Subnets, VPC Routers, and Route Tables Part 1

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TECHNICAL INSTRUCTOR

Subnets

Separates a specified CIDR range within an AZ.

A segment of a VPC that lives entirely within a single Availability Zone. Subnets cannot span more than one AZ. Subnets can be public, private, or VPN only.

VPC, Subnets, CIDR Blocks

VPC

Choosing a Private Addressing Space

- 192.168.0.0 - 192.168.255.255 (offers 1 /16 range)
- 172.16.0.0 - 172.31.255.255 (offers 16 /16 ranges)
- 10.0.0.0 - 10.255.255.255 (offers 256 /16 ranges)

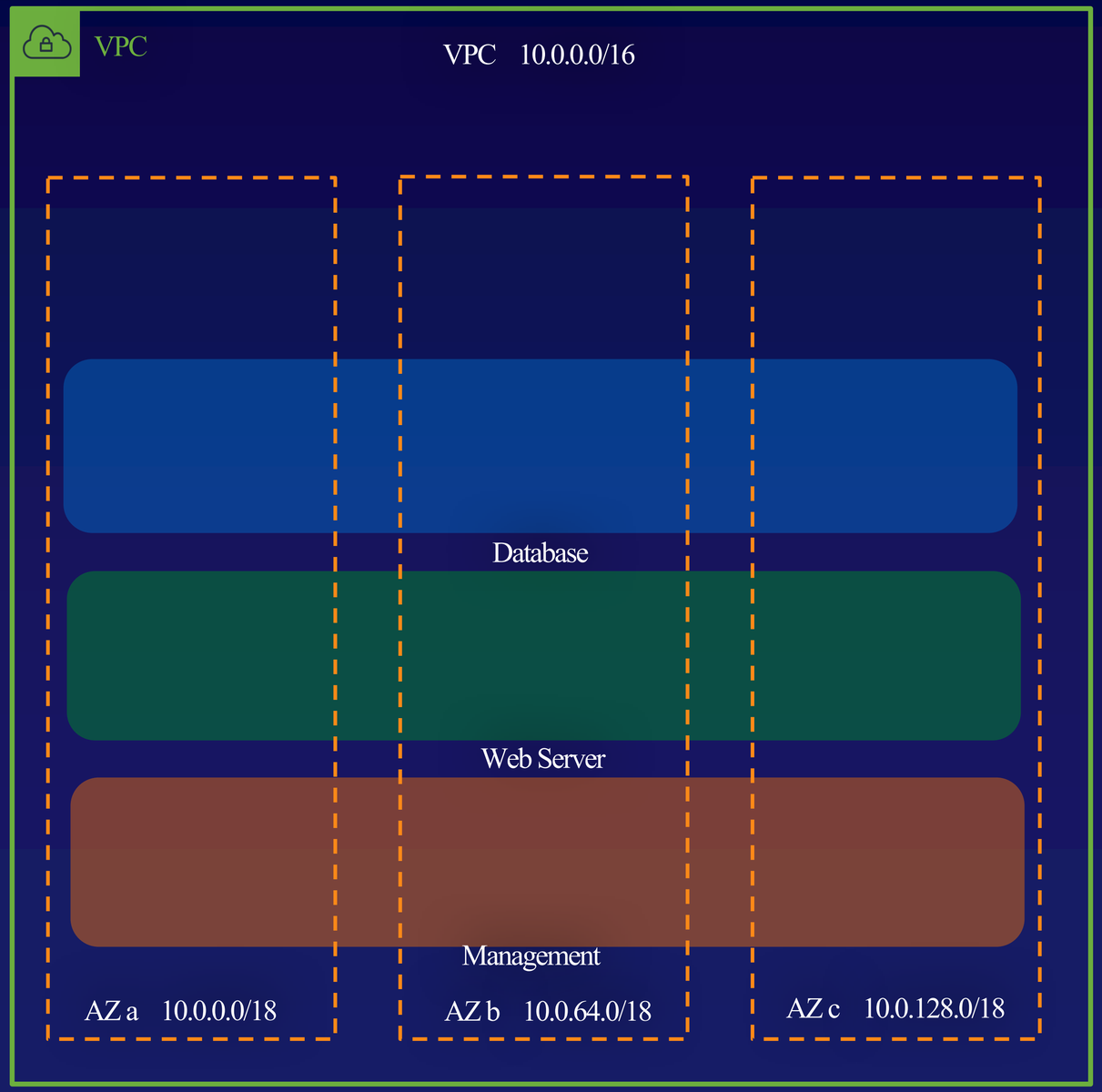
VPC, Subnets, CIDR Blocks

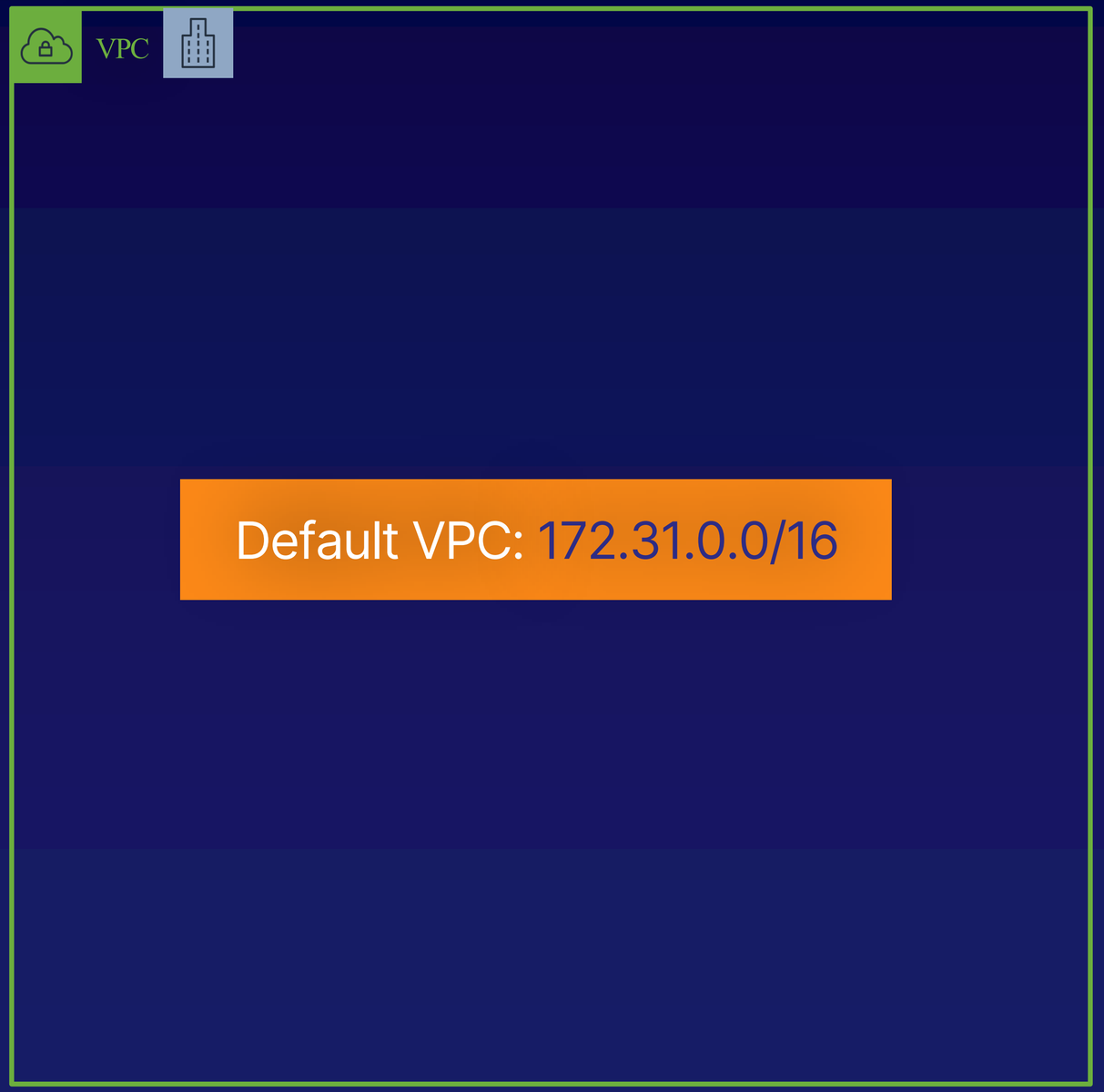
VPC

Choosing VPC CIDR Block

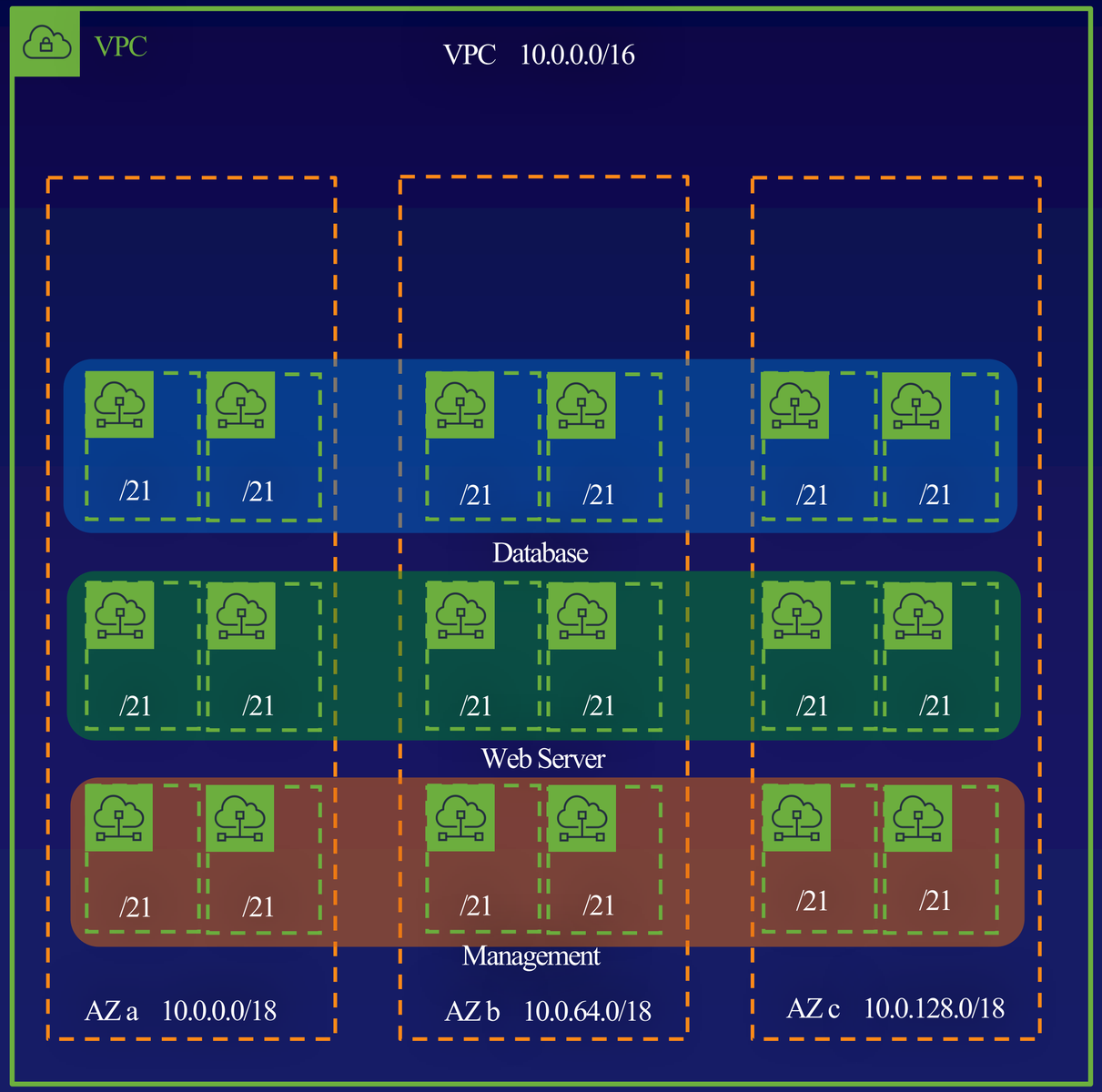
1. Integration with other VPCs
2. Integration with on-premise networks
3. Plans for subnetting

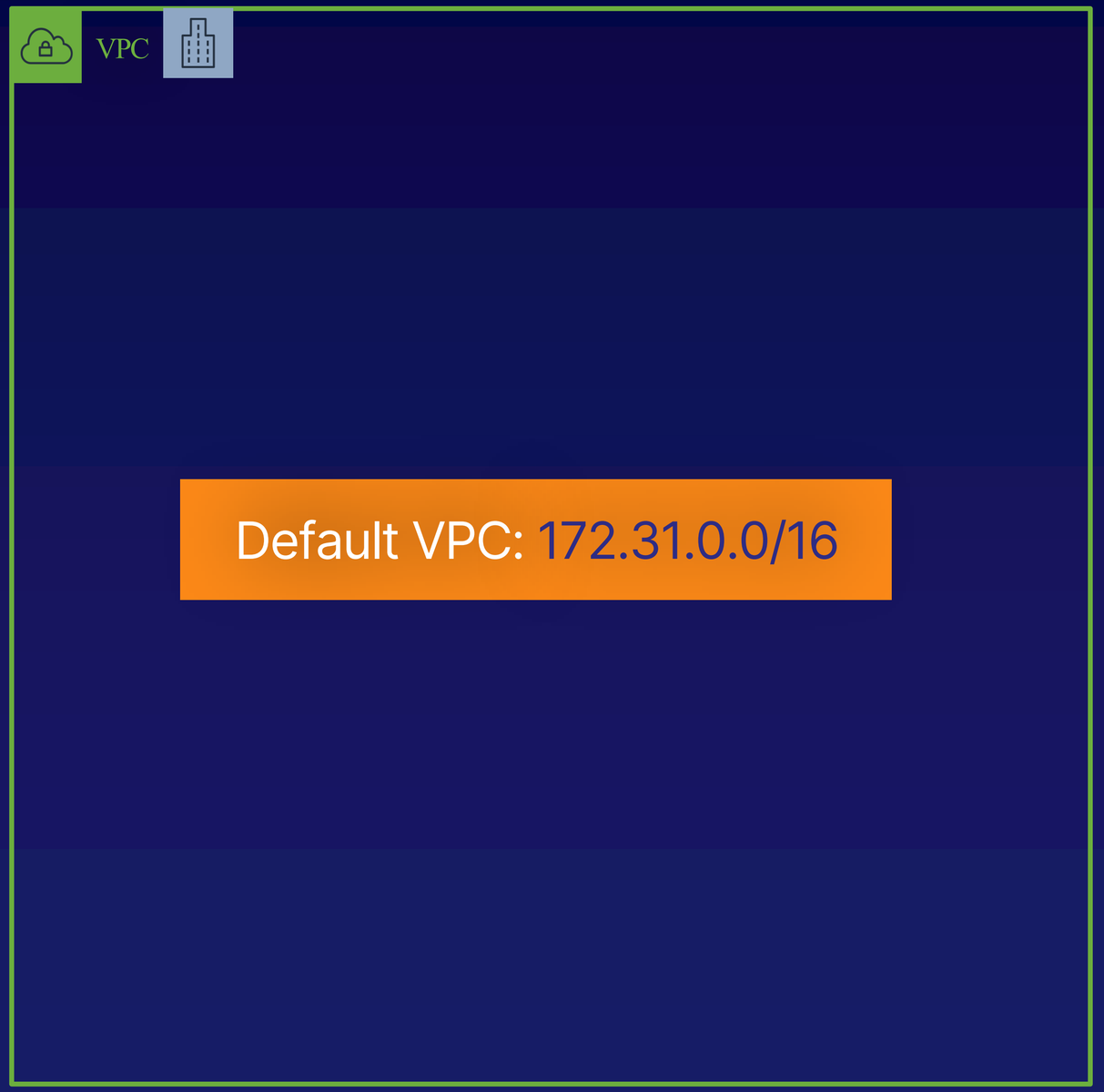
VPC, Subnets, CIDR Blocks





VPC, Subnets, CIDR Blocks





VPC, Subnets, CIDR Blocks

VPC

VPC 10.0.0.0/16

/21

/21

/21

AZ a 10.0.0.0/18

AZ b 10.0.64.0/18

AZ c 10.0.128.0/18

VPC

Intercommunication Between VPCs

Avoid using the default VPC if your VPC will communicate with other VPCs.

AWS Subnet Addressing

1

Specify Target AZ

You can create zero, one, or more subnets in an AZ. When creating a subnet you must specify the target AZ.

2

Determine CIDR Range

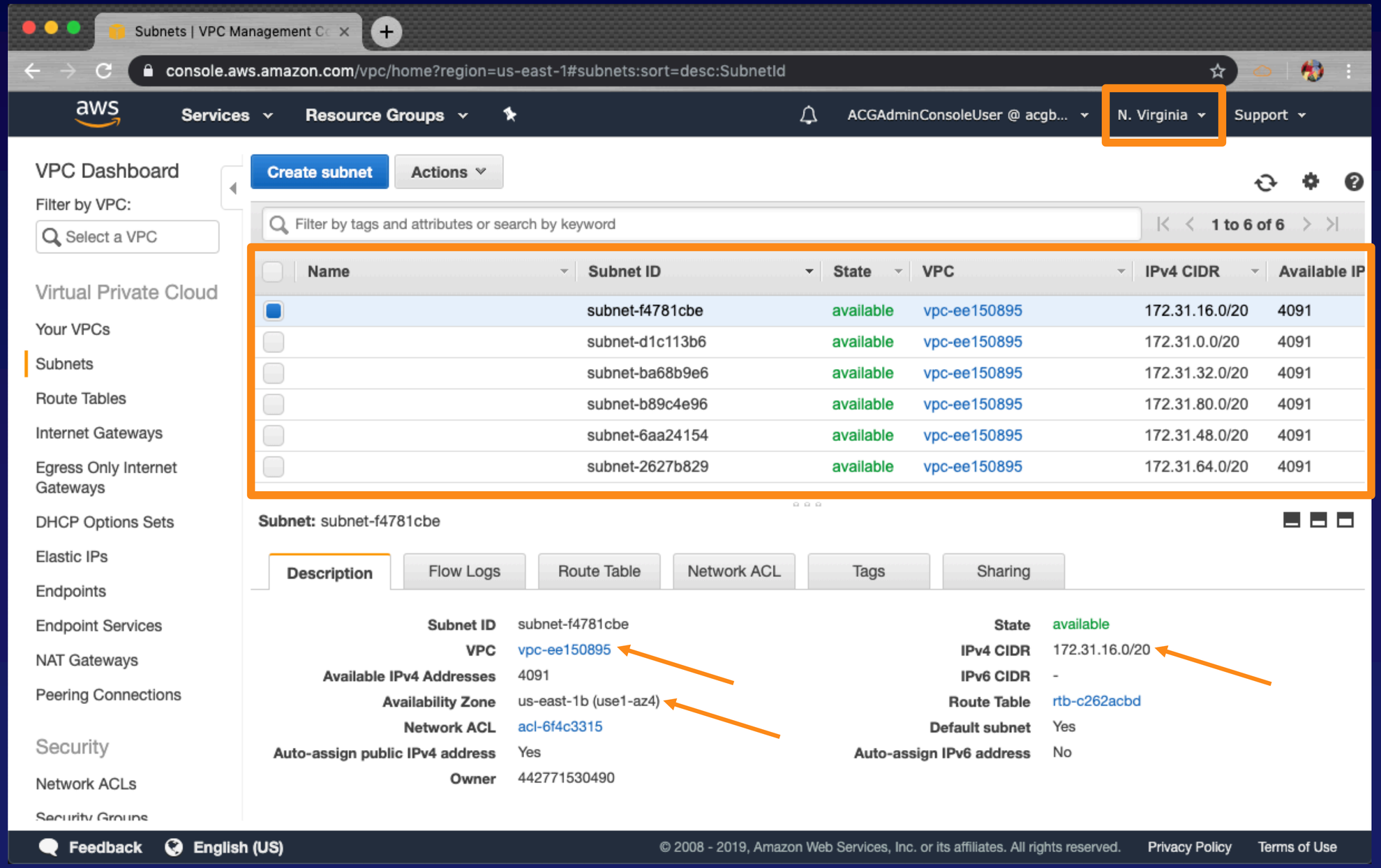
When creating a subnet, the smallest CIDR range you can allocate is /28 netmask and the largest is /16 netmask. That's 16 IPv4 address and 65,536 IPv4 addresses respectively.

3

AWS Reserved Addresses

AWS reserves the first four IPv4 addresses and the last IPv4 address of every subnet for internal networking purposes. So five addresses are always reserved by AWS.

Default Subnets



Default Subnets