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Support

VPC > Your VPCs > Create VPC

Create VPC

A VPC is an isolated portion of the AWS cloud populated by AWS objects, such as Amazon EC2 instances.

VPC settings

Name tag - optional
Creates a tag with a key of 'Name' and a value that you specify.

IPv4 CIDR block
10.0.0.0/24

IPv6 CIDR block
☒ No IPv6 CIDR block
☐ Amazon-provided IPv6 CIDR block
☐ IPv6 CIDR owned by me

Tenancy
Default

Tags

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

No tags associated with the resource.

Add new tag

You can add 50 more tags.

Cancel

Create VPC

CHAPTER 9:2

Create Your Own C

VPC: Part 1 - Demo

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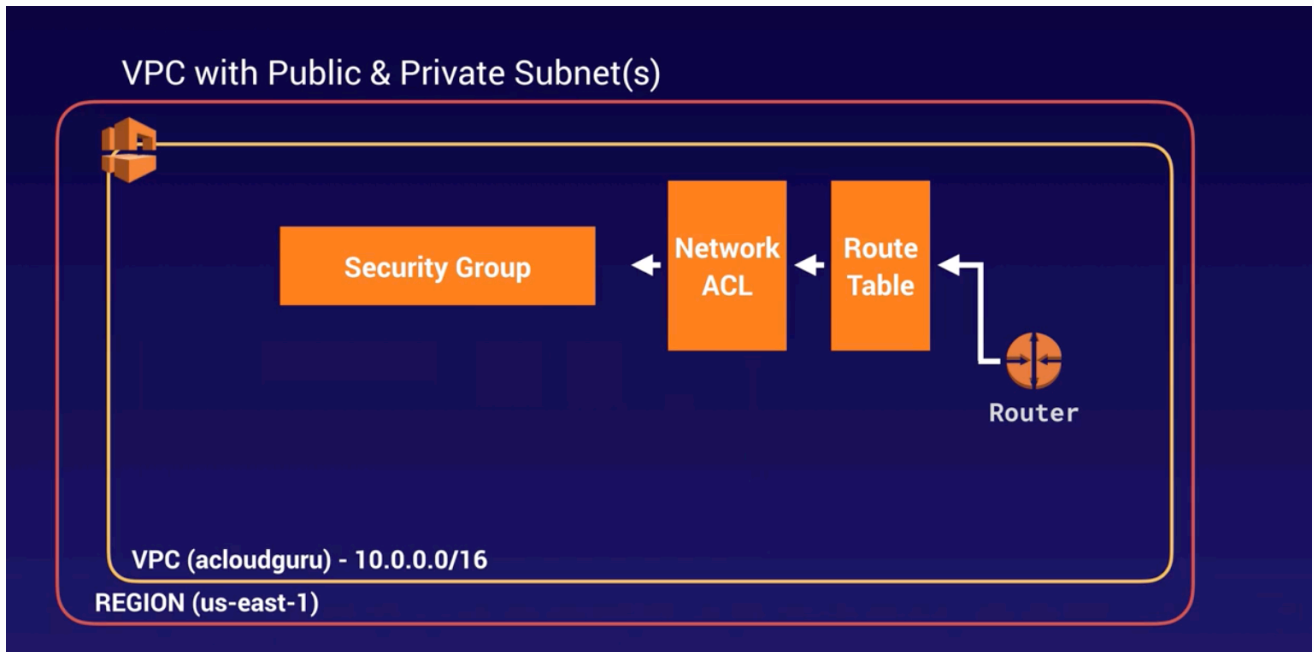
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Support

VPC > Subnets > Create subnet

Create subnet

VPC

VPC ID
Create subnets in this VPC.
vpc-0bb4c249a7b0bd6ca (cloudgunuVPC)

Associated VPC CIDRs
IPv4 CIDRs
10.0.0.0/16
IPv6 CIDRs
2600:1f13:2a4:5a00::/56 (us-west-2)

Subnet settings

Specify the CIDR blocks and Availability Zone for the subnet.

Subnet 1 of 1

Subnet name
Create a tag with a key of 'Name' and a value that you specify.
my-subnet-01
The name can be up to 256 characters long.

Availability Zone
Choose the zone in which your subnet will reside, or let Amazon choose one for you.
No preference

IPv4 CIDR block
10.0.0.0/24

IPv6 CIDR block
Specify whether to assign an IPv6 CIDR block to the subnet.

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VPC and Subnet Sizing

Amazon VPC supports IPv4 and IPv6 addressing, and has different CIDR block size limits for each. By default, all VPCs and subnets must have IPv4 CIDR blocks—you can't change this behavior. You can optionally associate an IPv6 CIDR block with your VPC.

For more information about IP addressing, see [IP Addressing in Your VPC](#).

Contents

- VPC and Subnet Sizing for IPv4
- Adding IPv4 CIDR Blocks to a VPC
- VPC and Subnet Sizing for IPv6

VPC and Subnet Sizing for IPv4

When you create a VPC, you must specify an IPv4 CIDR block for the VPC. The allowed block size is between a /16 netmask (65,536 IP addresses) and /28 netmask (16 IP addresses). After you've created your VPC, you can associate secondary CIDR blocks with the VPC. For more information, see [Adding IPv4 CIDR Blocks to a VPC](#).

When you create a VPC, we recommend that you specify a CIDR block (of /16 or smaller) from the private IPv4 address ranges as specified in [RFC 1918](#):

- 10.0.0.0 - 10.255.255.255 (10/8 prefix)
- 172.16.0.0 - 172.31.255.255 (172.16/12 prefix)
- 192.168.0.0 - 192.168.255.255 (192.168/16 prefix)

You can create a VPC with a publicly routable CIDR block that falls outside of the private IPv4 address ranges specified in [RFC 1918](#); however, for the purposes of this documentation, we refer to *private IP addresses* as the IPv4 addresses that are within the CIDR range of your VPC.

Note

If you're creating a VPC for use with another AWS service, check the service documentation to verify if there are specific requirements for the IP address range or networking components.

The CIDR block of a subnet can be the same as the CIDR block for the VPC (for a single subnet in the VPC), or a subset of the CIDR

On this page:

VPC and Subnet Basics

VPC and Subnet Sizing

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Subnet Security

Connections with Your Local Network and Other VPCs

NOTE

If you're creating a VPC for use with another AWS service, check the service documentation to verify if there are specific requirements for the IP address range or networking components.

The CIDR block of a subnet can be the same as the CIDR block for the VPC (for a single subnet in the VPC), or a subset of the CIDR block for the VPC (for multiple subnets). The allowed block size is between a /28 netmask and /16 netmask. If you create more than one subnet in a VPC, the CIDR blocks of the subnets cannot overlap.

For example, if you create a VPC with CIDR block 10.0.0.0/24, it supports 256 IP addresses. You can break this CIDR block into two subnets, each supporting 128 IP addresses. One subnet uses CIDR block 10.0.0.0/25 (for addresses 10.0.0.0 - 10.0.0.127) and the other uses CIDR block 10.0.0.128/25 (for addresses 10.0.0.128 - 10.0.0.255).

There are many tools available to help you calculate subnet CIDR blocks; for example, see <http://www.subnet-calculator.com/cidr.php>. Also, your network engineering group can help you determine the CIDR blocks to specify for your subnets.

The first four IP addresses and the last IP address in each subnet CIDR block are not available for you to use, and cannot be assigned to an instance. For example, in a subnet with CIDR block 10.0.0.0/24, the following five IP addresses are reserved:

- 10.0.0.0: Network address.
- 10.0.0.1: Reserved by AWS for the VPC router.
- 10.0.0.2: Reserved by AWS. The IP address of the DNS server is always the base of the VPC network range plus two; however, we also reserve the base of each subnet range plus two. For VPCs with multiple CIDR blocks, the IP address of the DNS server is located in the primary CIDR. For more information, see [Amazon DNS Server](#).
- 10.0.0.3: Reserved by AWS for future use.
- 10.0.0.255: Network broadcast address. We do not support broadcast in a VPC, therefore we reserve this address.

Adding IPv4 CIDR Blocks to a VPC

You can associate secondary IPv4 CIDR blocks with your VPC. When you associate a CIDR block with your VPC, a route is automatically added to your VPC route tables to enable routing within the VPC (the destination is the CIDR block and the target is local).

In the following example, the VPC on the left has a single CIDR block (10.0.0.0/16) and two subnets. The VPC on the right represents the architecture of the same VPC after you've added a second CIDR block (10.2.0.0/16) and created a new subnet from the range of the second CIDR.

VPC > Subnets > subnet-0df99803db0a88aef > Modify auto-assign IP settings

Modify auto-assign IP settings [Info](#)

Enable the auto-assign IP address setting to automatically request a public IPv4 or IPv6 address for a new network interface in this subnet.

Settings

Subnet ID

 subnet-0df99803db0a88aef

Auto-assign IPv4 [Info](#)

☒ Enable auto-assign public IPv4 address

Auto-assign customer-owned IPv4 address [Info](#)

☐ Enable auto-assign customer-owned IPv4 address
Option disabled because no customer owned pools found.

Cancel

Save