



Amazon VPC-1



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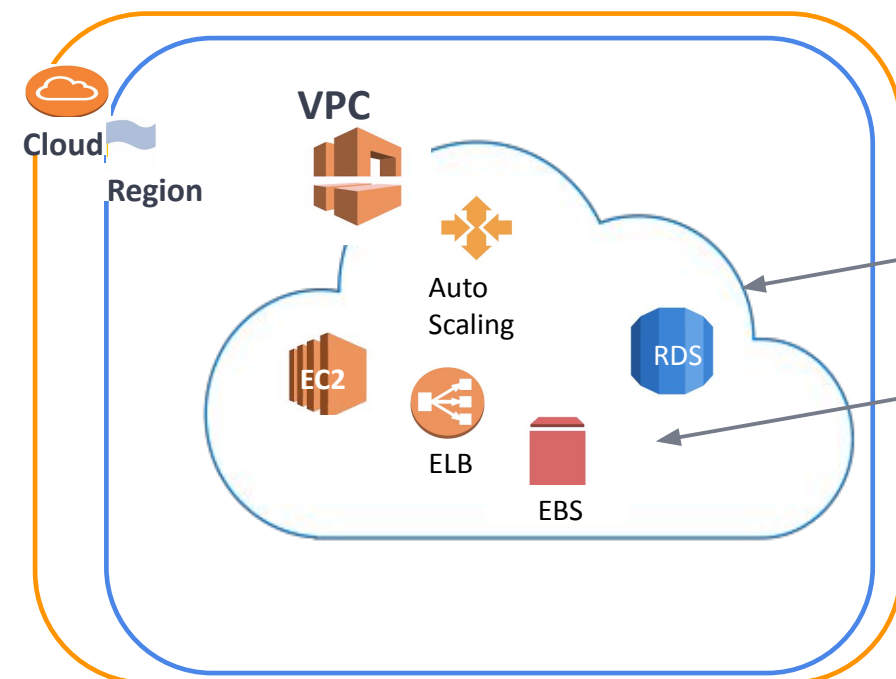
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Introduction to VPC

Introduction to VPC



What is VPC?



Amazon Virtual Private Cloud (Amazon VPC) is a **logically isolated area** of the AWS cloud where you can **launch AWS resources in a virtual network** that you define.

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VPC Basic Components

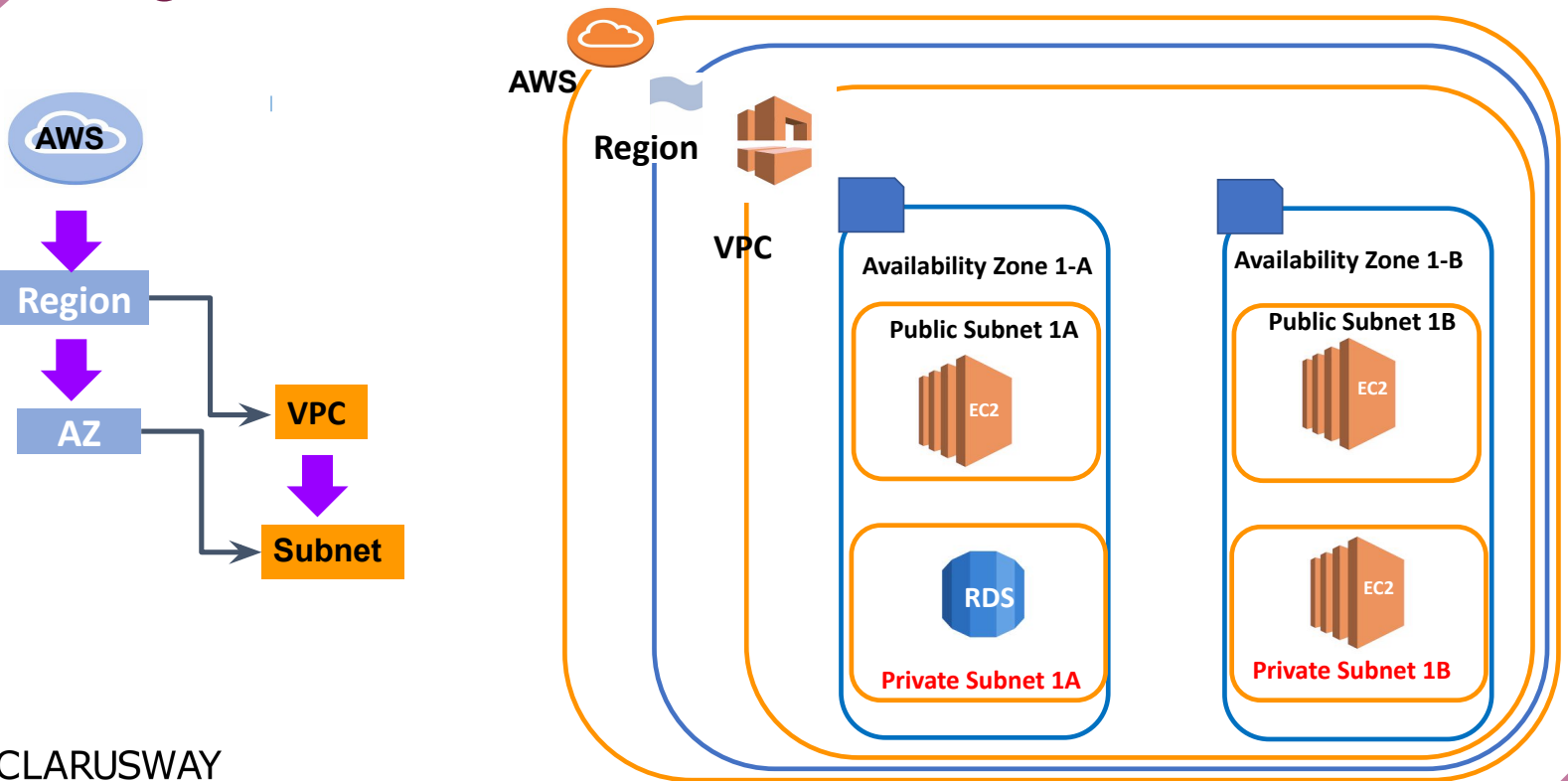
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VPC Basic Components

- VPC Region (AZ)
- VPC Subnets
- VPC CIDR
- Internet Gateway
- Route Table
- Security Group and Network ACL



Region, VPC, AZ and Subnets



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VPC CIDR



10.0.0.0/16

Block Size

$10.0.0.0/16 = 65,536$ IPs in Range

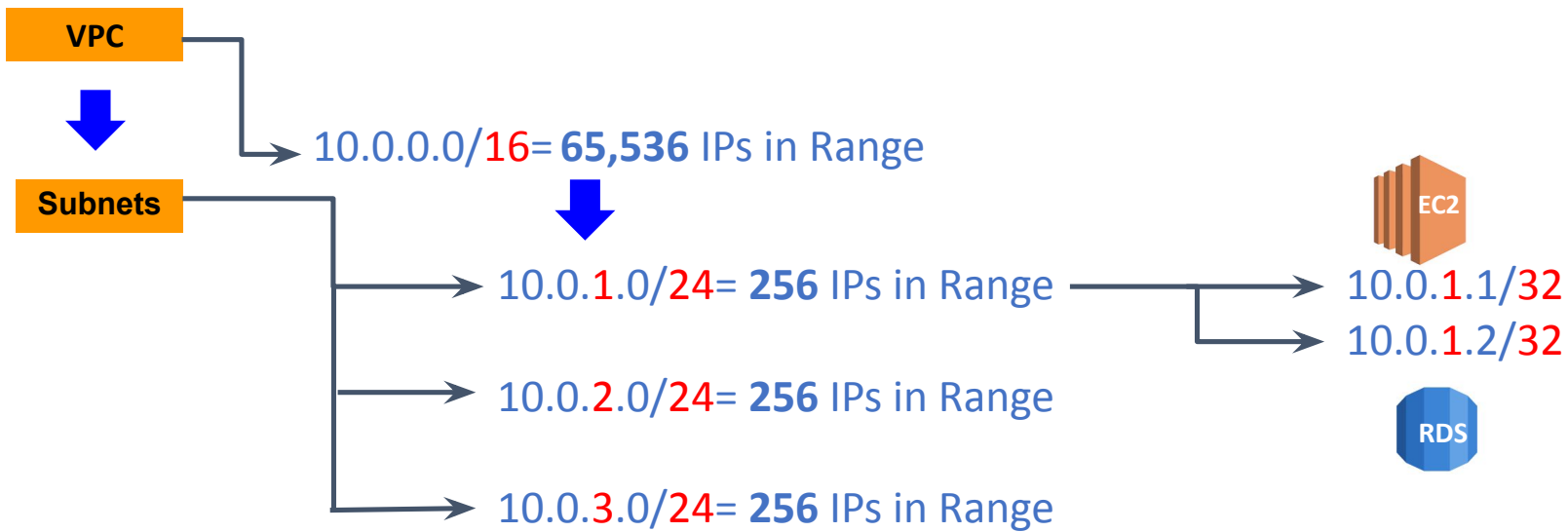
$10.0.1.0/24 = 256$ IPs in Range

$10.0.1.0/32 = 1$ IP in Range

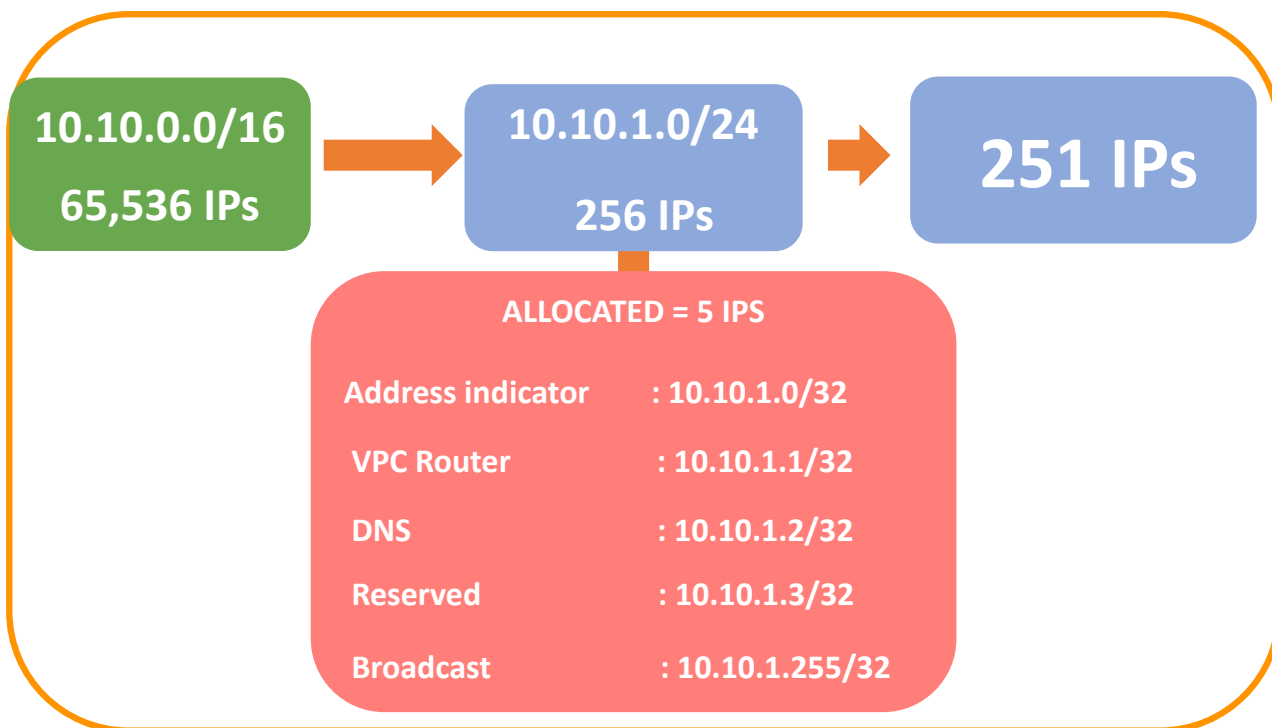
- **CIDR** refers to **C**lassless **I**nter-**D**omain **R**outing.
- It is a set of Internet protocol (IP) standards that is used to **create unique identifiers for networks**.
- As the Size Block/Netmask (/16,24,32) increases, the number of IP located in CIDR Block decreases.

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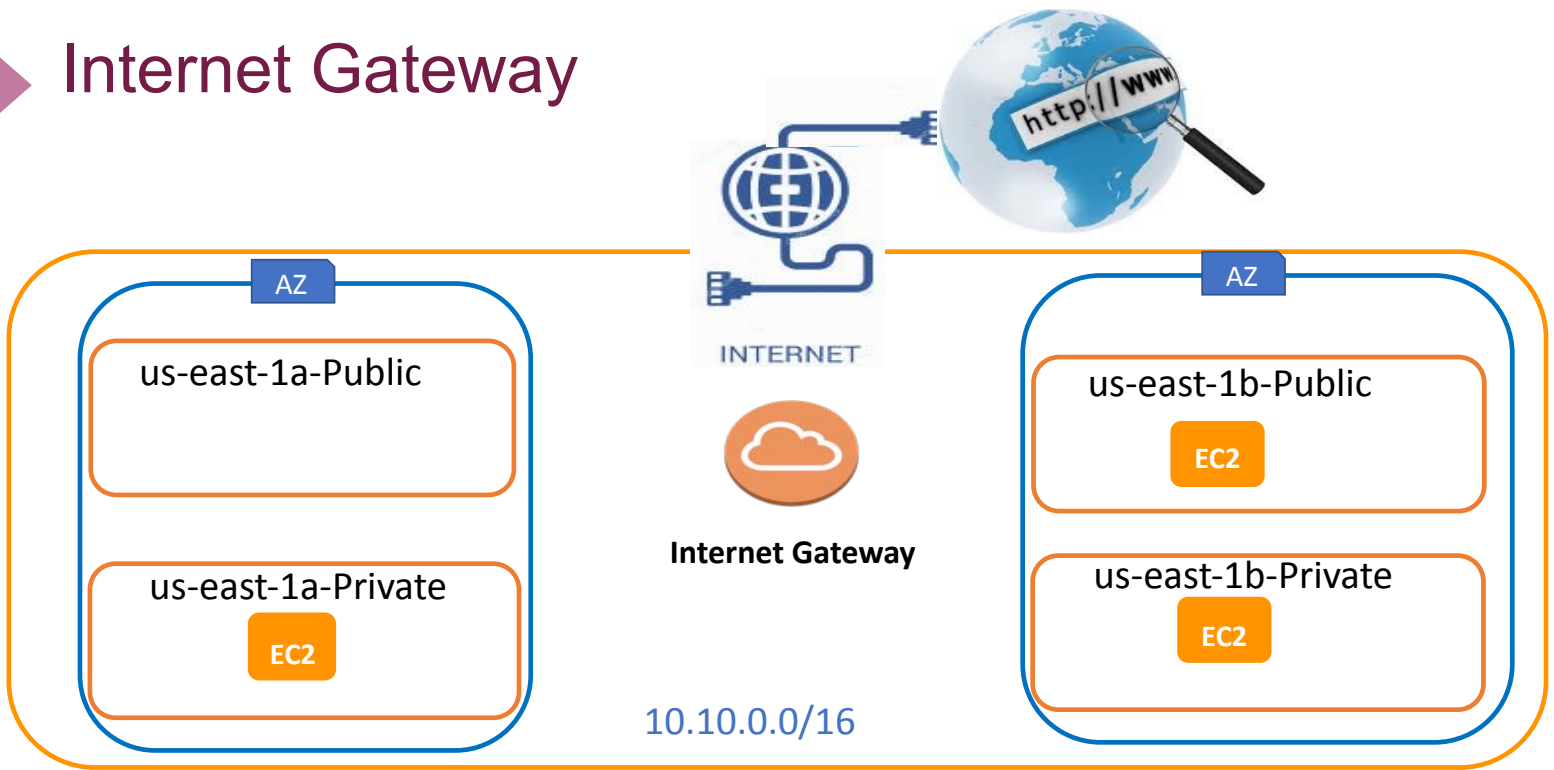
VPC CIDR



VPC CIDR



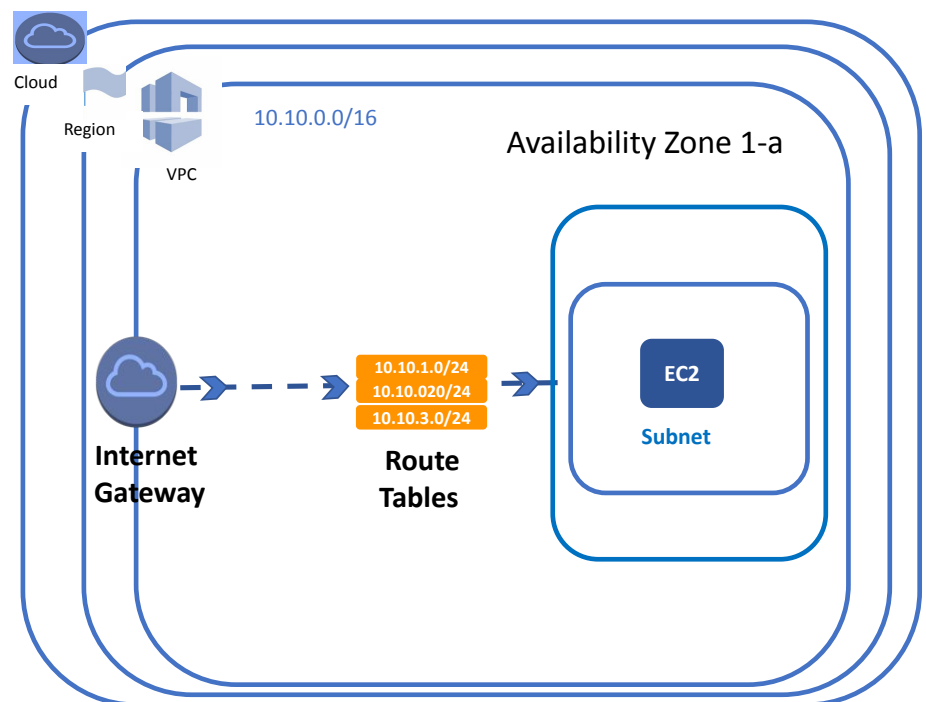
Internet Gateway



- **Internet Gateway** is a VPC component that provides communication between resources in your VPC and the internet.

Route Table

- **Route Table** is a set of rules, that is used to determine where VPC traffic is directed.



Network ACLs & Security Groups



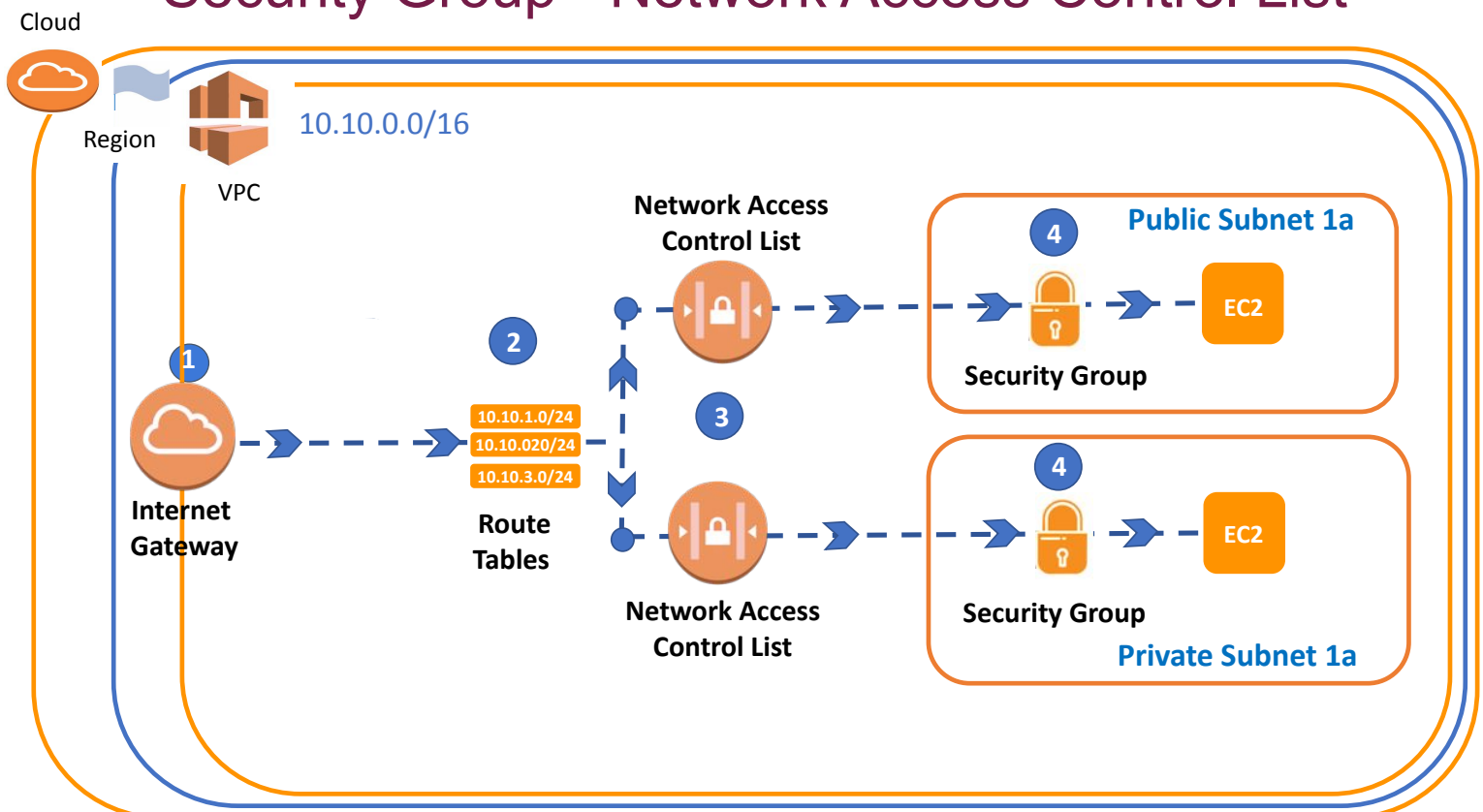
- Network ACLs are **subnet-based security components**.
 - It controls the traffic in and out of subnets.
- Security Groups are instance-based **security** components,
 - They are used for determining which traffic will access the instance.
- Instance in subnet is affected by rules of both Security Groups and Network ACLs



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Security Group - Network Access Control List



Security Group 		Network Access Control List 
Rules	It supports only Allow Rules	It supports both Allow and Deny rules
Default by AWS	By default, inbound rules are Denied , outbound rules are Allow	By default, all the rules are Allowed
* Newly Created by User	By default, inbound rules are Denied , outbound rules are Allow	By default, all the rules are Denied* until you add rules.
Add Rule	You need to add the rule which you'll Allow	You need to add the rule which you can either Allow or Deny it .
Stateful/Stateless	It is a Stateful means that any changes made in the inbound rule will be automatically reflected in the outbound rule	It is a Stateless means that any changes made in the inbound rule will not reflect the outbound rule
Association	<ol style="list-style-type: none"> 1. It is instance-based 2. Instances can associate with more than one Security Groups 	<ol style="list-style-type: none"> 1. It is subnet-based 2. Subnets can associate with only one Network ACL



THANKS!

Any questions?

