
AWS INNOVATE



SAP on AWS

Overview of SAP ERP on AWS

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Agenda

- Overview: AWS
- Overview: SAP on AWS
- SAP on AWS: Architectures & Infrastructure
- SAP on AWS: Shared Responsibility Model & Security Best Practices
- AWS Professional Services

Overview: AWS

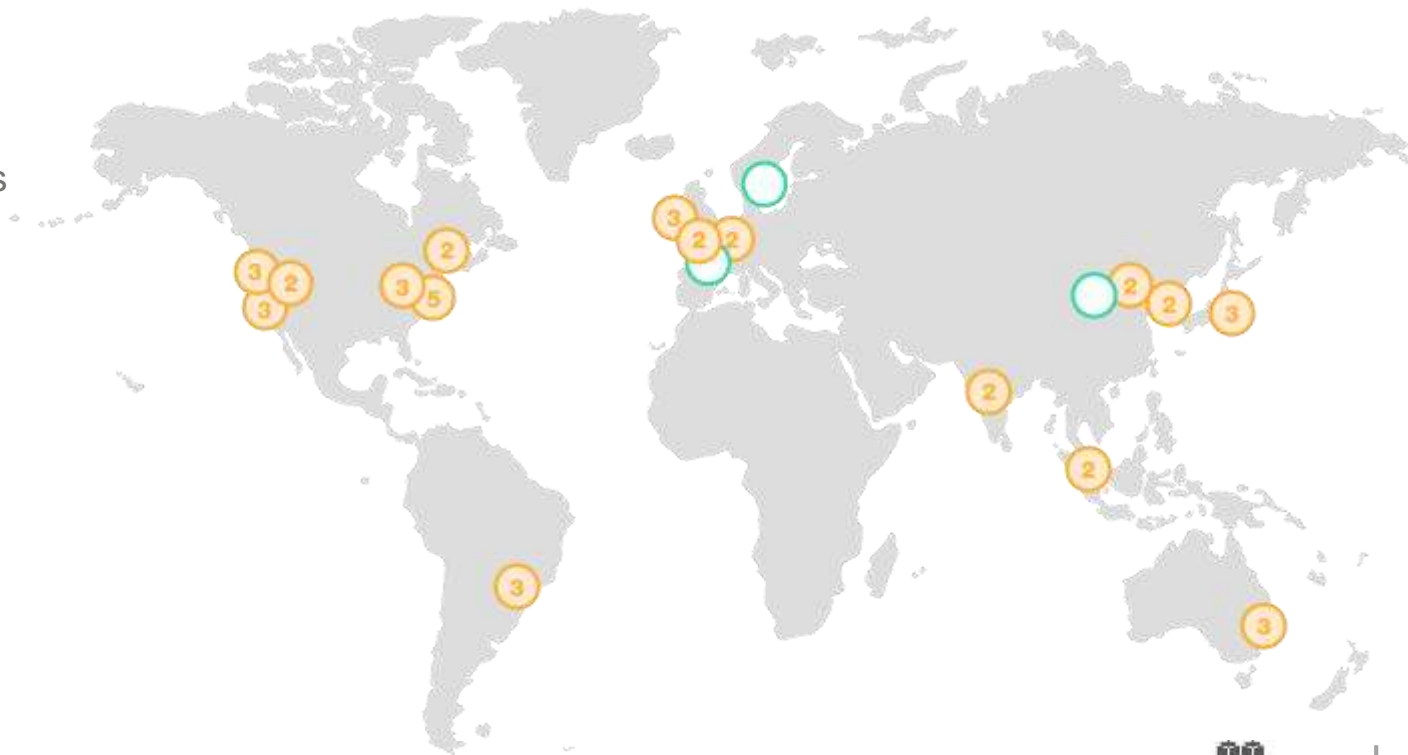
AWS Global Infrastructure

AWS INNOVATE

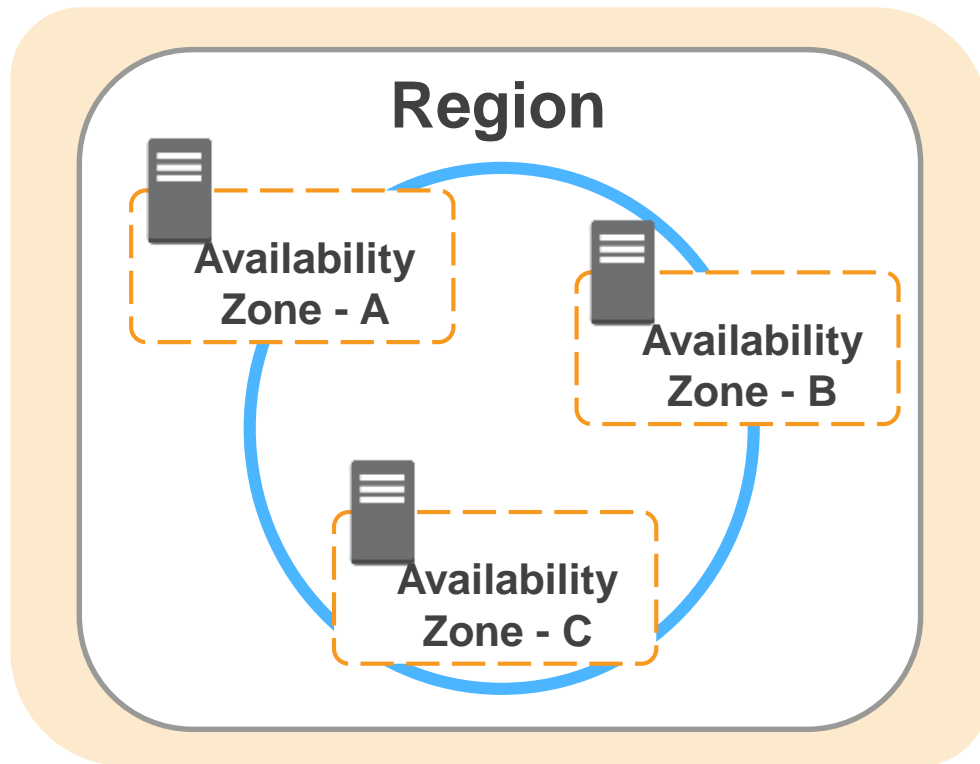
16 Regions

42 Availability Zones

3 more Regions
coming online
throughout the year



Achieving High Availability Using Multi-AZ



TECHNICAL & BUSINESS SUPPORT



Support



Professional Services



Partner Ecosystem



Training & Certification



Solutions Architects



Account Management



Security & Pricing Reports

HYBRID ARCHITECTURE



Integrated Networking



Direct Connect



Identity Federation



Integrated App Deployments



Data Backups



Integrated Resource Management

MARKETPLACE



Business Apps



Business Intelligence



DevOps Tools



Security



Networking



Databases



Storage

ANALYTICS



Data Warehousing



Business Intelligence



Hadoop/Spark



Streaming Data Analysis



Streaming Data Collection



Machine Learning



Elastic Search

APP SERVICES



Queuing & Notifications



Workflow



Search



Email



Transcoding

MOBILE SERVICES



API Gateway



Identity



Sync



Mobile Analytics



Single Integrated Console



Push Notifications

DEVELOPMENT & OPERATIONS



One-click App Deployment



DevOps Resource Management



Application Lifecycle Management



Containers



Triggers



Resource Templates

IoT



Rules Engine



Device Shadows



Device SDKs



Device Gateway



Registry

ENTERPRISE APPS



Virtual Desktops



Sharing & Collaboration



Corporate Email



Backup

SECURITY & COMPLIANCE



Identity Management



Access Control



Key Management & Storage



Monitoring & Logs



Configuration Compliance



Web application firewall



Assessment and reporting



Resource & Usage Auditing

CORE SERVICES



Compute
VMs, Auto-scaling,
& Load Balancing



Storage
Object, Blocks,
Archival, Import/Export



CDN



Databases
Relational, NoSQL,
Caching, Migration



Networking
VPC, DX, DNS

INFRASTRUCTURE



Regions



Availability
Zones



Points of
Presence

Amazon Web Services



*Unprecedented
Scale*

*Hyper
Speed*

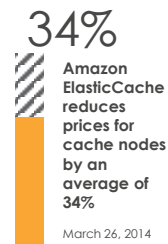


*Infinite IT
resources
available in
Minutes*



*Relentless
Innovation*

*Customer
Obsession*

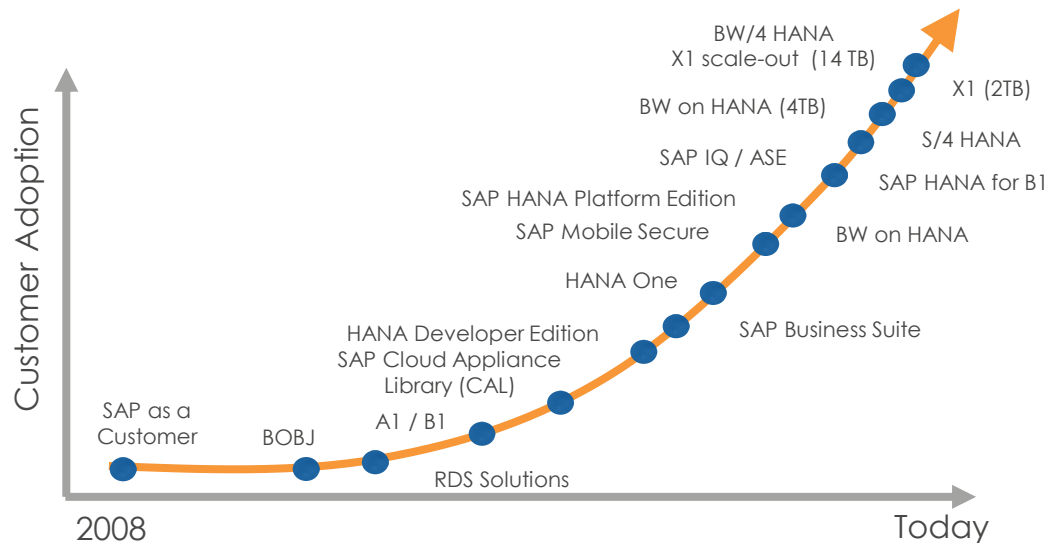


Overview: SAP on AWS

THE SAP | AWS ALLIANCE

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Strong partnership with a history of collaboration and rapid innovation



Customer Outcomes

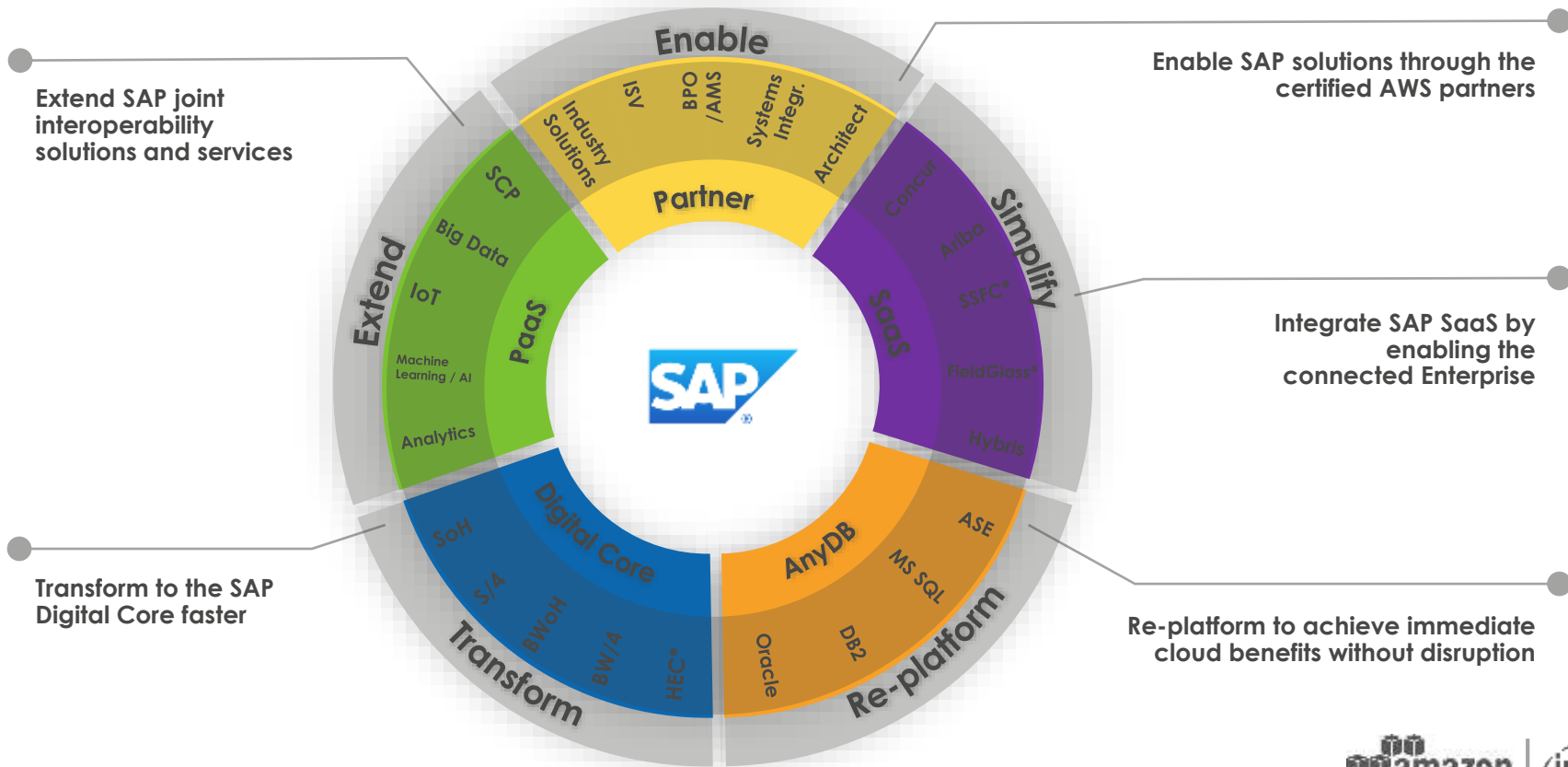


LIONSGATE



The AWS SAP 360° Strategy

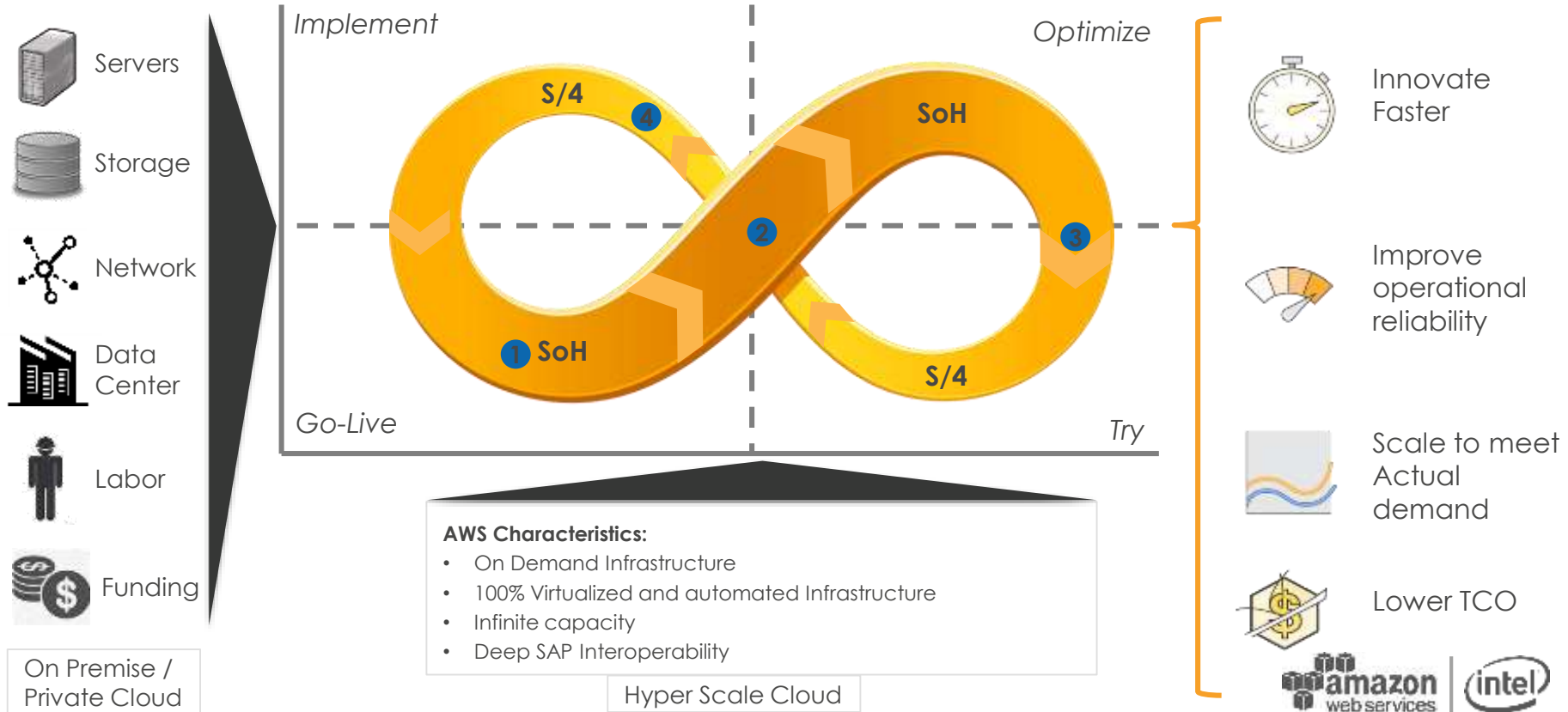
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Adopts SAP innovations faster

Enable Continuous Innovation

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SAP on AWS Architectures & Infrastructure

Platform: Wide Selections of certified instances

General Purpose				
Name	vCPU	Memory (GiB)	Network Bandwidth	SAPS
m4.16xlarge*	64	256	20 Gigabit	75,770
m4.10xlarge	40	160	10 Gigabit	47,320
m4.4xlarge	16	64	High	17,712
m4.2xlarge	8	32	High	8,856
m4.xlarge	4	16	High	4,428
m4.large	2	8	Moderate	2,214

Compute Optimized				
Name	vCPU	Memory (GiB)	Network Bandwidth	SAPS
c4.8xlarge	36	60	10 Gigabit	37,950
c4.4xlarge	16	30	High	19,030
c4.2xlarge	8	15	High	9,515
c4.xlarge	4	7.5	High	4,758
c4.large	2	3.75	Moderate	2,379

Memory Optimized				
Name	vCPU	Memory (GiB)	Network Bandwidth	SAPS
x1.32xlarge*	128	1952	20 Gigabit	131,500
x1.16xlarge*	64	976	10 Gigabit	65,750
r4.16xlarge*	64	488	20 Gigabit	76,400
r4.8xlarge	32	244	10 Gigabit	38,200
r3.8xlarge	32	244	10 Gigabit	31,920
r4.4xlarge	16	122	Up to 10 Gigabit	19,100
r4.2xlarge	8	61	Up to 10 Gigabit	9,550
r4.xlarge	4	30,5	Up to 10 Gigabit	4,775
r4.large	2	15,25	Up to 10 Gigabit	2,387

HANA

- Use in 2-tier and 3-tier configurations up to hundreds of thousands of SAPS
- Amazon EBS-optimized instances
- Enhanced networking, New Elastic Network Adapter
- Certified instances for SAP HANA*

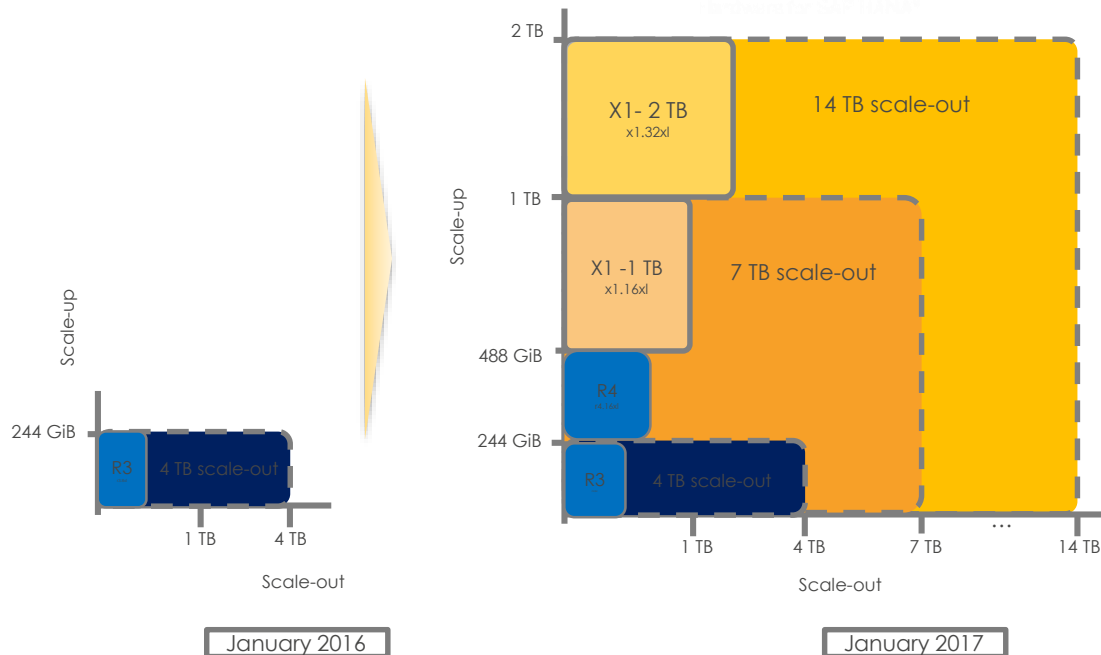
Check SAP Note 1656099 for more information



SAP Infrastructure Disruption: X1

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2016, the year the game changed...



Engineered for SAP HANA

High Performance:



Powered by Quad Socket Intel® Xeon® E7 Processors with up to 128 vCPUs and 2TB of DDR4 RAM; Support for Intel® AES-NI, AVX2, TSX instructions

Resilient:



Leverage multi-AZ HA and multi-region DR for productive HANA solutions; S3 Storage designed for 11 9's durability

Secure:



AWS provides the same, familiar approaches to security that companies have been using for decades with increased visibility, control, and auditability.

Flexible:



Quickly clone, scale up, out or down as business demands – Buy what you need at the moment, not 2 years from now.

Benefits:

AWS for SAP is the only Hyper-scale Cloud platform able to serve mission critical workloads:

Technical Excellence

- Build for HANA, Agility & Resiliency, Highly Secure

Infinite Global Scale

- Provision in 2TB ½ Hour, WW Coverage

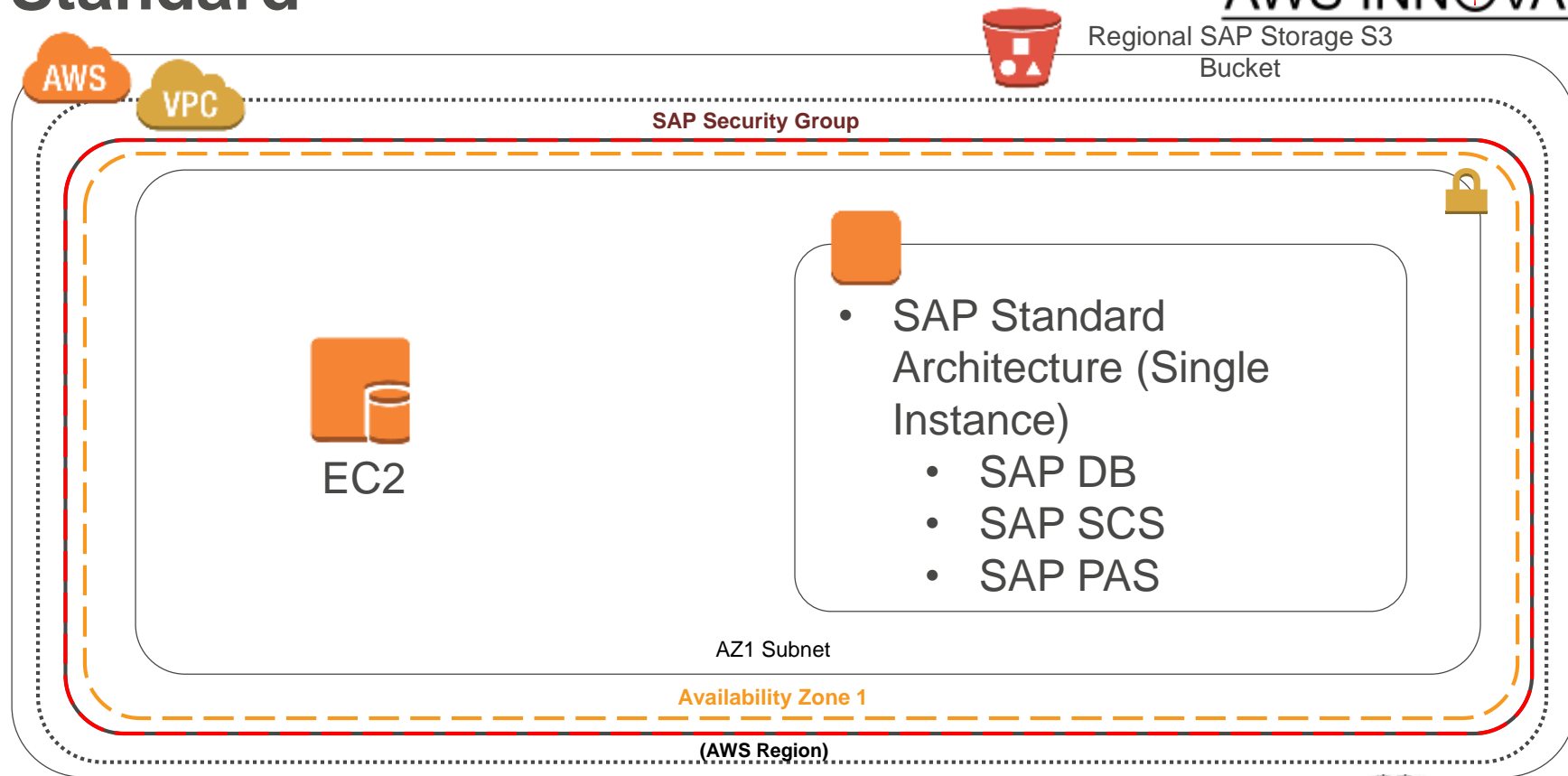
Lowest TCO

- \$13.56 per hour, >\$700 for 40 hours



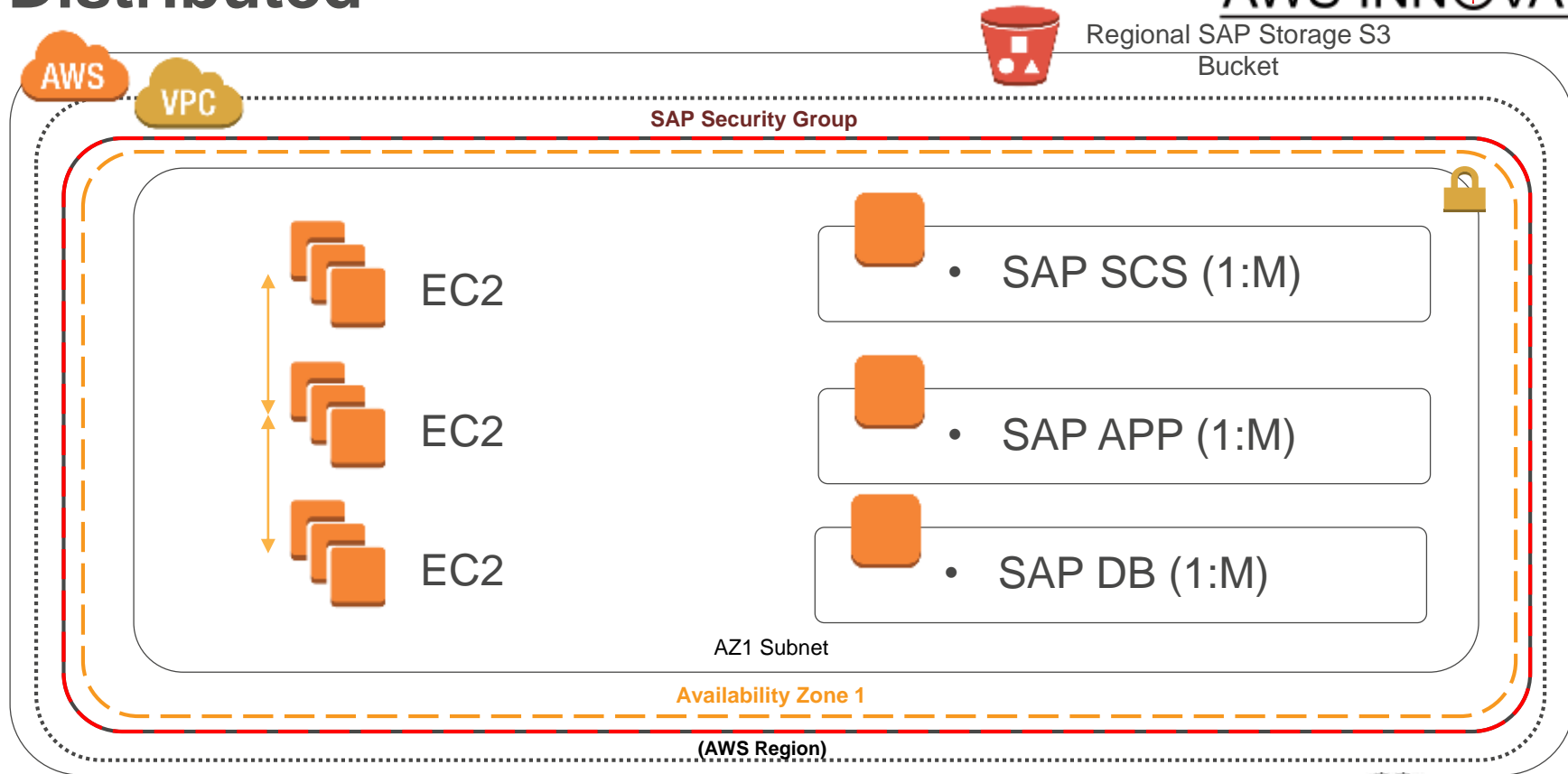
Standard

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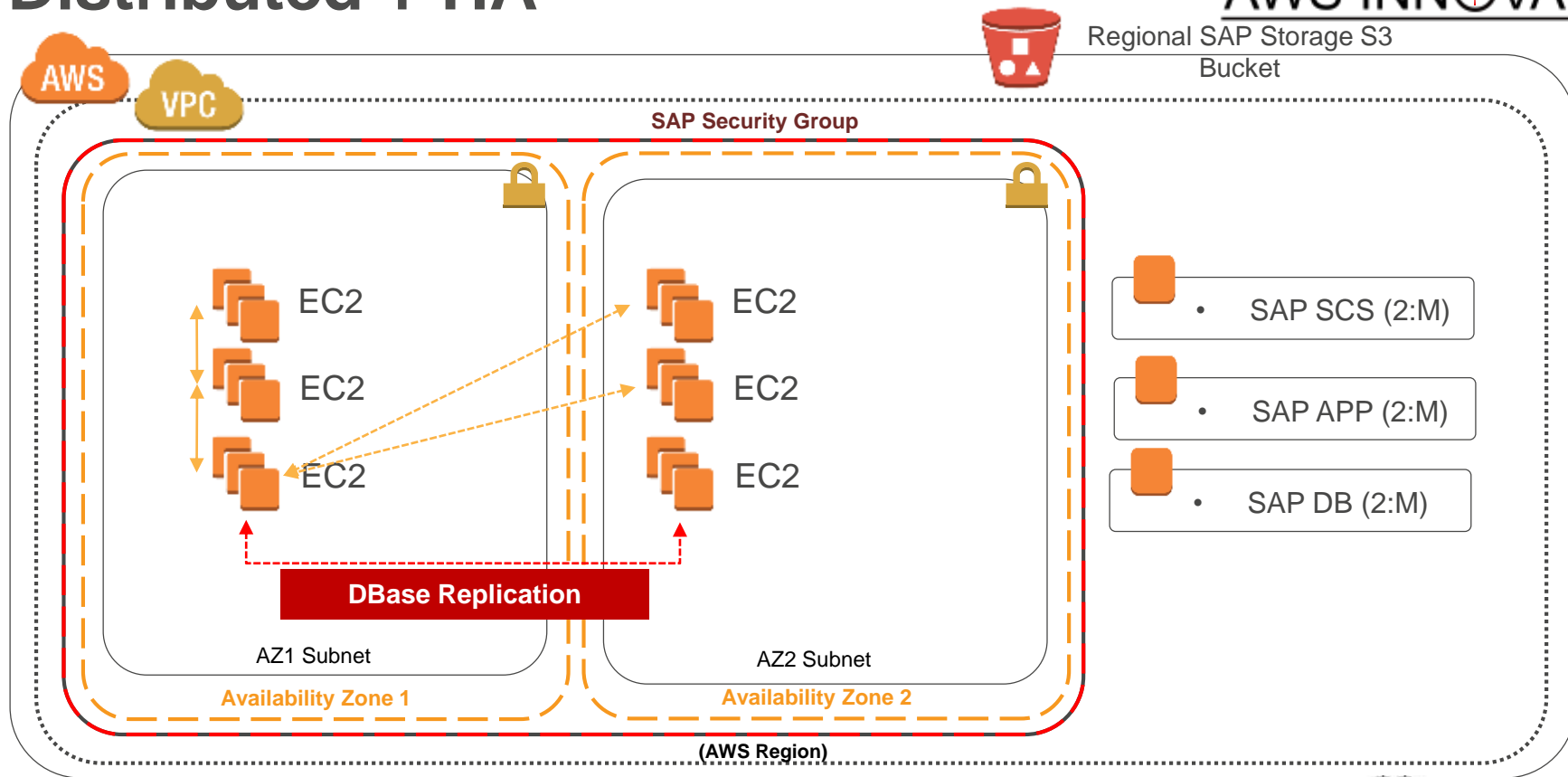


Distributed

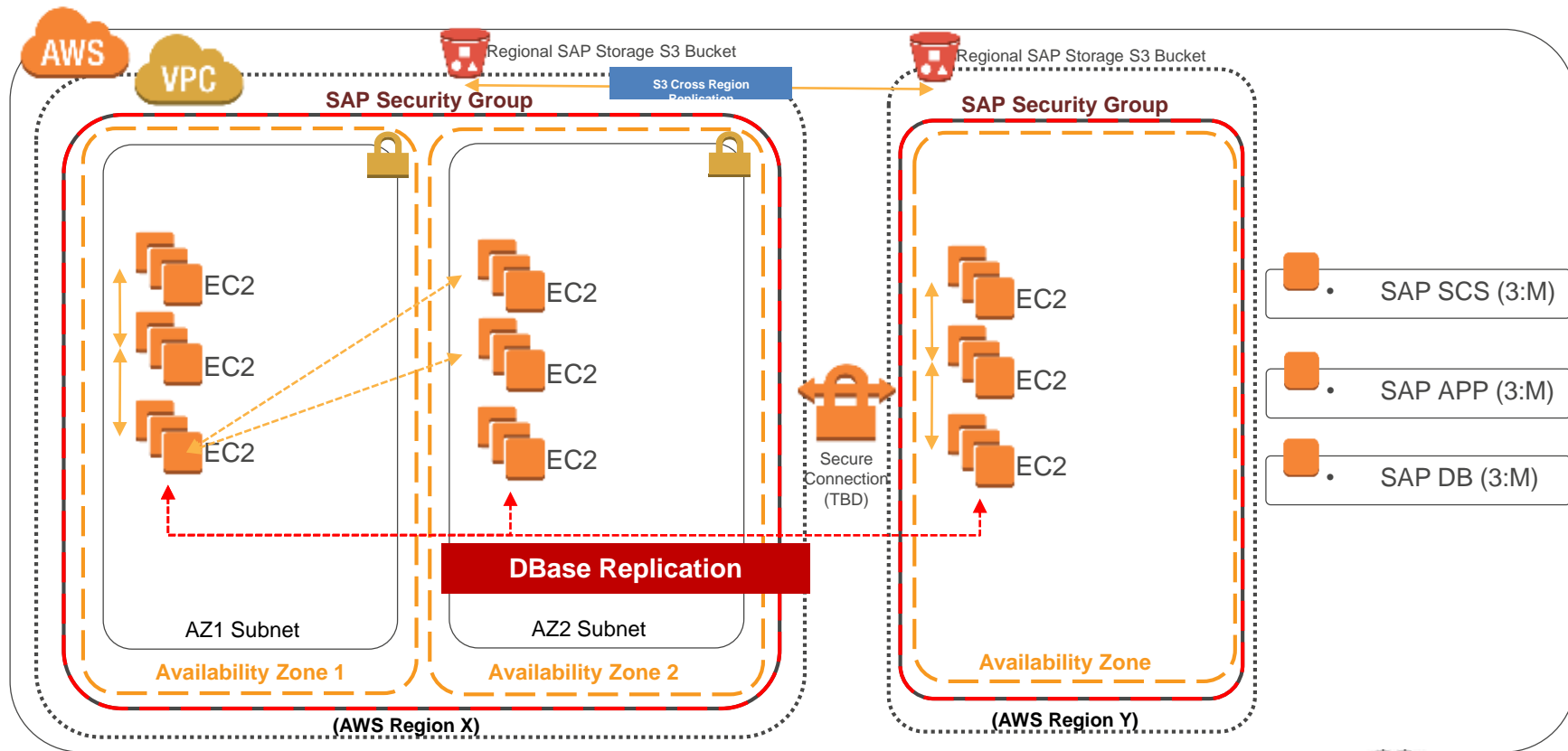
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Distributed + HA

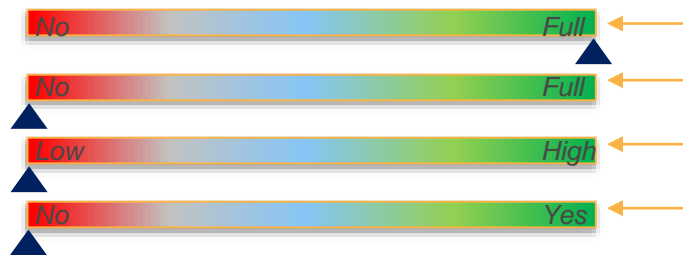


Distributed + HA + DR



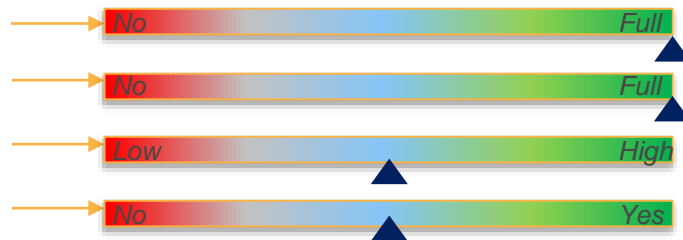
How do these options compare...

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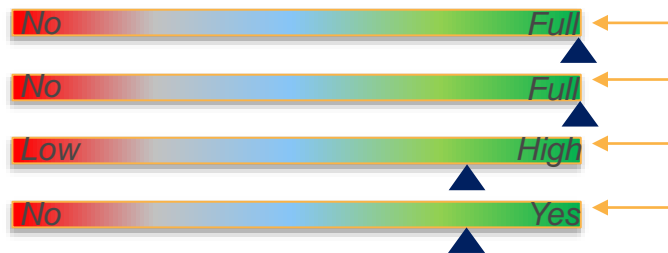


Architecture 1: Standard

SAP Certified
SAP Partner HA certified
Availability
Fault Tolerant

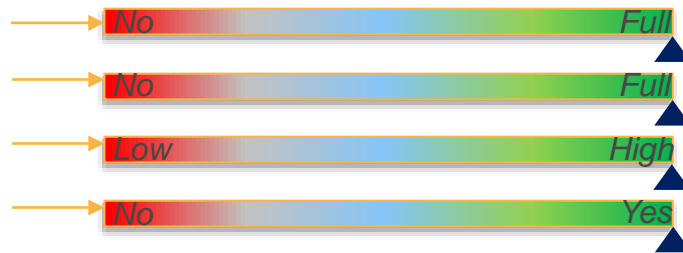


Architecture 2: Distributed



Architecture 3: Distributed + HA

SAP Certified
SAP Partner HA Certified
Availability
Fault Tolerant



Architecture 4: Distributed + HA +
DR

SAP Solutions on AWS



Databases

SAP HANA Editions
SAP MaxDB Database (7.8+)
SAP ASE (15.7.0.051+)
IBM DB2 (9.7+)
Microsoft SQL Server ('08 R2+)
Oracle 11g (or higher)*



SAP Business Applications

S/4HANA
BW/4HANA
SAP Business Suite
SAP Business Warehouse
SAP Business All-In One
SAP Business One
SAP BusinessObjects



SAP Database & Mobile Solutions

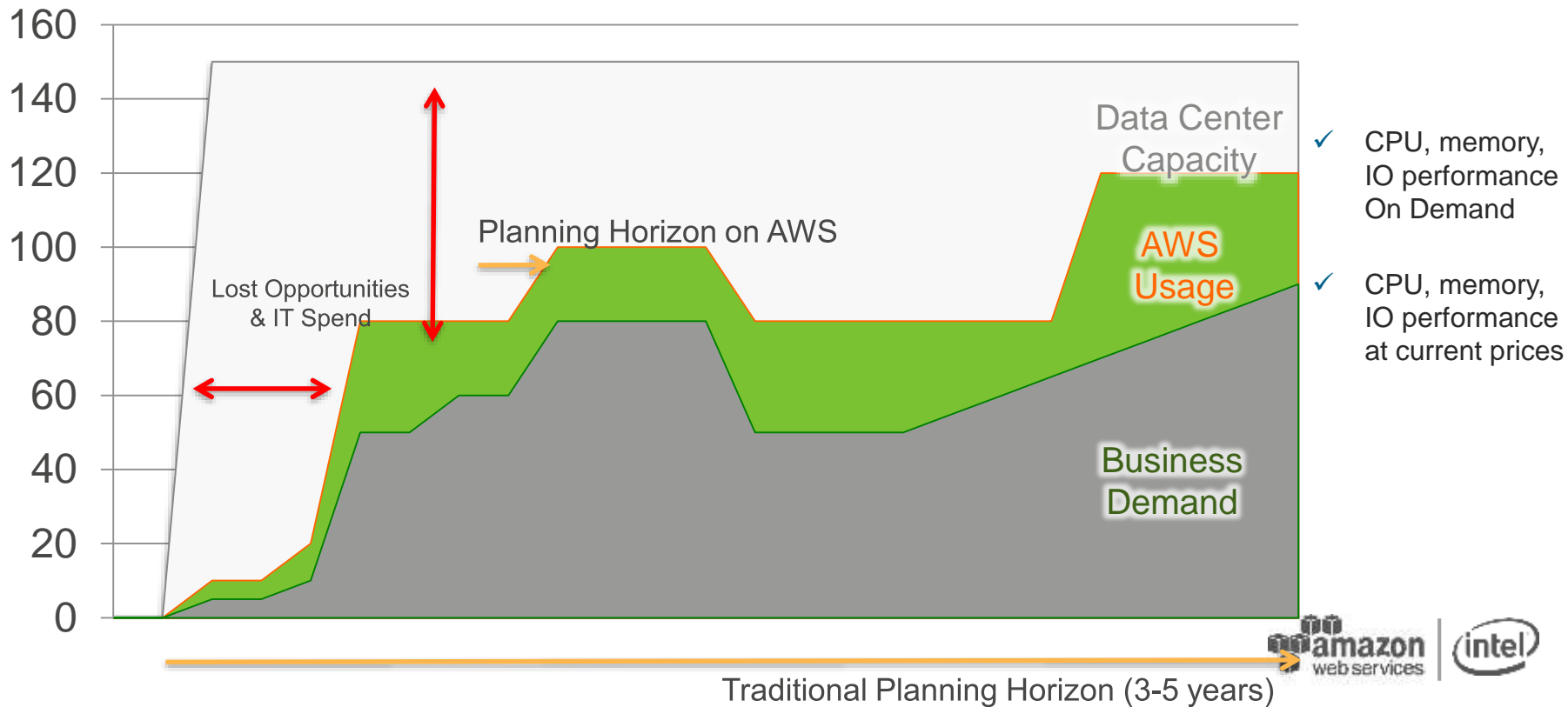
SAP Adaptive Server Enterprise
SAP IQ
SAP Replication Server
SAP Mobile Secure
Sybase Unwired Platform

*Oracle Linux required (OSS Note: 2358420) and My Oracle Support (MOS) Note 2174134.1



Optimize: Sizing

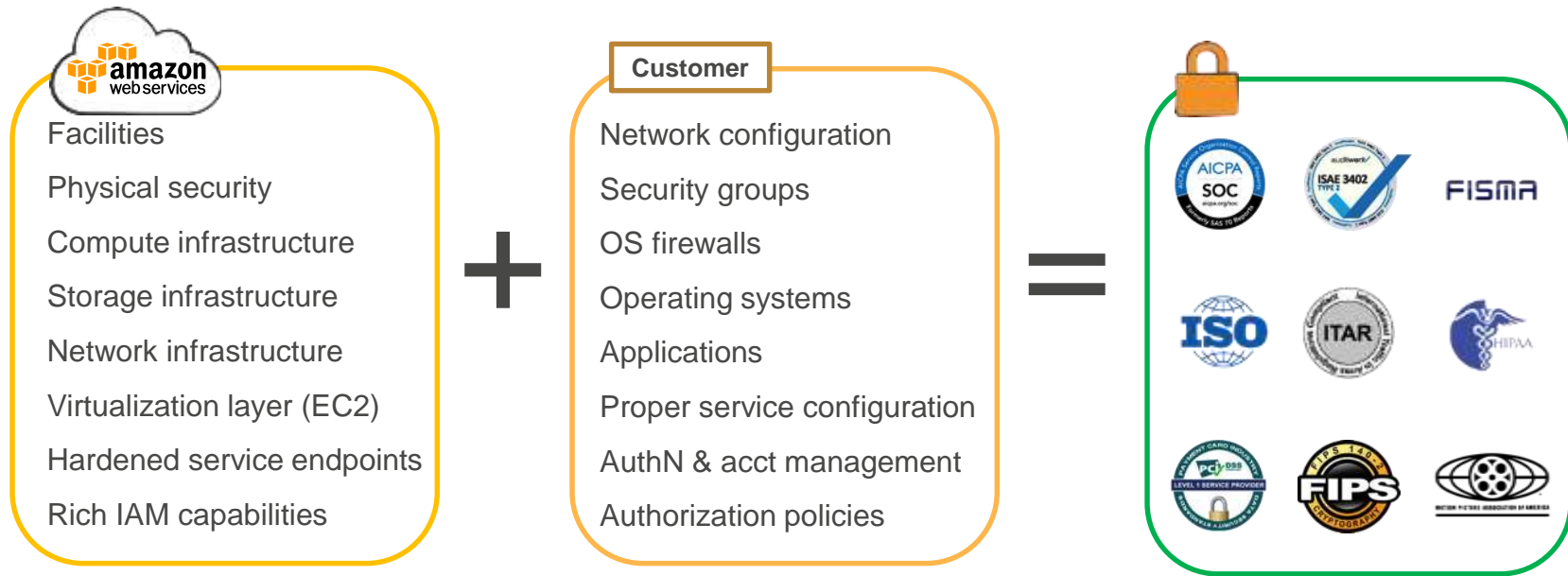
□ Traditional ■ AWS ■ Demand



SAP on AWS Shared Responsibility Model & Security Best Practices

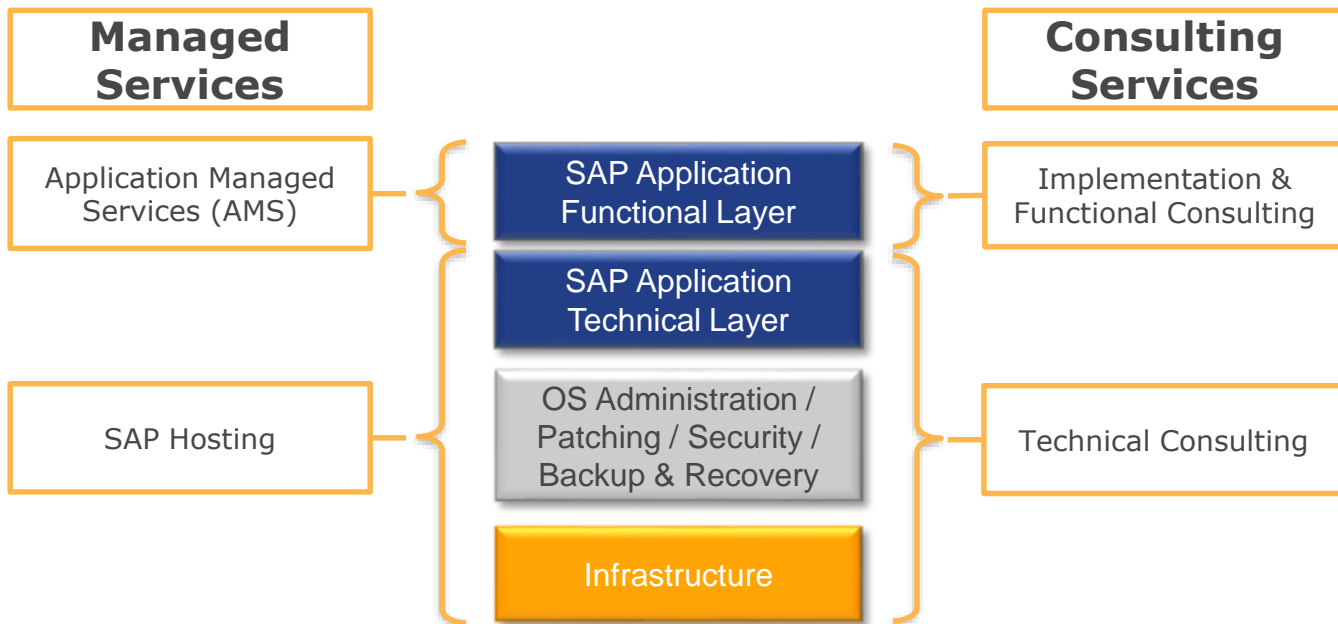
Shared Responsibility Model

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SAP on AWS Shared Responsibility Model

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Most SAP customers will require a fully managed SAP hosting service on top of AWS

Security — Best Practices

- Fine-grained security network controls with Amazon VPC
- Enable network access control on every subnet
- Firewall every single compute instance with security groups
- Encrypt your sensitive information everywhere (EBS, S3, etc.)
- Protect your encryption keys (AWS CloudHSM)
- Log and audit (AWS CloudTrail)
- AWS Identity and Access Management (IAM)
- Use dual-factor authentication for AWS login credentials
- Connect in private to your existing data centers



Why is SAP on AWS the Right Answer?

Accelerating the Digital Transformation Journey

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Flexibility



Technical Excellence



Economics

- **Rapid Provision:**
Create new HANA systems through AWS Quick Start in <1 hr
- **Grow (or shrink) as you go:**
Scale-Up or Out your configuration in <1 hour
- **Expertise:**
SAP, AWS and joint partner ecosystem
- **Secure:**
Innovate while maintaining a secure environment
- **Simplify:**
Clone and upgrade systems with ease
- **Consume:**
Provision new SAP innovations through SAP's Cloud Appliance Library (CAL)
- **Low Cost of Entry:**
2TB for 40 hours <\$700*
- **Flexible pricing:**
Achieve up to 72% discount on X1 for 3 year commitments



* Pricing based on US-East region, as of 08/14/2016

AWS Professional Services

Enterprise Transformation can be Complex



- Large programs with many work streams
- Thousands of workloads across multiple data centers
- Many inter-dependencies
- Significant compliance requirements
- Changes in processes, tools, operations

AWS Professional Services

Partnering in Your Journey

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Technical Specialists

Specialty practices for AWS security, infrastructure, app optimization, analytics, big data, and operational integration



Advisory Services

Strategy, planning, cost/benefit analysis, governance, risk management as it relates to implementing the AWS platform



Collaboration

Working with you and the APN Premier Partners you already trust to realize breakthrough results



Proven Process

Best practices to get the foundation right, migrate workloads, create a modern IT operating model to support your business

Thank You!