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# Amazon Elastic Compute Cloud

## API Reference

API Version 2013-02-01



## Amazon Elastic Compute Cloud: API Reference

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# Welcome

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

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

How Do I?	Relevant Topics
Download the current WSDL	<a href="#">Ec2.wsdl (2013-02-01)</a>
Learn about using the Query API	<a href="#">Making API Requests</a>
Get the list of API actions by function	<a href="#">List of Actions by Function (p. 2)</a>
Get the alphabetical list of API actions	<a href="#">Actions (p. 8)</a>
Get the alphabetical list of data types	<a href="#">Data Types (p. 440)</a>
Get the list of common parameters	<a href="#">Common Query Parameters (p. 530)</a>
Get descriptions of the error codes	<a href="#">Error Codes (p. 532)</a>
Download and learn about the AWS SDKs	<a href="#">AWS SDKs and Tools</a>

## Related Topics

- [Amazon EC2 product page](#)
- [Amazon Elastic Compute Cloud User Guide](#)
- [Amazon Virtual Private Cloud User Guide](#)
- [Amazon Elastic Compute Cloud Command Line Reference](#)



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- [UnassignPrivateIpAddresses](#) (p. 436)
- [UnmonitorInstances](#) (p. 438)

# AllocateAddress

## Description

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

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

## Request Parameters

### *Domain*

Set to `vpc` to allocate the address for use with instances in a VPC.

Type: String

Valid values: `vpc`

Default: The address is for use in EC2-Classic.

Required: Conditional

Condition: Required when allocating the address for use in a VPC.

## Response Elements

The following elements are returned in an `AllocateAddressResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `publicIp`

The Elastic IP address.

Type: `xsd:string`

### `domain`

Specifies whether this Elastic IP address is for use with instances in EC2-Classic (`standard`) or instances in a VPC.

Type: `xsd:string`

Valid values: `standard` | `vpc`

### `allocationId`

[EC2-VPC] The ID that AWS assigns to represent the allocation of the Elastic IP address for use with a VPC.

Type: `xsd:string`

## Examples

### Example Request

This example returns an Elastic IP address for use in EC2-Classic.

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

## Example Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <publicIp>192.0.2.1</publicIp>
  <domain>standard</domain>
</AllocateAddressResponse>
```

## Example Request

This example returns an Elastic IP address for use in a VPC.

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

## Example Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <publicIp>198.51.100.1</publicIp>
  <domain>vpc</domain>
  <allocationId>eipalloc-5723d13e</allocationId>
</AllocateAddressResponse>
```

## Related Actions

- [DescribeAddresses](#) (p. 169)
- [ReleaseAddress](#) (p. 383)
- [AssociateAddress](#) (p. 16)
- [DisassociateAddress](#) (p. 336)

# AssignPrivateIpAddresses

## Description

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

This action is available only in EC2-VPC.

## Request Parameters

### ***NetworkInterfaceId***

The network interface to which the IP address is assigned.

Type: String

Default: None

Required: Yes

### ***PrivateIpAddress.n***

The IP address to be assigned as a secondary private IP address to the network interface.

This option can be used multiple times to assign multiple secondary private IP addresses to the network interface.

Type: [AssignPrivateIpAddressesSetItemRequestType](#) (p. 444)

Default: None

Required: Conditional

Condition: You cannot specify this parameter when also specifying *SecondaryPrivateIpAddressCount*.

### ***SecondaryPrivateIpAddressCount***

The number of secondary IP addresses to assign to the network interface.

Type: Integer

Default: None

Required: Conditional

Condition: You cannot specify this parameter when also specifying *PrivateIpAddress.n*.

### ***AllowReassignment***

Specifies whether to allow an IP address that is already assigned to another network interface or instance to be reassigned to the specified network interface.

Type: Boolean

Default: False

Required: No

## Response Elements

The following elements are returned in an *AssignPrivateIpAddressesResponse* element.

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

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

### Example Response

```
<AssignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssignPrivateIpAddresses>
```

### Example Request

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

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

### Example Response

```
<AssignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssignPrivateIpAddresses>
```

## Related Actions

- [DescribeAddresses](#) (p. 169)
- [ReleaseAddress](#) (p. 383)
- [AssociateAddress](#) (p. 16)
- [DisassociateAddress](#) (p. 336)

# AssociateAddress

## Description

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

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

[EC2-VPC] If you don't specify a private IP address, the Elastic IP address is associated with the primary IP address. If the Elastic IP address is already associated with a different instance or a network interface, you get an error unless you specify the *AllowReassociation* parameter.

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

## Request Parameters

### *PublicIp*

The Elastic IP address.

Type: String

Default: None

Required: Conditional

Condition: Required for Elastic IP addresses for EC2-Classic.

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-Classic. For a VPC, you can specify either an instance ID or a network interface ID, but not both.

### *AllocationId*

[EC2-VPC] The allocation ID.

Type: String

Default: None

Required: Conditional

Condition: Required for a VPC.

### *NetworkInterfaceId*

[EC2-VPC] The ID of the network interface. Association fails when specifying an instance ID unless exactly one interface is attached.

Type: String

Default: None

Required: Conditional

Condition: If the instance has more than one network interface, you must specify a network interface ID.

### *PrivateIpAddress*

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

Type: String

Default: None

Required: No

***AllowReassociation***

[EC2-VPC] Allows an Elastic IP address that is already associated with an instance or network interface to be re-associated with the specified instance or network interface. If the Elastic IP address is associated, and this option is not specified, the operation fails.

Type: Boolean

Default: `false` if not specified

Required: No

## Response Elements

The following elements are returned in an `AssociateAddressResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**return**

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

**associationId**

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

Type: `xsd:string`

## Examples

### Example Request

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

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

### Example Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AssociateAddressResponse>
```

### Example Request

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

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



```
&AllowReassignment=true  
&AUTHPARAMS
```

## Example Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
  <associationId>eipassoc-fc5ca095</associationId>  
</AssociateAddressResponse>
```

## Related Actions

- [AllocateAddress](#) (p. 12)
- [DescribeAddresses](#) (p. 169)
- [ReleaseAddress](#) (p. 383)
- [DisassociateAddress](#) (p. 336)

# AssociateDhcpOptions

## Description

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

After you associate the options with the VPC, any existing instances and all new instances that you launch in that VPC use the options. You don't need to restart or relaunch the instances. They automatically pick up the changes within a few hours, depending on how frequently the instance renews its DHCP lease. If you want, you can explicitly renew the lease using the operating system on the instance.

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

## Request Parameters

### *DhcpOptionsId*

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

Required: Yes

### *VpcId*

The ID of the VPC to associate the DHCP options with.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `AssociateDhcpOptionsResponse` element.

### `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 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/2013-02-01/">  
  <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/2013-02-01/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <return>>true</return>  
</AssociateDhcpOptionsResponse>
```

## Related Actions

- [CreateDhcpOptions](#) (p. 60)
- [DescribeDhcpOptions](#) (p. 184)
- [DeleteDhcpOptions](#) (p. 128)

# AssociateRouteTable

## Description

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

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

## Request Parameters

### *RouteTableId*

The ID of the route table.

Type: String

Default: None

Required: Yes

### *SubnetId*

The ID of the subnet.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `AssociateRouteTableResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `associationId`

The ID that AWS provides to represent the association of the route table and the subnet.

Type: `xsd:string`

## 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <associationId>rtbassoc-f8ad4891</associationId>
</AssociateRouteTableResponse>
```

## Related Actions

- [CreateRouteTable](#) (p. 97)
- [DisassociateRouteTable](#) (p. 338)
- [DescribeRouteTables](#) (p. 266)
- [ReplaceRouteTableAssociation](#) (p. 392)

# AttachInternetGateway

## Description

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

## Request Parameters

### *InternetGatewayId*

The ID of the Internet gateway.

Type: String

Default: None

Required: Yes

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `AttachInternetGatewayResponse` element.

### `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

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/2013-02-01/">
```

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

## Related Actions

- [CreateInternetGateway](#) (p. 69)
- [DeleteInternetGateway](#) (p. 130)
- [DetachInternetGateway](#) (p. 326)
- [DescribeInternetGateways](#) (p. 225)

# AttachNetworkInterface

## Description

Attaches a network interface to an instance.

## Request Parameters

### *NetworkInterfaceId*

The ID of the network interface to attach.

Type: String

Default: None

Required: Yes

### *InstanceId*

The ID of the instance to attach to the network interface.

Type: String

Default: None

Required: Yes

### *DeviceIndex*

The index of the device for the network interface attachment.

Type: Integer

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `AttachNetworkInterfaceResponse` element.

### **requestId**

The ID of the attachment request.

Type: xsd:string

### **attachmentId**

The ID of the attachment.

Type: xsd:string

## Examples

### Example Request

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

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



## Example Response

```
<AttachNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>ace8cd1e-e685-4e44-90fb-92014d907212</requestId>
  <attachmentId>eni-attach-d94b09b0</attachmentId>
</AttachNetworkInterfaceResponse>
```

## Related Actions

- [DetachNetworkInterface](#) (p. 328)
- [CreateNetworkInterface](#) (p. 78)
- [DeleteNetworkInterface](#) (p. 137)
- [DescribeNetworkInterfaceAttribute](#) (p. 235)
- [DescribeNetworkInterfaces](#) (p. 237)
- [ModifyNetworkInterfaceAttribute](#) (p. 363)
- [ResetNetworkInterfaceAttribute](#) (p. 409)

# AttachVolume

## Description

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

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

### Note

If a volume has an AWS Marketplace product code:

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

For an overview of the AWS Marketplace, see <https://aws.amazon.com/marketplace/help/200900000>. For details on how to use the AWS Marketplace, see [AWS Marketplace](#).

## Request Parameters

### *VolumeId*

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

Type: String

Default: None

Required: Yes

### *InstanceId*

The ID of the instance. The instance must be running.

Type: String

Default: None

Required: Yes

### *Device*

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

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `AttachVolumeResponse` element.

### `requestId`

The ID of the request.

Type: xsd:string

**volumeId**  
The ID of the volume.  
Type: xsd:string

**instanceId**  
The ID of the instance.  
Type: xsd:string

**device**  
The device name as exposed to the instance (for example, /dev/sdh, or xvdh).  
Type: xsd:string

**status**  
The volume state.  
Type: xsd:string  
Valid values: attaching | attached | detaching | detached

**attachTime**  
The time stamp when the attachment initiated.  
Type: xsd:dateTime

## Examples

### Example Request

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

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

### Example Response

```
<AttachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1a2b3c4d</volumeId>
  <instanceId>i-1a2b3c4d</instanceId>
  <device>/dev/sdh</device>
  <status>attaching</status>
  <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</AttachVolumeResponse>
```

## Related Actions

- [CreateVolume](#) (p. 110)
- [DeleteVolume](#) (p. 155)
- [DescribeVolumes](#) (p. 303)
- [DetachVolume](#) (p. 330)

# AttachVpnGateway

## Description

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

## Request Parameters

### *VpnGatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `AttachVpnGatewayResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `attachment`

Information about the attachment.

Type: [AttachmentType](#) (p. 445)

## 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/2013-02-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <attachment>
```

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

## Related Actions

- [CreateVpnGateway](#) (p. 124)
- [DescribeVpnGateways](#) (p. 323)
- [DetachVpnGateway](#) (p. 332)
- [CreateVpc](#) (p. 113)
- [CreateVpnConnection](#) (p. 115)

# AuthorizeSecurityGroupEgress

## Description

Adds one or more egress rules to a security group for use with a VPC. Specifically, this action permits instances to send traffic to one or more destination CIDR IP address ranges, or to one or more destination security groups for the same VPC.

### Important

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

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

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

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

## Request Parameters

### *GroupId*

The ID of the security group to modify.

Type: String

Default: None

Required: Yes

### *IpPermissions.n.IpProtocol*

The IP protocol name or number (see [Protocol Numbers](#)).

When you call `DescribeSecurityGroups`, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, `tcp`, `udp`, or `icmp`).

Type: String

Valid values: `tcp` | `udp` | `icmp` or any protocol number (see [Protocol Numbers](#)). Use -1 to specify all.

Required: Yes

### *IpPermissions.n.FromPort*

The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, you can use -1 to specify all ICMP types.

Type: Integer

Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

### *IpPermissions.n.ToPort*

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

Type: Integer

Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

***IpPermissions.n.Groups.m.GroupId***

The name of the destination security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Condition: Required if modifying access for one or more destination security groups.

Required: Conditional

***IpPermissions.n.IpRanges.m.CidrIp***

The CIDR range. Cannot be used when specifying a destination security group.

Type: String

Default: None

Constraints: Valid CIDR IP address range.

Required: Conditional

Condition: Required if modifying access for one or more IP address ranges.

## Response Elements

The following elements are returned in an `AuthorizeSecurityGroupEgressResponse` element.

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

```
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 security group with the ID `sg-1a2b3c4d` access to your 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/2013-02-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</AuthorizeSecurityGroupEgressResponse>
```

## Related Actions

- [CreateSecurityGroup](#) (p. 99)
- [DescribeSecurityGroups](#) (p. 270)
- [RevokeSecurityGroupEgress](#) (p. 413)
- [AuthorizeSecurityGroupIngress](#) (p. 34)
- [RevokeSecurityGroupIngress](#) (p. 416)
- [DeleteSecurityGroup](#) (p. 145)



# AuthorizeSecurityGroupIngress

## Description

Adds one or more ingress rules to a security group.

### Important

EC2-Classic: You can have up to 100 rules per group.

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

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

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

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

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

## Request Parameters

### *GroupId*

The ID of the security group. The security group must belong to your AWS account.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-VPC; can be used instead of *GroupName* otherwise

### *GroupName*

The name of the security group.

Type: String

Default: None

Required: Conditional

Condition: For EC2-Classic, can be used instead of *GroupId*.

### *IpPermissions.n.IpProtocol*

The IP protocol name or number (see [Protocol Numbers](#)). For EC2-Classic, security groups can have rules only for TCP, UDP, and ICMP. For EC2-VPC, security groups can have rules assigned to any protocol number.

When you call `DescribeSecurityGroups`, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, `tcp`, `udp`, or `icmp`).

Type: String

Valid values for EC2-Classic: `tcp` | `udp` | `icmp` or the corresponding protocol number (6 | 17 | 1).

Valid values for EC2-VPC: `tcp` | `udp` | `icmp` or any protocol number (see [Protocol Numbers](#)). Use `-1` to specify all.

Required: Conditional

Condition: Required for EC2-VPC

***IpPermissions.n.FromPort***

The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, you can use -1 to specify all ICMP types.

Type: Integer

Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

***IpPermissions.n.ToPort***

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

Type: Integer

Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

***IpPermissions.n.Groups.m.UserId***

The AWS account ID that owns the source security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Required: Conditional

Condition: For security groups in EC2-Classic only. Required if modifying access for one or more source security groups.

***IpPermissions.n.Groups.m.GroupName***

The name of the source security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Required: Conditional

Condition: Required if modifying access for one or more source security groups.

***IpPermissions.n.Groups.m.GroupId***

The ID of the source security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Required: Conditional

Condition: For EC2-VPC only. Required if modifying access for one or more source security groups.

***IpPermissions.n.IpRanges.m.CidrIp***

The CIDR range. Cannot be used when specifying a source security group.

Type: String

Default: None

Constraints: Valid CIDR IP address range.

Required: Conditional

Condition: Required if modifying access for one or more IP address ranges.

## Response Elements

The following elements are returned in an `AuthorizeSecurityGroupIngressResponse` element.

**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 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 111122223333) 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=111122223333
&AUTHPARAMS
```

### Example Request

This example is for a security group for EC2-VPC. The request grants TCP port 80 access from the source group called `OtherGroupInMyVPC` (`sg-2a2b3c4d`) to your `VpcWebServers` security group (`sg-1a2b3c4d`). The request requires the group IDs and not the group names. Your AWS account ID is 111122223333.

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.Groups.1.GroupId=sg-2a2b3c4d
&IpPermissions.1.Groups.1.UserId=111122223333
&AUTHPARAMS
```

## Example Request

This example is for an EC2 security group. The request grants your local system the ability to use SSH (port 22) to connect to any instance in the `default` security group

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

## Example Request

This example is for an EC2 security group. The request gives your local system the ability to use Remote Desktop (port 3389) to connect to any instance in the `default` security group.

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

## Example Response

```
<AuthorizeSecurityGroupIngressResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>>true</return>  
</AuthorizeSecurityGroupIngressResponse>
```

## Related Actions

- [CreateSecurityGroup](#) (p. 99)
- [DescribeSecurityGroups](#) (p. 270)
- [RevokeSecurityGroupIngress](#) (p. 416)
- [DeleteSecurityGroup](#) (p. 145)

# BundleInstance

## Description

Bundles an Amazon instance store-backed Windows instance.

During bundling, only the root device volume (C:) is bundled. Data on other instance store volumes is not preserved.

### Note

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

## Request Parameters

### *InstanceId*

The ID of the instance to bundle.

Type: String

Default: None

Required: Yes

### *Storage.S3.Bucket*

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

Required: Yes

### *Storage.S3.Prefix*

The beginning of the file name of the AMI.

Type: String

Default: None

Required: Yes

### *Storage.S3.AWSSecretAccessKeyId*

The Access Key ID of the owner of the Amazon S3 bucket.

Type: String

Default: None

Required: Yes

### *Storage.S3.UploadPolicy*

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

Required: Yes

### *Storage.S3.UploadPolicySignature*

The signature of the Base64 encoded JSON document.

Type: String

Default: None

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

### **expiration**

The expiration of the policy. We recommend 12 hours or longer.

Required: Yes

### **conditions**

A list of restrictions on what can be uploaded to Amazon S3. Must contain the bucket and ACL conditions in this table.

Required: Yes

### **bucket**

The bucket to store the AMI.

Required: Yes

### **acl**

This must be set to ec2-bundle-read.

Required: Yes

## Response Elements

The following elements are returned in a `BundleInstanceResponse` element.

### **requestId**

The ID of the request.

Type: `xsd:string`

### **bundleInstanceTask**

The bundle task.

Type: [BundleInstanceTaskType](#) (p. 449)

## Examples

### Example Request

This example bundles the `i-e468cd8d` instance.

```
https://ec2.amazonaws.com/?Action=BundleInstance
&InstanceId=i-e468cd8d
&Storage.S3.AWSSecretAccessKeyId='AKIAIOSFODNN7EXAMPLE'
&Storage.S3.Bucket=myawsbucket
&Storage.S3.Prefix=winami
&Storage.S3.UploadPolicy=eyJleHBpcmF0aW9uIjogIjIwMDgtMDgtMzBUMDg6NDk6MDlaIiwiaWY29uZGl0aW9ucyI6IFt7ImJlY2tldCI6ICJteS1idWNrZXQifSxbInN0YXJ0cy13aXRoIiwgIiRrZXkiLCaibXktbmV3LWltYWdlI10seyJhY2wiOiAiZWMyLWJlbnRsZS1yZWZkInlkaEXAMPLE
&Storage.S3.UploadPolicySignature=fh5tyyyQD8W4COEthj3n1GNEXAMPLE
&AUTHPARAMS
```

## Example Response

```
<BundleInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <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>myawsbucket</bucket>
        <prefix>winami</prefix>
      </S3>
    </storage>
  </bundleInstanceTask>
</BundleInstanceResponse>
```

## Related Actions

- [CancelBundleTask](#) (p. 41)
- [DescribeBundleTasks](#) (p. 176)
- [CreateImage](#) (p. 63)

# CancelBundleTask

## Description

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

## Request Parameters

### *BundleId*

The ID of the bundle task.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `CancelBundleTaskResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `bundleInstanceTask`

The bundle task.

Type: [BundleInstanceTaskType](#) (p. 449)

## 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/2013-02-01/">
  <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>
    <storage>
      <S3>
```



```
        <bucket>myawsbucket</bucket>
        <prefix>my-new-image</prefix>
    </S3>
</storage>
</bundleInstanceTask>
</CancelBundleTaskResponse>
```

## Related Actions

- [BundleInstance](#) (p. 38)
- [DescribeBundleTasks](#) (p. 176)

# CancelConversionTask

## Description

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

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

## Request Parameters

***ConversionTaskId***

The ID of the task.

Type: String

Default: None

Required: Yes

## Response Elements

**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 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CancelConversionTaskResponse>
```

## Related Actions

- [ImportInstance](#) (p. 348)
- [ImportVolume](#) (p. 354)
- [DescribeConversionTasks](#) (p. 179)

# CancelExportTask

## Description

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

## Request Parameters

### *ExportTaskId*

The ID of the export task.

Type: String

Default: None

Required: Yes

## Response Elements

### **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 cancels the export task with ID `export-i-1234wxyz`.

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

### Example Response

```
<CancelExportTask xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</CancelExportTask>
```

## Related Actions

- [CreateInstanceExportTask](#) (p. 66)
- [DescribeExportTasks](#) (p. 188)

# CancelReservedInstancesListing

## Description

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

For more information about Reserved Instance Marketplace, see [Reserved Instance Marketplace](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### *reservedInstancesListingId*

The ID of the Reserved Instance listing to be canceled.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `CancelReservedInstancesListingResponseType` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `reservedInstancesListingsSet`

The Reserved Instance listing for cancellation. The listing information is wrapped in an `item` element.

Type: [DescribeReservedInstancesListingsResponseSetItemType](#) (p. 456)

## Examples

### Example Request

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

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

### Example Response

The response will show `status` is `CANCELLED`.

```
<CancelReservedInstancesListingResponse>
  <requestId>bec2cf62-98ef-434a-8a15-886fcexample</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>3ebe97b5-f273-43b6-a204-
7a18cEXAMPLE</reservedInstancesListingId>
```

```
<reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
  <createDate>2012-07-12T16:55:28.000Z</createDate>
  <updateDate>2012-07-12T16:55:28.000Z</updateDate>
  <status>cancelled</status>
  <statusMessage>CANCELLED</statusMessage>
  <instanceCounts>
    <item>
      <state>Available</state>
      <instanceCount>0</instanceCount>
    </item>
    <item>
      <state>Sold</state>
      <instanceCount>0</instanceCount>
    </item>
    <item>
      <state>Cancelled</state>
      <instanceCount>1</instanceCount>
    </item>
    <item>
      <state>Pending</state>
      <instanceCount>0</instanceCount>
    </item>
  </instanceCounts>
  <priceSchedules>
    <item>
      <term>5</term>
      <price>166.64</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>4</term>
      <price>133.32</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>3</term>
      <price>99.99</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>2</term>
      <price>66.66</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>1</term>
      <price>33.33</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
  </priceSchedules>
  <tagSet/>
  <clientToken>XqJIt1342112125076</clientToken>
```

```
    </item>  
  </reservedInstancesListingsSet>  
</CancelReservedInstancesListingResponse>
```

## Related Actions

- [CreateReservedInstancesListing](#) (p. 85)
- [DescribeReservedInstancesListings](#) (p. 253)

# CancelSpotInstanceRequests

## Description

CancelSpotInstanceRequests cancels one or more Spot Instance requests. Spot Instances are instances that Amazon EC2 starts on your behalf when the maximum price that you specify exceeds the current Spot Price. Amazon EC2 periodically sets the Spot Price based on available Spot Instance capacity and current Spot Instance requests. For more information about Spot Instances, see [Spot Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

### Important

Canceling a Spot Instance request does not terminate running Spot Instances associated with the request.

## Request Parameters

### *SpotInstanceRequestId.n*

One or more Spot Instance request IDs.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `CancelSpotInstanceRequestsResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `spotInstanceRequestSet`

A list of Spot Instance requests. Each request is wrapped in an `item` element.

Type: [CancelSpotInstanceRequestsResponseSetItemType](#) (p. 450)

## Examples

### Cancel a Spot Instance Request

#### To cancel Spot Instance requests

1. Construct the following Query request to view your open Spot Instance requests.

```
https://ec2.amazonaws.com/?Action=DescribeSpotInstanceRequests
&Filter.1.Name=state
&Filter.1.Value.1=open
&AUTHPARAMS
```

The following is an example response.



```
<DescribeSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>8cd6486a-80e1-494d-8a4f-be36cEXAMPLE</requestId>
  <spotInstanceRequestSet>
    ...
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <spotPrice>0.002000</spotPrice>
      <type>one-time</type>
      <state>open</state>
      <status>
        <code>not-scheduled-yet</code>
        <updateTime>YYYY-MM-DDTHH:MM:SS.000Z</updateTime>
        <message>Your Spot request will not be evaluated until YYYY-MM-DDTHH:MM:SS+0000 due to your 'Valid From' constraint.</message>
      </status>
      <validFrom>YYYY-MM-DDTHH:MM:SS.000Z</validFrom>
      <validUntil>YYYY-MM-DDTHH:MM:SS.000Z</validUntil>
      <launchSpecification>
        <imageId>ami-1a2b3c4d</imageId>
        <keyName>my-security-group</keyName>
        <groupSet>
          <item>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>Linux</groupName>
          </item>
        </groupSet>
        <instanceType>t1.micro</instanceType>
        <blockDeviceMapping>
          <item>
            <deviceName>/dev/sda1</deviceName>
            <ebs>
              <volumeSize>8</volumeSize>
              <deleteOnTermination>true</deleteOnTermination>
              <volumeType>standard</volumeType>
            </ebs>
          </item>
        </blockDeviceMapping>
        <monitoring>
          <enabled>>false</enabled>
        </monitoring>
      </launchSpecification>
      <createTime>2013-06-14T16:00:40.000Z</createTime>
      <productDescription>Linux/UNIX</productDescription>
    </item>
    ...
  </spotInstanceRequestSet>
</DescribeSpotInstanceRequestsResponse>
```

2. Construct a Query request to cancel the Spot Instance requests.

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

The following is an example response.

```
<CancelSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <state>cancelled</state>
    </item>
  </spotInstanceRequestSet>
</CancelSpotInstanceRequestsResponse>
```

**Tip**

You can filter the list of Spot Instance requests to return only certain EC2 instance types. For more information about how to filter the results, go to [DescribeSpotInstanceRequests](#) in the *Amazon Elastic Compute Cloud API Reference*.

## Related Actions

- [DescribeSpotInstanceRequests](#) (p. 282)
- [RequestSpotInstances](#) (p. 397)
- [DescribeSpotPriceHistory](#) (p. 290)

# ConfirmProductInstance

## Description

Determines whether a product code is associated with an instance. This action can only be used by the owner of the product code. It is useful when a product code owner needs to verify whether another EC2 user's instance is eligible for support.

## Request Parameters

### *ProductCode*

The product code.

Type: String

Default: None

Required: Yes

### *InstanceId*

The instance.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `ConfirmProductInstanceResponse` element.

### **requestId**

The ID of the request.

Type: `xsd:string`

### **return**

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

### **ownerId**

The instance owner's account ID. Only present if the product code is attached to the instance.

Type: `xsd:string`

## Examples

### Example Request

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

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

## Example Response

```
<ConfirmProductInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <ownerId>111122223333</ownerId>
</ConfirmProductInstanceResponse>
```

## Related Actions

- [DescribeInstances](#) (p. 203)
- [RunInstances](#) (p. 419)

# CopyImage

## Description

Initiates the copy of an AMI from the specified source region to the region in which the API call is executed.

## Request Parameters

### *SourceRegion*

The ID of the AWS region that contains the AMI to be copied (source).

Type: String

Default: None

Required: Yes

### *SourceImageId*

The ID of the Amazon EC2 AMI to copy.

Type: String

Default: None

Required: Yes

### *Name*

The name of the new AMI in the destination region.

Type: String

Default: Same name as the AMI being copied.

Required: No

### *Description*

A description of the new AMI in the destination region.

Type: String

Default: Same description as the AMI being copied.

Constraints: Up to 255 characters

Required: No

### *ClientToken*

Unique, case-sensitive identifier you provide to ensure idempotency of the request. For more information, see [How to Ensure Idempotency](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Default: None

Constraints: Up to 255 characters

Required: No

## Response Elements

The following elements are returned in a `CopyImage` element.

### **requestId**

The ID of the request.

Type: xsd:string

### **imageId**

The ID of the new AMI.

Type: xsd:string

**Tip**

You can use the common option `--region` to specify the region against which the command is executed. For AMI Copy, this will be the destination region.

## Examples

### Example Request

This example copies the AMI `ami-1a2b3c4d` in `us-west-2`, giving the new AMI the name `My-Standard-AMI`:

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

### Example Response

```
<CopyImageResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
  <imageId>ami-4d3c2b1a</imageId>
</CopyImageResponse>
```

# CopySnapshot

## Description

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

## Request Parameters

### *SourceRegion*

The ID of the AWS region that contains the snapshot to be copied.

Type: String

Default: None

Required: Yes

### *SourceSnapshotId*

The ID of the Amazon EBS snapshot to copy.

Type: String

Default: None

Required: Yes

### *Description*

A description of the new Amazon EBS snapshot.

Type: String

Default: None

Constraints: Up to 255 characters

Required: No

## Response Elements

The following elements are returned in a `CopySnapshotResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `snapshotId`

The ID of the new snapshot.

Type: `xsd:string`

## Examples

### Example Request

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

```
https://ec2.amazonaws.com/?Action=CopySnapshot
&AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE
&Description=My%20snapshot
&Signature=VjpSFePIKxDc1IUy92W3SBApdLiap7nno4pEc9iEXAMPLE
&SignatureMethod=HmacSHA256
&SignatureVersion=2
&SourceRegion=us-west-1
&SourceSnapshotId=snap-1a2b3c4d
&Timestamp=2012-12-11T02%3A03%3A35.713Z
&Version=2012-12-01
```

## Example Response

```
<CopySnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
<requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
<snapshotId>snap-2a2b3c4d</snapshotId>
</CopySnapshotResponse>
```

## Related Actions

- [CreateSnapshot](#) (p. 101)
- [DeleteSnapshot](#) (p. 147)
- [DescribeSnapshots](#) (p. 276)



# CreateCustomerGateway

## Description

Provides information to AWS about your VPN customer gateway device. The customer gateway is the appliance at your end of the VPN connection. (The device on the AWS side of the VPN connection is the virtual private gateway.) You must provide the Internet-routable IP address of the customer gateway's external interface. The IP address must be static and can't be behind a device performing network address translation (NAT).

You must provide the Internet-routable IP address of the customer gateway's external interface. The IP address must be static and can't be behind a device performing network address translation (NAT).

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

### Note

Amazon EC2 supports all 2-byte ASN numbers in the range of 1 - 65534, with the exception of 7224, which is reserved in the US East Region, and 9059, which is reserved in the EU West Region.

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

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

## Request Parameters

### *Type*

The type of VPN connection this customer gateway supports.

Type: String

Default: None

Valid values: `ipsec.1`

Required: Yes

### *IpAddress*

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

Type: String

Default: None

Required: Yes

### *BgpAsn*

The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN) for devices that support BGP.

Type: Integer

Default: 65000

Required: No

## Response Elements

The following elements are returned in an `CreateCustomerGatewayResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**customerGateway**

Information about the customer gateway.

Type: [CustomerGatewayType](#) (p. 452)

## Examples

### Example Request

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

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

### Example Response

```
<CreateCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <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 Actions

- [DescribeCustomerGateways](#) (p. 181)
- [DeleteCustomerGateway](#) (p. 126)

# CreateDhcpOptions

## Description

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

DHCP Option Name	Description
domain-name-servers	The IP addresses of up to four domain name servers, or . The default DHCP option set specifies .
domain-name	If you're using in US East (Northern Virginia) Region, specify <code>compute-1.amazonaws.com</code> . If you're using in another region, specify <code>region.compute.amazonaws.com</code> . Otherwise, specify a domain name (for example, <code>MyCompany.com</code> ).
ntp-servers	The IP addresses of up to four Network Time Protocol (NTP) servers.
netbios-name-servers	The IP addresses of up to four NetBIOS name servers.
netbios-node-type	The NetBIOS node type (1, 2, 4, or 8). We recommend that you specify 2 (broadcast and multicast are not currently supported). For more information about these node types, see <a href="#">RFC 2132</a> .

### Important

Your VPC automatically starts out with a set of DHCP options that includes only a DNS server that we provide (AmazonProvidedDNS). If you create a new set of options, and if your VPC has an Internet gateway, make sure to set the `domain-name-servers` option either to AmazonProvidedDNS or to a domain name server of your choice.

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

## Request Parameters

### *DhcpConfiguration.n.Key*

The name of a DHCP option.

Type: String

Default: None

Required: Yes

### *DhcpConfiguration.n.Value.m*

A value for the DHCP option.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `CreateDhcpOptionsResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**dhcpOptions**

A set of DHCP options.

Type: [DhcpOptionsType](#) (p. 463)

## Examples

### Example Request

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

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

### Example Response

```
<CreateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <dhcpOptions>
    <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
    <dhcpConfigurationSet>
      <item>
        <key>domain-name</key>
        <valueSet>
          <item>
            <value>example.com</value>
          </item>
        </valueSet>
      </item>
      <item>
        <key>domain-name-servers</key>
        <valueSet>
          <item>
            <value>10.2.5.1</value>
          </item>
          <item>
            <value>10.2.5.2</value>
          </item>
        </valueSet>
      </item>
    </dhcpConfigurationSet>
  </dhcpOptions>
</CreateDhcpOptionsResponse>
```

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

## Related Actions

- [AssociateDhcpOptions](#) (p. 19)
- [DescribeDhcpOptions](#) (p. 184)
- [DeleteDhcpOptions](#) (p. 128)

# CreateImage

## Description

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

### Note

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

## Request Parameters

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

### *Name*

A name for the new image.

Type: String

Default: None

Constraints: 3-128 alphanumeric characters, parenthesis (*()*), commas (*,*), slashes (*/*), dashes (*-*), or underscores(*\_*)

Required: Yes

### *Description*

A description of the new image.

Type: String

Default: None

Constraints: Up to 255 characters

Required: No

### *NoReboot*

By default this parameter is set to *false*, which means Amazon EC2 attempts to cleanly shut down the instance before image creation and then reboots the instance. When the parameter is set to *true*, 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: *false*

Required: No

### *BlockDeviceMapping.n.DeviceName*

The device name exposed to the instance (for example, */dev/sdh* or *xvdh*). For more information, see [Block Device Mapping](#).

Type: String

Default: None

Required: Conditional

Condition: If you're registering an Amazon EBS-backed AMI from a snapshot, you must specify *DeviceName* with the root device name (for example, */dev/sda1* or *xvda*), and *BlockDeviceMapping.n.Ebs.SnapshotId* with the snapshot ID

***BlockDeviceMapping.n.NoDevice***

Suppresses a device mapping.

Type: Boolean

Default: `true`

Required: No

***BlockDeviceMapping.n.VirtualName***

The name of the virtual device, ephemeral[0..3]. The number of instance store volumes depends on the instance type.

Type: String

Default: None

Required: No

***BlockDeviceMapping.n.Ebs.SnapshotId***

The ID of the snapshot.

Type: String

Default: None

Required: Conditional

Condition: If you're registering an Amazon EBS-backed AMI from a snapshot, you must at least specify *SnapshotId* with the snapshot ID, and *BlockDeviceMapping.n.DeviceName* with the root device name.

***BlockDeviceMapping.n.Ebs.VolumeSize***

The size of the volume, in GiBs.

Type: Integer

Valid values: If the volume type is `io1`, the minimum size of the volume is 10 GiB.

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.

Required: No

***BlockDeviceMapping.n.Ebs.DeleteOnTermination***

Whether the volume is deleted on instance termination.

Type: Boolean

Default: `true`

Required: No

***BlockDeviceMapping.n.Ebs.VolumeType***

The volume type.

Type: String

Valid values: `standard` | `io1`

Default: `standard`

Required: No

***BlockDeviceMapping.n.Ebs.Iops***

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4000.

Default: None

Required: Required when the volume type is `io1`; not used with `standard` volumes.

## Response Elements

The following elements are returned in a `CreateImageResponse` element.

**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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-4fa54026</imageId>
</CreateImageResponse>
```

## Related Actions

- [RunInstances](#) (p. 419)
- [DescribeInstances](#) (p. 203)
- [TerminateInstances](#) (p. 434)



# CreateInstanceExportTask

## Description

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

## Request Parameters

### *Description*

A description of the conversion task or the resource being exported.

Type: String

Default: None

Required: No

### *InstanceId*

The ID of the instance being exported.

Type: String

Default: None

Required: Yes

### *TargetEnvironment*

The target virtualization environment.

Type: String

Default: None

Valid values: vmware | citrix | microsoft

Required: Yes

### *ExportToS3.DiskImageFormat*

The format for the exported image.

Type: String

Default: vmdk if TargetEnvironment = vmware, otherwise vhd

Valid values: vmdk | vhd

Required: No

### *ExportToS3.ContainerFormat*

The container format used to combine disk images with metadata (such as OVF). If absent, only the disk image will be exported.

Type: String

Default: ova if TargetEnvironment = vmare, otherwise blank

Valid values: ova

Required: No

### *ExportToS3.S3Bucket*

The Amazon S3 bucket for the destination image. The bucket must exist and grant write permissions to AWS account vm-import-export@amazon.com.

Type: String

Default: None

Required: Yes

### *ExportToS3.S3Prefix*

The image is written to a single object in the Amazon S3 bucket at the S3 key s3prefix + exportTaskId + '.' + diskImageFormat.

Type: String

Default: None

Required: No

## Response Elements

The following elements are returned in a `CreateInstanceExportTaskResponse` element.

### **requestId**

The ID of the request.

Type: `xsd:string`

### **exportTask**

The details of the created ExportVM task.

Type: [ExportTaskResponseType](#) (p. 467)

## Examples

### Example Request

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

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

### Example Response

```
<CreateInstanceExportTaskResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/" >
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <exportTask>
    <exportTaskId>export-i-1234wxyz</exportTaskId>
    <description>Example for docs</description>
    <state>active</state>
    <statusMessage>Running</statusMessage>
    <instanceExport>
      <instanceId>i-12345678</instanceId >
      <targetEnvironment>VMWare</targetEnvironment >
    </instanceExport>
    <exportToS3>
      <diskImageFormat>VMDK</diskImageFormat >
      <containerFormat>OVA</containerFormat>
      <s3Bucket>my-bucket-for-exported-vm</s3Bucket>
      <s3Key>my-exports/ export-i-1234wxyz .ova</s3Key>
    </exportToS3>
  </exportTask>
</CreateInstanceExportTaskResponse>
```

## Related Actions

- [CancelExportTask](#) (p. 45)
- [DescribeExportTasks](#) (p. 188)

# CreateInternetGateway

## Description

Creates a new Internet gateway for use with a VPC. After creating the Internet gateway, you attach it to a VPC using [AttachInternetGateway](#) (p. 23). For more information about your VPC and Internet gateway, see [Amazon Virtual Private Cloud User Guide](#).

## Request Parameters

This action has no request parameters.

## Response Elements

The following elements are returned in a `CreateInternetGatewayResponse` element.

### **requestId**

The ID of the request.

Type: `xsd:string`

### **internetGateway**

Information about the Internet gateway

Type: [InternetGatewayType](#) (p. 486)

## 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <internetGateway>
    <internetGatewayId>igw-eaad4883</internetGatewayId>
    <attachmentSet/>
    <tagSet/>
  </internetGateway>
</CreateInternetGatewayResponse>
```

## Related Actions

- [DeleteInternetGateway](#) (p. 130)
- [AttachInternetGateway](#) (p. 23)
- [DetachInternetGateway](#) (p. 326)

- [DescribeInternetGateways](#) (p. 225)

# 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.

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

### Tip

The key pair returned to you works only in the region you're using when you create the key pair. To create a key pair that works in all regions, use [ImportKeyPair](#) (p. 352).

## Request Parameters

### **KeyName**

A unique name for the key pair.

Type: String

Default: None

Constraints: Accepts alphanumeric characters, spaces, dashes, and underscores.

Required: Yes

## Response Elements

The following elements are returned in a `CreateKeyPairResponse` element.

### **requestId**

The ID of the request.

Type: xsd:string

### **keyName**

The key pair name you provided.

Type: xsd:string

### **keyFingerprint**

A SHA-1 digest of the DER encoded private key.

Type: xsd:string

### **keyMaterial**

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
```



# CreateNetworkAcl

## Description

Creates a network ACL in a VPC. Network ACLs provide an optional layer of security (on top of security groups) for the instances in your VPC. For more information about network ACLs, see [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `CreateNetworkAclResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `networkAcl`

Information about the new network ACL.

Type: [NetworkAclType](#) (p. 493)

## Examples

### Example Request

The example creates a new network ACL in the VPC with ID `vpc-11ad4878`. Notice that the response includes a default entry for egress, and another for ingress, each with a very high rule number. These are the last entries we process to decide whether traffic is allowed in or out of an associated subnet. If the traffic doesn't match any rules with a lower rule number, then these default entries ultimately deny the traffic.

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

### Example Response

```
<CreateNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <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 Actions

- [DeleteNetworkAcl](#) (p. 133)
- [DescribeNetworkAcls](#) (p. 230)
- [ReplaceNetworkAclAssociation](#) (p. 385)

# CreateNetworkAclEntry

## Description

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

### Tip

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

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

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

## Request Parameters

### **NetworkAclId**

The ID of the ACL.

Type: String

Default: None

Required: Yes

### **RuleNumber**

The rule number to assign to the entry (for example, 100). ACL entries are processed in ascending order by rule number.

Type: Integer

Default: None

Constraints: Positive integer from 1 to 32766

Required: Yes

### **Protocol**

The IP protocol the rule applies to. You can use -1 to mean all protocols.

Type: Integer

Valid values: -1 or a protocol number (see [Protocol Numbers](#)).

Required: Yes

### **RuleAction**

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

Type: String

Default: None

Valid values: `allow` | `deny`

Required: Yes

### **Egress**

Indicates whether this rule applies to egress traffic from the subnet (`true`) or ingress traffic to the subnet (`false`).

Type: Boolean

Default: `false`

Valid values: `true` | `false`

Required: No

***CidrBlock***

The CIDR range to allow or deny, in CIDR notation (for example, 172.16.0.0/24).

Type: String

Default: None

Required: 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

Required: Conditional

Condition: Required if specifying 1 (ICMP) for the protocol.

***Icmp.Type***

For the ICMP protocol, the ICMP type. You can use -1 to specify all ICMP types.

Type: Integer

Default: None

Required: Conditional

Condition: Required if specifying 1 (ICMP) for the protocol.

***PortRange.From***

The first port in the range.

Type: Integer

Default: None

Required: Conditional

Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.

***PortRange.To***

The last port in the range.

Type: Integer

Default: None

Required: Conditional

Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.

## Response Elements

The following elements are returned in a `CreateNetworkAclEntryResponse` element.

**`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 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>>true</return>
</CreateNetworkAclEntryResponse>
```

## Related Actions

- [DeleteNetworkAclEntry](#) (p. 135)
- [ReplaceNetworkAclEntry](#) (p. 387)
- [DescribeNetworkAcls](#) (p. 230)

# CreateNetworkInterface

## Description

Creates a network interface in the specified subnet.

## Request Parameters

### *SubnetId*

The ID of the subnet to associate with the network interface.

Type: String

Default: None

Required: Yes

### *PrivateIpAddress*

The primary private IP address of the network interface.

Type: String

Default: None

Required: No

### *PrivateIpAddresses.n.PrivateIpAddress*

The private IP address of the specified network interface. This parameter can be used multiple times to specify explicit private IP addresses for a network interface, but only one private IP address can be designated as primary.

You cannot specify this parameter with the `PrivateIpAddresses.n.Primary` value of `true` if you specify the `PrivateIpAddress` option.

Type: String

Default: None

Required: No

### *PrivateIpAddresses.n.Primary*

Specifies whether the private IP address is the primary private IP address.

Only one IP address can be designated as primary. You cannot specify this parameter with the value of `true` and the `PrivateIpAddresses.n.PrivateIpAddress` option if you specify the `PrivateIpAddress` option.

Type: Boolean

Default: `false`

Required: No

### *SecondaryPrivateIpAddressCount*

The number of secondary private IP addresses to assign to a network interface. When you specify a number of secondary IP addresses, AWS automatically assigns these IP addresses within the subnet's range.

The number of IP addresses you can assign to a network interface varies by instance type. For more information, see [Available Instance Types](#) in the *Amazon Elastic Compute Cloud User Guide*.

For a single network interface, you cannot specify this option and specify more than one private IP address using `PrivateIpAddress.n`.

Type: Integer

Default: None

Required: No

### *Description*

The description of the network interface.

Type: String

Default: None

Required: No

***SecurityGroupId.n***

The list of security group IDs for the network interface.

Type: [SecurityGroupIdSetItemType](#) (p. 513)

Default: None

Required: No

## Response Elements

The following elements are returned in a `CreateNetworkInterfaceResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**networkInterface**

The network interface that was created.

Type: [NetworkInterfaceType](#) (p. 496)

## Examples

### Example Request

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

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

### Example Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>8dbe591e-5a22-48cb-b948-dd0aadd55adf</requestId>
  <networkInterface>
    <networkInterfaceId>eni-cfca76a6</networkInterfaceId>
    <subnetId>subnet-b2a249da</subnetId>
    <vpcId>vpc-c31dafaa</vpcId>
    <availabilityZone>ap-southeast-1b</availabilityZone>
    <description/>
    <ownerId>251839141158</ownerId>
    <requesterManaged>false</requesterManaged>
    <status>available</status>
    <macAddress>02:74:b0:72:79:61</macAddress>
    <privateIpAddress>10.0.2.157</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-1a2b3c4d</groupId>
```

```
        <groupName>default</groupName>
    </item>
</groupSet>
<tagSet/>
<privateIpAddressesSet>
    <item>
        <privateIpAddress>10.0.2.157</privateIpAddress>
        <primary>true</primary>
    </item>
</privateIpAddressesSet>
</networkInterface>
</CreateNetworkInterfaceResponse>
```

## Example Request

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

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

## Example Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>bd78c839-0895-4fac-a17f-98b559b6b630</requestId>
  <networkInterface>
    <networkInterfaceId>eni-1bcb7772</networkInterfaceId>
    <subnetId>subnet-a61dafcf</subnetId>
    <vpcId>vpc-c31dafaa</vpcId>
    <availabilityZone>ap-southeast-1b</availabilityZone>
    <description/>
    <ownerId>251839141158</ownerId>
    <requesterManaged>false</requesterManaged>
    <status>pending</status>
    <macAddress>02:74:b0:70:7f:1a</macAddress>
    <privateIpAddress>10.0.2.140</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-1a2b3c4d</groupId>
        <groupName>default</groupName>
      </item>
    </groupSet>
    <tagSet/>
    <privateIpAddressesSet>
      <item>
        <privateIpAddress>10.0.2.140</privateIpAddress>
        <primary>true</primary>
      </item>
```

```
<item>
  <privateIpAddress>10.0.2.172</privateIpAddress>
  <primary>>false</primary>
</item>
<item>
  <privateIpAddress>10.0.2.169</privateIpAddress>
  <primary>>false</primary>
</item>
<item>
  <privateIpAddress>10.0.2.170</privateIpAddress>
  <primary>>false</primary>
</item>
<item>
  <privateIpAddress>10.0.2.171</privateIpAddress>
  <primary>>false</primary>
</item>
</privateIpAddressesSet>
</networkInterface>
</CreateNetworkInterfaceResponse>
```

## Example Request

The following requests creates a network interface with a primary private IP address of 10.0.2.130 and two secondary IP addresses of 10.0.2.132 and 10.0.2.133.

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

## Example Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>a9565f4c-f928-4113-859b-905886d11658</requestId>
  <networkInterface>
    <networkInterfaceId>eni-41c47828</networkInterfaceId>
    <subnetId>subnet-a61dafcf</subnetId>
    <vpcId>vpc-c31dafaa</vpcId>
    <availabilityZone>ap-southeast-1b</availabilityZone>
    <description/>
    <ownerId>251839141158</ownerId>
    <requesterManaged>>false</requesterManaged>
    <status>pending</status>
    <macAddress>02:74:b0:78:bf:ab</macAddress>
    <privateIpAddress>10.0.2.130</privateIpAddress>
    <sourceDestCheck>>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-188d9f74</groupId>
```



```
        <groupName>default</groupName>
    </item>
</groupSet>
<tagSet/>
<privateIpAddressesSet>
    <item>
        <privateIpAddress>10.0.2.130</privateIpAddress>
        <primary>true</primary>
    </item>
    <item>
        <privateIpAddress>10.0.2.133</privateIpAddress>
        <primary>>false</primary>
    </item>
    <item>
        <privateIpAddress>10.0.2.132</privateIpAddress>
        <primary>>false</primary>
    </item>
</privateIpAddressesSet>
</networkInterface>
</CreateNetworkInterfaceResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 25)
- [DetachNetworkInterface](#) (p. 328)
- [DeleteNetworkInterface](#) (p. 137)
- [DescribeNetworkInterfaceAttribute](#) (p. 235)
- [DescribeNetworkInterfaces](#) (p. 237)
- [ModifyNetworkInterfaceAttribute](#) (p. 363)
- [ResetNetworkInterfaceAttribute](#) (p. 409)

# CreatePlacementGroup

## Description

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

## Request Parameters

### GroupName

A name for the placement group.

Type: String

Default: None

Required: Yes

### Strategy

The placement group strategy.

Type: String

Valid values: `cluster`

Required: Yes

## Response Elements

The following elements are returned in a `CreatePlacementGroupResponse` element.

### 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/2013-02-01/">
```

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

## Related Actions

- [DeletePlacementGroup](#) (p. 139)
- [DescribePlacementGroups](#) (p. 243)

# CreateReservedInstancesListing

## Description

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

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

If you want to sell your Reserved Instances, you must first register as a Seller in the Reserved Instance Marketplace. After completing the registration process, you can create a Reserved Instance Marketplace listing of some or all of your Reserved Instances, and specify the upfront price you want to receive for them. Your Reserved Instance listings then become available for purchase.

For more information about Reserved Instance Marketplace, go to [Reserved Instance Marketplace](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### *reservedInstancesId*

The ID of the Reserved Instance that will be listed.

Type: String

Default: None

Required: Yes

### *instanceCount*

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

Type: Integer

Default: None

Required: Yes

### *priceSchedules*

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

Type: [PriceScheduleRequestSetItem](#) (p. 500)

Required: Yes

### *clientToken*

Unique, case-sensitive identifier you provide to ensure idempotency of your listings. This helps avoid duplicate listings. For more information, go to [Ensuring Idempotency](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `CreateReservedInstancesListingResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**reservedInstancesListingSet**

The Reserved Instances listing that was created. The listing information is wrapped in an `item` element.

Type: [DescribeReservedInstancesListingsResponseSetItemType](#) (p. 456)

## Examples

### Example Request

This example creates a Reserved Instance Marketplace listing from the existing Reserved Instance `e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE`, which has 11 months remaining in its term. In this example, we set the upfront price at \$2.50, and the price drops over the course of the 11-month term if the instance is still not sold:

Term (months)	Upfront Price
11, 10, 9	\$2.50
8, 7, 6	\$2.00
5, 4	\$1.50
3, 2	\$0.70
1	\$0.10

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

### Example Response

```
<CreateReservedInstancesListingResponse>
  <requestId>a42481af-335a-4e9e-b291-bd18dexample</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>5ec28771-05ff-4b9b-aa31-
```

```
9e57dEXAMPLE</reservedInstancesListingId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
  <createDate>2012-07-17T17:11:09.449Z</createDate>
  <updateDate>2012-07-17T17:11:09.468Z</updateDate>
  <status>active</status>
  <statusMessage>ACTIVE</statusMessage>
  <instanceCounts>
    <item>
      <state>Available</state>
      <instanceCount>1</instanceCount>
    </item>
    <item>
      <state>Sold</state>
      <instanceCount>0</instanceCount>
    </item>
    <item>
      <state>Cancelled</state>
      <instanceCount>0</instanceCount>
    </item>
    <item>
      <state>Pending</state>
      <instanceCount>0</instanceCount>
    </item>
  </instanceCounts>
  <priceSchedules>
    <item>
      <term>11</term>
      <price>2.5</price>
      <currencyCode>USD</currencyCode>
      <active>true</active>
    </item>
    <item>
      <term>10</term>
      <price>2.5</price>
      <currencyCode>USD</currencyCode>
      <active>>false</active>
    </item>
    <item>
      <term>9</term>
      <price>2.5</price>
      <currencyCode>USD</currencyCode>
      <active>>false</active>
    </item>
    <item>
      <term>8</term>
      <price>2.0</price>
      <currencyCode>USD</currencyCode>
      <active>>false</active>
    </item>
    <item>
      <term>7</term>
      <price>2.0</price>
      <currencyCode>USD</currencyCode>
      <active>>false</active>
    </item>
    <item>
      <term>6</term>
```

```
        <price>2.0</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>5</term>
        <price>1.5</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>4</term>
        <price>1.5</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>3</term>
        <price>0.7</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>2</term>
        <price>0.7</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    <item>
        <term>1</term>
        <price>0.1</price>
        <currencyCode>USD</currencyCode>
        <active>false</active>
    </item>
    </priceSchedules>
    <tagSet/>
    <clientToken>myIdempToken1</clientToken>
</item>
</reservedInstancesListingsSet>
</CreateReservedInstancesListingResponse>
```

## List a Reserved Instance in the Reserved Instance Marketplace

### To list a Reserved Instance in the Reserved Instance Marketplace

1. Get a list of your Reserved Instances by calling [DescribeReservedInstances](#) (p. 249).

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

The following is an example response.

```
<DescribeReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
```

```

<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<reservedInstancesSet>
...
  <item>
    <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
    <instanceType>m1.xlarge</instanceType>
    <availabilityZone>us-east-1b</availabilityZone>
    <duration>31536000</duration>
    <fixedPrice>61.0</fixedPrice>
    <usagePrice>0.034</usagePrice>
    <instanceCount>3</instanceCount>
    <productDescription>Linux/UNIX</productDescription>
    <state>active</state>
    <instanceTenancy>default</instanceTenancy>
    <currencyCode>USD</currencyCode>
    <offeringType>Light Utilization</offeringType>
    <recurringCharges/>
  </item>
...
</reservedInstancesSet>
</DescribeReservedInstancesResponse>

```

Note the Reserved Instance ID of the Reserved Instance that you want to list in the Reserved Instance Marketplace.

2. Create a listing for three Reserved Instances from Reserved Instance ID e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE and specify the following pricing schedule.

Term (remaining months)	11	10	9	8	7	6	5	4	3	2	1
Price specified for period	2.5			2.0			1.5		0.7		0.1
Price	2.5	2.5	2.5	2.0	2.0	2.0	1.5	1.5	0.7	0.7	0.1

The call should look like this example:

```

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

```

The following is an example response.

```

<CreateReservedInstancesListingResponse>
  <requestId>a42481af-335a-4e9e-b291-bd18dEXAMPLE</requestId>
  <reservedInstancesListingsSet>

```



```
<item>
  <reservedInstancesListingId>5ec28771-05ff-4b9b-aa31-
9e57dEXAMPLE</reservedInstancesListingId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</re
servedInstancesId>
  <createDate>2012-08-30T17:11:09.449Z</createDate>
  <updateDate>2012-08-30T17:11:09.468Z</updateDate>
  <status>active</status>
  <statusMessage>active</statusMessage>
  <instanceCounts>
    <item>
      <state>Available</state>
      <instanceCount>3</instanceCount>
    </item>
    <item>
      <state>Sold</state>
      <instanceCount>0</instanceCount>
    </item>
    <item>
      <state>Cancelled</state>
      <instanceCount>0</instanceCount>
    </item>
    <item>
      <state>Pending</state>
      <instanceCount>0</instanceCount>
    </item>
  </instanceCounts>
  <priceSchedules>
    <item>
      <term>11</term>
      <price>2.5</price>
      <currencyCode>USD</currencyCode>
      <active>true</active>
    </item>
    <item>
      <term>10</term>
      <price>2.5</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>9</term>
      <price>2.5</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>8</term>
      <price>2.00</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
    <item>
      <term>7</term>
      <price>2.0</price>
      <currencyCode>USD</currencyCode>
      <active>false</active>
    </item>
  </priceSchedules>
</item>
```

```
    <item>
      <term>6</term>
      <price>2.0</price>
      <currencyCode>USD</currencyCode>
      <active>>false</active>
    </item>
    <item>
      <term>5</term>
      <price>1.5</price>
      <currencyCode>USD</currencyCode>
      <active>>false</active>
    </item>
    <item>
      <term>4</term>
      <price>1.5</price>
      <currencyCode>USD</currencyCode>
      <active>>false</active>
    </item>
    <item>
      <term>3</term>
      <price>0.7</price>
      <currencyCode>USD</currencyCode>
      <active>>false</active>
    </item>
    <item>
      <term>2</term>
      <price>0.7</price>
      <currencyCode>USD</currencyCode>
      <active>>false</active>
    </item>
    <item>
      <term>1</term>
      <price>0.1</price>
      <currencyCode>USD</currencyCode>
      <active>>false</active>
    </item>
  </priceSchedules>
  <tagSet/>
  <clientToken>listRI1</clientToken>
</item>
</reservedInstancesListingsSet>
</CreateReservedInstancesListingResponse>
```

3. To view the details of your Reserved Instance listing, run [DescribeReservedInstancesListings](#) (p. 253).

The command should look like this example:

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

Following is an example response.

```
<DescribeReservedInstancesListingsResponse>
  <requestId>cec5c904-8f3a-4de5-8f5a-ff7f9EXAMPLE</requestId>
  <reservedInstancesListingsSet>
    <item>
```

```
<reservedInstancesListingId>253dfbf9-c335-4808-b956-
d942cEXAMPLE</reservedInstancesListingId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</re
servedInstancesId>
  <createDate>2012-07-06T19:35:29.000Z</createDate>
  <updateDate>2012-07-06T19:35:30.000Z</updateDate>
  <status>active</status>
  <statusMessage>ACTIVE</statusMessage>
  <instanceCounts>
    <item>
      <state>Available</state>
      <instanceCount>20</instanceCount>
    </item>
    <item>
      <state>Sold</state>
      <instanceCount>0</instanceCount>
    </item>
    <item>
      <state>Cancelled</state>
      <instanceCount>0</instanceCount>
    </item>
    <item>
      <state>Pending</state>
      <instanceCount>0</instanceCount>
    </item>
  </instanceCounts>
  <priceSchedules>
    <item>
      <term>8</term>
      <price>480.0</price>
      <currencyCode>USD</currencyCode>
      <active>>false</active>
    </item>
    <item>
      <term>7</term>
      <price>420.0</price>
      <currencyCode>USD</currencyCode>
      <active>>false</active>
    </item>
    <item>
      <term>6</term>
      <price>360.0</price>
      <currencyCode>USD</currencyCode>
      <active>active</active>
    </item>
    <item>
      <term>5</term>
      <price>300.0</price>
      <currencyCode>USD</currencyCode>
      <active>>false</active>
    </item>
    <item>
      <term>4</term>
      <price>240.0</price>
      <currencyCode>USD</currencyCode>
      <active>>false</active>
    </item>
    <item>
```

```
        <term>3</term>
        <price>180.0</price>
        <currencyCode>USD</currencyCode>
        <active>>false</active>
    </item>
    <item>
        <term>2</term>
        <price>120.0</price>
        <currencyCode>USD</currencyCode>
        <active>>false</active>
    </item>
    <item>
        <term>1</term>
        <price>60.0</price>
        <currencyCode>USD</currencyCode>
        <active>>false</active>
    </item>
</priceSchedules>
<tagSet/>
<clientToken>myclienttoken1</clientToken>
</item>
</reservedInstancesListingsSet>
</DescribeReservedInstancesListingsResponse>
```

## Related Actions

- [CancelReservedInstancesListing](#) (p. 46)
- [DescribeReservedInstancesListings](#) (p. 253)

# CreateRoute

## Description

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

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

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

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

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

## Request Parameters

### ***RouteTableId***

The ID of the route table where the route will be added.

Type: String

Default: None

Required: Yes

### ***DestinationCidrBlock***

The CIDR address block used for the destination match. Routing decisions are based on the most specific match.

Type: String

Default: None

Required: Yes

### ***GatewayId***

The ID of a gateway attached to your VPC.

Type: String

Default: None

Required: Conditional

Condition: You must provide only one of the following: a `GatewayId`, `InstanceId`, or `NetworkInterfaceId`.

### ***InstanceId***

The ID of a NAT instance in your VPC.

Type: String

Default: None

Required: Conditional

Condition: You must provide only one of the following: a `GatewayId`, `InstanceId`, or `NetworkInterfaceId`.

### ***NetworkInterfaceId***

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

Type: String

Default: None

Required: Conditional

Condition: You must provide only one of the following: a `GatewayId`, `InstanceId`, or `NetworkInterfaceId`.

## Response Elements

The following elements are returned in a `CreateRouteResponse` element.

### **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 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CreateRouteResponse>
```

## Related Actions

- [DeleteRoute](#) (p. 141)
- [ReplaceRoute](#) (p. 390)
- [DescribeRouteTables](#) (p. 266)

# CreateRouteTable

## Description

Creates a route table within a VPC. After you create a new route table, you can add routes and associate the table with a subnet. For more information about route tables, see [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `CreateRouteTableResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `routeTable`

Information about the newly created route table.

Type: [RouteTableType](#) (p. 508)

## 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/2013-02-01/">
  <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 Actions

- [AssociateRouteTable](#) (p. 21)
- [DisassociateRouteTable](#) (p. 338)
- [DescribeRouteTables](#) (p. 266)
- [DeleteRouteTable](#) (p. 143)
- [ReplaceRouteTableAssociation](#) (p. 392)
- [CreateRoute](#) (p. 94)

# CreateSecurityGroup

## Description

Creates a security group.

### Important

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

EC2-VPC: You can create up to 100 security groups per VPC.

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

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

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

You can add or remove rules from your security groups using the `AuthorizeSecurityGroupIngress`, `AuthorizeSecurityGroupEgress`, `RevokeSecurityGroupIngress`, and `RevokeSecurityGroupEgress` actions.

## Request Parameters

### **GroupName**

The name of the security group.

Type: String

Default: None

Constraints: Up to 255 characters in length

Constraints for EC2-Classic: ASCII characters

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

Required: Yes

### **GroupDescription**

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

Type: String

Default: None

Constraints: Up to 255 characters in length

Constraints for EC2-Classic: ASCII characters

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

Required: Yes

### **VpcId**

[EC2-VPC] The ID of the VPC.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-VPC.

## Response Elements

The following elements are returned in a `CreateSecurityGroupResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**return**

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

**groupId**

The ID that AWS assigns to the security group.

Type: `xsd:string`

## 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
  <groupId>sg-1a2b3c4d</groupId>
</CreateSecurityGroupResponse>
```

## Related Actions

- [RunInstances](#) (p. 419)
- [DescribeSecurityGroups](#) (p. 270)
- [AuthorizeSecurityGroupIngress](#) (p. 34)
- [RevokeSecurityGroupIngress](#) (p. 416)
- [DeleteSecurityGroup](#) (p. 145)

# CreateSnapshot

## Description

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

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

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

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

### To unmount the volume in Linux/UNIX

- Enter the following command from the command line.

```
umount -d device_name
```

For example:

```
# umount -d /dev/sdh
```

### To unmount the volume in Windows

1. In Disk Management, right-click the volume to unmount, and select **Change Drive Letter and Path**.
2. Select the mount point to remove and click **Remove**.

## Request Parameters

### *VolumeId*

Required: Yes

### *Description*

A description of the Amazon EBS snapshot.

Type: String

Default: None

Constraints: Up to 255 characters

Required: No

## Response Elements

The following elements are returned in a `CreateSnapshotResponse` element.

<b>requestId</b>	The ID of the request. Type: xsd:string
<b>snapshotId</b>	The ID of the snapshot. Type: xsd:string
<b>volumeId</b>	The ID of the volume. Type: xsd:string
<b>status</b>	The snapshot state. Type: xsd:string Valid values: <code>pending</code>   <code>completed</code>   <code>error</code>
<b>startTime</b>	The time stamp when the snapshot was initiated. Type: xsd:dateTime
<b>progress</b>	The progress of the snapshot, as a percentage. Type: xsd:string
<b>ownerId</b>	The AWS account ID of the Amazon EBS snapshot owner. Type: xsd:string
<b>volumeSize</b>	The size of the volume, in GiB. Type: xsd:string
<b>description</b>	A description of the snapshot. Type: xsd:string

## Examples

### Example Request

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

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

### Example Response

```
<CreateSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<snapshotId>snap-1a2b3c4d</snapshotId>  
<volumeId>vol-1a2b3c4d</volumeId>  
<status>pending</status>  
<startTime>YYYY-MM-DDTHH:MM:SS.000Z</startTime>  
<progress>60%</progress>  
<ownerId>111122223333</ownerId>  
<volumeSize>30</volumeSize>  
<description>Daily Backup</description>  
</CreateSnapshotResponse>
```

## Related Actions

- [DeleteSnapshot](#) (p. 147)
- [DescribeSnapshots](#) (p. 276)

# CreateSpotDatafeedSubscription

## Description

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

## Request Parameters

### *Bucket*

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.

Required: Yes

### *Prefix*

A prefix for the datafeed file names.

Type: String

Default: None

Required: No

## Response Elements

The following elements are returned in a `CreateSpotDatafeedSubscriptionResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `spotDatafeedSubscription`

Type: [SpotDatafeedSubscriptionType](#) (p. 514)

## Examples

### Example Request

This example creates the data feed for the account.

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

### Example Response

```
<CreateSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<spotDatafeedSubscription>  
  <ownerId>111122223333</ownerId>  
  <bucket>myawsbucket</bucket>  
  <prefix>spotdata_</prefix>  
  <state>Active</state>  
</spotDatafeedSubscription>  
</CreateSpotDatafeedSubscriptionResponse>
```

## Related Actions

- [DeleteSpotDatafeedSubscription](#) (p. 149)
- [DescribeSpotDatafeedSubscription](#) (p. 281)



# CreateSubnet

## Description

Creates a subnet in an existing VPC. You can create up to 20 subnets in a VPC. If you add more than one subnet to a VPC, they're set up in a star topology with a logical router in the middle. If you need more than 20 subnets, you can request more by going to [Request to Increase Amazon VPC Limits](#).

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

### Important

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

If you launch an instance in a VPC using an Amazon EBS-backed AMI, the IP address doesn't change if you stop and restart the instance (unlike a similar instance launched outside a VPC, which gets a new IP address when restarted). It's therefore possible to have a subnet with no running instances (they're all stopped), but no remaining IP addresses available. For more information about Amazon EBS-backed AMIs, see [AMI Basics](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

### *CidrBlock*

The CIDR block for the subnet. For example, 10.0.0.0/24.

Type: String

Default: None

Required: Yes

### *AvailabilityZone*

The Availability Zone for the subnet.

Type: String

Default: AWS selects a zone for you (recommended)

Required: No

## Response Elements

The following elements are returned in a `CreateSubnetResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

**subnet**

Information about the subnet.

Type: [SubnetType](#) (p. 519)

## 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/2013-02-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <subnet>
    <subnetId>subnet-9d4a7b6c</subnetId>
    <state>pending</state>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <cidrBlock>10.0.1.0/24</cidrBlock>
    <availableIpAddressCount>251</availableIpAddressCount>
    <availabilityZone>us-east-1a</availabilityZone>
    <tagSet/>
  </subnet>
</CreateSubnetResponse>
```

## Related Actions

- [DescribeSubnets](#) (p. 294)
- [DeleteSubnet](#) (p. 150)

# CreateTags

## Description

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

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

## Request Parameters

### ***ResourceId.n***

The ID of a resource to tag. For example, `ami-1a2b3c4d`. You can specify multiple resources to assign the tags to.

Type: String

Default: None

Required: Yes

### ***Tag.n.Key***

The key for a tag.

Type: String

Default: None

Constraints: Tag keys are case sensitive and accept a maximum of 128 Unicode characters.

Required: Yes

### ***Tag.n.Value***

The value for a tag. If you don't want the tag to have a value, specify the parameter with no value, and we set the value to an empty string.

Type: String

Default: None

Constraints: Tag values are case sensitive and accept a maximum of 256 Unicode characters.

Required: Yes

## Response Elements

The following elements are returned in a `CreateTagsResponse` element.

### **`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 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/2013-02-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</CreateTagsResponse>
```

## Related Actions

- [DescribeTags](#) (p. 298)
- [DeleteTags](#) (p. 152)

# CreateVolume

## Description

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

## Request Parameters

### *Size*

The size of the volume, in GiBs.

Type: String

Valid values: 1-1024

Valid values: If the volume type is `io1`, the minimum size of the volume is 10 GiB.

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.

Required: No

### *SnapshotId*

The snapshot from which to create the new volume.

Type: String

Default: None

Condition: Required if you are creating a volume from a snapshot.

Required: Conditional

### *AvailabilityZone*

The Availability Zone for the new volume. Use [DescribeAvailabilityZones \(p. 173\)](#) to display Availability Zones that are currently available to your account.

Type: String

Default: None

Required: Yes

### *VolumeType*

The volume type.

Type: String

Valid values: `standard` | `io1`

Default: `standard`

Required: No

### *Iops*

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4000.

Default: None

Required: Conditional

Condition: Required when the volume type is `io1`; not used with `standard` volumes.

## Response Elements

The following elements are returned in a `CreateVolumeResponse` element.

**requestId**  
The ID of the request.  
Type: xsd:string

**volumeId**  
The ID of the volume.  
Type: xsd:string

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

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

**availabilityZone**  
The Availability Zone for the volume.  
Type: xsd:string

**status**  
The volume state.  
Type: xsd:string  
Valid values: `creating` | `available` | `in-use` | `deleting` | `deleted` | `error`

**createTime**  
The time stamp when volume creation was initiated.  
Type: xsd:dateTime

**volumeType**  
The volume type.  
Type: xsd:string  
Valid values: `standard` | `io1`

**iops**  
The number of I/O operations per second (IOPS) that the volume supports.  
Type: xsd:int  
Valid values: Range is 100 to 4000.

## 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1a2b3c4d</volumeId>
  <size>80</size>
```

```
<snapshotId/>  
<availabilityZone>us-east-1a</availabilityZone>  
<status>creating</status>  
<createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>  
<volumeType>standard</volumeType>  
</CreateVolumeResponse>
```

## Related Actions

- [DeleteVolume](#) (p. 155)
- [DescribeVolumes](#) (p. 303)
- [AttachVolume](#) (p. 27)
- [DetachVolume](#) (p. 330)
- [DescribeAvailabilityZones](#) (p. 173)

# CreateVpc

## Description

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

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

## Request Parameters

### *CidrBlock*

The CIDR block you want the VPC to cover (for example, 10.0.0.0/16).

Type: String

Default: None

Required: Yes

### *instanceTenancy*

The supported tenancy options for instances launched into the VPC. A value of `default` means that instances can be launched with any tenancy; a value of `dedicated` means all instances are launched as dedicated tenancy instances regardless of the tenancy assigned to the instance at launch. Setting the instance tenancy to `dedicated` runs your instance on single-tenant hardware.

Type: String

Default: `default`

Required: No

## Response Elements

The following elements are returned in a `CreateVpcResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `vpc`

Information about the VPC.

Type: [VpcType](#) (p. 525)

## Examples

### Example Request

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

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



## Example Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpc>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <state>pending</state>
    <cidrBlock>10.0.0.0/16</cidrBlock>
    <dhcpOptionsId>dopt-1a2b3c4d2</dhcpOptionsId>
    <instanceTenancy>default</instanceTenancy>
    <tagSet/>
  </vpc>
</CreateVpcResponse>
```

## Example Request

This example creates a VPC with the dedicated tenancy option.

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

## Example Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>a9e49797-a74f-4f68-b302-a134a51fd054</requestId>
  <vpc>
    <vpcId>vpc-11a63c78</vpcId>
    <state>pending</state>
    <cidrBlock>10.32.0.0/16</cidrBlock>
    <dhcpOptionsId>dopt-1a2b3c4d2</dhcpOptionsId>
    <instanceTenancy>dedicated</instanceTenancy>
  </vpc>
</CreateVpcResponse>
```

## Related Actions

- [DescribeVpcs](#) (p. 316)
- [DeleteVpc](#) (p. 157)
- [CreateDhcpOptions](#) (p. 60)
- [AssociateDhcpOptions](#) (p. 19)

# CreateVpnConnection

## Description

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

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

### Important

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

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

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

## Request Parameters

### *Type*

The type of VPN connection.

Type: String

Default: None

Valid values: `ipsec.1`

Required: Yes

### *CustomerGatewayId*

The ID of the customer gateway.

Type: String

Default: None

Required: Yes

### *VpnGatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

### *Options.StaticRoutesOnly*

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

Type: Boolean

Default: `false`

Required: No

## Response Elements

The following elements are returned in an `CreateVpnConnectionResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**vpnConnection**

Information about the VPN connection.

Type: [VpnConnectionType](#) (p. 526)

## Examples

### Example Request

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

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

### Example Response

```
<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <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>
          </vpn_gateway>
        </ipsec_tunnel>
      </vpn_connection>
    </customer_gateway_configuration>
  </vpnConnection>
</CreateVpnConnectionResponse>
```

```
</tunnel_outside_address>
<tunnel_inside_address>
  <ip_address>169.254.255.2</ip_address>
  <network_mask>255.255.255.252</network_mask>
  <network_cidr>30</network_cidr>
</tunnel_inside_address>
<bgp>
  <asn>7224</asn>
  <hold_time>30</hold_time>
</bgp>
</vpn_gateway>
<ike>
  <authentication_protocol>sha1</authentication_protocol>
  <encryption_protocol>aes-128-cbc</encryption_protocol>
  <lifetime>28800</lifetime>
  <perfect_forward_secrecy>group2</perfect_forward_secrecy>
  <mode>main</mode>
  <pre_shared_key>plain-text-password1</pre_shared_key>
</ike>
<ipsec>
  <protocol>esp</protocol>
  <authentication_protocol>hmac-sha1-96</authentication_protocol>
  <encryption_protocol>aes-128-cbc</encryption_protocol>
  <lifetime>3600</lifetime>
  <perfect_forward_secrecy>group2</perfect_forward_secrecy>
  <mode>tunnel</mode>
  <clear_df_bit>true</clear_df_bit>
  <fragmentation_before_encryption>true</fragmentation_before_encryption>
  <tcp_mss_adjustment>1396</tcp_mss_adjustment>
  <dead_peer_detection>
    <interval>10</interval>
    <retries>3</retries>
  </dead_peer_detection>
</ipsec>
</ipsec_tunnel>
<ipsec_tunnel>
  <customer_gateway>
    <tunnel_outside_address>
      <ip_address>YOUR_UPLINK_ADDRESS</ip_address>
    </tunnel_outside_address>
    <tunnel_inside_address>
      <ip_address>169.254.255.5</ip_address>
      <network_mask>255.255.255.252</network_mask>
      <network_cidr>30</network_cidr>
    </tunnel_inside_address>
    <bgp>
      <asn>YOUR_BGP_ASN</asn>
      <hold_time>30</hold_time>
    </bgp>
  </customer_gateway>
</vpn_gateway>
<tunnel_outside_address>
  <ip_address>72.21.209.225</ip_address>
</tunnel_outside_address>
<tunnel_inside_address>
  <ip_address>169.254.255.6</ip_address>
  <network_mask>255.255.255.252</network_mask>
```

```

        <network_cidr>30</network_cidr>
    </tunnel_inside_address>
    <bgp>
        <asn>7224</asn>
        <hold_time>30</hold_time>
    </bgp>
</vpn_gateway>
<ike>
    <authentication_protocol>sha1</authentication_protocol>
    <encryption_protocol>aes-128-cbc</encryption_protocol>
    <lifetime>28800</lifetime>
    <perfect_forward_secrecy>group2</perfect_forward_secrecy>
    <pre_shared_key>plain-text-password2</pre_shared_key>
    <mode>main</mode>
</ike>
<ipsec>
    <protocol>esp</protocol>
    <authentication_protocol>hmac-shal-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>

```

## Example Request

This example creates a VPN connection with the static routes option between the virtual private gateway (VGW), with ID vgw-8db04f81, and the customer gateway, with ID cgw-b4dc3961, for a device that does not support the Border Gateway Protocol (BGP). The response includes configuration information for the VPN connection's customer gateway (in the native XML format, but escaped).

```

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

```

## Example Response

```
<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>5cc7891f-1f3b-4fc4-a626-bdea8f63ff5a</requestId>
  <vpnConnection>
    <vpnConnectionId>vpn-83ad48ea</vpnConnectionId>
    <state>pending</state>
    <customerGatewayConfiguration><?xml version="1.0" encoding="UTF-8"?>
<vpn_connection id="vpn-83ad48ea">
  <customer_gateway_id>cgw-63ae4b0a</customer_gateway_id>
  <vpn_gateway_id>vgw-4ea04527</vpn_gateway_id>
  <vpn_connection_type>ipsec.1</vpn_connection_type>
  <vpn_connection_attributes>NoBGPVPNConnection</vpn_connection_attributes>
  <ipsec_tunnel>
    <customer_gateway>
      <tunnel_outside_address>
        <ip_address>111.112.113.11</ip_address>
      </tunnel_outside_address>
      <tunnel_inside_address>
        <ip_address>169.254.200.18</ip_address>
        <network_mask>255.255.255.252</network_mask>
        <network_cidr>30</network_cidr>
      </tunnel_inside_address>
    </customer_gateway>
    <vpn_gateway>
      <tunnel_outside_address>
        <ip_address>92.168.1.2</ip_address>
      </tunnel_outside_address>
      <tunnel_inside_address>
        <ip_address>169.254.200.17</ip_address>
        <network_mask>255.255.255.252</network_mask>
        <network_cidr>30</network_cidr>
      </tunnel_inside_address>
    </vpn_gateway>
    <ike>
      <authentication_protocol>sha1</authentication_protocol>
      <encryption_protocol>aes-128-cbc</encryption_protocol>
      <lifetime>28800</lifetime>
      <perfect_forward_secrecy>group2</perfect_forward_secrecy>
      <mode>main</mode>
      <pre_shared_key>UNoSTegjalhXf_Sc3iFyHeyPWvKLg4PF</pre_shared_key>
    </ike>
    <ipsec>
      <protocol>esp</protocol>
      <authentication_protocol>hmac-sha1-96</authentication_protocol>
      <encryption_protocol>aes-128-cbc</encryption_protocol>
      <lifetime>3600</lifetime>
      <perfect_forward_secrecy>group2</perfect_forward_secrecy>
      <mode>tunnel</mode>
      <clear_df_bit>true</clear_df_bit>
      <fragmentation_before_encryption>true</fragmentation_before_encryption>
      <tcp_mss_adjustment>1387</tcp_mss_adjustment>
      <dead_peer_detection>
        <interval>10</interval>
        <retries>3</retries>
      </dead_peer_detection>
  </vpn_connection>
</customerGatewayConfiguration>
</vpnConnection>
</CreateVpnConnectionResponse>
```

```
</ipsec>
</ipsec_tunnel>
<ipsec_tunnel>
  <customer_gateway>
    <tunnel_outside_address>
      <ip_address>111.112.113.11</ip_address>
    </tunnel_outside_address>
    <tunnel_inside_address>
      <ip_address>169.254.200.22</ip_address>
      <network_mask>255.255.255.252</network_mask>
      <network_cidr>30</network_cidr>
    </tunnel_inside_address>
  </customer_gateway>
  <vpn_gateway>
    <tunnel_outside_address>
      <ip_address>192.168.49.23</ip_address>
    </tunnel_outside_address>
    <tunnel_inside_address>
      <ip_address>169.254.200.21</ip_address>
      <network_mask>255.255.255.252</network_mask>
      <network_cidr>30</network_cidr>
    </tunnel_inside_address>
  </vpn_gateway>
  <ike>
    <authentication_protocol>shal</authentication_protocol>
    <encryption_protocol>aes-128-cbc</encryption_protocol>
    <lifetime>28800</lifetime>
    <perfect_forward_secretcy>group2</perfect_forward_secretcy>
    <mode>main</mode>
    <pre_shared_key>ihG3vT7xtPfNqDa9o3Sn2sjARDigAWI9</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_secretcy>group2</perfect_forward_secretcy>
    <mode>tunnel</mode>
    <clear_df_bit>true</clear_df_bit>
    <fragmentation_before_encryption>true</fragmentation_before_encryption>
    <tcp_mss_adjustment>1387</tcp_mss_adjustment>
    <dead_peer_detection>
      <interval>10</interval>
      <retries>3</retries>
    </dead_peer_detection>
  </ipsec>
</ipsec_tunnel>
</vpn_connection>
</customerGatewayConfiguration>
  <customerGatewayId>cgw-63ae4b0a</customerGatewayId>
  <vpnGatewayId>vgw-4ea04527</vpnGatewayId>
  <options>
    <staticRoutesOnly>true</staticRoutesOnly>
  </options>
  <routes/>
</vpnConnection>
</CreateVpnConnectionResponse>
```

## Related Actions

- [DescribeVpnConnections](#) (p. 319)
- [DeleteVpnConnection](#) (p. 159)
- [CreateVpc](#) (p. 113)
- [CreateSubnet](#) (p. 106)
- [AttachVpnGateway](#) (p. 29)



# CreateVpnConnectionRoute

## Description

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

### Important

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

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

## Request Parameters

### *DestinationCidrBlock*

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

Type: String

Default: None

Required: Yes

### *VpnConnectionId*

The ID of the VPN connection.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `CreateVpnConnectionRouteResponse` element.

### `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 static route to the VPN connection for the VPN connection ID `vpn-83ad48ea` to the destination CIDR block `11.12.0.0/16`. Note that when using the Query API the `/` is denoted as `%2F`.

```
https://ec2.amazonaws.com/?Action=CreateVpnConnectionRoute
&DestinationCidrBlock=11.12.0.0%2F16
```

```
&VpnConnectionId=vpn-83ad48ea  
&AUTHPARAMS
```

## Example Response

```
<CreateVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">  
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>  
  <return>true</return>  
</CreateVpnConnectionRouteResponse>
```

## Related Actions

- [DeleteVpnConnectionRoute](#) (p. 161)
- [DeleteVpnConnection](#) (p. 159)
- [DescribeVpnConnections](#) (p. 319)
- [CreateVpc](#) (p. 113)
- [CreateSubnet](#) (p. 106)
- [AttachVpnGateway](#) (p. 29)

# CreateVpnGateway

## Description

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

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

## Request Parameters

### Type

The type of VPN connection this virtual private gateway supports.

Type: String

Default: None

Valid values: `ipsec.1`

Required: Yes

## Response Elements

The following elements are returned in a `CreateVpnGatewayResponse` element.

### requestId

The ID of the request.

Type: `xsd:string`

### vpnGateway

Information about the virtual private gateway.

Type: [VpnGatewayType](#) (p. 527)

## 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/2013-02-01/">
  <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 Actions

- [DescribeVpnGateways](#) (p. 323)
- [DeleteVpnGateway](#) (p. 163)
- [AttachVpnGateway](#) (p. 29)
- [DetachVpnGateway](#) (p. 332)

# DeleteCustomerGateway

## Description

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

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

## Request Parameters

### *CustomerGatewayId*

The ID of the customer gateway.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `DeleteCustomerGatewayResponse` element.

### `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 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/2013-02-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteCustomerGatewayResponse>
```

## Related Actions

- [CreateCustomerGateway](#) (p. 58)
- [DescribeCustomerGateways](#) (p. 181)

# DeleteDhcpOptions

## Description

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

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

## Request Parameters

### *DhcpOptionsId*

The ID of the DHCP options set.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `DeleteDhcpOptionsResponse` element.

### **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/2013-02-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteDhcpOptionsResponse>
```

## Related Actions

- [AssociateDhcpOptions](#) (p. 19)
- [CreateDhcpOptions](#) (p. 60)
- [DescribeDhcpOptions](#) (p. 184)



# DeleteInternetGateway

## Description

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

## Request Parameters

### *InternetGatewayId*

The ID of the Internet gateway.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteInternetGatewayResponse` element.

### **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 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteInternetGatewayResponse>
```

## Related Actions

- [CreateInternetGateway](#) (p. 69)
- [AttachInternetGateway](#) (p. 23)
- [DetachInternetGateway](#) (p. 326)
- [DescribeInternetGateways](#) (p. 225)

# DeleteKeyPair

## Description

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

## Request Parameters

### *KeyName*

The name of the key pair.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteKeyPairResponse` element.

### **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 `gsg-keypair` key pair.

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

### Example Response

```
<DeleteKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteKeyPairResponse>
```

## Related Actions

- [CreateKeyPair](#) (p. 71)
- [DescribeKeyPairs](#) (p. 228)
- [ImportKeyPair](#) (p. 352)

# DeleteNetworkAcl

## Description

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

## Request Parameters

### *NetworkAclId*

The ID of the network ACL.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteNetworkAclResponse` element.

### `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 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteNetworkAclResponse>
```

## Related Actions

- [DeleteNetworkAcl](#) (p. 133)

- [DescribeNetworkAcls](#) (p. 230)
- [ReplaceNetworkAclAssociation](#) (p. 385)

# DeleteNetworkAclEntry

## Description

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

## Request Parameters

### *NetworkAclId*

The ID of the network ACL.

Type: String

Default: None

Required: Yes

### *RuleNumber*

The rule number for the entry to delete.

Type: Integer

Default: None

Required: Yes

### *Egress*

Specifies whether the rule to delete is an egress rule (*true*) or ingress rule (*false*).

Type: Boolean

Default: *false*

Valid values: *true* | *false*

Required: No

## Response Elements

The following elements are returned in a `DeleteNetworkAclEntryResponse` element.

### `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 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteNetworkAclEntryResponse>
```

## Related Actions

- [CreateNetworkAclEntry](#) (p. 75)
- [ReplaceNetworkAclEntry](#) (p. 387)
- [DescribeNetworkAcls](#) (p. 230)

# DeleteNetworkInterface

## Description

Deletes the specified network interface.

## Request Parameters

### *NetworkInterfaceId*

The ID of the network interface.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteNetworkInterfaceResponse` element.

### **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 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/2013-02-01/">
  <requestId>e1c6d73b-edaa-4e62-9909-6611404e1739</requestId>
  <return>true</return>
</DeleteNetworkInterfaceResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 25)
- [DetachNetworkInterface](#) (p. 328)



- [CreateNetworkInterface](#) (p. 78)
- [DescribeNetworkInterfaceAttribute](#) (p. 235)
- [DescribeNetworkInterfaces](#) (p. 237)
- [ModifyNetworkInterfaceAttribute](#) (p. 363)
- [ResetNetworkInterfaceAttribute](#) (p. 409)

# DeletePlacementGroup

## Description

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

## Request Parameters

### *GroupName*

The name of the placement group.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeletePlacementGroupResponse` element.

### `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/2013-02-01/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <return>true</return>
</DeletePlacementGroupResponse>
```

## Related Actions

- [CreatePlacementGroup](#) (p. 83)
- [DescribePlacementGroups](#) (p. 243)

# DeleteRoute

## Description

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

## Request Parameters

### *RouteTableId*

The ID of the route table.

Type: String

Default: None

Required: Yes

### *DestinationCidrBlock*

The CIDR range for the route to delete. The value you specify must exactly match the CIDR for the route.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `ReplaceRouteResponse` element.

### `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 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
&AUTHPARMS
```

## Example Response

```
<DeleteRouteResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteRouteResponse>
```

## Related Actions

- [CreateRoute](#) (p. 94)
- [ReplaceRoute](#) (p. 390)
- [DescribeRouteTables](#) (p. 266)

# DeleteRouteTable

## Description

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

## Request Parameters

### *RouteTableId*

The ID of the route table.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteRouteTableResponse` element.

### `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 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/2013-02-01/" >
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteRouteTableResponse>
```

## Related Actions

- [AssociateRouteTable](#) (p. 21)

- [DisassociateRouteTable](#) (p. 338)
- [DescribeRouteTables](#) (p. 266)
- [CreateRouteTable](#) (p. 97)
- [ReplaceRouteTableAssociation](#) (p. 392)

# DeleteSecurityGroup

## Description

Deletes a security group.

### Important

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

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

## Request Parameters

### *GroupName*

The name of the security group.

Type: String

Default: None

Required: Conditional

Condition: For EC2-Classic, default VPC, you can specify either `GroupName` or `GroupId`

### *GroupId*

The ID of the security group.

Type: String

Default: None

Required: Conditional

Condition: Required for a nondefault VPC; for EC2-Classic, default VPC, you can specify either `GroupName` or `GroupId`

## Response Elements

The following elements are returned in a `DeleteSecurityGroupResponse` element.

### `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 security group for EC2-Classic named `websrv`.



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

## Example Request

This example deletes the security group for EC2-VPC with the ID `sg-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=DeleteSecurityGroup
&GroupId=sg-1a2b3c4d
&AUTHPARAMS
```

## Example Response

```
<DeleteSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSecurityGroupResponse>
```

## Related Actions

- [CreateSecurityGroup](#) (p. 99)
- [DescribeSecurityGroups](#) (p. 270)
- [AuthorizeSecurityGroupIngress](#) (p. 34)
- [RevokeSecurityGroupIngress](#) (p. 416)

# 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

### *SnapshotId*

The ID of the Amazon EBS snapshot.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteSnapshotResponse` element.

### `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 snapshot `snap-1a2b3c4d`.

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

### Example Response

```
<DeleteSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSnapshotResponse>
```

## Related Actions

- [CreateSnapshot](#) (p. 101)
- [DescribeSnapshots](#) (p. 276)

# DeleteSpotDatafeedSubscription

## Description

Deletes the datafeed for Spot Instances. For more information about Spot Instances, see [Spot Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The `DeleteSpotDatafeedSubscription` operation does not have any request parameters.

## Response Elements

The following elements are returned in a `DeleteSpotDatafeedSubscriptionResponse` element.

### **requestId**

The ID of the request.

Type: `xsd:string`

### **return**

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Examples

### Example Request

This example deletes the data feed for the account.

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

### Example Response

```
<DeleteSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSpotDatafeedSubscriptionResponse>
```

## Related Actions

- [CreateSpotDatafeedSubscription](#) (p. 104)
- [DescribeSpotDatafeedSubscription](#) (p. 281)

# DeleteSubnet

## Description

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

## Request Parameters

### *SubnetId*

The ID of the subnet.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteSubnetResponse` element.

### `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 subnet with ID `subnet-9d4a7b6c`.

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

### Example Response

```
<DeleteSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteSubnetResponse>
```

## Related Actions

- [CreateSubnet](#) (p. 106)

- [DescribeSubnets](#) (p. 294)

# DeleteTags

## Description

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

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

## Request Parameters

### ***ResourceId.n***

The ID of the resource. For example, `ami-1a2b3c4d`. You can specify more than one resource ID.

Type: String

Default: None

Required: Yes

### ***Tag.n.Key***

The tag's key. You can specify more than one tag to delete.

Type: String

Default: None

Required: Yes

### ***Tag.n.Value***

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.

Required: No

## Response Elements

The following elements are returned in a `DeleteTagsResponse` element.

### **`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 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/2013-02-01/">
  <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/2013-02-01/">
  <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 Actions

- [CreateTags](#) (p. 108)
- [DescribeTags](#) (p. 298)

# DeleteVolume

## Description

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

### Note

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

## Request Parameters

### *VolumeId*

The ID of the volume.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteVolumeResponse` element.

### `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 volume `vol-1a2b3c4d`.

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

### Example Response

```
<DeleteVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteVolumeResponse>
```

## Related Actions

- [CreateVolume](#) (p. 110)
- [DescribeVolumes](#) (p. 303)
- [AttachVolume](#) (p. 27)
- [DetachVolume](#) (p. 330)

# DeleteVpc

## Description

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

## Request Parameters

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteVpcResponse` element.

### `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 VPC with ID `vpc-1a2b3c4d`.

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

### Example Response

```
<DeleteVpcResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpcResponse>
```

## Related Actions

- [CreateVpc](#) (p. 113)

- [DescribeVpcs](#) (p. 316)

# DeleteVpnConnection

## Description

Deletes a VPN connection. Use this if you want to delete a VPC and all its associated components. Another reason to use this operation is if you believe the tunnel credentials for your VPN connection have been compromised. In that situation, you can delete the VPN connection and create a new one that has new keys, without needing to delete the VPC or virtual private gateway. If you create a new VPN connection, you must reconfigure the customer gateway using the new configuration information returned with the new VPN connection ID.

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

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

## Request Parameters

### *VpnConnectionId*

The ID of the VPN connection.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `DeleteVpnConnectionResponse` element.

### `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 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/2013-02-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpnConnectionResponse>
```

## Related Actions

- [CreateVpnConnection](#) (p. 115)
- [DescribeVpnConnections](#) (p. 319)
- [DetachVpnGateway](#) (p. 332)
- [DeleteVpc](#) (p. 157)

# DeleteVpnConnectionRoute

## Description

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

### Important

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

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

## Request Parameters

### *DestinationCidrBlock*

The CIDR block associated with the local subnet of the customer data center.

Type: String

Default: None

Required: Yes

### *VpnConnectionId*

The ID of the VPN connection.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `DeleteVpnConnectionRouteResponse` element.

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

```
https://ec2.amazonaws.com/?Action=DeleteVpnConnectionRoute
&DestinationCidrBlock=11.12.0.0%2F16
```



```
&VpnConnectionId=vpn-83ad48ea  
&AUTHPARAMS
```

## Example Response

```
<DeleteVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">  
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>  
  <return>true</return>  
</DeleteVpnConnectionRouteResponse>
```

## Related Actions

- [CreateVpnConnectionRoute](#) (p. 122)
- [DeleteVpnConnection](#) (p. 159)
- [DescribeVpnConnections](#) (p. 319)
- [CreateVpc](#) (p. 113)
- [CreateSubnet](#) (p. 106)
- [AttachVpnGateway](#) (p. 29)

# DeleteVpnGateway

## Description

Deletes a virtual private gateway. Use this when you want to delete a VPC and all its associated components because you no longer need them. We recommend that before you delete a virtual private gateway, you detach it from the VPC and delete the VPN connection. Note that you don't need to delete the virtual private gateway if you just want to delete and recreate the VPN connection between your VPC and data center.

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

## Request Parameters

### *VpnGatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeleteVpnGatewayResponse` element.

### **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 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/2013-02-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
```

```
<return>true</return>  
</DeleteVpnGatewayResponse>
```

## Related Actions

- [CreateVpnGateway](#) (p. 124)
- [DescribeVpnGateways](#) (p. 323)
- [DeleteVpnConnection](#) (p. 159)

# 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

### *ImageId*

The ID of the AMI to deregister.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DeregisterImageResponse` element.

### **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 deregisters the `ami-4fa54026` AMI.

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

### Example Response

```
<DeregisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeregisterImageResponse>
```

## Related Actions

- [RegisterImage](#) (p. 379)

- [DescribeImages](#) (p. 193)

# DescribeAccountAttributes

## Description

Describes the specified attribute of your AWS account.

The following are the supported account attributes.

**supported-platforms**

Whether your account can launch instances into EC2-Classic and EC2-VPC, or only into EC2-VPC. For more information, see [Supported Platforms](#).

**default-vpc**

The ID of the default VPC for your account, or `none`. For more information, see [Your Default VPC and Subnets](#).

## Request Parameters

**AttributeName.n**

One or more account attribute names.

Type: String

Valid values: `supported-platforms` | `default-vpc`

## Response Elements

The following elements are returned in a `DescribeAccountAttributesResponse` structure.

**requestId**

The ID of the request.

Type: `xsd:string`

**accountAttributeSet**

A list of the names and values of the requested attributes, each one wrapped in an `item` element.

Type: [AccountAttributeSetItemType](#) (p. 443)

## Examples

### Example Request

This request describes the platforms that are supported by your account.

```
https://ec2.amazonaws.com/?Action=DescribeAccountAttributes
&AttributeName.1=supported-platforms
&AUTHPARAMS
```

### Example Response

The following is an example response for an account that must launch instances into EC2-VPC.

```
<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
    <item>
      <attributeName>supported-platforms</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>VPC</attributeValue>
        </item>
      </attributeValueSet>
    </item>
  </accountAttributeSet>
</DescribeAccountAttributesResponse>
```

## Example Response

The following is an example response for an account that can launch instances into EC2-Classic or EC2-VPC.

```
<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <accountAttributeSet>
    <item>
      <attributeName>supported-platforms</attributeName>
      <attributeValueSet>
        <item>
          <attributeValue>EC2</attributeValue>
        </item>
        <item>
          <attributeValue>VPC</attributeValue>
        </item>
      </attributeValueSet>
    </item>
  </accountAttributeSet>
</DescribeAccountAttributesResponse>
```

# DescribeAddresses

## Description

Describes one or more of your Elastic IP addresses.

An Elastic IP address is for use in either the EC2-Classical platform or in a VPC. For more information, see [Elastic IP Addresses](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### ***PublicIp.n***

One or more EC2 Elastic IP addresses.

Type: String

Default: None

Required: No

### ***AllocationId.n***

One or more allocation IDs corresponding to the address or addresses to describe (VPC addresses only).

Type: String

Default: None

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

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

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

The following are the available filters.



**domain**

Indicates whether the address is for use in a VPC.

Type: String

Valid values: `standard` | `vpc`

**instance-id**

The instance the address is associated with (if any).

Type: String

**public-ip**

The Elastic IP address.

Type: String

**allocation-id**

The allocation ID for the address (VPC only).

Type: String

**association-id**

The association ID for the address (VPC only).

Type: String

**network-interface-id**

The network interface (if any) that the address is associated with (VPC only).

Type: String

**network-interface-owner-id**

The owner IID.

Type: String

**private-ip-address**

The private IP address associated with the Elastic IP address (VPC only).

Type: String

## Response Elements

The following elements are returned in a `DescribeAddressesResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**addressesSet**

A list of IP addresses, each one wrapped in an `item` element.

Type: [DescribeAddressesResponseItemType](#) (p. 453)

## Examples

### Example Request

EC2-Classic: This example describes two specific 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/2013-02-01/">
  <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

EC2-VPC: This example describes a specific Elastic IP address allocated to your account. You must use the allocation ID to specify the address.

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

## Example Response

```
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>f7de5e98-491a-4c19-a92d-908d6EXAMPLE</requestId>
  <addressesSet>
    <item>
      <publicIp>203.0.113.41</publicIp>
      <allocationId>eipalloc-08229861</allocationId>
      <domain>vpc</domain>
      <instanceId>i-64600030</instanceId>
      <associationId>eipassoc-f0229899</associationId>
      <networkInterfaceId>eni-ef229886</networkInterfaceId>
      <networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
      <privateIpAddress>10.0.0.228</privateIpAddress>
    </item>
  </addressesSet>
</DescribeAddressesResponse>
```

## Example Request

EC2-VPC: This example lists all of your addresses for EC2-VPC, but none for EC2-Classic (assuming you have both types of addresses).

```
https://ec2.amazonaws.com/?Action=DescribeAddresses
&Filter.1.Name=domain
```

```
&Filter.1.Value.1=vpc  
&AUTHPARAMS
```

## Related Actions

- [AllocateAddress](#) (p. 12)
- [ReleaseAddress](#) (p. 383)
- [AssociateAddress](#) (p. 16)
- [DisassociateAddress](#) (p. 336)

# DescribeAvailabilityZones

## Description

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

### Note

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

## Request Parameters

### *ZoneName.n*

One or more Availability Zones.

Type: String

Default: None

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

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

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

The following are the available filters.

### **message**

Information about the Availability Zone.

Type: String

**region-name**

The region for the Availability Zone (for example, us-east-1).

Type: String

**state**

The state of the Availability Zone

Type: String

Valid values: available

**zone-name**

The name of the zone.

Type: String

## Response Elements

The following elements are returned in a `DescribeAvailabilityZonesResponse` element.

**requestId**

The ID of the request.

Type: xsd:string

**availabilityZoneInfo**

A list of Availability Zones, each one wrapped in an `item` element.

Type: [AvailabilityZoneItemType](#) (p. 445)

## 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/2013-02-01/">
  <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>
  </availabilityZoneInfo>
</DescribeAvailabilityZonesResponse>
```

```
<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 Actions

- [RunInstances](#) (p. 419)
- [DescribeRegions](#) (p. 246)

# DescribeBundleTasks

## Description

Describes one or more of your bundling tasks.

### Note

Completed bundle tasks are listed for only a limited time. If your bundle task is no longer in the list, you can still register an AMI from it. Just use the `RegisterImage` action with the Amazon S3 bucket name and image manifest name you provided to the bundle task.

## Request Parameters

### *BundleId.n*

One or more bundle task IDs.

Type: String

Default: If no ID is specified, all bundle tasks are described.

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

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

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

The following are the available filters.

### **bundle-id**

The ID of the bundle task.

Type: String

### **error-code**

If the task failed, the error code returned.

Type: String

**error-message**

If the task failed, the error message returned.

Type: String

**instance-id**

The ID of the instance that was bundled.

Type: String

**progress**

The level of task completion, as a percentage (for example, 20%).

Type: String

**s3-bucket**

The Amazon S3 bucket to store the AMI.

Type: String

**s3-prefix**

The beginning of the AMI name.

Type: String

**start-time**

The time the task started (for example, 2008-09-15T17:15:20.000Z).

Type: DateTime

**state**

The state of the task.

Type: String

Valid values: pending | waiting-for-shutdown | bundling | storing | cancelling | complete  
| failed

**update-time**

The time of the most recent update for the task (for example, 2008-09-15T17:15:20.000Z).

Type: DateTime

## Response Elements

The following elements are returned in a `DescribeBundleTasksResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**bundleInstanceTasksSet**

A list of bundle tasks, each one wrapped in an `item` element.

Type: [BundleInstanceTaskType](#) (p. 449)

## 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/2013-02-01/">
  <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>myawsbucket</bucket>
          <prefix>winami</prefix>
        </S3>
      </storage>
      <progress>20%</progress>
    </item>
  </bundleInstanceTasksSet>
</DescribeBundleTasksResponse>
```

## Example Request

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

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

## Related Actions

- [BundleInstance](#) (p. 38)
- [CancelBundleTask](#) (p. 41)

# DescribeConversionTasks

## Description

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

## Request Parameters

### *ConversionTaskId.n*

One or more conversion task IDs.

Type: String

Required: No

## Response Elements

The following elements are returned in a `DescribeConversionTasksResponse` element.

### `conversionTasks`

A list of conversion tasks, each one wrapped in an `item` element.

Type: [ConversionTaskType](#) (p. 450)

## 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/2013-02-01/">
  <conversionTasks>
    <item>
      <conversionTask>
        <conversionTaskId>import-i-fh95npoc</conversionTaskId>
        <expirationTime>2010-12-22T12:01Z</expirationTime>
        <importVolume>
          <bytesConverted>1000</bytesConverted>
          <availabilityZone>us-east-1a</availabilityZone>
          <description/>
          <image>
            <format>VDMK</format>
            <size>128696320</size>
            <importManifestUrl>
              https://s3.amazonaws.com/myawsbucket/a3a5e1b6-590d-43cc-97c1-
```

```
15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccess
KeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snej01TlTtL0uR7KEx
tEXAMPLE%3D
    </importManifestUrl>
  </image>
  <volume>
    <size>8</size>
    <id>vol-34d8a2ff</id>
  </volume>
</importVolume>
<state>active</state>
<statusMessage/>
</conversionTask>
</item>
</conversionTasks>
</DescribeConversionTasksResponse>
```

## Related Actions

- [ImportInstance](#) (p. 348)
- [ImportVolume](#) (p. 354)
- [CancelConversionTask](#) (p. 43)

# DescribeCustomerGateways

## Description

Describes one or more of your VPN customer gateways.

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

## Request Parameters

### *CustomerGatewayId.n*

A customer gateway ID. You can specify more than one in the request.

Type: String

Default: Describes your customer gateways.

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

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

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

The following are the available filters.

### **bgp-asn**

The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).

Type: String

### **customer-gateway-id**

The ID of the customer gateway.

Type: String

**ip-address**

The IP address of the customer gateway's Internet-routable external interface (for example, 12.1.2.3).

Type: String

**state**

The state of the customer gateway.

Type: String

Valid values: pending | available | deleting | deleted

**type**

The type of customer gateway. Currently the only supported type is `ipsec.1`.

Type: String

Valid values: ipsec.1

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag:key` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:*key***

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

## Response Elements

The following elements are returned in an `DescribeCustomerGatewaysResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**customerGatewaySet**

A list of customer gateways, each one wrapped in an `item` element.

Type: [CustomerGatewayType](#) (p. 452)

## 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/2013-02-01/" >
  <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 Actions

- [CreateCustomerGateway](#) (p. 58)
- [DeleteCustomerGateway](#) (p. 126)

# DescribeDhcpOptions

## Description

Describes one or more of your sets of DHCP options.

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

## Request Parameters

### *DhcpOptionsId.n*

A DHCP options set ID. You can specify more than one in the request.

Type: String

Default: Describes your sets of DHCP options, or only those otherwise specified.

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

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

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

The following are the available filters.

### **dhcp-options-id**

The ID of a set of DHCP options.

Type: String

### **key**

The key for one of the options (for example, `domain-name`).

Type: String

**value**

The value for one of the options.

Type: String

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag:key` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:*key***

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

## Response Elements

The following elements are returned in a `DescribeDhcpOptionsResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**dhcpOptionsSet**

A list of DHCP options sets, each one wrapped in an `item` element.

Type: [DhcpOptionsType](#) (p. 463)

## 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/2013-02-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <dhcpOptionsSet>
    <item>
      <dhcpOptionsId>dopt-7a8b9c2d</dhcpOptionsId>
      <dhcpConfigurationSet>
        <item>
          <key>domain-name</key>
          <valueSet>
            <item>
              <value>example.com</value>
            </item>
          </valueSet>
        </item>
        <item>
          <key>domain-name-servers</key>
          <valueSet>
            <item>
              <value>10.2.5.1</value>
            </item>
          </valueSet>
        </item>
        <item>
          <key>domain-name-servers</key>
          <valueSet>
            <item>
              <value>10.2.5.2</value>
            </item>
          </valueSet>
        </item>
      </dhcpConfigurationSet>
      <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 Actions

- [CreateDhcpOptions](#) (p. 60)
- [AssociateDhcpOptions](#) (p. 19)

- [DeleteDhcpOptions](#) (p. 128)

# DescribeExportTasks

## Description

Describes one or more of your export tasks.

## Request Parameters

### *ExportTaskId.n*

One or more export task IDs. If no task IDs are provided, all active export tasks are described.

Type: String

Default: None

Required: No

## Response Elements

The following elements are returned in a `DescribeExportTasks` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `exportTaskSet`

A list of export tasks, each one wrapped in an item element.

Type: [ExportTaskResponseType](#) (p. 467)

## Examples

### Example Request

This example describes a single export task.

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

### Example Response

```
<DescribeExportTasksResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<exportTaskSet>
  <item>
<exportTaskId>export-i-1234wxyz</exportTaskId>
<description>Example for docs</description>
<state>active</state>
<statusMessage>Running</statusMessage>
<instanceExport>
<instanceId>i-12345678</instanceId>
<targetEnvironment>VMWare</targetEnvironment>
```

```
</instanceExport>
<exportToS3>
  <diskImageFormat>VMDK</diskImageFormat>
  <containerFormat>OVA</containerFormat>
  <s3Bucket>my-bucket-for-exported-vm</s3Bucket>
  <s3Key>my-exports/ export-i-1234wxyz .ova</s3Key>
</exportToS3>
</item>
</exportTaskSet>
</ DescribeExportTasksResponse>
```

## Related Actions

- [CancelExportTask](#) (p. 45)
- [CreateInstanceExportTask](#) (p. 66)

# DescribeImageAttribute

## Description

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

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

## Request Parameters

### *ImageId*

The ID of the AMI.

Type: String

Default: None

Required: Yes

### *Attribute*

The AMI attribute.

Type: String

Default: None

Valid values: `description` | `kernel` | `ramdisk` | `launchPermission` | `productCodes` | `blockDeviceMapping`

Required: Yes

## Response Elements

The following elements are returned in a `DescribeImageAttributeResponse` element.

### **requestId**

The ID of the request.

Type: `xsd:string`

### **imageId**

The ID of the AMI.

Type: `xsd:string`

### **launchPermission**

A list of launch permissions, each one wrapped in an `item` element.

Type: [LaunchPermissionItemType](#) (p. 488)

### **productCodes**

A list of product codes, each one wrapped in an `item` element that contains a product code and a product code type.

Type: [ProductCodeItemType](#) (p. 503)

**kernel**

The kernel ID, wrapped in a `value` element.

Type: `xsd:string`

**ramdisk**

The RAM disk ID, wrapped in a `value` element.

Type: `xsd:string`

**description**

A user-created description of the AMI, wrapped in a `value` element.

Type: `xsd:string`

**blockDeviceMapping**

One or more block device mapping entries, each one wrapped in an `item` element.

Type: [BlockDeviceMappingItemType](#) (p. 446)

## 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/2013-02-01/">
  <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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-2bb65342</imageId>
  <productCodes>
    <item>
      <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
      <type>marketplace</type>
    </item>
  </productCodes>
</DescribeImageAttributeResponse>
```

## Related Actions

- [DescribeImages](#) (p. 193)
- [ModifyImageAttribute](#) (p. 357)
- [ResetImageAttribute](#) (p. 405)

# DescribeImages

## Description

Describes the images (AMIs, AKIs, and ARIs) available to you. Images available to you include public images, private images that you own, and private images owned by other AWS accounts but for which you have explicit launch permissions.

Launch permissions fall into three categories:

### public

The owner of the AMI granted launch permissions for the AMI to the `all` 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, or `marketplace` for AMIs from the AWS Marketplace.

### Note

For an overview of the AWS Marketplace, see <https://aws.amazon.com/marketplace/help/200900000>. For details on how to use the AWS Marketplace, see [AWS Marketplace](#).

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

### Note

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

## Request Parameters

### *ExecutableBy.n*

The AMIs for which the specified user ID has explicit launch permissions. The user ID can be an AWS account ID, `self` to return AMIs for which the sender of the request has explicit launch permissions, or `all` to return AMIs with public launch permissions.

Type: String

Default: None

Required: No

### *ImageId.n*

One or more AMI IDs.



Type: String

Default: Returns all AMIs, or only those otherwise specified.

Required: No

***Owner.n***

The AMIs owned by the specified owner. Multiple owner values can be specified. The IDs `amazon`, `aws-marketplace`, and `self` can be used to include AMIs owned by Amazon, AWS Marketplace, or AMIs owned by you, respectively.

Type: String

Default: None

Valid values: `amazon` | `aws-marketplace` | `self` | AWS account ID | `all`

Required: No

***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

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

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

The following are the available filters.

**`architecture`**

The image architecture.

Type: String

Valid values: `i386` | `x86_64`

**`block-device-mapping.delete-on-termination`**

Whether the Amazon EBS volume is deleted on instance termination.

Type: Boolean

**`block-device-mapping.device-name`**

The device name (for example, `/dev/sdh`) for the Amazon EBS volume.

Type: String

**`block-device-mapping.snapshot-id`**

The ID of the snapshot used for the Amazon EBS volume.

Type: String

**block-device-mapping.volume-size**  
The volume size of the Amazon EBS volume, in GiB.  
Type: Integer

**block-device-mapping.volume-type**  
The volume type of the Amazon EBS volume.  
Type: String  
Valid values: `standard` | `io1`

**description**  
The description of the image (provided during image creation).  
Type: String

**image-id**  
The ID of the image.  
Type: String

**image-type**  
The image type.  
Type: String  
Valid values: `machine` | `kernel` | `ramdisk`

**is-public**  
Whether the image is public.  
Type: Boolean

**kernel-id**  
The kernel ID.  
Type: String

**manifest-location**  
The location of the image manifest.  
Type: String

**name**  
The name of the AMI (provided during image creation).  
Type: String

**owner-alias**  
The AWS account alias (for example, `amazon`).  
Type: String

**owner-id**  
The AWS account ID of the image owner.  
Type: String

**platform**  
The platform. To only list Windows-based AMIs, use `windows`. Otherwise, leave blank.  
Type: String  
Valid value: `windows`

**product-code**  
The product code.  
Type: String

**product-code.type**  
The type of the product code.  
Type: String  
Valid values: `devpay` | `marketplace`

**ramdisk-id**  
The RAM disk ID.

Type: String

**root-device-name**

The name of the root device volume (for example, /dev/sda1).

Type: String

**root-device-type**

The type of the root device volume.

Type: String

Valid values: ebs | instance-store

**state**

The state of the image.

Type: String

Valid values: available | pending | failed

**state-reason-code**

The reason code for the state change.

Type: String

**state-reason-message**

The message for the state change.

Type: String

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag:key` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**virtualization-type**

The virtualization type.

Type: String

Valid values: paravirtual | hvm

**hypervisor**

The hypervisor type.

Type: String

Valid values: ovm | xen

## Response Elements

The following elements are returned in a `DescribeImagesResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**imagesSet**

A list of images, each one wrapped in an `item` element.

Type: [DescribeImagesResponseItemType](#) (p. 453)

## 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>amazon/getting-started</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>111122223333</imageOwnerId>
      <isPublic>>true</isPublic>
      <architecture>i386</architecture>
      <imageType>machine</imageType>
      <kernelId>aki-1a2b3c4d</kernelId>
      <ramdiskId>ari-1a2b3c4d</ramdiskId>
      <imageOwnerAlias>amazon</imageOwnerAlias>
      <name>getting-started</name>
      <description>Image Description</description>
      <rootDeviceType>ebs</rootDeviceType>
      <rootDeviceName>/dev/sda</rootDeviceName>
      <blockDeviceMapping>
        <item>
          <deviceName>/dev/sda1</deviceName>
          <ebs>
            <snapshotId>snap-1a2b3c4d</snapshotId>
            <volumeSize>15</volumeSize>
            <deleteOnTermination>>false</deleteOnTermination>
            <volumeType>standard</volumeType>
          </ebs>
        </item>
      </blockDeviceMapping>
    </item>
  </imagesSet>
</DescribeImagesResponse>
```

```
<virtualizationType>paravirtual</virtualizationType>
<tagSet/>
<hypervisor>xen</hypervisor>
</item>
</imagesSet>
</DescribeImagesResponse>
```

## Example Request

This example filters the response to include only the public Windows images with an x86\_64 architecture.

```
https://ec2.amazonaws.com/?Action=DescribeImages
&Filter.1.Name=is-public
&Filter.1.Value.1=true
&Filter.2.Name=architecture
&Filter.2.Value.1=x86_64
&Filter.3.Name=platform
&Filter.3.Value.1=windows
&AUTHPARAMS
```

## Example Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>ec2-public-windows-images/Server2003r2-x86_64-Win-
v1.07.manifest.xml</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>111122223333</imageOwnerId>
      <isPublic>>true</isPublic>
      <architecture>x86_64</architecture>
      <imageType>machine</imageType>
      <platform>windows</platform>
      <imageOwnerAlias>amazon</imageOwnerAlias>
      <rootDeviceType>instance-store</rootDeviceType>
      <blockDeviceMapping/>
      <virtualizationType>hvm</virtualizationType>
      <tagSet/>
      <hypervisor>xen</hypervisor>
    </item>
    ...
  </imagesSet>
</DescribeImagesResponse>
```

## Example Request

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

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

## Example Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>4a4a27a2-2e7c-475d-b35b-ca822EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>aws-marketplace/example-marketplace-amzn-ami.1</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>111122223333</imageOwnerId>
      <isPublic>true</isPublic>
      <productCodes>
        <item>
          <productCode>alb2c3d4e5f6g7h8i9j10k11</productCode>
          <type>marketplace</type>
        </item>
      </productCodes>
      <architecture>i386</architecture>
      <imageType>machine</imageType>
      <kernelId>aki-1a2b3c4d</kernelId>
      <imageOwnerAlias>aws-marketplace</imageOwnerAlias>
      <name>example-marketplace-amzn-ami.1</name>
      <description>Amazon Linux AMI i386 EBS</description>
      <rootDeviceType>ebs</rootDeviceType>
      <rootDeviceName>/dev/sda1</rootDeviceName>
      <blockDeviceMapping>
        <item>
          <deviceName>/dev/sda1</deviceName>
          <ebs>
            <snapshotId>snap-1a2b3c4d</snapshotId>
            <volumeSize>8</volumeSize>
            <deleteOnTermination>true</deleteOnTermination>
          </ebs>
        </item>
      </blockDeviceMapping>
      <virtualizationType>paravirtual</virtualizationType>
      <hypervisor>xen</hypervisor>
    </item>
    ...
  </imagesSet>
</DescribeImagesResponse>
```

## Related Actions

- [DescribeInstances](#) (p. 203)
- [DescribeImageAttribute](#) (p. 190)

# DescribeInstanceAttribute

## Description

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

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

## Request Parameters

### *InstanceId*

The instance ID.

Type: String

Default: None

Required: Yes

### *Attribute*

The instance attribute.

Type: String

Default: None

Valid values: `instanceType` | `kernel` | `ramdisk` | `userData` | `disableApiTermination` | `instanceInitiatedShutdownBehavior` | `rootDeviceName` | `blockDeviceMapping` | `sourceDestCheck` | `groupSet` | `productCodes` | `ebsOptimized`

Required: Yes

## Response Elements

The following elements are returned in a `DescribeInstanceAttributeResponse` element.

**requestId**

The ID of the request.

Type: xsd:string

**instanceId**

The ID of the instance.

Type: xsd:string

**instanceType**

The instance type (for example, `m1.small`), wrapped in a `value` element. See [Available Instance Types](#) for more information.

Type: xsd:string

**kernel**

The kernel ID, wrapped in a `value` element.

Type: xsd:string

**ramdisk**

The RAM disk ID, wrapped in a `value` element.

Type: xsd:string

**userData**

MIME, Base64-encoded user data, wrapped in a `value` element.

Type: xsd:string

**disableApiTermination**

Indicates whether the instance can be terminated through the Amazon EC2 API. The value is wrapped in a `value` element. A value of `true` means you can't terminate the instance using the API (i.e., the instance is "locked"); a value of `false` means you can. You must modify this attribute before you can terminate any "locked" instances using the API.

Type: xsd:boolean

**instanceInitiatedShutdownBehavior**

If an instance shutdown is initiated, this determines whether the instance stops or terminates. The value is wrapped in a `value` element.

Type: xsd:string

Valid values: `stop` | `terminate`

**rootDeviceName**

The name of the root device (for example, `/dev/sda1`), wrapped in a `value` element.

Type: xsd:string

**blockDeviceMapping**

Type: [InstanceBlockDeviceMappingResponseItemType](#) (p. 474)

**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, and `false` means checking is disabled. The value must be `false` for the instance to perform NAT. For more information, see [NAT Instances](#) in the *Amazon Virtual Private Cloud User Guide*.

Type: xsd:boolean

**groupSet**

The security groups the instance belongs to. Each group's information is wrapped in an `item` element.

Type: [GroupItemType](#) (p. 469)

**productCodes**

A list of product codes, each one wrapped in an `item` element that contains a product code and a product code type.

Type: [ProductCodesSetItemType](#) (p. 503)

**ebsOptimized**

Whether the instance is optimized for EBS I/O.



Type: xsd:boolean

## 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-10a64379</instanceId>
  <kernel>
    <value>aki-f70657b2</value>
  </kernel>
</DescribeInstanceAttributeResponse>
```

## Related Actions

- [DescribeInstances](#) (p. 203)
- [ModifyInstanceAttribute](#) (p. 360)
- [ResetInstanceAttribute](#) (p. 407)

# DescribeInstances

## Description

Describes one or more of your instances.

If you specify one or more instance IDs, Amazon EC2 returns information for those instances. If you do not specify instance IDs, Amazon EC2 returns information for all relevant instances. If you specify an invalid instance ID, an error is returned. If you specify an instance that you do not own, it is not included in the returned results.

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

## Request Parameters

### *InstanceId.n*

One or more instance IDs.

Type: String

Default: Returns all instances, or only those otherwise specified.

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

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

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

The following are the available filters.

### **architecture**

The instance architecture.

Type: String

Valid values: `i386` | `x86_64`

**availability-zone**

The Availability Zone of the instance.

Type: String

**block-device-mapping.attach-time**

The attach time for an Amazon EBS volume mapped to the instance (for example, 2010-09-15T17:15:20.000Z)

Type: DateTime

**block-device-mapping.delete-on-termination**

Indicates whether the Amazon EBS volume is deleted on instance termination.

Type: Boolean

**block-device-mapping.device-name**

The device name (for example, `/dev/sdh`) for the Amazon EBS volume.

Type: String

**block-device-mapping.status**

The status for the Amazon EBS volume.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

**block-device-mapping.volume-id**

The volume ID of the Amazon EBS volume.

Type: String

**client-token**

The idempotency token you provided when you launched the instance.

Type: String

**dns-name**

The public DNS name of the instance.

Type: String

**group-id**

The ID of the security group for the instance. If the instance is in EC2-Classic or a default VPC, you can use `group-name` instead.

Type: String

**group-name**

The name of the security group for the instance. If the instance is in a nondefault VPC, you must use `group-id` instead.

Type: String

**image-id**

The ID of the image used to launch the instance.

Type: String

**instance-id**

The ID of the instance.

Type: String

**instance-lifecycle**

Indicates whether this is a Spot Instance.

Type: String

Valid values: `spot`

**instance-state-code**

The state of the instance. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented.

Type: Integer (16-bit unsigned integer)

Valid values: 0 (pending) | 16 (running) | 32 (shutting-down) | 48 (terminated) | 64 (stopping) | 80 (stopped)

**instance-state-name**

The state of the instance.

Type: String

Valid values: pending | running | shutting-down | terminated | stopping | stopped

**instance-type**

The type of instance (for example, m1.small).

Type: String

**instance.group-id**

The ID of the security group for the instance. If the instance is in EC2-Classic or a default VPC, you can use `instance.group-name` instead.

Type: String

**instance.group-name**

The name of the security group for the instance. If the instance is in a nondefault VPC, you must use `instance.group-id` instead.

Type: String

**ip-address**

The public IP address of the instance.

Type: String

**kernel-id**

The kernel ID.

Type: String

**key-name**

The name of the key pair used when the instance was launched.

Type: String

**launch-index**

When launching multiple instances, this is the index for the instance in the launch group (for example, 0, 1, 2, and so on).

Type: String

**launch-time**

The time the instance was launched (for example, 2010-08-07T11:54:42.000Z).

Type: DateTime

**monitoring-state**

Indicates whether monitoring is enabled for the instance.

Type: String

Valid values: disabled | enabled

**owner-id**

The AWS account ID of the instance owner.

Type: String

**placement-group-name**

The name of the placement group for the instance.

Type: String

**platform**

The platform. Use `windows` if you have Windows based instances; otherwise, leave blank.

Type: String

Valid value: windows

**private-dns-name**

The private DNS name of the instance.

Type: String

**private-ip-address**

The private IP address of the instance.

Type: String

**product-code**

The product code associated with the AMI used to launch the instance.

Type: String

**product-code.type**

The type of product code.

Type: String

Valid values: `devpay` | `marketplace`

**ramdisk-id**

The RAM disk ID.

Type: String

**reason**

The reason for the current state of the instance (for example, shows "User Initiated [date]" when you stop or terminate the instance). Similar to the state-reason-code filter.

Type: String

**requester-id**

The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on)

Type: String

**reservation-id**

The ID of the instance's reservation. A reservation ID is created any time you launch an instance. A reservation ID has a one-to-one relationship with an instance launch request, but can be associated with more than one instance if you launch multiple instances using the same launch request. For example, if you launch one instance, you'll get one reservation ID. If you launch ten instances using the same launch request, you'll also get one reservation ID.

Type: String

**root-device-name**

The name of the root device for the instance (for example, `/dev/sda1`).

Type: String

**root-device-type**

The type of root device the instance uses.

Type: String

Valid values: `ebs` | `instance-store`

**source-dest-check**

Indicates whether the instance performs source/destination checking. A value of `true` means that checking is enabled, and `false` means checking is disabled. The value must be `false` for the instance to perform network address translation (NAT) in your VPC.

Type: Boolean

**spot-instance-request-id**

The ID of the Spot Instance request.

Type: String

**state-reason-code**

The reason code for the state change.

Type: String

**state-reason-message**

A message that describes the state change.

Type: String

**subnet-id**

The ID of the subnet for the instance.

Type: String

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where Purpose is `X`, see the `tag:key` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:*key***

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**virtualization-type**

The virtualization type of the instance.

Type: String

Valid values: `paravirtual` | `hvm`

**vpc-id**

The ID of the VPC the instance is running in.

Type: String

**hypervisor**

The hypervisor type of the instance.

Type: String

Valid values: `ovm` | `xen`

**network-interface.description**

The description of the network interface.

Type: String

**network-interface.subnet-id**

The ID of the subnet for the network interface.

Type: String

**network-interface.vpc-id**

The ID of the VPC for the network interface.

Type: String

**network-interface.network-interface-id**

The ID of the network interface.

Type: String

**network-interface.owner-id**

The ID of the owner of the network interface.

Type: String

- network-interface.availability-zone**  
The availability zone for the network interface.  
Type: String
- network-interface.requester-id**  
The requester ID for the network interface.  
Type: String
- network-interface.requester-managed**  
Indicates whether the network interface is being managed by AWS.  
Type: Boolean
- network-interface.status**  
The status of the network interface.  
Type: String  
Valid values: available | in-use
- network-interface.mac-address**  
The MAC address of the network interface.  
Type: String  
Valid values: available | in-use
- network-interface-private-dns-name**  
The private DNS name of the network interface.  
Type: String
- network-interface.source-destination-check**  
Whether the network interface performs source/destination checking. A value of `true` means checking is enabled, and `false` means checking is disabled. The value must be `false` for the network interface to perform network address translation (NAT) in your VPC.  
Type: Boolean
- network-interface.group-id**  
The ID of a security group associated with the network interface.  
Type: String
- network-interface.group-name**  
The name of a security group associated with the network interface.  
Type: String
- network-interface.attachment.attachment-id**  
The ID of the interface attachment.  
Type: String
- network-interface.attachment.instance-id**  
The ID of the instance to which the network interface is attached.  
Type: String
- network-interface.attachment.instance-owner-id**  
The owner ID of the instance to which the network interface is attached.  
Type: String
- network-interface.addresses.private-ip-address**  
The private IP address associated with the network interface.  
Type: String
- network-interface.attachment.device-index**  
The device index to which the network interface is attached.  
Type: Integer
- network-interface.attachment.status**  
The status of the attachment.  
Type: String  
Valid values: attaching | attached | detaching | detached

**network-interface.attachment.attach-time**

The time that the network interface was attached to an instance.

Type: Date

**network-interface.attachment.delete-on-termination**

Specifies whether the attachment is deleted when an instance is terminated.

Type: Boolean

**network-interface.addresses.primary**

Specifies whether the IP address of the network interface is the primary private IP address.

Type: Boolean

**network-interface.addresses.association.public-ip**

The ID of the association of an Elastic IP address with a network interface.

Type: String

**network-interface.addresses.association.ip-owner-id**

The owner ID of the private IP address associated with the network interface.

Type: String

**association.public-ip**

The address of the Elastic IP address bound to the network interface.

Type: String

**association.ip-owner-id**

The owner of the Elastic IP address associated with the network interface.

Type: String

**association.allocation-id**

The allocation ID that AWS returned when you allocated the Elastic IP address for your network interface.

Type: String

**association.association-id**

The association ID returned when the network interface was associated with an IP address.

Type: String

## Response Elements

The following elements are returned in a `DescribeInstancesResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**reservationSet**

A list of reservations, each one wrapped in an `item` element.

Type: [ReservationInfoType](#) (p. 505)

## 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/2013-02-01/">
  <requestId>fdcdcab1-ae5c-489e-9c33-4637c5dda355</requestId>
  <reservationSet>
    <item>
      <reservationId>r-1a2b3c4d</reservationId>
      <ownerId>111122223333</ownerId>
      <groupSet>
        <item>
          <groupId>sg-1a2b3c4d</groupId>
          <groupName>my-security-group</groupName>
        </item>
      </groupSet>
    </item>
  </reservationSet>
  <instancesSet>
    <item>
      <instanceId>i-1a2b3c4d</instanceId>
      <imageId>ami-1a2b3c4d</imageId>
      <instanceState>
        <code>16</code>
        <name>running</name>
      </instanceState>
      <privateDnsName/>
      <dnsName/>
      <reason/>
      <keyName>gsg-keypair</keyName>
      <amiLaunchIndex>0</amiLaunchIndex>
      <productCodes/>
      <instanceType>c1.medium</instanceType>
      <launchTime>YYYY-MM-DDTHH:MM:SS+0000</launchTime>
      <placement>
        <availabilityZone>us-west-2a</availabilityZone>
        <groupName/>
        <tenancy>default</tenancy>
      </placement>
      <platform>windows</platform>
      <monitoring>
        <state>disabled</state>
      </monitoring>
      <subnetId>subnet-1a2b3c4d</subnetId>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <privateIpAddress>10.0.0.12</privateIpAddress>
      <ipAddress>46.51.219.63</ipAddress>
      <sourceDestCheck>true</sourceDestCheck>
      <groupSet>
        <item>
          <groupId>sg-1a2b3c4d</groupId>
          <groupName>my-security-group</groupName>
        </item>
      </groupSet>
      <architecture>x86_64</architecture>
      <rootDeviceType>ebs</rootDeviceType>
      <rootDeviceName>/dev/sda1</rootDeviceName>
      <blockDeviceMapping>
        <item>
          <deviceName>/dev/sda1</deviceName>
          <ebs>
```

```
        <volumeId>vol-1a2b3c4d</volumeId>
        <status>attached</status>
        <attachTime>YYYY-MM-DDTHH:MM:SS.SSSZ</attachTime>
        <deleteOnTermination>true</deleteOnTermination>
    </ebs>
</item>
</blockDeviceMapping>
<virtualizationType>hvm</virtualizationType>
<clientToken>ABCDE1234567890123</clientToken>
<tagSet>
  <item>
    <key>Name</key>
    <value>Windows Instance</value>
  </item>
</tagSet>
<hypervisor>xen</hypervisor>
<networkInterfaceSet>
  <item>
    <networkInterfaceId>eni-1a2b3c4d</networkInterfaceId>
    <subnetId>subnet-1a2b3c4d</subnetId>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <description>Primary network interface</description>
    <ownerId>111122223333</ownerId>
    <status>in-use</status>
    <macAddress>1b:2b:3c:4d:5e:6f</macAddress>
    <privateIpAddress>10.0.0.12</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-1a2b3c4d</groupId>
        <groupName>my-security-group</groupName>
      </item>
    </groupSet>
  </item>
</networkInterfaceSet>
<attachment>
  <attachmentId>eni-attach-1a2b3c4d</attachmentId>
  <deviceIndex>0</deviceIndex>
  <status>attached</status>
  <attachTime>YYYY-MM-DDTHH:MM:SS+0000</attachTime>
  <deleteOnTermination>true</deleteOnTermination>
</attachment>
<association>
  <publicIp>198.51.100.63</publicIp>
  <ipOwnerId>111122223333</ipOwnerId>
</association>
<privateIpAddressesSet>
  <item>
    <privateIpAddress>10.0.0.12</privateIpAddress>
    <primary>true</primary>
    <association>
      <publicIp>198.51.100.63</publicIp>
      <ipOwnerId>111122223333</ipOwnerId>
    </association>
  </item>
  <item>
    <privateIpAddress>10.0.0.14</privateIpAddress>
    <primary>false</primary>
    <association>
      <publicIp>198.51.100.177</publicIp>
    </association>
  </item>
</privateIpAddressesSet>
```

```
        <ipOwnerId>111122223333</ipOwnerId>
      </association>
    </item>
  </privateIpAddressesSet>
</item>
</networkInterfaceSet>
</item>
</instancesSet>
</item>
<item>
  <reservationId>r-2a2b3c4d</reservationId>
  <ownerId>111122223333</ownerId>
  <groupSet>
    <item>
      <groupId>sg-2a2b3c4d</groupId>
      <groupName>my-security-group-2</groupName>
    </item>
  </groupSet>
  <instancesSet>
    <item>
      <instanceId>i-2a2b3c4d</instanceId>
      <imageId>ami-2a2b3c4d</imageId>
      <instanceState>
        <code>l6</code>
        <name>running</name>
      </instanceState>
      <privateDnsName>ip-10-251-50-35.ec2.internal</privateDnsName>
      <dnsName>ec2-67-202-51-223.compute-1.amazonaws.com</dnsName>
      <reason/>
      <keyName>gsg-keypair</keyName>
      <amiLaunchIndex>0</amiLaunchIndex>
      <productCodes/>
      <instanceType>t1.micro</instanceType>
      <launchTime>YYYY-MM-DDTHH:MM:SS+0000</launchTime>
      <placement>
        <availabilityZone>us-west-2b</availabilityZone>
        <groupName/>
        <tenancy>default</tenancy>
      </placement>
      <platform>windows</platform>
      <monitoring>
        <state>disabled</state>
      </monitoring>
      <privateIpAddress>10.139.34.251</privateIpAddress>
      <ipAddress>122.248.233.255</ipAddress>
      <groupSet>
        <item>
          <groupId>sg-2a2b3c4d</groupId>
          <groupName>my-security-group-2</groupName>
        </item>
      </groupSet>
      <architecture>x86_64</architecture>
      <rootDeviceType>ebs</rootDeviceType>
      <rootDeviceName>/dev/sda1</rootDeviceName>
      <blockDeviceMapping>
        <item>
          <deviceName>/dev/sda1</deviceName>
          <ebs>
```

```
        <volumeId>vol-2a2b3c4d</volumeId>
        <status>attached</status>
        <attachTime>YYYY-MM-DDTHH:MM:SS.SSSZ</attachTime>
        <deleteOnTermination>true</deleteOnTermination>
    </ebs>
</item>
</blockDeviceMapping>
<virtualizationType>hvm</virtualizationType>
<clientToken>ABCDE1234567890123</clientToken>
<tagSet>
    <item>
        <key>Name</key>
        <value>EC2 Instance</value>
    </item>
</tagSet>
<hypervisor>xen</hypervisor>
<networkInterfaceSet/>
</item>
</instancesSet>
</item>
</reservationSet>
</DescribeInstancesResponse>
```

## Example Request

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

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=instance-type
&Filter.1.Value.1=m1.small
&Filter.1.Value.2=m1.large
&Filter.2.Name=block-device-mapping.status
&Filter.2.Value.1=attached
&Filter.3.Name=block-device-mapping.delete-on-termination
&Filter.3.Value.1=true
&AUTHPARAMS
```

## Example Response

```
<DescribeInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>fdcdcab1-ae5c-489e-9c33-4637c5dda355</requestId>
  <reservationSet>
    <item>
      <reservationId>r-1a2b3c4d</reservationId>
      <ownerId>111122223333</ownerId>
      <groupSet>
        <item>
          <groupId>sg-1a2b3c4d</groupId>
          <groupName>my-security-group</groupName>
        </item>
      </groupSet>
      <instancesSet>
        <item>
          <reservationId>r-2a2b3c4d</reservationId>
```

```
<ownerId>111122223333</ownerId>
<groupSet>
  <item>
    <groupId>sg-2a2b3c4d</groupId>
    <groupName>my-security-group-2</groupName>
  </item>
</groupSet>
<instancesSet>
  <item>
    <instanceId>i-2a2b3c4d</instanceId>
    <imageId>ami-2a2b3c4d</imageId>
    <instanceState>
      <code>16</code>
      <name>running</name>
    </instanceState>
    <privateDnsName>ip-10-251-50-35.ec2.internal</privateDnsName>
    <dnsName>ec2-67-202-51-223.compute-1.amazonaws.com</dnsName>
    <reason/>
    <keyName>gsg-keypair</keyName>
    <amiLaunchIndex>0</amiLaunchIndex>
    <productCodes/>
    <instanceType>m1.large</instanceType>
    <launchTime>YYYY-MM-DDTHH:MM:SS+0000</launchTime>
    <placement>
      <availabilityZone>us-west-2b</availabilityZone>
      <groupName/>
      <tenancy>default</tenancy>
    </placement>
    <platform>windows</platform>
    <monitoring>
      <state>disabled</state>
    </monitoring>
    <privateIpAddress>10.139.34.251</privateIpAddress>
    <ipAddress>122.248.233.255</ipAddress>
    <groupSet>
      <item>
        <groupId>sg-2a2b3c4d</groupId>
        <groupName>my-security-group-2</groupName>
      </item>
    </groupSet>
    <architecture>x86_64</architecture>
    <rootDeviceType>ebs</rootDeviceType>
    <rootDeviceName>/dev/sda1</rootDeviceName>
    <blockDeviceMapping>
      <item>
        <deviceName>/dev/sda1</deviceName>
        <ebs>
          <volumeId>vol-2a2b3c4d</volumeId>
          <status>attached</status>
          <attachTime>YYYY-MM-DDTHH:MM:SS.SSSZ</attachTime>
          <deleteOnTermination>true</deleteOnTermination>
        </ebs>
      </item>
    </blockDeviceMapping>
    <virtualizationType>hvm</virtualizationType>
    <clientToken>ABCDE1234567890123</clientToken>
    <tagSet>
      <item>
```

```
        <key>Name</key>
        <value>EC2 Instance</value>
      </item>
    </tagSet>
    <hypervisor>xen</hypervisor>
    <networkInterfaceSet/>
  </item>
</instancesSet>
</item>
</reservationSet>
</DescribeInstancesResponse>
```

## Example Request

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

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

## Example Response

```
<DescribeInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>fdcdcab1-ae5c-489e-9c33-4637c5dda355</requestId>
  <reservationSet>
    <item>
      <reservationId>r-1a2b3c4d</reservationId>
      <ownerId>111122223333</ownerId>
      <groupSet>
        <item>
          <groupId>sg-1a2b3c4d</groupId>
          <groupName>my-security-group</groupName>
        </item>
      </groupSet>
      <instancesSet>
        <item>
          <instanceId>i-1a2b3c4d</instanceId>
          <imageId>ami-1a2b3c4d</imageId>
          <instanceState>
            <code>l6</code>
            <name>running</name>
          </instanceState>
          <privateDnsName/>
          <dnsName/>
          <reason/>
          <keyName>gsg-keypair</keyName>
          <amiLaunchIndex>0</amiLaunchIndex>
          <productCodes/>
          <instanceType>c1.medium</instanceType>
          <launchTime>YYYY-MM-DDTHH:MM:SS+0000</launchTime>
          <placement>
            <availabilityZone>us-west-2a</availabilityZone>
            <groupName/>
            <tenancy>default</tenancy>
          </placement>
        </item>
      </instancesSet>
    </item>
  </reservationSet>
</DescribeInstancesResponse>
```

```
</placement>
<platform>windows</platform>
<monitoring>
  <state>disabled</state>
</monitoring>
<subnetId>subnet-1a2b3c4d</subnetId>
<vpcId>vpc-1a2b3c4d</vpcId>
<privateIpAddress>10.0.0.12</privateIpAddress>
<ipAddress>46.51.219.63</ipAddress>
<sourceDestCheck>>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-1a2b3c4d</groupId>
    <groupName>my-security-group</groupName>
  </item>
</groupSet>
<architecture>x86_64</architecture>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sda1</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sda1</deviceName>
    <ebs>
      <volumeId>vol-1a2b3c4d</volumeId>
      <status>attached</status>
      <attachTime>YYYY-MM-DDTHH:MM:SS.SSSZ</attachTime>
      <deleteOnTermination>>true</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping>
<virtualizationType>hvm</virtualizationType>
<clientToken>ABCDE1234567890123</clientToken>
<tagSet>
  <item>
    <key>Name</key>
    <value>Windows Instance</value>
  </item>
</tagSet>
<hypervisor>xen</hypervisor>
<networkInterfaceSet>
  <item>
    <networkInterfaceId>eni-1a2b3c4d</networkInterfaceId>
    <subnetId>subnet-1a2b3c4d</subnetId>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <description>Primary network interface</description>
    <ownerId>111122223333</ownerId>
    <status>in-use</status>
    <macAddress>1b:2b:3c:4d:5e:6f</macAddress>
    <privateIpAddress>10.0.0.12</privateIpAddress>
    <sourceDestCheck>>true</sourceDestCheck>
    <groupSet>
      <item>
        <groupId>sg-1a2b3c4d</groupId>
        <groupName>my-security-group</groupName>
      </item>
    </groupSet>
    <attachment>
      <attachmentId>eni-attach-1a2b3c4d</attachmentId>
```

```
        <deviceIndex>0</deviceIndex>
        <status>attached</status>
        <attachTime>YYYY-MM-DDTHH:MM:SS+0000</attachTime>
        <deleteOnTermination>true</deleteOnTermination>
    </attachment>
    <association>
        <publicIp>198.51.100.63</publicIp>
        <publicDnsName>198.51.100.63</publicDnsName>
        <ipOwnerId>111122223333</ipOwnerId>
    </association>
    <privateIpAddressesSet>
        <item>
            <privateIpAddress>10.0.0.12</privateIpAddress>
            <primary>true</primary>
            <association>
                <publicIp>198.51.100.63</publicIp>
                <ipOwnerId>111122223333</ipOwnerId>
            </association>
        </item>
        <item>
            <privateIpAddress>10.0.0.14</privateIpAddress>
            <primary>>false</primary>
            <association>
                <publicIp>198.51.100.177</publicIp>
                <ipOwnerId>111122223333</ipOwnerId>
            </association>
        </item>
    </privateIpAddressesSet>
</item>
</networkInterfaceSet>
</item>
</instancesSet>
</item>
</reservationSet>
</DescribeInstancesResponse>
```

## Related Actions

- [RunInstances](#) (p. 419)
- [StopInstances](#) (p. 432)
- [StartInstances](#) (p. 430)
- [TerminateInstances](#) (p. 434)



# DescribeInstanceStatus

## Description

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

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

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

- Scheduled Reboot: When Amazon EC2 determines that an instance must be rebooted, the instance's status will return one of two event codes: `system-reboot` or `instance-reboot`. System reboot commonly occurs if certain maintenance or upgrade operations require a reboot of the underlying host that supports an instance. Instance reboot commonly occurs if the instance must be rebooted, rather than the underlying host. Rebooting events include a scheduled start and end time.
- System Maintenance: When Amazon EC2 determines that an instance requires maintenance that requires power or network impact, the instance's status will return an event code called `system-maintenance`. System maintenance is either power maintenance or network maintenance. For power maintenance, your instance will be unavailable for a brief period of time and then rebooted. For network maintenance, your instance will experience a brief loss of network connectivity. System maintenance events include a scheduled start and end time. You will also be notified by email if one of your instances is set for system maintenance. The email message indicates when your instance is scheduled for maintenance.
- Scheduled Retirement: When Amazon EC2 determines that an instance must be shut down, the instance's status returns an event code called `instance-retirement`. Retirement commonly occurs when the underlying host is degraded and must be replaced. Retirement events include a scheduled start and end time. You will also be notified by email if one of your instances is set to retiring. The email message indicates when your instance will be permanently retired.
- Scheduled Stop: When Amazon EC2 determines that an instance must be shut down, the instance's status returns an event code called `instance-stop`. Stop events include a scheduled start and end time. You will also be notified by email if one of your instances is set to stop. The email message indicates when your instance will be stopped.

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

## Request Parameters

### *InstanceId*

The list of instance IDs. If not specified, all instances are described.

Type: String

Default: None

Constraints: Maximum 100 explicitly specified instance IDs.

Required: No

***IncludeAllInstances***

When `true`, returns the health status for all instances (for example, running, stopped, pending, shutting down). When `false`, returns only the health status for running instances.

Type: Boolean

Default: `false`

Required: No

***MaxResults***

The maximum number of paginated instance items per response.

Type: Integer

Default: 1000

Required: No

***NextToken***

The next paginated set of results to return.

Type: String

Default: None

Required: No

***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

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

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

The following are the available filters.

**`availability-zone`**

The Availability Zone of the instance.

Type: String

**`event.code`**

The code identifying the type of event.

Type: String

Valid values: `instance-reboot` | `system-reboot` | `system-maintenance` | `instance-retirement` | `instance-stop`

**event.description**

A description of the event.

Type: String

**event.not-after**

The latest end time for the scheduled event.

Type: DateTime

**event.not-before**

The earliest start time for the scheduled event.

Type: DateTime

**instance-state-name**

The state of the instance.

Type: String

Valid values: `pending` | `running` | `shutting-down` | `terminated` | `stopping` | `stopped`

**instance-state-code**

A code representing the state of the instance. The high byte is an opaque internal value and should be ignored. The low byte is set based on the state represented

Type: Integer (16-bit unsigned integer)

Valid values: 0 (`pending`) | 16 (`running`) | 32 (`shutting-down`) | 48 (`terminated`) | 64 (`stopping`) | 80 (`stopped`)

**system-status.status**

The system status of the instance.

Type: String

Valid values: `ok` | `impaired` | `initializing` | `insufficient-data` | `not-applicable`

**system-status.reachability**

Filters on system status where the name is `reachability`.

Type: String

Valid values: `passed` | `failed` | `initializing` | `insufficient-data`

**instance-status.status**

The status of the instance.

Type: String

Valid values: `ok` | `impaired` | `initializing` | `insufficient-data` | `not-applicable`

**instance-status.reachability**

Filters on instance status where the name is `reachability`.

Type: String

Valid values: `passed` | `failed` | `initializing` | `insufficient-data`

## Response Elements

The following elements are returned in a `DescribeInstanceStatusResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**instanceStatusSet**

A list of instances status descriptions, each one wrapped in an `item` element.

Type: [InstanceStatusItemType](#) (p. 484)

**nextToken**

The next paginated set of results to return.

Type: xsd:string

## Examples

### Example Request

This example returns instance status descriptions for all instances.

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&Version=2013-02-01
&AuthParams
```

### Example Request

This example returns instance status descriptions for the specified instances.

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&InstanceId.0=i-1a2b3c4d
&InstanceId.1=i-2a2b3c4d
&Version=2013-02-01
&AuthParams
```

### Example Request

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

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&Filter.0.Name=system-status.reachability
&Filter.0.Value.failed
&Version=2013-02-01
&AuthParams
```

### Example Response

```
<DescribeInstanceStatusResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>3be1508e-c444-4fef-89cc-0b1223c4f02fEXAMPLE</requestId>
  <instanceStatusSet>
    <item>
      <instanceId>i-1a2b3c4d</instanceId>
      <availabilityZone>us-east-1d</availabilityZone>
      <instanceState>
        <code>16</code>
        <name>running</name>
      </instanceState>
    </item>
  </instanceStatusSet>
</DescribeInstanceStatusResponse>
```

```
<systemStatus>
  <status>impaired</status>
  <details>
    <item>
      <name>reachability</name>
      <status>failed</status>
      <impairedSince>YYYY-MM-DDTHH:MM:SS.000Z</impairedSince>
    </item>
  </details>
</systemStatus>
<instanceStatus>
  <status>impaired</status>
  <details>
    <item>
      <name>reachability</name>
      <status>failed</status>
      <impairedSince>YYYY-MM-DDTHH:MM:SS.000Z</impairedSince>
    </item>
  </details>
</instanceStatus>
<eventsSet>
  <code>instance-retirement</code>
  <notBefore>YYYY-MM-DDTHH:MM:SS+0000</notBefore>
  <notAfter>YYYY-MM-DDTHH:MM:SS+0000</notAfter>
  <description>
    The instance is running on degraded hardware
  </description>
</eventsSet>
</item>
<item>
  <instanceId>i-2a2b3c4d</instanceId>
  <availabilityZone>us-east-1d</availabilityZone>
  <instanceState>
    <code>16</code>
    <name>running</name>
  </instanceState>
  <systemStatus>
    <status>ok</status>
    <details>
      <item>
        <name>reachability</name>
        <status>passed</status>
      </item>
    </details>
  </systemStatus>
  <instanceStatus>
    <status>ok</status>
    <details>
      <item>
        <name>reachability</name>
        <status>passed</status>
      </item>
    </details>
  </instanceStatus>
  <eventsSet>
    <code>instance-reboot</code>
```

```
        <notBefore>YYYY-MM-DDTHH:MM:SS+0000</notBefore>
        <notAfter>YYYY-MM-DDTHH:MM:SS+0000</notAfter>
        <description>
            The instance is scheduled for a reboot
        </description>
    </eventsSet>
</item>
<item>
    <instanceId>i-3a2b3c4d</instanceId>
    <availabilityZone>us-east-1c</availabilityZone>
    <instanceState>
        <code>16</code>
        <name>running</name>
    </instanceState>
    <systemStatus>
        <status>ok</status>
        <details>
            <item>
                <name>reachability</name>
                <status>passed</status>
            </item>
        </details>
    </systemStatus>
    <instanceStatus>
        <status>ok</status>
        <details>
            <item>
                <name>reachability</name>
                <status>passed</status>
            </item>
        </details>
    </instanceStatus>
</item>
<item>
    <instanceId>i-4a2b3c4d</instanceId>
    <availabilityZone>us-east-1c</availabilityZone>
    <instanceState>
        <code>16</code>
        <name>running</name>
    </instanceState>
    <systemStatus>
        <status>ok</status>
        <details>
            <item>
                <name>reachability</name>
                <status>passed</status>
            </item>
        </details>
    </systemStatus>
    <instanceStatus>
        <status>insufficient-data</status>
        <details>
            <item>
                <name>reachability</name>
                <status>insufficient-data</status>
            </item>
        </details>
    </instanceStatus>
</item>
```

```
    </item>  
  </instanceStatusSet>  
</DescribeInstanceStatusResponse>
```

# DescribeInternetGateways

## Description

Describes one or more of your Internet gateways.

## Request Parameters

### *InternetGatewayId.n*

One or more Internet gateway IDs.

Type: String

Default: None

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

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

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

The following are the available filters.

### **attachment.state**

The current state of the attachment between the gateway and the VPC. Returned only if a VPC is attached.

Type: String

Valid value: `available`

### **attachment.vpc-id**

The ID of an attached VPC.

Type: String



**internet-gateway-id**

The ID of the Internet gateway.

Type: String

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag `Purpose=X` OR `Purpose=Y`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

## Response Elements

The following elements are returned in a `DescribeInternetGatewaysResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**internetGatewaySet**

A list of Internet gateways, each one wrapped in an `item` element.

Type: [InternetGatewayType](#) (p. 486)

## Examples

### Example Request

This example describes your Internet gateways.

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

### Example Response

```
<DescribeInternetGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<internetGatewaySet>
  <item>
    <internetGatewayId>igw-eaad4883EXAMPLE</internetGatewayId>
    <attachmentSet>
      <item>
        <vpcId>vpc-11ad4878</vpcId>
        <state>available</state>
      </item>
    </attachmentSet>
    <tagSet/>
  </item>
</internetGatewaySet>
</DescribeInternetGatewaysResponse>
```

## Related Actions

- [CreateInternetGateway](#) (p. 69)
- [DeleteInternetGateway](#) (p. 130)
- [DetachInternetGateway](#) (p. 23)
- [DetachInternetGateway](#) (p. 326)

# DescribeKeyPairs

## Description

Describes one or more of your key pairs.

## Request Parameters

### *KeyName.n*

One or more key pair names.

Type: String

Default: Describes all key pairs you own, or only those otherwise specified.

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

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

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

The following are the available filters.

### **fingerprint**

The fingerprint of the key pair.

Type: String

### **key-name**

The name of the key pair.

Type: String

## Response Elements

The following elements are returned in a `DescribeKeyPairsResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**keySet**

A list of key pairs, each one wrapped in an `item` element.

Type: [DescribeKeyPairsResponseItemType](#) (p. 455)

## 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <keySet>
    <item>
      <keyName>gsg-keypair</keyName>
      <keyFingerprint>
        00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
      </keyFingerprint>
    </item>
  </keySet>
</DescribeKeyPairsResponse>
```

### Example Request

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

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

## Related Actions

- [CreateKeyPair](#) (p. 71)
- [ImportKeyPair](#) (p. 352)
- [DeleteKeyPair](#) (p. 132)

# DescribeNetworkAcls

## Description

Describes the network ACLs in your VPC.

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

## Request Parameters

### ***NetworkAclId.n***

One or more network ACL IDs.

Type: String

Default: None

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

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

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

The following are the available filters.

### **association.association-id**

The ID of an association ID for the ACL.

Type: String

### **association.network-acl-id**

The ID of the network ACL involved in the association.

Type: String

**association.subnet-id**

The ID of the subnet involved in the association.

Type: String

**default**

Indicates whether the ACL is the default network ACL for the VPC.

Type: Boolean

**entry.cidr**

The CIDR range specified in the entry.

Type: String

**entry.egress**

Indicates whether the entry applies to egress traffic.

Type: Boolean

**entry.icmp.code**

The ICMP code specified in the entry, if any.

Type: Integer

**entry.icmp.type**

The ICMP type specified in the entry, if any.

Type: Integer

**entry.port-range.from**

The start of the port range specified in the entry.

Type: Integer

**entry.port-range.to**

The end of the port range specified in the entry.

Type: Integer

**entry.protocol**

The protocol specified in the entry.

Type: String

Valid values: `tcp` | `udp` | `icmp` or a protocol number

**entry.rule-action**

Indicates whether the entry allows or denies the matching traffic.

Type: String

Valid values: `allow` | `deny`

**entry.rule-number**

The number of an entry (in other words, rule) in the ACL's set of entries.

Type: Integer

**network-acl-id**

The ID of the network ACL.

Type: String

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "`tag-key=Purpose`" and the filter "`tag-value=X`", you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:** *key*

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**vpc-id**

The ID of the VPC for the network ACL.

Type: String

## Response Elements

The following elements are returned in a `DescribeNetworkAclsResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**networkAclSet**

A list of network ACLs, each one wrapped in an `item` element.

Type: [NetworkAclType](#) (p. 493)

## 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/2013-02-01/">
  <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>
        </item>
      </entrySet>
    </item>
  </networkAclSet>
</DescribeNetworkAclsResponse>
```

```
    <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>
    <item>
      <ruleNumber>110</ruleNumber>
      <protocol>6</protocol>
      <ruleAction>allow</ruleAction>
      <egress>false</egress>
      <cidrBlock>0.0.0.0/0</cidrBlock>
      <portRange>
        <from>80</from>
```



```
        <to>80</to>
      </portRange>
    </item>
    <item>
      <ruleNumber>120</ruleNumber>
      <protocol>6</protocol>
      <ruleAction>allow</ruleAction>
      <egress>false</egress>
      <cidrBlock>0.0.0.0/0</cidrBlock>
      <portRange>
        <from>443</from>
        <to>443</to>
      </portRange>
    </item>
  </entrySet>
</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 Actions

- [CreateNetworkAcl](#) (p. 73)
- [DeleteNetworkAcl](#) (p. 133)
- [ReplaceNetworkAclAssociation](#) (p. 385)
- [CreateNetworkAclEntry](#) (p. 75)
- [DeleteNetworkAclEntry](#) (p. 135)
- [ReplaceNetworkAclEntry](#) (p. 387)

# DescribeNetworkInterfaceAttribute

## Description

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

## Request Parameters

### *NetworkInterfaceId*

The ID of the network interface.

Type: String

Default: None

Required: Yes

### *Attribute*

The attribute of the network interface.

Type: String

Default: None

Valid values: `description` | `groupSet` | `sourceDestCheck` | `attachment`

Required: Yes

## Response Elements

The following elements are returned in a `DescribeNetworkInterfaceAttributeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `networkInterfaceId`

The ID of the network interface.

Type: `xsd:string`

## Examples

### Example Request

This example describes the attributes of a network interface.

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfaceAttribute
&NetworkInterfaceId=eni-686ea200
&Attribute=sourceDestCheck
&AUTHPARAMS
```

### Example Response

```
<DescribeNetworkInterfaceAttributeResponse
  xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>7a20c6b2-d71c-45fb-bba7-37306850544b</requestId>
```

```
<networkInterfaceId>eni-686ea200</networkInterfaceId>  
<sourceDestCheck>  
  <value>true</value>  
</sourceDestCheck>  
</DescribeNetworkInterfaceAttributeResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 25)
- [DetachNetworkInterface](#) (p. 328)
- [CreateNetworkInterface](#) (p. 78)
- [DeleteNetworkInterface](#) (p. 137)
- [DescribeNetworkInterfaces](#) (p. 237)
- [ModifyNetworkInterfaceAttribute](#) (p. 363)
- [ResetNetworkInterfaceAttribute](#) (p. 409)

# DescribeNetworkInterfaces

## Description

Describes one or more of your network interfaces.

## Request Parameters

### *NetworkInterfaceId.n*

One or more network interface IDs.

Type: String

Default: None

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

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

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

The following are the available filters.

### **addresses.private-ip-address**

The private IP addresses associated with the network interface.

Type: String

### **addresses.primary**

Whether the private IP address is the primary IP address associated with the network interface.

Type: Boolean

Valid values: `true` | `false`

### **addresses.association.public-ip**

The association ID returned when the network interface was associated with the Elastic IP address.

Type: String

**addresses.association.owner-id**  
The owner ID of the addresses associated with the network interface.  
Type: String

**association.association-id**  
The association ID returned when the network interface was associated with an IP address.  
Type: String

**association.allocation-id**  
The allocation ID that AWS returned when you allocated the Elastic IP address for your network interface.  
Type: String

**association.ip-owner-id**  
The owner of the Elastic IP address associated with the network interface.  
Type: String

**association.public-ip**  
The address of the Elastic IP address bound to the network interface.  
Type: String

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

**attachment.instance-id**  
The ID of the instance to which the network interface is attached.  
Type: String

**attachment.instance-owner-id**  
The owner ID of the instance to which the network interface is attached.  
Type: String

**attachment.device-index**  
The device index to which the network interface is attached.  
Type: Integer

**attachment.status**  
The status of the attachment.  
Type: String  
Valid values: `attaching` | `attached` | `detaching` | `detached`

**attachment.attach.time**  
The time that the network interface was attached to an instance.  
Type: DateTime

**attachment.delete-on-termination**  
Indicates whether the attachment is deleted when an instance is terminated.  
Type: Boolean

**availability-zone**  
The Availability Zone of the network interface.  
Type: String

**description**  
The description of the network interface.  
Type: String

**group-id**  
The ID of a security group associated with the network interface.  
Type: String

- group-name**  
The name of a security group associated with the network interface.  
Type: String
- mac-address**  
The MAC address of the network interface.  
Type: String
- network-interface-id**  
The ID of the network interface.  
Type: String
- owner-id**  
The AWS account ID of the network interface owner.  
Type: String
- private-ip-address**  
The private IP address or addresses of the network interface.  
Type: String
- private-dns-name**  
The private DNS name of the network interface.  
Type: String
- requester-id**  
The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on).  
Type: String
- requester-managed**  
Indicates whether the network interface is being managed by an AWS service (for example, AWS Management Console, Auto Scaling, and so on).  
Type: Boolean
- source-dest-check**  
Indicates whether the network interface performs source/destination checking. A value of `true` means checking is enabled, and `false` means checking is disabled. The value must be `false` for the network interface to perform Network Address Translation (NAT) in your VPC.  
Type: Boolean
- status**  
The status of the network interface. If the network interface is not attached to an instance, the status shows `available`; if a network interface is attached to an instance the status shows `in-use`.  
Type: String  
Valid values: `available` | `in-use`
- subnet-id**  
The ID of the subnet for the network interface.  
Type: String
- tag-key**  
The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.  
For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.  
Type: String
- tag-value**  
The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.  
Type: String

**tag:** *key*

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**vpc-id**

The ID of the VPC for the network interface.

Type: String

## Response Elements

The following elements are returned in a `DescribeNetworkInterfacesResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**networkInterfaceSet**

Information about the network interfaces, each one wrapped in an `item` element.

Type: [NetworkInterfaceType](#) (p. 496)

## Examples

### Example Request

This example describes network interfaces.

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

### Example Response

```
<DescribeNetworkInterfacesResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>fc45294c-006b-457b-bab9-012f5b3b0e40</requestId>
  <networkInterfaceSet>
    <item>
      <networkInterfaceId>eni-0f62d866</networkInterfaceId>
      <subnetId>subnet-c53c87ac</subnetId>
      <vpcId>vpc-cc3c87a5</vpcId>
      <availabilityZone>ap-southeast-1b</availabilityZone>
      <description/>
      <ownerId>053230519467</ownerId>
      <requesterManaged>>false</requesterManaged>
      <status>in-use</status>
      <macAddress>02:81:60:cb:27:37</macAddress>
    </item>
  </networkInterfaceSet>
</DescribeNetworkInterfacesResponse>
```

```
<privateIpAddress>10.0.0.146</privateIpAddress>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-3f4b5653</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<attachment>
  <attachmentId>eni-attach-6537fc0c</attachmentId>
  <instanceId>i-22197876</instanceId>
  <instanceOwnerId>053230519467</instanceOwnerId>
  <deviceIndex>0</deviceIndex>
  <status>attached</status>
  <attachTime>2012-07-01T21:45:27.000Z</attachTime>
  <deleteOnTermination>true</deleteOnTermination>
</attachment>
<tagSet/>
<privateIpAddressesSet>
  <item>
    <privateIpAddress>10.0.0.146</privateIpAddress>
    <primary>true</primary>
  </item>
  <item>
    <privateIpAddress>10.0.0.148</privateIpAddress>
    <primary>false</primary>
  </item>
  <item>
    <privateIpAddress>10.0.0.150</privateIpAddress>
    <primary>false</primary>
  </item>
</privateIpAddressesSet>
</item>
<item>
  <networkInterfaceId>eni-a66ed5cf</networkInterfaceId>
  <subnetId>subnet-cd8a35a4</subnetId>
  <vpcId>vpc-f28a359b</vpcId>
  <availabilityZone>ap-southeast-1b</availabilityZone>
  <description>Primary network interface</description>
  <ownerId>053230519467</ownerId>
  <requesterManaged>false</requesterManaged>
  <status>in-use</status>
  <macAddress>02:78:d7:00:8a:1e</macAddress>
  <privateIpAddress>10.0.1.233</privateIpAddress>
  <sourceDestCheck>true</sourceDestCheck>
  <groupSet>
    <item>
      <groupId>sg-a2a0b2ce</groupId>
      <groupName>quick-start-1</groupName>
    </item>
  </groupSet>
  <attachment>
    <attachmentId>eni-attach-a99c57c0</attachmentId>
    <instanceId>i-886401dc</instanceId>
    <instanceOwnerId>053230519467</instanceOwnerId>
    <deviceIndex>0</deviceIndex>
    <status>attached</status>
    <attachTime>2012-06-27T20:08:44.000Z</attachTime>
```



```
    <deleteOnTermination>true</deleteOnTermination>
  </attachment>
  <tagSet/>
  <privateIpAddressesSet>
    <item>
      <privateIpAddress>10.0.1.233</privateIpAddress>
      <primary>true</primary>
    </item>
    <item>
      <privateIpAddress>10.0.1.20</privateIpAddress>
      <primary>false</primary>
    </item>
  </privateIpAddressesSet>
</item>
</networkInterfaceSet>
</DescribeNetworkInterfacesResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 25)
- [DetachNetworkInterface](#) (p. 328)
- [CreateNetworkInterface](#) (p. 78)
- [DeleteNetworkInterface](#) (p. 137)
- [DescribeNetworkInterfaceAttribute](#) (p. 235)
- [ModifyNetworkInterfaceAttribute](#) (p. 363)
- [ResetNetworkInterfaceAttribute](#) (p. 409)

# DescribePlacementGroups

## Description

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

## Request Parameters

### ***GroupName.n***

One or more placement group names.

Type: String

Default: Describes all your placement groups, or only those otherwise specified.

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

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

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

The following are the available filters.

### **group-name**

The name of the placement group.

Type: String

### **state**

The state of the placement group.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

### **strategy**

The strategy of the placement group.

Type: String  
Valid value: `cluster`

## Response Elements

The following elements are returned in a `DescribePlacementGroupsResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**placementGroupSet**

A list of placement groups, each one wrapped in an `item` element.

Type: [PlacementGroupInfoType](#) (p. 497)

## 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/2013-02-01/">
  <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
  <placementGroupSet>
    <item>
      <groupName>XYZ-cluster</groupName>
      <strategy>cluster</strategy>
      <state>available</state>
    </item>
  </placementGroupSet>
</DescribePlacementGroupsResponse>
```

### Example Request

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

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

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
  <placementGroupSet>
    <item>
      <groupName>Project-cluster</groupName>
      <strategy>cluster</strategy>
      <state>available</state>
    </item>
  </placementGroupSet>
</DescribePlacementGroupsResponse>
```

## Related Actions

- [CreatePlacementGroup](#) (p. 83)
- [DeletePlacementGroup](#) (p. 139)

# DescribeRegions

## Description

Describes one or more regions that are currently available to you.

For a list of the regions supported by Amazon EC2, see [Regions and Endpoints](#).

## Request Parameters

### *RegionName.n*

One or more region names.

Type: String

Default: Describes all regions available to the account.

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

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

The following are the available filters.

### **endpoint**

The endpoint of the region (for example, `ec2.us-east-1.amazonaws.com`).

Type: String

### **region-name**

The name of the region.

Type: String

## Response Elements

The following elements are returned in a `DescribeRegionsResponse` element.

### **requestId**

The ID of the request.

Type: `xsd:string`

#### regionInfo

A list of regions, each one wrapped in an `item` element.

Type: [RegionItemType](#) (p. 505)

## 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/2013-02-01/">
  <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/2013-02-01/">
  <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 Actions

- [DescribeAvailabilityZones](#) (p. 173)
- [RunInstances](#) (p. 419)

# DescribeReservedInstances

## Description

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

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

For more information about Reserved Instances, see [Reserved Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### *ReservedInstancesId.n*

One or more Reserved Instance IDs.

Type: String

Default: Describes all your Reserved Instances, or only those otherwise specified.

Required: No

### *offeringType*

The Reserved Instance offering type.

Type: String

Valid values: `Heavy Utilization` | `Medium Utilization` | `Light Utilization`

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

You can specify multiple filters; for example, specify Reserved Instances that are in a specific Availability Zone and have a specific tag. The response includes information for a Reserved Instance only if it matches all of the filters that you specified. If there's no match, no special message is returned, the response is simply empty.



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

The following are the available filters.

**availability-zone**

The Availability Zone where the Reserved Instance can be used.

Type: String

**duration**

The duration of the Reserved Instance (one year or three years), in seconds.

Type: Long

Valid values: 31536000 | 94608000

**fixed-price**

The purchase price of the Reserved Instance (for example, 9800.0)

Type: Double

**instance-type**

The instance type on which the Reserved Instance can be used.

Type: String

**product-description**

The product description of the Reserved Instance.

Type: String

Valid values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

**reserved-instances-id**

The ID of the Reserved Instance.

Type: String

**start**

The time at which the Reserved Instance purchase request was placed (for example, 2010-08-07T11:54:42.000Z).

Type: DateTime

**state**

The state of the Reserved Instance.

Type: String

Valid values: pending-payment | active | payment-failed | retired

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**usage-price**

The usage price of the Reserved Instance, per hour (for example, 0.84)

Type: Double

## Response Elements

The following elements are returned in a `DescribeReservedInstancesResponse` element.

**requestId**

The ID of the request.

Type: xsd:string

**reservedInstancesSet**

A list of Reserved Instances, each one wrapped in an `item` element.

Type: [DescribeReservedInstancesResponseSetItemType](#) (p. 459)

## 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesSet>
    ...
    <item>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
      <instanceType>m1.xlarge</instanceType>
      <availabilityZone>us-east-1b</availabilityZone>
      <duration>31536000</duration>
      <fixedPrice>61.0</fixedPrice>
      <usagePrice>0.034</usagePrice>
      <instanceCount>3</instanceCount>
      <productDescription>Linux/UNIX</productDescription>
      <state>active</state>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <recurringCharges/>
    </item>
  </reservedInstancesSet>
</DescribeReservedInstancesResponse>
```

```
    </item>
    ...
  </reservedInstancesSet>
</DescribeReservedInstancesResponse>
```

## Example Request

This example filters the response to include only one-year, m1.small Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with a VPC, set the product description to Linux/UNIX (Amazon VPC).

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

## Related Actions

- [PurchaseReservedInstancesOffering](#) (p. 372)
- [DescribeReservedInstancesOfferings](#) (p. 257)

# DescribeReservedInstancesListings

## Description

Describes your account's Reserved Instance listings in the Reserved Instance Marketplace. This call returns information, such as the ID of the Reserved Instance to which a listing is associated.

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

As a seller, you choose to list some or all of your Reserved Instances, and you specify the upfront price you want to receive for them. Your Reserved Instances are then listed in the Reserved Instance Marketplace and are available for purchase.

As a buyer, you specify the configuration of the Reserved Instance you want to purchase, and the Marketplace will match what you're searching for with what's available. The Marketplace will first sell the lowest priced Reserved Instances to you, and continue to sell available Reserved Instance listings to you until your demand is met. You will be charged based on the total price of all of the listings that you purchase.

For more information about Reserved Instance Marketplace, go to [Reserved Instance Marketplace](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### ***ReservedInstancesListingId.n***

The information about the Reserved Instance listing wrapped in an `item` element.

Type: [DescribeReservedInstancesListingSetItemType](#) (p. 457)

Default: None

Required: No

### ***ReservedInstancesId.n***

The set of Reserved Instances IDs which are used to see associated listings.

Type: [DescribeReservedInstancesSetItemType](#) (p. 460)

Default: None

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

Our policy is to provide filters for all `ec2-describe` calls so that you can limit the response to your specified criteria. Therefore, you can use filters to limit the response when describing Reserved Instances listings, even though you can use other options instead.

For example, you can use a filter or an option to get the listing of Reserved Instances that are in an active state. You can also specify multiple options or filters (for example, to limit the response to the Reserved Instances listings that are in the closed state with a specific status message). The response includes information for a listing only if it matches all options or filters. If there's no match, no special message is returned, the response is simply empty.

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

The following are the available filters.

### **status**

Status of the Reserved Instance listing.

Valid values: `pending` | `active` | `cancelled` | `closed`

Type: String

### **status-message**

Reason for the status.

Type: String

### **reserved-instances-listing-id**

The ID of the Reserved Instances listing.

Type: String

### **reserved-instances-id**

The ID of the Reserved Instances.

Type: String

## Response Elements

The following elements are returned in a `DescribeReservedInstancesListingsResponseType` element.

### **requestId**

The ID of the request.

Type: `xsd:string`

### **reservedInstancesListingsSet**

The Reserved Instance listing information wrapped in an `item` element.

Type: [DescribeReservedInstancesListingsResponseSetItemType](#) (p. 456)

## Examples

### Example Request

This example shows all the listings associated with your account.

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

## Example Response

```
<DescribeReservedInstancesListingsResponse>
  <requestId>cec5c904-8f3a-4de5-8f5a-ff7f9EXAMPLE</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>253dfbf9-c335-4808-b956-
d942cEXAMPLE</reservedInstancesListingId>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
      <createDate>2012-07-06T19:35:29.000Z</createDate>
      <updateDate>2012-07-06T19:35:30.000Z</updateDate>
      <status>active</status>
      <statusMessage>ACTIVE</statusMessage>
      <instanceCounts>
        <item>
          <state>Available</state>
          <instanceCount>20</instanceCount>
        </item>
        <item>
          <state>Sold</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Cancelled</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Pending</state>
          <instanceCount>0</instanceCount>
        </item>
      </instanceCounts>
      <priceSchedules>
        <item>
          <term>8</term>
          <price>480.0</price>
          <currencyCode>USD</currencyCode>
          <active>>false</active>
        </item>
        <item>
          <term>7</term>
          <price>420.0</price>
          <currencyCode>USD</currencyCode>
          <active>>false</active>
        </item>
        <item>
          <term>6</term>
          <price>360.0</price>
          <currencyCode>USD</currencyCode>
          <active>active</active>
        </item>
        <item>
          <term>5</term>
```

```
        <price>300.0</price>
        <currencyCode>USD</currencyCode>
        <active>>false</active>
    </item>
    <item>
        <term>4</term>
        <price>240.0</price>
        <currencyCode>USD</currencyCode>
        <active>>false</active>
    </item>
    <item>
        <term>3</term>
        <price>180.0</price>
        <currencyCode>USD</currencyCode>
        <active>>false</active>
    </item>
    <item>
        <term>2</term>
        <price>120.0</price>
        <currencyCode>USD</currencyCode>
        <active>>false</active>
    </item>
    <item>
        <term>1</term>
        <price>60.0</price>
        <currencyCode>USD</currencyCode>
        <active>>false</active>
    </item>
</priceSchedules>
<tagSet/>
<clientToken>myclienttoken1</clientToken>
</item>
</reservedInstancesListingsSet>
</DescribeReservedInstancesListingsResponse>
```

## Related Actions

- [CancelReservedInstancesListing](#) (p. 46)
- [CreateReservedInstancesListing](#) (p. 85)

# DescribeReservedInstancesOfferings

## Description

Describes Reserved Instance offerings that are available for purchase. With Amazon EC2 Reserved Instances, you purchase the right to launch Amazon EC2 instances for a period of time. During that time period you will not receive insufficient capacity errors, and you will pay a lower usage rate than the rate charged for On-Demand instances for the actual time used.

Starting with the 2011-11-01 API version, AWS expanded its offering of Amazon EC2 Reserved Instances to address a range of projected instance usage. There are three types of Reserved Instances based on customer utilization levels: *Heavy Utilization*, *Medium Utilization*, and *Light Utilization*. You determine the type of the Reserved Instances offerings by including the optional *offeringType* parameter when calling `DescribeReservedInstancesOfferings`. The Medium Utilization offering type is equivalent to the Reserved Instance offering available before API version 2011-11-01. If you are using tools that predate the 2011-11-01 API version, `DescribeReservedInstancesOfferings` will only list information about the Medium Utilization Reserved Instance offering type.

For information about Reserved Instances pricing, go to [Understanding Reserved Instance Pricing Tiers](#) in the *Amazon Elastic Compute Cloud User Guide*. For more information about Reserved Instances, go to [Reserved Instances](#) also in the *Amazon Elastic Compute Cloud User Guide*.

Starting with the 2012-08-15 API version, AWS offers the Reserved Instance Marketplace, where you can buy and sell Reserved Instances. The Reserved Instance Marketplace matches sellers who want to resell Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

By default, with the 2012-08-15 API version, `DescribeReservedInstancesOfferings` returns information about AWS and Reserved Instance Marketplace offerings. If you are using tools that predate the 2012-08-15 API version, `DescribeReservedInstancesOfferings` will only list information about the Amazon EC2 Reserved Instance offerings.

For more information about the Reserved Instance Marketplace, go to [Reserved Instance Marketplace](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### ***ReservedInstancesOfferingId.n***

One or more Reserved Instances offering IDs.

Type: String

Default: None

Required: No

### ***InstanceType***

The Amazon EC2 instance type on which the Reserved Instance can be used. See [Available Instance Types](#) for more information.

Type: String

Default: None

Required: No

### ***AvailabilityZone***

The Availability Zone in which the Reserved Instance can be used.

Type: String

Default: None



Required: No

***ProductDescription***

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

Required: No

***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

***InstanceTenancy***

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

Required: No

***OfferingType***

The Reserved Instance offering type.

Type: String

Valid values: Heavy Utilization | Medium Utilization | Light Utilization

Default: None

Required: No

***IncludeMarketplace***

Include Marketplace offerings in the response.

Type: Boolean

Default: true

Required: No

***MinDuration***

Minimum duration (in seconds) to filter when searching for offerings.

Type: Long

Default: 2592000 (1 month)

Required: No

***MaxDuration***

Maximum duration (in seconds) to filter when searching for offerings.

Type: Long

Default: 94608000 (3 years)

Required: No

***MaxInstanceCount***

Maximum number of instances to filter when searching for offerings.

Type: Integer

Default: 20

Required: No

***NextToken***

Token to use when requesting the next paginated set of offerings.

Type: String

Default: First page of results if the string is empty.

Required: No

***MaxResults***

Maximum number of offerings to return.

Type: Integer

Default: 100

Maximum: 100

Required: No

## Supported Filters

Our policy is to provide filters for all `ec2-describe` calls so that you can limit the response to your specified criteria. Therefore, you can use filters to limit the response when describing Reserved Instances offerings, even though you can use other options instead.

For example, you could use an option or a filter to get the offerings for a specific instance type. You can specify multiple options or filters (for example, limit the response to the `m2.xlarge` instance type, and only for Windows instances). The response includes information for an offering only if it matches all options or filters. If there's no match, no special message is returned, the response is simply empty.

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

The following are the available filters.

**`availability-zone`**

The Availability Zone where the Reserved Instance can be used.

Type: String

**`duration`**

The duration of the Reserved Instance (for example, one year or three years), in seconds.

Type: Long

Valid values: 31536000 | 94608000

**`fixed-price`**

The purchase price of the Reserved Instance (for example, 9800.0)

Type: Double

**`instance-type`**

The Amazon EC2 instance type on which the Reserved Instance can be used.

Type: String

**`marketplace`**

Set to `true` to show only Reserved Instance Marketplace offerings. When this filter is not used, which is the default behavior, all offerings from AWS and Reserved Instance Marketplace are listed.

Type: Boolean

**`product-description`**

The description of the Reserved Instance.

Type: String

Valid values: `Linux/UNIX` | `Linux/UNIX (Amazon VPC)` | `Windows` | `Windows (Amazon VPC)`

**reserved-instances-offering-id**

The Reserved Instances offering ID.

Type: String

**usage-price**

The usage price of the Reserved Instance, per hour (for example, 0.84)

Type: Double

## Response Elements

The following elements are returned in a `DescribeReservedInstancesOfferingsResponse` element.

**requestId**

The ID of the request.

Type: xsd:string

**reservedInstancesOfferingsSet**

A list of Reserved Instances offerings. Each offering's information is wrapped in an `item` element.

Type: [DescribeReservedInstancesOfferingsResponseSetItemType](#) (p. 457)

**nextToken**

The next paginated set of results to return.

Type: String

## Examples

### Example Describing Reserved Instance Marketplace Offerings Only

This example requests a list of Linux/UNIX, Light Utilization Reserved Instances that are available through the Reserved Instance Marketplace only.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.0.Name=marketplace
&Filter.0.Value.1=true
&IncludeMarketplace=true
&OfferingType=Light+Utilization
&ProductDescription=Linux%2FUNIX
&Version=2013-02-01
&AUTHPARAMS
```

**Note**

When using the Query API, all strings must be URL-encoded.

This is the response listing Reserved Instance Marketplace offerings only.

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazon
aws.com/doc/2013-02-01/">
  <requestId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>a6ce8269-7b8c-42cd-a7f5-0841cEXAMPLE</re
servedInstancesOfferingId>
```

```
<instanceType>m1.large</instanceType>
<availabilityZone>us-east-1a</availabilityZone>
<duration>90720000</duration>
<fixedPrice>96.03</fixedPrice>
<usagePrice>0.027</usagePrice>
<productDescription>Linux/UNIX</productDescription>
<instanceTenancy>default</instanceTenancy>
<currencyCode>USD</currencyCode>
<offeringType>Light Utilization</offeringType>
<recurringCharges/>
<marketplace>true</marketplace>
<pricingDetailsSet>
  <item>
    <price>96.03</price>
    <count>1</count>
  </item>
</pricingDetailsSet>
</item>
<item>
  <reservedInstancesOfferingId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</re
servedInstancesOfferingId>
  <instanceType>m1.xlarge</instanceType>
  <availabilityZone>us-east-1b</availabilityZone>
  <duration>28512000</duration>
  <fixedPrice>61.0</fixedPrice>
  <usagePrice>0.034</usagePrice>
  <productDescription>Linux/UNIX</productDescription>
  <instanceTenancy>default</instanceTenancy>
  <currencyCode>USD</currencyCode>
  <offeringType>Light Utilization</offeringType>
  <recurringCharges>
    <item>
      <frequency>Hourly</frequency>
      <amount>0.29</amount>
    </item>
  </recurringCharges>
  <marketplace>true</marketplace>
  <pricingDetailsSet>
    <item>
      <price>61.0</price>
      <count>2</count>
    </item>
  </pricingDetailsSet>
</item>
</reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
```

## Example Describing AWS Offerings Only

By default, with the 2012-08-15 API version, `DescribeReservedInstancesOfferings` returns information about AWS Reserved Instances and Reserved Instance Marketplace offerings. If you want a list of AWS offerings only, set `IncludeMarketplace` to `false`.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&IncludeMarketplace=false
```

```
&Version=2013-02-01  
&AUTHPARAMS
```

## Example Using MaxResults and nextToken to Manage Results

API version 2012-08-15 provides pagination support, which means that you can query the results sequentially and in parts. Use `MaxResults` to specify the maximum number of results that will be returned in the response. Then each paginated response will contain a `nextToken`, which can be provided as input to a subsequent `DescribeReservedInstancesOfferings` call to fetch the next page.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings  
&MaxResults=5  
&Version=2013-02-01  
&AUTHPARAMS
```

The response should look similar to the following example.

```
<DescribeReservedInstancesOfferingsResponse>  
  <requestId>d072f652-cc57-458c-89e0-e6c02EXAMPLE</requestId>  
  <reservedInstancesOfferingsSet>  
    ...  
    <item>  
      <reservedInstancesOfferingId>649fd0c8-7846-46b8-8f84-a6400EXAMPLE</re  
servedInstancesOfferingId>  
      <instanceType>m1.large</instanceType>  
      <availabilityZone>us-east-1a</availabilityZone>  
      <duration>94608000</duration>  
      <fixedPrice>1200.0</fixedPrice>  
      <usagePrice>0.0</usagePrice>  
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>  
      <instanceTenancy>default</instanceTenancy>  
      <currencyCode>USD</currencyCode>  
      <offeringType>Heavy Utilization</offeringType>  
      <recurringCharges>  
        <item>  
          <frequency>Hourly</frequency>  
          <amount>0.052</amount>  
        </item>  
      </recurringCharges>  
      <marketplace>>false</marketplace>  
      <pricingDetailsSet/>  
    </item>  
    <item>  
      <reservedInstancesOfferingId>e5a2ff3b-a4f3-477c-8928-dbd00EXAMPLE</re  
servedInstancesOfferingId>  
      <instanceType>m1.large</instanceType>  
      <availabilityZone>us-east-1a</availabilityZone>  
      <duration>94608000</duration>  
      <fixedPrice>1000.0</fixedPrice>  
      <usagePrice>0.076</usagePrice>  
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>  
      <instanceTenancy>default</instanceTenancy>  
      <currencyCode>USD</currencyCode>  
      <offeringType>Medium Utilization</offeringType>
```

```
<recurringCharges/>
<marketplace>>false</marketplace>
<pricingDetailsSet/>
</item>
...
</reservedInstancesOfferingsSet>
<nextToken>h/C8YKPBHEjW8xKz1827/Zzyb0VqsqkjRo3TqhFYeE=</nextToken>
</DescribeReservedInstancesOfferingsResponse>
```

Then, you can use the `NextToken` to fetch the next page. The request should look like the following example. Make sure that you URL encode the `NextToken` value.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&MaxResults=5
&NextToken=h%2FC8YKPBHEjW8xKz1827%2FZzyb0VqsqkjRo3TqhFYeE%3D
&Version=2013-02-01
&AUTHPARAMS
```

The response should be similar to the following example.

```
<DescribeReservedInstancesOfferingsResponse>
  <requestId>652900ca-902c-42fa-b8ae-da67bEXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    ...
    <item>
      <reservedInstancesOfferingId>438012d3-496e-4ab3-b1f6-38ffeEXAMPLE</re
servedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>425.2</fixedPrice>
      <usagePrice>0.124</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <recurringCharges/>
      <marketplace>>false</marketplace>
      <pricingDetailsSet/>
    </item>
    <item>
      <reservedInstancesOfferingId>248e7b75-579e-4599-a34d-cb6aaEXAMPLE</re
servedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>31536000</duration>
      <fixedPrice>780.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Heavy Utilization</offeringType>
      <recurringCharges>
        <item>
          <frequency>Hourly</frequency>
          <amount>0.064</amount>
```

```
        </item>
      </recurringCharges>
      <marketplace>>false</marketplace>
      <pricingDetailsSet/>
    </item>
    ...
  </reservedInstancesOfferingsSet>
  <nextToken>69AJRhm9bxVUF8YCKAs2HsQjyqa246eTkVv23eNFTKw=</nextToken>
</DescribeReservedInstancesOfferingsResponse>
```

## Example Request

This example describes available Reserved Instance offerings.

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

## Example Response

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazon
aws.com/doc/2013-02-01/">
  <requestId>48692a1d-3036-48fd-8c0e-d34681b97efdEXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    ...
    <item>
      <reservedInstancesOfferingId>248e7b75-c83a-48c1-bcf7-
b7f03e9c43feEXAMPLE</reservedInstancesOfferingId>
      <instanceType>c1.medium</instanceType>
      <availabilityZone>us-east-1b</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>700.0</fixedPrice>
      <usagePrice>0.06</usagePrice>
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Medium Utilization</offeringType>
      <recurringCharges/>
    </item>
    ...
  </reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
```

## Example Request

This example filters the response to include only one-year, m1.small or m1.large Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with a VPC, set the product description to Linux/UNIX (Amazon VPC).

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.1.Name=duration
&Filter.1.Value.1=31536000
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
```

```
&Filter.2.Value.2=m1.large  
&Filter.3.Name=product-description  
&Filter.3.Value.1=Linux%2FUNIX  
&AUTHPARAMS
```

## Related Actions

- [PurchaseReservedInstancesOffering](#) (p. 372)
- [DescribeReservedInstances](#) (p. 249)



# DescribeRouteTables

## Description

Describes one or more of your route tables.

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

## Request Parameters

### ***RouteTableId.n***

One or more route table IDs.

Type: String

Default: Returns all route tables, or only those otherwise specified.

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

You can specify multiple filters; for example, specify tables that have a specific route and are associated with a specific subnet. The response includes information for a table only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

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

The following are the available filters.

### **`association.route-table-association-id`**

The ID of an association ID for the route table.

Type: String

### **`association.route-table-id`**

The ID of the route table involved in the association.

Type: String

**association.subnet-id**

The ID of the subnet involved in the association.

Type: String

**association.main**

Indicates whether the route table is the main route table for the VPC.

Type: Boolean

**route-table-id**

The ID of the route table.

Type: String

**route.destination-cidr-block**

The CIDR range specified in a route in the table.

Type: String

**route.gateway-id**

The ID of a gateway specified in a route in the table.

Type: String

**route.instance-id**

The ID of an instance specified in a route in the table.

Type: String

**route.origin**

Describes how the route was created.

Type: String

Valid values: `CreateRouteTable` | `CreateRoute` | `EnableVgwRoutePropagation`

`CreateRouteTable` indicates that route was automatically created when the route table was created.

`CreateRoute` indicates that the route was manually added to the route table.

`EnableVgwRoutePropagation` indicates that the route was propagated by route propagation.

**route.state**

The state of a route in the route table. The `blackhole` state indicates that the route's target isn't available (for example, the specified gateway isn't attached to the VPC, the specified NAT instance has been terminated, and so on).

Type: String

Valid values: `active` | `blackhole`

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag `Purpose=X` OR `Purpose=Y`, specify:

```
Filter.1.Name=tag:Purpose
```

Filter.1.Value.1=X

Filter.1.Value.2=Y

**vpc-id**

The ID of the VPC for the route table.

Type: String

## Response Elements

The following elements are returned in a `DescribeRouteTablesResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**routeTableSet**

A list of route tables, each one wrapped in an `item` element.

Type: [RouteTableType](#) (p. 508)

## 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/2013-02-01/">
  <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>
          <origin>CreateRouteTable</origin>
        </item>
      </routeSet>
      <associationSet>
        <item>
          <routeTableAssociationId>rtbassoc-12ad487b</routeTableAssoci
ationId>
          <routeTableId>rtb-13ad487a</routeTableId>
          <main>true</main>
        </item>
      </associationSet>
    </item>
  </routeTableSet>
</DescribeRouteTablesResponse>
```

```
    </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>
      <origin>CreateRouteTable</origin>
    </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 Actions

- [AssociateRouteTable](#) (p. 21)
- [DisassociateRouteTable](#) (p. 338)
- [DeleteRouteTable](#) (p. 143)
- [CreateRouteTable](#) (p. 97)
- [ReplaceRouteTableAssociation](#) (p. 392)

# DescribeSecurityGroups

## Description

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

## Request Parameters

### *GroupName.n*

One or more security group names.

Type: String

Default: Describes all your security groups, or only those otherwise specified.

Condition: For EC2-Classic, default VPC, you can specify either `GroupName` or `GroupId`

Required: No

### *GroupId.n*

One or more security group IDs.

Type: String

Default: Describes all your security groups, or only those otherwise specified.

Condition: Required for a EC2-VPC; for EC2-Classic, default VPC, you can specify either `GroupName` or `GroupId`

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain security groups. For example, you can use a filter to specify that you're interested in groups whose name contains a specific string. You can specify multiple values for a filter. The response includes information for a security group only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify group's whose name contains a specific string, and that give permission to another security group with a different string in its name. The response includes information for a group only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

### **Important**

Filters are based on literal strings only. This is important to remember when you want to use filters to return only security groups with access allowed on a specific port number or numbers. For example, suppose that you want to get all groups that have access on port 22, and that GroupA gives access on a range of ports using `fromPort=20` and `toPort=30`. If you filter with

`ip-permission.from-port=22` or `ip-permission.to-port=22` (or both), the response does not contain information for GroupA. You get information for GroupA only if you specify `ip-permission.from-port=20` or `ip-permission.to-port=30` (or both).

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

The following are the available filters.

**description**

The description of the security group.

Type: String

**group-id**

The ID of the security group.

Type: String

**group-name**

The name of the security group.

Type: String

**ip-permission.cidr**

The CIDR range that has been granted the permission.

Type: String

**ip-permission.from-port**

The start of port range for the TCP and UDP protocols, or an ICMP type number.

Type: String

**ip-permission.group-name**

The name of security group that has been granted the permission.

Type: String

**ip-permission.protocol**

The IP protocol for the permission.

Type: String

Valid values: `tcp` | `udp` | `icmp` or a protocol number

**ip-permission.to-port**

The end of port range for the TCP and UDP protocols, or an ICMP code.

Type: String

**ip-permission.user-id**

The ID of an AWS account that has been granted the permission.

Type: String

**owner-id**

The AWS account ID of the owner of the security group.

Type: String

**tag-key**

The key of a tag assigned to the security group.

Type: String

**tag-value**

The value of a tag assigned to the security group.

Type: String

**vpc-id**

Only return the security groups that belong to the specified EC2-VPC ID.

Type: String

## Response Elements

The following elements are returned in a `DescribeSecurityGroupsResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**securityGroupInfo**

A list of security groups, each one wrapped in an `item` element.

Type: [SecurityGroupItemType](#) (p. 513)

## 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <securityGroupInfo>
    <item>
      <ownerId>111122223333</ownerId>
      <groupId>sg-1a2b3c4d</groupId>
      <groupName>WebServers</groupName>
      <groupDescription>Web Servers</groupDescription>
      <vpcId/>
      <ipPermissions>
        <item>
          <ipProtocol>tcp</ipProtocol>
          <fromPort>80</fromPort>
          <toPort>80</toPort>
          <groups/>
          <ipRanges>
            <item>
              <cidrIp>0.0.0.0/0</cidrIp>
            </item>
          </ipRanges>
        </item>
      </ipPermissions>
      <ipPermissionsEgress/>
    </item>
    <item>
      <ownerId>111122223333</ownerId>
      <groupId>sg-2a2b3c4d</groupId>
```

```
<groupName>RangedPortsBySource</groupName>
<groupDescription>Group A</groupDescription>
<ipPermissions>
  <item>
    <ipProtocol>tcp</ipProtocol>
    <fromPort>6000</fromPort>
    <toPort>7000</toPort>
    <groups>
      <item>
        <userId>111122223333</userId>
        <groupId>sg-3a2b3c4d</groupId>
        <groupName>Group B</groupName>
      </item>
    </groups>
    <ipRanges/>
  </item>
</ipPermissions>
<ipPermissionsEgress/>
</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 Actions

- [CreateSecurityGroup](#) (p. 99)
- [AuthorizeSecurityGroupIngress](#) (p. 34)
- [RevokeSecurityGroupIngress](#) (p. 416)
- [DeleteSecurityGroup](#) (p. 145)



# DescribeSnapshotAttribute

## Description

Describes an attribute of the specified snapshot. You can specify only one attribute at a time.

## Request Parameters

### *SnapshotId*

The ID of the Amazon EBS snapshot.

Type: String

Default: None

Required: Yes

### *Attribute*

The snapshot attribute.

Type: String

Default: None

Valid values: `createVolumePermission` | `productCodes`

Required: Yes

## Response Elements

The following elements are returned in a `DescribeSnapshotAttributeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `snapshotId`

The ID of the Amazon EBS snapshot.

Type: `xsd:string`

### `createVolumePermission`

A list of permissions for creating volumes from the snapshot. Each permission is wrapped in an `item` element.

Type: [CreateVolumePermissionItemType](#) (p. 451)

### `productCodes`

A list of product codes. Each product code is wrapped in an `item` element type that contains a product code and a type.

Type: [ProductCodesSetItemType](#) (p. 503)

## Examples

### Example Request

This example describes permissions for the `snap-1a2b3c4d` snapshot.

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

```
&Attribute=createVolumePermission  
&AUTHPARAMS
```

## Example Response

```
<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <snapshotId>snap-1a2b3c4d</snapshotId>  
  <createVolumePermission>  
    <item>  
      <group>all</group>  
    </item>  
  </createVolumePermission>  
</DescribeSnapshotAttributeResponse>
```

## Example Request

This example describes product codes associated with the snap-1a2b3c4d snapshot.

```
https://ec2.amazonaws.com/?Action=DescribeSnapshotAttribute  
&SnapshotId=snap-1a2b3c4d  
&Attribute=productCodes  
&AUTHPARAMS
```

## Example Response

```
<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <snapshotId>snap-1a2b3c4d</snapshotId>  
  <productCodes>  
    <item>  
      <productCode>alb2c3d4e5f6g7h8i9j10k11</productCode>  
      <type>marketplace</type>  
    </item>  
  </productCodes>  
</DescribeSnapshotAttributeResponse>
```

## Related Actions

- [ModifySnapshotAttribute](#) (p. 365)
- [DescribeSnapshots](#) (p. 276)
- [ResetSnapshotAttribute](#) (p. 411)
- [CreateSnapshot](#) (p. 101)

# DescribeSnapshots

## Description

Describes one or more of the Amazon EBS snapshots available to you. Snapshots available to you include public snapshots available for any AWS account to launch, private snapshots you own, and private snapshots owned by another AWS account but for which you've been given explicit create volume permissions.

The create volume permissions fall into 3 categories:

### **public**

The owner of the snapshot granted create volume permissions for the snapshot to the `all` group. All AWS accounts have create volume permissions for these snapshots.

### **explicit**

The owner of the snapshot granted create volume permissions to a specific AWS account.

### **implicit**

An AWS account has implicit create volume permissions for all snapshots it owns.

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

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

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

If you specify a list of restorable users, only snapshots with create snapshot permissions for those users are returned. You can specify AWS account IDs (if you own the snapshot(s)), `self` for snapshots for which you own or have explicit permissions, or `all` for public snapshots.

## Request Parameters

### ***SnapshotId.n***

One or more snapshot IDs.

Type: String

Default: Describes snapshots for which you have launch permissions.

Required: No

### ***Owner.n***

Returns the snapshots owned by the specified owner. Multiple owners can be specified.

Type: String

Valid values: `self` | `amazon` | AWS Account ID

Default: None

Required: No

### ***RestorableBy.n***

One or more AWS accounts IDs that can create volumes from the snapshot.

Type: String

Default: None

Required: No

***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain snapshots. For example, you can use a filter to specify that you're interested in snapshots whose status is `pending`. You can specify multiple values for a filter. The response includes information for a snapshot only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify snapshot's that have a `pending` status, and have a specific tag. The response includes information for a snapshot only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

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

The following are the available filters.

**description**

A description of the snapshot.

Type: String

**owner-alias**

The AWS account alias (for example, `amazon`) that owns the snapshot.

Type: String

**owner-id**

The ID of the AWS account that owns the snapshot.

Type: String

**progress**

The progress of the snapshot, as a percentage (for example, `80%`).

Type: String

**snapshot-id**

The snapshot ID.

Type: String

**start-time**

The time stamp when the snapshot was initiated.

Type: DateTime

**status**

The status of the snapshot.

Type: String

Valid values: `pending` | `completed` | `error`

#### **tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag:key` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

#### **tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

#### **tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

#### **volume-id**

The ID of the volume the snapshot is for.

Type: String

#### **volume-size**

The size of the volume, in GiB (for example, 20).

Type: String

## Response Elements

The following elements are returned in a `DescribeSnapshotsResponse` element.

#### **requestId**

The ID of the request.

Type: xsd:string

#### **snapshotSet**

A list of snapshots. Each snapshot is wrapped in an `item` element.

Type: [DescribeSnapshotsSetItemResponseType](#) (p. 461)

## Examples

### Example Request

This example describes snapshot `snap-1a2b3c4d`.

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

## Example Response

```
<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotSet>
    <item>
      <snapshotId>snap-1a2b3c4d</snapshotId>
      <volumeId>vol-1a2b3c4d</volumeId>
      <status>pending</status>
      <startTime>YYYY-MM-DDTHH:MM:SS.SSSZ</startTime>
      <progress>80%</progress>
      <ownerId>111122223333</ownerId>
      <volumeSize>15</volumeSize>
      <description>Daily Backup</description>
      <tagSet/>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

## Example Request

This example filters the response to include only snapshots with the `pending` status, and that are also tagged with a value that includes the string `db_`.

```
https://ec2.amazonaws.com/?Action=DescribeSnapshots
&Filter.1.Name=status
&Filter.1.Value.1=pending
&Filter.2.Name=tag-value
&Filter.2.Value.1=*db_*
&AUTHPARAMS
```

## Example Response

```
<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotSet>
    <item>
      <snapshotId>snap-1a2b3c4d</snapshotId>
      <volumeId>vol-1a2b3c4d</volumeId>
      <status>pending</status>
      <startTime>YYYY-MM-DDTHH:MM:SS.SSSZ</startTime>
      <progress>30%</progress>
      <ownerId>111122223333</ownerId>
      <volumeSize>15</volumeSize>
      <description>Daily Backup</description>
      <tagSet>
        <item>
          <key>Purpose</key>
          <value>demo_db_14_backup</value>
        </item>
      </tagSet>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

## Related Actions

- [CreateSnapshot](#) (p. 101)
- [DeleteSnapshot](#) (p. 147)

# DescribeSpotDatafeedSubscription

## Description

Describes the datafeed for Spot Instances. For more information about Spot Instances, see [Spot Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The `DescribeSpotDatafeedSubscription` operation does not have any request parameters.

## Response Elements

The following elements are returned in a `DescribeSpotDatafeedSubscriptionResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**spotDatafeedSubscription**

The Spot Instance datafeed subscription.

Type: [SpotDatafeedSubscriptionType](#) (p. 514)

## 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>111122223333</ownerId>
    <bucket>myawsbucket</bucket>
    <prefix>spotdata_</prefix>
    <state>Active</state>
  </spotDatafeedSubscription>
</DescribeSpotDatafeedSubscriptionResponse>
```

## Related Actions

- [CreateSpotDatafeedSubscription](#) (p. 104)
- [DeleteSpotDatafeedSubscription](#) (p. 149)



# DescribeSpotInstanceRequests

## Description

Describes the Spot Instance requests that belong to your account. Spot Instances are instances that Amazon EC2 starts on your behalf when the maximum price that you specify exceeds the current Spot Price. Amazon EC2 periodically sets the Spot Price based on available Spot Instance capacity and current Spot Instance requests. For more information about Spot Instances, see [Spot Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### ***SpotInstanceRequestId.n***

One or more Spot Instance request IDs.

Type: String

Default: None

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain Spot Instance requests. For example, you can use a filter to specify that you're interested in requests where the Spot Price is a specific value. (You can't use a greater than or less than comparison, however you can use \* and ? wildcards.) You can specify multiple values for a filter. The response includes information for a Spot Instance request only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify that the Spot Price is a specific value, and that the instance type is m1.small. The response includes information for a request only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

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

The following are the available filters.

### **availability-zone-group**

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

- create-time**  
The time stamp when the Spot Instance request was created.  
Type: String
- fault-code**  
The fault code related to the request.  
Type: String
- fault-message**  
The fault message related to the request.  
Type: String
- instance-id**  
The ID of the instance that fulfilled the request.  
Type: String
- launch-group**  
The Spot Instance launch group. Launch groups are Spot Instances that launch together and terminate together.  
Type: String
- launch.block-device-mapping.delete-on-termination**  
Whether the Amazon EBS volume is deleted on instance termination.  
Type: Boolean
- launch.block-device-mapping.device-name**  
The device name (for example, /dev/sdh) for the Amazon EBS volume.  
Type: String
- launch.block-device-mapping.snapshot-id**  
The ID of the snapshot used for the Amazon EBS volume.  
Type: String
- launch.block-device-mapping.volume-size**  
The volume size of the Amazon EBS volume, in GiB.  
Type: String
- launch.block-device-mapping.volume-type**  
The volume type of the Amazon EBS volume.  
Type: String  
Valid values: `standard` | `io1`
- launch.group-id**  
The security group for the instance.  
Type: String
- launch.image-id**  
The ID of the AMI.  
Type: String
- launch.instance-type**  
The type of instance (for example, `m1.small`).  
Type: String
- launch.kernel-id**  
The kernel ID.  
Type: String
- launch.key-name**  
The name of the key pair the instance launched with.  
Type: String
- launch.monitoring-enabled**  
Whether monitoring is enabled for the Spot Instance.

- Type: Boolean
- launch.ramdisk-id**  
The RAM disk ID.  
Type: String
- launch.network-interface.network-interface-id**  
The ID of the network interface.  
Type: String
- launch.network-interface.device-index**  
The index of the device for the network interface attachment on the instance.  
Type: Integer
- launch.network-interface.subnet-id**  
The ID of the subnet for the instance.  
Type: String
- launch.network-interface.description**  
A description of the network interface.  
Type: String
- launch.network-interface.private-ip-address**  
The primary private IP address of the network interface.  
Type: String
- launch.network-interface.delete-on-termination**  
Indicates whether the network interface is deleted when the instance is terminated.  
Type: Boolean
- launch.network-interface.group-id**  
The ID of the security group associated with the network interface.  
Type: String
- launch.network-interface.group-name**  
The name of the security group associated with the network interface.  
Type: String
- launch.network-interface.addresses.primary**  
Indicates whether the IP address is the primary private IP address.  
Type: String
- product-description**  
The product description associated with the instance.  
Type: String  
Valid values: Linux/UNIX | Windows
- spot-instance-request-id**  
The Spot Instance request ID.  
Type: String
- spot-price**  
The maximum hourly price for any Spot Instance launched to fulfill the request.  
Type: String
- state**  
The state of the Spot Instance request. Spot bid status information can help you track your Amazon EC2 Spot Instance requests. For information, see [Tracking Spot Requests with Bid Status Codes](#) in the *Amazon Elastic Compute Cloud User Guide*.  
Type: String  
Valid values: open | active | closed | cancelled | failed
- status-code**  
The short code describing the most recent evaluation of your Spot Instance request. For more information, see [Spot Bid Status](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**status-message**

The message explaining the status of the Spot Instance request.

Type: String

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag `Purpose=X` OR `Purpose=Y`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**type**

The type of Spot Instance request.

Type: String

Valid values: `one-time` | `persistent`

**launched-availability-zone**

The Availability Zone in which the bid is launched.

Type: String

**valid-from**

The start date of the request.

Type: DateTime

**valid-until**

The end date of the request.

Type: DateTime

## Response Elements

The following elements are returned in a `DescribeSpotInstanceRequestsResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**spotInstanceRequestSet**

A list of Spot Instance requests. Each request is wrapped in an `item` element.

Type: [SpotInstanceRequestSetItemType](#) (p. 515)

#### **networkInterfaceSet**

Information about the network interface.

Type: [InstanceNetworkInterfaceSetItemRequestType](#) (p. 478)

## 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <spotPrice>0.09</spotPrice>
      <type>one-time</type>
      <state>active</state>
      <status>
        <code>fulfilled</code>
        <updateTime>YYYY-MM-DDTHH:MM:SS.000Z</updateTime>
        <message>Your Spot request is fulfilled.</message>
      </status>
      <launchSpecification>
        <imageId>ami-1a2b3c4d</imageId>
        <keyName>gsg-keypair</keyName>
        <groupSet>
          <item>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>webserv</groupName>
          </item>
        </groupSet>
        <instanceType>m1.small</instanceType>
        <monitoring>
          <enabled>>false</enabled>
        </monitoring>
        <ebsOptimized>>false</ebsOptimized>
      </launchSpecification>
      <instanceId>i-1a2b3c4d</instanceId>
      <createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
      <productDescription>Linux/UNIX</productDescription>
      <launchedAvailabilityZone>us-east-1a</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
```

## Find Running Spot Instances

You can use `DescribeSpotInstanceRequests` to find a running Spot Instance by examining the response. If the status of the Spot Instance is fulfilled, the `instanceId` will appear in the response and contain the identifier of the instance.

Alternatively, you can use [DescribeInstances](#) (p. 203) and use a filter to look for instances where `instanceLifecycle` contains `spot`. The following is an example request.

```
https://ec2.amazonaws.com/
?Action=DescribeInstances
&Filter.1.Name=instance-lifecycle
&Filter.1.Value.1=spot
&AUTHPARAMS
```

The following is an example response.

```
<DescribeInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>b1719f2a-5334-4479-b2f1-26926EXAMPLE</requestId>
  <reservationSet>
    <item>
      <reservationId>r-1a2b3c4d</reservationId>
      <ownerId>111122223333</ownerId>
      <groupSet>
        <item>
          <groupId>sg-1a2b3c4d</groupId>
          <groupName>Linux</groupName>
        </item>
      </groupSet>
      <instancesSet>
        <item>
          <instanceId>i-1a2b3c4d</instanceId>
          <imageId>ami-1a2b3c4d</imageId>
          <instanceState>
            <code>16</code>
            <name>running</name>
          </instanceState>
          <privateDnsName>private_DNS_name</privateDnsName>
        </item>
      </instancesSet>
    </item>
  </reservationSet>
</DescribeInstancesResponse>
```

```
<dnsName>DNS_name</dnsName>
<reason/>
<keyName>gsg-keypair</keyName>
<amiLaunchIndex>0</amiLaunchIndex>
<productCodes/>
<instanceType>t1.micro</instanceType>
<launchTime>YYYY-MM-DDTHH:MM:SS.000Z</launchTime>
<placement>
  <availabilityZone>us-east-1a</availabilityZone>
  <groupName/>
  <tenancy>default</tenancy>
</placement>
<kernelId>aki-1a2b3c4d</kernelId>
<monitoring>
  <state>disabled</state>
</monitoring>
<privateIpAddress>private_IP_address</privateIpAddress>
<ipAddress>IP_address</ipAddress>
<groupSet>
  <item>
    <groupId>sg-1a2b3c4d</groupId>
    <groupName>Linux</groupName>
  </item>
</groupSet>
<architecture>x86_64</architecture>
<rootDeviceType>ebs</rootDeviceType>
<rootDeviceName>/dev/sdal</rootDeviceName>
<blockDeviceMapping>
  <item>
    <deviceName>/dev/sdal</deviceName>
    <ebs>
      <volumeId>vol-1a2b3c4d</volumeId>
      <status>attached</status>
      <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
      <deleteOnTermination>>true</deleteOnTermination>
    </ebs>
  </item>
</blockDeviceMapping>
<i><instanceLifecycle>spot</instanceLifecycle>
<spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
</i>
<virtualizationType>paravirtual</virtualizationType>
<clientToken>client_token</clientToken>
<tagSet/>
<hypervisor>xen</hypervisor>
<networkInterfaceSet/>
<ebsOptimized>>false</ebsOptimized>
</item>
</instancesSet>
<requesterId>requester_ID</requesterId>
</item>
</reservationSet>
</DescribeInstancesResponse>"
```

## Related Actions

- [RequestSpotInstances](#) (p. 397)
- [CancelSpotInstanceRequests](#) (p. 49)

- [DescribeSpotPriceHistory](#) (p. 290)



# DescribeSpotPriceHistory

## Description

Describes the Spot Price history. Spot Instances are instances that Amazon EC2 starts on your behalf when the maximum price that you specify exceeds the current Spot Price. Amazon EC2 periodically sets the Spot Price based on available Spot Instance capacity and current Spot Instance requests. For more information about Spot Instances, see [Spot Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

When you use the `availability-zone` option, this command describes the price history for the specified Availability Zone with the most recent set of prices listed first. If you don't specify an Availability Zone, the command returns the prices across all Availability Zones, starting with the most recent set. However, if you use this command with versions of the API earlier than the 2011-05-15 version, this command returns the lowest price across the region for the given time period. The prices returned are listed in chronological order — from the oldest to the most recent.

## Request Parameters

### *StartTime*

The start date and time of the Spot Instance price history data.

Type: DateTime

Default: None

Required: No

### *EndTime*

The end date and time of the Spot Instance price history data.

Type: DateTime

Default: None

Required: No

### *InstanceType.n*

The instance type to return.

Type: String

Valid values: `t1.micro` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.xlarge` | `m3.2xlarge` | `c1.medium` | `c1.xlarge` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` | `cc1.4xlarge` | `cc2.8xlarge` | `cg1.4xlarge`. See [Available Instance Types](#) for more information.

Default: None

Required: No

### *ProductDescription.n*

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

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String  
Default: None  
Required: No

**AvailabilityZone**

Filters the results by availability zone.

Type: String  
Valid values: `us-east-1a`, etc.  
Default: None  
Required: No

**MaxResults**

The number of rows to return.

Type: Integer  
Default: None  
Required: No

**NextToken**

The next set of rows to return.

Type: String  
Valid values: A `NextToken` value returned by a previous call of the API.  
Default: None  
Required: No

## Supported Filters

**Note**

Our policy is to provide filters for all `ec2-describe` calls so you can limit the response to your specified criteria. Therefore, you can use filters to limit the response when describing Spot Price histories, even though you can use the options instead.

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

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

The following are the available filters.

**instance-type**

The type of instance (for example, `m1.small`).  
Type: String

**product-description**

The product description for the Spot Price.

Type: String  
Valid values: `Linux/UNIX | SUSE Linux | Windows | Linux/UNIX (Amazon VPC) | SUSE Linux (Amazon VPC) | Windows (Amazon VPC)`

**spot-price**

The Spot Price. The value must match exactly (or use wildcards; greater than or less than comparison is not supported).  
Type: String

**timestamp**

The timestamp of the Spot Price history (for example, 2010-08-16T05:06:11.000Z). You can use wildcards (\* and ?). Greater than or less than comparison is not supported.

Type: DateTime

**availability-zone**

The Availability Zone for which prices should be returned.

Type: String

## Response Elements

The following elements are returned in a `DescribeSpotPriceHistoryResponse` element.

**requestId**

The ID of the request.

Type: xsd:string

**spotPriceHistorySet**

A list of historical Spot Prices. Each price is wrapped in an `item` element.

Type: [SpotPriceHistorySetItemType](#) (p. 517)

**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/2013-02-01/">
```

```
<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 Actions

- [DescribeSpotInstanceRequests](#) (p. 282)
- [RequestSpotInstances](#) (p. 397)
- [CancelSpotInstanceRequests](#) (p. 49)

# DescribeSubnets

## Description

Describes one or more of your subnets.

## Request Parameters

### *SubnetId.n*

A subnet ID. You can specify more than one in the request.

Type: String

Default: Describes all your subnets

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

You can specify multiple filters; for example, specify subnets that are in a specific VPC and are in the `available` state. The response includes information for a subnet only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

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

The following are the available filters.

### **availability-zone**

The Availability Zone for the subnet.

Type: String

### **available-ip-address-count**

The number of IP addresses in the subnet that are available.

Type: String

### **cidr**

The CIDR block of the subnet. The CIDR block you specify must exactly match the subnet's CIDR block for information to be returned for the subnet.

Type: String

Constraints: Must contain the slash followed by one or two digits (for example, /28)

**defaultForAz**

Indicates whether this is the default subnet for the Availability Zone.

Type: Boolean

**state**

The state of the subnet.

Type: String

Valid values: pending | available

**subnet-id**

The ID of the subnet.

Type: String

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag `Purpose=X` OR `Purpose=Y`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**vpc-id**

The ID of the VPC for the subnet.

Type: String

## Response Elements

The following elements are returned in a `DescribeSubnetsResponse` element.

**requestId**

The ID of the request.

Type: xsd:string

**subnetSet**

A list of subnets. Each subnet is wrapped in an `item` element.

Type: [SubnetType](#) (p. 519)

## 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/2013-02-01/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <subnetSet>
    <item>
      <subnetId>subnet-9d4a7b6c</subnetId>
      <state>available</state>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <cidrBlock>10.0.1.0/24</cidrBlock>
      <availableIpAddressCount>251</availableIpAddressCount>
      <availabilityZone>us-east-1a</availabilityZone>
      <defaultForAz>false</defaultForAz>
      <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
      <tagSet/>
    </item>
    <item>
      <subnetId>subnet-6e7f829e</subnetId>
      <state>available</state>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <cidrBlock>10.0.0.0/24</cidrBlock>
      <availableIpAddressCount>251</availableIpAddressCount>
      <availabilityZone>us-east-1a</availabilityZone>
      <defaultForAz>false</defaultForAz>
      <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
      <tagSet/>
    </item>
  </subnetSet>
</DescribeSubnetsResponse>
```

### Example 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 Actions

- [CreateSubnet](#) (p. 106)
- [DeleteSubnet](#) (p. 150)



# DescribeTags

## Description

Describes one or more of the tags for your EC2 resources. For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters to limit the response when describing tags. For example, you can use a filter to get only the tags for a specific resource type. You can specify multiple values for a filter. The response includes information for a tag only if it matches at least one of the filter values that you specified.

You can specify multiple filters (for example, specify a specific resource type and tag values that contain the string `database`). The response includes information for a tag only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

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

The following are the available filters.

### **key**

The tag key.

Type: String

### **resource-id**

The resource ID.

Type: String

### **resource-type**

The resource type.

Type: String

Valid values: `customer-gateway | dhcp-options | image | instance | internet-gateway | network-acl | network-interface | reserved-instances | route-table | security-group | snapshot | spot-instances-request | subnet | volume | vpc | vpn-connection | vpn-gateway`

### **value**

The tag value.

Type: String

## Response Elements

The following elements are returned in a `DescribeTagsResponse` element.

### **requestId**

The ID of the request.

Type: `xsd:string`

### **tagSet**

A list of tags. Each tag is wrapped in an `item` element.

Type: [TagSetItemType](#) (p. 520)

## 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/2013-02-01/">
  <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>
  </tagSet>
</DescribeTagsResponse>
```

```
<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/2013-02-01/">
  <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/2013-02-01/">
  <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/2013-02-01/">
  <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/2013-02-01/">
  <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 Actions

- [CreateTags \(p. 108\)](#)
- [DeleteTags \(p. 152\)](#)

# DescribeVolumes

## Description

Describes one or more of your Amazon EBS volumes. For more information about Amazon EBS, see [Amazon Elastic Block Store](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### ***VolumeId.n***

One or more volume IDs.

Type: String

Default: Describes all volumes that you own, or only those otherwise specified.

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain volumes. For example, you can use a filter to specify that you're interested in volumes whose status is `available`. You can specify multiple values for a filter. The response includes information for a volume only if it matches at least one of the filter values that you specified.

You can specify multiple filters (for example, specify that the volume is `available`, and has a specific tag). The response includes information for a volume only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

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

The following are the available filters.

### **`attachment.attach-time`**

The time stamp when the attachment initiated.

Type: DateTime

### **`attachment.delete-on-termination`**

Whether the volume is deleted on instance termination.

Type: Boolean

### **`attachment.device`**

The device name that is exposed to the instance (for example, `/dev/sda1`).

Type: String

**attachment.instance-id**

The ID of the instance the volume is attached to.

Type: String

**attachment.status**

The attachment state.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

**availability-zone**

The Availability Zone in which the volume was created.

Type: String

**create-time**

The time stamp when the volume was created.

Type: DateTime

**size**

The size of the volume, in GiB (for example, 20).

Type: String

**snapshot-id**

The snapshot from which the volume was created.

Type: String

**status**

The status of the volume.

Type: String

Valid values: `creating` | `available` | `in-use` | `deleting` | `deleted` | `error`

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag `Purpose=X` OR `Purpose=Y`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**volume-id**

The volume ID.

Type: String

**volume-type**

The Amazon EBS volume type. If the volume is an `io1` volume, the response includes the IOPS as well.

Type: String

Valid values: standard | io1

## Response Elements

The following elements are returned in a `DescribeVolumesResponse` element.

### **requestId**

The ID of the request.

Type: `xsd:string`

### **volumeSet**

A list of volumes. Each volume is wrapped in an `item` element.

Type: [DescribeVolumesSetItemResponseType](#) (p. 462)

## 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeSet>
    <item>
      <volumeId>vol-1a2b3c4d</volumeId>
      <size>80</size>
      <snapshotId/>
      <availabilityZone>us-east-1a</availabilityZone>
      <status>in-use</status>
      <createTime>YYYY-MM-DDTHH:MM:SS.SSSZ</createTime>
      <attachmentSet>
        <item>
          <volumeId>vol-1a2b3c4d</volumeId>
          <instanceId>i-1a2b3c4d</instanceId>
          <device>/dev/sdh</device>
          <status>attached</status>
          <attachTime>YYYY-MM-DDTHH:MM:SS.SSSZ</attachTime>
          <deleteOnTermination>>false</deleteOnTermination>
        </item>
      </attachmentSet>
      <volumeType>standard</volumeType>
    </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 Actions

- [CreateVolume](#) (p. 110)
- [DeleteVolume](#) (p. 155)
- [AttachVolume](#) (p. 27)
- [DetachVolume](#) (p. 330)

# DescribeVolumeAttribute

## Description

Describes an attribute of a volume. You can specify only one attribute at a time.

Currently, volumes have two attributes, `autoEnableIO` and `productCodes`.

## Request Parameters

### *VolumeId*

The ID of the volume.

Type: String

Default: None

Required: Yes

### *Attribute*

The instance attribute.

Type: String

Default: None

Valid values: `autoEnableIO` | `productCodes`

Required: Yes

## Response Elements

The following elements are returned in a `DescribeVolumeAttributeResponse` element.

### **requestId**

The ID of the request.

Type: `xsd:string`

### **volumeId**

The ID of the volume.

Type: `xsd:string`

### **autoEnableIO**

The state of `autoEnableIO` attribute.

Type: `NullableAttributeBooleanValueType`

### **productCodes**

A list of product codes. Each product code is wrapped in an `item` element that contains a product code and a type.

Type: [ProductCodesSetItemType](#) (p. 503)

## Example

### Example Request

This example describes the `autoEnableIO` attribute of the volume `vol-12345678`.

```
https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=autoEnableIO
&VolumeId=vol-12345678
&AUTHPARAMS
```

## Example Response

```
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>5jdkf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeId>vol-12345678</volumeId>
  <autoEnableIO>
    <value>>false</value>
  </autoEnableIO>
</DescribeVolumeAttributeResponse>
```

## Example Request

This example describes the `productCodes` attribute of the volume `vol-12345678`.

```
https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=productCodes
&VolumeId=vol-12345678
&AUTHPARAMS
```

## Example Response

```
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>5jdkf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeId>vol-12345678</volumeId>
  <productCodes>
    <item>
      <productCode>alb2c3d4e5f6g7h8i9j10k11</productCode>
      <type>marketplace</type>
    </item>
  </productCodes>
</DescribeVolumeAttributeResponse>
```

## Related Actions

- [DescribeVolumeStatus](#) (p. 309)
- [ModifyVolumeAttribute](#) (p. 367)

# DescribeVolumeStatus

## Description

Describes the status of one or more volumes. Volume status provides the result of the checks performed on your volumes to determine events that can impair the performance of your volumes. The performance of a volume can be affected if an issue occurs on the volume's underlying host. If the volume's underlying host experiences a power outage or system issue, once the system is restored there could be data inconsistencies on the volume. Volume events notify you if this occurs. Volume actions notify you if any action needs to be taken in response to the event.

The `DescribeVolumeStatus` operation provides the following information about the specified volumes:

**Status:** Reflects the current status of the volume. The possible values are `ok`, `impaired`, `warning`, or `insufficient-data`. If all checks pass, the overall status of the volume is `ok`. If the check fails, the overall status is `impaired`. If the status is `insufficient-data`, then the checks may still be taking place on your volume at the time. We recommend you retry the request. For more information on volume status, see [Monitoring the Status of Your Volumes](#).

**Events:** Reflect the cause of a volume status and may require you to take an action. For example, if your volume returns an `impaired` status, then the volume event might be `potential-data-inconsistency`. This means that your volume has been affected by an issue with the underlying host, has all I/O operations disabled, and may have inconsistent data.

**Actions:** Reflect the actions you may have to take in response to an event. For example, if the status of the volume is `impaired` and the volume event shows `potential-data-inconsistency`, then the action will show `enable-volume-io`. This means that you may want to enable the I/O operations for the volume by calling the [EnableVolumeIO](#) (p. 342) action and then check the volume for data consistency.

### Note

Volume status is based on the volume status checks, and does not reflect the volume state. Therefore, volume status does not indicate volumes in the `error` state (for example, when a volume is incapable of accepting I/O.)

## Request Parameters

### *VolumeId.n*

One or more volume IDs.

Type: String

Default: Describes all volumes that you own, or only those otherwise specified.

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

### *MaxResults*

The maximum number of paginated volume items per response.

Type: Integer

Default: None

Required: No

***NextToken***

A string specifying the next paginated set of results to return using the pagination token returned by a previous call to this API.

Type: String

Default: None

Required: No

## Supported Filters

You can specify filters so that the response includes information for only certain volumes. For example, you can use a filter to specify that you're interested in volumes that have `impaired` status. You can specify multiple values for a filter. The response includes information for a volume only if it matches at least one of the filter values that you specified.

You can specify multiple filters; for example, specify volumes that are in a specific Availability Zone and have the status `impaired`. The response includes information for a volume only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

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

The following are the available filters.

**`availability-zone`**

The Availability Zone of the instance.

Type: String

**`volume-status.status`**

The status of the volume.

Type: String

Valid values: `ok` | `impaired` | `warning` | `insufficient-data`

**`volume-status.details-name`**

The cause for the `volume-status.status`.

Type: String

Valid values: `io-enabled` | `io-performance`

**`volume-status.details-status`**

The status of the `volume-status.details-name`.

Type: String

Valid values for `io-enabled`: `passed` | `failed`

Valid values for `io-performance`: `normal` | `degraded` | `severely-degraded` | `stalled`

**`event.description`**

A description of the event.

Type: String

**`event.not-after`**

The latest end time for the event.

Type: DateTime

**`event.not-before`**

The earliest start time for the event.

Type: DateTime

**event.event-id**

The event ID.

Type: String

**event.event-type**

The event type.

Type: String

Valid values for io-enabled: potential-data-inconsistency

Valid values for io-performance: io-performance:degraded |

io-performance:severely-degraded | io-performance:stalled

**action.code**

The action code for the event, for example, enable-volume-io

Type: String

**action.event-id**

The event ID associated with the action.

Type: String

**action.description**

A description of the action.

Type: String

## Response Elements

The following elements are returned in a `DescribeVolumeStatusResponse` element.

**requestId**

The ID of the request.

Type: xsd:string

**volumeStatusSet**

A list of volumes. Each volume is wrapped in an `item` element.

Type: [VolumeStatusItemType](#) (p. 522)

**nextToken**

A string specifying the next paginated set of results to return.

Type: xsd:string

## Examples

### Example Request

This example describes the status of all the volumes associated with your account.

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

### Example Response

```
<DescribeVolumeStatus xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeStatusSet>
    <item>
```

```
<VolumeId>vol-11111111</volumeId>
<availabilityZone>us-east-1d</availabilityZone>
<volumeStatus>
  <status>ok</status>
  <details>
    <item>
      <name>io-enabled</name>
      <status>passed</status>
    </item>
  </details>
</volumeStatus>
</item>
<item>
  <volumeId>vol-22222222</volumeId>
  <availabilityZone>us-east-1d</availabilityZone>
  <volumeStatus>
    <status>impaired</status>
    <details>
      <item>
        <name>io-enabled</name>
        <status>failed</status>
      </item>
    </details>
  </volumeStatus>
  <eventsSet>
    <item>
      <eventId>evol-61a54008</eventId>
      <eventType>potential-data-inconsistency</eventType>
      <description>THIS IS AN EXAMPLE</description>
      <notBefore>2011-12-01T14:00:00.000Z</notBefore>
      <notAfter>2011-12-01T15:00:00.000Z</notAfter>
    </item>
  </eventsSet>
  <actionsSet>
    <item>
      <code>enable-volume-io</code>
      <eventId> evol-61a54008</eventId>
      <eventType>potential-data-inconsistency</eventType>
      <description>THIS IS AN EXAMPLE</description>
    </item>
  </actionsSet>
</item>
</volumeStatusSet>
</DescribeVolumesStatusResponse>
```

## Example Request

This example describes all the volumes in the `us-east-1d` Availability Zone with failed `io-enabled` status.

```
https://ec2.amazonaws.com/?Action=DescribeVolumeStatus
&Filter.1.Name=availability-zone
&Filter.1.Value.1=us-east-1d
&Filter.2.Name=volume-status.details-name
&Filter.2.Value.1=io-enabled
&Filter.3.Name=volume-status.details-status
```

```
&Filter.3.Value.1=failed  
&AUTHPARAMS
```

## Related Actions

- [ModifyVolumeAttribute](#) (p. 367)
- [DescribeVolumeAttribute](#) (p. 307)
- [EnableVolumeIO](#) (p. 342)



# DescribeVpcAttribute

## Description

Describes the specify attribute of the specified VPC.

## Request Parameters

### *VpcId*

The ID of the VPC.

Type: String

Required: Yes

### *Attribute*

The VPC attribute.

Type: String

Default: None

Valid values: `enableDnsSupport` | `enableDnsHostnames`

Required: Yes

## Response Elements

The following elements are returned in a `DescribeVpcAttributeResponse` structure.

### **requestId**

The ID of the request.

Type: `xsd:string`

### **enableDnsSupport**

Specifies whether the Amazon DNS server provided by is enabled for the VPC.

Type: `xsd:boolean`

### **enableDnsHostnames**

Specifies whether DNS hostnames are provided for the instances launched in this VPC.

Type: `xsd:boolean`

## Examples

### Example Request

This request describes the `enableDnsSupport` attribute of the VPC with the ID `vpc-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=DescribeVpcAttribute
&VpcId=vpc-1a2b3c4d
&Attribute=enableDnsSupport
&AUTHPARAMS
```

### Example Response

This example response indicates that DNS resolution is supported.

```
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">

  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcId>vpc-1a2b3c4d</vpcId>
  <enableDnsSupport>
    <value>true</value>
  </enableDnsSupport>
</DescribeVpcAttributeResponse>
```

## Example Request

This request describes the `enableDnsHostnames` attribute of the VPC with the ID `vpc-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=DescribeVpcAttribute
&VpcId=vpc-1a2b3c4d
&Attribute=enableDnsHostnames
&AUTHPARAMS
```

## Example Response

This example response indicates that DNS hostnames are supported.

```
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">

  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcId>vpc-1a2b3c4d</vpcId>
  <enableDnsHostnames>
    <value>true</value>
  </enableDnsHostnames>
</DescribeVpcAttributeResponse>
```

## Related Actions

- [CreateVpc](#) (p. 113)
- [DeleteVpc](#) (p. 157)
- [ModifyVpcAttribute](#) (p. 369)

# DescribeVpcs

## Description

Describes one or more of your VPCs.

## Request Parameters

### *vpcId.n*

One or more VPC IDs.

Type: String

Default: Describes your VPCs, or only those otherwise specified

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

You can specify multiple filters; for example, specify VPCs that use one of several sets of DHCP options and are in the `available` state. The results include information for a VPC only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

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

The following are the available filters.

### **cidr**

The CIDR block of the VPC. The CIDR block you specify must exactly match the VPC's CIDR block for information to be returned for the VPC.

Type: String

Constraints: Must contain the slash followed by one or two digits (for example, `/28`)

### **dhcp-options-id**

The ID of a set of DHCP options.

Type: String

### **isDefault**

Indicates whether the VPC is the default VPC.

Type: Boolean

**state**

The state of the VPC.

Type: String

Valid values: pending | available

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter "tag-key=Purpose" and the filter "tag-value=X", you get any resources assigned both the tag key Purpose (regardless of what the tag's value is), and the tag value X (regardless of what the tag's key is). If you want to list only resources where Purpose is X, see the `tag:key` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag Purpose=X, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag Purpose=X OR Purpose=Y, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**vpc-id**

The ID of the VPC.

Type: String

## Response Elements

The following elements are returned in a `DescribeVpcsResponse` element.

**requestId**

The ID of the request.

Type: xsd:string

**vpcSet**

A list of VPCs. Each VPC is wrapped in an `item` element.

Type: [VpcType](#) (p. 525)

## 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/2013-02-01/">
  <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>
      <instanceTenancy>default</instanceTenancy>
      <isDefault>>false</isDefault>
      <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 Actions

- [CreateVpc](#) (p. 113)
- [DeleteVpc](#) (p. 157)
- [CreateDhcpOptions](#) (p. 60)
- [AssociateDhcpOptions](#) (p. 19)

# DescribeVpnConnections

## Description

Describes one or more of your VPN connections.

### Important

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

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

### Note

You can get the customer gateway configuration information in a friendly format by using the **ec2-describe-vpn-connections** command instead. For more information, see [ec2-describe-vpn-connections](#).

## Request Parameters

### *VpnConnectionId.n*

A VPN connection ID. You can specify more than one in the request.

Type: String

Default: Describes your VPN connections

Required: No

### *Filter.n.Name*

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### *Filter.n.Value.m*

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

You can specify multiple filters; for example, specify VPN connections that are associated with a specific virtual private gateway, and the gateway is in the `pending` or `available` state. The response includes information for a VPN connection only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

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

The following are the available filters.

**customer-gateway-configuration**

The configuration information for the customer gateway.

Type: String

**customer-gateway-id**

The ID of a customer gateway associated with the VPN connection.

Type: String

**state**

The state of the VPN connection.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

**option.static-routes-only**

Indicates whether the connection has static routes only. Used for devices that do not support Border Gateway Protocol (BGP).

Type: Boolean

**route.destination-cidr-block**

The destination CIDR block. This corresponds to the subnet used in a customer data center.

Type: String

**bgp-asn**

The BGP Autonomous System Number (ASN) associated with a BGP device.

Type: Integer

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `"tag-key=Purpose"` and the filter `"tag-value=X"`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:key**

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag `Purpose=X` OR `Purpose=Y`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**type**

The type of VPN connection. Currently the only supported type is `ipsec.1`.

Type: String

Valid values: `ipsec.1`

**vpn-connection-id**

The ID of the VPN connection.

Type: String

**vpn-gateway-id**

The ID of a virtual private gateway associated with the VPN connection.

Type: String

## Response Elements

The following elements are returned in an `DescribeVpnConnectionsResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**vpnConnectionSet**

A list of VPN connections. Each VPN connection is wrapped in an `item` element.

Type: [VpnConnectionType](#) (p. 526)

## Examples

### Example Request

This example describes 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/2013-02-01/">
  <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 describes any VPN connection you own that is associated with the customer gateway with ID `cgw-b4dc3961`, and whose state is either pending or available.



```
https://ec2.amazonaws.com/?Action=DescribeVpnConnections
&Filter.1.Name=customer-gateway-id
&Filter.1.Value.1=cgw-b4dc3961
&Filter.2.Name=state
&Filter.2.Value.1=pending
&Filter.2.Value.2=available
&AUTHPARAMS
```

## Related Actions

- [CreateVpnConnection](#) (p. 115)
- [DeleteVpnConnection](#) (p. 159)

# DescribeVpnGateways

## Description

Describes one or more of your virtual private gateways.

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

## Request Parameters

### ***VpnGatewayId.n***

A virtual private gateway ID. You can specify more than one in the request.

Type: String

Default: Describes your virtual private gateways.

Required: No

### ***Filter.n.Name***

The name of a filter. See the Supported Filters section for a list of supported filter names.

Type: String

Default: None

Required: No

### ***Filter.n.Value.m***

A value for the filter. See the Supported Filters section for a list of supported values for each filter.

Type: String

Default: None

Required: No

## Supported Filters

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

You can specify multiple filters; for example, specify virtual private gateways that are in a specific Availability Zone and are in the `pending` or `available` state. The response includes information for a virtual private gateway only if it matches all the filters that you specified. If there's no match, no special message is returned, the response is simply empty.

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

The following are the available filters.

### **`attachment.state`**

The current state of the attachment between the gateway and the VPC.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

### **`attachment.vpc-id`**

The ID of an attached VPC.

Type: String

**availability-zone**

The Availability Zone for the virtual private gateway.

Type: String

**state**

The state of the virtual private gateway.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

**tag-key**

The key of a tag assigned to the resource. This filter is independent of the `tag-value` filter. For example, if you use both the filter `tag-key=Purpose` and the filter `tag-value=X`, you get any resources assigned both the tag key `Purpose` (regardless of what the tag's value is), and the tag value `X` (regardless of what the tag's key is). If you want to list only resources where `Purpose` is `X`, see the `tag:key` filter.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**tag-value**

The value of a tag assigned to the resource. This filter is independent of the `tag-key` filter.

Type: String

**tag:*key***

Filters the response based on a specific tag/value combination.

Example: To list just the resources that have been assigned tag `Purpose=X`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

Example: To list just resources that have been assigned tag `Purpose=X` OR `Purpose=Y`, specify:

```
Filter.1.Name=tag:Purpose
```

```
Filter.1.Value.1=X
```

```
Filter.1.Value.2=Y
```

**type**

The type of virtual private gateway. Currently the only supported type is `ipsec.1`.

Type: String

Valid values: `ipsec.1`

**vpn-gateway-id**

The ID of the virtual private gateway.

Type: String

## Response Elements

The following elements are returned in a `DescribeVpnGatewaysResponse` element.

**requestId**

The ID of the request.

Type: `xsd:string`

**vpnGatewaySet**

A list of virtual private gateways. Each virtual private gateway is wrapped in an `item` element.

Type: [VpnGatewayType](#) (p. 527)

## 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/2013-02-01/">
  <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 Actions

- [CreateVpnGateway](#) (p. 124)
- [DeleteVpnGateway](#) (p. 163)

# DetachInternetGateway

## Description

Detaches an Internet gateway from a VPC, disabling connectivity between the Internet and the VPC. The VPC must not contain any running instances with Elastic IP addresses.

## Request Parameters

### *InternetGatewayId*

The ID of the Internet gateway.

Type: String

Default: None

Required: Yes

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DetachInternetGatewayResponse` element.

### `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

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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<return>true</return>  
</DetachInternetGatewayResponse>
```

## Related Actions

- [CreateInternetGateway](#) (p. 69)
- [DeleteInternetGateway](#) (p. 130)
- [DetachInternetGateway](#) (p. 23)
- [DescribeInternetGateways](#) (p. 225)

# DetachNetworkInterface

## Description

Detaches a network interface from an instance.

## Request Parameters

### *AttachmentId*

The ID of the attachment.

Type: String

Default: None

Required: Yes

### *Force*

Set to `true` to force a detachment.

Type: Boolean

Default: None

Required: No

## Response Elements

The following elements are returned in a `DetachNetworkInterfaceResponse` element.

### **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 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/2013-02-01/">
  <requestId>ce540707-0635-46bc-97da-33a8a362a0e8</requestId>
  <return>true</return>
</DetachNetworkInterfaceResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 25)
- [CreateNetworkInterface](#) (p. 78)
- [DeleteNetworkInterface](#) (p. 137)
- [DescribeNetworkInterfaceAttribute](#) (p. 235)
- [DescribeNetworkInterfaces](#) (p. 237)
- [ModifyNetworkInterfaceAttribute](#) (p. 363)
- [ResetNetworkInterfaceAttribute](#) (p. 409)



# DetachVolume

## Description

Detaches an Amazon EBS volume from an instance. Make sure to unmount any file systems on the device within your operating system before detaching the volume. Failure to do so will result in volume being stuck in "busy" state while detaching. For more information about Amazon EBS, see [Using Amazon Elastic Block Store](#) in the *Amazon Elastic Compute Cloud User Guide*.

### Note

If an Amazon EBS volume is the root device of an instance, it cannot be detached while the instance is in the "running" state. To detach the root volume, stop the instance first. If the root volume is detached from an instance with an AWS Marketplace product code, then the AWS Marketplace product codes from that volume are no longer associated with the instance.

## Request Parameters

### *VolumeId*

The ID of the volume.

Type: String

Default: None

Required: Yes

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: No

### *Device*

The device name.

Type: String

Default: None

Required: No

### *Force*

Forces detachment if the previous detachment attempt did not occur cleanly (logging into an instance, unmounting the volume, and detaching normally). This option can lead to data loss or a corrupted file system. Use this option only as a last resort to detach a volume from a failed instance. The instance won't have an opportunity to flush file system caches or file system metadata. If you use this option, you must perform file system check and repair procedures.

Type: Boolean

Default: None

Required: No

## Response Elements

The following elements are returned in a `DetachVolumeResponse` element.

### `requestId`

The ID of the request.

Type: xsd:string

**volumeId**  
The ID of the volume.  
Type: xsd:string

**instanceId**  
The ID of the instance.  
Type: xsd:string

**device**  
The device name exposed to the instance.  
Type: xsd:string

**status**  
The attachment state.  
Type: xsd:string  
Valid values: attaching | attached | detaching | detached

**attachTime**  
The time stamp when the attachment initiated.  
Type: xsd:dateTime

## Examples

### Example Request

This example detaches volume `vol-1a2b3c4d`.

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

### Example Response

```
<DetachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1a2b3c4d</volumeId>
  <instanceId>i-1a2b3c4d</instanceId>
  <device>/dev/sdh</device>
  <status>detaching</status>
  <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</DetachVolumeResponse>
```

## Related Actions

- [CreateVolume](#) (p. 110)
- [DeleteVolume](#) (p. 155)
- [DescribeVolumes](#) (p. 303)
- [AttachVolume](#) (p. 27)

# DetachVpnGateway

## Description

Detaches a virtual private gateway from a VPC. You do this if you're planning to turn off the VPC and not use it anymore. You can confirm a virtual private gateway has been completely detached from a VPC by describing the virtual private gateway (any attachments to the virtual private gateway are also described).

You must wait for the attachment's state to switch to `detached` before you can delete the VPC or attach a different VPC to the virtual private gateway.

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

## Request Parameters

### *VpnGatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

### *VpcId*

The ID of the VPC.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DetachVpnGatewayResponse` element.

### `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 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/2013-02-01/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <return>true</return>  
</DetachVpnGatewayResponse>
```

## Related Actions

- [AttachVpnGateway](#) (p. 29)
- [DescribeVpnGateways](#) (p. 323)

# DisableVgwRoutePropagation

## Description

Disables a virtual private gateway (VGW) from propagating routes to the routing tables of a VPC.

## Request Parameters

### *RouteTableId*

The ID of the routing table.

Type: String

Default: None

Required: Yes

### *GatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DisableVgwRoutePropagationResponseType` element.

### **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 disables the virtual private gateway `vgw-d8e09e8a` from automatically propagating routes to the routing table with ID `rtb-c98a35a0`.

```
https://ec2.amazonaws.com/?Action=DisableVgwRoutePropagationResponse
&RouteTableID=rtb-c98a35a0
&GatewayId= vgw-d8e09e8a
&AUTHPARAMS
```

### Example Response

```
<DisableVgwRoutePropagationResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">>
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
```

```
<return>true</return>  
</DisableVgwRoutePropagationResponse>
```

## Related Actions

- [DisableVgwRoutePropagation](#) (p. 334)

# DisassociateAddress

## Description

Disassociates an Elastic IP address from the instance or network interface it's associated with.

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

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

## Request Parameters

### *PublicIp*

[EC2-Classic] The Elastic IP address.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-Classic

### *AssociationId*

[EC2-VPC] The association ID corresponding to the Elastic IP address.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-VPC

## Response Elements

The following elements are returned in a `DisassociateAddressResponse` element.

### **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 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 Elastic IP address with association ID eipassoc-aa7486c3 from the instance in a VPC to which it is assigned.

```
https://ec2.amazonaws.com/?Action=DisassociateAddress
&AssociationID=eipassoc-aa7486c3
&AUTHPARAMS
```

## Example Response

```
<DisassociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DisassociateAddressResponse>
```

## Related Actions

- [AllocateAddress](#) (p. 12)
- [DescribeAddresses](#) (p. 169)
- [ReleaseAddress](#) (p. 383)
- [AssociateAddress](#) (p. 16)



# DisassociateRouteTable

## Description

Disassociates a subnet from a route table.

After you perform this action, the subnet no longer uses the routes in the route table. Instead, it uses the routes in the VPC's main route table. For more information about route tables, see [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### *AssociationId*

The association ID representing the current association between the route table and subnet.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `DisassociateRouteTableResponse` element.

### `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 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DisassociateRouteTableResponse>
```

## Related Actions

- [CreateRouteTable](#) (p. 97)
- [AssociateRouteTable](#) (p. 21)
- [DeleteRouteTable](#) (p. 143)
- [DescribeRouteTables](#) (p. 266)
- [ReplaceRouteTableAssociation](#) (p. 392)

# EnableVgwRoutePropagation

## Description

Enables a virtual private gateway (VGW) to propagate routes to the routing tables of a VPC.

## Request Parameters

### *RouteTableId*

The ID of the routing table.

Type: String

Default: None

Required: Yes

### *GatewayId*

The ID of the virtual private gateway.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `EnableVgwRoutePropagationResponseType` element.

### **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 enables the virtual private gateway `vgw-d8e09e8a` to automatically propagate routes to the routing table with ID `rtb-c98a35a0`.

```
https://ec2.amazonaws.com/?Action=EnableVgwRoutePropagation
&RouteTableID=rtb-c98a35a0
&GatewayId= vgw-d8e09e8a
&AUTHPARAMS
```

### Example Response

```
<EnableVgwRoutePropagation xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">>
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
```

```
<return>true</return>  
</EnableVgwRoutePropagation>
```

## Related Actions

- [DisableVgwRoutePropagation](#) (p. 334)

# EnableVolumeIO

## Description

Enables I/O operations for a volume that had I/O operations disabled because the data on the volume was potentially inconsistent.

## Request Parameters

### *VolumeId*

The volume ID.  
Type: String  
Default: None  
Required: Yes

## Response Elements

The following elements are returned in an `EnableVolumeIOResponse` element.

### `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 enables the I/O operations of the volume `vol-88888888`.

```
https://ec2.amazonaws.com/?Action=EnableVolumeIO
&VolumeId= vol-88888888
&AUTHPARAMS
```

### Example Response

```
<EnableVolumeIOResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</EnableVolumeIOResponse>
```

## Related Actions

- [DescribeVolumeStatus](#) (p. 309)
- [ModifyVolumeAttribute](#) (p. 367)

- [DescribeVolumeAttribute](#) (p. 307)

# 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

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `GetConsoleOutputResponse` element.

### **requestId**

The ID of the request.

Type: xsd:string

### **instanceId**

The instance ID.

Type: xsd:string

### **timestamp**

The time the output was last updated.

Type: xsd:dateTime

### **output**

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/2013-02-01/">
  <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
bHQgMSB6b25lbG1zdHMKS2VybVVsIGNvbW1hbmQgbGluZTogcm9vdD0vZGV2L3NkYTEgcm8gNApF
bmFibGluZyBmYXN0IEZQVSBzYXZlIGFuZCBzZXN0b3JlLi4uIGRvbmUuCG==</output>
</GetConsoleOutputResponse>
```

## Related Actions

- [RunInstances](#) (p. 419)



# 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

### *InstanceId*

A Windows instance ID.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `GetPasswordDataResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instanceId`

The ID of the instance.

Type: `xsd:string`

### `timestamp`

The time the data was last updated.

Type: `xsd:dateTime`

### `passwordData`

The password of the instance.

Type: `xsd:string`

## 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/2013-02-01/">
  <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 Actions

- [RunInstances](#) (p. 419)

# ImportInstance

## Description

Creates a new import instance task using metadata from the specified disk image. After importing the image, you then upload it using the `ec2-upload-disk-image` command in the EC2 command line tools. For more information, see [Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### *Description*

A description of the instance being imported.

Type: String

Default: None

Required: No

### *LaunchSpecification.Architecture*

The architecture of the instance.

Type: String

Default: None

Valid values: i386 | x86\_64

Required: Yes

### *LaunchSpecification.GroupName.n*

One or more security group names.

Type: String

Default: None

Required: No

### *LaunchSpecification.UserData*

User data to be made available to the instance.

Type: String

Default: None

Required: No

### *LaunchSpecification.InstanceType*

The instance type. See [Available Instance Types](#) for more information.

Type: String

Default: None

Required: Yes

### *LaunchSpecification.Placement.AvailabilityZone*

The Availability Zone to launch the instance into.

Type: String

Default: We choose a zone for you

Required: No

### *LaunchSpecification.Monitoring.Enabled*

Specifies whether to enable detailed monitoring for the instance.

Type: Boolean

Default: false

Required: No

***LaunchSpecification.SubnetId***

[EC2-VPC] The ID of the subnet to launch the instance into.

Type: String

Default: None

Required: No

***LaunchSpecification.InstanceInitiatedShutdownBehavior***

Specifies whether the instance stops or terminates on instance-initiated shutdown.

Type: String

Valid values: stop | terminate

Default: stop

Required: No

***LaunchSpecification.PrivateIpAddress***

[EC2-VPC] You can optionally use this parameter to assign the instance a specific available IP address from the IP address range of the subnet.

Type: String

Default: We selects an IP address from the IP address range of subnet for the instance

Required: No

***DiskImage.n.Image.Format***

The file format of the disk image.

Type: String

Default: None

Valid values: VMDK | RAW | VHD

Required: Yes

***DiskImage.n.Image.Bytes***

The number of bytes in the disk image.

Type: Long

Default: None

Required: Yes

***DiskImage.n.Image.ImportManifestUrl***

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 [Signing and Authenticating REST Requests](#) topic in the *Amazon Simple Storage Service Developer Guide*.

Type: String

Default: None

Required: Yes

***DiskImage.n.Image.Description***

An optional description of the disk image.

Type: String

Default: None

Required: No

***DiskImage.n.Volume.Size***

The size, in GB (2<sup>30</sup> bytes), of the Amazon EBS volume that will hold the converted image.

Required: Yes

***Platform***

The instance operating system.

Type: String

Default: None

Valid value: windows

Required: No

## Response Elements

The following elements are returned in an `ImportInstanceResponse` element.

### `conversionTask`

Information about the import instance task.

Type: [ConversionTaskType](#) (p. 450)

## Examples

### Example Request

This example creates an import instance task that migrates a Windows Server 2008 SP2 (32-bit) VM into the AWS us-east-1 region.

```
https://ec2.amazonaws.com/?Action=ImportInstance
&LaunchSpecification.Architecture=x86_64
&LaunchSpecification.InstanceType=m1.xlarge
&DiskImage.1.Image.Format=VMDK
&DiskImage.1.Image.Bytes=1179593728
&DiskImage.1.Image.ImportManifestUrl=https://s3.amazonaws.com/myawsbucket/
a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.
vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signa
ture=5snej01TlTtL0uR7KExtEXAMPLE%3D
&DiskImage.1.Volume.Size=12
&Platform=Windows
&AUTHPARAMS
```

### Example Response

```
<ImportInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <conversionTask>
    <conversionTaskId>import-i-ffvko9js</conversionTaskId>
    <expirationTime>2010-12-22T12:01Z</expirationTime>
    <importInstance>
      <volumes>
        <item>
          <bytesConverted>0</bytesConverted>
          <availabilityZone>us-east-1a</availabilityZone>
          <image>
            <format>VMDK</format>
            <size>1179593728</size>
            <importManifestUrl>
              https://s3.amazonaws.com/myawsbucket/a3a5e1b6-590d-43cc-97c1-
15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccess
KeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snej01TlTtL0uR7KEx
tEXAMPLE%3D
            </importManifestUrl>
          </image>
          <description/>
        </item>
      </volumes>
    </importInstance>
  </conversionTask>
</ImportInstanceResponse>
```

```
        <volume>
          <size>12</size>
          <id>vol-1a2b3c4d</id>
        </volume>
        <status>active</status>
        <statusMessage/>
      </item>
    </volumes>
    <instanceId>i-12655a7f</instanceId>
    <description/>
  </importInstance>
</conversionTask>
</ImportInstanceResponse>
```

## Related Actions

- [ImportVolume](#) (p. 354)
- [DescribeConversionTasks](#) (p. 179)
- [CancelConversionTask](#) (p. 43)

# 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.

Note that you can have up to five thousand key pairs per region.

## Request Parameters

### ***KeyName***

A unique name for the key pair.

Type: String

Default: None

Required: Yes

### ***PublicKeyMaterial***

The public key. You must base64 encode the public key material before sending it to AWS.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `ImportKeyPairResponse` element.

### **`requestId`**

The ID of the request.

Type: `xsd:string`

### **`keyName`**

The key pair name you provided.

Type: `xsd:string`

### **`keyFingerprint`**

The MD5 public key fingerprint as specified in section 4 of [RFC4716](#).





# ImportVolume

## Description

Creates a new import volume task using metadata from the specified disk image. After importing the image, you then upload it using the `ec2-upload-disk-image` command in the EC2 command line tools. For more information, see [Using the Command Line Tools to Import Your Virtual Machine to Amazon EC2](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### ***AvailabilityZone***

The Availability Zone for the resulting Amazon EBS volume.

Type: String

Default: None

Required: Yes

### ***Image.Format***

The file format of the disk image.

Type: String

Default: None

Valid values: VMDK | RAW | VHD

Required: Yes

### ***Image.Bytes***

The number of bytes in the disk image.

Type: Long

Default: None

Required: Yes

### ***Image.ImportManifestUrl***

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 [Signing and Authenticating REST Requests](#) topic in the *Amazon Simple Storage Service Developer Guide*.

Type: String

Default: None

Required: Yes

### ***Description***

An optional description of the volume being imported.

Type: String

Default: None

Required: No

### ***Volume.Size***

The size, in GB (2<sup>30</sup> bytes), of an Amazon EBS volume to hold the converted image.

Type: Integer

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `ImportVolumeResponse` element.

### **conversionTask**

Information about the import volume task.

Type: [ConversionTaskType](#) (p. 450)

## 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/myawsbucket/a3a5e1b6-590d-
43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmani
fest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signa
ture=5snej01TlTtL0uR7KExtEXAMPLE%3D
&VolumeSize=8
&AUTHPARAMS>
```

### Example Response

```
<ImportVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <conversionTask>
    <conversionTaskId>import-i-fh95npoc</conversionTaskId>
    <expirationTime>2010-12-22T12:01Z</expirationTime>
    <importVolume>
      <bytesConverted>0</bytesConverted>
      <availabilityZone>us-east-1c</availabilityZone>
      <description/>
      <image>
        <format>VMDK</format>
        <size>128696320</size>
        <importManifestUrl>
          https://s3.amazonaws.com/myawsbucket/a3a5e1b6-590d-43cc-97c1-
          15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccess
          KeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snej01TlTtL0uR7KEx
          tEXAMPLE%3D
        </importManifestUrl>
        <checksum>ccb1b0536a4a70e86016b85229b5c6b10b14a4eb</checksum>
      </image>
      <volume>
        <size>8</size>
        <id>vol-34d8a2ff</id>
      </volume>
    </importVolume>
    <state>active</state>
```

```
<statusMessage/>  
</conversionTask>  
</ImportVolumeResponse>
```

## Related Actions

- [ImportInstance](#) (p. 348)
- [DescribeConversionTasks](#) (p. 179)
- [CancelConversionTask](#) (p. 43)

# ModifyImageAttribute

## Description

Modifies an attribute of an AMI.

### Note

AWS Marketplace product codes cannot be modified. Images with an AWS Marketplace product code cannot be made public.

## Request Parameters

### *ImageId*

The AMI ID.

Type: String

Default: None

Required: Yes

### *LaunchPermission.Add.n.UserId*

Adds the specified AWS account ID to the AMI's list of launch permissions.

Type: String

Default: None

Required: No

### *LaunchPermission.Remove.n.UserId*

Removes the specified AWS account ID from the AMI's list of launch permissions.

Type: String

Default: None

Required: No

### *LaunchPermission.Add.n.Group*

Adds the specified group to the image's list of launch permissions. The only valid value is `all`.

Type: String

Valid value: `all` (for all EC2 users)

Default: None

Required: No

### *LaunchPermission.Remove.n.Group*

Removes the specified group from the image's list of launch permissions. The only valid value is `all`.

Type: String

Valid value: `all` (for all EC2 users)

Default: None

Required: No

### *ProductCode.n*

Adds the specified product code to the specified instance store-backed AMI. After you add a product code to an AMI, it can't be removed.

Type: String

Default: None

Required: No

### *Description.Value*

Changes the AMI's description to the specified value.

Type: String

Default: None

Required: No

## Response Elements

The following elements are returned in a `ModifyImageAttributeResponse` element.

### **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 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.1=774F4FF8  
&AUTHPARAMS
```

## Example Request

This example changes the description of the AMI to New\_Description

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute  
&ImageId=ami-61a54008  
&Description.Value=New_Description  
&AUTHPARAMS
```

## Example Response

```
<ModifyImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">  
  
  <return>true</return>  
</ModifyImageAttributeResponse>
```

## Related Actions

- [ResetImageAttribute](#) (p. 405)
- [DescribeImageAttribute](#) (p. 190)

# ModifyInstanceAttribute

## Description

Modifies the specified attribute of the specified instance. You can specify only one attribute at a time.

### Note

To modify some attributes, the instance must be stopped. For more information, see [Modifying Attributes of a Stopped Instance](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

### *InstanceType.Value*

Changes the instance type to the specified value. See [Available Instance Types](#) for more information. An `InvalidInstanceAttributeValue` error will be returned if the instance type is not valid.

Type: String

Default: None

Required: No

### *Kernel.Value*

Changes the instance's kernel to the specified value.

Type: String

Default: None

Required: No

### *Ramdisk.Value*

Changes the instance's RAM disk to the specified value.

Type: String

Default: None

Required: No

### *UserData.Value*

Changes the instance's user data to the specified value.

Type: String

Default: None

Required: No

### *DisableApiTermination.Value*

Changes the instance's `DisableApiTermination` flag to the specified value. A value of `true` means you can't terminate the instance using the API (i.e., the instance is "locked"); a value of `false` means you can. You must modify this attribute before you can terminate any "locked" instances using the API.

Type: Boolean

Default: None

Required: No

### *InstanceInitiatedShutdownBehavior.Value*

Changes the instance's `InstanceInitiatedShutdownBehavior` flag to the specified value.

Type: String

Default: None

Valid values: `stop` | `terminate`

Required: No

***BlockDeviceMapping.Value***

Modifies the `DeleteOnTermination` attribute for volumes that are currently attached. The volume must be owned by the caller. If no value is specified for `DeleteOnTermination`, the value defaults to `true` and the volume is deleted when the instance is terminated.

**Note**

To add instance store volumes to an Amazon EBS-backed instance, you must add them when you launch the instance. For more information, see [Updating the Block Device Mapping when Launching an Instance](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: [InstanceBlockDeviceMappingItemType](#) (p. 473)

Default: None

Example: `&BlockDeviceMapping.1.Ebs.DeleteOnTermination=true`

Required: No

***SourceDestCheck.Value***

Enables a network address translation (NAT) instance in a VPC to perform NAT. The attribute controls whether source/destination checking is enabled on the instance. A value of `true` means checking is enabled, and `false` means checking is disabled. The value must be `false` for the instance to perform NAT. For more information, see [NAT Instances](#) in the *Amazon Virtual Private Cloud User Guide*.

Type: Boolean

Default: None

Required: No

***GroupId.n***

[EC2-VPC] Changes the instance's security group. You must specify at least one security group, even if it's just the default security group for the VPC. You must specify the security group ID, not the security group name.

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

Required: No

***EbsOptimized***

Whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Default: `false`

Required: No

## Response Elements

The following elements are returned in a `ModifyInstanceAttributeResponse` element.

**`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 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyInstanceAttributeResponse>
```

## Related Actions

- [ResetInstanceAttribute](#) (p. 407)
- [DescribeInstanceAttribute](#) (p. 200)

# ModifyNetworkInterfaceAttribute

## Description

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

## Request Parameters

### ***NetworkInterfaceId***

The ID of the network interface.

Type: String

Default: None

Required: Yes

### ***Description.Value***

The description of the network interface.

Type: String

Default: None

Required: No

### ***SecurityGroupId.n***

Changes the security groups that a network interface 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

Required: No

### ***SourceDestCheck.Value***

Enables a Network Address Translation (NAT) instance in a VPC to perform NAT. The attribute controls whether source/destination checking is enabled on the instance. A value of `true` means checking is enabled, and `false` means checking is disabled. The value must be `false` for the instance to perform NAT. For more information, see [NAT Instances](#) in the *Amazon Virtual Private Cloud User Guide*.

Type: Boolean

Default: None

Required: No

### ***Attachment.AttachmentId***

The ID of the interface attachment.

Type: String

Default: None

Required: Conditional

Condition: This parameter is required if you are modifying the `DeleteOnTermination` attribute of an interface attachment.

### ***Attachment.DeleteOnTermination***

Specifies whether to delete the attachment when terminating the instance.

Type: Boolean

Default: None

Required: Conditional

Condition: You must specify a specific attachment ID to change this attribute.

## Response Elements

The following elements are returned in a `ModifyNetworkInterfaceAttributeResponse` element.

**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 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/2013-02-01/">
  <requestId>657a4623-5620-4232-b03b-427e852d71cf</requestId>
  <return>true</return>
</ModifyNetworkInterfaceAttributeResponse>
```

## Related Actions

- [AttachNetworkInterface](#) (p. 25)
- [DetachNetworkInterface](#) (p. 328)
- [CreateNetworkInterface](#) (p. 78)
- [DeleteNetworkInterface](#) (p. 137)
- [DescribeNetworkInterfaceAttribute](#) (p. 235)
- [DescribeNetworkInterfaces](#) (p. 237)
- [ResetNetworkInterfaceAttribute](#) (p. 409)

# ModifySnapshotAttribute

## Description

Adds or remove permission settings for the specified snapshot.

### Note

Snapshots with AWS Marketplace product codes cannot be made public.

## Request Parameters

### *SnapshotId*

The ID of the snapshot.

Type: String

Default: None

Required: Yes

### *CreateVolumePermission.Add.n.UserId*

Adds the specified AWS account ID to the volume's list of create volume permissions.

Type: String

Default: None

Required: Yes

### *CreateVolumePermission.Add.n.Group*

Adds the specified group to the volume's list of create volume permissions. The only valid value is `all`.

Type: String

Default: None

Required: Yes

### *CreateVolumePermission.Remove.n.UserId*

Removes the specified AWS account ID from the volume's list of create volume permissions.

Type: String

Default: None

Required: No

### *CreateVolumePermission.Remove.n.Group*

Removes the specified group from the volume's list of create volume permissions.

Type: String

Default: None

Required: No

## Response Elements

The following elements are returned in a `ModifySnapshotAttributeResponse` element.

### **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 makes the `snap-1a2b3c4d` snapshot public, and gives the account with ID `111122223333` permission to create volumes from the snapshot.

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&snapshotId=snap-1a2b3c4d
&CreateVolumePermission.Add.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

This example makes the `snap-1a2b3c4d` snapshot public, and removes the account with ID `111122223333` from the list of users with permission to create volumes from the snapshot.

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&snapshotId=snap-1a2b3c4d
&CreateVolumePermission.Remove.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

### Example Response

```
<ModifySnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifySnapshotAttributeResponse>
```

## Related Actions

- [DescribeSnapshotAttribute](#) (p. 274)
- [DescribeSnapshots](#) (p. 276)
- [ResetSnapshotAttribute](#) (p. 411)
- [CreateSnapshot](#) (p. 101)

# ModifyVolumeAttribute

## Description

Modifies a volume attribute.

By default, all I/O operations for the volume are suspended when the data on the volume is determined to be potentially inconsistent, to prevent undetectable, latent data corruption. The I/O access to the volume can be resumed by first calling [EnableVolumeIO \(p. 342\)](#) action to enable I/O access and then checking the data consistency on your volume.

You can change the default behavior to resume I/O operations without calling [EnableVolumeIO \(p. 342\)](#) action by setting the `AutoEnableIO` attribute of the volume to `true`. We recommend that you change this attribute only for volumes that are stateless, or disposable, or for boot volumes.

## Request Parameters

### *VolumeId*

The ID of the volume.

Type: String

Default: None

Required: Yes

### *AutoEnableIO.Value*

This attribute exists to auto-enable the I/O operations to the volume.

Type: Boolean

Default: `false`

Required: Yes

## Response Elements

The following elements are returned in a `ModifyVolumeAttributeResponse` element.

### **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 modifies the attribute of the volume `vol-12345678`

```
https://ec2.amazonaws.com/?Action=ModifyVolumeAttribute
&VolumeId=vol-12345678
&AutoEnableIO.Value=true
&AUTHPARAMS
```

## Example Response

```
<ModifyVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">  
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>  
  <return>true</return>  
</ModifyVolumeAttributeResponse>
```

## Related Actions

- [DescribeVolumeAttribute](#) (p. 307)
- [DescribeVolumeStatus](#) (p. 309)

# ModifyVpcAttribute

## Description

Modifies the specified attribute of the specified VPC.

## Request Parameters

### *vpcId*

The ID of the VPC.

Type: String

Required: Yes

### **enableDnsSupport**

Indicates whether the DNS resolution is supported for the VPC. If this attribute is `true`, the Amazon DNS server resolves DNS hostnames for your instances to their corresponding IP addresses; otherwise, it does not.

Type: Boolean

Required: No

### **enableDnsHostnames**

Indicates whether the instances launched in the VPC get DNS hostnames. If this attribute is `true`, instances in the VPC get DNS hostnames; otherwise, they do not.

You can only set this attribute to `true` if you also set the `EnableDnsSupport` attribute to `true`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned in a `ModifyVpcAttributeResponse` structure.

### **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 request disables support for DNS hostnames in the VPC with the ID `vpc-1a2b3c4d`.

```
https://ec2.amazonaws.com/?Action=ModifyVpcAttribute
&VpcId=vpc-1a2b3c4d
&EnableDnsHostnames.Value=false
&AUTHPARAMS
```



# MonitorInstances

## Description

Enables monitoring for a running instance. For more information about monitoring instances, see [Monitoring Your Instances and Volumes](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### *InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `MonitorInstancesResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instancesSet`

A list of instances. Each instance is wrapped in an `item` element.

Type: [MonitorInstancesResponseSetItemType](#) (p. 492)

## 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/2013-02-01/">
  <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 Actions

- [UnmonitorInstances](#) (p. 438)
- [RunInstances](#) (p. 419)

# PurchaseReservedInstancesOffering

## Description

Purchases a Reserved Instance for use with your account. With Amazon EC2 Reserved Instances, you obtain a capacity reservation for a certain instance configuration over a specified period of time. You pay a lower usage rate than with On-Demand instances for the time that you actually use the capacity reservation.

Starting with the 2011-11-01 API version, AWS expanded its offering of Reserved Instances to address a range of projected instance usage. There are three types of Reserved Instances based on customer utilization levels: *Heavy Utilization*, *Medium Utilization*, and *Light Utilization*.

The Medium Utilization offering type is equivalent to the Reserved Instance offering available before API version 2011-11-01. If you are using tools that predate the 2011-11-01 API version, `DescribeReservedInstancesOfferings` will only list information about the `Medium Utilization` Reserved Instance offering type.

For information about Reserved Instance pricing tiers, go to [Understanding Reserved Instance pricing tiers](#) in the *Amazon Elastic Compute Cloud User Guide*. For more information about Reserved Instances, go to [Reserved Instances](#) also in the *Amazon Elastic Compute Cloud User Guide*.

You determine the type of the Reserved Instances offerings by including the optional `offeringType` parameter when calling `DescribeReservedInstancesOfferings`. After you've identified the Reserved Instance with the offering type you want, specify its `ReservedInstancesOfferingId` when you call `PurchaseReservedInstancesOffering`.

Starting with the 2012-08-15 API version, you can also purchase Reserved Instances from the Reserved Instance Marketplace. The Reserved Instance Marketplace matches sellers who want to resell Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

By default, with the 2012-08-15 API version, `DescribeReservedInstancesOfferings` returns information about Amazon EC2 Reserved Instances available directly from AWS, plus instance offerings available on the Reserved Instance Marketplace. If you are using tools that predate the 2012-08-15 API version, the `DescribeReservedInstancesOfferings` action will only list information about Amazon EC2 Reserved Instances available directly from AWS.

For more information about the Reserved Instance Marketplace, go to [Reserved Instance Marketplace](#) in the *Amazon Elastic Compute Cloud User Guide*.

You determine the Reserved Instance Marketplace offerings by specifying `true` for the optional `includeMarketplace` parameter when calling `DescribeReservedInstancesOfferings`. After you've identified the Reserved Instance with the offering type you want, specify its `reservedInstancesOfferingId` when you call `PurchaseReservedInstancesOffering`.

## Request Parameters

### `reservedInstancesOfferingId`

The ID of the Reserved Instance offering you want to purchase.

Type: String

Default: None

Required: Yes

***instanceCount***

The number of Reserved Instances to purchase.

Type: Integer

Default: None

Required: Yes

***limitPrice***

Specified for Reserved Instance Marketplace offerings to limit the total order and ensure that the Reserved Instances are not purchased at unexpected prices.

Type: [ReservedInstanceLimitPriceType](#) (p. 506)

Required: No

## Response Elements

The following elements are returned in a `PurchaseReservedInstancesOfferingResponse` element.

**`requestId`**

The ID of the request.

Type: `xsd:string`

**`reservedInstancesId`**

The IDs of the purchased Reserved Instances.

Type: `xsd:string`

## Examples

### Set the limit price for Reserved Instance Marketplace purchase

This example uses `LimitPrice` to limit the total purchase order of Reserved Instances from Reserved Instance Marketplace.

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
&LimitPrice.Amount=200
&InstanceCount=2
&AUTHPARAMS
```

The response looks like the following example.

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon
aws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
</PurchaseReservedInstancesOfferingResponse>
```

### Example Request

This example illustrates a purchase of a Reserved Instances offering.

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
&InstanceCount=2
&AUTHPARAMS
```

The response looks like the following example.

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon
aws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
</PurchaseReservedInstancesOfferingResponse>
```

## Find and Purchase a Reserved Instance

### To find and purchase a Reserved Instance

1. Use [DescribeReservedInstancesOfferings \(p. 257\)](#) to get a list of Reserved Instance offerings that match your specifications. In this example, we'll requests a list of Linux/UNIX, Light Utilization Reserved Instances that are available through the Reserved Instance Marketplace only.

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.0.Name=marketplace
&Filter.0.Value.1=true
&IncludeMarketplace=true
&OfferingType=Light+Utilization
&ProductDescription=Linux%2FUNIX
&Version=2013-02-01
&AUTHPARAMS
```

#### Note

When using the Query API, all strings must be URL-encoded.

The following is an example response.

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazon
aws.com/doc/2013-02-01/">
  <requestId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>a6ce8269-7b8c-42cd-a7f5-
0841cEXAMPLE</reservedInstancesOfferingId>
      <instanceType>m1.large</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>90720000</duration>
      <fixedPrice>96.03</fixedPrice>
      <usagePrice>0.027</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <recurringCharges/>
      <marketplace>true</marketplace>
```

```
<pricingDetailsSet>
  <item>
    <price>96.03</price>
    <count>1</count>
  </item>
</pricingDetailsSet>
</item>
<item>
  <reservedInstancesOfferingId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</re
servedInstancesOfferingId>
  <instanceType>m1.xlarge</instanceType>
  <availabilityZone>us-east-1b</availabilityZone>
  <duration>28512000</duration>
  <fixedPrice>61.0</fixedPrice>
  <usagePrice>0.034</usagePrice>
  <productDescription>Linux/UNIX</productDescription>
  <instanceTenancy>default</instanceTenancy>
  <currencyCode>USD</currencyCode>
  <offeringType>Light Utilization</offeringType>
  <recurringCharges>
    <item>
      <frequency>Hourly</frequency>
      <amount>0.29</amount>
    </item>
  </recurringCharges>
  <marketplace>true</marketplace>
  <pricingDetailsSet>
    <item>
      <price>61.0</price>
      <count>2</count>
    </item>
  </pricingDetailsSet>
</item>
</reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
```

2. From the list of available Reserved Instances in the previous example, select the marketplace offering and specify a limit price.

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE
&InstanceCount=1
&LimitPrice.Amount=200
&AUTHPARAMS
```

The following is an example response.

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazon
aws.com/doc/2012-08-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedIn
stancesId>
</PurchaseReservedInstancesOfferingResponse>
```

3. To verify the purchase, check for your new Reserved Instance with [DescribeReservedInstances](#) (p. 249).

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

The following is an example response:

```
<DescribeReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesSet>
    ...
    <item>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reserved
InstancesId>
      <instanceType>m1.xlarge</instanceType>
      <availabilityZone>us-east-1b</availabilityZone>
      <duration>31536000</duration>
      <fixedPrice>61.0</fixedPrice>
      <usagePrice>0.034</usagePrice>
      <instanceCount>3</instanceCount>
      <productDescription>Linux/UNIX</productDescription>
      <state>active</state>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Light Utilization</offeringType>
      <recurringCharges/>
    </item>
    ...
  </reservedInstancesSet>
</DescribeReservedInstancesResponse>
```

You can run your Reserved Instance any time after your purchase is complete. To run your Reserved Instance, you launch it in the same way you launch an On-Demand EC2 instance. Make sure to specify the same criteria that you specified for your Reserved Instance. AWS will automatically charge you the lower hourly rate.

## Related Actions

- [DescribeReservedInstancesOfferings](#) (p. 257)
- [DescribeReservedInstances](#) (p. 249)

# 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

### *InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `RebootInstancesResponse` element.

### `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 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RebootInstancesResponse>
```



## Related Actions

- [RunInstances](#) (p. 419)

# RegisterImage

## Description

Registers a new AMI with Amazon EC2. When you're creating an AMI, this is the final step you must complete before you can launch an instance from the AMI. For more information about creating AMIs, see [Creating Your Own AMIs](#) in the *Amazon Elastic Compute Cloud User Guide*.

### Note

For Amazon EBS-backed instances, the `CreateImage` operation creates and registers the AMI in a single request, so you don't have to register the AMI yourself.

You can also use the `RegisterImage` action to create an EBS-backed AMI from a snapshot of a root device volume. For more information, see [Launching an Instance from a Snapshot](#) in the *Amazon Elastic Compute Cloud User Guide*.

If needed, you can deregister an AMI at any time. Any modifications you make to an AMI backed by instance store invalidates its registration. If you make changes to an image, deregister the previous image and register the new image.

### Note

You cannot register an image where a secondary (non-root) snapshot has AWS Marketplace product codes.

## Request Parameters

### *ImageLocation*

The full path to your AMI manifest in Amazon S3 storage.

Type: String

Default: None

Required: Conditional

Condition: Required if registering an instance store-backed AMI

### *Name*

A name for your AMI.

Type: String

Default: None

Constraints: 3-128 alphanumeric characters, parenthesis (`()`), commas (`,`), slashes (`/`), dashes (`-`), or underscores (`_`)

Required: Yes

### *Description*

A description of the AMI.

Type: String

Default: None

Constraints: Up to 255 characters.

Required: No

### *Architecture*

The architecture of the image.

Type: String

Valid values: `i386` | `x86_64`

Default: `i386` for Amazon EBS-backed AMIs. Instance store-backed AMIs try to use the architecture specified in the manifest file.

Required: No

***KernelId***

The ID of the kernel.

Type: String

Default: None

Required: No

***RamdiskId***

The ID of the RAM disk. Some kernels require additional drivers at launch. Check the kernel requirements for information on whether you need to specify a RAM disk. To find kernel requirements, refer to the Resource Center and search for the kernel ID.

Type: String

Default: None

Required: No

***RootDeviceName***

The name of the root device (for example, /dev/sda1, or xvda).

Type: String

Default: None

Required: Conditional

Condition: Required if registering an Amazon EBS-backed AMI

***BlockDeviceMapping.n.DeviceName***

The device name exposed to the instance (for example, /dev/sdh or xvdh). For more information, see [Block Device Mapping](#).

Type: String

Default: None

Required: Conditional

Condition: If you're registering an Amazon EBS-backed AMI from a snapshot, you must specify *DeviceName* with the root device name (for example, /dev/sda1 or xvda), and *BlockDeviceMapping.n.Ebs.SnapshotId* with the snapshot ID

***BlockDeviceMapping.n.NoDevice***

Suppresses a device mapping.

Type: Boolean

Default: true

Required: No

***BlockDeviceMapping.n.VirtualName***

The name of the virtual device, ephemeral[0..3]. The number of instance store volumes depends on the instance type.

Type: String

Default: None

Required: No

***BlockDeviceMapping.n.Ebs.SnapshotId***

The ID of the snapshot.

Type: String

Default: None

Required: Conditional

Condition: If you're registering an Amazon EBS-backed AMI from a snapshot, you must at least specify *SnapshotId* with the snapshot ID, and *BlockDeviceMapping.n.DeviceName* with the root device name.

***BlockDeviceMapping.n.Ebs.VolumeSize***

The size of the volume, in GiBs.

Type: Integer

Valid values: If the volume type is `io1`, the minimum size of the volume is 10 GiB.

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.

Required: Conditional

Condition: Required unless you're creating the volume from a snapshot.

***BlockDeviceMapping.n.Ebs.DeleteOnTermination***

Whether the volume is deleted on instance termination.

Type: Boolean

Default: `true`

Required: No

***BlockDeviceMapping.n.Ebs.VolumeType***

The volume type.

Type: String

Valid values: `standard` | `io1`

Default: `standard`

Required: No

***BlockDeviceMapping.n.Ebs.Iops***

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4000.

Default: None

Required: Conditional

Condition: Required when the volume type is `io1`; not used with `standard` volumes.

## Response Elements

The following elements are returned in a `RegisterImageResponse` element.

**`requestId`**

The ID of the request.

Type: `xsd:string`

**`imageId`**

The ID of the newly registered AMI.

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 `myawsbucket`.

```
https://ec2.amazonaws.com/?Action=RegisterImage
&ImageLocation=myawsbucket/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-1a2b3c4d
&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-1a2b3c4d
&BlockDeviceMapping.2.DeviceName=/dev/sdb
&BlockDeviceMapping.2.Ebs.SnapshotId=snap-2a2b3c4d
&BlockDeviceMapping.3.DeviceName=/dev/sdc
&BlockDeviceMapping.3.Ebs.VolumeSize=100
&Name=MyImage
&AUTHPARAMS
```

## Example Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

## Related Actions

- [DescribeImages](#) (p. 193)
- [DeregisterImage](#) (p. 165)

# ReleaseAddress

## Description

Releases an Elastic IP address allocated to your account.

### Important

After releasing an Elastic IP address, it is released to the IP address pool and might be unavailable to you. Be sure to update your DNS records and any servers or devices that communicate with the address. If you attempt to release an Elastic IP address that you already released, you'll get an `AuthFailure` error if the address is already allocated to another AWS account.

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

[EC2-Classic, default VPC] Releasing an Elastic IP address automatically disassociates it from any instance that it's associated with. To disassociate an Elastic IP address without releasing it, use the `ec2-diassociate-address` command.

[nondefault VPC] You must use the `ec2-diassociate-address` command to disassociate the Elastic IP address before you try to release it. Otherwise, Amazon EC2 returns an error (`InvalidIPAddress.InUse`).

## Request Parameters

### *PublicIp*

[EC2-Classic] The Elastic IP address.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-Classic

### *AllocationId*

[EC2-VPC] The allocation ID that AWS provided when you allocated the address for use with a VPC.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-VPC

## Response Elements

The following elements are returned in a `ReleaseAddressResponse` element.

### `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 releases an Elastic IP address (67.202.55.255).

```
https://ec2.amazonaws.com/?Action=ReleaseAddress
&PublicIp=192.0.2.1
&AUTHPARAMS
```

### Example Request

This example releases an 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReleaseAddressResponse>
```

## Related Actions

- [AllocateAddress](#) (p. 12)
- [DescribeAddresses](#) (p. 169)
- [AssociateAddress](#) (p. 16)
- [DisassociateAddress](#) (p. 336)

# ReplaceNetworkAclAssociation

## Description

Changes which network ACL a subnet is associated with. By default when you create a subnet, it's automatically associated with the default network ACL. For more information about network ACLs, see [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### *AssociationId*

The ID representing the current association between the original network ACL and the subnet.

Type: String

Default: None

Required: Yes

### *NetworkAclId*

The ID of the new ACL to associate with the subnet.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `ReplaceNetworkAclAssociationResponse` element.

### `requestId`

The ID of the request.

Type: xsd:string

### `newAssociationId`

The ID of the new association.

Type: xsd: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/2013-02-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <newAssociationId>aassoc-17b85d7e</newAssociationId>  
</ReplaceNetworkAclAssociationResponse>
```

## Related Actions

- [CreateNetworkAcl](#) (p. 73)
- [DeleteNetworkAcl](#) (p. 133)
- [DescribeNetworkAcls](#) (p. 230)

# ReplaceNetworkAclEntry

## Description

Replaces an entry (i.e., rule) in a network ACL. For more information about network ACLs, see [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### *NetworkAclId*

The ID of the ACL.

Type: String

Default: None

Required: Yes

### *RuleNumber*

The rule number of the entry to replace.

Type: Integer

Default: None

Required: Yes

### *Protocol*

The IP protocol the rule applies to. You can use -1 to mean all protocols.

Type: Integer

Valid values: -1 or a protocol number (see [Protocol Numbers](#)).

Required: Yes

### *RuleAction*

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

Type: String

Default: None

Valid values: allow | deny

Required: Yes

### *Egress*

Indicates whether this rule applies to egress traffic from the subnet (`true`) or ingress traffic to the subnet (`false`).

Type: Boolean

Default: `false`

Valid values: `true` | `false`

Required: No

### *CidrBlock*

The CIDR range to allow or deny, in CIDR notation (for example, 172.16.0.0/24).

Type: String

Default: None

Required: 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

Required: Conditional

Condition: Required if specifying 1 (ICMP) for the protocol.

***icmp.Type***

For the ICMP protocol, the ICMP type. You can use -1 to specify all ICMP types.

Type: Integer

Default: None

Required: Conditional

Condition: Required if specifying 1 (ICMP) for the protocol.

***PortRange.From***

The first port in the range.

Type: Integer

Default: None

Required: Conditional

Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.

***PortRange.To***

The last port in the range.

Type: Integer

Default: None

Required: Conditional

Condition: Required if specifying 6 (TCP) or 17 (UDP) for the protocol.

## Response Elements

The following elements are returned in a `ReplaceNetworkAclEntryResponse` element.

**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 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReplaceNetworkAclEntryResponse>
```

## Related Actions

- [CreateNetworkAclEntry](#) (p. 75)
- [DeleteNetworkAclEntry](#) (p. 135)
- [DescribeNetworkAcls](#) (p. 230)

# ReplaceRoute

## Description

Replaces an existing route within a route table in a VPC. For more information about route tables, see [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### ***RouteTableId***

The ID of the route table.

Type: String

Default: None

Required: Yes

### ***DestinationCidrBlock***

The CIDR address block used for the destination match. The value you provide must match the CIDR of an existing route in the table.

Type: String

Default: None

Required: Yes

### ***GatewayId***

The ID of a gateway attached to your VPC.

Type: String

Default: None

Required: Conditional

Condition: You must provide only one of the following: a `GatewayId`, `InstanceId`, or `NetworkInterfaceId`.

### ***InstanceId***

The ID of a NAT instance in your VPC.

Type: String

Default: None

Required: Conditional

Condition: You must provide only one of the following: a `GatewayId`, `InstanceId`, or `NetworkInterfaceId`.

### ***NetworkInterfaceId***

Allows routing to network interface attachments.

Type: String

Default: None

Required: Conditional

Condition: You must provide only one of the following: `GatewayId`, `InstanceId`, or `NetworkInterfaceId`.

## Response Elements

The following elements are returned in a `ReplaceRouteResponse` element.

### **`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 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReplaceRouteResponse>
```

## Related Actions

- [DeleteRoute](#) (p. 141)
- [CreateRoute](#) (p. 94)
- [DescribeRouteTables](#) (p. 266)

# ReplaceRouteTableAssociation

## Description

Changes the route table associated with a given subnet in a VPC. After you execute this action, the subnet uses the routes in the new route table it's associated with. For more information about route tables, see [Route Tables](#) in the *Amazon Virtual Private Cloud User Guide*.

You can also use this action to change which table is the main route table in the VPC. You just specify the main route table's association ID and the route table that you want to be the new main route table.

## Request Parameters

### *AssociationId*

The ID representing the current association between the original route table and the subnet.

Type: String

Default: None

Required: Yes

### *RouteTableId*

The ID of the new route table to associate with the subnet.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `ReplaceRouteTableAssociationResponse` element.

### **requestId**

The ID of the request.

Type: xsd:string

### **newAssociationId**

The ID of the new association.

Type: xsd: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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>rtbassoc-faad4893</newAssociationId>
</ReplaceRouteTableAssociationResponse>
```

## Related Actions

- [CreateRouteTable](#) (p. 97)
- [DisassociateRouteTable](#) (p. 338)
- [DeleteRouteTable](#) (p. 143)
- [DescribeRouteTables](#) (p. 266)
- [AssociateRouteTable](#) (p. 21)



# ReportInstanceStatus

## Description

Use this action to submit feedback about an instance's status. This action works only for instances that are in the `running` state. If your experience with the instance differs from the instance status returned by the `DescribeInstanceStatus` action, use `ReportInstanceStatus` to report your experience with the instance. Amazon EC2 collects this information to improve the accuracy of status checks.

### Note

Use of this action does not change the value returned by `DescribeInstanceStatus`.

To report an instance's status, specify an instance ID with the `InstanceId.n` parameter and a reason code with the `ReasonCode.n` parameter that applies to that instance. The following table contains descriptions of all available reason codes.

### instance-stuck-in-state

My instance is stuck in a state.

### unresponsive

My instance is unresponsive.

### not-accepting-credentials

My instance is not accepting my credentials.

### password-not-available

A password is not available for my instance.

### performance-network

My instance is experiencing performance problems which I believe are network related.

### performance-instance-store

My instance is experiencing performance problems which I believe are related to the instance stores.

### performance-ebs-volume

My instance is experiencing performance problems which I believe are related to an EBS volume.

### performance-other

My instance is experiencing performance problems.

### other

Other, explained in the submitted description parameter.

## Request Parameters

### *InstanceId.n*

One or more instance IDs.

Type: String

Required: Yes

### *Status*

The status of all instances listed in the `InstanceId.n` parameter.

Type: String

Valid values: `ok` | `impaired`

Required: Yes

### *StartTime*

The time at which the reported instance health state began.

Type: DateTime

Required: No

***EndTime***

The time at which the reported instance health state ended.

Type: DateTime

Required: No

***ReasonCode.n***

A reason code that describes a specific instance's health state. Each code you supply corresponds to an instance ID that you supply with the *InstanceId.n* parameter. See the [Description \(p. 394\)](#) section for descriptions of each reason code.

Type: String

Valid values: instance-stuck-in-state | unresponsive | not-accepting-credentials | password-not-available | performance-network | performance-instance-store | performance-ebs-volume | performance-other | other

Required: Yes

***Description***

Descriptive text about the instance health state.

Type: String

Default: None

Required: No

## Response Elements

The following elements are returned in a `ReportInstanceStatusResponse` element.

**`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 reports instance health state for two instances.

```
https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Status=impaired
&InstanceId.0=i-9440effb
&InstanceId.1=i-0cf27c63
&Version=2013-02-01
&AuthParams
```

### Example Request

This example reports instance health state for two instances with reason codes.

```
https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Description=Description+of+my+issue.
```

```
&Status=impaired
&InstanceId.0=i-9440effb
&InstanceId.1=i-0cf27c63
&ReasonCode.0=instance-performance-network
&ReasonCode.1=instance-performance-disk
&Version=2013-02-01
&AuthParams
```

## Example Response

```
<ReportInstanceStatusResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>b8131cff-dfbd-4277-bafe-be006fd0c4da</requestId>
  <return>true</return>
</ReportInstanceStatusResponse>
```

# RequestSpotInstances

## Description

Creates a Spot Instance request. Spot Instances are instances that Amazon EC2 starts on your behalf when the maximum price that you specify exceeds the current Spot Price. Amazon EC2 periodically sets the Spot Price based on available Spot Instance capacity and current Spot Instance requests. For more information about Spot Instances, see [Using Spot Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

### Note

Users must be subscribed to the required product to run an instance with AWS Marketplace product codes.

## Request Parameters

### *SpotPrice*

The maximum hourly price for any Spot Instance launched to fulfill the request.

Type: String

Default: None

Required: Yes

### *InstanceCount*

The maximum number of Spot Instances to launch.

Type: Integer

Default: 1

Required: No

### *Type*

The Spot Instance request type.

Type: String

Valid values: `one-time` | `persistent`

Default: `one-time`

Required: No

### *ValidFrom*

The start date of the request. If this is a one-time request, the request becomes active at this date and time and remains active until all instances launch, the request expires, or the request is canceled. If the request is persistent, the request becomes active at this date and time and remains active until it expires or is canceled.

Type: DateTime

Default: Request is effective independently

Required: No

### *ValidUntil*

The end date of the request. If this is a one-time request, the request remains active until all instances launch, the request is canceled, or this date is reached. If the request is persistent, it remains active until it is canceled or this date and time is reached.

Type: DateTime

Default: Request is effective indefinitely

Required: No

### *LaunchGroup*

The instance launch group. Launch groups are Spot Instances that launch together and terminate together.

Type: String

Default: Instances are launched and terminated individually

Required: No

***AvailabilityZoneGroup***

The user-specified name for a logical grouping of bids.

When you specify *AvailabilityZoneGroup* in a Spot Instance request, all Spot Instances in the request are launched in the same Availability Zone. Instance proximity is maintained with this parameter, but choice of Availability Zone is not. *AvailabilityZoneGroup* applies only to bids for Spot Instances of the same instance type. Any additional Spot Instance requests that are specified with the same *AvailabilityZoneGroup* name will be launched in that same Availability Zone, as long as at least one instance from the group is still active.

If there is no active instance running in the Availability Zone group that you specify for a new Spot Instance request (i.e., all instances are terminated, the bid is expired, or the bid falls below current market), then Amazon EC2 will launch the instance in any Availability Zone where the constraint can be met. Consequently, the subsequent set of Spot Instances could be placed in a different zone from the original request, even if the same *AvailabilityZoneGroup* name was specified.

To ensure that all Spot Instances across all bids are launched into a particular Availability Zone, specify *LaunchSpecification.Placement.AvailabilityZone* in the API or *-availability-zone* in the CLI.

Type: String

Default: Instances are launched in any available Availability Zone.

Required: No

***LaunchSpecification.ImageId***

The ID of the AMI.

Type: String

Default: None

Required: Yes

***LaunchSpecification.KeyName***

The name of the key pair.

Type: String

Default: None

Required: No

***LaunchSpecification.SecurityGroupId.n***

The ID of the security group.

Type: String

Default: The instance uses the default security group

Required: Conditional

Condition: If you want to specify one or more security groups, you can use either

*LaunchSpecification.SecurityGroupId.n* or *LaunchSpecification.SecurityGroup.n*.

***LaunchSpecification.SecurityGroup.n***

[EC2-Classical, default VPC] The name of the security group.

Type: String

Default: The instance uses the default security group

Required: Conditional

Condition: If you want to specify one or more security groups, you can use either

*LaunchSpecification.SecurityGroupId.n* or *LaunchSpecification.SecurityGroup.n*.

***LaunchSpecification UserData***

The MIME, Base64-encoded user data to make available to the instances.

Type: String

Default: None

Required: No

***LaunchSpecification.InstanceType***

The instance type.

Type: String

Valid values: `t1.micro` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.xlarge` | `m3.2xlarge` | `c1.medium` | `c1.xlarge` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` | `cc1.4xlarge` | `cc2.8xlarge` | `cg1.4xlarge`. See [Available Instance Types](#) for more information.

Default: `m1.small`

Required: Yes

***LaunchSpecification.Placement.AvailabilityZone***

The placement constraint (for example, specific Availability Zone) for launching the instances.

Specify if you want all of the Spot Instances in all of your bids to be launched in a particular Availability Zone. Specifying this option requires Amazon EC2 to find capacity in the specified Availability Zone instead of letting Amazon EC2 pick the best Availability Zone available; this can potentially delay the fulfillment of your bid, and/or require a higher bid price.

Type: String

Default: Amazon EC2 selects an Availability Zone.

Required: No

***LaunchSpecification.Placement.GroupName***

The name of an existing placement group you want to launch the instance into (for cluster instances).

Type: String

Default: None.

Required: No

***LaunchSpecification.KernelId***

The ID of the kernel.

Type: String

Default: None

Required: No

***LaunchSpecification.RamdiskId***

The ID of the RAM disk. Some kernels require additional drivers at launch. Check the kernel requirements for information on whether you need to specify a RAM disk and search for the kernel ID.

Type: String

Default: None

Required: No

***LaunchSpecification.BlockDeviceMapping.n.DeviceName***

The device named exposed to the instance (for example, `/dev/sdh` or `xvdh`). For more information, see [Block Device Mapping](#).

Type: String

Default: None

Required: No

***LaunchSpecification.BlockDeviceMapping.n.NoDevice***

Suppresses the device mapping.

Type: Boolean

Default: `true`

Required: No

***LaunchSpecification.BlockDeviceMapping.n.VirtualName***

The name of the virtual device, `ephemeral[0..3]`. The number of instance store volumes depends on the instance type.

Type: String

Default: None

Required: No

***LaunchSpecification.BlockDeviceMapping.n.Ebs.SnapshotId***

The ID of the snapshot.

Type: String

Default: None

Required: No

***LaunchSpecification.BlockDeviceMapping.n.Ebs.VolumeSize***

The size of the volume, in GiBs.

Type: Integer

Valid values: If the volume type is `io1`, the minimum size of the volume is 10 GiB.

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.

Required: No

***LaunchSpecification.BlockDeviceMapping.n.Ebs.DeleteOnTermination***

Whether the volume is deleted on instance termination.

Type: Boolean

Default: true

Required: No

***LaunchSpecification.BlockDeviceMapping.n.Ebs.VolumeType***

The volume type.

Type: String

Valid values: `standard` | `io1`

Default: `standard`

Required: No

***LaunchSpecification.BlockDeviceMapping.n.Ebs.Iops***

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4000.

Default: None

Required: Required when the volume type is `io1`; not used with `standard` volumes.

***LaunchSpecification.Monitoring.Enabled***

Enables monitoring for the instance.

Type: String

Default: Disabled

Required: No

***LaunchSpecification.SubnetId***

The ID of the subnet in which to launch the Spot Instance.

Type: String

Default: None

Required: No

***LaunchSpecification.NetworkInterface.n.NetworkInterfaceId***

[EC2-VPC] Attaches an existing interface to a single instance. Requires `n=1` instances.

Type: String

Default:

Required: No

***LaunchSpecification.NetworkInterface.n.DeviceIndex***

[EC2-VPC] Applies to both attaching existing network interfaces and when creating new network interfaces.

Type: Integer

Default:

Required: No

***LaunchSpecification.NetworkInterface.n.SubnetId***

[EC2-VPC] Applies only when creating new network interfaces.

Type: String

Default:

Required: No

***LaunchSpecification.NetworkInterface.n.Description***

[EC2-VPC] Applies only when creating new network interfaces.

Type: String

Default: None

Required: No

***LaunchSpecification.NetworkInterface.n.PrivateIpAddress***

[EC2-VPC] The primary private IP address of the network interface. Applies only when creating new network interfaces. Requires n=1 network interfaces in launch.

Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter if you are also specifying

`LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.Primary` with a value of `true` with the

`LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress` option.

Type: String

Default: None

Required: No

***LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress***

[EC2-VPC] The primary private IP address of the network interface. Applies only when creating new network interfaces. Requires n=1 network interfaces in launch.

Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter with

`LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.Primary` with a value of `true` if you are also specifying the

`LaunchSpecification.NetworkInterface.n.PrivateIpAddress` option.

Type: String

Default: None

Required: No

***LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.Primary***

[EC2-VPC] Whether the private IP address is the primary private IP address. Applies only when creating new network interfaces. Requires n=1 network interfaces in launch.

Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter with a value of `true` with the

`LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress` option if you specify the `LaunchSpecification.NetworkInterface.n.PrivateIpAddress` option.

Type: String

Default: None

Required: No

***LaunchSpecification.NetworkInterface.n.SecondaryPrivateIpAddressCount***

[EC2-VPC] The number of secondary private IP addresses to assign to a network interface. When you specify a number of secondary IP addresses, AWS automatically assigns these IP addresses within the subnet's range.



The number of IP addresses you can assign to a network interface varies by instance type. For more information, go to [Available Instance Types](#) in the *Amazon Elastic Compute Cloud User Guide*.

For a single network interface, you cannot specify this option and specify more than one private IP address using `LaunchSpecification.NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress`.

Type: Integer

Default: None

Required: No

***LaunchSpecification.NetworkInterface.n.SecurityGroupId.n***

The security group IDs to associate with the created instance. Applies only when creating new network interfaces.

Type: String

Default: None

Required: No

***LaunchSpecification.NetworkInterface.n.DeleteOnTermination***

Applies to all network interfaces.

Type: Boolean

Default:

Required: No

***LaunchSpecification.IamInstanceProfile.Arn***

The Amazon resource name (ARN) of the IAM Instance Profile (IIP) to associate with the instances.

Type: String

Default: None

Required: No

***LaunchSpecification.IamInstanceProfile.Name***

The name of the IAM Instance Profile (IIP) to associate with the instances.

Type: String

Default: None

Required: No

***LaunchSpecification.EbsOptimized***

Whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Default: `false`

Required: No

## Response Elements

The following elements are returned in a `RequestSpotInstancesResponse` element.

**`requestId`**

The ID of the request.

Type: `xsd:string`

**`spotInstanceRequestSet`**

Information about the Spot Instance request, wrapped in an `item` element.

Type: [SpotInstanceRequestSetItemType](#) (p. 515)

## Examples

### Example Request

This example creates a Spot Instances request for two `m1.small` instances and associates an IAM instance profile called `s3access` with them.

```
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&SpotPrice=0.50
&InstanceCount=2
&Type=one-time
&AvailabilityZoneGroup=MyAzGroup
&LaunchSpecification.ImageId=ami-1a2b3c4d
&LaunchSpecification.KeyName=gsg-keypair
&LaunchSpecification.SecurityGroup.1=websrv
&LaunchSpecification.InstanceType=m1.small
&LaunchSpecification.IamInstanceProfile.Name=s3access
&AUTHPARAMS
```

### Example Response

```
<RequestSpotInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <spotPrice>0.5</spotPrice>
      <type>one-time</type>
      <state>open</state>
      <status>
        <code>pending-evaluation</code>
        <updateTime>YYYY-MM-DDTHH:MM:SS.000Z</updateTime>
        <message>Your Spot request has been submitted for review, and is pending
evaluation.</message>
      </status>
      <availabilityZoneGroup>MyAzGroup</availabilityZoneGroup>
      <launchSpecification>
        <imageId>ami-1a2b3c4d</imageId>
        <keyName>gsg-keypair</keyName>
        <groupSet>
          <item>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>websrv</groupName>
          </item>
        </groupSet>
        <instanceType>m1.small</instanceType>
        <blockDeviceMapping/>
        <monitoring>
          <enabled>>false</enabled>
        </monitoring>
        <ebsOptimized>>false</ebsOptimized>
      </launchSpecification>
      <createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
      <productDescription>Linux/UNIX</productDescription>
    </item>
  </spotInstanceRequestSet>
</RequestSpotInstancesResponse>
```

```
</item>  
</spotInstanceRequestSet>  
</RequestSpotInstancesResponse>
```

## Related Actions

- [DescribeSpotInstanceRequests](#) (p. 282)
- [CancelSpotInstanceRequests](#) (p. 49)
- [DescribeSpotPriceHistory](#) (p. 290)

# ResetImageAttribute

## Description

Resets an attribute of an AMI to its default value.

### Note

The `productCodes` attribute cannot be reset.

## Request Parameters

### *ImageId*

The ID of the AMI.

Type: String

Default: None

Required: Yes

### *Attribute*

The attribute to reset (currently you can only reset the launch permission attribute).

Type: String

Default: None

Valid value: `launchPermission`

Required: Yes

## Response Elements

The following elements are returned in a `ResetImageAttributeResponse` element.

### **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/2013-02-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</ResetImageAttributeResponse>
```

## Related Actions

- [ModifyImageAttribute](#) (p. 357)
- [DescribeImageAttribute](#) (p. 190)

# ResetInstanceAttribute

## Description

Resets an attribute of an instance to its default value. To reset the kernel or RAM disk, the instance must be in a stopped state. To reset the `SourceDestCheck`, the instance can be either running or stopped.

The `SourceDestCheck` attribute exists to enable a Network Address Translation (NAT) instance in a VPC to perform NAT. The attribute controls whether source/destination checking is enabled on the instance. The default value is `true`, which means checking is enabled. The value must be `false` for the instance to perform NAT. For more information, see [NAT Instances](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### *InstanceId*

The ID of the instance.

Type: String

Default: None

Required: Yes

### *Attribute*

The attribute to reset.

Type: String

Default: None

Valid values: `kernel` | `ramdisk` | `sourceDestCheck`

Required: Yes

## Response Elements

The following elements are returned in a `ResetInstanceAttributeResponse` element.

### **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 `kernel` attribute.

```
https://ec2.amazonaws.com/?Action=ResetInstanceAttribute
&InstanceId=i-1a2b3c4d
&Attribute=kernel
&AUTHPARAMS
```

## Example Response

```
<ResetInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetInstanceAttributeResponse>
```

## Related Actions

- [ModifyInstanceAttribute](#) (p. 360)
- [DescribeInstanceAttribute](#) (p. 200)

# ResetNetworkInterfaceAttribute

## Description

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

## Request Parameters

### *NetworkInterfaceId*

The ID of the network interface.

Type: String

Default: None

Required: Yes

### *Attribute=[sourceDestCheck]*

The name of the attribute to reset; *sourceDestCheck* defaults to `true`.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `ResetNetworkInterfaceAttributeResponse` element.

### **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 `sourceDestCheck` attribute for the elastic network interface (ENI) `eni-ffda3197`.

```
https://ec2.amazonaws.com/?Action=ResetNetworkInterfaceAttribute&NetworkInterfaceId=eni-ffda3197&Attribute=sourceDestCheck&AUTHPARAMS
```

### Example Response

```
<ResetNetworkInterfaceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>5187642e-3f16-44a3-b05f-24c3848b5162</requestId>
  <return>true</return>
</ResetNetworkInterfaceAttributeResponse>
```



## Related Actions

- [AttachNetworkInterface](#) (p. 25)
- [DetachNetworkInterface](#) (p. 328)
- [CreateNetworkInterface](#) (p. 78)
- [DeleteNetworkInterface](#) (p. 137)
- [DescribeNetworkInterfaceAttribute](#) (p. 235)
- [DescribeNetworkInterfaces](#) (p. 237)
- [ModifyNetworkInterfaceAttribute](#) (p. 363)

# ResetSnapshotAttribute

## Description

Resets permission settings for the specified snapshot.

## Request Parameters

### *SnapshotId*

The ID of the snapshot.

Type: String

Default: None

Required: Yes

### *Attribute*

The attribute to reset (currently only the attribute for permission to create volumes can be reset)

Type: String

Default: None

Valid value: `createVolumePermission`

Required: Yes

## Response Elements

The following elements are returned in a `ResetSnapshotAttributeResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `return`

Returns `true` if the request succeeds. Otherwise, returns an error.

Type: `xsd:boolean`

## Examples

### Example Request

This example resets the permissions for `snap-1a2b3c4d`, making it a private snapshot that can only be used by the account that created it.

```
https://ec2.amazonaws.com/?Action=ResetSnapshotAttribute
&SnapshotId=snap-1a2b3c4d
&Attribute=createVolumePermission
&AUTHPARAMS
```

### Example Response

```
<ResetSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
```

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

## Related Actions

- [ModifySnapshotAttribute](#) (p. 365)
- [DescribeSnapshotAttribute](#) (p. 274)
- [DescribeSnapshots](#) (p. 276)
- [CreateSnapshot](#) (p. 101)

# RevokeSecurityGroupEgress

## Description

Removes one or more egress rules from a security group for EC2-VPC. The values that you specify in the revoke request (for example, ports) must match the existing rule's values for the rule to be revoked.

Each rule consists of the protocol and the CIDR range or destination security group. For the TCP and UDP protocols, you must also specify the destination port or range of ports. For the ICMP protocol, you must also specify the ICMP type and code.

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

For more information, see [Security Groups](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

### *GroupId*

The ID of the security group to modify.

Type: String

Default: None

Required: Yes

### *IpPermissions.n.IpProtocol*

The IP protocol name or number (see [Protocol Numbers](#)).

When you call `DescribeSecurityGroups`, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, `tcp`, `udp`, or `icmp`).

Type: String

Valid values: `tcp` | `udp` | `icmp` or any protocol number (see [Protocol Numbers](#)). Use `-1` to specify all.

Required: Yes

### *IpPermissions.n.FromPort*

The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, you can use `-1` to specify all ICMP types.

Type: Integer

Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

### *IpPermissions.n.ToPort*

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

Type: Integer

Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

### *IpPermissions.n.Groups.m.GroupId*

The name of the destination security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Condition: Required if modifying access for one or more destination security groups.

Required: Conditional

*IpPermissions.n.IpRanges.m.CidrIp*

The CIDR range. Cannot be used when specifying a destination security group.

Type: String

Default: None

Constraints: Valid CIDR IP address range.

Required: Conditional

Condition: Required if modifying access for one or more IP address ranges.

## Response Elements

The following elements are returned in a `RevokeSecurityGroupEgressResponse` element.

**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 the access that the `webserv` security group for EC-VPC (with ID `sg-1a2b3c4d`) has to the `205.192.0.0/16` and `205.159.0.0/16` address ranges on TCP port 80.

```
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 security group for EC2-VPC (with ID `sg-1a2b3c4d`) has to the security group for EC2-VPC 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RevokeSecurityGroupEgressResponse>
```

## Related Actions

- [CreateSecurityGroup](#) (p. 99)
- [DescribeSecurityGroups](#) (p. 270)
- [AuthorizeSecurityGroupEgress](#) (p. 31)
- [AuthorizeSecurityGroupIngress](#) (p. 34)
- [AuthorizeSecurityGroupIngress](#) (p. 416)
- [DeleteSecurityGroup](#) (p. 145)

# RevokeSecurityGroupIngress

## Description

Removes one or more ingress rules from a security group. The values that you specify in the revoke request (for example, ports) must match the existing rule's values for the rule to be removed.

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

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

### *GroupId*

The ID of the security group. The security group must belong to your AWS account.

Type: String

Default: None

Required: Conditional

Condition: Required for EC2-VPC; can be used instead of *GroupName* otherwise

### *GroupName*

The name of the security group.

Type: String

Default: None

Required: Conditional

Condition: For EC2-Classic, can be used instead of *GroupId*.

### *IpPermissions.n.IpProtocol*

The IP protocol name or number (see [Protocol Numbers](#)). For EC2-Classic, security groups can have rules only for TCP, UDP, and ICMP. For EC2-VPC, security groups can have rules assigned to any protocol number.

When you call `DescribeSecurityGroups`, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (for example, `tcp`, `udp`, or `icmp`).

Type: String

Valid values for EC2-Classic: `tcp` | `udp` | `icmp` or the corresponding protocol number (6 | 17 | 1).

Valid values for EC2-VPC: `tcp` | `udp` | `icmp` or any protocol number (see [Protocol Numbers](#)). Use -1 to specify all.

Required: Conditional

Condition: Required for EC2-VPC

### *IpPermissions.n.FromPort*

The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, you can use -1 to specify all ICMP types.

Type: Integer

Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

***IpPermissions.n.ToPort***

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

Type: Integer

Default: None

Required: Conditional

Condition: Required for ICMP and any protocol that uses ports

***IpPermissions.n.Groups.m.UserId***

The AWS account ID that owns the source security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Required: Conditional

Condition: For security groups in EC2-Classic only. Required if modifying access for one or more source security groups.

***IpPermissions.n.Groups.m.GroupName***

The name of the source security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Required: Conditional

Condition: Required if modifying access for one or more source security groups.

***IpPermissions.n.Groups.m.GroupId***

The ID of the source security group. Cannot be used when specifying a CIDR IP address.

Type: String

Default: None

Required: Conditional

Condition: For EC2-VPC only. Required if modifying access for one or more source security groups.

***IpPermissions.n.IpRanges.m.CidrIp***

The CIDR range. Cannot be used when specifying a source security group.

Type: String

Default: None

Constraints: Valid CIDR IP address range.

Required: Conditional

Condition: Required if modifying access for one or more IP address ranges.

## Response Elements

The following elements are returned in a `RevokeSecurityGroupIngressResponse` element.

**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 security group named `webserv`. If the security group were for a VPC, you'd specify the ID of the security group instead of the name.

```
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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RevokeSecurityGroupIngressResponse>
```

## Related Actions

- [CreateSecurityGroup](#) (p. 99)
- [DescribeSecurityGroups](#) (p. 270)
- [AuthorizeSecurityGroupIngress](#) (p. 34)
- [DeleteSecurityGroup](#) (p. 145)

# RunInstances

## Description

Launches the specified number of instances of an AMI for which you have permissions.

If capacity is insufficient to launch the maximum number of instances requested in one Availability Zone (the specified Availability Zone for targeted requests, or an Availability Zone chosen by EC2 for untargeted requests), Amazon EC2 launches the minimum number specified. If Amazon EC2 cannot launch the minimum number of instances requested in a single Availability Zone, no instances are launched.

### Note

Every instance is launched in a security group (created using the `CreateSecurityGroup` operation). If you don't specify a security group in the `RunInstances` request, the "default" security group is used.

For Linux instances, you can provide an optional key pair ID in the launch request (created using the `CreateKeyPair` or `ImportKeyPair` operation). The instances will have access to the public key at boot. You can use this key to provide secure access to an instance of an image on a per-instance basis. Amazon EC2 public images use this feature to provide secure access without passwords.

### Important

Launching public images without a key pair ID will leave them inaccessible.

The public key material is made available to the instance at boot time by placing it in the `openssh_id.pub` file on a logical device that is exposed to the instance as `/dev/sda2` (the instance store). The format of this file is suitable for use as an entry within `~/.ssh/authorized_keys` (the OpenSSH format). This can be done at boot (as part of `rc.local`) allowing for secure access without passwords.

You can provide optional user data in the launch request. All instances that collectively comprise the launch request have access to this data. For more information, see [Instance Metadata](#) in the *Amazon Elastic Compute Cloud User Guide*.

### Note

If any of the AMIs have a product code attached for which the user has not subscribed, the `RunInstances` call will fail.

## Request Parameters

### *ImageId*

The ID of the AMI.

Type: String

Default: None

Required: Yes

### *MinCount*

The minimum number of instances to launch. If the value is more than Amazon EC2 can launch, no instances are launched at all.

Type: Integer

Default: None

Constraints: Between 1 and the maximum number allowed for your account (the default for each account is 20, but this limit can be increased).

Required: Yes

### *MaxCount*

The maximum number of instances to launch. If the value is more than Amazon EC2 can launch, the largest possible number above `MinCount` will be launched instead.

Type: Integer

Default: None

Constraints: Between 1 and the maximum number allowed for your account (the default for each account is 20, but this limit can be increased).

Required: Yes

***KeyName***

The name of the key pair to use.

Type: String

Default: None

Required: No

***SecurityGroupId.n***

One or more security group IDs.

Type: String

Default: None

Required: Conditional

Condition: Required for nondefault VPC; optional for EC2-Classic, default VPC

***SecurityGroup.n***

[EC2-Classic, default VPC] One or more security group names.

Type: String

Default: None

Required: Conditional

Condition: For EC2-Classic, default VPC, you must specify either a group ID or a group name

***UserData***

The Base64-encoded MIME user data to be made available to the instance(s) in this reservation.

Type: String

Default: None

Required: No

***InstanceType***

The instance type. See [Available Instance Types](#) for more information.

Type: String

Valid values: `t1.micro` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.xlarge` | `m3.2xlarge` | `c1.medium` | `c1.xlarge` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` | `hi1.4xlarge` | `hs1.8xlarge` | `cc1.4xlarge` | `cc2.8xlarge` | `cg1.4xlarge`

Default: `m1.small`

Required: No

***Placement.AvailabilityZone***

The Availability Zone to launch the instance into.

Type: String

Default: EC2 chooses a zone for you

Required: No

***Placement.GroupName***

The name of an existing placement group you want to launch the instance into (for cluster instances).

Type: String

Default: None

Required: No

***Placement.Tenancy***

The tenancy of the instance. An instance with a tenancy of `dedicated` runs on single-tenant hardware and can only be launched into a VPC.

Type: String

Default: `default`

Required: No

***KernelId***

The ID of the kernel with which to launch the instance.

Type: String

Default: None

Required: No

***RamdiskId***

The ID of the RAM disk. Some kernels require additional drivers at launch. Check the kernel requirements for information on whether you need to specify a RAM disk. To find kernel requirements, refer to the Resource Center and search for the kernel ID.

Type: String

Default: None

Required: No

***BlockDeviceMapping.n.DeviceName***

The device name exposed to the instance (for example, `/dev/sdh` or `xvdh`). For more information, see [Block Device Mapping](#).

Type: String

Default: None

Required: No

***BlockDeviceMapping.n.NoDevice***

Suppresses the device mapping.

Type: empty element

Default: None

Required: No

***BlockDeviceMapping.n.VirtualName***

The virtual device name, `ephemeral[0..3]`. The number of instance store volumes depends on the instance type.

Type: String

Default: None

Required: No

***BlockDeviceMapping.n.Ebs.SnapshotId***

The ID of the snapshot.

Type: String

Default: None

Required: No

***BlockDeviceMapping.n.Ebs.VolumeSize***

The size of the volume, in GiBs.

Type: Integer

Valid values: If the volume type is `io1`, the minimum size of the volume is 10 GiB.

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.

Required: No

***BlockDeviceMapping.n.Ebs.DeleteOnTermination***

Whether the volume is deleted on instance termination.

Type: Boolean

Default: `true`

Required: No

***BlockDeviceMapping.n.Ebs.VolumeType***

The volume type.

Type: String

Valid values: `standard` | `io1`

Default: `standard`

Required: No

***BlockDeviceMapping.n.Ebs.Iops***

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4000.

Default: None

Required: Required when the volume type is `io1`; not used with `standard` volumes.

***Monitoring.Enabled***

Enables monitoring for the instance.

Type: Boolean

Default: `false`

Required: No

***SubnetId***

[EC2-VPC] The ID of the subnet to launch the instance into.

Type: String

Default: None

Required: No

***DisableApiTermination***

Whether you can terminate the instance using the EC2 API. A value of `true` means you can't terminate the instance using the API (i.e., the instance is "locked"); a value of `false` means you can. If you set this to `true`, and you later want to terminate the instance, you must first change the `disableApiTermination` attribute's value to `false` using `ModifyInstanceAttribute`.

Type: Boolean

Default: `false`

Required: No

***InstanceInitiatedShutdownBehavior***

Whether the instance stops or terminates on instance-initiated shutdown.

Type: String

Valid values: `stop` | `terminate`

Default: `stop`

Required: No

***PrivateIpAddress***

[EC2-VPC] You can optionally use this parameter to assign the instance a specific available IP address from the IP address range of the subnet as the primary IP address.

Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter if you are also specifying `PrivateIpAddresses.n.Primary` with a value of `true` with the `PrivateIpAddresses.n.PrivateIpAddress` option.

Type: String

Default: We select an IP address from the IP address range of the subnet for the instance

Required: No

***ClientToken***

Unique, case-sensitive identifier you provide to ensure idempotency of the request. For more information, see [How to Ensure Idempotency](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Default: None

Constraints: Maximum 64 ASCII characters

Required: No

***NetworkInterface.n.NetworkInterfaceId***

Attaches an existing interface to a single instance. Requires n=1 instances.

Type: String

Default: None

Required: No

***NetworkInterface.n.DeviceIndex***

Applies to both attaching existing network interfaces and when creating new network interfaces.

Type: Integer

Default: None

Required: No

***NetworkInterface.n.SubnetId***

Applies only when creating new network interfaces.

Type: String

Default: None

Required: No

***NetworkInterface.n.Description***

Applies only when creating new network interfaces.

Type: String

Default: None

Required: No

***NetworkInterface.n.PrivateIpAddress***

The primary private IP address of the network interface. Applies only when creating new network interfaces. Requires n=1 network interfaces in launch.

Type: String

Default: None

Required: No

***NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress***

The private IP address of the specified network interface. This parameter can be used multiple times to specify explicit private IP addresses for a network interface, but only one private IP address can be designated as primary.

Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter with the `NetworkInterface.n.PrivateIpAddresses.n.Primary` value of `true` if you designate a primary private IP address using the `NetworkInterface.n.PrivateIpAddress` option.

Type: String

Default: None

Required: No

***NetworkInterface.n.PrivateIpAddresses.n.Primary***

Whether the private IP address is the primary private IP address.

Only one private IP address can be designated as primary. Therefore, you cannot specify this parameter with the `NetworkInterface.n.PrivateIpAddresses.n.Primary` value of `true` and the `NetworkInterface.n.PrivateIpAddresses.n.PrivateIpAddress` option if you designate a primary private IP address using `NetworkInterface.n.PrivateIpAddress`.

Type: Boolean

Default: None

Required: No

***NetworkInterface.n.SecondaryPrivateIpAddressCount***

The number of private IP addresses to assign to a network interface.

For a single network interface, you cannot specify this option and specify more than one private IP address using `NetworkInterface.n.PrivateIpAddress`.

Required: No

***NetworkInterface.n.SecurityGroupId.n***

Applies only when creating new network interfaces.

Type: String

Default: None

Required: No

***NetworkInterface.n.DeleteOnTermination***

Applies to all network interfaces.

Type: Boolean

Default: None

Required: No

***IamInstanceProfile.Arn***

Amazon resource name (ARN) of the IAM Instance Profile (IIP) to associate with the instances.

Type: String

Default: None

Required: No

***IamInstanceProfile.Name***

The name of the IAM Instance Profile (IIP) to associate with the instances.

Type: String

Default: None

Required: No

***EbsOptimized***

Whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Default: `false`

Required: No

## Response Elements

The following elements are returned in a `RunInstancesResponse` element.

**`requestId`**

The ID of the request.

Type: `xsd:string`

**`reservationId`**

The ID of the reservation.

Type: `xsd:string`

**`ownerId`**

The ID of the AWS account that owns the reservation.

Type: `xsd:string`

**`groupSet`**

A list of security groups the instance belongs to. Each group is wrapped in an `item` element.

Type: [GroupItemType](#) (p. 469)

**instancesSet**

A list of instances. Each instance is wrapped in an `item` element.

Type: [RunningInstancesItemType](#) (p. 510)

**requesterId**

The ID of the requester that launched the instances on your behalf (for example, AWS Management Console, Auto Scaling).

Type: `xsd:string`

## 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-1d
&Monitoring.Enabled=true
&AUTHPARAMS
```

### Example Response

```
<RunInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservationId>r-47a5402e</reservationId>
  <ownerId>111122223333</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/>
      <dnsName/>
      <reason/>
      <amiLaunchIndex>0</amiLaunchIndex>
      <instanceType>m1.small</instanceType>
      <launchTime>2007-08-07T11:51:50.000Z</launchTime>
      <placement>
        <availabilityZone>us-east-1b</availabilityZone>
        <groupName/>
        <tenancy>default</tenancy>
      </placement>
    </item>
  </instancesSet>
</RunInstancesResponse>
```



```
<monitoring>
  <state>enabled</state>
</monitoring>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-245f6a01</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<virtualizationType>paravirtual</virtualizationType>
<clientToken/>
<hypervisor>xen</hypervisor>
<ebsOptimized>>false</ebsOptimized>
</item>
<item>
  <instanceId>i-2bc64242</instanceId>
  <imageId>ami-60a54009</imageId>
  <instanceState>
    <code>0</code>
    <name>pending</name>
  </instanceState>
  <privateDnsName/>
  <dnsName/>
  <amiLaunchIndex>1</amiLaunchIndex>
  <instanceType>m1.small</instanceType>
  <launchTime>2007-08-07T11:51:50.000Z</launchTime>
  <placement>
    <availabilityZone>us-east-1b</availabilityZone>
    <groupName/>
    <tenancy>default</tenancy>
  </placement>
  <monitoring>
    <state>enabled</state>
  </monitoring>
  <sourceDestCheck>true</sourceDestCheck>
  <groupSet>
    <item>
      <groupId>sg-245f6a01</groupId>
      <groupName>default</groupName>
    </item>
  </groupSet>
  <virtualizationType>paravirtual</virtualizationType>
  <hypervisor>xen</hypervisor>
  <ebsOptimized>>false</ebsOptimized>
</item>
<item>
  <instanceId>i-2be64332</instanceId>
  <imageId>ami-60a54009</imageId>
  <instanceState>
    <code>0</code>
    <name>pending</name>
  </instanceState>
  <privateDnsName/>
  <dnsName/>
  <amiLaunchIndex>2</amiLaunchIndex>
  <instanceType>m1.small</instanceType>
  <launchTime>2007-08-07T11:51:50.000Z</launchTime>
```

```
<placement>
  <availabilityZone>us-east-1b</availabilityZone>
  <groupName/>
  <tenancy>default</tenancy>
</placement>
<monitoring>
  <state>enabled</state>
</monitoring>
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-245f6a01</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<virtualizationType>paravirtual</virtualizationType>
<hypervisor>xen</hypervisor>
<ebsOptimized>>false</ebsOptimized>
</item>
</instancesSet>
</RunInstancesResponse>
```

## Example Request

This example launches an instance of the `ami-31814f58` AMI and attaches an elastic network interface to it.

```
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/2013-02-01/">
  <requestId>e86ff3c8-2400-45e3-a4e7-f158a69283d4</requestId>
  <reservationId>r-157ad274</reservationId>
  <ownerId>111122223333</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>111122223333</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>
```

## Example Request

The following example launches an m1.large instance into a VPC in subnet subnet-a61dafcf with a single network interface, a primary private IP address of 10.0.2.106 and two secondary private IP addresses (10.0.2.107 and 10.0.2.108)

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-beb0caec
&InstanceType=m1.large
&MaxCount=1
&MinCount=1
&Monitoring.Enabled=false
&NetworkInterface.0.DeviceIndex=0
&NetworkInterface.0.PrivateIpAddresses.0.Primary=true
&NetworkInterface.0.PrivateIpAddresses.0.PrivateIpAddress=10.0.2.106
&NetworkInterface.0.PrivateIpAddresses.1.Primary=false
&NetworkInterface.0.PrivateIpAddresses.1.PrivateIpAddress=10.0.2.107
&NetworkInterface.0.PrivateIpAddresses.2.Primary=false
&NetworkInterface.0.PrivateIpAddresses.2.PrivateIpAddress=10.0.2.108
&NetworkInterface.0.SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

## Example Request

This example launches a Dedicated Instance into a VPC.

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-2a1fec43
&SubnetId=subnet-dea63cb7
&Placement.Tenancy=dedicated
&MinCount=1
&MaxCount=1
&AUTHPARAMS
```

## Related Actions

- [DescribeInstances](#) (p. 203)
- [StopInstances](#) (p. 432)
- [StartInstances](#) (p. 430)
- [TerminateInstances](#) (p. 434)
- [AuthorizeSecurityGroupIngress](#) (p. 34)
- [RevokeSecurityGroupIngress](#) (p. 416)
- [DescribeSecurityGroups](#) (p. 270)
- [CreateSecurityGroup](#) (p. 99)
- [CreateKeyPair](#) (p. 71)
- [ImportKeyPair](#) (p. 352)

# StartInstances

## Description

Starts an Amazon EBS-backed AMI that you've previously stopped.

Instances that use Amazon EBS volumes as their root devices can be quickly stopped and started. When an instance is stopped, the compute resources are released and you are not billed for hourly instance usage. However, your root partition Amazon EBS volume remains, continues to persist your data, and you are charged for Amazon EBS volume usage. You can restart your instance at any time. Each time you transition an instance from stopped to started, we charge a full instance hour, even if transitions happen multiple times within a single hour.

### Note

Before stopping an instance, make sure it is in a state from which it can be restarted. Stopping an instance does not preserve data stored in RAM.

Performing this operation on an instance that uses an instance store as its root device returns an error.

For more information, see [Using Amazon EBS-Backed AMIs and Instances](#).

## Request Parameters

### *InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `StartInstancesResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instancesSet`

A list of instance state changes. Each change is wrapped in an `item` element.

Type: [InstanceStateChangeType](#) (p. 481)

## 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/2013-02-01/">
  <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 Actions

- [StopInstances](#) (p. 432)
- [RunInstances](#) (p. 419)
- [DescribeInstances](#) (p. 203)
- [TerminateInstances](#) (p. 434)

# 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, see [Stopping Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### *InstanceIds*

One or more instance IDs.

Type: String

Default: None

Required: Yes

### *Force*

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`

Required: No

## Response Elements

The following elements are returned in a `StopInstancesResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

**instancesSet**

A list of instance state changes. Each change is wrapped in an `item` element.

Type: [InstanceStateChangeType](#) (p. 481)

## 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/2013-02-01/">
  <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 Actions

- [StartInstances](#) (p. 430)
- [RunInstances](#) (p. 419)
- [DescribeInstances](#) (p. 203)
- [TerminateInstances](#) (p. 434)



# 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, see [Stopping Instances](#) in the *Amazon Elastic Compute Cloud User Guide*

## Request Parameters

### *InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in a `TerminateInstancesResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instancesSet`

A list of instance state changes. Each change is wrapped in an `item` element.

Type: [InstanceStateChangeType](#) (p. 481)

## 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/2013-02-01/">
  <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 Actions

- [DescribeInstances](#) (p. 203)
- [RunInstances](#) (p. 419)
- [StopInstances](#) (p. 432)
- [StartInstances](#) (p. 430)

# UnassignPrivateIpAddresses

## Description

Unassigns one or more secondary private IP addresses from a network interface.

This command is only available in EC2-VPC.

## Request Parameters

### *NetworkInterfaceId*

The network interface from which the secondary private IP address will be unassigned.

Type: String

Default: None

Required: Yes

### *PrivateIpAddress.n*

The secondary private IP addresses that you want to unassign from the network interface. You can specify this option multiple times to unassign more than one IP address.

Type: [AssignPrivateIpAddressesSetItemRequestType](#) (p. 444)

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `UnassignPrivateIpAddressesResponse` element.

### **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

The following request unassigns two secondary private IP addresses from the specified network interface.

```
https://ec2.amazonaws.com/?Action=UnassignPrivateIpAddresses
&NetworkInterfaceId=eni-197d9972
&PrivateIpAddress.0=10.0.2.60
&PrivateIpAddress.1=10.0.2.65
&AUTHPARAMS
```

## Example Response

```
<UnassignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2013-02-01/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</UnassignPrivateIpAddresses>
```

## Related Actions

- [AssignPrivateIpAddresses](#) (p. 14)

# UnmonitorInstances

## Description

Disables monitoring for a running instance. For more information about monitoring instances, see [Monitoring Your Instances and Volumes](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

### *InstanceId.n*

One or more instance IDs.

Type: String

Default: None

Required: Yes

## Response Elements

The following elements are returned in an `UnmonitorInstancesResponse` element.

### `requestId`

The ID of the request.

Type: `xsd:string`

### `instancesSet`

A list of monitoring information for one or more instances. Each set of information is wrapped in an `item` element.

Type: [MonitorInstancesResponseSetItemType](#) (p. 492)

## 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/2013-02-01/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-43a4412a</instanceId>
      <monitoring>
        <state>disabled</state>
      </monitoring>
    </item>
  </instancesSet>
</UnmonitorInstancesResponse>
```

```
</item>
<item>
  <instanceId>i-23a3397d</instanceId>
  <monitoring>
    <state>disabled</state>
  </monitoring>
</item>
</instancesSet>
</UnmonitorInstancesResponse>
```

## Related Actions

- [MonitorInstances](#) (p. 370)
- [RunInstances](#) (p. 419)

# Data Types

---

## Topics

- [AccountAttributeSetItemType](#) (p. 443)
- [AccountAttributeValueSetItemType](#) (p. 443)
- [AssignPrivateIpAddressesSetItemRequestType](#) (p. 444)
- [AttachmentSetItemResponseType](#) (p. 444)
- [AttachmentType](#) (p. 445)
- [AvailabilityZoneItemType](#) (p. 445)
- [AvailabilityZoneMessageType](#) (p. 446)
- [BlockDeviceMappingItemType](#) (p. 446)
- [BundleInstanceS3StorageType](#) (p. 447)
- [BundleInstanceTaskErrorType](#) (p. 448)
- [BundleInstanceTaskStorageType](#) (p. 448)
- [BundleInstanceTaskType](#) (p. 449)
- [CancelSpotInstanceRequestsResponseSetItemType](#) (p. 450)
- [ConversionTaskType](#) (p. 450)
- [CreateVolumePermissionItemType](#) (p. 451)
- [CustomerGatewayType](#) (p. 452)
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- [DescribeImagesResponseItemType](#) (p. 453)
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- [DescribeReservedInstancesListingSetItemType](#) (p. 457)
- [DescribeReservedInstancesOfferingsResponseSetItemType](#) (p. 457)
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- [DescribeReservedInstancesResponseSetItemType](#) (p. 459)
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- [DiskImageDescriptionType](#) (p. 464)
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- [InstanceCountsSetType](#) (p. 475)
- [InstanceEbsBlockDeviceType](#) (p. 475)
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- [InstanceMonitoringStateType](#) (p. 476)
- [InstanceNetworkInterfaceAssociationType](#) (p. 477)
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- [InstanceNetworkInterfaceSetItemRequestType](#) (p. 478)
- [InstanceNetworkInterfaceSetItemType](#) (p. 479)
- [InstancePrivateIpAddressesSetItemType](#) (p. 480)
- [InstanceStateChangeType](#) (p. 481)
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- [SpotPriceHistorySetItemType](#) (p. 517)
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- [UserDataType](#) (p. 521)
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- [VolumeStatusItemType](#) (p. 522)
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- [VpcType](#) (p. 525)
- [VpnConnectionOptionsResponseType](#) (p. 526)
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- [VpnStaticRouteType](#) (p. 528)
- [VpnTunnelTelemetryType](#) (p. 529)

## AccountAttributeSetItemType

Contains a set of account attributes.

### Ancestors

- [AccountAttributeSetType](#)

### Relevant Operations

- [DescribeAccountAttributes](#) (p. 167)

### Contents

**attributeName**

The name of the attribute.

Type: String

**attributeValueSet**

A list of the values of the requested attributes, each one wrapped in an `item` element.

Type: [AccountAttributeValueSetItemType](#) (p. 443)

## AccountAttributeValueSetItemType

Describes the value of an account attribute.

### Ancestors

- [AccountAttributeSetItemType](#) (p. 443)

### Relevant Operations

- [DescribeAccountAttributes](#) (p. 167)

### Contents

**attributeValue**

The value of the attribute.

Type: String

# AssignPrivateIpAddressesSetItemRequestType

Describes a private IP address.

## Ancestors

- AssignPrivateIpAddressesType

## Relevant Operations

- AssignPrivateIpAddresses (p. 14)
- UnassignPrivateIpAddresses (p. 436)

## Contents

### **privateIpAddress**

The private IP address.

Type: String

# AttachmentSetItemResponseType

The AttachmentSetItemResponseType data type.

## Ancestors

- AttachmentSetResponseType

## Relevant Operations

- DescribeVolumes

## Contents

### **volumeId**

The ID of the volume.

Type: String

### **instanceId**

The ID of the instance.

Type: String

### **device**

The device name exposed to the instance (e.g., /dev/sdh).

Type: String

### **status**

The attachment state.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

**attachTime**

The time stamp when the attachment initiated.

Type: DateTime

**deleteOnTermination**

Whether the Amazon EBS volume is deleted on instance termination.

Type: Boolean

## AttachmentType

Describes an attachment between a virtual private gateway and a VPC.

### Ancestors

- AttachmentSetType

### Relevant Operations

- [AttachVpnGateway](#) (p. 29)
- [CreateVpnGateway](#) (p. 124)
- [DescribeVpnGateways](#) (p. 323)

### Contents

**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

### **zoneName**

The name of the Availability Zone.

Type: String

### **zoneState**

The state of the Availability Zone.

Type: String

### **regionName**

The name of the Region.

Type: String

### **messageSet**

Any messages about the Availability Zone, each one wrapped in an `item` element.

Type: [AvailabilityZoneMessageType](#) (p. 446)

## AvailabilityZoneMessageType

The AvailabilityZoneMessageType data type.

### Ancestors

- AvailabilityZoneMessageSetType

### Relevant Operations

- DescribeAvailabilityZones

## Contents

### **message**

The message about the Availability Zone.

Type: String

## BlockDeviceMappingItemType

Describes a block device mapping.

### Ancestors

- BlockDeviceMappingType

### Relevant Operations

- [DescribeImageAttribute](#) (p. 190)

- [DescribeImages](#) (p. 193)
- [DescribeSpotInstanceRequests](#) (p. 282)
- [RegisterImage](#) (p. 379)
- [RequestSpotInstances](#) (p. 397)
- [RunInstances](#) (p. 419)

## Contents

### **deviceName**

The device name exposed to the instance (for example, /dev/sdh).

Type: String

### **virtualName**

The virtual device name.

Type: String

### **ebs**

Parameters used to automatically set up Amazon EBS volumes when the instance is launched.

Type: [EbsBlockDeviceType](#) (p. 466)

### **noDevice**

Include this empty element to suppress the specified device included in the block device mapping of the AMI.

## BundleInstanceS3StorageType

The BundleInstanceS3StorageType data type.

## Ancestors

- [BundleInstanceTaskStorageType](#) (p. 448)

## Relevant Operations

- [BundleInstance](#)
- [DescribeBundleTasks](#)
- [CancelBundleTask](#)
- [BundleInstance](#)

## Contents

### **awsAccessKeyId**

The Access Key ID of the owner of the Amazon S3 bucket.

Type: String

### **bucket**

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

**prefix**

The beginning of the file name of the AMI.

Type: String

**uploadPolicy**

A Base64-encoded Amazon S3 upload policy that gives Amazon EC2 permission to upload items into Amazon S3 on the user's behalf.

Type: String

**uploadPolicySignature**

The signature of the Base64 encoded JSON document.

Type: String

## BundleInstanceTaskErrorType

The BundleInstanceTaskErrorType data type.

### Ancestors

- [BundleInstanceTaskType](#) (p. 449)

### Relevant Operations

- BundleInstance
- DescribeBundleTasks
- CancelBundleTask

### Contents

**code**

The error code.

Type: String

**message**

The error message.

Type: String

## BundleInstanceTaskStorageType

The BundleInstanceTaskStorageType data type.

### Ancestors

- [BundleInstanceTaskType](#) (p. 449)

## Relevant Operations

- [BundleInstance](#)
- [DescribeBundleTasks](#)
- [CancelBundleTask](#)
- [BundleInstance](#)

## Contents

### s3

An Amazon S3 storage location.

Type: [BundleInstanceS3StorageType](#) (p. 447)

## BundleInstanceTaskType

Describes a bundle task.

## Ancestors

- [BundleInstanceTasksSetType](#)

## Relevant Operations

- [BundleInstance](#) (p. 38)
- [CancelBundleTask](#) (p. 41)
- [DescribeBundleTasks](#) (p. 176)

## Contents

### instanceId

The ID of the instance associated with this bundle task.

Type: String

### bundleId

The ID for this bundle task.

Type: String

### state

The state of the task.

Type: String

Valid values: `pending` | `waiting-for-shutdown` | `bundling` | `storing` | `cancelling` | `complete` | `failed`

### startTime

The time this task started.

Type: DateTime



**updateTime**

The time of the most recent update for the task.

Type: DateTime

**storage**

The Amazon S3 storage locations.

Type: [BundleInstanceTaskStorageType](#) (p. 448)

**progress**

The level of task completion, as a percent (for example, 20%).

Type: String

**error**

If the task fails, a description of the error.

Type: [BundleInstanceTaskErrorType](#) (p. 448)

## CancelSpotInstanceRequestsResponseSetItemType

The CancelSpotInstanceRequestsResponseSetItemType data type.

### Ancestors

- [CancelSpotInstanceRequestsResponseSetType](#)

### Relevant Operations

- [CancelSpotInstanceRequests](#)

### Contents

**spotInstanceRequestId**

The ID of the Spot Instance request.

Type: String

**state**

The state of the Spot Instance request.

Type: String

Valid values: `active` | `open` | `closed` | `cancelled` | `failed`

## ConversionTaskType

The ConversionTaskType data type.

### Ancestors

- [ConversionTaskSetType](#)

## Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume

## Contents

### **conversionTaskId**

The ID of the conversion task

Type: String

### **expirationTime**

The time when the task expires. If the upload isn't complete before the expiration time, we automatically cancel the task.

Type: String

### **importVolume**

If the task is for importing a volume, this contains information about the import volume task.

Type: [ImportVolumeTaskDetailsType](#) (p. 473)

### **importInstance**

If the task is for importing an instance, this contains information about the import instance task.

Type: [ImportInstanceTaskDetailsType](#) (p. 471)

### **state**

The state of the conversion task.

Type: String

Valid values: `active` | `cancelling` | `cancelled` | `completed`

### **statusMessage**

The status message related to the conversion task.

Type: String

## CreateVolumePermissionItemType

The CreateVolumePermissionItemType data type.

## Ancestors

- CreateVolumePermissionListType

## Relevant Operations

- ModifySnapshotAttribute
- DescribeSnapshotAttribute

## Contents

### **userId**

The ID of an AWS account that can create volumes from the snapshot.

Type: String

### **group**

The group that is allowed to create volumes from the snapshot.

Type: String

Valid value: `all`

## CustomerGatewayType

Describes a customer gateway.

## Ancestors

- [CustomerGatewaySetType](#)

## Relevant Operations

- [CreateCustomerGateway](#) (p. 58)
- [DescribeCustomerGateways](#) (p. 181)

## Contents

### **customerGatewayId**

The ID of the customer gateway.

Type: String

### **state**

The current state of the customer gateway.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

### **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**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 507)

# DescribeAddressesResponseItemType

Describes an IP address.

## Ancestors

- DescribeAddressesResponseInfoType

## Relevant Operations

- [DescribeAddresses](#) (p. 169)

## Contents

### **publicIp**

The public IP address.

Type: String

### **allocationId**

The ID representing the allocation of the address for use with EC2-VPC.

Type: String

### **domain**

Whether this Elastic IP address is for instances in EC2-Classic or EC2-VPC.

Type: String

Valid values: `standard` | `vpc`

### **instanceId**

The ID of the instance the address is associated with (if any).

Type: String

### **associationId**

The ID representing the association of an Elastic IP address with an instance in a VPC.

Type: String

### **networkInterfaceId**

The ID of the network interface.

Type: String

### **networkInterfaceOwnerId**

The ID of the AWS account that owns the network interface.

Type: String

# DescribeImagesResponseItemType

The DescribeImagesResponseItemType data type.

## Ancestors

- DescribeImagesResponseInfoType

## Relevant Operations

- `DescribeImages`

## Contents

### **imageId**

The ID of the AMI.

Type: String

### **imageLocation**

The location of the AMI.

Type: String

### **imageState**

Current state of the AMI. If the operation returns `available`, the image is successfully registered and available for launching.

Type: String

Valid values: `available` | `pending` | `failed`

### **imageOwnerId**

AWS account ID of the image owner.

Type: String

### **isPublic**

Whether the image has public launch permissions. The value is `true` if this image has public launch permissions or `false` if it has only implicit and explicit launch permissions.

Type: Boolean

### **productCodes**

Any product codes associated with the AMI, each one wrapped in an `item` element.

Type: [ProductCodesSetItemType](#) (p. 503)

### **architecture**

The architecture of the image.

Type: String

### **imageType**

The type of image (machine, kernel, or RAM disk).

Type: String

### **kernelId**

The kernel associated with the image, if any. Only applicable for machine images.

Type: String

### **ramdiskId**

The RAM disk associated with the image, if any. Only applicable for machine images.

Type: String

### **platform**

The value is `Windows` for Windows AMIs; otherwise blank.

Type: String

### **stateReason**

The reason for the state change.

Type: [StateReasonType](#) (p. 518)

### **imageOwnerAlias**

The AWS account alias (for example, `amazon`, `self`, etc.) or AWS account ID that owns the AMI.

Type: String

<b>name</b>	The name of the AMI that was provided during image creation. Type: String
<b>description</b>	The description of the AMI that was provided during image creation. Type: String
<b>rootDeviceType</b>	The type of root device used by the AMI. The AMI can use an Amazon EBS volume or an instance store volume. Type: String Valid values: <code>ebs</code>   <code>instance-store</code>
<b>rootDeviceName</b>	The device name of the root device (for example, <code>/dev/sda1</code> , or <code>xvda</code> ). Type: String
<b>blockDeviceMapping</b>	Any block device mapping entries, each one wrapped in an <code>item</code> element. Type: <a href="#">BlockDeviceMappingItemType</a> (p. 446)
<b>virtualizationType</b>	The type of virtualization of the AMI. Type: String Valid values: <code>paravirtual</code>   <code>hvm</code>
<b>tagSet</b>	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 507)
<b>hypervisor</b>	The image's hypervisor type. Type: String Valid values: <code>ovm</code>   <code>xen</code>

## DescribeKeyPairsResponseItem Type

The DescribeKeyPairsResponseItem Type data type.

### Ancestors

- DescribeKeyPairsResponseInfoType

### Relevant Operations

- DescribeKeyPairs

### Contents

<b>keyName</b>	The name of the key pair. Type: String
----------------	---

**keyFingerprint**

If you used `CreateKeyPair` to create the key pair, this is the SHA-1 digest of the DER encoded private key. If you used `ImportKeyPair` to provide AWS the public key, this is the MD5 public key fingerprint as specified in section 4 of [RFC4716](#).

Type: String

## DescribeReservedInstancesListingsResponseSetItemType

The `DescribeReservedInstancesListingsResponseSetItemType` data type.

### Ancestors

- `DescribeReservedInstancesListingsResponseType`

### Relevant Operations

- `DescribeReservedInstancesListings`

### Contents

**reservedInstancesListingId**

The ID of the Reserved Instance listing.

Type: String

**reservedInstancesId**

The ID of the Reserved Instance.

Type: String

**createDate**

The time the listing is created.

Type: DateTime

**updateDate**

The last modified timestamp of the listing.

Type: DateTime

**status**

The status of the Reserved Instance listing.

Type: String

Valid values: `active` | `pending` | `cancelled` | `closed`.

**statusMessage**

The reason for the current status of the Reserved Instance listing. The response can be blank.

Type: String

**instanceCounts**

The number of instances in this state.

Type: [InstanceCountsSetType](#) (p. 475)

**priceSchedules**

The price of the Reserved Instance listing.

Type: [PriceScheduleSetType](#) (p. 501)

**tagSet**

The tags assigned to the resource. Each tag's information is wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 507)

**clientToken**

The idempotency token you provided when you created the listing.

Type: String

## DescribeReservedInstancesListingSetItemType

The DescribeReservedInstancesListingSetItemType data type.

### Ancestors

- DescribeReservedInstancesListings

### Relevant Operations

- DescribeReservedInstancesListings

### Contents

**reservedInstancesListingId**

The ID of the Reserved Instance listing.

Type: String

## DescribeReservedInstancesOfferingsResponseSetItemType

The DescribeReservedInstancesOfferingsResponseSetItemType data type.

### Ancestors

- DescribeReservedInstancesOfferingsResponseSetType

### Relevant Operations

- DescribeReservedInstancesOfferings

### Contents

**reservedInstancesOfferingId**

The ID of the Reserved Instance offering.

Type: String

**instanceType**

The instance type on which the Reserved Instance can be used.

Type: String



**availabilityZone**

The Availability Zone in which the Reserved Instance can be used.

Type: String

**duration**

The duration of the Reserved Instance, in seconds.

Type: Long

**fixedPrice**

The purchase price of the Reserved Instance.

Type: Double

**usagePrice**

The usage price of the Reserved Instance, per hour.

Type: Double

**productDescription**

The Reserved Instance description.

Type: String

Valid values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

**instanceTenancy**

The tenancy of the reserved instance.

Type: 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). At this time, the only supported currency is USD.

Type: String

**offeringType**

The Reserved Instance offering type.

Type: String

**recurringCharges**

The recurring charge tag assigned to the resource.

Type: [RecurringChargesSetItemType](#) (p. 505)

**marketplace**

Indicates if the offering is available through the Reserved Instance Marketplace (resale) or AWS. Returns `true` if it is a Marketplace offering.

Type: Boolean

**pricingDetailsSet**

The pricing details of the Reserved Instance offering wrapped in an `item` element.

Type: [PricingDetailsSetItemType](#) (p. 502).

## DescribeReservedInstancesOfferingsResponseType

The DescribeReservedInstancesOfferingsResponseType data type.

### Ancestors

- DescribeReservedInstancesOfferings

### Relevant Operations

- DescribeReservedInstancesOfferings

## Contents

### **requestId**

The ID of the Reserved Instance offering request.

Type: String

### **reservedInstancesOfferingsSet**

The instance type on which the Reserved Instance can be used.

Type: [DescribeReservedInstancesOfferingsResponseSetItemType](#) (p. 457)

### **nextToken**

The next paginated set of results to return.

Type: String

## DescribeReservedInstancesResponseSetItemType

The DescribeReservedInstancesResponseSetItemType data type.

## Ancestors

- DescribeReservedInstancesResponseSetType

## Relevant Operations

- DescribeReservedInstances

## Contents

### **reservedInstancesId**

The ID of the Reserved Instance.

Type: String

### **instanceType**

The instance type on which the Reserved Instance can be used.

Type: String

### **availabilityZone**

The Availability Zone in which the Reserved Instance can be used.

Type: String

### **start**

The date and time the Reserved Instance started.

Type: DateTime

### **duration**

The duration of the Reserved Instance, in seconds.

Type: Long

### **fixedPrice**

The purchase price of the Reserved Instance.

Type: Double

### **usagePrice**

The usage price of the Reserved Instance, per hour.

Type: Double

**instanceCount**

The number of Reserved Instances purchased.

Type: Integer

**productDescription**

The Reserved Instance description.

Type: String

Valid values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

**state**

The state of the Reserved Instance purchase.

Type: String

Valid values: payment-pending | active | payment-failed | retired

**tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 507)

**instanceTenancy**

The tenancy of the reserved instance.

Type: String

Valid values: default | dedicated

**currencyCode**

The currency of the Reserved Instance. It's specified using ISO 4217 standard currency codes.

Type: String

Valid values: As specified in ISO 4217 (for example, USD, JPY)

**offeringType**

The Reserved Instance offering type.

Type: String

**recurringCharges**

The recurring charge tag assigned to the resource.

Type: [RecurringChargesSetItemType](#) (p. 505)

## DescribeReservedInstancesSetItemType

The DescribeReservedInstancesSetItemType data type.

### Ancestors

- DescribeReservedInstancesListings

### Relevant Operations

- DescribeReservedInstances

### Contents

**reservedInstancesId**

The ID of the Reserved Instance.

Type: String

## DescribeSnapshotsSetItemResponseType

The DescribeSnapshotsSetItemResponseType data type.

### Ancestors

- DescribeSnapshotsSetResponseType

### Relevant Operations

- DescribeSnapshots

### Contents

**snapshotId**

The ID of the snapshot.

Type: String

**volumeId**

The ID of the volume.

Type: String

**status**

The snapshot state.

Type: String

Valid values: `pending` | `completed` | `error`

**startTime**

The time stamp when the snapshot was initiated.

Type: DateTime

**progress**

The progress of the snapshot, as a percentage.

Type: String

**ownerId**

The ID of the AWS account that owns the snapshot.

Type: String

**volumeSize**

The size of the volume, in GiB.

Type: String

**description**

The description of the snapshot.

Type: String

**ownerAlias**

The AWS account alias (for example, `amazon`, `self`) or AWS account ID that owns the AMI.

Type: String

**tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 507)

## DescribeVolumesSetItemResponseType

The DescribeVolumesSetItemResponseType data type.

### Ancestors

- [ItemType-DescribeVolumesSetResponseType](#)

### Relevant Operations

- [DescribeVolumes](#)

### Contents

#### **volumeId**

The ID of the volume.

Type: String

#### **size**

The size of the volume, in GiBs.

Type: String

#### **snapshotId**

The snapshot from which the volume was created (optional).

Type: String

#### **availabilityZone**

The Availability Zone in which the volume was created.

Type: String

#### **status**

The state of the volume.

Type: String

Valid values: `creating` | `available` | `in-use` | `deleting` | `deleted` | `error`

#### **createTime**

The time stamp when volume creation was initiated.

Type: DateTime

#### **attachmentSet**

Any volumes attached, each one wrapped in an `item` element.

Type: [AttachmentSetItemResponseType](#) (p. 444)

#### **tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 507)

#### **volumeType**

The volume type.

Type: String

Valid values: `standard` | `io1`

**iops**

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4000.

## DhcpConfigurationItemType

Describes a DHCP configuration option.

### Ancestors

- [DhcpConfigurationItemSetType](#)

### Relevant Operations

- [CreateDhcpOptions](#) (p. 60)
- [DescribeDhcpOptions](#) (p. 184)

### Contents

**key**

The name of a DHCP option.

Type: String

**valueSet**

Any values for a DHCP option, each one wrapped in an `item` element.

Type: [DhcpValueType](#) (p. 464)

## DhcpOptionsType

Describes a set of DHCP options.

### Ancestors

- [DhcpOptionsSetType](#)

### Relevant Operations

- [CreateDhcpOptions](#) (p. 60)
- [DescribeDhcpOptions](#) (p. 184)

## Contents

### `dhcpOptionsId`

The ID of the set of DHCP options.

Type: String

### `dhcpConfigurationSet`

The options in the set. Each option's key and set of values are wrapped in an `item` element.

Type: [DhcpConfigurationItemType](#) (p. 463)

### `tagSet`

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 507)

## DhcpValueType

The DhcpValueType data type.

## Ancestors

- [DhcpValueSetType](#)

## Relevant Operations

- [CreateDhcpOptions](#)
- [CreateDhcpOptions](#)
- [DescribeDhcpOptions](#)

## Contents

### `value`

A value for the DHCP option.

Type: String

## DiskImageDescriptionType

The DiskImageDescriptionType data type.

## Ancestors

- [ImportInstanceVolumeDetailItemType](#) (p. 472)
- [ImportVolumeTaskDetailsType](#) (p. 473)

## Relevant Operations

- [DescribeConversionTasks](#)

- [ImportInstance](#)
- [ImportVolume](#)

## Contents

### **format**

The disk image format.

Type: String

### **size**

The size of the disk image.

Type: 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 [Authenticating REST Requests](#) topic in the *Amazon Simple Storage Service Developer Guide*.

Type: String

### **checksum**

The checksum computed for the disk image.

Type: String

## DiskImageVolumeDescriptionType

The DiskImageVolumeDescriptionType data type.

## Ancestors

- [ImportInstanceVolumeDetailItemType](#) (p. 472)
- [ImportVolumeTaskDetailsType](#) (p. 473)

## Relevant Operations

- [DescribeConversionTasks](#)
- [ImportInstance](#)
- [ImportVolume](#)

## Contents

### **size**

The size of the volume.

Type: Integer

### **id**

The volume identifier.

Type: String



# EbsBlockDeviceType

Describe an Amazon EBS block device.

## Ancestors

- [BlockDeviceMappingItemType](#) (p. 446)

## Relevant Operations

- [DescribeImageAttribute](#) (p. 190)
- [DescribeImages](#) (p. 193)
- [DescribeSpotInstanceRequests](#) (p. 282)
- [RegisterImage](#) (p. 379)
- [RequestSpotInstances](#) (p. 397)
- [RunInstances](#) (p. 419)

## Contents

### **snapshotId**

The ID of the snapshot.

Type: String

### **volumeSize**

The size of the volume, in GiB.

Type: Integer

Valid values: If the volume type is `io1`, the minimum size of the volume is 10 GiB.

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.

### **deleteOnTermination**

Whether the Amazon EBS volume is deleted on instance termination.

Type: Boolean

### **volumeType**

The volume type.

Type: String

Valid values: `standard` | `io1`

Default: `standard`

### **iops**

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Valid values: Range is 100 to 4000.

Default: None

Condition: Required when the volume type is `io1`; not used with `standard` volumes.

# EbsInstanceBlockDeviceMappingResponseType

Describes parameter used to set up an Amazon EBS volume in a block device mapping.

## Ancestors

- [InstanceBlockDeviceMappingResponseItem](#) (p. 474)

## Relevant Operations

- [DescribeInstanceAttribute](#) (p. 200)
- [DescribeInstances](#) (p. 203)
- [RunInstances](#) (p. 419)

## Contents

### **volumeId**

The ID of the Amazon EBS volume.

Type: String

### **status**

The attachment state.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

### **attachTime**

The time stamp when the attachment initiated.

Type: DateTime

### **deleteOnTermination**

Whether the Amazon EBS volume is deleted on instance termination.

Type: Boolean

# ExportTaskResponseType

The ExportTaskResponseType data type.

## Ancestors

- [CreateInstanceExportTaskResponse](#)
- [DescribeExportTasksResponse](#)
- [ExportTaskSetResponse](#)

## Relevant Operations

- [CreateInstanceExportTask](#)
- [DescribeExportTasks](#)

## Contents

### **exportTaskId**

The ID of the export task.

Type: String

### **description**

A description of the resource being exported.

Type: String

### **state**

The state of the conversion task.

Type: String

Valid values: active | cancelling | cancelled | completed

### **statusMessage**

The status message related to the export task.

Type: String

### **instanceExport**

Information about the instance being exported.

Type: [InstanceExportTaskResponseType](#) (p. 476)

### **exportToS3**

Information about the destination Amazon S3 bucket.

Type: [ExportToS3TaskResponseType](#) (p. 468)

## ExportToS3TaskResponseType

The ExportToS3TaskResponseType data type.

## Ancestors

- [CreateInstanceExportTaskResponseType](#)
- [DescribeExportTasksResponseType](#)
- [ExportTaskSetResponseType](#)
- [ExportTaskResponseType](#)

## Relevant Operations

- [CreateInstanceExportTask](#)
- [DescribeExportTasks](#)

## Contents

### **diskImageFormat**

The format for the exported image.

Type: String

Valid values: vmdk | vhd

**containerFormat**

The container format used to combine disk images with metadata (such as OVF).

Type: String

Valid values: ova

**s3Bucket**

The Amazon S3 bucket for the destination image.

Type: String

**s3Key**

The image written to a single object in s3bucket at the S3 key s3prefix + exportTaskId + '.' + diskImageFormat.

Type: String

## GroupItem

The GroupItem data type.

### Ancestors

- GroupSetType

### Relevant Operations

- DescribeInstanceAttribute
- DescribeInstances
- RequestSpotInstances
- DescribeSpotInstanceRequests
- RequestSpotInstances
- RunInstances
- CreateNetworkInterface

### Contents

**groupId**

The ID of the security group.

In API versions before 2011-01-01, this field returned the name of the security group.

Type: String

**groupName**

The name of the security group.

Type: String

## IamInstanceProfileRequestType

The IamInstanceProfileRequestType data type.

## Ancestors

- RunInstancesType
- LaunchSpecificationRequestType
- LaunchSpecificationResponseType

## Relevant Operations

- RunInstances
- RequestSpotInstances

## Contents

### **arn**

The Amazon resource name (ARN) of the IAM Instance Profile (IIP) to associate with the instance.

Type: String

### **name**

The name of the IAM Instance Profile (IIP) to associate with the instance.

Type: String

# IamInstanceProfileResponseType

The IamInstanceProfileResponseType data type.

## Ancestors

- RunningInstancesItemType

## Relevant Operations

- RunInstances
- RequestSpotInstances

## Contents

### **arn**

The Amazon resource name (ARN) of the IAM Instance Profile (IIP) to associate with the instance.

Type: String

### **id**

The ID of the IAM Instance Profile ID (IIP) associated with the instance.

Type: String

## IcmpTypeCodeType

Describes the ICMP type and code.

### Ancestors

- [NetworkAclEntryType](#) (p. 493)

### Relevant Operations

- [CreateNetworkAcl](#) (p. 73)
- [DescribeNetworkAcls](#) (p. 230)

### Contents

#### `code`

The ICMP code. A value of -1 means all codes for the specified 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. 450)

### Relevant Operations

- [DescribeConversionTasks](#)
- [ImportInstance](#)
- [ImportVolume](#)

### Contents

#### `volumes`

Any instance volumes for import, each one wrapped in an `item` element.

Type: [ImportInstanceVolumeDetailItem](#) (p. 472)

#### `instanceId`

The ID of the resulting instance in Amazon EC2.

Type: String

**platform**

The instance operating system.

Type: String

Valid value: windows

**description**

An optional description of the instance.

Type: String

## ImportInstanceVolumeDetailItemType

The ImportInstanceVolumeDetailItemType data type.

### Ancestors

- ImportInstanceVolumeDetailSetType

### Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume

### Contents

**bytesConverted**

The number of bytes converted so far.

Type: Long

**availabilityZone**

The Availability Zone where the resulting instance will reside.

Type: String

**image**

The information about the image.

Type: [DiskImageDescriptionType](#) (p. 464)

**description**

The description you provided when starting the import instance task.

Type: String

**volume**

The information about the volume.

Type: [DiskImageVolumeDescriptionType](#) (p. 465)

**status**

The status of the import of this particular disk image.

Type: String

**statusMessage**

The status information or errors related to the disk image.

Type: String

## ImportVolumeTaskDetailsType

The ImportVolumeTaskDetailsType data type.

### Ancestors

- [ConversionTaskType](#) (p. 450)

### Relevant Operations

- DescribeConversionTasks
- ImportInstance
- ImportVolume

### Contents

#### **bytesConverted**

The number of bytes converted so far.

Type: Long

#### **availabilityZone**

The Availability Zone where the resulting volume will reside.

Type: String

#### **description**

The description you provided when starting the import volume task.

Type: String

#### **image**

Information about the image.

Type: [DiskImageDescriptionType](#) (p. 464)

#### **volume**

Information about the volume.

Type: [DiskImageVolumeDescriptionType](#) (p. 465)

## InstanceBlockDeviceMappingItemType

Describes a block device mapping.

### Ancestors

- InstanceBlockDeviceMappingType

### Relevant Operations

- [ModifyInstanceAttribute](#) (p. 360)



## Contents

### **deviceName**

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

Type: String

### **virtualName**

The virtual device name.

Type: String

### **ebs**

Parameters used to automatically set up Amazon EBS volumes when the instance is launched.

Type: [InstanceEbsBlockDeviceType](#) (p. 475)

### **noDevice**

Include this empty element to suppress the specified device included in the block device mapping of the AMI.

## InstanceBlockDeviceMappingResponseItemType

Describes a block device mapping.

### Ancestors

- [InstanceBlockDeviceMappingResponseType](#)

### Relevant Operations

- [DescribeInstanceAttribute](#)
- [DescribeInstances](#)
- [RunInstances](#)

## Contents

### **deviceName**

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

Type: String

### **ebs**

Parameters used to automatically set up Amazon EBS volumes when the instance is launched.

Type: [EbsInstanceBlockDeviceMappingResponseType](#) (p. 467)

## InstanceCountsSetItemType

The InstanceCountsSetItemType data type.

### Ancestors

- [DescribeReservedInstancesListingSetType](#)

- [InstanceCountsSetType](#)

## Relevant Operations

- [DescribeReservedInstancesListingsResponseType](#)

## Contents

### **state**

The states of the listed Reserved Instances.

Type: String

Valid values: `available` | `sold` | `cancelled` | `pending`

### **instanceCount**

The number of listed Reserved Instances in the state specified by the `state`.

Type: Integer

## InstanceCountsSetType

The InstanceCountsSetType data type.

## Ancestors

- [DescribeReservedInstancesListingSetType](#)

## Relevant Operations

- [DescribeReservedInstancesListingsResponseType](#)

## Contents

### **item**

The Reserved Instance listing item.

Type: [InstanceCountsSetItemType](#) (p. 474)

## InstanceEbsBlockDeviceType

Describes parameters used to set up an Amazon EBS volume.

## Ancestors

- [InstanceBlockDeviceMappingItemType](#) (p. 473)

## Relevant Operations

- [ModifyInstanceAttribute](#) (p. 360)

## Contents

### **deleteOnTermination**

Whether the Amazon EBS volume is deleted on instance termination.

Type: Boolean

### **volumeId**

The ID of the Amazon EBS volume.

Type: String

## InstanceExportTaskResponseType

The InstanceExportTaskResponseType data type.

## Ancestors

- [CreateInstanceExportTaskResponseType](#)
- [DescribeExportTasksResponseType](#)
- [ExportTaskSetResponseType](#)
- [ExportTaskResponseType](#)

## Relevant Operations

- [CreateInstanceExportTask](#)
- [DescribeExportTasks](#)

## Contents

### **instanceId**

The ID of the resource being exported.

Type: String

### **targetEnvironment**

The target virtualization environment.

Type: String

Valid values: `vmware` | `citrix`

## InstanceMonitoringStateType

Describes the monitoring information for an instance.

## Ancestors

- [MonitorInstancesResponseSetItem](#) (p. 492)
- [RunningInstancesItem](#) (p. 510)

## Relevant Operations

- [MonitorInstances](#)
- [UnmonitorInstances](#)
- [DescribeInstances](#)
- [RunInstances](#)

## Contents

### **state**

The state of monitoring for the instance. The `disabled` state means that Detailed Monitoring is disabled for the instance. The `enabled` state means that Detailed Monitoring is enabled for the instance. The `pending` state means that the instance is launching or that you recently enabled Detailed Monitoring for the instance.

Type: String

Valid values: `disabled` | `enabled` | `pending`

## InstanceNetworkInterfaceAssociationType

Describes association information for an Elastic IP address.

## Relevant Operations

- [DescribeInstances](#) (p. 203)
- [RunInstances](#) (p. 419)

## Contents

### **publicIp**

The address of the Elastic IP address bound to the network interface.

Type: String

### **publicDnsName**

The public DNS name.

Type: String

### **ipOwnerId**

The ID of the Elastic IP address owner.

Type: String

# InstanceNetworkInterfaceAttachmentType

Describes a network interface attachment.

## Relevant Operations

- [DescribeInstances](#) (p. 203)
- [RunInstances](#) (p. 419)

## Contents

### **attachmentID**

The ID of the network interface attachment.

Type: String

### **deviceIndex**

The index of the device on the instance for the network interface attachment.

Type: Integer

### **status**

The attachment state.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

### **attachTime**

The time stamp when the attachment initiated.

Type: DateTime

### **deleteOnTermination**

Whether the network interface is deleted when the instance is terminated.

Type: Boolean

# InstanceNetworkInterfaceSetItemType

Describes a network interface.

## Ancestors

- [InstanceNetworkInterfaceSetRequestType](#)

## Relevant Operations

- [DescribeNetworkInterfaces](#) (p. 237)

## Contents

### **networkInterfaceId**

The ID of the network interface.

Type: String

**deviceIndex**

Required. The index of the device on the instance for the network interface attachment.

Type: Integer

**subnetId**

The ID of the subnet associated with the network string.

Type: String

**description**

The description of the network interface.

Type: String

**privateIpAddress**

The private IP address of the network interface.

Type: String

**groupSet**

The group IDs for use by the network interface.

Type: [SecurityGroupIdSetItemType](#) (p. 513)

**deleteOnTermination**

If set to `true`, the interface is deleted when the instance is terminated.

Type: Boolean

**privateIpAddressesSet**

The list of IP addresses to assign to the network interface.

Type: [PrivateIpAddressesSetItemRequestType](#) (p. 502)

**secondaryPrivateIpAddressCount**

The number of secondary private IP addresses. You cannot specify this option with `privateIpAddressesSet`.

Type: Integer

## InstanceNetworkInterfaceSetItemType

Describes a network interface.

### Ancestors

- [InstanceNetworkInterfaceSetType](#)

### Relevant Operations

- [DescribeInstances](#) (p. 203)
- [RunInstances](#) (p. 419)

### Contents

**networkInterfaceId**

The ID of the network interface.

Type: String

**subnetId**

The ID of the subnet.

Type: String

<b>vpcId</b>	The ID of the VPC. Type: String
<b>description</b>	The description. Type: String
<b>ownerId</b>	The ID of the customer who created the network interface. Type: String
<b>status</b>	The network interface's status ( <code>available</code> or <code>in-use</code> ). Type: String
<b>macAddress</b>	The MAC address. Type: String
<b>privateIpAddress</b>	The IP address of the network interface within the subnet. Type: String
<b>privateDnsName</b>	The private DNS name. Type: String
<b>sourceDestCheck</b>	Whether to validate network traffic to or from this network interface. Type: Boolean
<b>groupSet.item</b>	A security group. Type: <a href="#">GroupItemType</a> (p. 469)
<b>attachment</b>	The network interface attachment. Type: <a href="#">InstanceNetworkInterfaceAttachmentType</a> (p. 478)
<b>association</b>	The association information for an Elastic IP associated with the network interface. Type: <a href="#">InstanceNetworkInterfaceAssociationType</a> (p. 477)
<b>privateIpAddressesSet</b>	The private IP addresses associated with the network interface. Type: <a href="#">InstancePrivateIpAddressesSetItemType</a> (p. 480)

## InstancePrivateIpAddressesSetItemType

Describes a private IP address.

### Ancestors

- [InstancePrivateIpAddressesSetType](#)

## Relevant Operations

- [DescribeInstances](#) (p. 203)
- [RunInstances](#) (p. 419)

## Contents

### **privateIpAddress**

The private IP address of the network interface

Type: String

### **privateDnsName**

The private DNS name.

Type: String

### **primary**

Whether this IP address is the primary private IP address of the network interface.

Type: Boolean

### **association**

The association information for an Elastic IP address associated with the network interface.

Type: [InstanceNetworkInterfaceAssociationType](#) (p. 477)

## InstanceStateChangeType

Describes an instance state change.

## Ancestors

- [InstanceStateChangeSetType](#)

## Relevant Operations

- [StartInstances](#) (p. 430)
- [StopInstances](#) (p. 432)
- [TerminateInstances](#) (p. 434)

## Contents

### **instanceId**

The instance ID.

Type: String

### **currentState**

The current state of the instance.

Type: [InstanceStateType](#) (p. 482)

### **previousState**

The previous state of the instance.

Type: [InstanceStateType](#) (p. 482)



## InstanceStateType

Describes the current state of the instance.

### Ancestors

- [InstanceStateChangeType](#) (p. 481)
- [RunningInstancesItemType](#) (p. 510)

### Relevant Operations

- [DescribeInstances](#) (p. 203)
- [DescribeInstanceStatus](#) (p. 218)
- [RunInstances](#) (p. 419)
- [StartInstances](#) (p. 430)
- [StopInstances](#) (p. 432)
- [TerminateInstances](#) (p. 434)

### Contents

#### code

The low byte represents the state. The high byte is an opaque internal value and should be ignored.

Type: Integer (16-bit unsigned)

Valid values: 0 (pending) | 16 (running) | 32 (shutting-down) | 48 (terminated) | 64 (stopping) | 80 (stopped)

#### name

The current state of the instance.

Type: String

Valid values: pending | running | shutting-down | terminated | stopping | stopped

## InstanceStatusDetailsSetType

The InstanceStateType data type.

### Ancestors

- [InstanceStatusItemType](#) (p. 484)
- [InstanceStatusType](#) (p. 485)

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 218)

## Contents

### **name**

The type of instance status detail.

Type: String

Valid values: `reachability`

### **status**

The status.

Type: String

Valid values: `passed` | `failed` | `insufficient-data`

### **impairedSince**

The time when a status check failed. For an instance that was launched and impaired, this is the time when the instance was launched.

Type: DateTime

## InstanceStatusEventsSetType

Describes a set of events.

## Relevant Operations

- [DescribeInstanceStatus](#) (p. 218)

## Contents

### **item**

Information about scheduled events for the instance.

Type: [InstanceStatusEventType](#) (p. 483)

## InstanceStatusEventType

Describes an event.

## Ancestors

- [InstanceStatusEventsSetType](#) (p. 483)

## Relevant Operations

- [DescribeInstanceStatus](#) (p. 218)

## Contents

### **code**

The associated code of the event.

Type: String

Valid parameters: `instance-reboot` | `system-reboot` | `instance-retirement`

### **description**

A description of the event.

Type: String

### **notBefore**

The earliest scheduled start time for the event.

Type: DateTime

### **notAfter**

The latest scheduled end time for the event.

Type: DateTime

## InstanceStatusItemType

Describes the status of an instance.

## Ancestors

- [InstanceStatusSetType](#)

## Relevant Operations

- [DescribeInstanceStatus](#) (p. 218)

## Contents

### **instanceId**

The ID of the instance.

Type: String

### **availabilityZone**

The Availability Zone of the instance.

Type: String

### **eventsSet**

Extra information regarding events associated with the instance.

Type: [InstanceStatusEventsSetType](#) (p. 483)

### **instanceState**

The intended state of the instance. Calls to `DescribeInstanceStatus` require that an instance be in the `running` state.

Type: [InstanceStateType](#) (p. 482)

### **systemStatus**

Reports impaired functionality that stems from issues related to the systems that support an instance, such as hardware failures and network connectivity problems.

Type: [InstanceStatusType](#) (p. 485)

**instanceStatus**

Reports impaired functionality that arises from problems internal to the instance. The [DescribeInstanceStatus](#) (p. 218) response elements report such problems as impaired reachability.

Type: [InstanceStatusType](#) (p. 485)

## InstanceStatusSetType

The InstanceStatusSetType data type.

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 218)

### Contents

**item**

Information about the status of the instance.

Type: [InstanceStatusItemType](#) (p. 484)

## InstanceStatusType

Describes the state of an instance.

### Ancestors

- [InstanceStatusItemType](#) (p. 484)

### Relevant Operations

- [DescribeInstanceStatus](#) (p. 218)

### Contents

**status**

The status.

Type: String

Valid values: ok | impaired | insufficient-data | not-applicable

**details**

Information about system instance health or application instance health.

Type: [InstanceStatusDetailsSetType](#) (p. 482)

# InternetGatewayAttachmentType

Describes the attachment of a VPC to an Internet gateway.

## Ancestors

- [InternetGatewayAttachmentSetType](#)

## Relevant Operations

- [AttachInternetGateway](#) (p. 23)
- [CreateInternetGateway](#) (p. 69)
- [DescribeInternetGateways](#) (p. 225)

## Contents

### **vpcId**

The ID of the VPC.

Type: String

### **state**

The current state of the attachment.

Type: String

Valid values: `attaching` | `attached` | `detaching` | `detached`

# InternetGatewayType

Describes an Internet gateway.

## Ancestors

- [InternetGatewaySetType](#)

## Relevant Operations

- [CreateInternetGateway](#) (p. 69)
- [DescribeInternetGateways](#) (p. 225)

## Contents

### **internetGatewayId**

The ID of the Internet gateway.

Type: String

### **attachmentSet**

Any VPCs attached to the Internet gateway, each one wrapped in an `item` element.

Type: [InternetGatewayAttachmentType](#) (p. 486)

**tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItem](#) (p. 507)

## IpPermissionType

The IpPermissionType data type.

### Ancestors

- IpPermissionSetType

### Relevant Operations

- AuthorizeSecurityGroupIngress
- RevokeSecurityGroupIngress
- DescribeSecurityGroups

### Contents

**ipProtocol**

The protocol.

When you call `DescribeSecurityGroups`, the protocol value returned is the number. Exception: For TCP, UDP, and ICMP, the value returned is the name (e.g., `tcp`, `udp`, or `icmp`). For a list of protocol numbers, see [Protocol Numbers](#).

Type: String

**fromPort**

The start of port range for the TCP and UDP protocols, or an ICMP type number. A value of -1 indicates all ICMP types.

Type: Integer

**toPort**

The end of port range for the TCP and UDP protocols, or an ICMP code. A value of -1 indicates all ICMP codes for the given ICMP type.

Type: Integer

**groups**

A list of security group and AWS account ID pairs. Each pair is wrapped in an `item` element.

Type: [UserIdGroupPairType](#) (p. 521)

**ipRanges**

A list of IP ranges. Each range is wrapped in an `item` element.

Type: [IpRangeItem](#) (p. 487)

## IpRangeItem

Describes an IP range.

## Ancestors

- IpRangeSetType

## Relevant Operations

- AuthorizeSecurityGroupIngress
- RevokeSecurityGroupIngress
- DescribeSecurityGroups

## Contents

### `cidrIp`

The CIDR range. Cannot be used when specifying a source security group.

Type: String

## LaunchPermissionItemType

The LaunchPermissionItemType data type.

## Ancestors

- LaunchPermissionListType

## Relevant Operations

- DescribeImageAttribute
- ModifyImageAttribute

## Contents

### `group`

The name of the group.

Type: String

Valid value: `all`

### `userId`

The AWS account ID.

Type: String

## LaunchSpecificationRequestType

The LaunchSpecificationRequestType data type.

## Ancestors

- [RequestSpotInstancesType](#)

## Relevant Operations

- [RequestSpotInstances](#)

## Contents

### **imageId**

The AMI ID.

Type: String

### **keyName**

The name of the key pair.

Type: String

### **groupSet**

A list of security groups. Each group is wrapped in an `item` element.

Type: [GroupItemType](#) (p. 469)

### **userData**

Base64-encoded MIME user data made available to the instance(s) in the reservation.

Type: [UserDataTypes](#) (p. 521)

### **instanceType**

The instance type.

Type: String

### **placement**

The placement information for the instance.

Type: [PlacementRequestType](#) (p. 498)

### **kernelId**

The ID of the kernel to select.

Type: 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: String

### **blockDeviceMapping**

Any block device mapping entries for the instance. Each entry is wrapped in an `item` element.

Type: [BlockDeviceMappingItemType](#) (p. 446)

### **monitoring**

The monitoring information for the instance.

Type: [MonitoringInstanceTypes](#) (p. 491)

### **subnetId**

The ID of the subnet.

Type: String

### **networkInterfaceSet**

The network interfaces associated with the instance.

Type: [InstanceNetworkInterfaceSetItemRequestTypes](#) (p. 478)



**iamInstanceProfile**

The IAM Instance Profile (IIP) associated with the instance.

Type: [IamInstanceProfileRequestType](#) (p. 469)

**ebsOptimized**

Whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Default: `false`

## LaunchSpecificationResponseType

The LaunchSpecificationResponseType data type.

### Ancestors

- [SpotInstanceRequestSetItemType](#) (p. 515)

### Relevant Operations

- [DescribeSpotInstanceRequests](#)

### Contents

**imageId**

The AMI ID.

Type: String

**keyName**

The name of the key pair.

Type: String

**groupSet**

A list of security groups. Each group is wrapped in an `item` element.

Type: [GroupItemType](#) (p. 469)

**instanceType**

The instance type.

Type: String

**placement**

The placement information for the instance.

Type: [PlacementRequestType](#) (p. 498)

**kernelId**

The ID of the kernel to select.

Type: 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: String

**blockDeviceMapping**

Any block device mapping entries for the instance. Each entry is wrapped in an `item` element.

Type: [BlockDeviceMappingItemType](#) (p. 446)

**monitoring**

The monitoring information for the instance.

Type: [MonitoringInstanceType](#) (p. 491)

**subnetId**

The ID of the subnet.

Type: String

**networkInterfaceSet**

The network interfaces for the instance.

Type: [InstanceNetworkInterfaceSetItemRequestType](#) (p. 478)

**iamInstanceProfile**

The IAM Instance Profile (IIP) associated with the instance.

Type: [IamInstanceProfileRequestType](#) (p. 469)

**ebsOptimized**

Whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Default: `false`

## MonitoringInstanceType

The `MonitoringInstanceType` data type.

### Ancestors

- [LaunchSpecificationRequestType](#) (p. 488)
- [LaunchSpecificationResponseType](#) (p. 490)
- `RunInstancesType`

### Relevant Operations

- `RequestSpotInstances`
- `DescribeSpotInstanceRequests`
- `RequestSpotInstances`
- `RunInstances`

### Contents

**enabled**

Whether monitoring is enabled for the instance.

Type: Boolean

## MonitorInstancesResponseSetItemType

The MonitorInstancesResponseSetItemType data type.

### Ancestors

- MonitorInstancesResponseSetType

### Relevant Operations

- MonitorInstances
- UnmonitorInstances

### Contents

**instanceId**

The instance ID.

Type: String

**monitoring**

The monitoring information.

Type: [InstanceMonitoringStateType](#) (p. 476)

## NetworkAclAssociationType

Describes an association between a network ACL and a subnet.

### Ancestors

- NetworkAclAssociationSetType

### Relevant Operations

- [CreateNetworkAcl](#) (p. 73)
- [DescribeNetworkAcls](#) (p. 230)

### Contents

**networkAclAssociationId**

An identifier representing the association between a network ACL and a subnet.

Type: String

**networkAclId**

The ID of the network ACL.

Type: String

**subnetId**

The ID of the subnet.

Type: String

## NetworkAclEntryType

Describes an entry in a network ACL.

### Ancestors

- [NetworkAclEntrySetType](#)

### Relevant Operations

- [CreateNetworkAcl](#) (p. 73)
- [DescribeNetworkAcls](#) (p. 230)

### Contents

**ruleNumber**

The rule number for the entry. ACL entries are processed in ascending order by rule number.

Type: Integer

**protocol**

The protocol. A value of -1 means all protocols.

Type: Integer

Valid values: Any protocol number (see [Protocol Numbers](#)).

**ruleAction**

Whether to allow or deny the traffic that matches the rule.

Type: String

**egress**

Indicates an egress rule (rule is applied to traffic leaving the subnet). Value of `true` indicates egress.

Type: Boolean

**cidrBlock**

The network range to allow or deny, in CIDR notation.

Type: String

**icmpTypeCode**

ICMP protocol: The ICMP type and code.

Type: [IcmpTypeCodeType](#) (p. 471)

**portRange**

TCP or UDP protocols: The range of ports the rule applies to.

Type: [PortRangeType](#) (p. 499)

## NetworkAclType

Describes a network ACL.

## Ancestors

- [NetworkAclSetType](#)

## Relevant Operations

- [CreateNetworkAcl](#) (p. 73)
- [DescribeNetworkAcls](#) (p. 230)

## Contents

### **networkAclId**

The ID of the network ACL.

Type: String

### **vpcId**

The ID of the VPC for the network ACL.

Type: String

### **default**

Whether this is the default network ACL for the VPC.

Type: Boolean

### **entrySet**

A list of entries (rules) in the network ACL. Each entry is wrapped in an `item` element.

Type: [NetworkAclEntryType](#) (p. 493)

### **associationSet**

A list of associations between the network ACL and one or more subnets. Each association is wrapped in an `item` element.

Type: [NetworkAclAssociationType](#) (p. 492)

### **tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 507)

## NetworkInterfaceAssociationType

Describes association information for an Elastic IP address.

## Ancestors

- [InstanceNetworkInterfaceSetItemType](#)

## Relevant Operations

- [CreateNetworkInterface](#) (p. 78)
- [DescribeNetworkInterfaces](#) (p. 237)

## Contents

### **publicIp**

The address of the Elastic IP address bound to the network interface.

Type: String

### **publicDnsName**

The public DNS name.

Type: String

### **ipOwnerId**

The ID of the Elastic IP address owner.

Type: String

### **allocationID**

The allocation ID.

Type: String

### **associationID**

The association ID.

Type: String

## NetworkInterfaceAttachmentType

Describes a network interface attachment.

### Relevant Operations

- [CreateNetworkInterface](#) (p. 78)
- [DescribeNetworkInterfaces](#) (p. 237)

## Contents

### **attachmentID**

The ID of the network interface attachment.

Type: String

### **instanceID**

The ID of the instance.

Type: String

## NetworkInterfacePrivateIpAddressesSetItemType

Describes the private IP address of a network interface.

### Relevant Operations

- [DescribeNetworkInterfaces](#)

## Contents

### **privateIpAddress**

The private IP address of the network interface.

Type: String

### **privateDnsName**

The private DNS name.

Type: String

### **primary**

Whether this IP address is the primary private IP address of the network interface.

Type: Boolean

### **association**

The association information for an Elastic IP address associated with the network interface.

Type: [NetworkInterfaceAssociationType](#) (p. 494)

## NetworkInterfaceType

Describes a network interface.

## Ancestors

- [NetworkInterfaceSetType](#)

## Relevant Operations

- [CreateNetworkInterface](#) (p. 78)
- [DescribeNetworkInterfaces](#) (p. 237)

## Contents

### **networkInterfaceId**

The ID of the network interface.

Type: String

### **subnetId**

The ID of the subnet.

### **networkInterfaceId**

The ID of the network interface.

Type: String

### **subnetId**

The ID of the subnet.

Type: String

### **vpcId**

The ID of the VPC.

Type: String

### **availabilityZone**

The Availability Zone.

Type: String

**description**  
A description.  
Type: String

**ownerId**  
The ID of the customer who created the interface.  
Type: String

**requesterId**  
The ID of the entity that launched the instance on your behalf (for example, AWS Management Console or Auto Scaling)  
Type: String

**requesterManaged**  
Whether the network interface is being managed by AWS.  
Type: String

**status**  
The status (available, attaching, in-use, detaching).  
Type: String

**macAddress**  
The MAC address.  
Type: String

**privateIpAddress**  
The IP address of the interface within the subnet.  
Type: String

**privateDnsName**  
The private DNS name.  
Type: String

**sourceDestCheck**  
Whether traffic to or from the instance is validated.  
Type: Boolean

**groupSet**  
The security group.  
Type: [GroupItem](#) (p. 469)

**attachment**  
The network interface attachment.  
Type: [NetworkInterfaceAttachmentType](#) (p. 495)

**association**  
The association information for an Elastic IP associated with the network interface.  
Type: [NetworkInterfaceAssociationType](#) (p. 494)

**tagSet**  
The tags assigned to the resource.  
Type: [ResourceTagSetItemType](#) (p. 507)

**privateIpAddressesSet**  
The private IP addresses associated with the network interface. Items are returned in a set.  
Type: [NetworkInterfacePrivateIpAddressesSetItemType](#) (p. 495)

## PlacementGroupInfoType

Describes a placement group.



## Ancestors

- [PlacementGroupSetType](#)

## Relevant Operations

- [DeletePlacementGroup](#) (p. 139)

## Contents

### **groupName**

The name of the placement group.

Type: String

### **strategy**

The placement strategy.

Type: String

Valid values: `cluster`

### **state**

The status of the placement group.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

## PlacementRequestType

The PlacementRequestType data type.

## Ancestors

- [LaunchSpecificationRequestType](#) (p. 488)
- [LaunchSpecificationResponseType](#) (p. 490)
- [RunInstancesType](#)

## Relevant Operations

- [RequestSpotInstances](#)
- [DescribeSpotInstanceRequests](#)
- [RequestSpotInstances](#)
- [RunInstances](#)

## Contents

### **availabilityZone**

The Availability Zone for launching the instance.

Type: String

**groupName**

The name of a placement group for the instance.

Type: String

## PlacementResponseType

The PlacementResponseType data type.

### Ancestors

- [RunningInstancesItemType](#) (p. 510)

### Relevant Operations

- DescribeInstances
- RunInstances

### Contents

**availabilityZone**

The Availability Zone of the instance.

Type: String

**groupName**

The name of the placement group the instance is in (for cluster compute instances).

Type: 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: String

## PortRangeType

Describes a range of ports.

### Ancestors

- [NetworkAclEntryType](#) (p. 493)

### Relevant Operations

- [DescribeNetworkAcls](#) (p. 230)

## Contents

### **from**

The first port in the range.

Type: Integer

### **to**

The last port in the range.

Type: Integer

## PriceScheduleRequestSetItemType

The PriceScheduleRequestSetItemType data type.

## Ancestors

- PriceScheduleRequestSetType

## Relevant Operations

- CreateReservedInstancesListing

## Contents

### **term**

The number of months remaining in the reservation. For example, 2 is the second to the last month before the capacity reservation expires.

Type: Long

### **price**

The fixed price for the term.

Type: Double

### **currencyCode**

The currency for transacting the Reserved Instance resale.

Type: String

Valid value: USD

## PriceScheduleSetItemType

The PriceScheduleSetItemType data type.

## Ancestors

- DescribeReservedInstancesListingsResponseSetItemType
- PriceScheduleSetType

## Relevant Operations

- `CreateReservedInstancesListing`

## Contents

### **term**

The number of months remaining in the reservation. For example, 2 is the second to the last month before the capacity reservation expires.

Type: Long

### **price**

The fixed price for the term.

Type: Double

### **currencyCode**

The currency for transacting the Reserved Instance resale.

Type: String

Valid value: `USD`

### **active**

The current price schedule, as determined by the term remaining for the Reserved Instance in the listing.

A specific price schedule is always in effect, but only one price schedule can be active at any time. Take, for example, a Reserved Instance listing that has five months remaining in its term. When you specify price schedules for five months and two months, this means that schedule 1, covering the first three months of the remaining term, will be active during months 5, 4, and 3. Then schedule 2, covering the last two months of the term, will be active for months 2 and 1.

Type: Boolean

## PriceScheduleSetType

The `PriceScheduleSetType` data type.

## Ancestors

- `DescribeReservedInstancesListingSetType`

## Relevant Operations

- `DescribeReservedInstancesListingsResponseType`

## Contents

### **item**

The Reserved Instance listing price schedule item.

Type: [PriceScheduleSetItemType](#) (p. 500).

## PricingDetailsSetItemType

The PricingDetailsSetItemType data type.

### Ancestors

- DescribeReservedInstancesOfferings

### Relevant Operations

- DescribeReservedInstancesOfferingsResponseType

### Contents

#### **price**

The price per instance.

Type: Integer

#### **count**

The number of instances available for the price.

Type: Integer

## PrivateIpAddressesSetItemRequestType

Describes a secondary private IP address for a network interface.

### Ancestors

- PrivateIpAddressesSetRequestType

### Relevant Operations

- AssignPrivateIpAddresses
- UnassignPrivateIpAddresses

### Contents

#### **privateIpAddressesSet**

The list of private IP addresses.

Type: [AssignPrivateIpAddressesSetItemRequestType](#) (p. 444)

#### **primary**

Whether the private IP address is the primary private IP address.

Type: Boolean

## ProductCodeItem

The ProductCodeItem data type.

### Ancestors

- ProductCodeList

### Relevant Operations

- DescribeImageAttribute
- ModifyImageAttribute

### Contents

**productCode**  
The product code.  
Type: String

## ProductCodesSetItem

The ProductCodesSetItem data type.

### Ancestors

- ProductCodesSet

### Relevant Operations

- DescribeImages
- DescribeImageAttribute
- DescribeInstances
- DescribeInstanceAttribute
- DescribeSnapshotAttribute
- DescribeVolumeAttribute
- RunInstances

### Contents

**productCode**  
The product code.  
Type: String

**type**

The type of product code.

Type: String

Valid values: `devpay` | `marketplace`

## ProductDescriptionSetItemType

The ProductDescriptionSetItemType data type.

### Ancestors

- ProductDescriptionSetType

### Relevant Operations

- DescribeSpotPriceHistory

### Contents

**productDescription**

The description of the AMI.

Type: String

Valid values: `Linux/UNIX` | `SUSE Linux` | `Windows`

## PropagatingVgwType

Describes a virtual private gateway propagating route.

### Ancestors

- PropagatingVgwSetType

### Relevant Operations

- [CreateRouteTable](#) (p. 97)
- [DescribeRouteTables](#) (p. 266)

### Contents

**gatewayID**

The ID of the virtual private gateway (VGW).

Type: String

## RecurringChargesSetItemType

The RecurringChargesSetItemType data type.

### Relevant Operations

- DescribeReservedInstances
- DescribeReservedInstanceOfferings

### Contents

#### **frequency**

The frequency of the recurring charge.

Type: String

Valid value: Hourly

#### **amount**

The amount of the recurring charge.

Type: Double

## RegionItemType

Describes a region.

### Ancestors

- RegionSetType

### Relevant Operations

- [DescribeRegions](#) (p. 246)

### Contents

#### **regionName**

The name of the region.

Type: String

#### **regionEndpoint**

The region service endpoint.

Type: String

## ReservationInfoType

Describes a reservation.



## Ancestors

- [ReservationSetType](#)

## Relevant Operations

- [DescribeInstances](#) (p. 203)

## Contents

### **reservationId**

The ID of the reservation.

Type: String

### **ownerId**

The ID of the AWS account that owns the reservation.

Type: String

### **groupSet**

A list of security groups. Each group is wrapped in an `item` element.

Type: [GroupItemType](#) (p. 469)

### **instancesSet**

A list of instances. Each instance is wrapped in an `item` element.

Type: [RunningInstancesItemType](#) (p. 510)

### **requesterId**

The ID of the requester that launched the instances on your behalf (for example, AWS Management Console or Auto Scaling).

Type: String

## ReservedInstanceLimitPriceType

The `ReservedInstanceLimitPriceType` data type.

## Ancestors

- [PurchaseReservedInstancesOfferings](#)

## Relevant Operations

- [DescribeReservedInstancesOfferingsResponse](#)Type

## Contents

### **amount**

Used for Reserved Instance Marketplace offerings. Specifies the limit price on the total order (`instanceCount * price`).

Type: Double

**currencyCode**

Currency in which the `limitPrice` amount is specified. At this time, the only supported currency is USD.

Type: Double

## ResourceTagSetItemType

Describes the tags assigned to an EC2 resource.

### Ancestors

- ResourceTagSetType

### Relevant Operations

- DescribeImages
- DescribeInstances
- DescribeVolumes
- DescribeSnapshots
- DescribeSpotInstanceRequests

### Contents

**key**

The tag key.

Type: String

**value**

The tag value.

Type: String

## RouteTableAssociationType

Describes an association between a route table and a subnet.

### Ancestors

- RouteTableAssociationSetType

### Relevant Operations

- [CreateRouteTable](#) (p. 97)
- [DescribeRouteTables](#) (p. 266)

## Contents

### **routeTableAssociationId**

An identifier representing the association between a route table and a subnet.

Type: String

### **routeTableId**

The ID of the route table.

Type: String

### **subnetId**

The ID of the subnet.

Type: String

### **main**

Whether this is the main route table.

Type: Boolean

## RouteTableType

Describes a route table.

## Ancestors

- [RouteTableSetType](#)

## Relevant Operations

- [CreateRouteTable](#) (p. 97)
- [DescribeRouteTables](#) (p. 266)

## Contents

### **routeTableId**

The route table's ID.

Type: String

### **vpcId**

The ID of the VPC for the route table.

Type: String

### **routeSet**

A list of routes in the route table. Each route is wrapped in an `item` element.

Type: [RouteType](#) (p. 509)

### **associationSet**

A list of associations between the route table and one or more subnets. Each association is wrapped in an `item` element.

Type: [RouteTableAssociationType](#) (p. 507)

### **propagatingVgwSet**

The IDs of any virtual private gateways (VGW) propagating routes, each route wrapped in an `item` element.

Type: [PropagatingVgwType](#) (p. 504)

**tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItem](#) (p. 507)

## RouteType

Describes a route in a route table.

### Ancestors

- [RouteSetType](#)

### Relevant Operations

- [CreateRouteTable](#) (p. 97)
- [DescribeRouteTables](#) (p. 266)

### Contents

***destinationCidrBlock***

The CIDR address block used for the destination match.

Type: String

***gatewayId***

The ID of a gateway attached to your VPC.

Type: String

***instanceId***

The ID of a NAT instance in your VPC.

Type: String

***instanceOwnerId***

The owner of the instance.

Type: String

***networkInterfaceId***

The network interface ID.

Type: String

***state***

The state of the route. The `blackhole` state indicates that the route's target isn't available (for example, the specified gateway isn't attached to the VPC, or the specified NAT instance has been terminated).

Type: String

Valid values: `active` | `blackhole`

***origin***

Describes how the route was created.

Type: String

Valid values: `Valid values: CreateRouteTable | CreateRoute | EnableVgwRoutePropagation`

- `CreateRouteTable` indicates that route was automatically created when the route table was create.

- `CreateRoute` indicates that the route was manually added to the route table.
- `EnableVgwRoutePropagation` indicates that the route was propagated by route propagation.

## RunningInstancesItemType

Describes a running instance.

### Ancestors

- `RunningInstancesSetType`

### Relevant Operations

- [DescribeInstances](#) (p. 203)
- [RunInstances](#) (p. 419)

### Contents

**instanceId**

The ID of the instance launched.

Type: String

**imageId**

The ID of the AMI used to launch the instance.

Type: String

**instanceState**

The current state of the instance.

Type: [InstanceStateType](#) (p. 482)

**privateDnsName**

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: String

**dnsName**

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: String

**reason**

The reason for the most recent state transition. This might be an empty string.

Type: String

**keyName**

The key pair name, if this instance was launched with an associated key pair.

Type: String

**amiLaunchIndex**

The AMI launch index, which can be used to find this instance in the launch group.

Type: String

**productCodes**

The product codes attached to this instance. Each product code is wrapped in an `item` element.

Type: [ProductCodesSetItemType](#) (p. 503)

**instanceType**

The instance type (for example, `m1.small`).

Type: String

**launchTime**

The time the instance was launched.

Type: DateTime

**placement**

The location where the instance launched.

Type: [PlacementResponseType](#) (p. 499)

**kernelId**

The kernel associated with this instance.

Type: String

**ramdiskId**

The RAM disk associated with this instance.

Type: String

**platform**

The platform of the instance (for example, Windows).

Type: String

**monitoring**

The monitoring information for the instance.

Type: [InstanceMonitoringStateType](#) (p. 476)

**subnetId**

The ID of the subnet in which the instance is running.

Type: String

**vpcId**

The ID of the VPC in which the instance is running.

Type: String

**privateIpAddress**

The private IP address assigned to the instance.

Type: String

**ipAddress**

The IP address of the instance.

Type: String

**sourceDestCheck**

Specifies whether to enable an instance launched in a VPC to perform NAT. This controls whether source/destination checking is enabled on the instance. A value of `true` means checking is enabled, and `false` means checking is disabled. The value must be `false` for the instance to perform NAT. For more information, go to [NAT Instances](#) in the *Amazon Virtual Private Cloud User Guide*.

Type: Boolean

**groupSet**

A list of the security groups for the instance. Each group is wrapped in an `item` element.

Type: [GroupItemType](#) (p. 469)

**stateReason**

The reason for the most recent state transition. See [StateReasonType](#) (p. 518) for a listing of supported state change codes.

Type: [StateReasonType](#) (p. 518)

**architecture**

The architecture of the image.

Type: String

Valid values: `i386` | `x86_64`

**rootDeviceType**

The root device type used by the AMI. The AMI can use an Amazon EBS or instance store root device.

Type: String

Valid values: `ebs` | `instance-store`

**rootDeviceName**

The root device name (for example, `/dev/sda1`).

Type: String

**blockDeviceMapping**

Any block device mapping entries for the instance, each one wrapped in an `item` element.

Type: [InstanceBlockDeviceMappingResponseItem](#) (p. 474)

**instanceLifecycle**

Whether this is a Spot Instance.

Type: String

Valid values: `spot` | blank (no value)

**spotInstanceRequestId**

The ID of the Spot Instance request.

Type: String

**virtualizationType**

The instance's virtualization type.

Type: String

Valid values: `paravirtual` | `hvm`

**clientToken**

The idempotency token you provided when you launched the instance.

Type: String

**tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItem](#) (p. 507)

**hypervisor**

The instance's hypervisor type.

Type: String

Valid values: `ovm` | `xen`

**networkInterfaceSet**

The network interfaces for the instance.

Type: [InstanceNetworkInterfaceSetItem](#) (p. 479)

**iamInstanceProfile**

The IAM Instance Profile (IIP) associated with the instance.

Type: [IamInstanceProfileResponse](#) (p. 470)

**ebsOptimized**

Whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Default: `false`

## SecurityGroupIdSetItemType

The SecurityGroupIdSetItemType data type.

### Ancestors

- LaunchSpecificationResponseType
- LaunchSpecificationRequestType
- InstanceNetworkInterfaceSetItemRequestType

### Relevant Operations

- CreateNetworkInterface
- ModifyNetworkInterfaceAttribute
- ModifyInstanceAttribute
- RequestSpotInstances
- DescribeSpotInstanceRequests
- RunInstances

### Contents

#### **groupId**

The ID of the security group associated with the network interface.

Type: String

## SecurityGroupItemType

The SecurityGroupItemType data type.

### Ancestors

- SecurityGroupSetType

### Relevant Operations

- DescribeSecurityGroups

### Contents

#### **ownerId**

The AWS account ID of the owner of the security group.

Type: String



**groupId**

The ID of the security group.

Type: String

**groupName**

The name of the security group.

Type: String

**groupDescription**

A description of the security group.

Type: String

**vpcId**

[EC2-VPC] The ID of the VPC for the security group.

Type: String

**ipPermissions**

A list of inbound rules associated with the security group. Each permission is wrapped in an `item` element.

Type: [IpPermissionType](#) (p. 487)

**ipPermissionsEgress**

[EC2-VPC] A list of outbound rules associated with the security group. Each permission is wrapped in an `item` element.

Type: [IpPermissionType](#) (p. 487)

**tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItem](#) (p. 507)

## SpotDatafeedSubscriptionType

The SpotDatafeedSubscriptionType data type.

### Ancestors

- [CreateSpotDatafeedSubscriptionResponseType](#)
- [DescribeSpotDatafeedSubscriptionResponseType](#)

### Relevant Operations

- [CreateSpotDatafeedSubscription](#)
- [DescribeSpotDatafeedSubscription](#)

### Contents

**ownerId**

The AWS account ID of the account.

Type: String

**bucket**

The Amazon S3 bucket where the Spot Instance datafeed is located.

Type: String

**prefix**

The prefix that is prepended to datafeed files.

Type: String

**state**

The state of the Spot Instance datafeed subscription.

Type: String

Valid values: `Active` | `Inactive`

**fault**

The fault codes for the Spot Instance request, if any.

Type: [SpotInstanceStateFaultType](#) (p. 516)

## SpotInstanceRequestSetItemType

The SpotInstanceRequestSetItemType data type.

### Ancestors

- SpotInstanceRequestSetType

### Relevant Operations

- DescribeSpotInstanceRequests
- RequestSpotInstances

### Contents

**spotInstanceId**

The ID of the Spot Instance request.

Type: String

**spotPrice**

The maximum hourly price for any Spot Instance launched to fulfill the request.

Type: String

**type**

The Spot Instance request type.

Type: String

Valid values: `one-time` | `persistent`

**state**

The state of the Spot Instance request. Spot bid status information can help you track your Amazon EC2 Spot Instance requests. For information, see [Tracking Spot Requests with Bid Status Codes](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Valid values: `open` | `active` | `closed` | `cancelled` | `failed`

**fault**

The fault codes for the Spot Instance request, if any.

Type: [SpotInstanceStateFaultType](#) (p. 516)

**status**

The status code and status message describing the Spot Instance request.

Type: [SpotInstanceStatusMessageType](#) (p. 517)

**validFrom**

The start date of the request. If this is a one-time request, the request becomes active at this date and time and remains active until all instances launch, the request expires, or the request is canceled. If the request is persistent, the request becomes active at this date and time and remains active until it expires or is canceled.

Type: `DateTime`

**validUntil**

The end date of the request. If this is a one-time request, the request remains active until all instances launch, the request is canceled, or this date is reached. If the request is persistent, it remains active until it is canceled or this date is reached.

Type: `DateTime`

**launchGroup**

The instance launch group. Launch groups are Spot Instances that launch together and terminate together.

Type: `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: `String`

**launchedAvailabilityZone**

The Availability Zone in which the bid is launched.

Type: `String`

**launchSpecification**

Additional information for launching instances.

Type: [LaunchSpecificationResponseType](#) (p. 490)

**instanceId**

The instance ID, if an instance has been launched to fulfill the Spot Instance request.

Type: `String`

**createTime**

The time stamp when the Spot Instance request was created.

Type: `DateTime`

**productDescription**

The product description associated with the Spot Instance.

Type: `String`

**tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 507)

## SpotInstanceStateFaultType

The `SpotInstanceStateFaultType` data type.

### Ancestors

- [SpotDatafeedSubscriptionType](#) (p. 514)
- [SpotInstanceRequestSetItemType](#) (p. 515)

## Relevant Operations

- [CreateSpotDatafeedSubscription](#)
- [DescribeSpotDatafeedSubscription](#)
- [DescribeSpotInstanceRequests](#)
- [RequestSpotInstances](#)

## Contents

### **code**

The reason code for the Spot Instance state change.

Type: String

### **message**

The message for the Spot Instance state change.

Type: String

## SpotInstanceStatusMessageType

The SpotInstanceStatusMessageType data type.

## Ancestors

- [SpotInstanceRequestSetItemType](#) (p. 515)

## Relevant Operations

- [DescribeSpotInstanceRequests](#)

## Contents

### **code**

The status code of the request.

Type: String

### **updateTime**

The time the status was stated.

Type: DateTime

### **message**

The description for the status code for the Spot request.

Type: String

## SpotPriceHistorySetItemType

The SpotPriceHistorySetItemType data type.

## Ancestors

- [SpotPriceHistorySetType](#)

## Relevant Operations

- [DescribeSpotPriceHistory](#)

## Contents

### **instanceType**

The instance type.

Type: String

### **productDescription**

A general description of the AMI.

Type: String

Valid values: Linux/UNIX | SUSE Linux | Windows

### **spotPrice**

The maximum price you will pay to launch one or more Spot Instances.

Type: String

### **timestamp**

The date and time the request was created.

Type: DateTime

### **availabilityZone**

The Availability Zone.

Type: String

## StateReasonType

The StateReasonType data type.

## Ancestors

- [DescribeImagesResponseItemType](#) (p. 453)
- [RunningInstancesItemType](#) (p. 510)

## Relevant Operations

- [DescribeImages](#)
- [DescribeInstances](#)
- [RunInstances](#)

## Contents

### **code**

The reason code for the state change. See the following table for a list of codes.

Type: String

### **message**

The message for the state change.

Type: String

The following are the currently supported state reason codes.

#### **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 shut down by a user via an API call.

#### **Client.VolumeLimitExceeded**

The volume limit was exceeded.

#### **Client.InvalidSnapshot.NotFound**

The specified snapshot was not found.

## SubnetType

Describes a subnet.

## Ancestors

- SubnetSetType

## Relevant Operations

- [CreateSubnet](#) (p. 106)
- [DescribeSubnets](#) (p. 294)

## Contents

### **subnetId**

The ID of the subnet.

Type: String

<b>state</b>	The current state of the subnet. Type: String
<b>vpcId</b>	The ID of the VPC the subnet is in. Type: String
<b>cidrBlock</b>	The CIDR block assigned to the subnet. Type: String
<b>availableIpAddressCount</b>	The number of unused IP addresses in the subnet (the IP addresses for any stopped instances are considered unavailable). Type: Integer
<b>availabilityZone</b>	The Availability Zone of the subnet. Type: String
<b>defaultForAz</b>	Indicates whether this is the default subnet for the Availability Zone. Type: Boolean
<b>mapPublicIpOnLaunch</b>	Indicates whether instances launched in this subnet receive a public IP address. Type: Boolean
<b>tagSet</b>	Any tags assigned to the resource, each one wrapped in an <code>item</code> element. Type: <a href="#">ResourceTagSetItemType</a> (p. 507)

## TagSetItemType

The TagSetItemType data type.

### Relevant Operations

- DescribeTags

### Contents

<b>resourceId</b>	The ID of the resource. For example, <code>ami-1a2b3c4d</code> . Type: String
<b>resourceType</b>	The type of resource. Type: String Valid values: <code>customer-gateway</code>   <code>dhcp-options</code>   <code>image</code>   <code>instance</code>   <code>internet-gateway</code>   <code>network-acl</code>   <code>network-interface</code>   <code>reserved-instances</code>   <code>route-table</code>   <code>security-group</code>   <code>snapshot</code>   <code>spot-instances-request</code>   <code>subnet</code>   <code>volume</code>   <code>vpc</code>   <code>vpn-connection</code>   <code>vpn-gateway</code>
<b>key</b>	The key of the tag.

Type: String  
**value**  
The value of the tag.  
Type: String

## UserDataType

The UserData Type data type.

### Ancestors

- [LaunchSpecificationRequestType](#) (p. 488)

### Relevant Operations

- RequestSpotInstances
- DescribeSpotInstanceRequests
- RequestSpotInstances
- RunInstances

### Contents

**data**  
The Base64-encoded MIME user data made available to the instance(s) in the reservation.  
Type: String

## UserGroupIdPairType

Describes a security group and AWS account ID pair.

### Ancestors

- UserGroupIdPairSetType

### Relevant Operations

- AuthorizeSecurityGroupEgress
- AuthorizeSecurityGroupIngress
- RevokeSecurityGroupEgress
- RevokeSecurityGroupIngress
- DescribeSecurityGroups



## Contents

### **userId**

The ID of an AWS account. Cannot be used when specifying a CIDR IP address range.

Type: String

### **groupId**

The ID of the security group in the specified AWS account. Cannot be used when specifying a CIDR IP address range.

Type: String

### **groupName**

The name of the security group in the specified AWS account. Cannot be used when specifying a CIDR IP address range.

Type: String

## VolumeStatusItemType

The VolumeStatusItemType data type.

## Ancestors

- VolumeStatusSetType

## Relevant Operation

- DescribeVolumeStatus

## Contents

### **volumeId**

The volume ID.

Type: String

### **availabilityZone**

The Availability Zone of the volume.

Type: String

### **volumeStatus**

The volume status. The status of each volume is wrapped in an `item` element.

Type: [VolumeStatusInfoType](#) (p. 523).

### **eventSet**

A list of events associated with the volume. Each event is wrapped in an `item` element.

Type: [VolumeStatusEventItemType](#) (p. 524).

### **actionSet**

The details of the action. Each action detail is wrapped in an `item` element.

Type: [VolumeStatusActionItemType](#) (p. 524).

## VolumeStatusInfoType

The VolumeStatusInfoType data type.

### Ancestors

- VolumeStatusItemType

### Relevant Operation

- DescribeVolumeStatus

### Contents

#### **status**

The status of the volume.

Type: String

Valid values : ok | impaired | insufficient-data

#### **details**

The details of the volume status. Each volume status detail is wrapped in an `item` type.

Type: [VolumeStatusDetailsItemType](#) (p. 523).

## VolumeStatusDetailsItemType

The VolumeStatusDetailsItemType data type.

### Ancestors

- VolumeStatusInfoType

### Relevant Operation

- DescribeVolumeStatus

### Contents

#### **name**

The name of the volume's status.

Type: String

#### **status**

The intended status of the volume status.

Type: String

## VolumeStatusEventItemType

The VolumeStatusEventItemType data type.

### Ancestors

- VolumeStatusItemType

### Relevant Operation

- DescribeVolumeStatus

### Contents

**eventType**

The type of this event.

Type: String

**eventId**

The ID of this event.

Type: String

**description**

A description of the event.

Type: String

**notBefore**

The earliest start time of the event.

Type: DateTime

**notAfter**

The latest end time of the event.

Type: DateTime

## VolumeStatusActionItemType

The VolumeStatusActionItemType data type.

### Ancestors

- VolumeStatusItemType

### Relevant Operation

- DescribeVolumeStatus

## Contents

- code**  
The code identifying the action.  
Type: String
- eventType**  
The event type associated with this action.  
Type: String
- eventId**  
The ID of the event associated with this action.  
Type: String
- description**  
A description of the action.  
Type: String

## VpcType

Describes a VPC.

### Ancestors

- [VpcSetType](#)

### Relevant Operations

- [CreateVpc](#) (p. 113)
- [DescribeVpcs](#) (p. 316)

## Contents

- vpcId**  
The ID of the VPC.  
Type: String
- state**  
The current state of the VPC.  
Type: String  
Valid values: `pending` | `available`
- cidrBlock**  
The CIDR block for the VPC.  
Type: String
- dhcpOptionsId**  
The ID of the set of DHCP options you've associated with the VPC (or `default` if the default options are associated with the VPC).  
Type: String
- tagSet**  
Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 507)

**instanceTenancy**

The allowed tenancy of instances launched into the VPC.

Type: String

**isDefault**

Indicates whether the VPC is the default VPC.

Type: Boolean

## VpnConnectionOptionsResponseType

Describes VPN connection options.

### Relevant Operations

- [CreateVpnConnection](#) (p. 115)
- [DescribeVpnConnections](#) (p. 319)

### Contents

**staticRoutesOnly**

Indicates whether the VPN connection uses static routes only. Static routes must be used for devices that don't support BGP.

Type: Boolean

## VpnConnectionType

Describes a VPN connection.

### Ancestors

- [VpnConnectionSetType](#)

### Relevant Operations

- [CreateVpnConnection](#) (p. 115)
- [DescribeVpnConnections](#) (p. 319)

### Contents

**vpnConnectionId**

The ID of the VPN connection.

Type: String

**state**

The current state of the VPN connection.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

**customerGatewayConfiguration**

The configuration information for the VPN connection's customer gateway (in the native XML format). This element is always present in the `CreateVpnConnection` response; however, it's present in the `DescribeVpnConnections` response only if the VPN connection is in the `pending` or `available` state.

Type: String

**type**

The type of VPN connection (ipsec.1).

Type: String

**customerGatewayId**

The ID of the customer gateway at your end of the VPN connection.

Type: String

**vpnGatewayId**

The ID of the virtual private gateway at the AWS side of the VPN connection.

Type: String

**tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 507)

**vgwTelemetry**

Information about the virtual private gateway. Each gateway is wrapped in an `item` element.

Type: [VpnTunnelTelemetryType](#) (p. 529)

**options**

The option set describing the VPN connection.

Type: [VpnConnectionOptionsResponseType](#) (p. 526)

**routes**

The set of static routes associated with a VPN connection.

Type: [VpnStaticRouteType](#) (p. 528)

## VpnGatewayType

Describes a virtual private gateway.

### Ancestors

- [VpnGatewaySetType](#)

### Relevant Operations

- [CreateVpnGateway](#) (p. 124)
- [DescribeVpnGateways](#) (p. 323)

### Contents

**vpnGatewayId**

The ID of the virtual private gateway.

Type: String

**state**

The current state of the virtual private gateway.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

**type**

The type of VPN connection the virtual private gateway supports (ipsec.1).

Type: String

**availabilityZone**

The Availability Zone where the virtual private gateway was created.

Type: String

**attachments**

Any VPCs attached to the virtual private gateway, each one wrapped in an `item` element.

Type: [AttachmentType](#) (p. 445)

**tagSet**

Any tags assigned to the resource, each one wrapped in an `item` element.

Type: [ResourceTagSetItemType](#) (p. 507)

## VpnStaticRouteType

Describes a static route for a VPN connection.

### Ancestors

- [VpnStaticRoutesSetType](#)

### Relevant Operations

- [CreateVpnConnection](#) (p. 115)
- [DescribeVpnConnections](#) (p. 319)

### Contents

**destinationCidrBlock**

The CIDR block associated with the local subnet of the customer data center.

Type: String

**source**

Indicates how the routes were provided.

Type: String

Valid value: `Static`

**state**

The current state of the static route.

Type: String

Valid values: `pending` | `available` | `deleting` | `deleted`

# VpnTunnelTelemetryType

Describes telemetry for a VPN tunnel.

## Ancestors

- [VgwTelemetryType](#)

## Relevant Operations

- [CreateVpnConnection](#) (p. 115)
- [DescribeVpnConnections](#) (p. 319)

## Contents

### **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: Integer



# 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: 2013-02-01	Yes
<i>AWSSecurityToken</i>	The access key ID for the request sender. This identifies the account which will be charged for usage of the service. The account that's associated with the access key ID must be signed up for Amazon EC2, or the request isn't accepted. AKIAIOSFODNN7EXAMPLE	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, see <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, see <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, see <a href="#">Signature Version 2 Signing Process</a> in the <i>Amazon Web Services General Reference</i> . Example: Qnp14Qk/7tINHzfXCiT7VEXAMPLE	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, see <a href="#">Signature Version 2 Signing Process</a> in the <i>Amazon Web Services General Reference</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, see <a href="#">Signature Version 2 Signing Process</a> in the <i>Amazon Web Services General Reference</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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## Topics

- [Overview \(p. 532\)](#)
- [Summary of Client Error Codes \(p. 533\)](#)
- [Summary of Server Error Codes \(p. 540\)](#)
- [Request Error Response \(p. 541\)](#)
- [Example Error Response Request \(p. 541\)](#)
- [Eventual Consistency \(p. 542\)](#)

## 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 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 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> .
<code>AttachmentLimitExceeded</code>	You've reached the limit on the number of Amazon EBS volumes that can be attached to a single instance.	
<code>AuthFailure</code>	User not authorized.	You might be trying to run an AMI for which you do not have permission.
<code>Blocked</code>	The account is currently blocked.	Contact <a href="mailto:aws-verification@amazon.com">aws-verification@amazon.com</a> if you have questions.
<code>CustomerGatewayLimitExceeded</code>	You've reached the limit on the number of customer gateways you can create.	
<code>DependencyViolation</code>	The specified object has dependent resources.	
<code>DiskImageSizeTooLarge</code>	The disk image exceeds the allowed limit (for instance or volume import).	
<code>FilterLimitExceeded</code>	Request uses too many filters or too many total filter values.	
<code>Gateway.NotAttached</code>	Specified gateway isn't attached, so it can't be detached.	

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

<b>Error Code</b>	<b>Description</b>	<b>Notes</b>
<code>IdempotentParameterMismatch</code>	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.
<code>IncorrectInstanceState</code>	Instance is in an incorrect state so the attempted action cannot occur.	
<code>IncorrectState</code>	The resource is in an incorrect state.	This error can occur if you are trying to attach a volume that is still being created, for example. Ensure the volume is in the 'available' state.
<code>InstanceLimitExceeded</code>	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.
<code>InsufficientInstanceCapacity</code>	There is insufficient capacity available for the requested instance type.	The returned message gives guidance on how to solve the problem.
<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.	

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

Error Code	Description	Notes
InvalidConversionTaskId	Specified conversion task ID (for instance or volume import) is invalid.	
InvalidCustomerGateway.DuplicateIpAddress	Conflict among chosen gateway IP addresses.	
InvalidCustomerGatewayID.NotFound	The specified customer gateway ID does not exist.	
InvalidDevice.InUse	The device to which you are trying to attach (i.e. /dev/sdh) is already in use on the instance.	
InvalidDhcpOptionsID.NotFound	Specified DHCP options ID does not exist.	
InvalidFormat	Specified disk format (for instance or volume import) is invalid.	
InvalidFilter	Specified filter is invalid.	
InvalidGatewayID.NotFound	Specified gateway ID does not exist.	
InvalidGroup.Duplicate	Attempt to create a duplicate group.	
InvalidGroupId.Malformed	Specified group ID is invalid.	
InvalidGroup.InUse	Specified group cannot be deleted because it is in use.	
InvalidGroup.NotFound	Specified security group does not exist.	This error may occur because the security group ID has not propagated through the system. For more information, see <a href="#">Eventual Consistency</a> .
InvalidGroup.Reserved	Specified group name is a reserved name.	
InvalidInstanceAttributeValue	The specified instance attribute value is not valid.	This error is most commonly encountered when trying to set the <code>InstanceType</code> attribute to an unrecognized value.
InvalidInstanceID.Malformed	Specified instance ID is not valid.	

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

<b>Error Code</b>	<b>Description</b>	<b>Notes</b>
<code>InvalidInstanceID.NotFound</code>	Specified instance ID does not exist.	This error may occur because the instance ID has not propagated through the system. For more information, see <a href="#">Eventual Consistency</a> .
<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</code> > <code>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.	
<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.	

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

<b>Error Code</b>	<b>Description</b>	<b>Notes</b>
<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.InUse</code>	The snapshot which you are trying to delete is in use by one or more AMIs.	
<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.	
<code>InvalidVpnConnectionID.NotFound</code>	The specified VPN connection ID does not exist.	
<code>InvalidVpnGatewayID.NotFound</code>	Specified virtual private gateway 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>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>OptInRequired</code>	You are not subscribed to this service.	This error message can apply to Amazon EC2 or individual AWS Marketplace product codes.
<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>RequestLimitExceeded</code>	The maximum request rate permitted by the Amazon EC2 APIs has been exceeded for your account.	For best results, use an increasing or variable sleep interval between requests. For more information, see <a href="#">Query API Request Rate</a> .
<code>ReservedInstancesLimitExceeded</code>	Your current quota does not allow you to purchase the required number of reserved instances.	

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Client Error Codes**

<b>Error Code</b>	<b>Description</b>	<b>Notes</b>
<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.
<code>RouteAlreadyExists</code>	A route for the specified CIDR block already exists in this route table.	
<code>RouteLimitExceeded</code>	You've reached the limit on the number of routes you can add to a route table.	
<code>RouteTableLimitExceeded</code>	You've reached the limit on the number of route tables you can create.	
<code>RulesPerSecurityGroupLimitExceeded</code>	You've reached the limit on the number of rules you can add to a security group.	
<code>SecurityGroupLimitExceeded</code>	You've reached the limit on the number of security groups you can create.	
<code>SecurityGroupsPerInstanceLimitExceeded</code>	You've reached the limit on the number of security groups you can put an instance into.	
<code>SnapshotLimitExceeded</code>	You've reached the limit on the number of Amazon EBS snapshots you can create.	
<code>SubnetLimitExceeded</code>	You've reached the limit on the number of subnets you can create for the VPC.	
<code>TagLimitExceeded</code>	You've reached the limit on the number of tags you can assign to the specified resource.	For more information about tag restrictions and limits, see <a href="#">Tag Restrictions</a> .
<code>UnauthorizedOperation</code>	You are not authorized to perform this operation.	
<code>UnknownParameter</code>	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.

**Amazon Elastic Compute Cloud API Reference**  
**Summary of Server Error Codes**

---

<b>Error Code</b>	<b>Description</b>	<b>Notes</b>
UnsupportedOperation	The instance type or feature is not supported in your requested Availability Zone or with the requested configuration.	The returned message gives guidance on how to solve the problem.
VolumeInUse	The specified volume is already attached to an instance.	Ensure that the specified volume is in an 'available' state, and not already in use by an instance.
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.	
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

<b>Error Code</b>	<b>Description</b>	<b>Notes</b>
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.

Error Code	Description	Notes
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.
InternalServerError	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.	

## Request Error Response

The following shows the structure of a request error response.

```
<Response>
  <Errors>
    <Error>
      <Code>Error code text</Code>
      <Message>Error message</Message>
    </Error>
  </Errors>
  <RequestID>request ID</RequestID>
</Response>
```

## Example Error Response Request

The following shows an example of an error response.

```
<Response>
  <Errors>
    <Error>
      <Code>InvalidInstanceID.NotFound</Code>
      <Message>The instance ID 'i-4cbc822a' does not exist</Message>
    </Error>
  </Errors>
  <RequestID>ea966190-f9aa-478e-9ede-cb5432daacc0</RequestID>
</Response>
```

## Eventual Consistency

The Amazon EC2 API follows an eventual consistency model, due to the distributed nature of the system supporting the API. This means that when you run an API command, the result may not be immediately visible to subsequent API commands, which can result in an error.

For more information about eventual consistency and how to manage it, see [Eventual Consistency](#).