

AWS State, Local, and Education Learning Days

New York

Cloud Foundations

10:15am – 11:15am

100
level

Migration and modernization with AWS: lessons learned and best practices

Learn insights on AWS tools and services, and modernizing applications during migration

11:30am – 12:30pm

200
level

Foundational best practices to strengthen your cloud journey

Foundational cloud principles to ensure secure, reliable, compliant, and operationally excellent AWS environment

1:30pm – 3:00pm

200
level

AWS Foundations hands-on workshop

Customize your AWS learning with interactive technical workshops and personalized lab experiences.

3:15pm – 4:15pm

300
level

Designing modern applications in AWS

Unlock serverless potential: reduce costs, boost scalability, and enhance security with cloud-native architectures



Cloud Foundations

Mike Brugnoni

Solution Architect

Amazon Web Services

mbrug@amazon.com

Agenda

Overview of AWS Services

Workshop



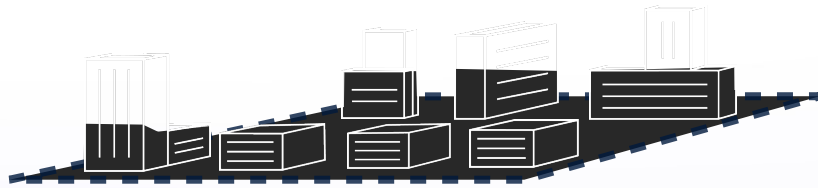
Amazon VPC



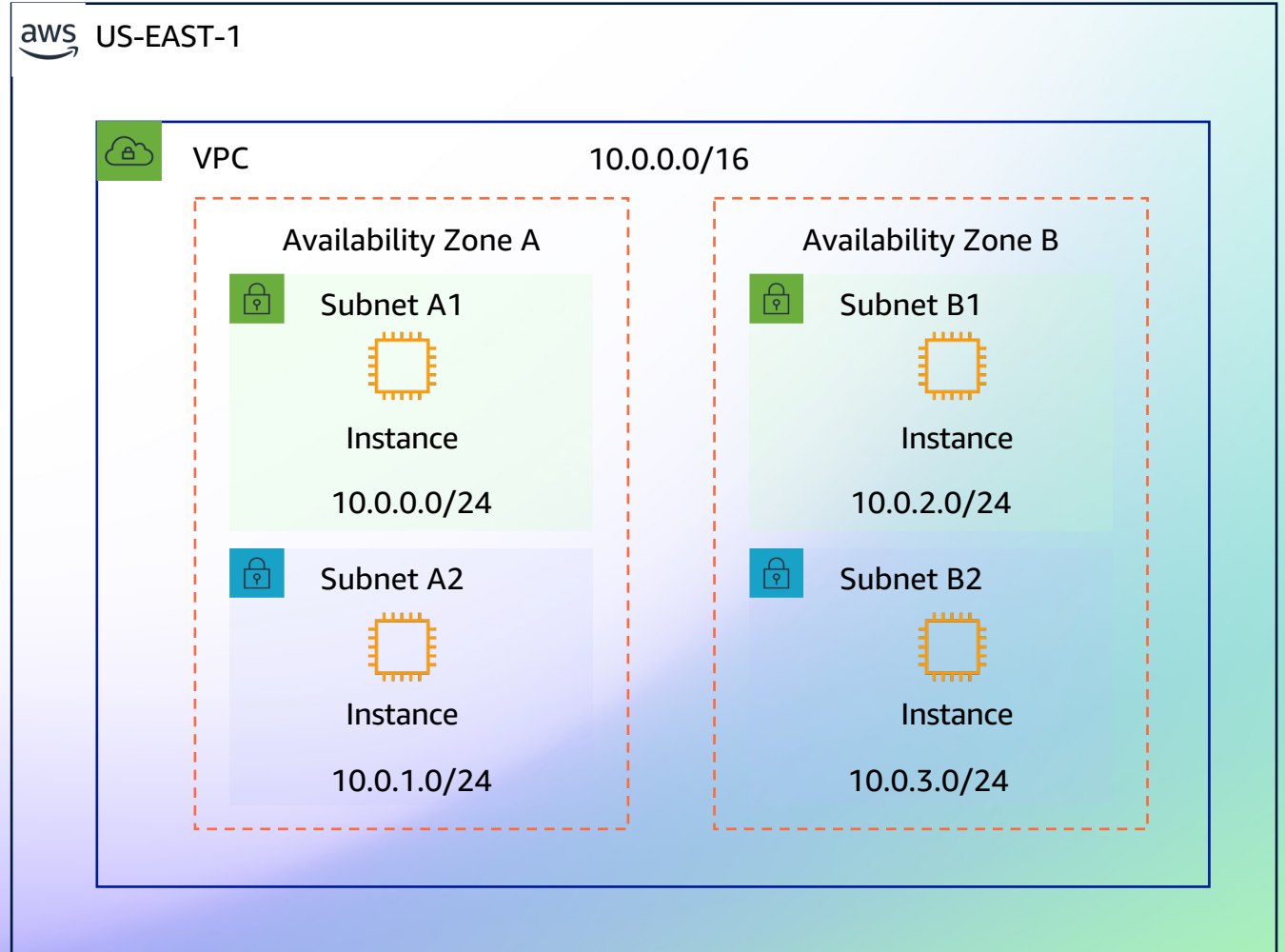
Amazon Virtual Private Cloud (VPC) overview



AVAILABILITY ZONE



DATA CENTER, RACK, HOST



Load Balancing



Types of ELB: NLB / ALB

Network Load Balancer (NLB)

- Layer 4 Load Balancing
- Connection-based Load Balancing
- High Throughput
- Low Latency
- Preserve source IP address
- Static IPs
- Long-lived TCP Connections
- Supports Security groups

Application Load Balancer (ALB)

- Layer 7 Load Balancing
- Content-Based Routing (host and path based)
- HTTP/2 Support
- Request Tracing
- Web Application Firewall (WAF) integration
- Application Load Balancer now supports TLS 1.3

Supported by both

- Cross-zone load balancing
- WebSocket Support
- Deletion Protection

VPC Security



Resource FW: Security Groups

- Stateful firewall
- Inbound and Outbound customer defined rules
- Instance/Interface level inspection

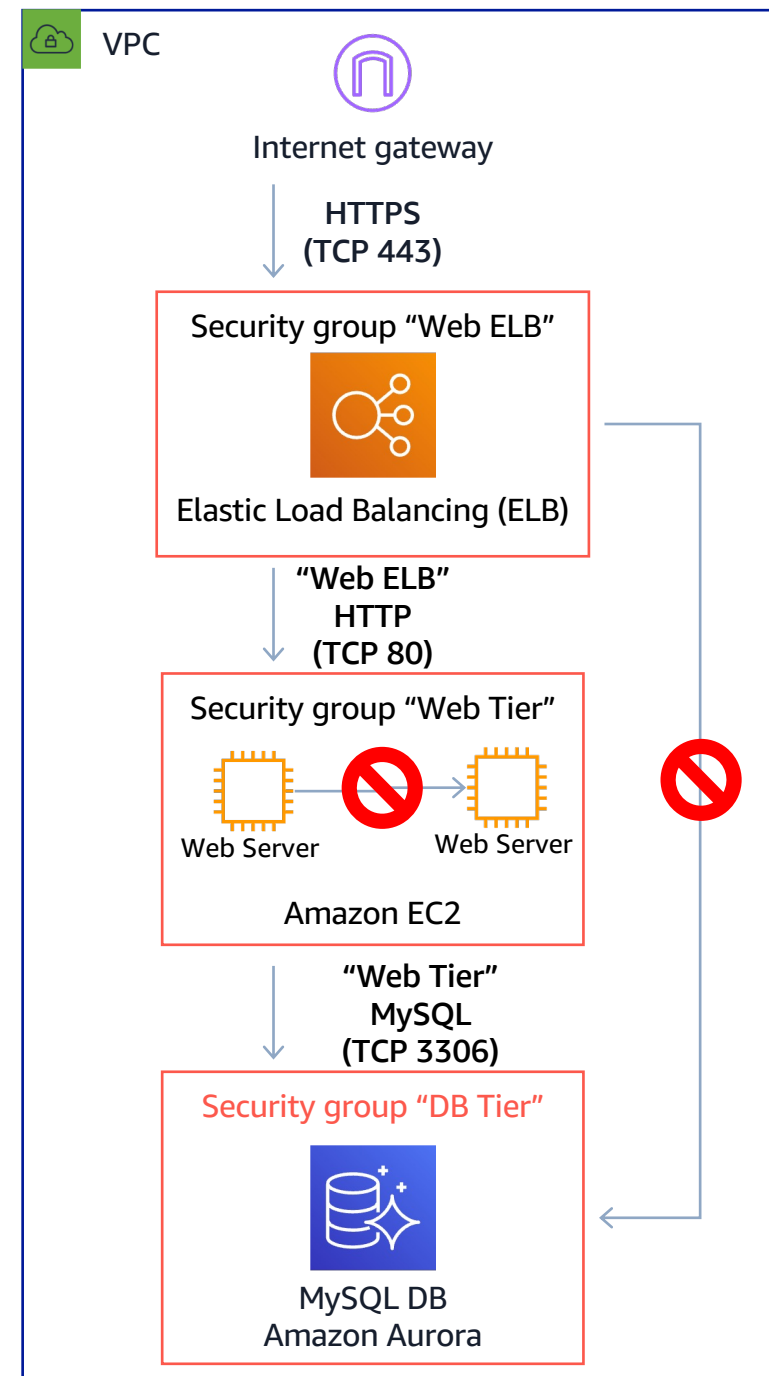
Micro segmentation

Mandatory, all instances have an associated Security Group

- Can be cross referenced

Works across VPC Peering

- Only supports allow rules
- Implicit deny all if not allowed
- AWS Verified Access adds a new logging functionality to improve troubleshooting



Identity and Access Management



Who can access what

Who



Developers and applications

can access



Permissions

what



Resources



**Policy
Authorization**



**Policy
Guardrails**

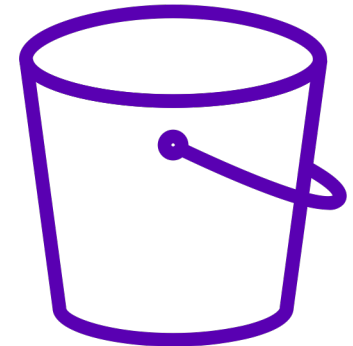
Goal: Least privileged access

Amazon S3



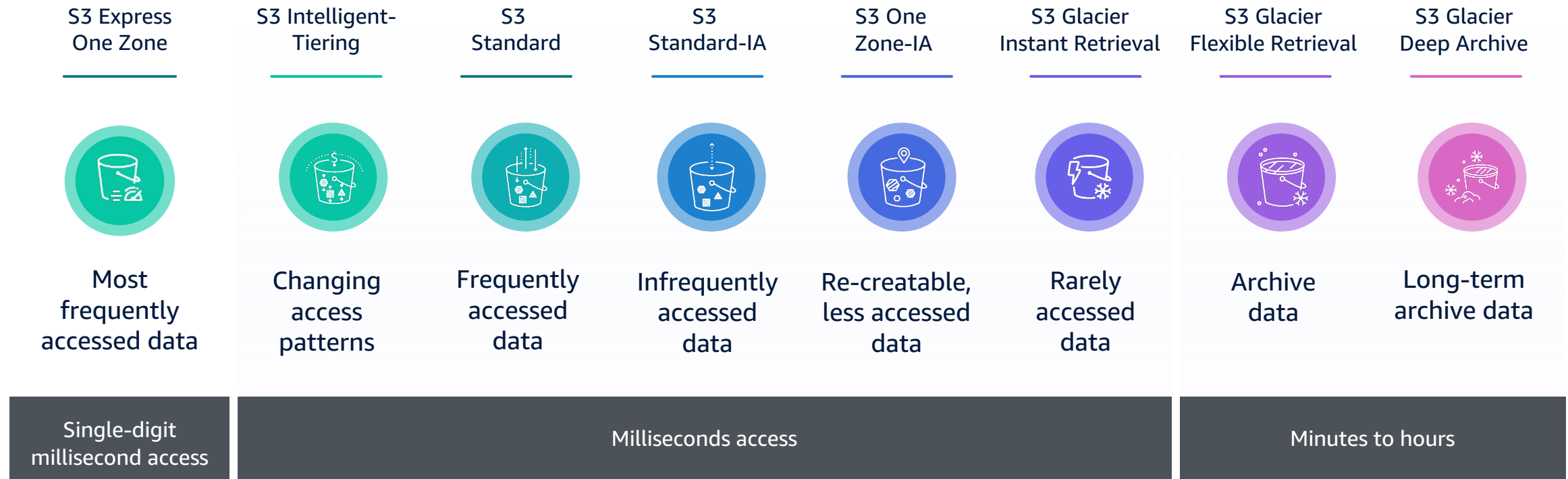
Amazon S3 (Simple Storage Service)

- Web accessible object store (through API or HTTPS)
- Highly durable (99.999999999% design)
- Limitlessly scalable
- Multiple Tiers to match your workload
- Data Lifecycle Rules
- Static Website Hosting
- Security, Compliance, and Audit capabilities
- Standard Storage Pricing (us-east-1) - \$0.023 per GB



Amazon S3 storage class choice matters at scale

PURPOSE-BUILT TO DELIVER THE MOST COST-EFFECTIVE STORAGE FOR VARIOUS ACCESS PATTERNS AND PERFORMANCE REQUIREMENTS

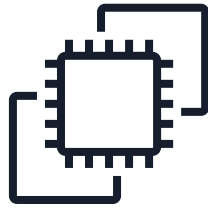


Amazon EC2 Overview



Choices for Compute

World-class performance, security, and innovation



AMAZON EC2

Virtual server instances
in the cloud



AMAZON ECS, EKS, and FARGATE*

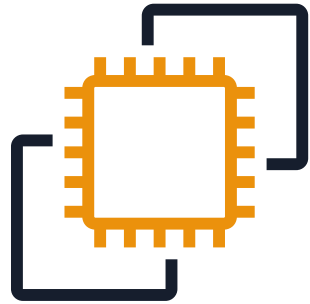
Container management
service for running
Docker on a managed
cluster of EC2



AWS LAMBDA

Serverless compute
for stateless code execution
in response to triggers

Amazon Elastic Compute Cloud (Amazon EC2)



AMAZON EC2

Linux | Windows | Mac

Arm and x86 architectures

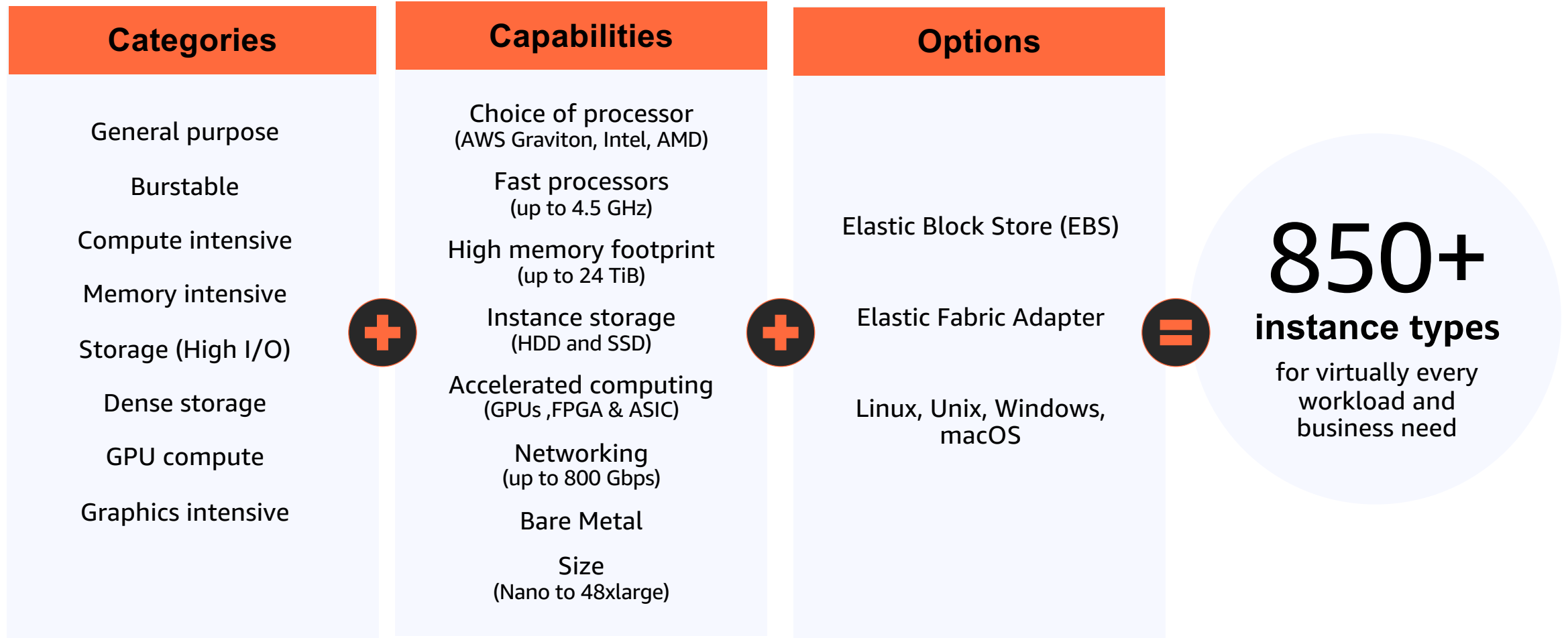
General purpose and workload optimized

Bare metal, disk, networking capabilities

Packaged | Custom | Community AMIs

Multiple purchase options: On-Demand, Spot instances, Reserved Instances, Savings Plans, Dedicated Hosts

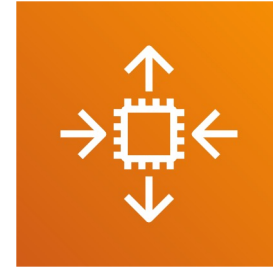
Broadest and deepest platform choice



EC2 Auto Scale Groups



EC2 Auto Scaling and Components



Amazon EC2 Auto Scaling is a fully managed service which helps to maintain application availability by automatically adding or removing EC2 instances to handle the load of the application according to some defined conditions.

Groups

Logical managed collections of EC2 instances that can scale to meet demand

Configuration templates

Templates used to launch EC2 instances

Scaling options

Ways to scale your Auto Scaling group prescriptively and dynamically

Pricing : There is no additional fees with Amazon EC2 Auto Scaling

AWS Systems Manager



Systems Manager capabilities

Operations management



Explorer



OpsCenter



Incident Manager

Application management



Application Manager



AppConfig



Parameter Store

Change management



Change Manager



Automation



Maintenance Windows



Change Calendar

Node management



Fleet Manager



Session Manager



Inventory



Run Command



Patch Manager



Distributor



State Manager

Thank you
Let's Dive into the workshop!





Thank you!

Mark Bronnimann

Solutions Architect
Amazon Web Services
mbronni@amazon.com

3:15pm – 4:15pm

300
level

**Designing modern
applications in AWS**

Unlock serverless
potential: reduce costs,
boost scalability, and
enhance security with
cloud-native
architectures

Please complete the survey
for this session



Track: Cloud Fundamentals

Session: **AWS Foundations hands-on workshop**