId</code>	Reserved Instances Offering ID not found.	
<code>InvalidSubnetID.NotFound</code>	Specified subnet ID does not exist.	
<code>InvalidVolumeID.Duplicate</code>	Volume already exists in the system.	
<code>InvalidVolumeID.Malformed</code>	Specified volume ID was malformed.	
<code>InvalidVolumeID.ZoneMismatch</code>	Specified volume ID and instance ID are in different Availability Zones.	
<code>InvalidVolume.NotFound</code>	Specified volume does not exist.	
<code>InvalidVpcID.NotFound</code>	Specified VPC ID does not exist.	



**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

<b>Error Code</b>	<b>Description</b>	<b>Notes</b>
<code>InvalidVpnConnectionID.NotFound</code>	The specified VPN connection ID does not exist.	
<code>InvalidVpnGatewayID.NotFound</code>	Specified virtual private gateway ID does not exist.	
<code>InvalidZone.NotFound</code>	The specified zone does not exist.	
<code>LegacySecurityGroup</code>	You must delete the 2009-07-15-default security group before you can attach an Internet gateway.	
<code>MissingParameter</code>	The request is missing a required parameter.	
<code>NetworkAclEntryAlreadyExists</code>	Specified rule number already exists in this network ACL.	
<code>NetworkAclEntryLimitExceeded</code>	You've reached the limit on the number of network ACL entries you can add to the ACL.	
<code>NetworkAclLimitExceeded</code>	You've reached the limit on the number of network ACLs you can create.	
<code>NonEBSInstance</code>	The instance specified does not support EBS.	Please restart the instance and try again. This will ensure that the code is run on an instance with updated code.
<code>PendingSnapshotLimitExceeded</code>	You've reached the limit on the number of Amazon EBS snapshots you can have in the pending state.	
<code>PendingVerification</code>	The account is pending verification.	Contact <a href="mailto:aws-verification@amazon.com">aws-verification@amazon.com</a> if you have questions.
<code>ReservedInstancesLimitExceeded</code>	Your current quota does not allow you to purchase the required number of reserved instances.	
<code>Resource.AlreadyAssociated</code>	Specified gateway is already attached, or specified subnet is already associated with another object.	
<code>ResourceLimitExceeded</code>	Exceeded an EC2 resource limit.	Example: You reached the maximum number of import conversion tasks allowed.

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

<b>Error Code</b>	<b>Description</b>	<b>Notes</b>
RouteAlreadyExists	A route for the specified CIDR block already exists in this route table.	
RouteLimitExceeded	You've reached the limit on the number of routes you can add to a route table.	
RouteTableLimitExceeded	You've reached the limit on the number of route tables you can create.	
RulesPerSecurityGroupLimitExceeded	You've reached the limit on the number of rules you can add to a security group.	
SecurityGroupLimitExceeded	You've reached the limit on the number of security groups you can create.	
SecurityGroupsPerInstanceLimitExceeded	You've reached the limit on the number of security groups you can put an instance into.	
SnapshotLimitExceeded	You've reached the limit on the number of Amazon EBS snapshots you can create.	
SubnetLimitExceeded	You've reached the limit on the number of subnets you can create for the VPC.	
UnknownParameter	An unknown or unrecognized parameter was supplied.	Requests that could cause this error include supplying a misspelled parameter or a parameter that is not supported for the specified API version.
Unsupported	The instance type or feature is not supported in your requested Availability Zone.	The returned message gives guidance on how to solve the problem.
VolumeLimitExceeded	You've reached the limit on the number of Amazon EBS volumes you can create.	
VpcLimitExceeded	You've reached the limit on the number of VPCs you can create.	
VpnConnectionLimitExceeded	You've reached the limit on the number of VPN connections you can create.	

Amazon Elastic Compute Cloud API Reference  
Summary of Server Error Codes

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Error Code	Description	Notes
VpnGatewayAttachmentLimitExceeded	You've reached the limit on the number of VPCs that can be attached to the given virtual private gateway.	
VpnGatewayLimitExceeded	You've reached the limit on the number of virtual private gateways you can create.	

## Summary of Server Error Codes

Error Code	Description	Notes
InsufficientAddressCapacity	Not enough available addresses to satisfy your minimum request.	Reduce the number of addresses you are requesting or wait for additional capacity to become available.
InsufficientInstanceCapacity	Not enough available instances to satisfy your minimum request.	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.
InsufficientReservedInstanceCapacity	Not enough available Reserved Instances to satisfy your minimum request.	Reduce the number of Reserved Instances in your request or wait for additional capacity to become available.
InternalError	Internal Error.	This error should not occur. If this persists, please contact us with details by posting a message on the <a href="#">AWS forums</a> .
Unavailable	The server is overloaded and cannot handle the request.	

# Amazon EC2 Resources

The following table lists related resources that you'll find useful as you work with this service.

Resource	Description
<a href="#">Amazon Elastic Compute Cloud Getting Started Guide</a>	Provides a quick tutorial of the service based on a simple use case. Examples and instructions are included.
<a href="#">Amazon Elastic Compute Cloud User Guide</a>	Provides conceptual information about Amazon EC2 and describes how to use Amazon EC2 features using the AWS Management Console, command line tools, and Query API.
<a href="#">Amazon Elastic Compute Cloud Command Line Reference</a>	Contains a comprehensive description of all the command line tools and their options.
<a href="#">Amazon EC2 Technical FAQ</a>	Covers the top questions developers have asked about this product.
<a href="#">Amazon EC2 Release Notes</a>	Give a high-level overview of the current release. They specifically note any new features, corrections, and known issues.
<a href="#">AWS Developer Resource Center</a>	A central starting point to find documentation, code samples, release notes, and other information to help you build innovative applications with AWS.
<a href="#">AWS Management Console</a>	The console lets you perform most of the functions of Amazon EC2 and other AWS products without programming.
<a href="#">Discussion Forums</a>	A community-based forum for developers to discuss technical questions related to Amazon Web Services.
<a href="#">AWS Support Center</a>	The home page for AWS Technical Support, including access to our Developer Forums, Technical FAQs, Service Status page, and AWS Premium Support (if you are subscribed to this program).
<a href="#">AWS Premium Support Information</a>	The primary web page for information about AWS Premium Support, a one-on-one, fast-response support channel to help you build and run applications on AWS Infrastructure Services.

Resource	Description
<a href="#">Amazon EC2 Product Information</a>	The primary web page for information about Amazon EC2.
Form for questions related to your AWS account: <a href="#">Contact Us</a>	This form is <i>only</i> for account questions. For technical questions, use the Discussion Forums.
<a href="#">Terms of Use</a>	Detailed information about the copyright and trademark usage at Amazon.com and other topics.

# Document History

This documentation is associated with the 2011-12-01 release of Amazon EC2. This guide was last updated on 21 December 2011.

The following table describes the important changes since the last release of the Amazon EC2 documentation set.

Change	Description	Release Date
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: <ul style="list-style-type: none"> <li>• <a href="#">AttachNetworkInterface</a> (p. 23)</li> <li>• <a href="#">DetachNetworkInterface</a> (p. 261)</li> <li>• <a href="#">CreateNetworkInterface</a> (p. 63)</li> <li>• <a href="#">DeleteNetworkInterface</a> (p. 105)</li> <li>• <a href="#">DescribeNetworkInterfaces</a> (p. 192)</li> <li>• <a href="#">DescribeNetworkInterfaceAttribute</a> (p. 191)</li> <li>• <a href="#">ModifyNetworkInterfaceAttribute</a> (p. 290)</li> <li>• <a href="#">ResetNetworkInterfaceAttribute</a> (p. 324)</li> </ul>	21 December 2011
New Offering Types for Amazon EC2 Reserved Instances	Starting with API version 2011-11-01, you can use the new <i>offering-type</i> parameter of <code>DescribeReservedInstancesOfferings</code> to identify the Reserved Instance offerings that address your projected use: <i>Heavy Utilization</i> , <i>Medium Utilization</i> , and <i>Light Utilization</i> . See <a href="#">DescribeReservedInstancesOfferings</a> (p. 205).	01 December 2011
Support for Amazon EC2 Instance Status	The <a href="#">RequestParameters</a> (p. 177) 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 <a href="#">RequestSpotInstances</a> (p. 315) action is updated with the <code>subnet</code> option, which enables you to specify an Amazon VPC subnet into which to launch your Spot Instances.	11 October 2011

Change	Description	Release Date
Support for VHD file format added to the 2011-07-15 API version	We've added VHD as one of the VM file formats supported for import into Amazon EC2. See the API actions <a href="#">ImportInstance</a> and <a href="#">ImportVolume</a> , and the CLI commands <a href="#">ec2-import-instance</a> and <a href="#">ec2-import-volume</a> .	24 August 2011
Updates for the 2011-07-15 API version	We've added one new data type, <a href="#">VpnTunnelTelemetryType</a> (p. 427), for the 2011-07-15 API release.	03 August 2011
Temporary Security Credentials	We've added one new common request parameter, <a href="#">SecurityToken</a> , that supports temporary security credentials. For more information, see <a href="#">Common Query Parameters</a> (p. 428) or go to <a href="#">Using Temporary Security Credentials</a> in the <i>Amazon Elastic Compute Cloud User Guide</i> .	03 August 2011
Spot Instances Availability Zone pricing changes	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.	26 May 2011
Updates for the 2011-05-15 API Version	We've updated several existing actions for the 2011-05-15 API release.	26 May 2011
Dedicated Instances	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.	27 March 2011
Updates for the 2011-02-28 API version	We've updated several existing actions for the 2011-02-28 API release.	27 March 2011
Updates for the 2011-01-01 API version	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.	11 March 2011
Merged Amazon VPC Documentation	We've merged the Amazon VPC actions into this guide.	11 March 2011
VM Import	Added the following new actions, which allow you to import a virtual machine or volume into Amazon EC2: <ul style="list-style-type: none"> <li>• <a href="#">ImportInstance</a> (p. 275)</li> <li>• <a href="#">ImportVolume</a> (p. 281)</li> <li>• <a href="#">DescribeConversionTasks</a> (p. 143)</li> <li>• <a href="#">CancelConversionTask</a> (p. 41)</li> </ul>	15 December 2010
Consolidated Documentation	We've consolidated the Query and SOAP API topics. See <a href="#">Actions</a> (p. 8).	06 December 2010

Change	Description	Release Date
Parameters for <code>ModifyImageAttribute</code> and <code>ModifyInstanceAttribute</code>	Updated the list of Query parameters for <a href="#">ModifyImageAttribute</a> (p. 284) and for <a href="#">ModifyInstanceAttribute</a> (p. 287).	20 November 2010
Modifying Block Device Mapping	Removed information from <a href="#">ModifyInstanceAttribute</a> (p. 287) about modifying an instance's block device mapping attribute. You currently can't modify an instance's block device mapping with this action.	20 November 2010
Filters and Tags	Added information about filters to many of the <i>describe</i> actions. Added information about creating, describing, and deleting tags. For more information about the API actions for tags, see <a href="#">CreateTags</a> (p. 81), <a href="#">DeleteTags</a> (p. 120), and <a href="#">DescribeTags</a> (p. 239).	19 September 2010
Idempotent Instance Launch	Updated <code>RunInstances</code> to include a <code>ClientToken</code> parameter to ensure idempotency. For more information about the change to <code>RunInstances</code> , see <a href="#">RunInstances</a> (p. 334).	19 September 2010
Import Key Pair	Added <code>ImportKeyPair</code> . For more information, see <a href="#">ImportKeyPair</a> (p. 279).	19 September 2010
Placement Groups for Cluster Compute Instances	Added information about placement groups, which you use with cluster compute instances. For more information about the API actions for placement groups, see <a href="#">CreatePlacementGroup</a> (p. 65), <a href="#">DescribePlacementGroups</a> (p. 195), and <a href="#">DeletePlacementGroup</a> (p. 107).	12 July 2010
Amazon VPC IP Address Designation	Amazon VPC users can now specify the IP address to assign an instance launched in a VPC. For information about using the <code>PrivateIpAddress</code> parameter with the <code>RunInstances</code> action, see <a href="#">RunInstances</a> (p. 334).	12 July 2010
Error List Update	Updated the list of errors to include <code>Client.Blocked</code> , <code>Client.InsufficientInstanceCapacity</code> , <code>Client.PendingVerification</code> , and <code>Client.Unsupported</code> . For more information, see <a href="#">Error Codes</a> (p. 430).	21 May 2010
Security Group Permissions	Clarified the information about authorizing security group permissions. For more information, see <a href="#">AuthorizeSecurityGroupIngress</a> (p. 32).	28 April 2010
New Region	Amazon EC2 now supports the Asia Pacific (Singapore) Region. The new endpoint for requests to this Region is <code>ec2.ap-southeast-1.amazonaws.com</code> .	28 April 2010



Change	Description	Release Date
Clarification about Spot Instances	Clarified that you can't stop and start Spot Instances that use an Amazon EBS root device. For more information about stopping instances, see <a href="#">StopInstances (p. 346)</a> .	1 February 2010
Spot Instances	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 <a href="#">Amazon Elastic Compute Cloud User Guide</a> .	14 December 2009