

Wifi / Password

Wifi name:
TDPK-WIFI

Username:
AWS@Workshop1
AWS@Workshop2
AWS@Workshop3

Password
Welcome@2022



<https://github.com/TIDC-PS-Inter/AWS-Workshop>

True IDC Cloud Professional Service

AWS On Boarding Part 1

Mr. Athiwat Itthiwatana

Cloud & Solution consultant



Presented by

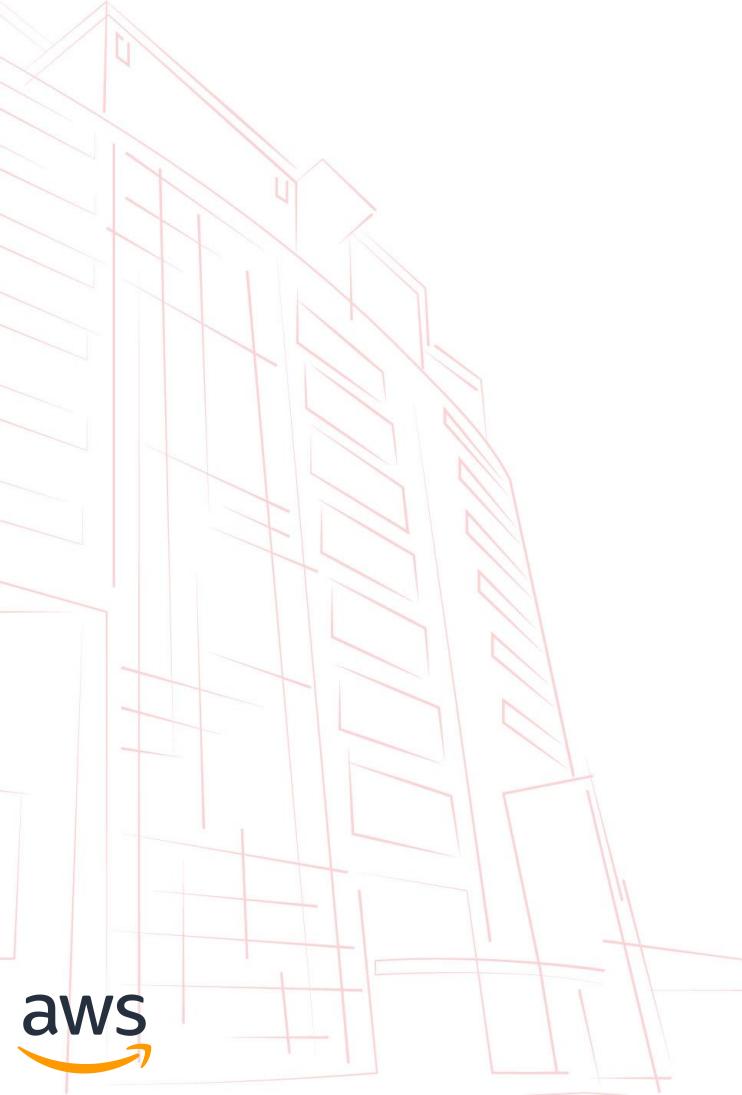


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- Cloud & Solution Consultant, TrueIDC
- AWS Specialist
- SAP Basis Specialist
- athiwat.itt@ascendcorp.com



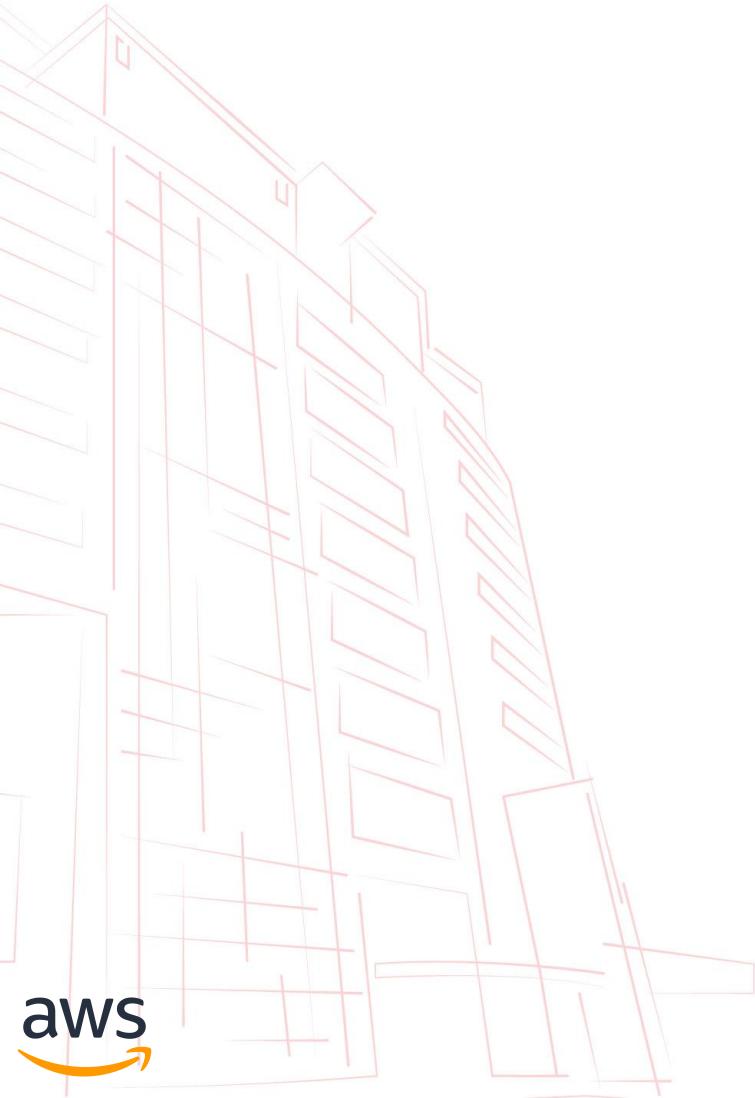


Course Objectives

- 
- Recognize terminology and concepts as they relate to the **AWS platform** and navigate the AWS Management Console
 - Understand the **foundational services**, including Amazon Elastic Compute Cloud (EC2), Amazon Virtual Private Cloud (VPC)
 - Understand the **security** measures AWS provides and key concepts of AWS identity and Access Management (AMI)

Agenda

- Cloud concept
- AWS Global Infrastructure
- AWS Network
- AWS Compute
- Lab: Build EC2 & ALB



What is Cloud Computing ?



Cloud Computing



On demand delivery of
IT resources and
application via the internet
with pay-as-you-go pricing.

Who should use the Cloud ???



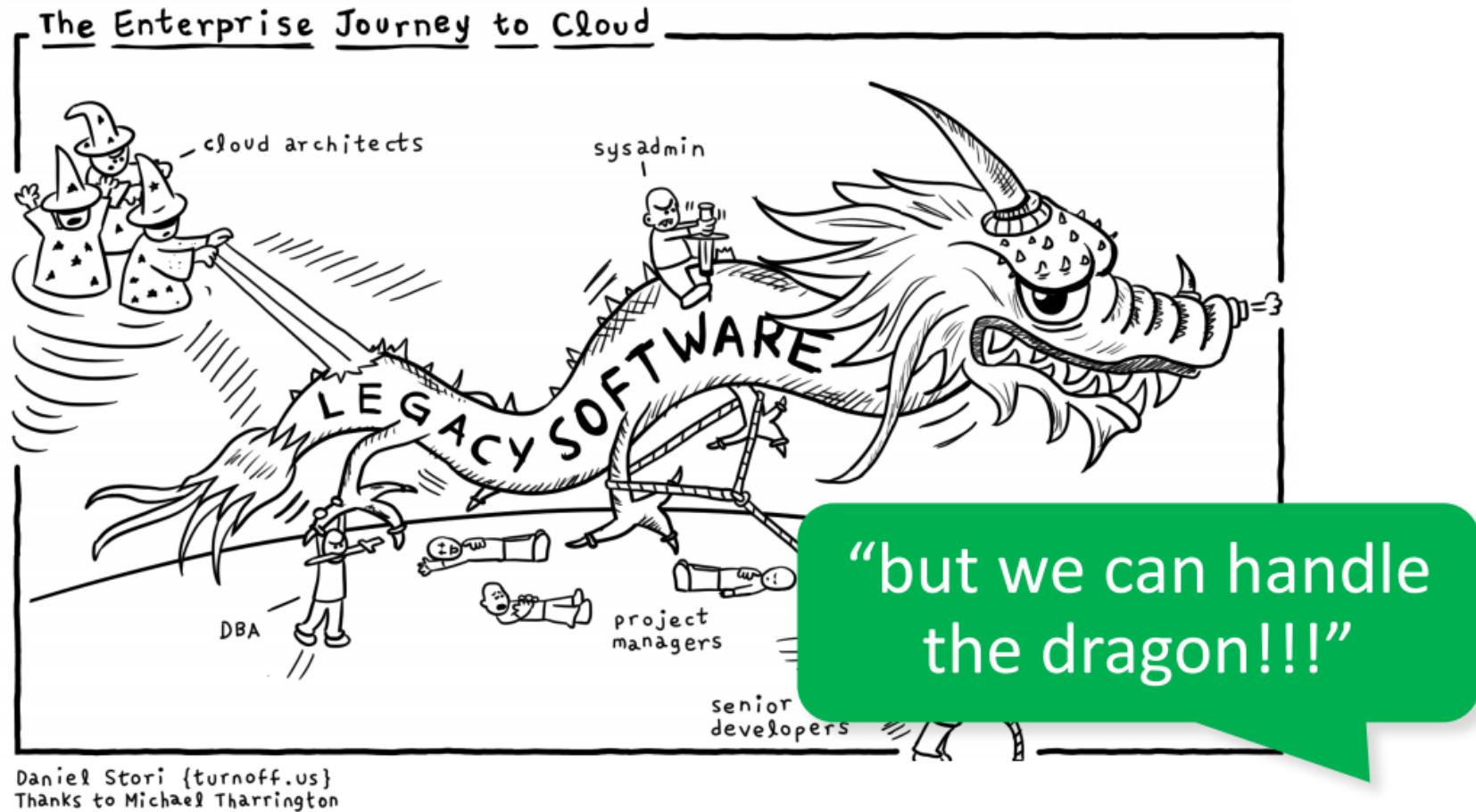
Who should use the Cloud ? - Startup



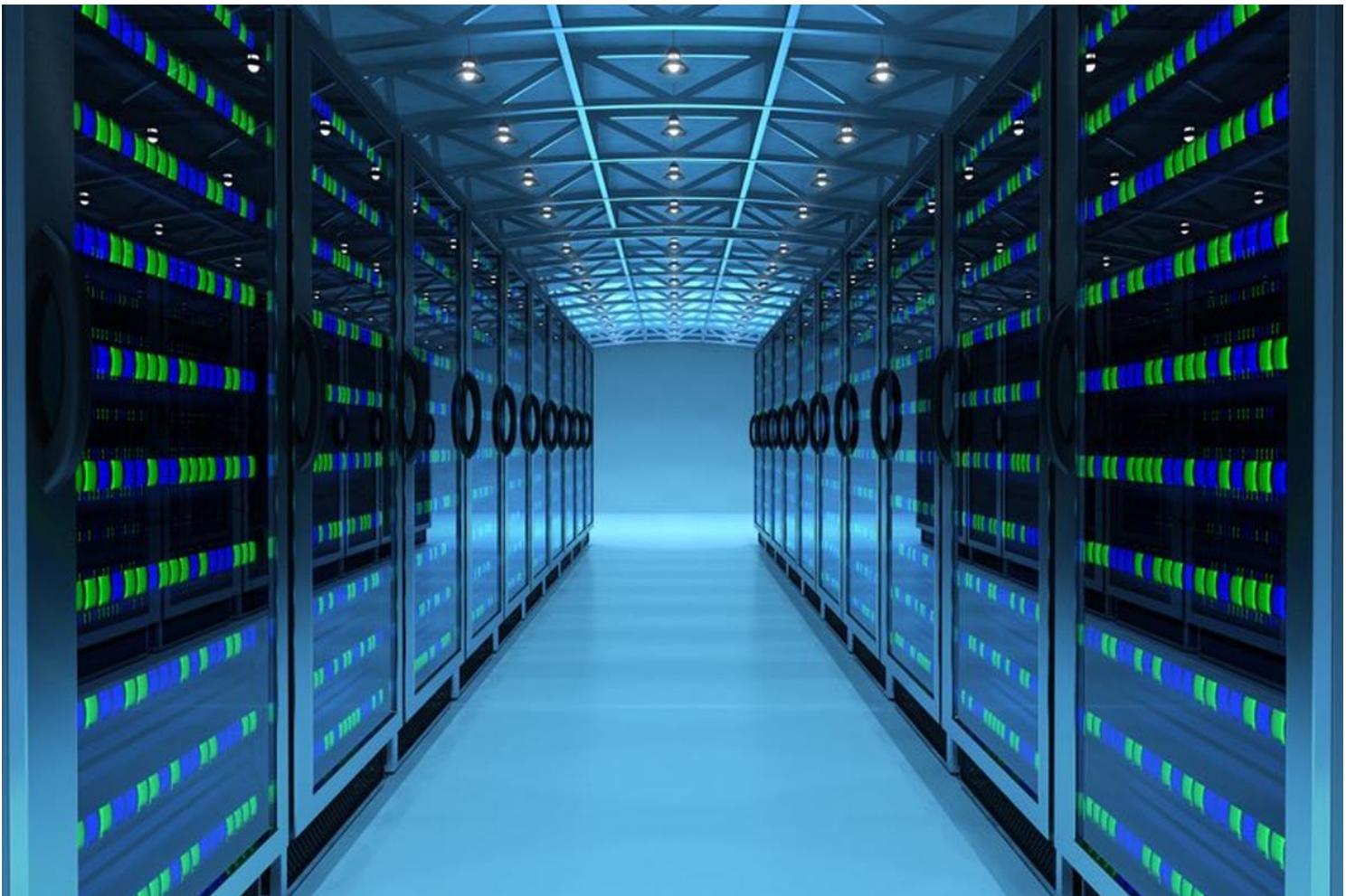
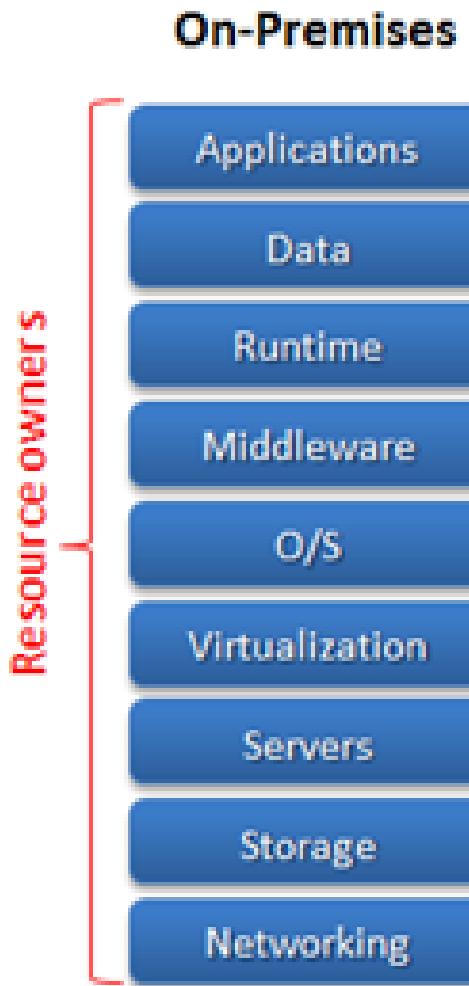
Who should use the Cloud ???



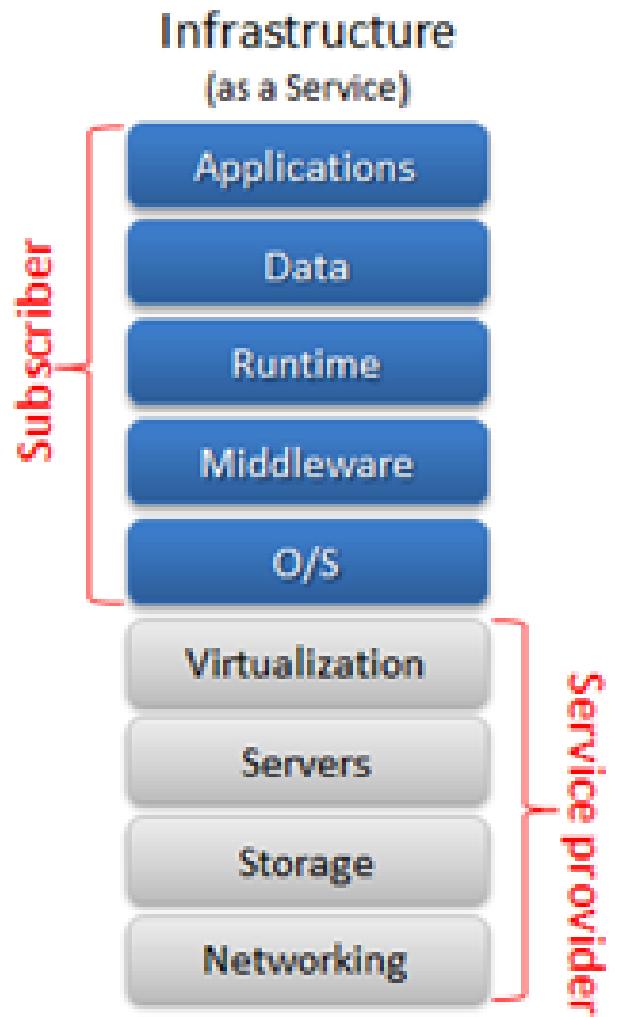
Who should use the Cloud ? - Enterprise



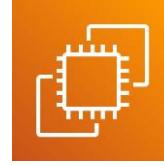
Type of Cloud computing



Type of Cloud computing

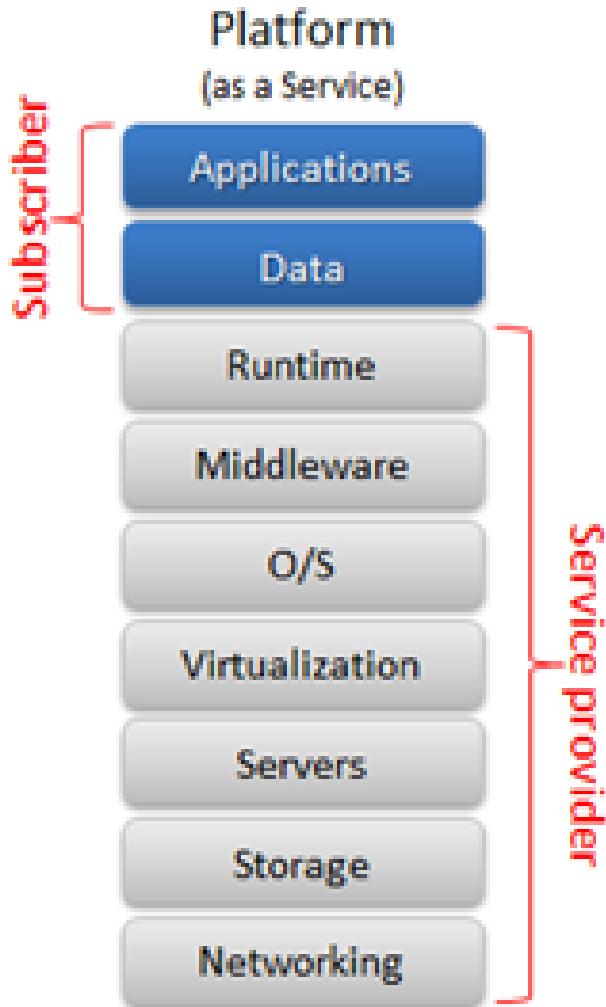


aws



Amazon Elastic Compute
Cloud (Amazon EC2)

Type of Cloud computing



Amazon Relational Database Service (Amazon RDS)



AWS Elastic Beanstalk

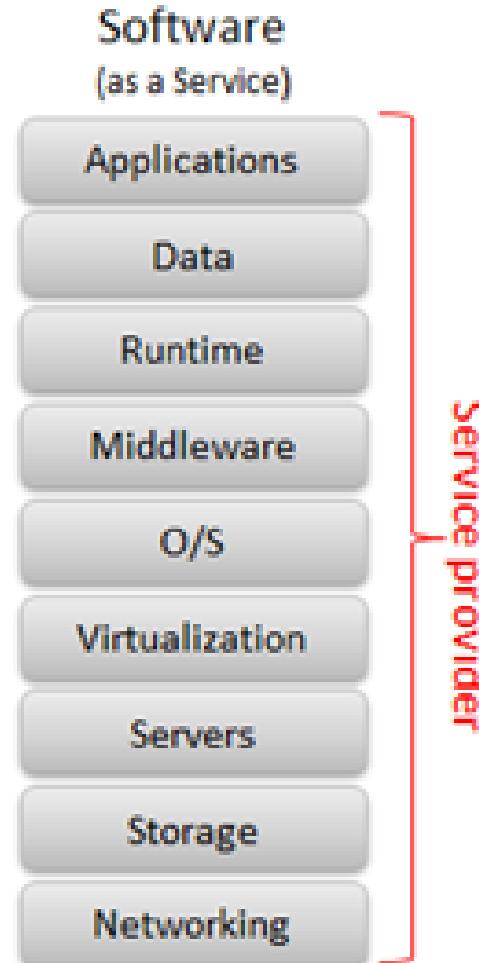


Amazon Elastic Container Service (Amazon ECS)



Google app engine

Type of Cloud computing



Amazon Simple Storage
Service (Amazon S3)



iCloud

WELCOME



Amazon Web Services (AWS)

Amazon Web Services (AWS) is the world's most comprehensive and broadly adopted cloud platform, offering over 165 fully featured services from data centers globally. Millions of customers.

—including the fastest-growing startups, largest enterprises, and leading government agencies—trust AWS to power their infrastructure, become more agile, and lower costs.



Gartner Magic Quadrant for Cloud Infrastructure as a Service, Worldwide

Cloud adoption continues to increase as agile development, rapid deployment, and unlimited scale become the new normal for customers of all industries, sizes, and geographies. In Gartner's second evaluation covering both cloud infrastructure and platform services (IaaS & PaaS, or "CIPS"), AWS is evaluated as a Leader placed highest in both axes of measurement, Ability to Execute and Completeness of Vision. In this report, discover why Gartner positioned AWS as a Leader, learn how a Leader in this report is defined, and dive deep into the benefits that public cloud can bring to your organization.

AWS named as a leader in the Infrastructure as a Service (IaaS) Magic Quadrant report for 11th consecutive year since 2011*

Gartner®



As of July 2021

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trueIDC

AWS History

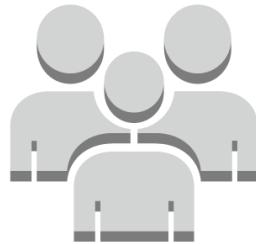


On-Premises versus Cloud

Traditional Infrastructure



Equipment



Resources and Administration



Contracts



Cost



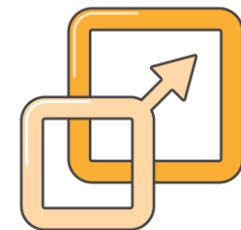
AWS Cloud



No Upfront Expense
Pay for what you
use



Improve Time to
Market & Agility

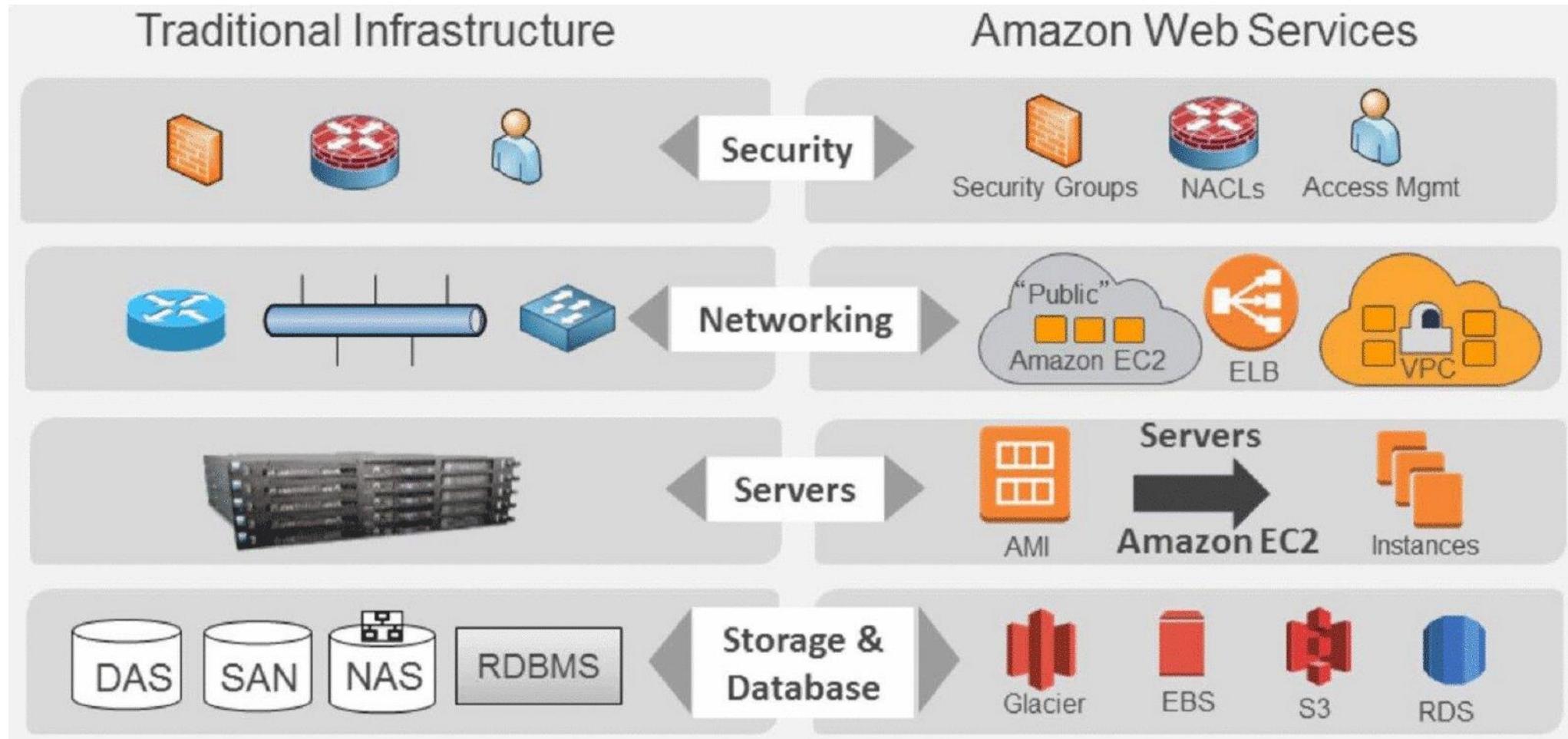


Scale Up
and
Down



Self-service
Infrastructure

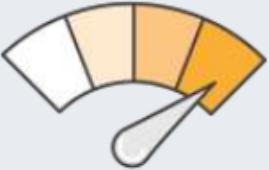
Traditional Mapping



The AWS Cloud



Eliminate costly technical debt and reallocate resources so you can deliver high-value, revenue-generating projects faster.



Innovate faster and solidify your competitive advantage by merging startup agility with enterprise experience and resources.



Reduce risk by focusing resources dedicated to security, compliance and availability to the most important areas of your business.

"AWS is our trusted partner that is going to run our company for the next 140 years."

Jim Fowler – CIO, General Electric

The AWS Cloud



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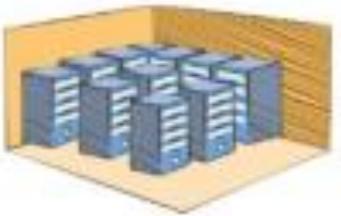
"AWS is our trusted partner that is going to run our company for the next 140 years."

Jim Fowler – CIO, General Electric

Eliminate costly technical debt

On -Premises

Physical space



Cabling

Cooling

Power



Networking

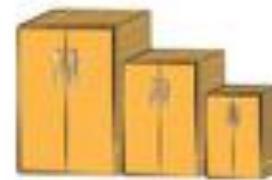
Racks

Servers

Storage

Certification

Labor

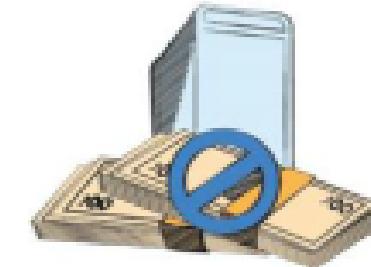


AWS Cloud



\$0

to get started

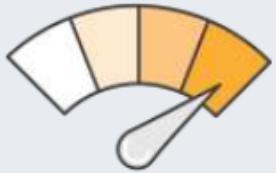


No upfront investment

The AWS Cloud



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Innovation faster at AWS

What's New with AWS: 2022 Archive

[AWS What's New homepage](#)

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- ▶ Blockchain
- ▶ Business Applications
- ▶ Cloud Financial Management
- ▶ Compute
- ▶ Containers

1-20 (1129)

[Amazon EKS Anywhere Curated Packages now generally available](#)

08/24/2022

[AWS Application Migration Service is now available in the Asia Pacific \(Jakarta\) Region](#)

08/24/2022

[Amazon EC2 X2idn and X2iedn instances now available in Asia Pacific \(Jakarta\) region](#)

08/24/2022

[AWS Glue is now available in the AWS Asia Pacific \(Jakarta\) Region](#)

08/24/2022

[Customers can now pay upfront or with scheduled payments using AWS IQ](#)

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[AWS WAF Fraud Control - Account takeover prevention for Amazon CloudFront](#)

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The AWS Cloud



Eliminate costly technical debt and reallocate resources so you can deliver high-value, revenue-generating projects faster.



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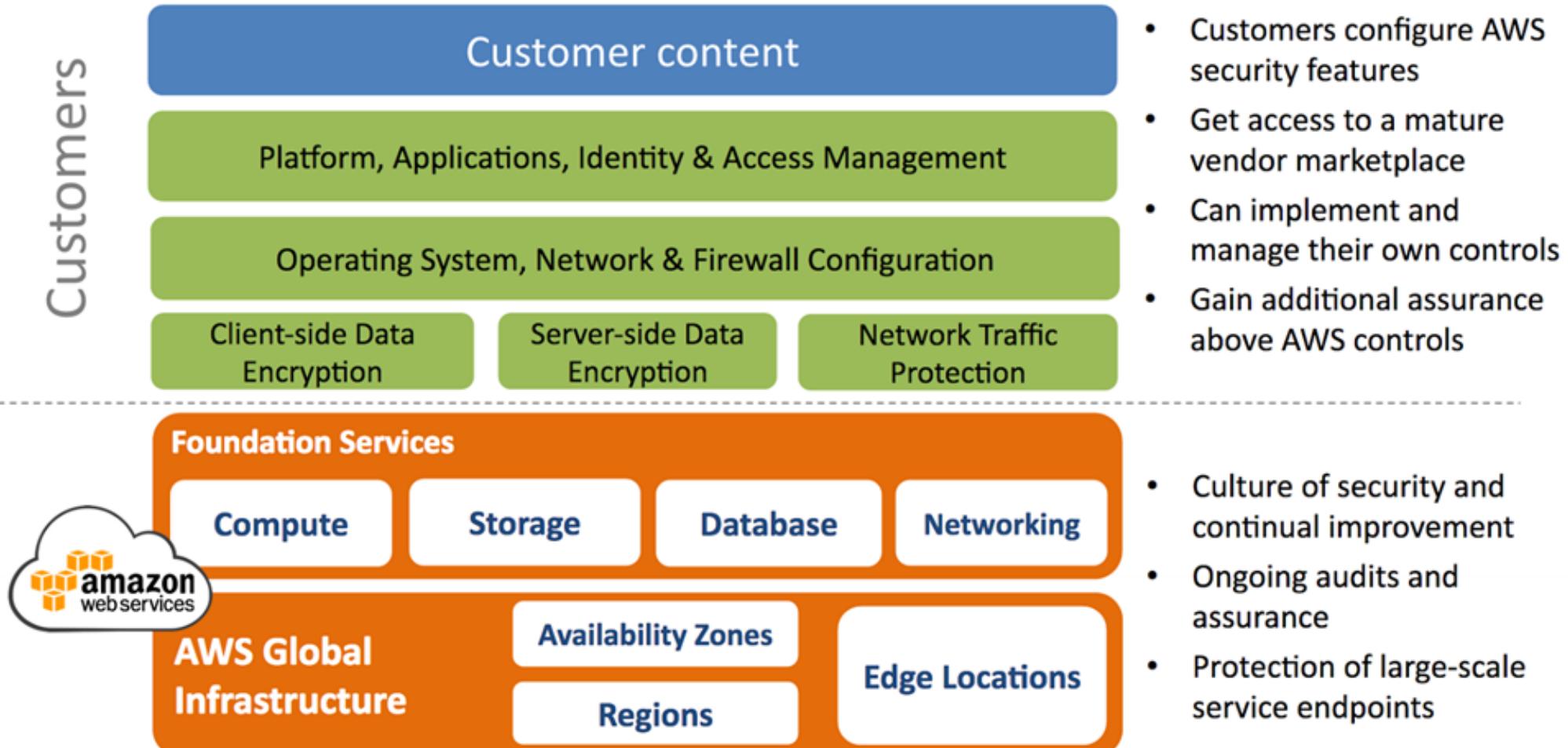
Reduce risk by focusing resources dedicated to security, compliance and availability to the most important areas of your business.

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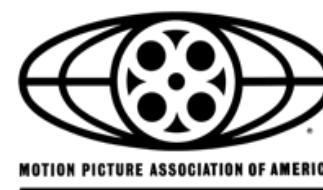
Jim Fowler – CIO, General Electric

Reduce risk

Security is a shared responsibility between AWS and our customers



AWS Compliance program



FISMA

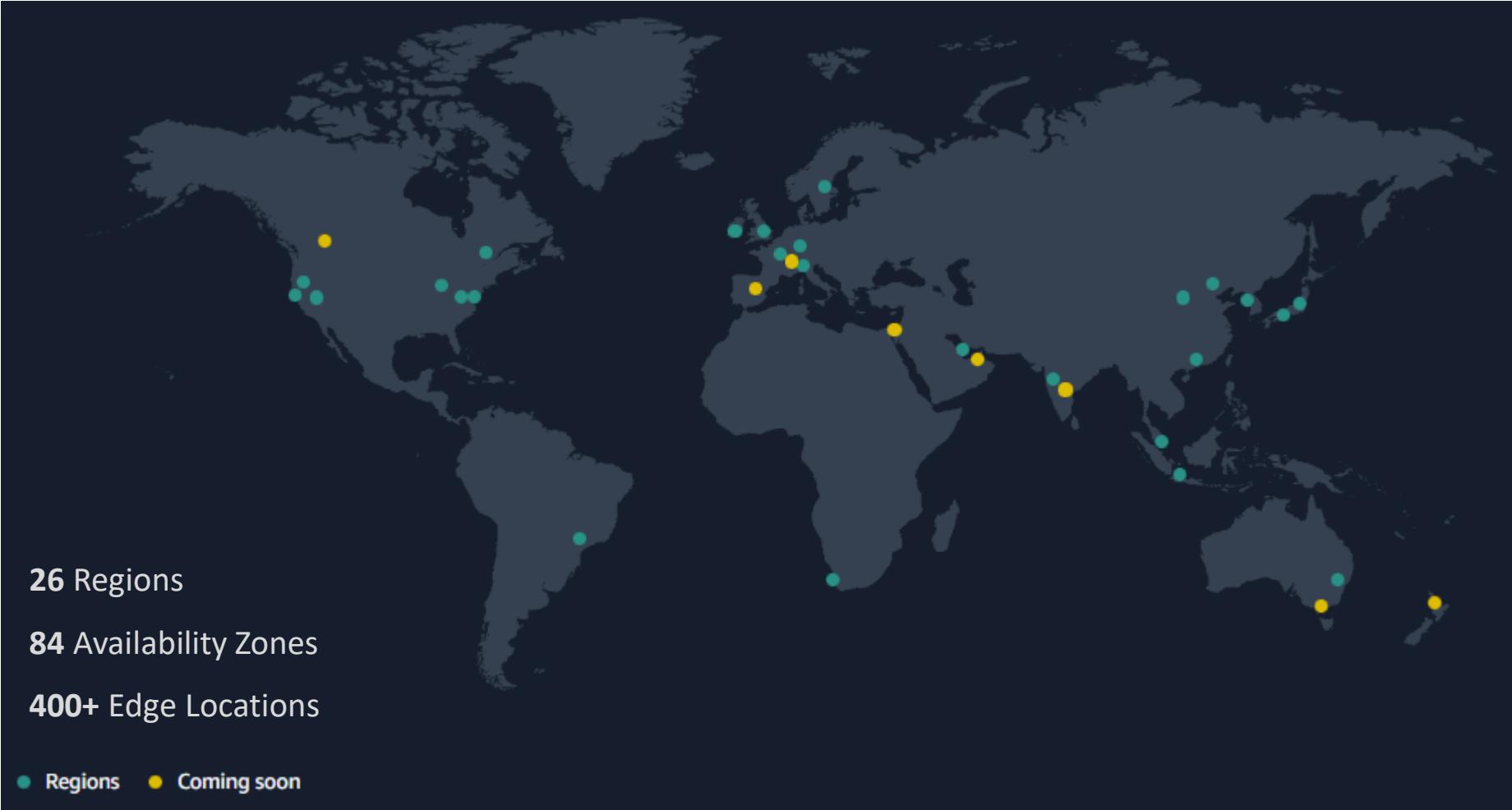
Pricing fundamentals

- cube Three fundamental drivers of cost with AWS:
 - cube Compute
 - cube Storage
 - cube Outbound data transfer
- cube (In most cases) No charge:
 - cube Inbound data transfer
 - cube Data transfer between services within the same region
- cube Charge for aggregated outbound data transfer

AWS Networking



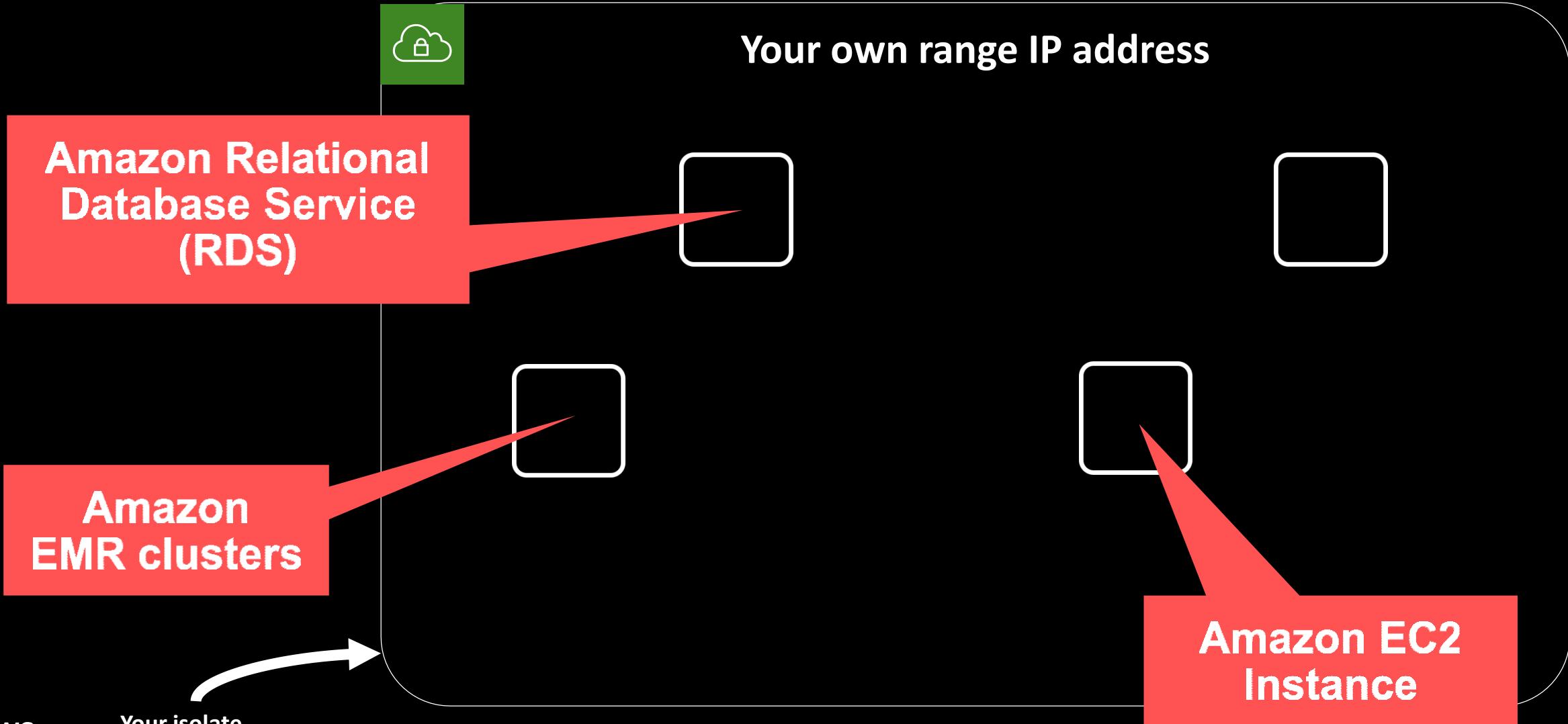
AWS Global Infrastructure



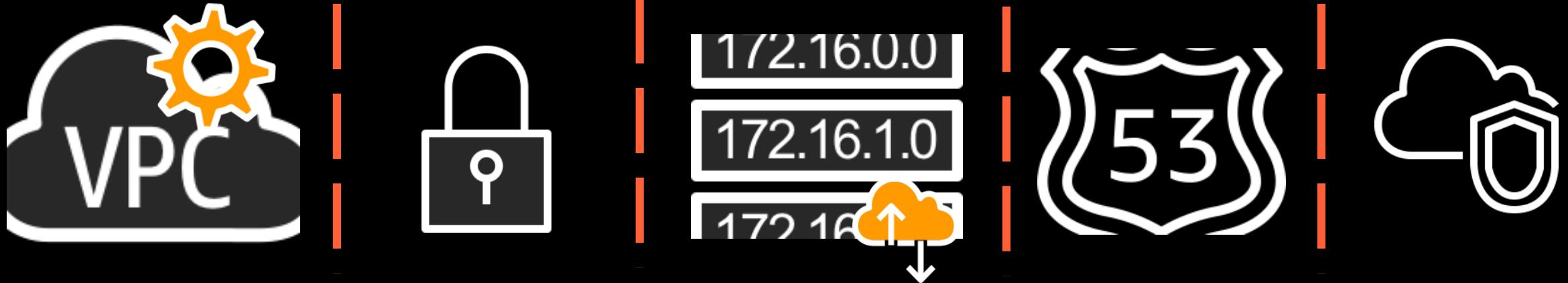
AWS now spans **84 Availability Zones** within **26 geographic regions** around the world and has announced plans for nine more Availability Zones and 8 more AWS Regions in the future. (as of Aug 2022)

VPC concepts & fundamentals

What is VPC ?



VPC concepts & fundamentals



IP
addressing

Creating
subnets

Routing in a
VPC

DNS in-VPC with
Amazon Route 53

Security

Default VPC

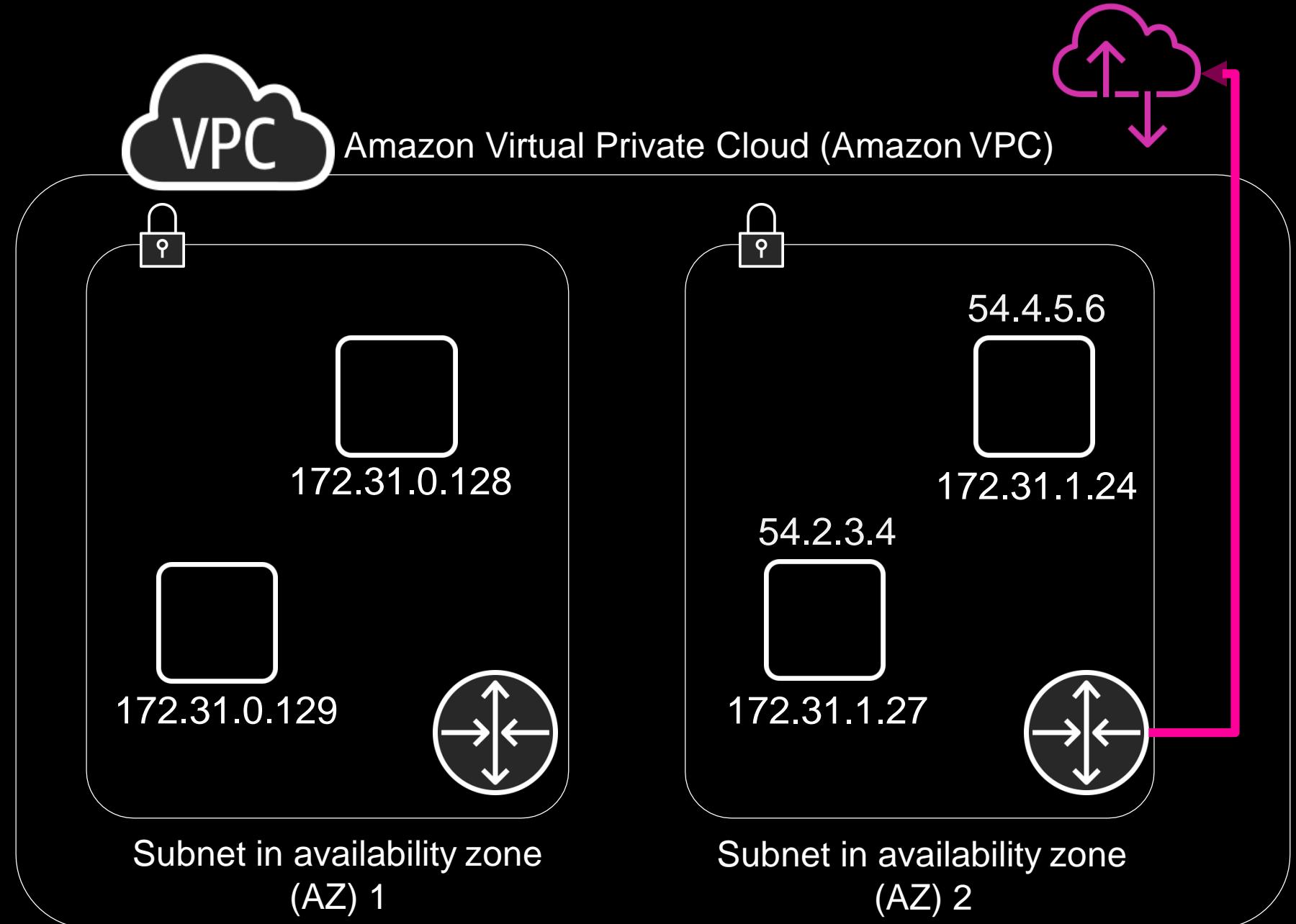
/16 IPv4 CIDR block
(172.31.0.0/16).

/20 default subnet

Connected Internet Gateway

Security Group (SG)

Network Access Control
List (NACL)



Choosing an IP address range

Choosing an IP address range for your VPC



Avoid ranges that overlap with other networks to which you might connect

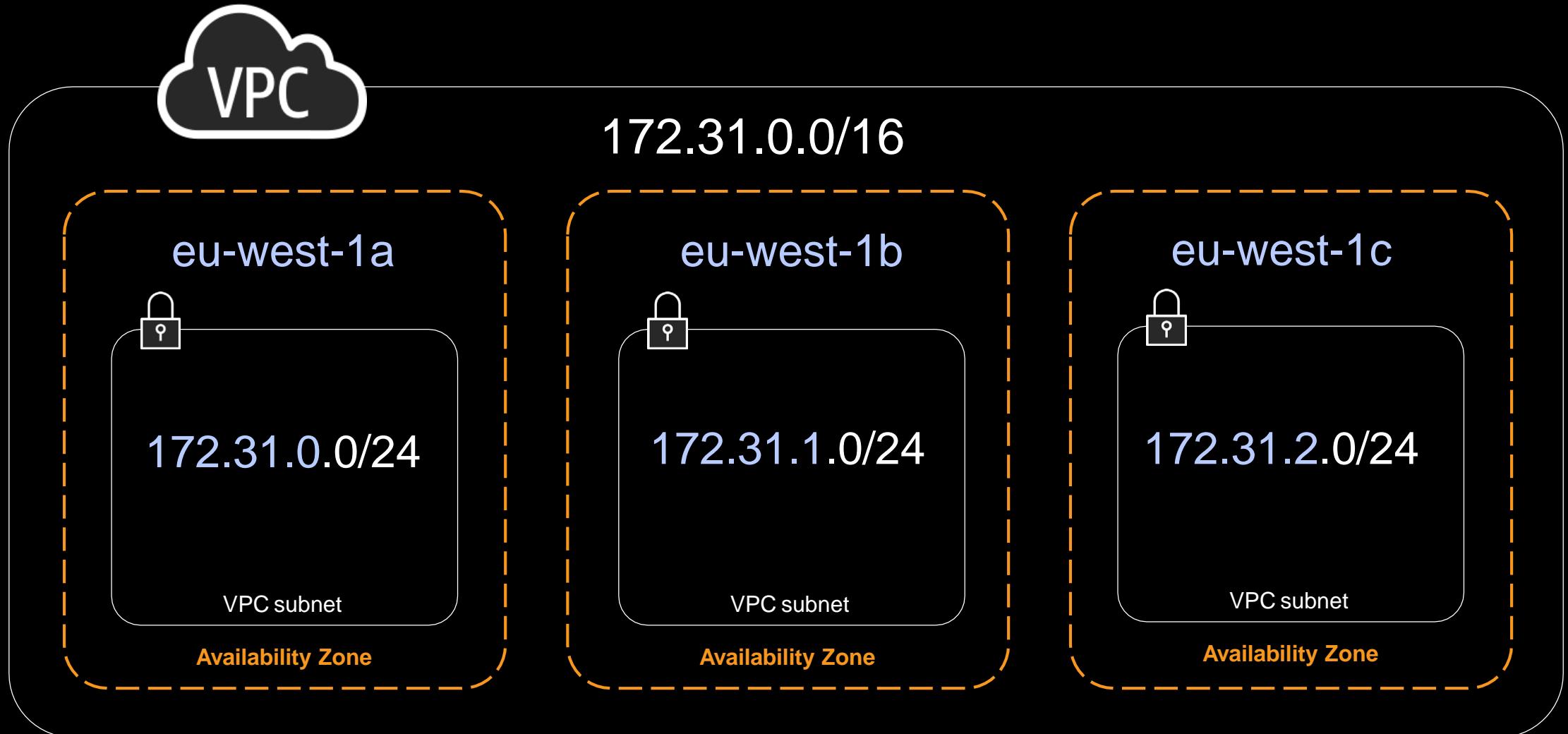
172.31.0.0/16

Recommended:
RFC1918 range

Recommended:
/16
(65,536 addresses)

Creating subnets in a VPC

VPC subnets and Availability Zones



Routing in a VPC

Routing in your VPC

- **Route tables** contain rules for which packets go where
- Your VPC has a *default* route table
- But, you can create and assign different **route tables** to different **subnets**

Create Route Table **Delete Route Table** **Set As Main Table**

Search Route Tables and their X

Name	Route Table ID	Explicitly Associated	Main	VPC
<input checked="" type="checkbox"/> rtb-0028d8ca88068...	0 Subnets	Yes	vpc-0bcb5110cf0ce088b myVPC	

rtb-0028d8ca88068723d

Summary **Routes** **Subnet Associations** **Route Propagation** **Tags**

Edit

Traffic destined for my VPC stays in my VPC

Destination	Target	Status	Propagated
172.31.0.0/16	local	Active	No
2600:1f16:14d:6300::/56	local	Active	No

DNS in a VPC

VPC DNS options

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	DHCP options set
myVPC	vpc-0bcb5110cf0ce088b	available	172.31.0.0/16	2600:1f16:14d:6300::/56	dopt-c8cf28a1

vpc-0bcb5110cf0ce088b | myVPC

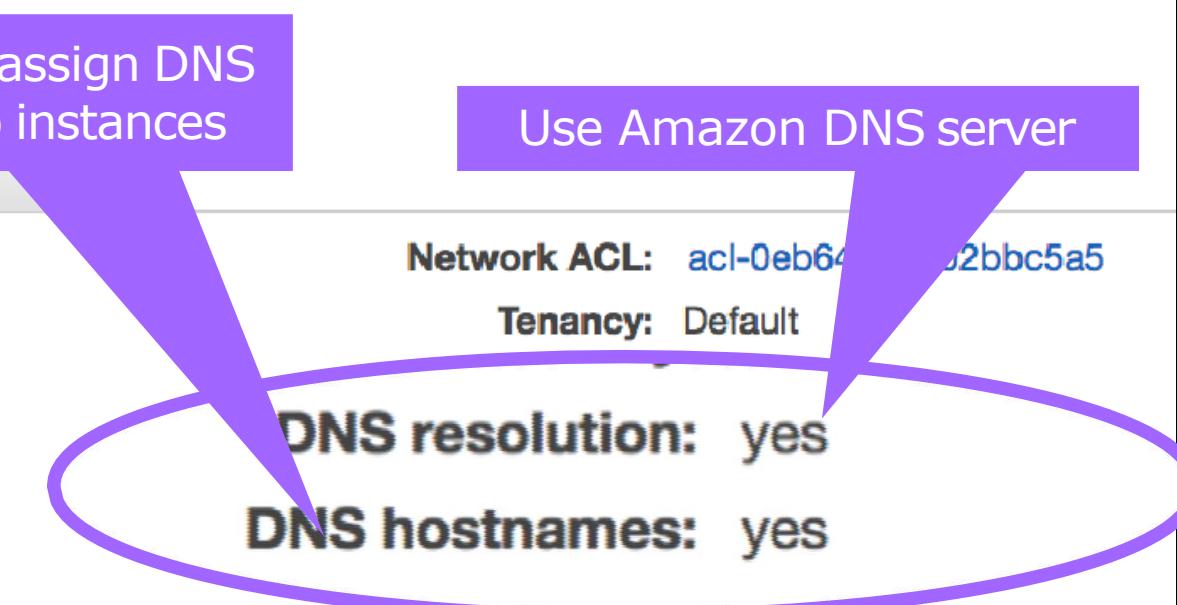
Summary [CIDR Blocks](#) [Flow Logs](#) [Tags](#)

VPC ID: vpc-0bcb5110cf0ce088b | myVPC
State: available
IPv4 CIDR: 172.31.0.0/16
IPv6 CIDR: 2600:1f16:14d:6300::/56
DHCP options set: dopt-c8cf28a1
Route table: rtb-0028d8ca88068723d

Have EC2 auto-assign DNS host names to instances

Use Amazon DNS server

DNS resolution: yes
DNS hostnames: yes



Amazon Route 53 private hosted zones

The screenshot shows the Amazon Route 53 console interface. On the left, there's a list of existing record sets for the domain `demohostedzone.org`. A purple callout points from the text "example.demohostedzone.org" in the list to the "Name:" field in the "Create Record Set" dialog on the right. The "Create Record Set" dialog has the following fields:

- Name:** example.demohostedzone.org.
- Type:** A – IPv4 address
- Alias:** No (radio button selected)
- TTL (Seconds):** 300 (with buttons for 1m, 5m, 1h, 1d)
- Value:** 172.31.0.99

Below the Value field, there is a note: "IPv4 address. Enter multiple addresses on separate lines. Example: 192.0.2.235 198.51.100.234".

Amazon Route 53 Resolver for hybrid clouds

Step1
Configure endpoints

Step2
Configure inbound endpoint

Step3
Configure outbound endpoint

Step4
Create rule

Step5
Review and create

Route 53 Resolver endpoints

Configure endpoints

Endpoints provide the information that Resolver needs to route DNS queries from your VPCs to your network, from your network to your VPCs, or both.

You are signed in to the following region: us-west-2
To change your region use the region selector in the upper-right corner.

Basic configuration

Direction of DNS queries info

You can configure endpoints for inbound DNS queries (to your VPC), outbound DNS queries (from your VPC), or both.

Inbound and outbound
Configure endpoints that allows DNS queries both to and from your VPC

Inbound only
Configure an endpoint that allows DNS queries to your VPC from an on-premises network or another VPC.

Outbound Only
Configure an endpoint that allows DNS queries from your VPC to an on-premises network or another VPC.

Conditional forwarding rules

Cancel Previous Next



Security groups



Network access
control list



Flow logs

Network security



Security groups



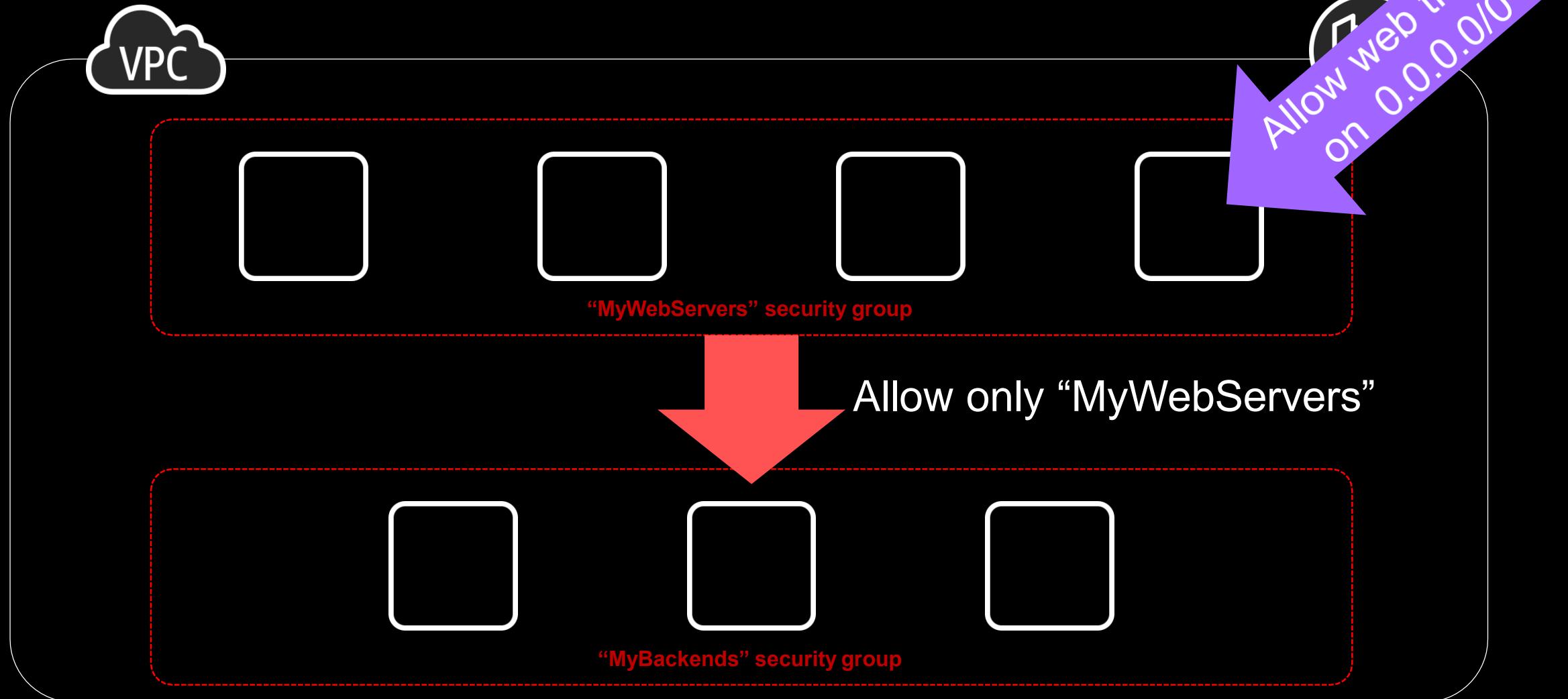
Network access
control list



Flow logs

Network security

Security groups follow application structure



Security groups example: Web servers

The screenshot shows the AWS VPC Security Groups console. At the top, there is a table listing three security groups:

Name	Group ID	Group Name	VPC ID	Description
MyWebServers	sg-0228ccc01e1f02eb7	MyWebServers	vpc-0bcb5110cf0ce088b	group for web servers
MyBackends	sg-09d98b1a3d09baf45	MyBackends	vpc-0bcb5110cf0ce088b	group for backend hosts
default	sg-0e2dc655a56122087	default	vpc-0bcb5110cf0ce088b	default VPC security group

Below the table, a message "Security Group: sg-0228ccc01e1f02eb7" is displayed. Underneath, there are tabs for "Description", "Inbound" (which is selected), and "Outbound". An "Edit" button is present. A purple callout points to the "Inbound" tab, containing the text "Allow HTTP traffic from anywhere".

The "Inbound" rules table shows the following entries:

Type	Protocol	Port Range	Source	Description
HTTP	TCP	80	0.0.0.0/0	allow all HTTP on ...
HTTP	TCP	80	::/0	allow all HTTP on ...

Security groups example: Backends

The screenshot shows the AWS Security Groups console. At the top, there is a table listing three security groups: 'MyWebServers', 'MyBackends', and 'default'. The 'MyBackends' row is selected, indicated by a blue background.

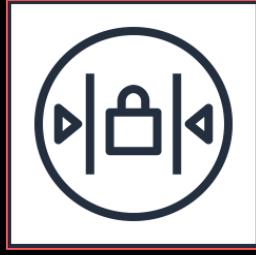
Below the table, a modal window is open for the 'MyBackends' security group. The title bar says 'Security Group: sg-09d98b1a3d09baf45'. The 'Inbound' tab is selected, showing a single rule:

Type	Protocol	Port Range	Source	Description
Custom TCP Rule	TCP	2345	sg-0228ccc01e1f02eb7 (MyWebServers)	allow traffic from...

A purple callout bubble points to the 'Source' column of the rule, containing the value 'sg-0228ccc01e1f02eb7 (MyWebServers)'. The text 'Allow application traffic from web servers only' is displayed inside the callout bubble.



Security groups



Network access
control list



Flow logs

Network security

Security groups vs. NACLs

Security group	Network ACL
Operates at instance level	Operates at subnet level
Supports allow rules only	Supports allow and deny rules
Is stateful: return traffic is automatically allowed regardless of any rules	Is stateless: return traffic must be explicitly allowed by rules
All rules evaluated before deciding whether to allow traffic	Rules evaluated in order when deciding whether to allow traffic
Applies only to instances explicitly associated with the security group	Automatically applies to all instances launched into associated subnets



Security groups



Network access
control list

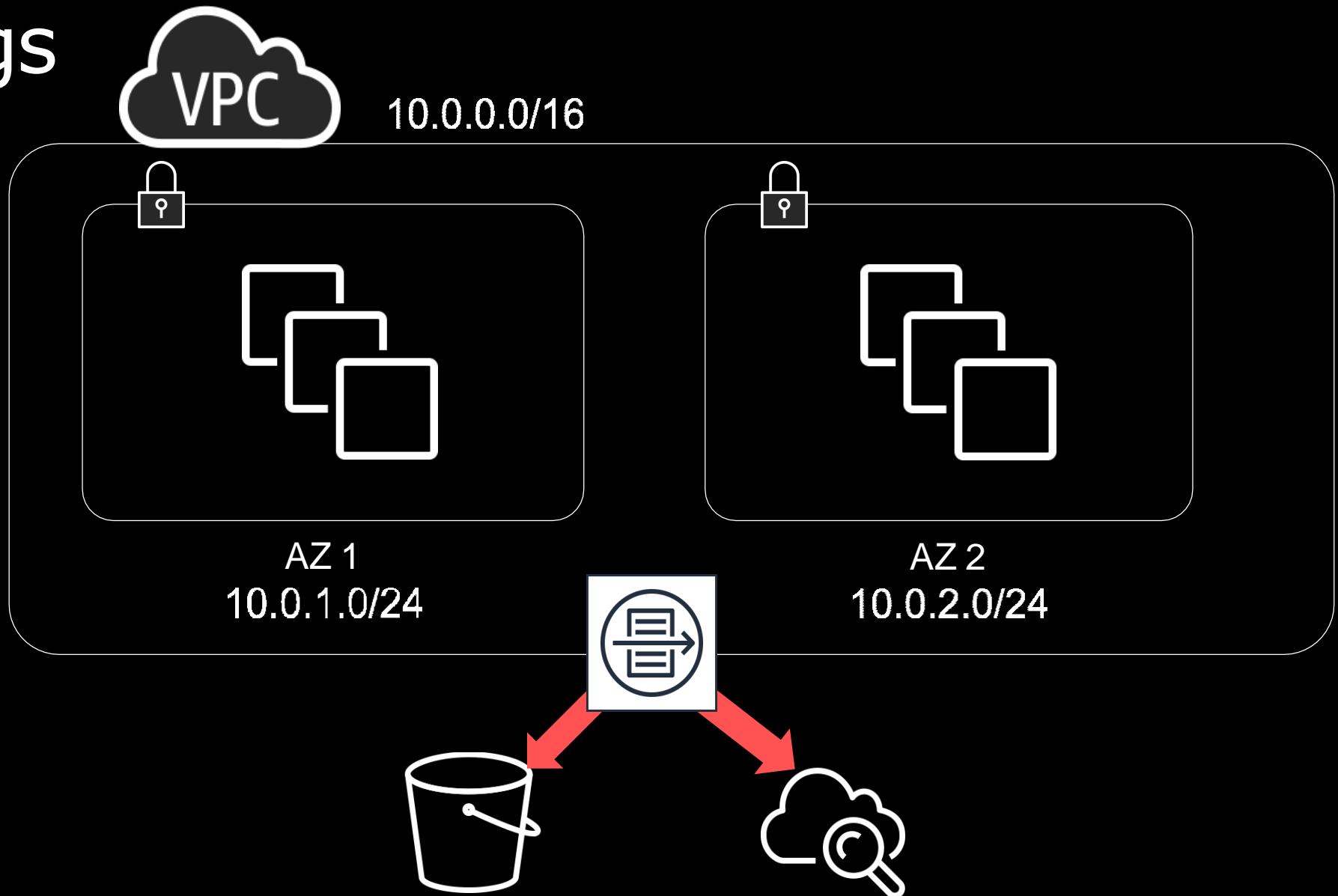


Flow logs

Network security

VPC flow logs

- Visibility
- Troubleshooting
- Analyze traffic



VPC flow logs: Setup

VPC traffic metadata captured in Amazon S3 or Amazon CloudWatch Logs

myVPC

Summary CIDR Blocks **Flow Logs** Tags

You can create flow logs on your resources to capture IP traffic flow information for your network interfaces for your VPC. Learn more about flow logs.

Create flow log

Flow Log ID	Filter	Destination Type	Destination Name	IAM Role ARN	Creation Date
fl-0e6a51c9092741fea	ALL	s3	my-flow-logs	-	October
fl-09a184a919be995ac	ALL	cloud-watch-logs	my-flow-logs-cw	arn:aws:iam::082897841036:role/flowlogsRole	October

VPC flow logs format

Interface	Source IP	Source port	Protocol	Packets	Accept or reject
AWS account	Event Data				
> 2 41747	eni-b30b9cd5	119.147.115.32	10.1.1.179	6000 22 6 1 40	1442975475 1442975535 REJECT OK
▼ 2 41747	eni-b30b9cd5	169.54.233.117	10.1.1.179	21188 80 6 1 40	1442975535 1442975595 REJECT OK
▼ 2 41747	eni-b30b9cd5	212.7.209.6	10.1.1.179	3389 3389 6 1 40	1442975596 1442975655 REJECT OK
▼ 2 41747	eni-b30b9cd5	189.134.227.225	10.1.1.179	39664 23 6 2 120	1442975656 1442975716 REJECT OK
▼ 2 41747	eni-b30b9cd5	77.85.113.238	10.1.1.179	0 0 1 1 100	1442975656 1442975716 REJECT OK
▼ 2 41747	eni-b30b9cd5	10.1.1.179	198.60.73.8	512 123 17 1 76	1442975776 1442975836 ACCEPT OK

Connectivity options for VPCs

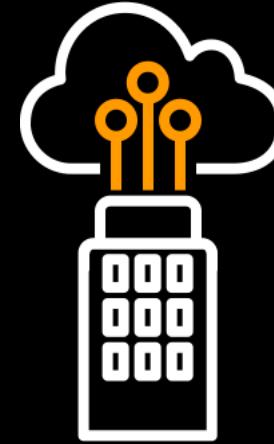
Connecting your VPC



Internet
connectivity or **not**

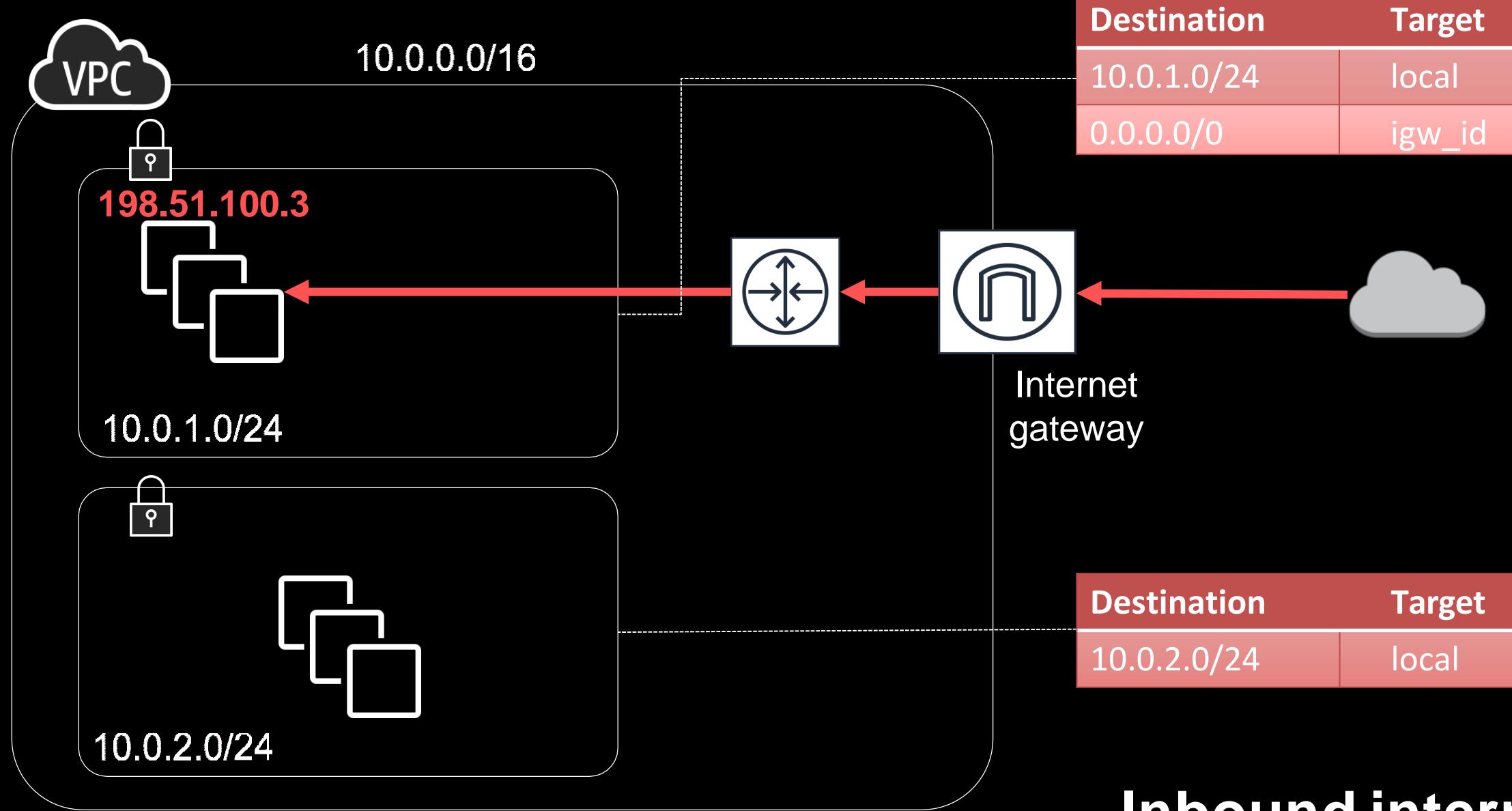


Connecting to other
VPCs

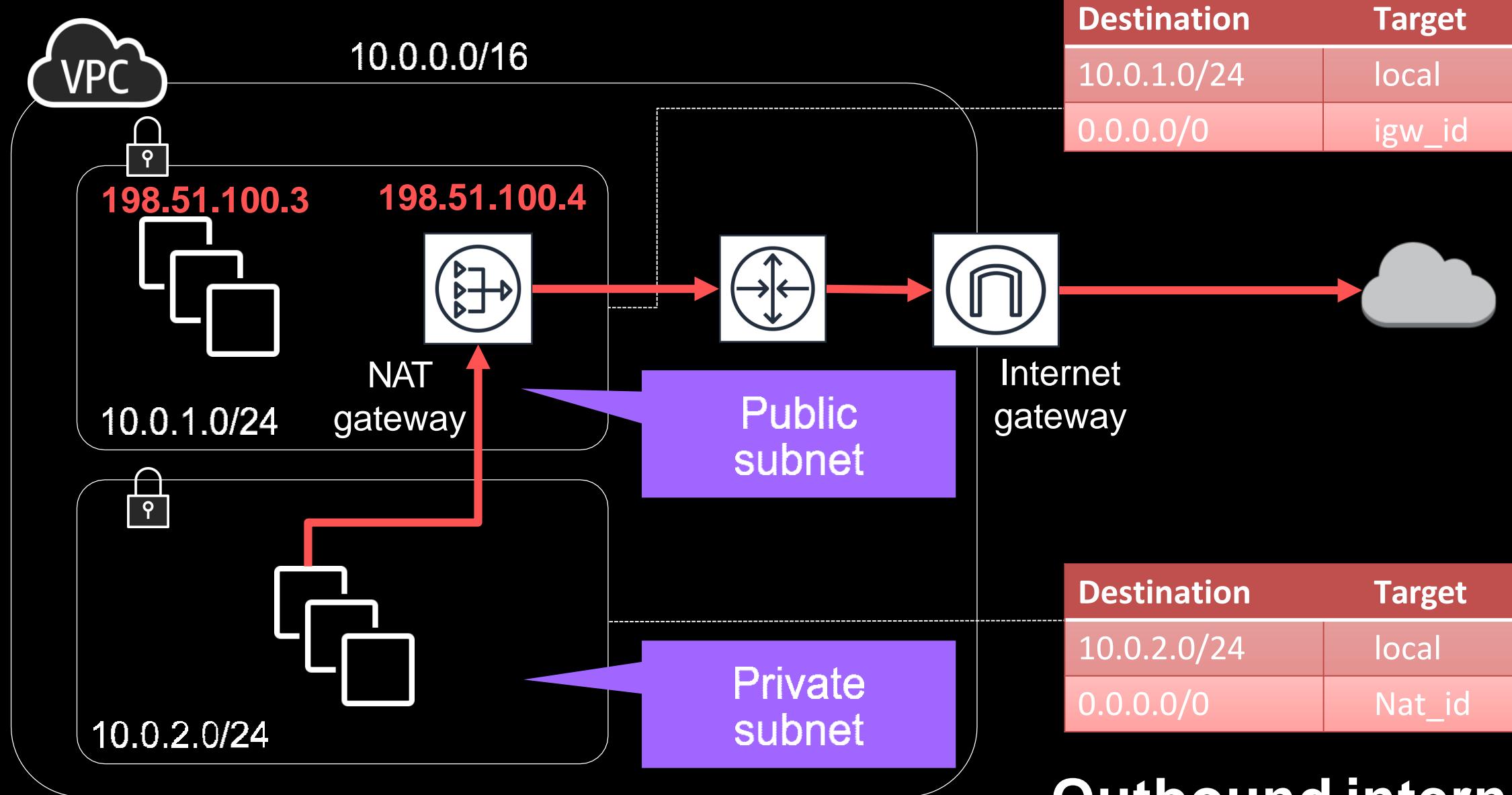


Connecting to your
on-premises network

Internet connectivity or not

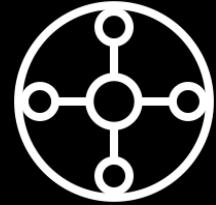


Inbound internet access





VPC Peering

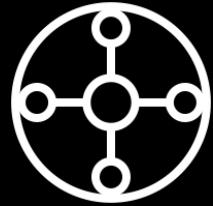


Transit Gateway

Connecting to other VPCs



VPC Peering

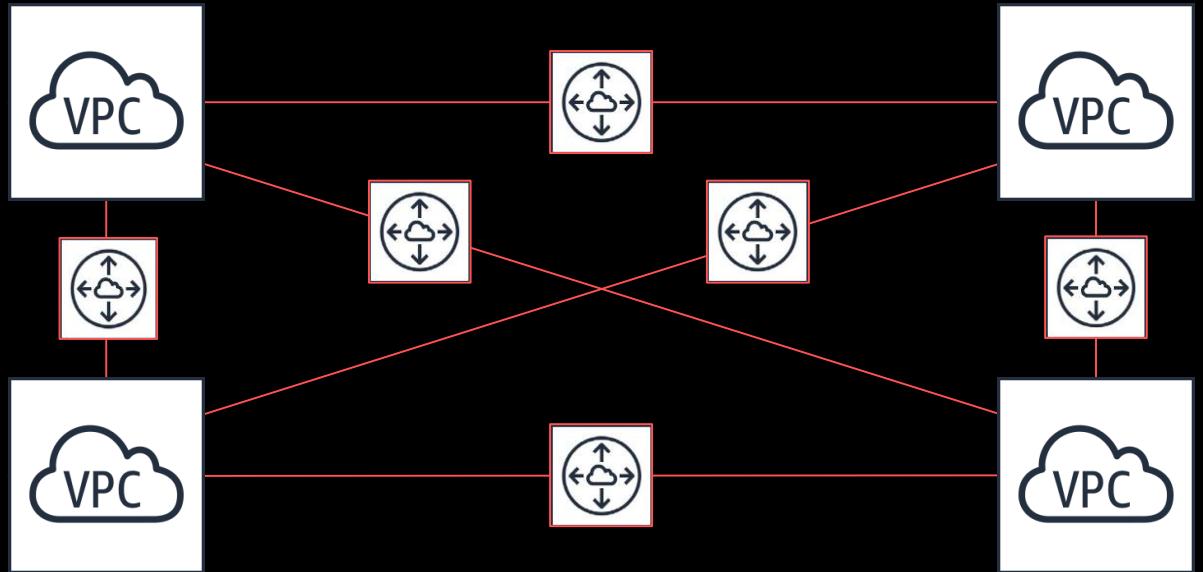


Transit Gateway

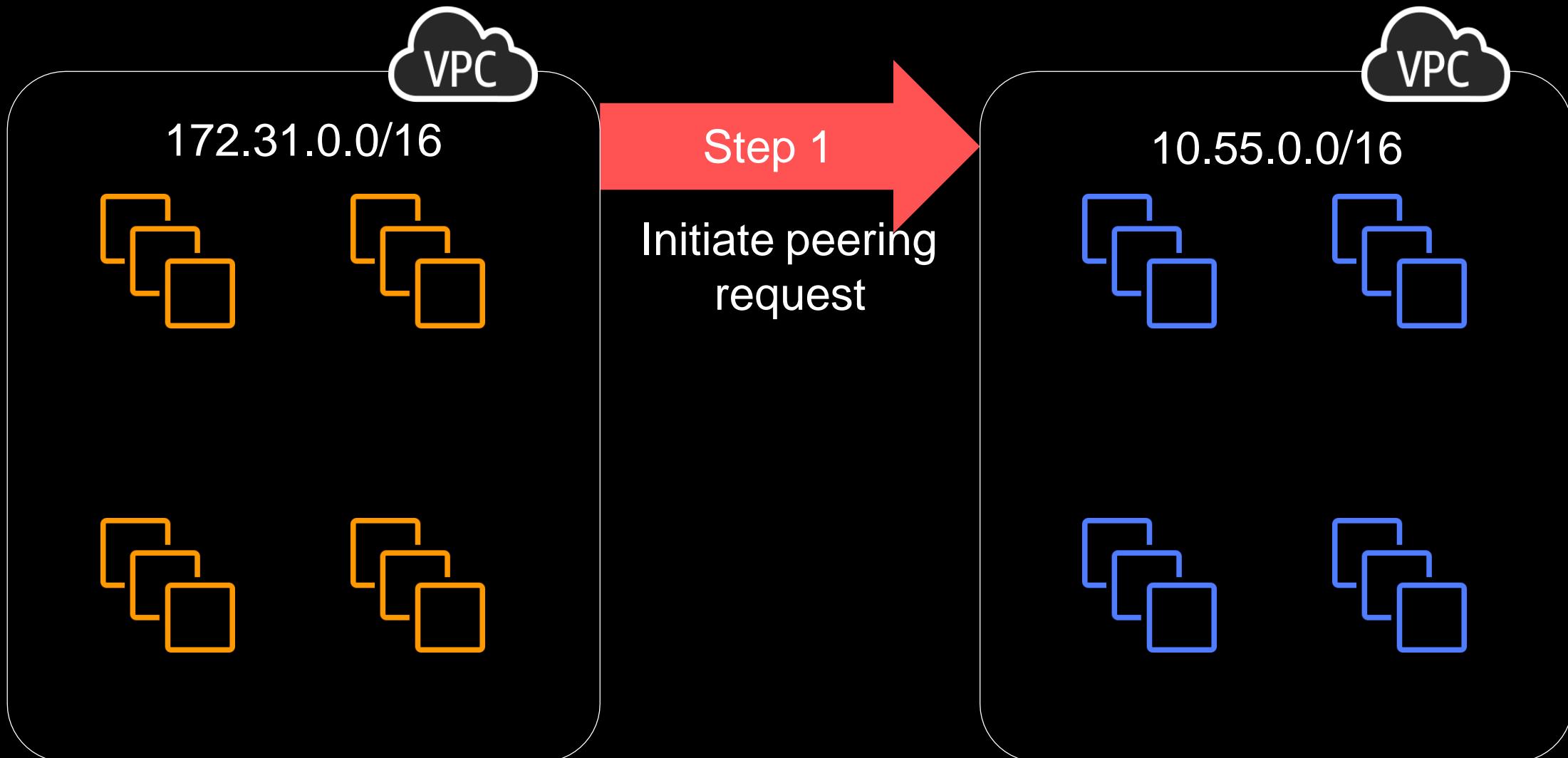
Connecting to other VPCs

VPC peering

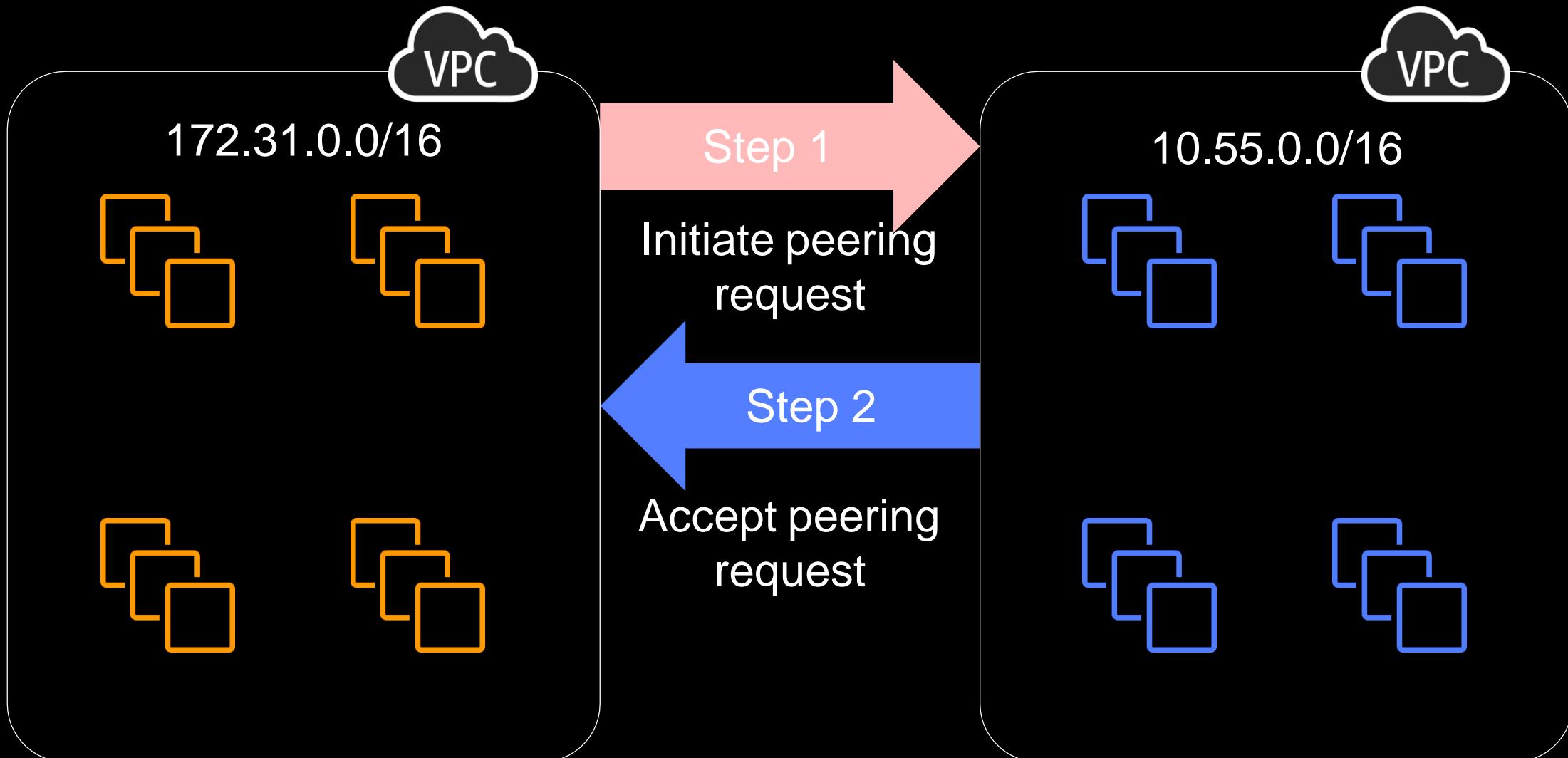
- Full **private IP connectivity** between two VPCs
- Can peer VPCs **across regions**
- VPCs can be in **different accounts**
- VPC CIDR ranges must not overlap



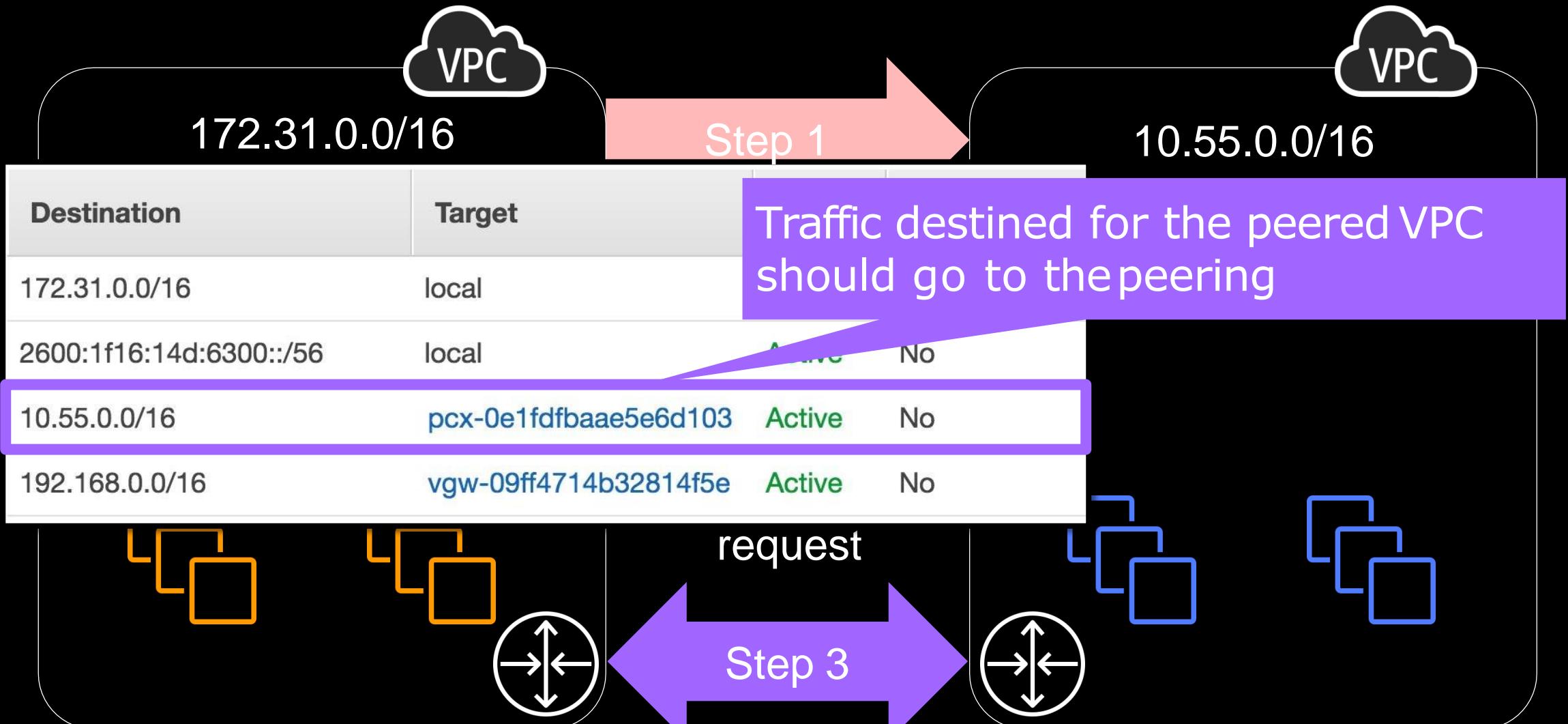
Establish a VPC peering: Initiate request



Establish a VPC peering: Accept request

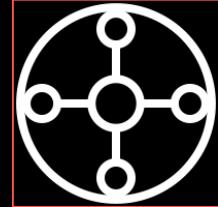


Establish a VPC peering: Create a route





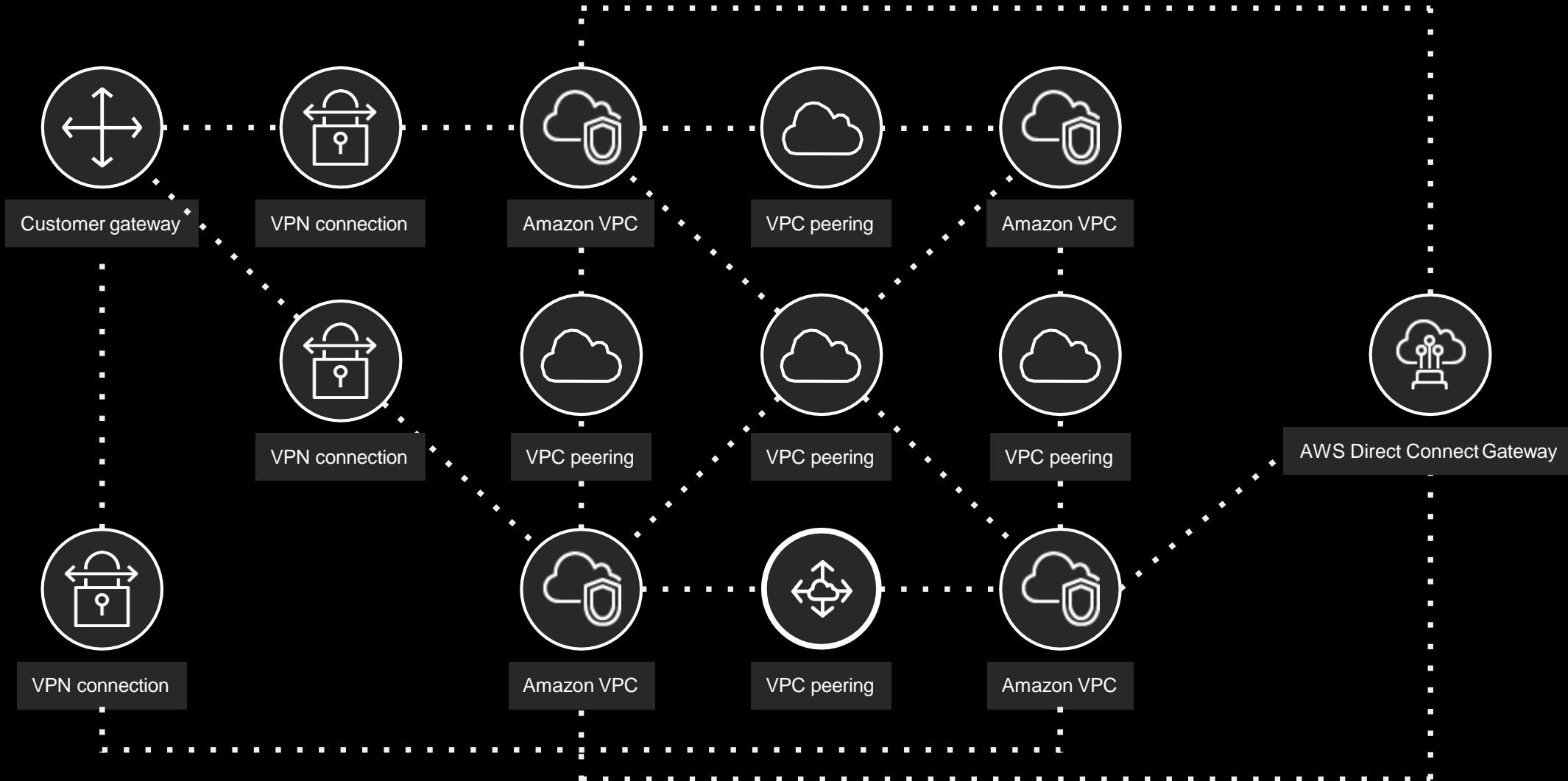
VPC Peering



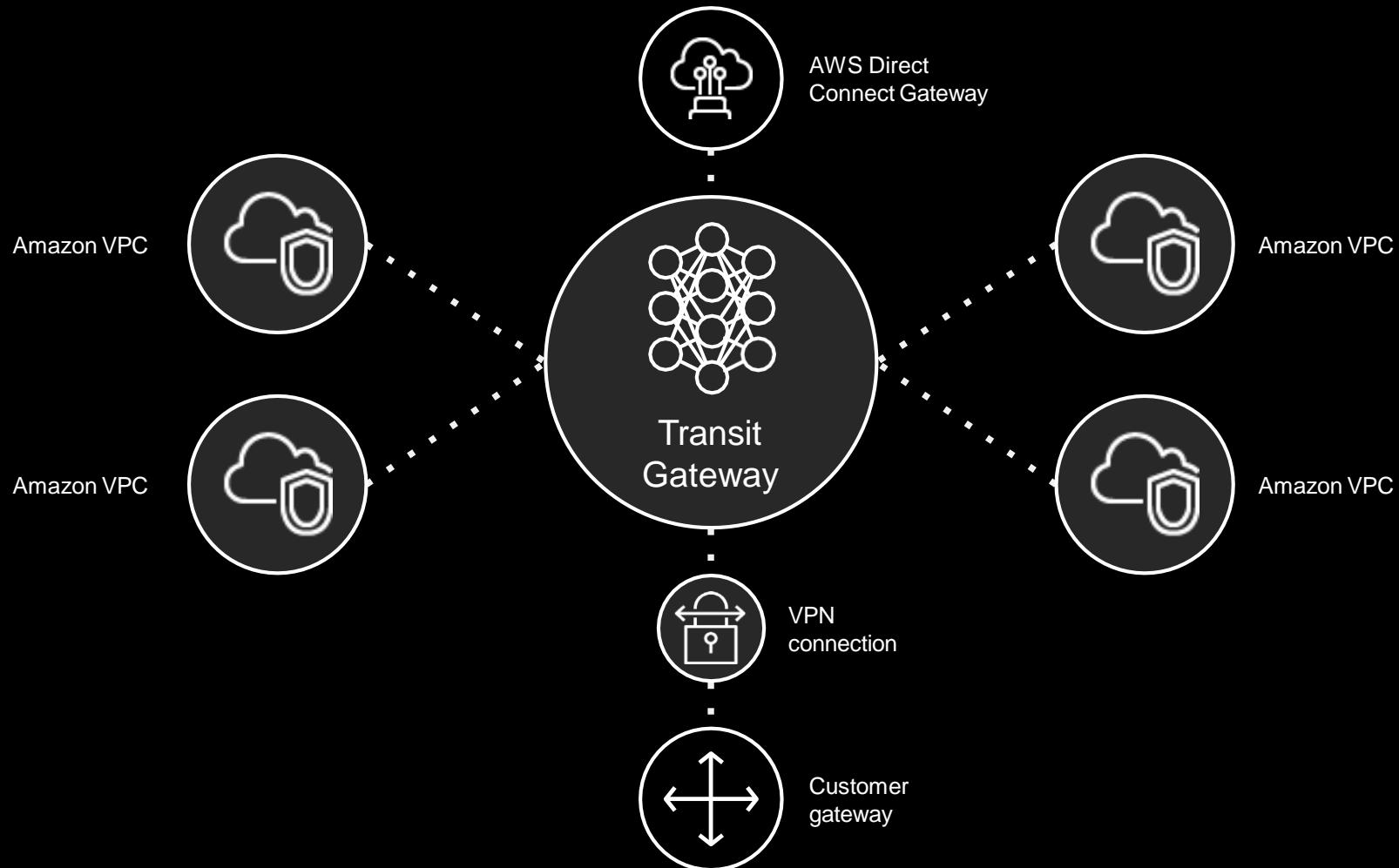
Transit Gateway

Connecting to other VPCs and beyond

Before Transit Gateway...



With Transit Gateway ...





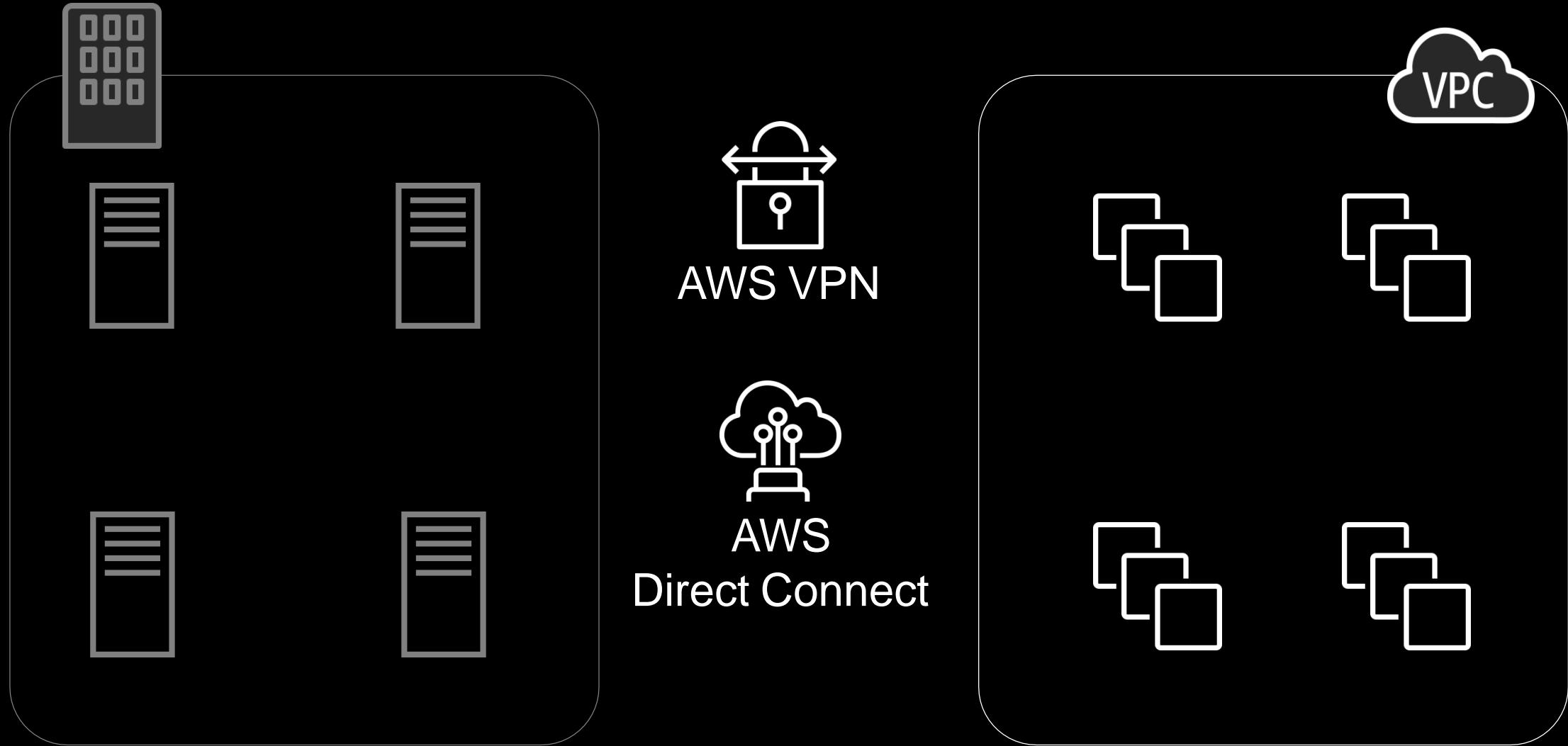
AWS VPN



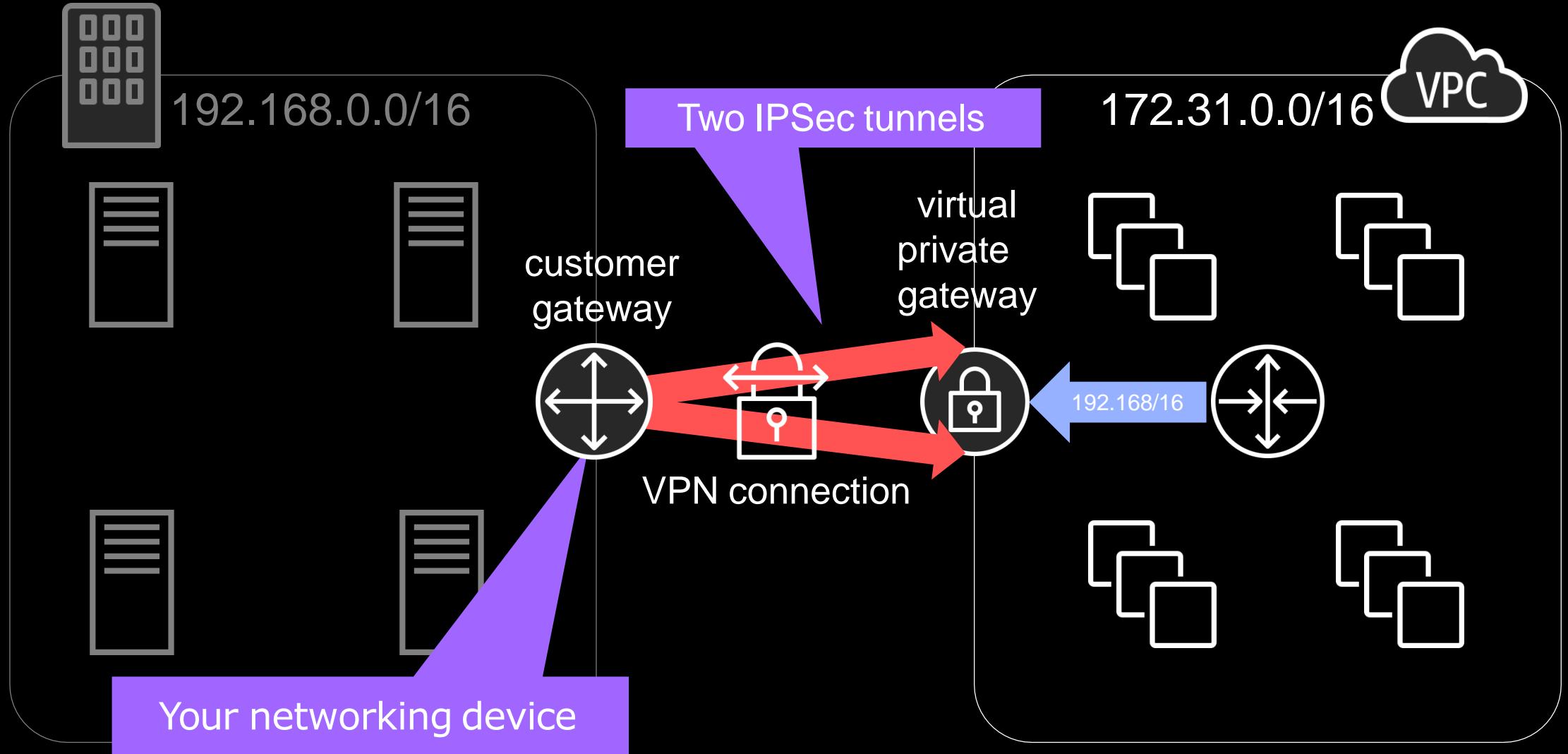
AWS
Direct Connect

Connecting to on-premises networks:

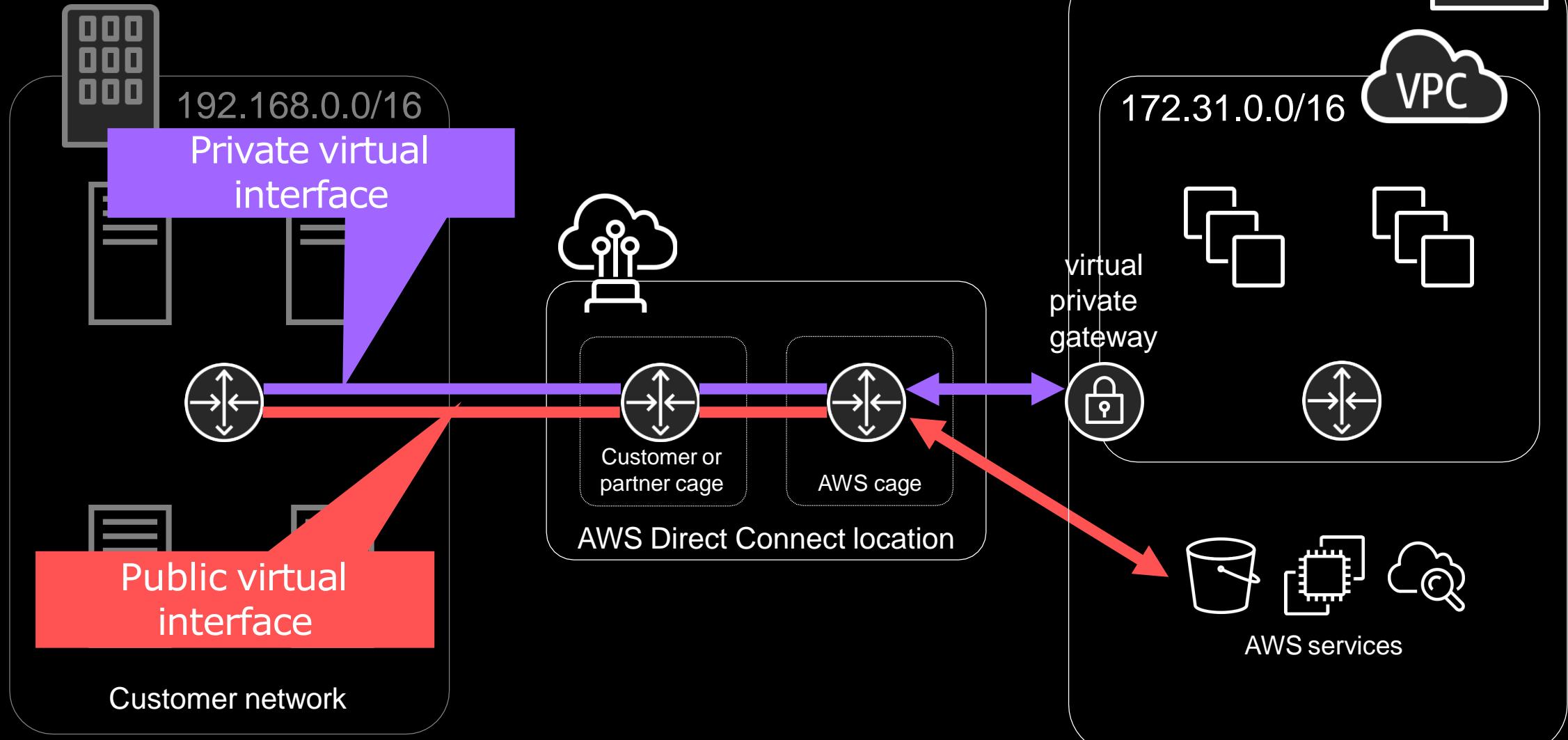
Extend an on-premises network into your VPC



AWS VPN basics



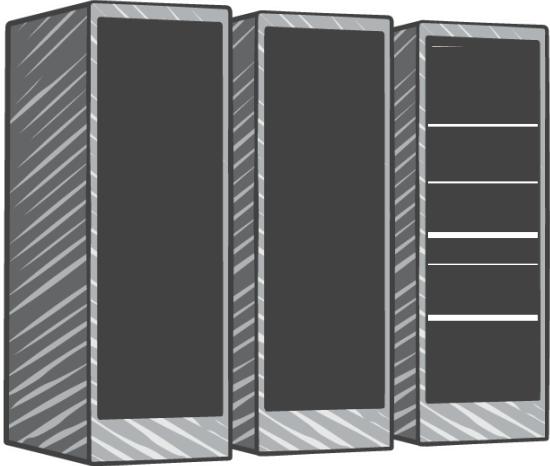
AWS Direct Connect basics



AWS Compute

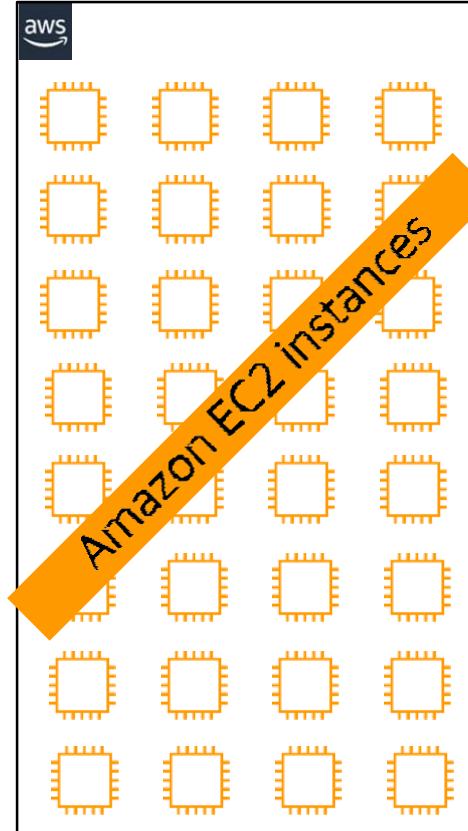


What is Amazon EC2?



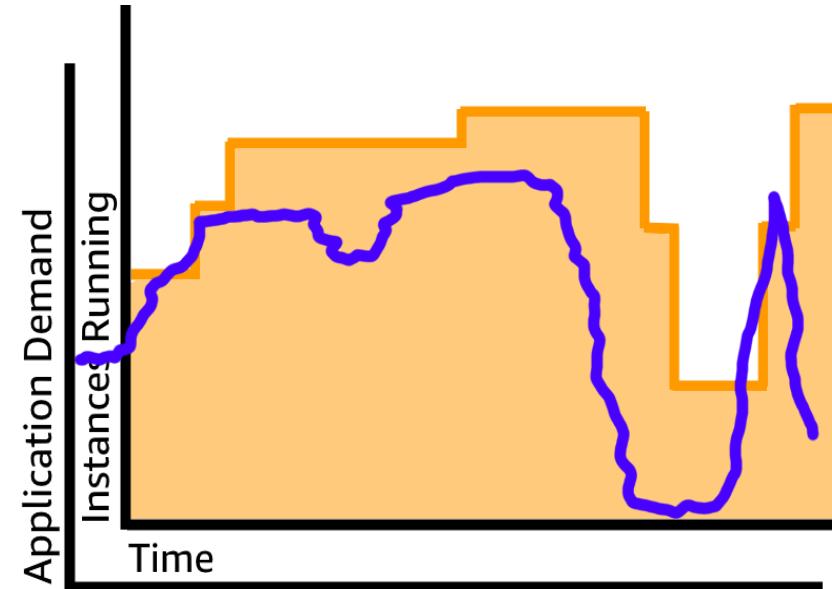
On-premises servers

- ✓ Application server
- ✓ Web server
- ✓ Database server
- ✓ Game server
- ✓ Mail server
- ✓ Media server
- ✓ Catalog server
- ✓ File server
- ✓ Computing server
- ✓ Proxy server



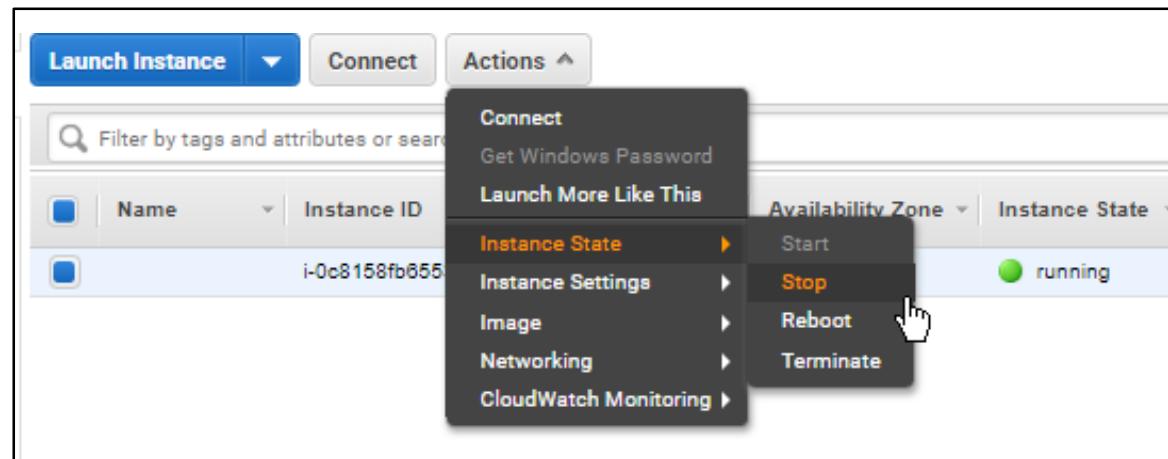
Benefits of Amazon EC2

- Elasticity



Benefits of Amazon EC2

- Elasticity
- Control



Benefits of Amazon EC2

- **Elasticity**
- **Control**
- **Flexibility**

Step 2: Choose an Instance Type
applications. [Learn more](#) about instance types and how they can meet your computing needs.

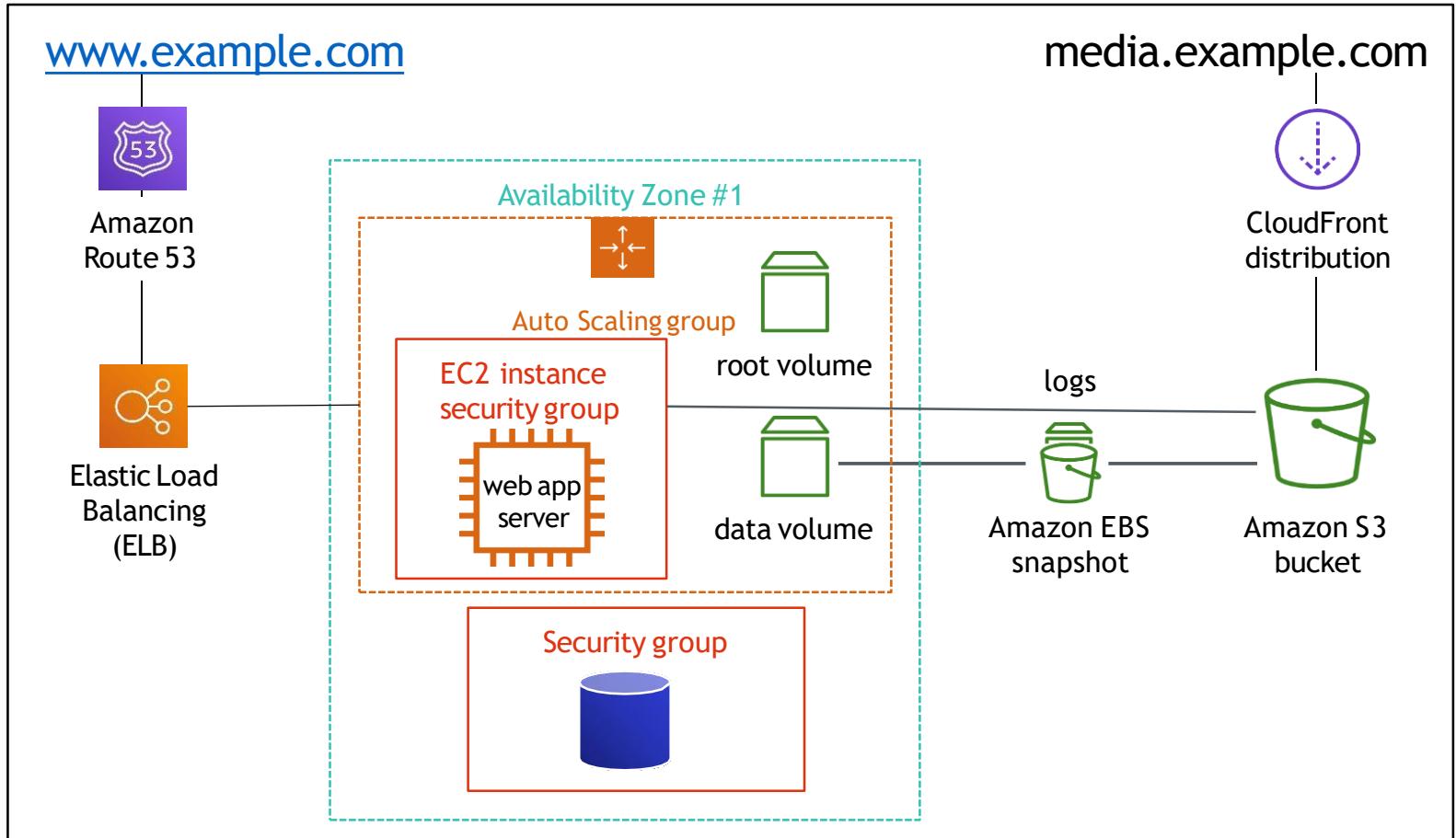
Filter by: [Compute optimized](#) [Current generation](#) [Show/Hide Columns](#)

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
1	Compute optimized	c5d.large	2	4	1 x 50 (SSD)	Yes	Up to 10 Gigabit	Yes
2	Compute optimized	c5d.xlarge	4	8	1 x 100 (SSD)	Yes	Up to 10 Gigabit	Yes
3	Compute optimized	c5d.2xlarge	8	16	1 x 200 (SSD)	Yes	Up to 10 Gigabit	Yes
4	Compute optimized	c5d.4xlarge	16	32	1 x 400 (SSD)	Yes	Up to 10 Gigabit	Yes
5	Compute optimized	c5d.9xlarge	36	72	1 x 900 (SSD)	Yes	10 Gigabit	Yes
6	Compute optimized	c5d.18xlarge	72	144	2 x 900 (SSD)	Yes	25 Gigabit	Yes
7	Compute optimized	c5.large	2	4	EBS only	Yes	Up to 10 Gigabit	Yes
8	Compute optimized	c5.xlarge	4	8	EBS only	Yes	Up to 10 Gigabit	Yes
9	Compute optimized	c5.2xlarge	8	16	EBS only	Yes	Up to 10 Gigabit	Yes
10	Compute optimized	c5.4xlarge	16	32	EBS only	Yes	Up to 10 Gigabit	Yes
11	Compute optimized	c5.9xlarge	36	72	EBS only	Yes	10 Gigabit	Yes
12	Compute optimized	c5.18xlarge	72	144	EBS only	Yes	25 Gigabit	Yes
13	Compute optimized	c4.large	2	3.75	EBS only	Yes	Moderate	Yes
14	Compute optimized	c4.xlarge	4	7.5	EBS only	Yes	High	Yes

Benefits of Amazon EC2

- Elasticity
- Control
- Flexibility
- Integrated



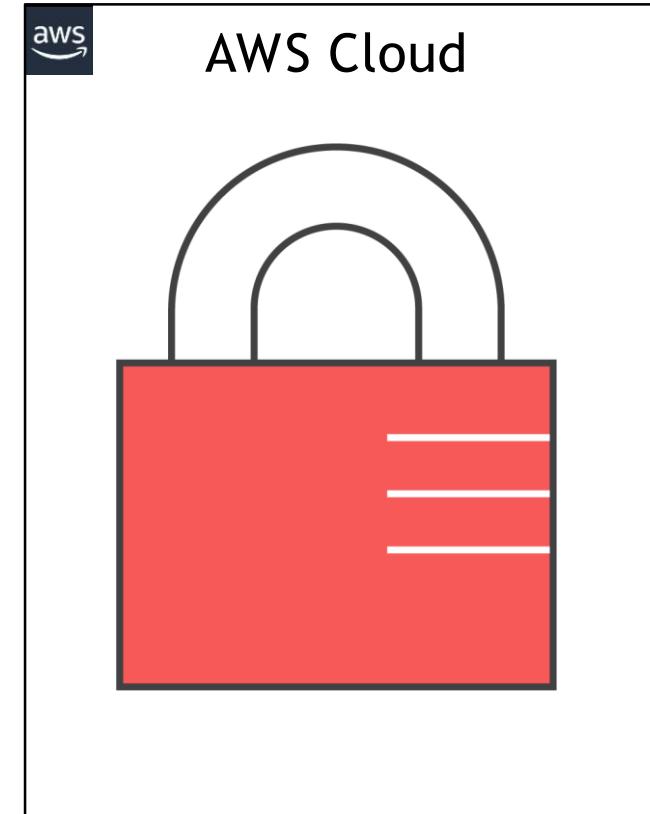
Benefits of Amazon EC2

- Elasticity
- Control
- Flexibility
- Integrated
- Reliable



Benefits of Amazon EC2

- Elasticity
- Control
- Flexibility
- Integrated
- Reliable
- Secure



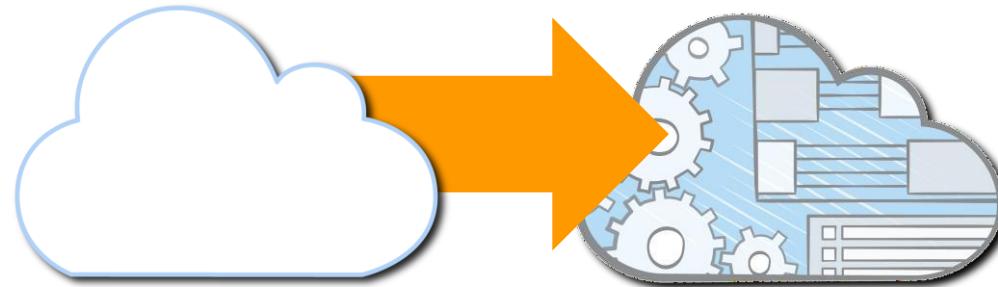
Benefits of Amazon EC2

- Elasticity
- Control
- Flexibility
- Integrated
- Reliable
- Secure
- Inexpensive

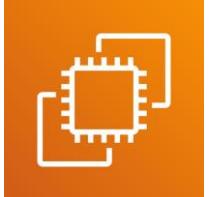


Benefits of Amazon EC2

- Elasticity
- Control
- Flexibility
- Integrated
- Reliable
- Secure
- Inexpensive
- Easy

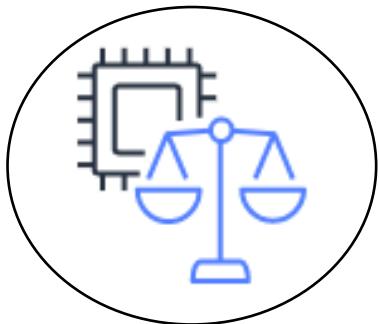


Amazon Elastic Compute Cloud



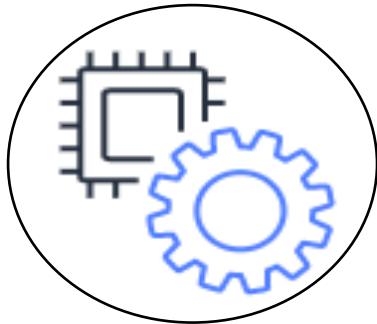
Amazon EC2

web service that provides resizable compute capacity in the cloud It is designed to make web-scale computing easier for developers.



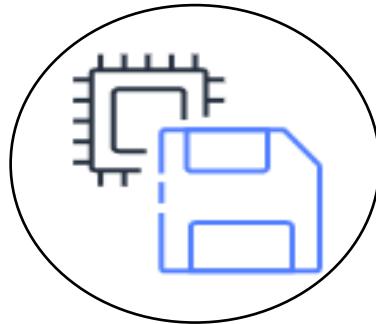
General-Purpose

- Web servers
- Code repositories



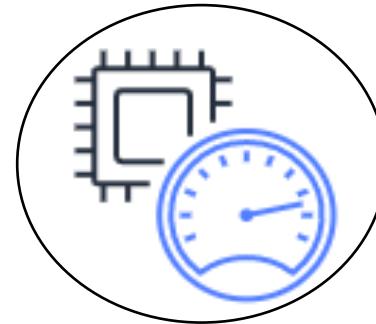
Compute Optimized

- High performance web servers
- scientific modelling
- batch processing



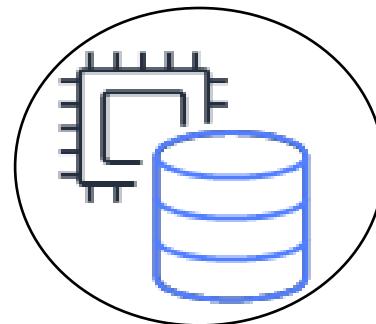
Memory Optimized

- high performance databases
- mid-size in-memory databases
- real time big data analytics



Accelerated Computing

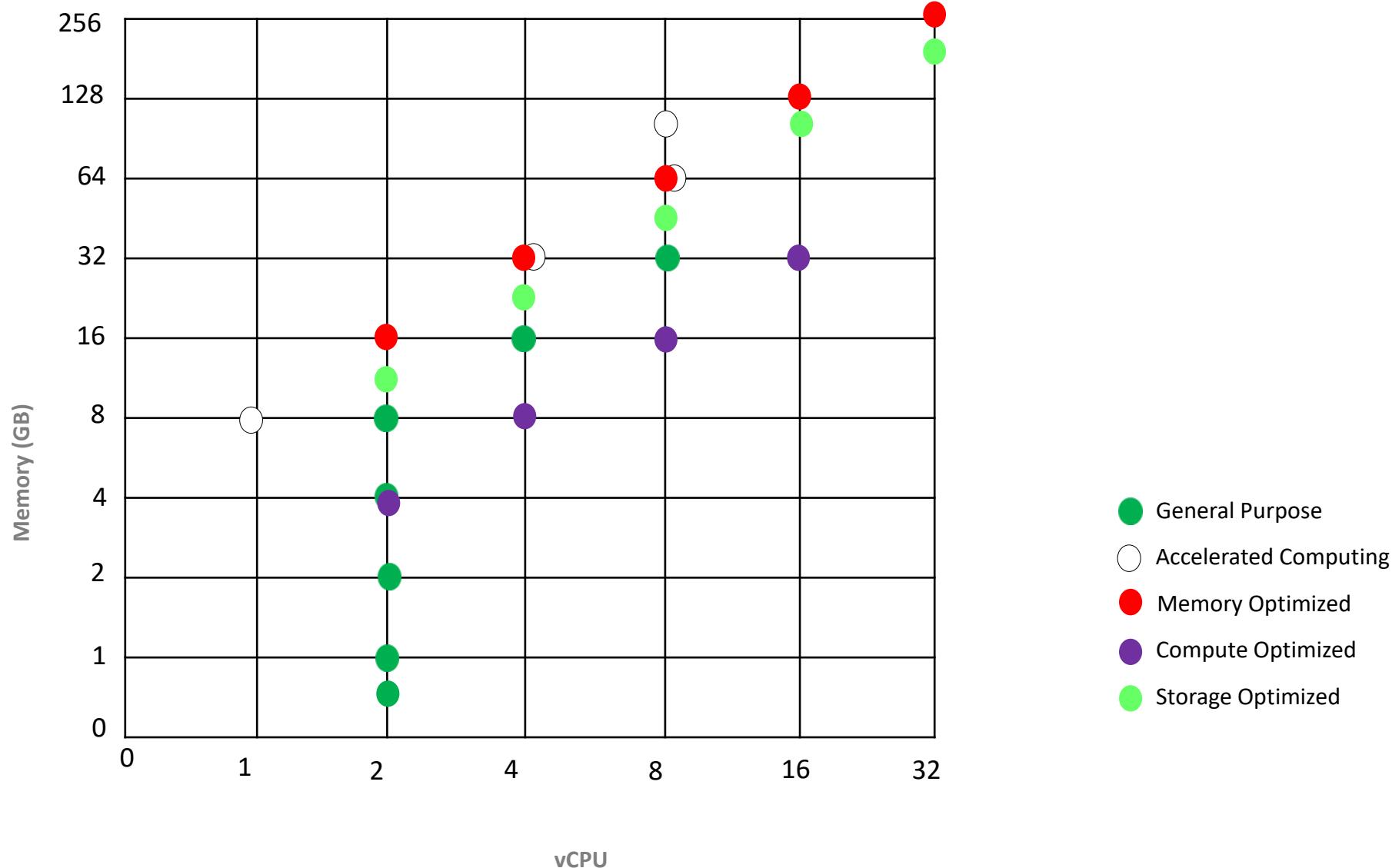
- Machine/Deep learning
- speech recognition
- autonomous vehicles



Storage Optimized

- NoSQL databases
- in-memory databases
- data warehousing

Amazon Elastic Compute Cloud



EC2 Pricing Model

On-Demand

Pay for compute capacity by **the second** with no long-term commitments



Spiky workloads to define needs

Reserved Instances

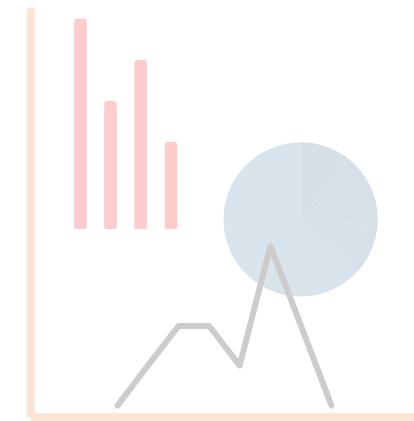
Make a 1- or 3-year commitment and receive a **significant discount** off on-Demand prices



Committed and steady-state usage

Saving Plan

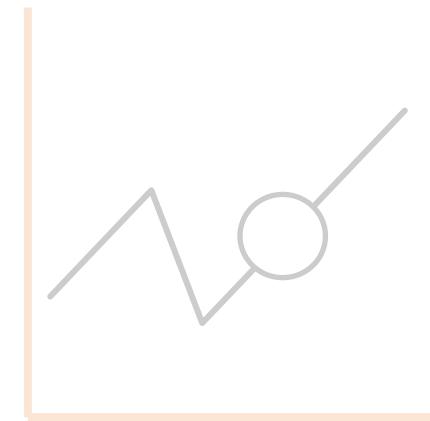
Same great discounts as EC2 RIs with **more flexibility**



Flexibility to access compute across EC2, Lambda and AWS Fargate

Spot Instances

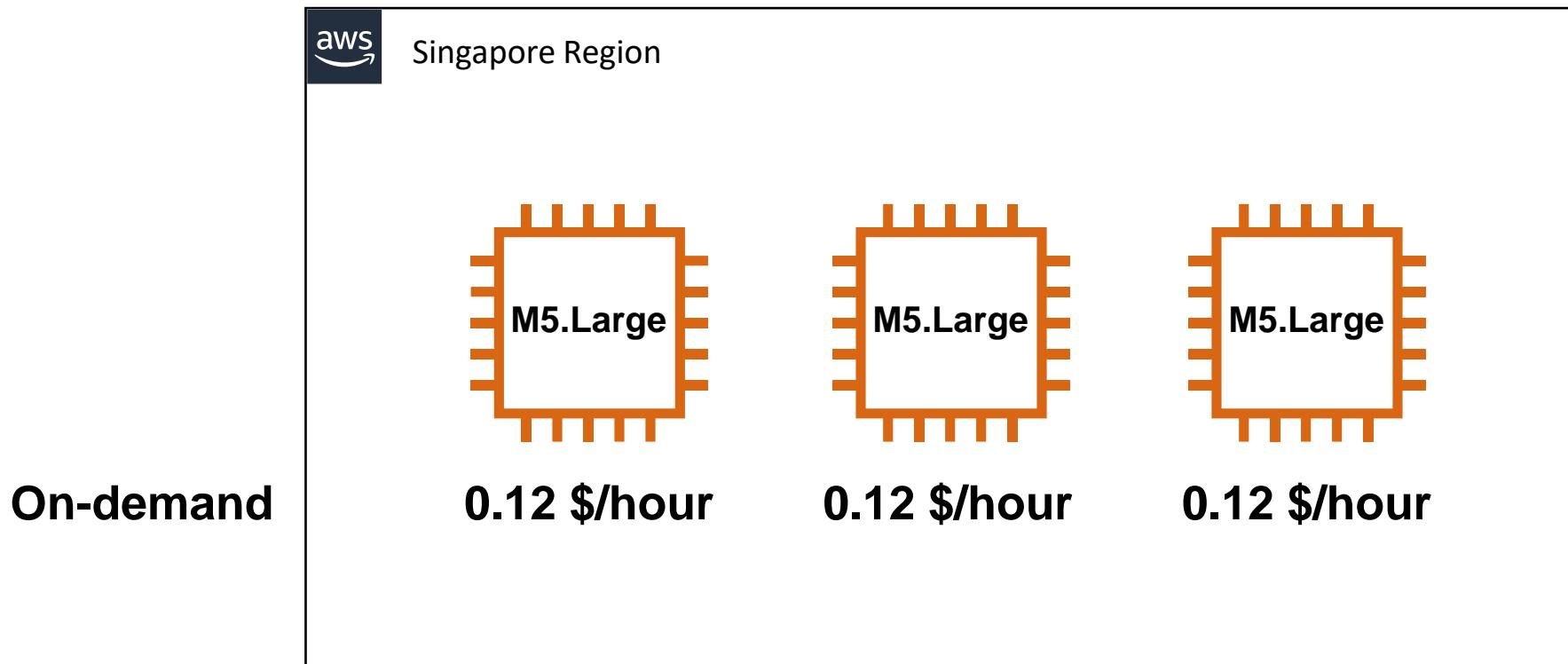
Spare EC2 capacity at **savings of up to 90%** off On-Demand prices



Fault-tolerant, flexible, stateless workloads

Pricing Model: On-Demand

Running 3x M5.Large Linux on EC2 in Singapore Region



Monthly billing cost **\$86.4**

Yearly billing cost **\$3,153.60**

EC2 Pricing Model

On-Demand

Pay for compute capacity by **the second** with no long-term commitments



Spiky workloads to define needs

Reserved Instances

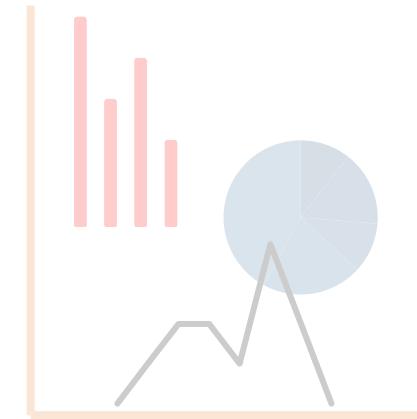
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Flexibility to access compute across EC2, Lambda and AWS Fargate

Spot Instances

Spare EC2 capacity at **savings of up to 90%** off On-Demand prices



Fault-tolerant, flexible, stateless workloads

Reserve Instance

RI Type

Standard RI

High saving
Fixed family, size flexibility
only Linux

Convertible RI

Great flexibility
Ability to change instance family
Slightly less saving

RI Term

1 Year

~20 – 30% saving
7 – 8 months break even

3 Years

Maximum saving up to 60%
10 – 15 months break even

RI Payment

Full Upfront

More saving
all cash upfront

Partial Upfront

Pay half upfront another
Half monthly

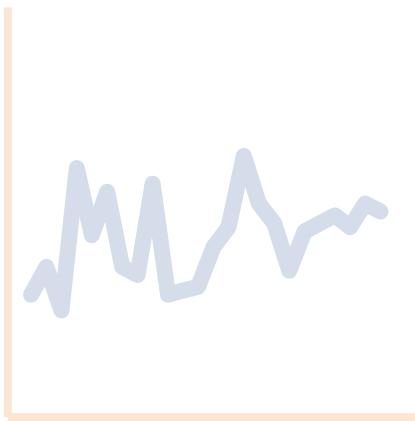
No Upfront

Least saving
Pay monthly

EC2 Pricing Model

On-Demand

Pay for compute capacity by **the second** with no long-term commitments



Spiky workloads to define needs

Reserved Instances

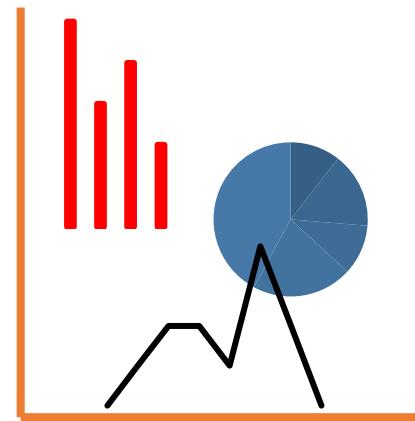
Make a 1- or 3-year commitment and receive a **significant discount** off on-Demand prices



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Spot Instances

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Fault-tolerant, flexible, stateless workloads

Saving Plan

Saving Plan Type

Compute Saving Plans

Flexibility Family, Apply Fargate
Size Flexibility, Apply Any Region

EC2 Instance Saving Plans

Fixed Family, Size Flexibility

Saving Plan Term

1 Year

~20 – 30% saving
7 – 8 months break even

3 Years

Maximum saving up to 60%
10 – 15 months break even

Saving Plan Payment

Full Upfront

More saving
all cash upfront

Partial Upfront

Pay half upfront another
Half monthly

No Upfront

Least saving
Pay monthly

Comparing RIs and Saving Plans

	Compute Saving Plans	EC2 Instance Saving Plans	Convertible RIs 	Standard RIs
Savings over on Demand	Up to 66%	Up to 72%	Up to 66%	Up to 72%
Low price in exchange for monetary commitment				
Pricing automatically applies to any instance family				
Pricing automatically applies to any instance size			 	 
Pricing automatically applies to any Tenancy or OS				
Automatically apply to Lambda and Fargate usage				
Pricing automatically applies to across any AWS Region				
1- and 3-year Term length options				

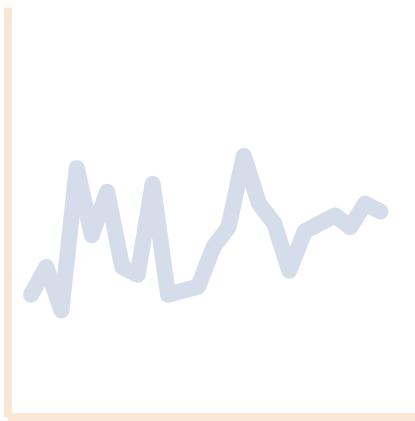
 Convertible RIs can be changed across instance families, sizes, OS and tenancy they require customers to manually perform exchanges.

 Regional Convertible RIs and Regional Standard RIs provide instance size flexibility

EC2 Pricing Model

On-Demand

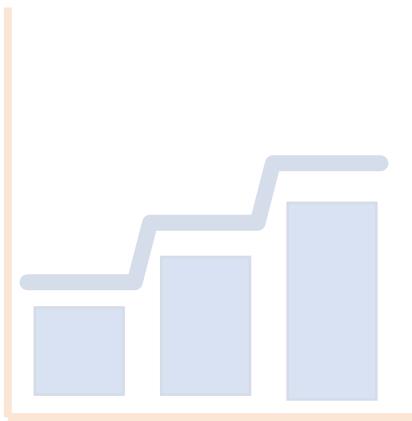
Pay for compute capacity by **the second** with no long-term commitments



Spiky workloads to define needs

Reserved Instances

Make a 1- or 3-year commitment and receive a **significant discount** off on-Demand prices



Committed and steady-state usage

Saving Plan

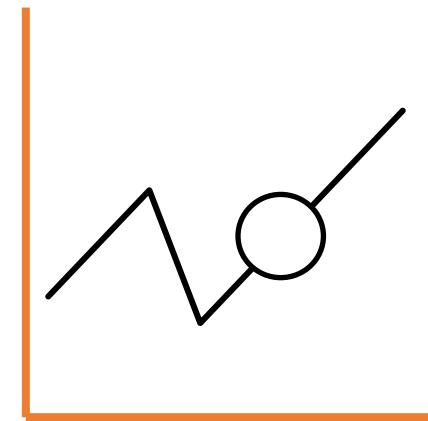
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Flexibility to access compute across EC2, Lambda and AWS Fargate

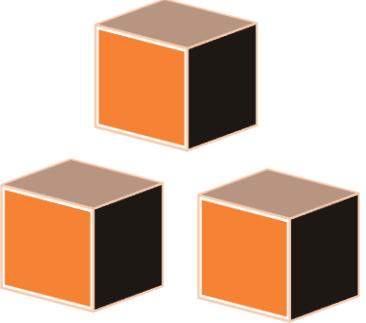
Spot Instances

Spare EC2 capacity at **savings of up to 90% off** On-Demand prices

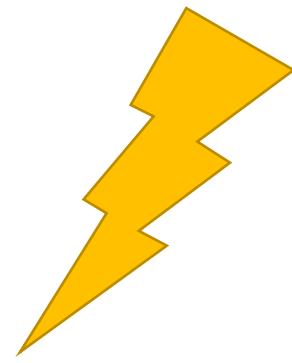


Fault-tolerant, flexible, stateless workloads

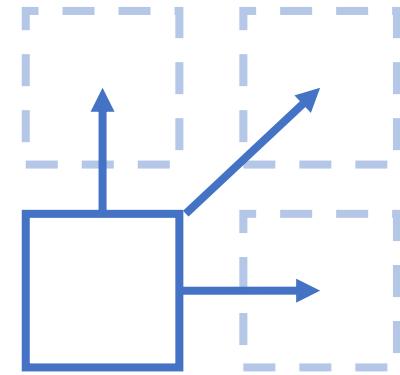
Is my workload good with Spot ?



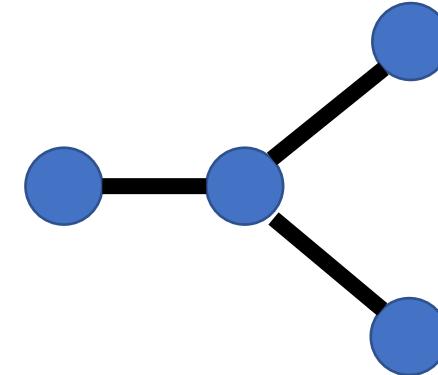
Stateless



Fault-Tolerant



Flexible



**Loosely
Coupled**

EC2 Spot Pools

C4	1a	1b	1c	On Demand
8XL	\$0.50	\$0.27	\$0.29	\$1.76
4XL	\$0.21	\$0.30	\$0.16	\$0.88
2XL	\$0.08	\$0.07	\$0.08	\$0.44
XL	\$0.04	\$0.05	\$0.04	\$0.22
L	\$0.01	\$0.01	\$0.04	\$0.11

No more bidding

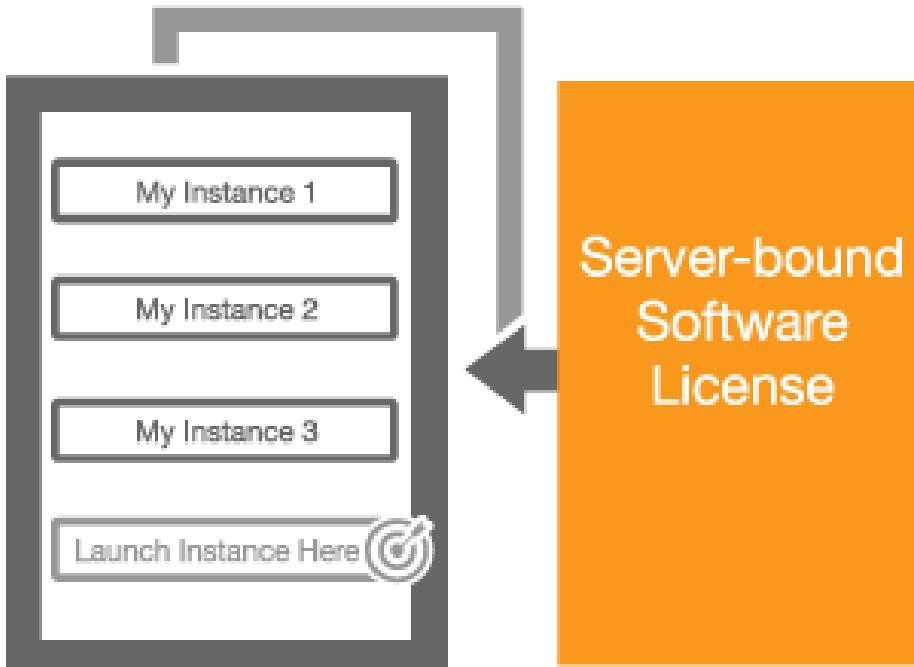
Predictable prices

Minimal interruption

Available in every Availability Zone

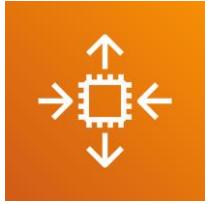
Dedicated Hosts

My Dedicated Host



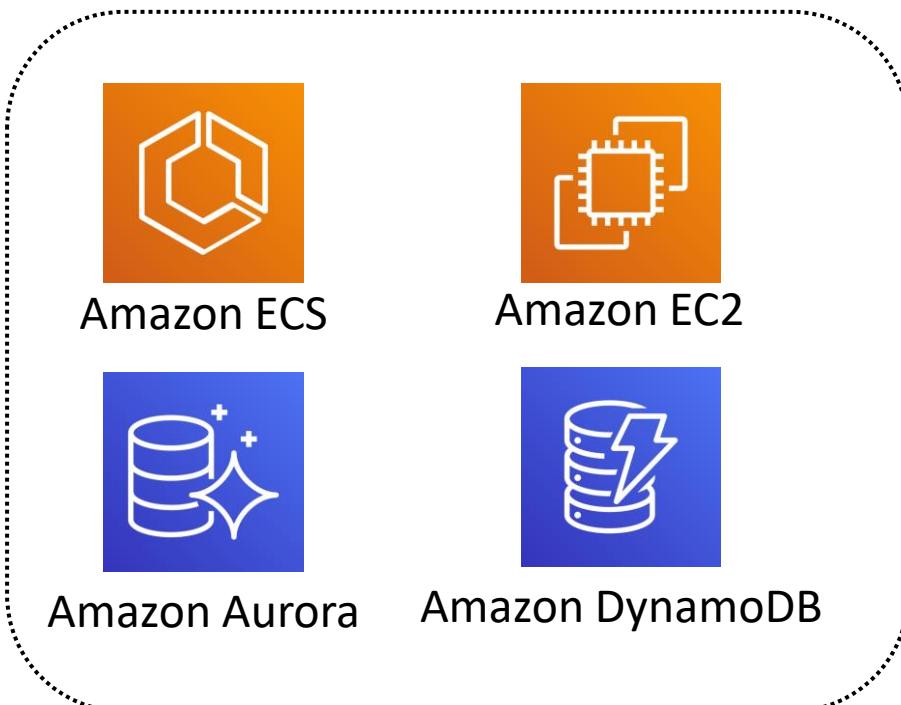
- Dedicated Host allocation
- Allow you to use your eligible software licenses
- Visibility into physical resources
- Get the flexibility and cost effectiveness of using your own licenses

Amazon EC2 Auto Scaling



Amazon EC2
Auto Scaling

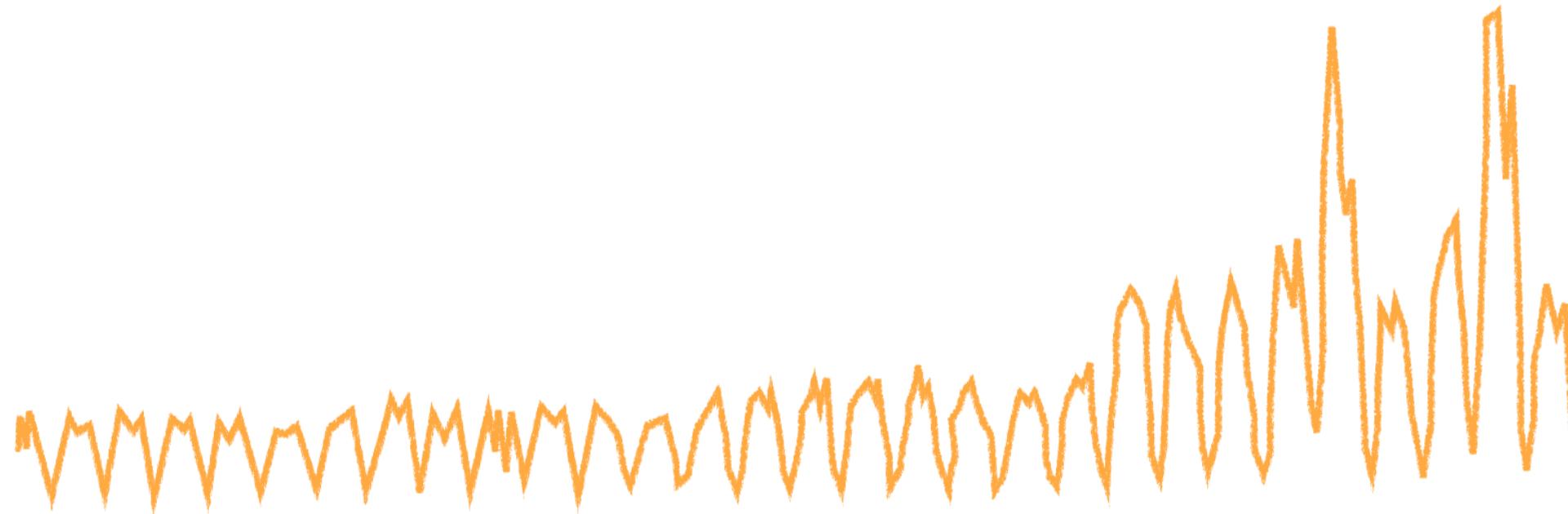
AWS service that helps you optimize the performance of your applications while lowering infrastructure costs by easily and safely scaling multiple AWS resources.



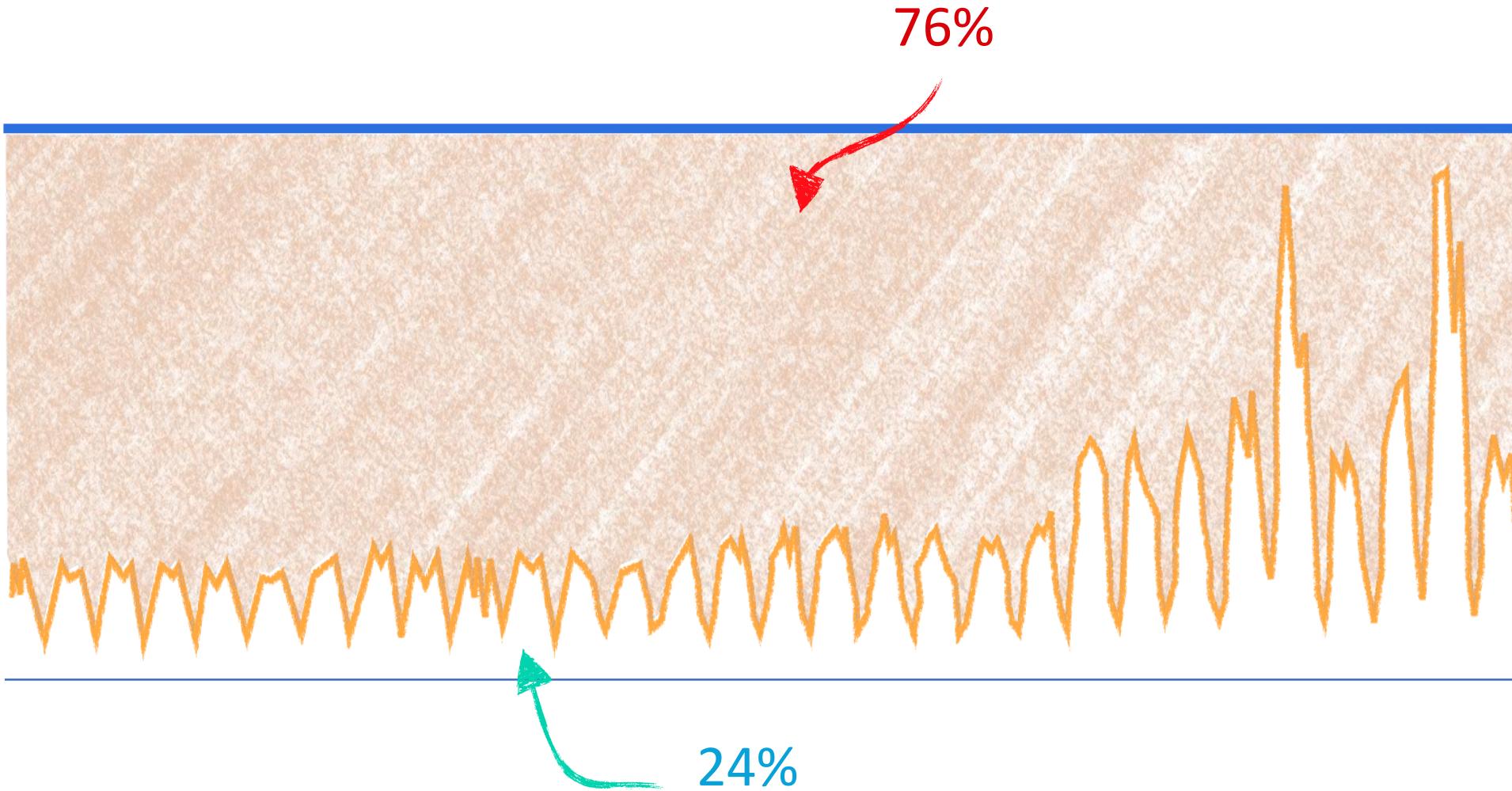
November traffic to Amazon.com



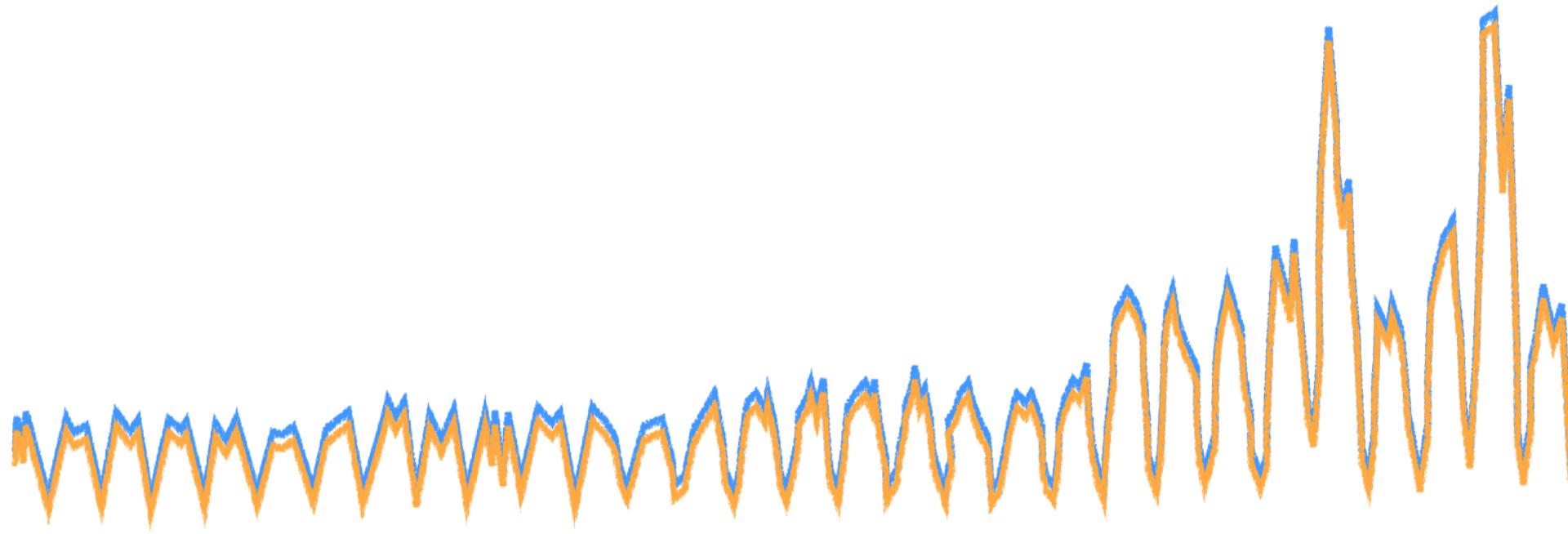
November traffic to Amazon.com



November traffic to Amazon.com



November traffic to Amazon.com





Amazon Elastic Container Registry

a fully-managed Docker container registry that makes it easy for developers to store, manage, and deploy Docker container images. Amazon ECR is integrated with Amazon Elastic Container Service (ECS)



Amazon Elastic Container Service

a fully managed container orchestration service. Customers such as Duolingo, Samsung, GE, and Cook Pad use ECS to run their most sensitive and mission critical applications because of its security, reliability, and scalability.



Amazon EKS

Amazon Elastic Kubernetes Service

a managed service that makes it easy for you to run Kubernetes on AWS without needing to install and operate your own Kubernetes control plane or worker nodes.



AWS Fargate

AWS Fargate

a serverless compute engine for containers that works with both Amazon Elastic Container Service (ECS) and Amazon Elastic Kubernetes Service (EKS).

Amazon Elastic Beanstalk



an easy-to-use service for deploying and scaling web applications and services developed with Java, .NET, PHP, Node.js, Python, Ruby, Go, and Docker on familiar servers such as Apache, Nginx, Passenger, and IIS.

AWS Elastic Beanstalk



Amazon Lightsail



an easy-to-use cloud platform that offers you everything needed to build an application or website, plus a cost-effective, monthly plan. Whether you're new to the cloud or looking to get on the cloud quickly with AWS infrastructure

Amazon Lightsail

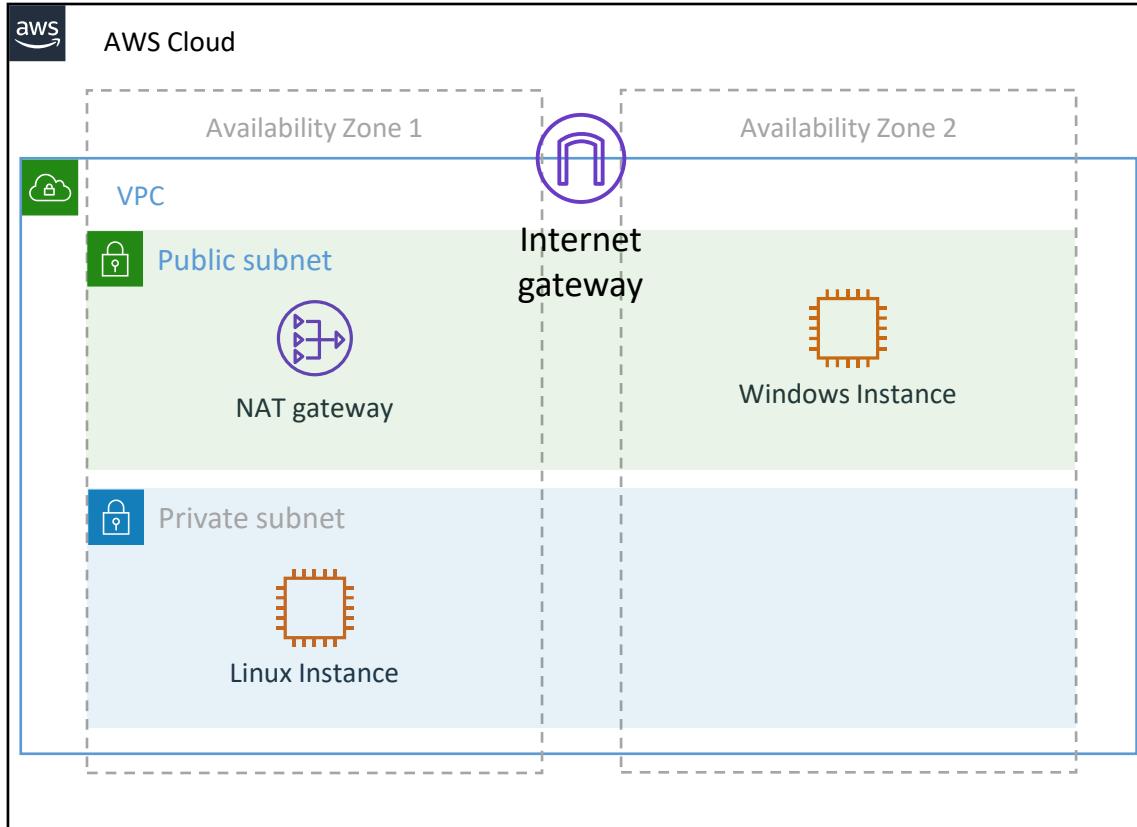


Lab Session - github



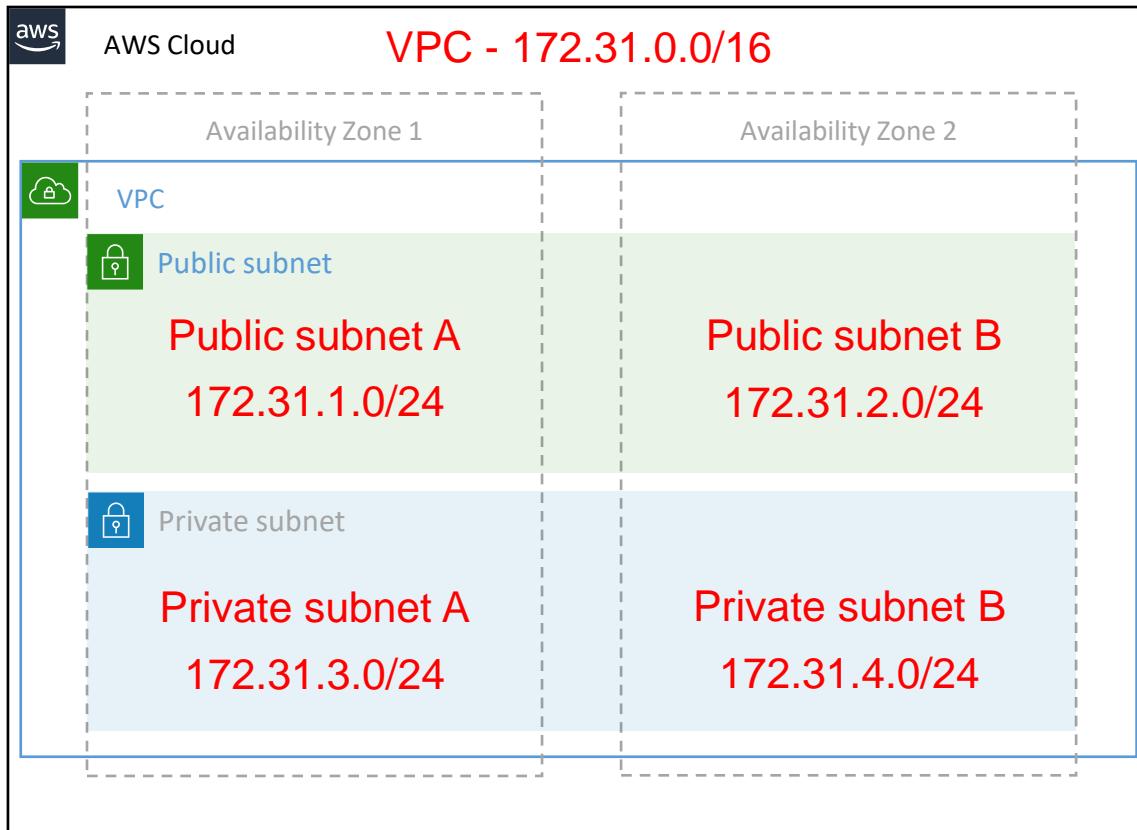
<https://github.com/TIDC-PS-Inter/AWS-Workshop>

Lab: Create EC2 from Scratch



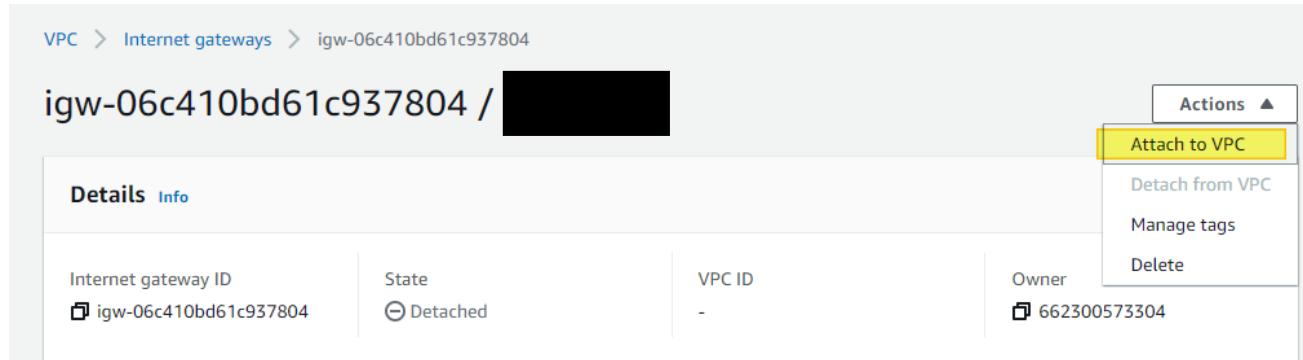
- Choosing an IP address range for your VPC
- Create 4 subnet
- Create Internet gateway
- Create NAT Gateway
- Create Route table
- Create EC2
- Create Security Group
- Try to access

Lab: Create EC2 from Scratch

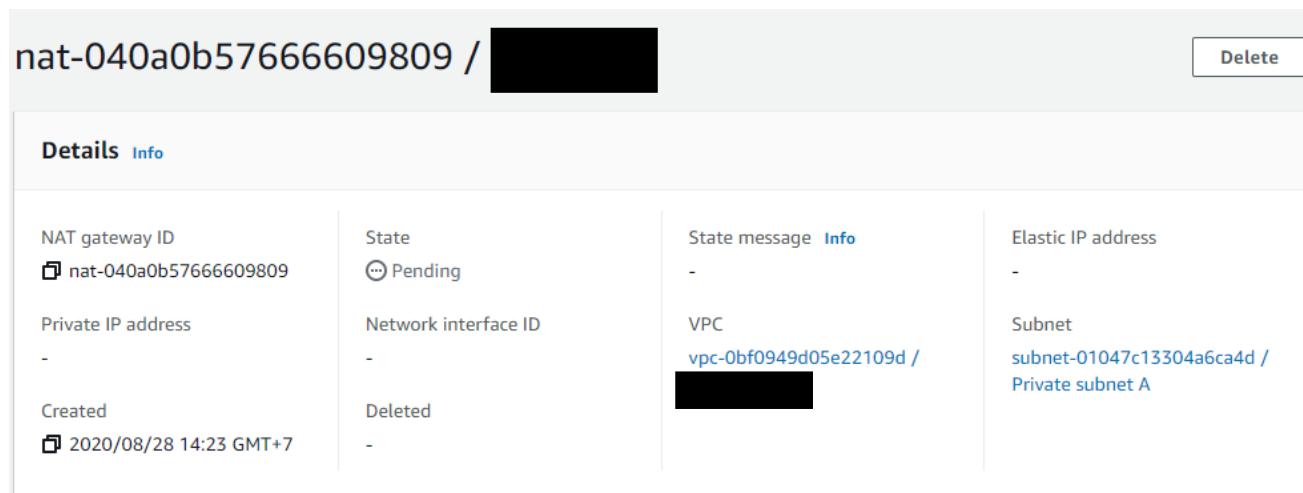


- Choosing an IP address range for your VPC
- Create 4 subnet

Lab: Create EC2 from Scratch



Create Internet Gateway



Create Nat Gateway

Lab: Create EC2 from Scratch

The screenshot shows the AWS Route Tables page. A route table named "Public-RT" is selected. The table has two subnets associated with it. The "Routes" tab is active, showing the following routes:

Destination	Target	Status	Propagated
172.31.0.0/16	local	active	No
0.0.0.0/0	igw-06c410bd61c937804	active	No

Create Route table - Public

Subnet ID	IPv4 CIDR	IPv6 CIDR
subnet-095fdbcb58b7a403...	172.31.2.0/24	-
subnet-09284a5023be346...	172.31.1.0/24	-

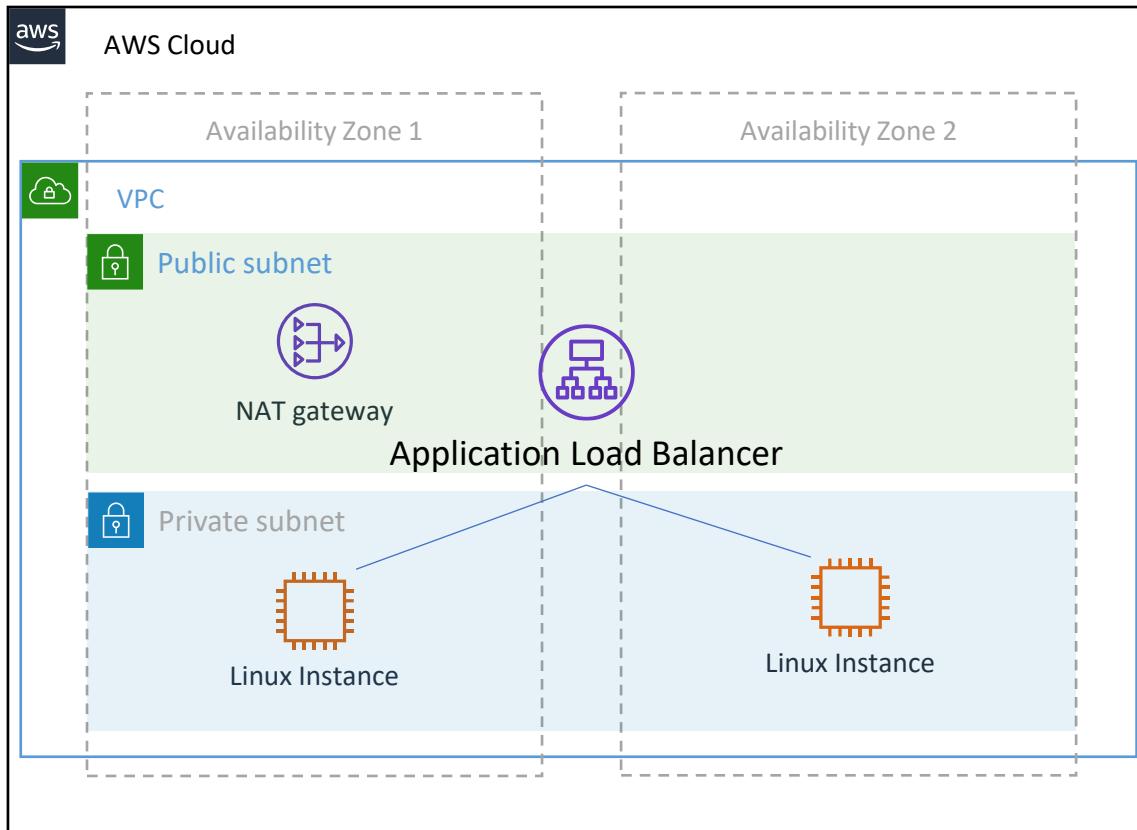
The screenshot shows the AWS Route Tables page. A route table named "Private-RT" is selected. The table has two subnets associated with it. The "Routes" tab is active, showing the following routes:

Destination	Target	Status	Propagated
172.31.0.0/16	local	active	No
0.0.0.0/0	nat-0ce5af728a2053b17	active	No

Create Route table - Private

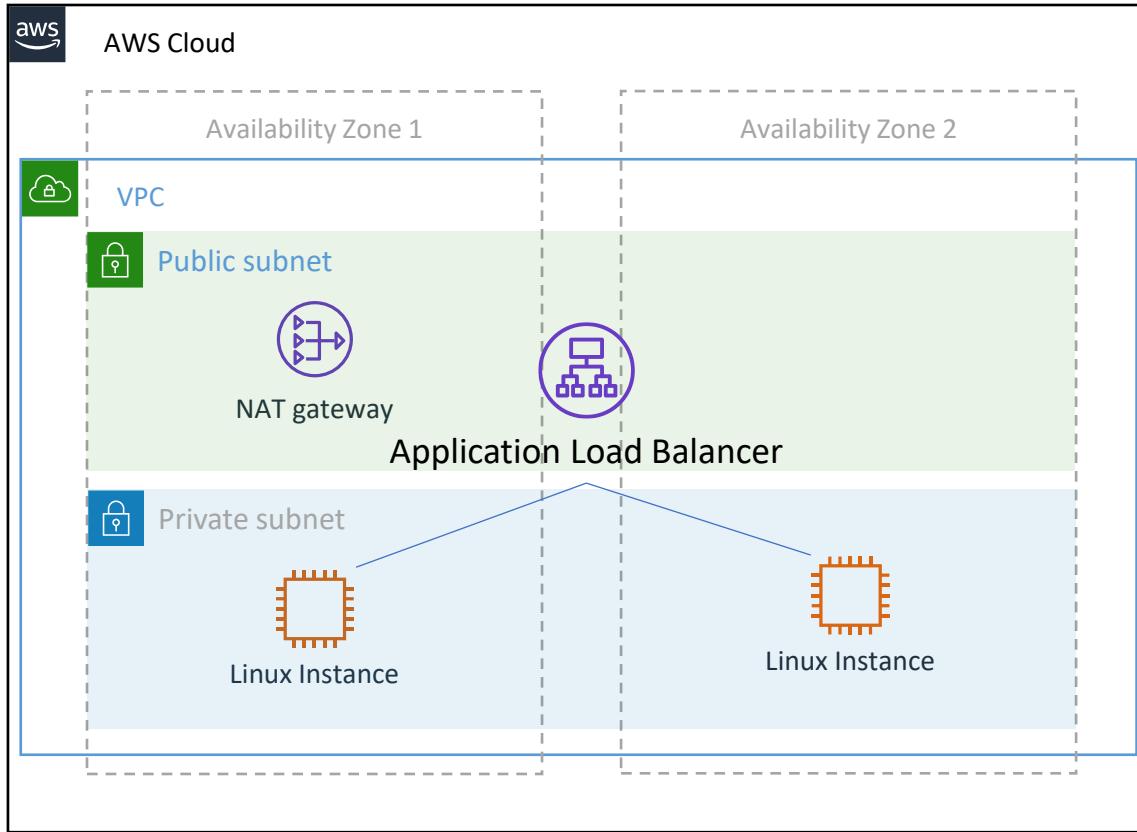
Subnet ID	IPv4 CIDR	IPv6 CIDR
subnet-01047c13304a6ca...	172.31.3.0/24	-
subnet-0fa558d87059089...	172.31.4.0/24	-

Lab: Load Balance



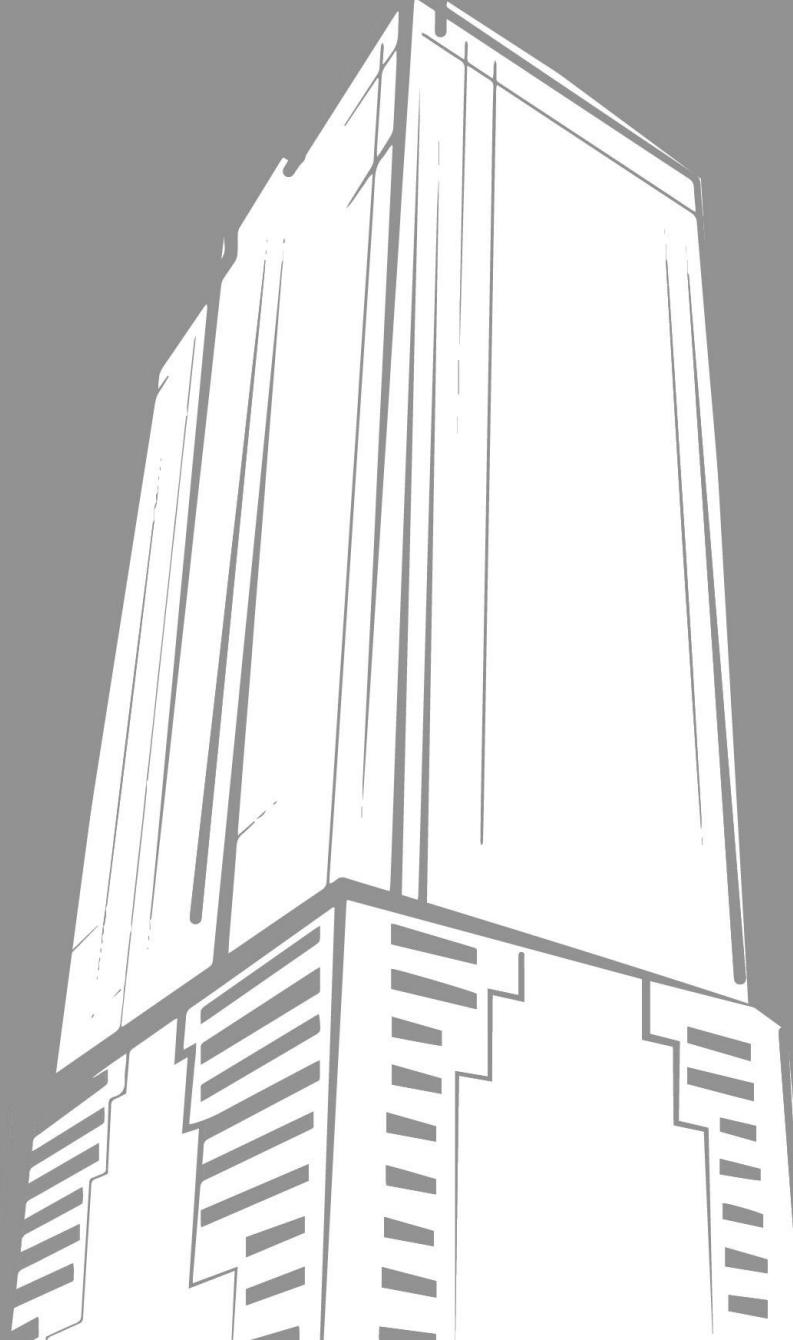
- Create EC2 (Amazon linux2) with user data
- Create Application Load Balance

Lab: Load Balance



User data for EC2

```
#!/bin/bash  
# install httpd (Linux)  
sudo yum update -y  
sudo yum install -y httpd  
sudo systemctl start httpd.service  
sudo systemctl enable httpd.service  
sudo echo "Hello World from $(hostname -f)" >  
/var/www/html/index.html
```



THAILAND#1

CARRIER NEUTRAL DATA CENTER
AND CLOUD SERVICE PROVIDER