
AWS
re:Invent
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ARC205

Establishing your cloud foundation on AWS—beyond your landing zone

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EBSCO Information Services – Cloud Platform Operations

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AWS

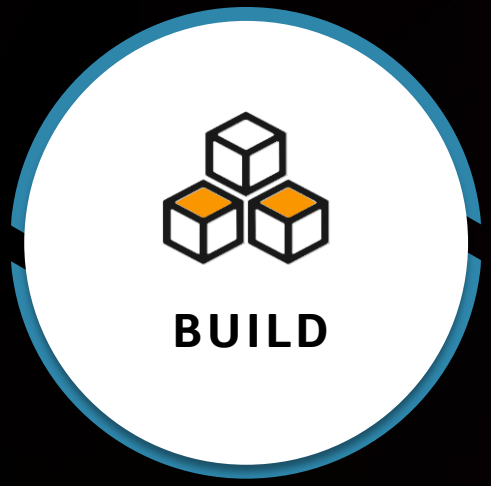
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Whatever journey you're taking, you need a foundation



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What do customers want on AWS?



Make a difference



Deliver and innovate rapidly



Secure and compliant environment

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Why do businesses adopt the cloud?



Organic and new revenue growth

Innovate rapidly (TTV)

Global reach

New products and segments



Business insight

Data-driven decision making

Lower the cost of curiosity

Cloud capabilities drive business outcomes



Operate with efficiency

Enhance productivity

Pay for what you use

Reduce carbon footprint



Reduce risk

Operational resilience

M&A, divestiture

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How do businesses adopt the cloud?

Develop cloud-native apps



Innovation



Use SaaS

Focus on core business



Modernize workloads

Insight, scale, resiliency

Migrate workloads

Quick, minimal disruption

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Foundational cloud capability areas



Requirements

Secure

Flexible

Resilient

Scalable

Operations-ready

Cost-effective

Extensible

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Cloud Foundations capabilities



Cloud center of excellence

Skills and training

Service management (e.g., ITIL)

Provisioning

Security operations

Baseline services (e.g., accounts, access control)

Business services (e.g., Amazon Kinesis Data Analytics, Amazon ML)

Tools

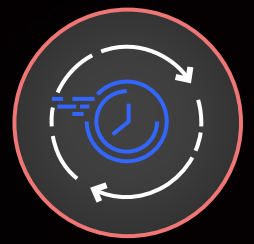
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Cloud Foundations on AWS enables . . .



Agility

Response to change



Increased velocity

Quicker time to value



Reliability

Resilient and available



Efficiency

Pay-as-you-go, Elastic, and fit-for-purpose



Risk management

Security and policy enforcement

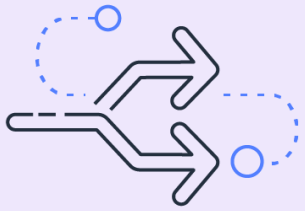
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What is Cloud Foundations?

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What is Cloud Foundations?



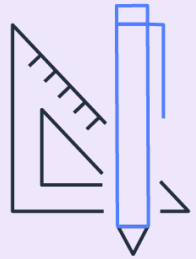
Guided path



Process



People



Technology

Deploy

Operate

Govern

Production Workloads

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Decisions and architecture considerations

- Security
- Cost management
- Management and governance
- Compute
- Developer tools
- Database services

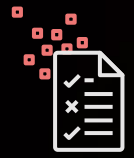
- AWS Services
- AWS Solutions
- AWS Partners



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To meet your and your customer's requirements

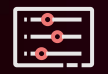

Access management


Service knowledge management


Change management


Automated provisioning

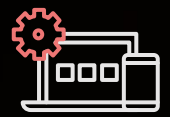

Automation


Configuration management


Log management


Host security


Continuity management (backup)


Patch management


Monitoring


Event incident service management


24/7 service desk coverage


Reporting


Compliance


Capacity management

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Cloud Foundations capabilities

- 30 specific **capabilities** that span people, processes, and technology
- Based on AWS published strategy for implementing enterprise-grade AWS environments
- Each capability brings in relevant business function stakeholders



Security Finance Central IT Networking Operations Software Engineering

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The Cloud Foundations capabilities

Governance, risk management, and compliance

- Log Storage
- Data De-identification
- Tagging
- Service Onboarding
- Change Management
- Forensics
- Audit & Assessment
- Governance

Operations

- Developer Experience & Tools
- Logging & Monitoring
- Patching
- Rollout/Rollback
- Sort/Search for Metadata

Security

- Identity Management & Access Control
- Encryption & Key Management
- Secrets Management
- Data Isolation
- Security Incident Response
- Vulnerability & Threat Management
- Application Security

Infrastructure

- Network Connectivity
- Network Security
- Workload Isolation Boundary
- Template Management

Business continuity

- Disaster Recovery
- Backup
- Support

Finance

- Cloud Financial Management
- Records Management
- Resource Inventory

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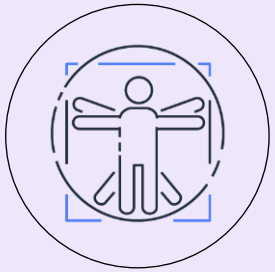
What is a Cloud Foundations capability?



- Scenarios
- General guidance
- AWS Implementation recommendations

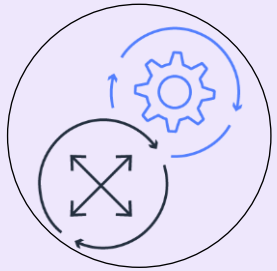
Business outcome

People



Skillsets

Process



Runbooks and Configuration

Technology



AWS Service Baseline and Best Practices

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Network connectivity – Scenarios

WHAT PROBLEM IS THIS CAPABILITY SOLVING FOR YOUR ENVIRONMENT?

CF11 – S1: Connectivity within the cloud

CF11 – S2: IP address and multiple network management

CF11 – S3: Centralized or distributed network configuration and management

CF11 – S4: Hybrid connectivity

CF11 – S5: Network monitoring and logging

CF11 – S6: DNS management

CF11 – S7: SaaS provider connectivity





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Network connectivity – General guidance

WHAT NEEDS TO BE IN PLACE IN YOUR ENVIRONMENT AND WHY?

- Network designing and planning
  - CIDRs
  - IP utilization
- Network configuration and management
- Establish logging and monitoring setup
- Hybrid environment setup
  - VPN
  - BGP
- Connectivity within the cloud



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Network connectivity – AWS implementation guidance

HOW DO YOU IMPLEMENT THE GENERAL GUIDANCE ON AWS?

AWS-specific

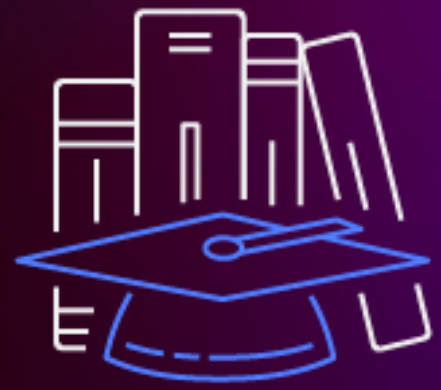
- Network account
- Access to the network account for networking administrators
- Cloud WAN for centralized management – AWS Transit gateway for advanced complex routing scenarios
- AWS Resource Access Manager to share attachments across the organization
- IPAM service to ensure not overlapping of IP addresses
- Specific runbooks including step-by-step guidance to operate repeatable tasks

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Network connectivity – Customer resources

WHAT DO YOU NEED TO KNOW TO BUILD THIS ON AWS?

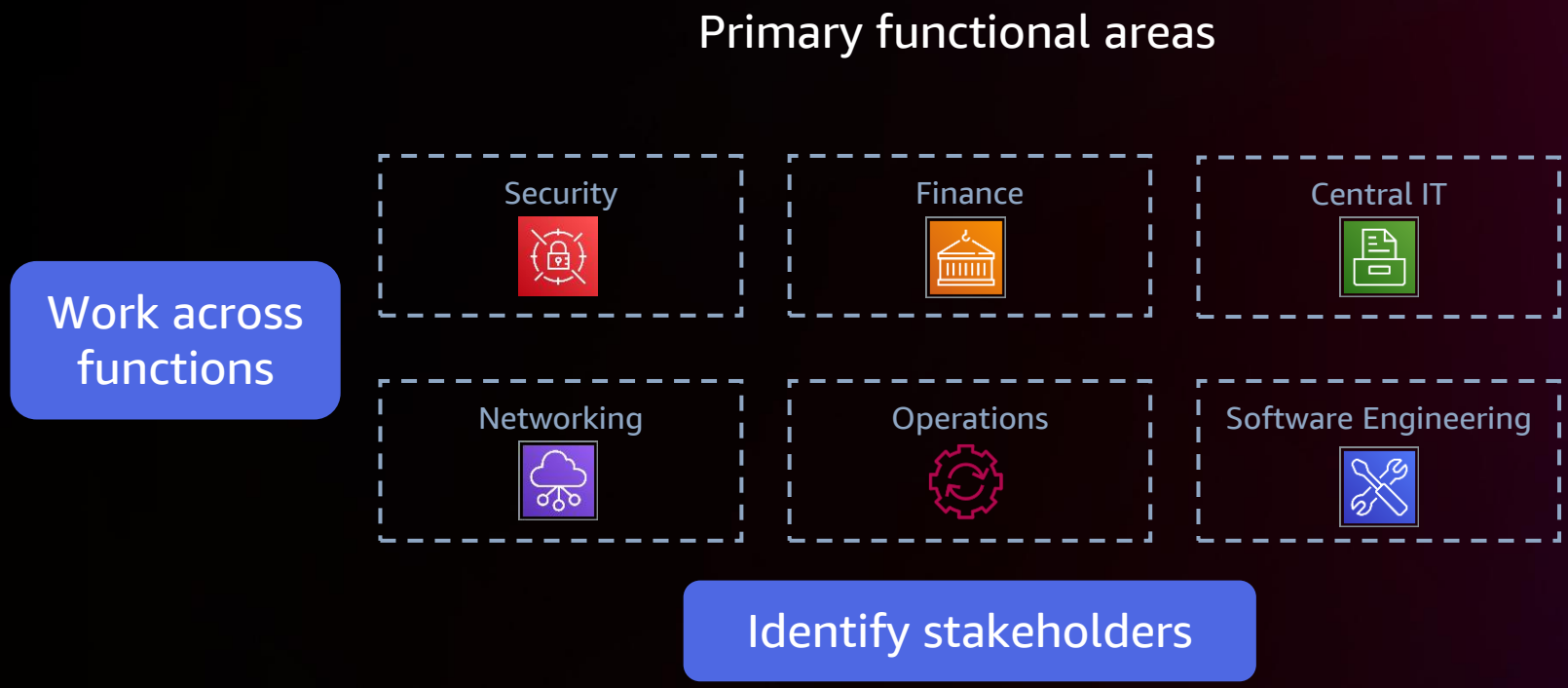


AWS-specific

- AWS Training resources
- White-papers, Reference Architecture recommendations
- AWS Documentation
- Staffing & Skills recommended to operate the capability

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Identify your stakeholders



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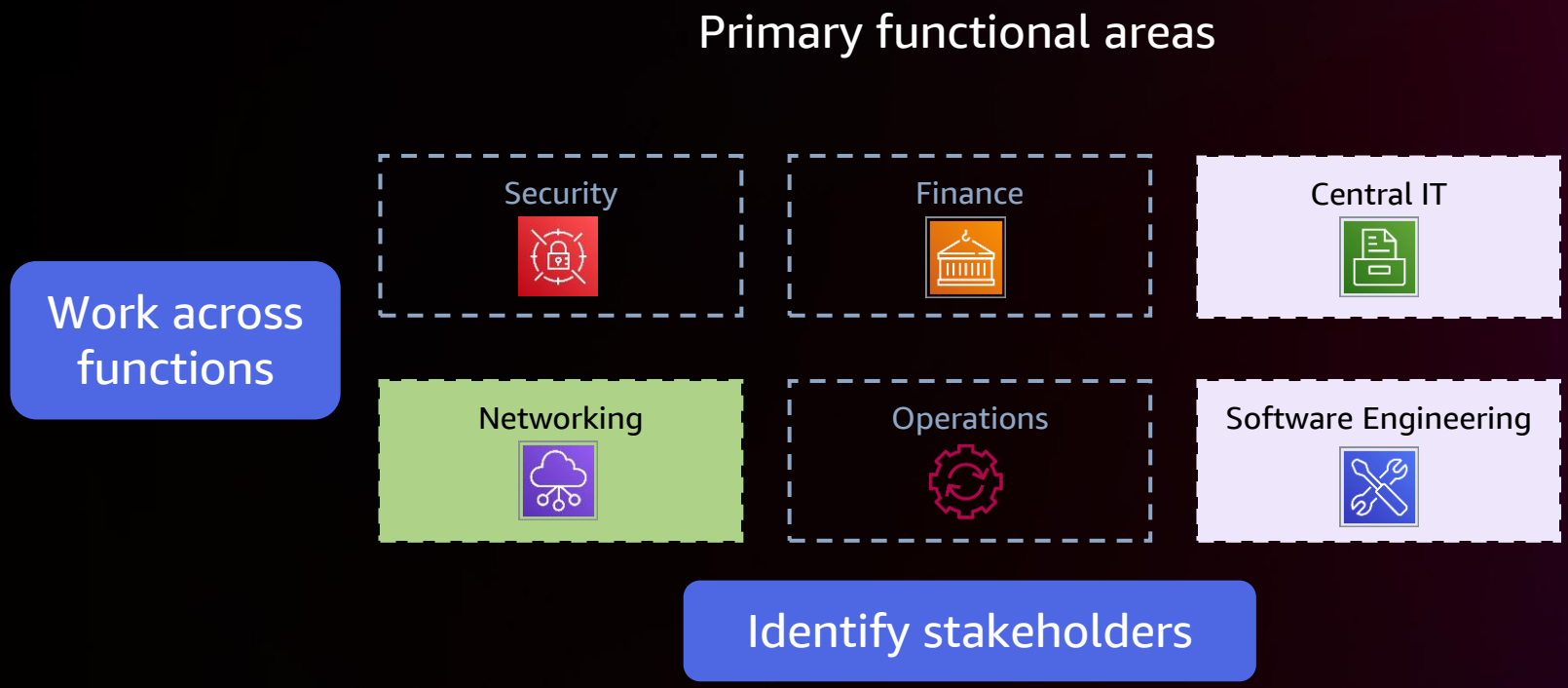
Capabilities by primary functional area

Security	Finance	Central IT	Networking	Operations	Software Engineering
Patching		Records Management		Change Management	
Secrets Management		Audit & Assessment			
Forensics	Cloud Financial Management	Logging & Monitoring		Disaster Recovery	Developer Experience & Tools
Security Incident response	Resource Inventory Management	Template Management		Backups	
Vulnerability & Threat Management		Data De-Identification			
Data Isolation		Governance	Network Security	Rollout/Rollback	Application Security
Encryption & Key Management		Sort/Search for Metadata		Support	
Workload Isolation Boundary					
Log Storage		Tagging	Network Connectivity		
Identity Management & Access Control		Service Onboarding			

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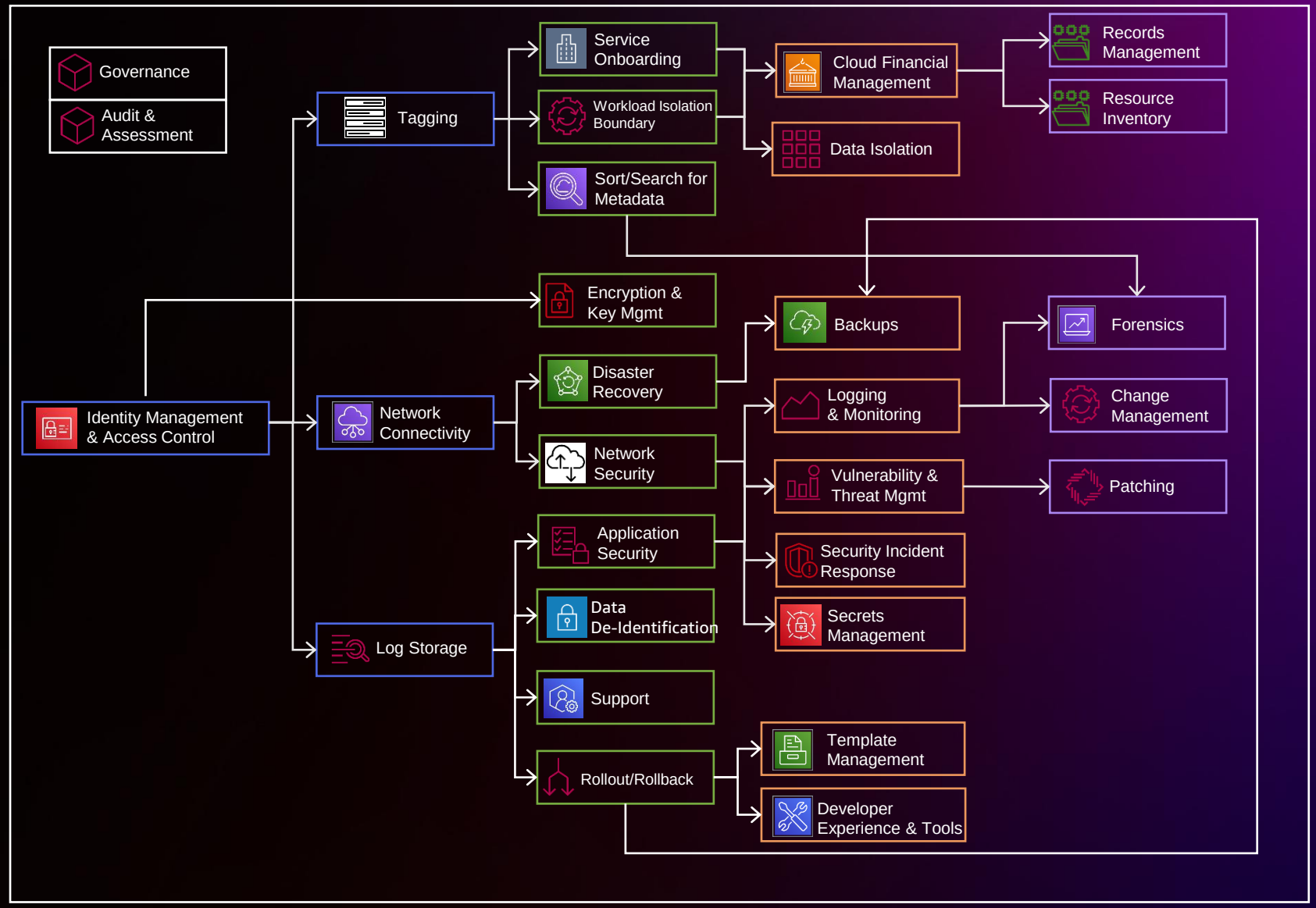
Networking functional areas



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Capability path

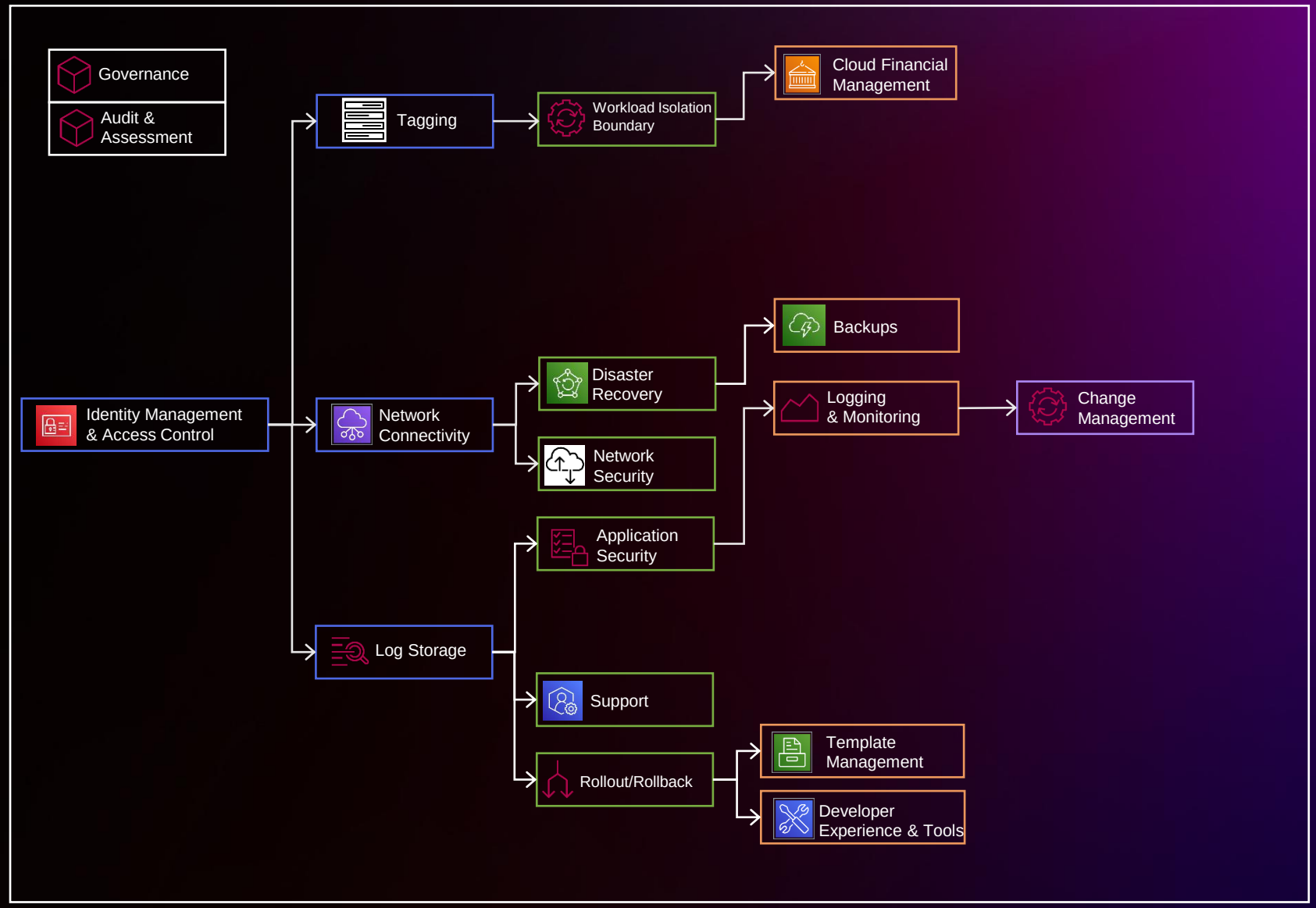
Complete environment



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Capability path

Getting started
Use case



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Using Cloud Foundations for your cloud journey



Establish your goals



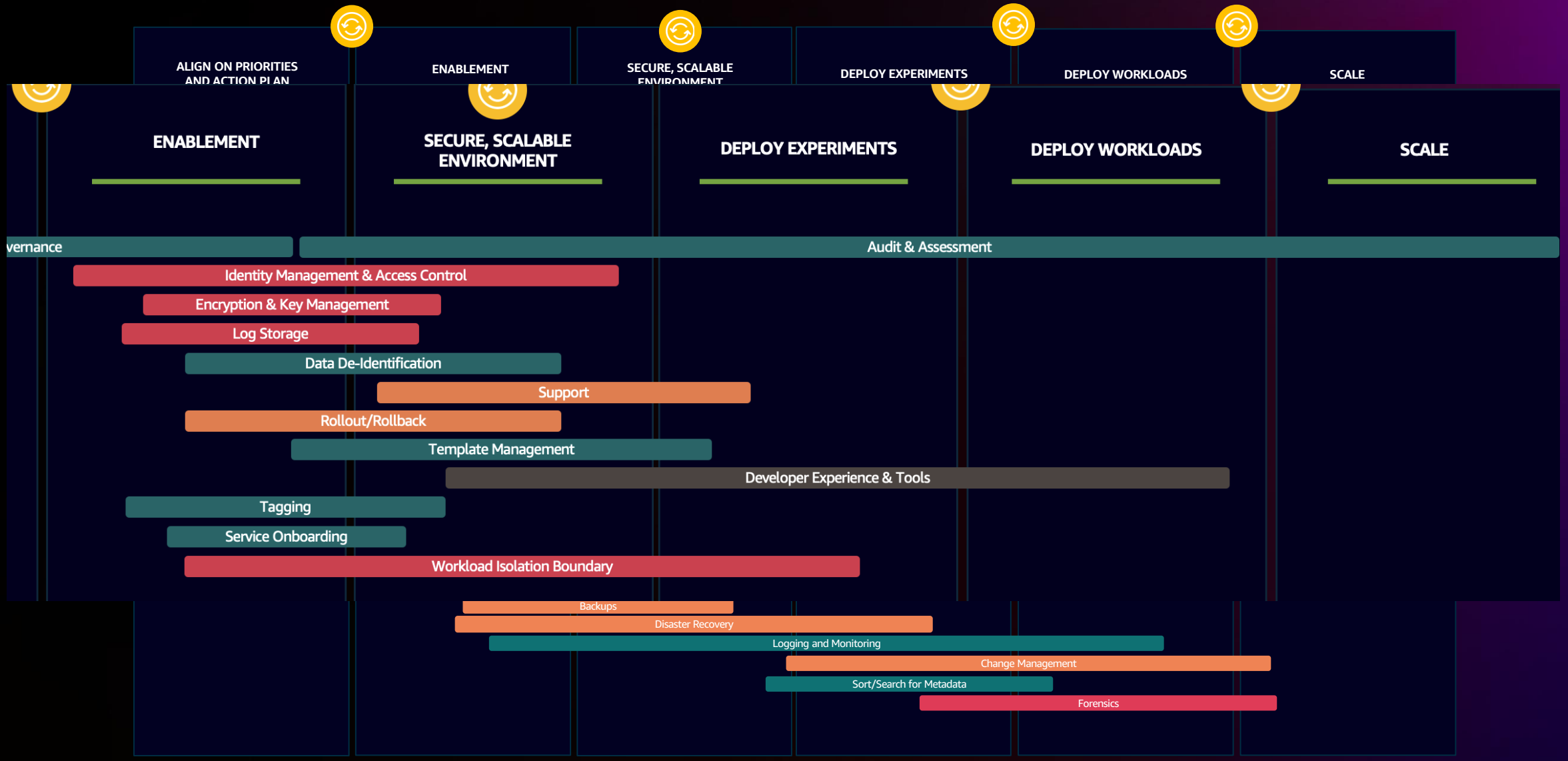
Plan the journey



Track your progress

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Cloud Foundations timeline



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Cloud Foundations tracker

CAP ID	Scenari	Capability	Scenario	Functional Area	Completed	Notes	Owner
CF11		Network Connectivity		Network	No		
CF11	CF11-S1	Network Connectivity	Connectivity within Cloud	Network	No		
CF11	CF11-S2	Network Connectivity	IP address and multiple network management	Network	No		
CF11	CF11-S3	Network Connectivity	Centralized or Distributed Network configuration and management	Network	No		
CF11	CF11-S4	Network Connectivity	Hybrid Connectivity	Network	No		
CF11	CF11-S5	Network Connectivity	Network Monitoring and Logging	Network	No		
CF11	CF11-S6	Network Connectivity	DNS Management	Network	No		
CF11	CF11-S7	Network Connectivity	SaaS Provider Connectivity	Network	No		
CF12		Support		Operations, Central IT, Security	No		
CF12	CF12-S1	Support	Establishing support model(s) for your organization	Operations, Central IT, Security	No		
CF12	CF12-S2	Support	Monitoring the state of components across your organization	Operations, Central IT, Security	No		
CF12	CF12-S3	Support	Establishing operational readiness	Operations, Central IT, Security	No		
CF12	CF12-S4	Support	Monitoring the health of your organization	Operations, Central IT, Security	No		
CF12	CF12-S5	Support	Managing operational events	Operations, Central IT, Security	No		
CF12	CF12-S6	Support	Continuously evolving operations	Operations, Central IT, Security	No		
CF13		Rollout/Rollback		Operations, Central IT	No		
CF13	CF13-S1	Rollout Rollback	Establish and maintain infrastructure design principles	Operations, Central IT	No		
CF13	CF13-S2	Rollout Rollback	Establish and maintain deployment strategies	Operations, Central IT	No		
CF13	CF13-S3	Rollout Rollback	Establish and maintain monitoring of deployments	Operations, Central IT	No		
CF14		Template Management		Central IT, Software Engineering, Security, Operations	No		
CF14	CF14-S1	Template Management	Establishing single central repository platform	Central IT, Software Engineering, Security, Operations	No		
CF14	CF14-S2	Template Management	Defining access mechanisms for central repositories	Central IT, Software Engineering, Security, Operations	No		
CF14	CF14-S3	Template Management	Developing processes and routines for template lifecycle management	Central IT, Software Engineering, Security, Operations	No		
CF14	CF14-S4	Template Management	Implementing self-service service request management	Central IT, Software Engineering, Security, Operations	No		
CF15		Logging and Monitoring		Operations, Security	No		
CF15	CF15-S1	Logging & Monitoring	Anomaly Detection	Operations, Security	No		
CF15	CF15-S2	Logging & Monitoring	Operational logs	Operations, Security	No		
CF15	CF15-S3	Logging & Monitoring	Log lifecycle and maintenance	Operations, Security	No		
CF15	CF15-S4	Logging & Monitoring	Application Health Monitoring	Operations, Security	No		
CF15	CF15-S5	Logging & Monitoring	Dashboards	Operations, Security	No		
CF16		Cloud Financial Management		Finance, Central IT, Software Engineering	No		
CF16	CF16-S1	Cloud Financial Management	Allocating cost for your cloud environment	Finance, Central IT, Software Engineering	No		
CF16	CF16-S2	Cloud Financial Management	Planning and Forecasting your spend across your environment	Finance, Central IT, Software Engineering	No		
CF16	CF16-S3	Cloud Financial Management	Monitoring cost and usage in your environment.	Finance, Central IT, Software Engineering	No		
CF16	CF16-S4	Cloud Financial Management	Measuring efficiency and optimizing cost	Finance, Central IT, Software Engineering	No		
CF16	CF16-S5	Cloud Financial Management	Establishing your cloud financial operations function	Finance, Central IT, Software Engineering	No		

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EBSCO

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EBSCO Information Services





Colleges & Universities	Hospitals & Medical Schools
Corporations	Government Institutions
School Libraries	Public Libraries

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EBSCO Information Services





- Global leader in Library Services Industry
- Ranked 4th in Forbes list of “Great place to work for women”
- Over $2B Annual Revenues
- Active in OpenSource Community (FOLIO)
- EBSCO FOLIO Selected as new ILS for Library of Congress

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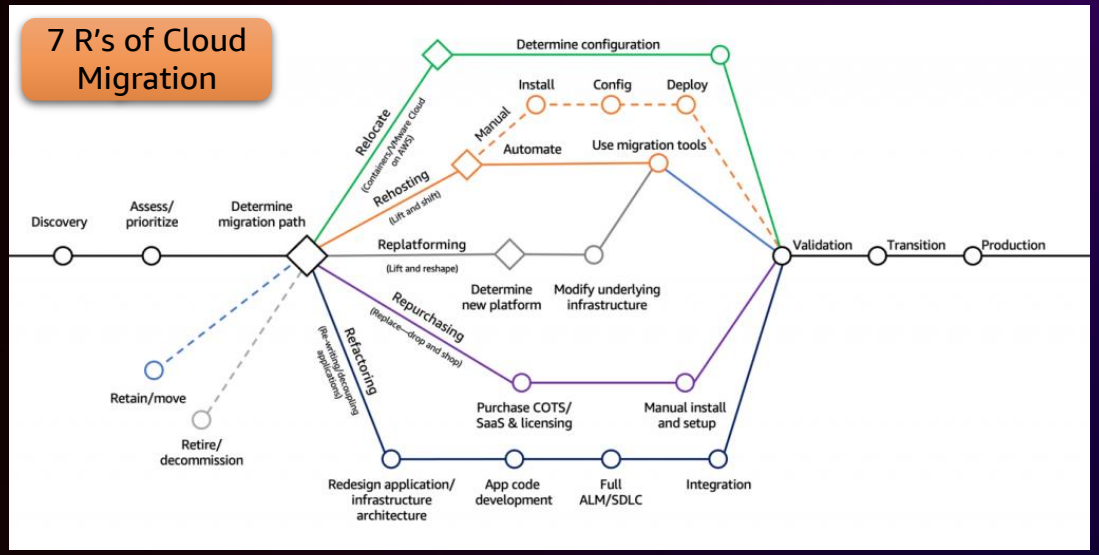
EBSCO: The Technology Company





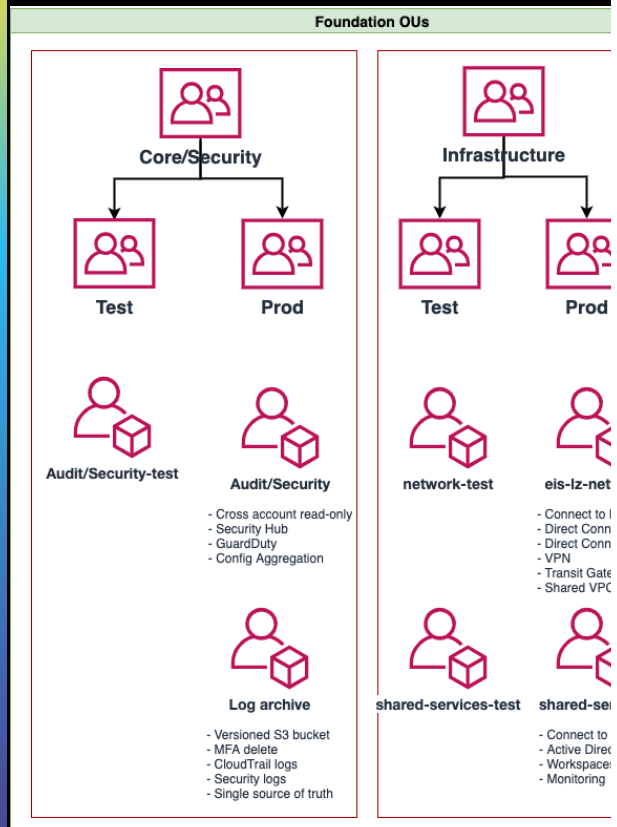


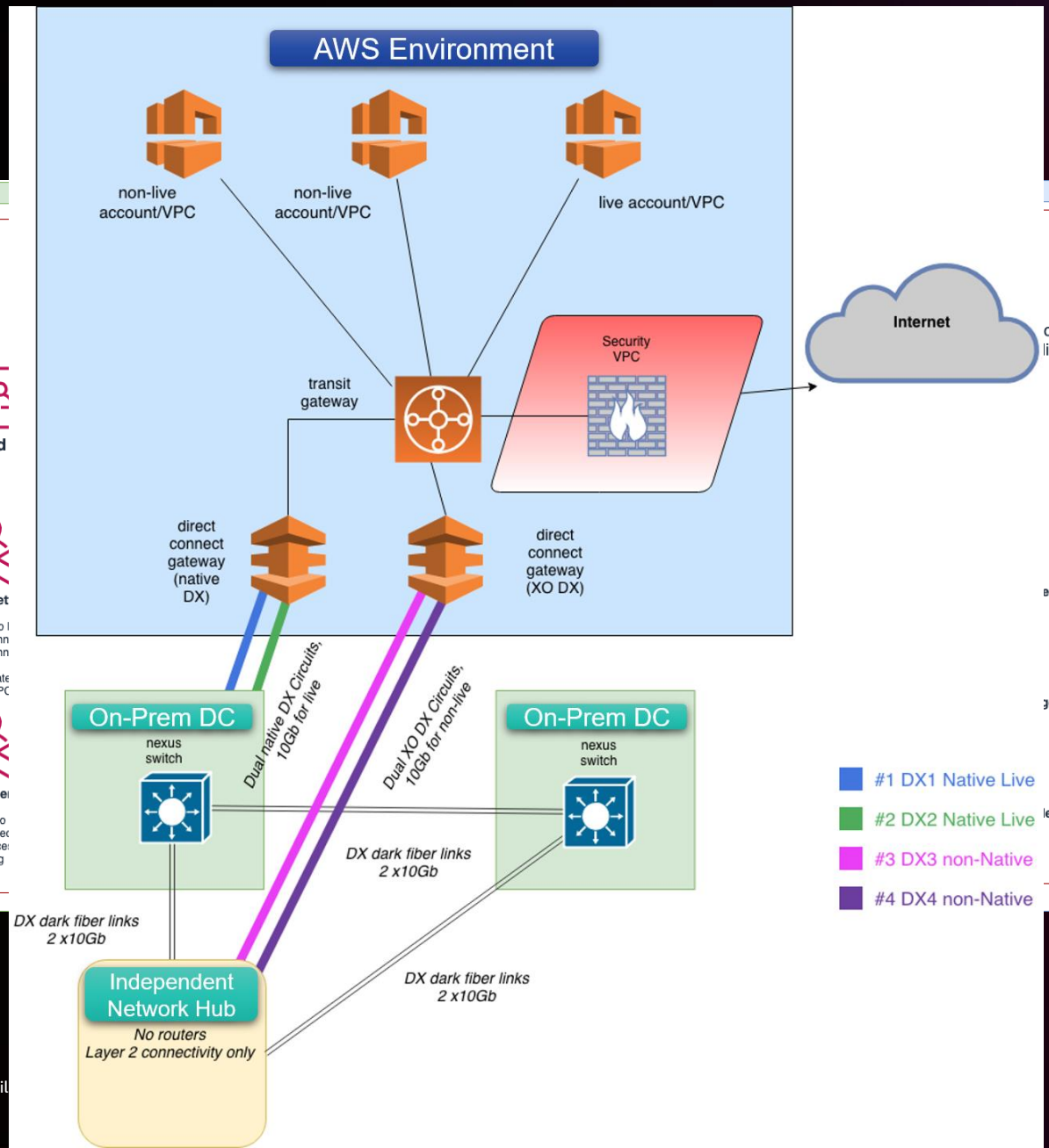


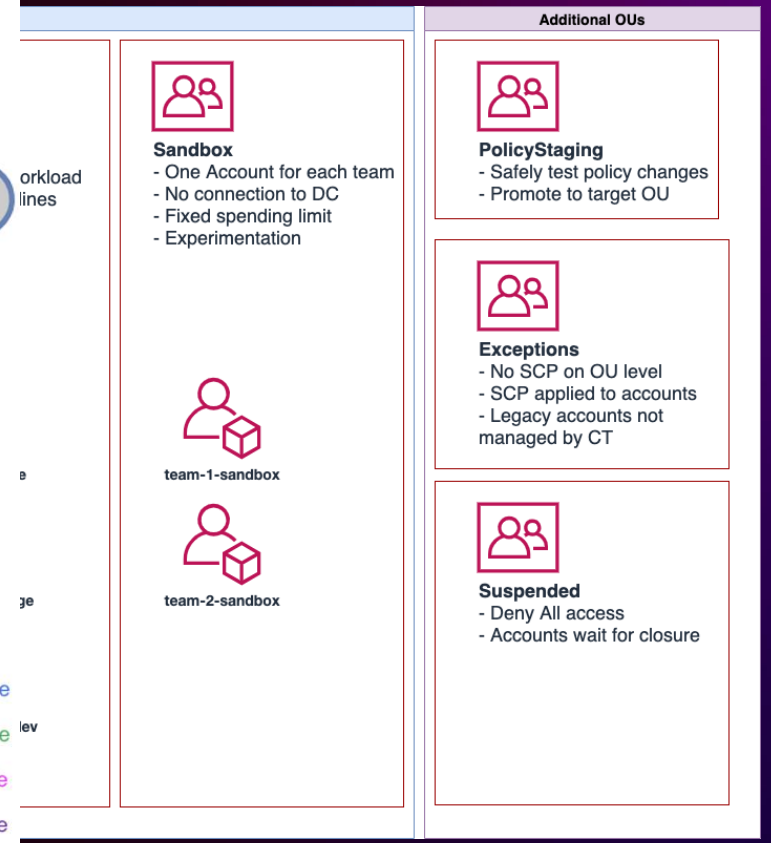


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EBSCO in AWS







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EIS Cloud Adoption Journey









2017

Small Internal Win

2018-2020

ProServe Mobilize

2021

Migrate Core Business

2022

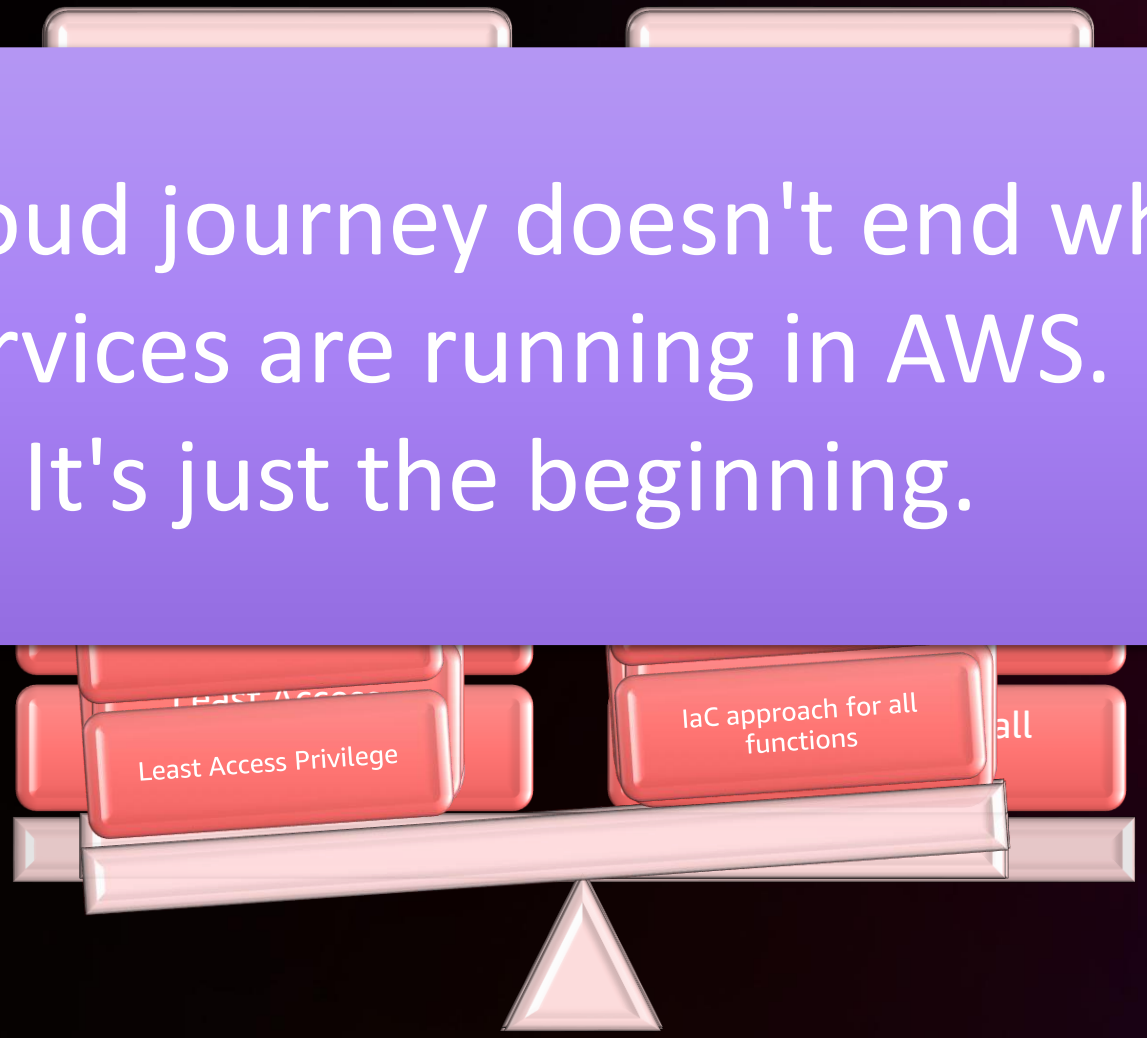
Optimize/ Modernization

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Why Cloud Foundations?

The cloud journey doesn't end when services are running in AWS.
It's just the beginning.



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How we are using the framework

Governance, risk management, and compliance

- Log Storage
- Data De-identification
- Tagging
- Service Onboarding
- Change Management
- Forensics
- Audit & Assessment
- Governance

Operations

- Developer Experience & Tools
- Logging & Monitoring
- Patching
- Rollout/Rollback
- Sort/Search for Metadata

Security

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Business continuity

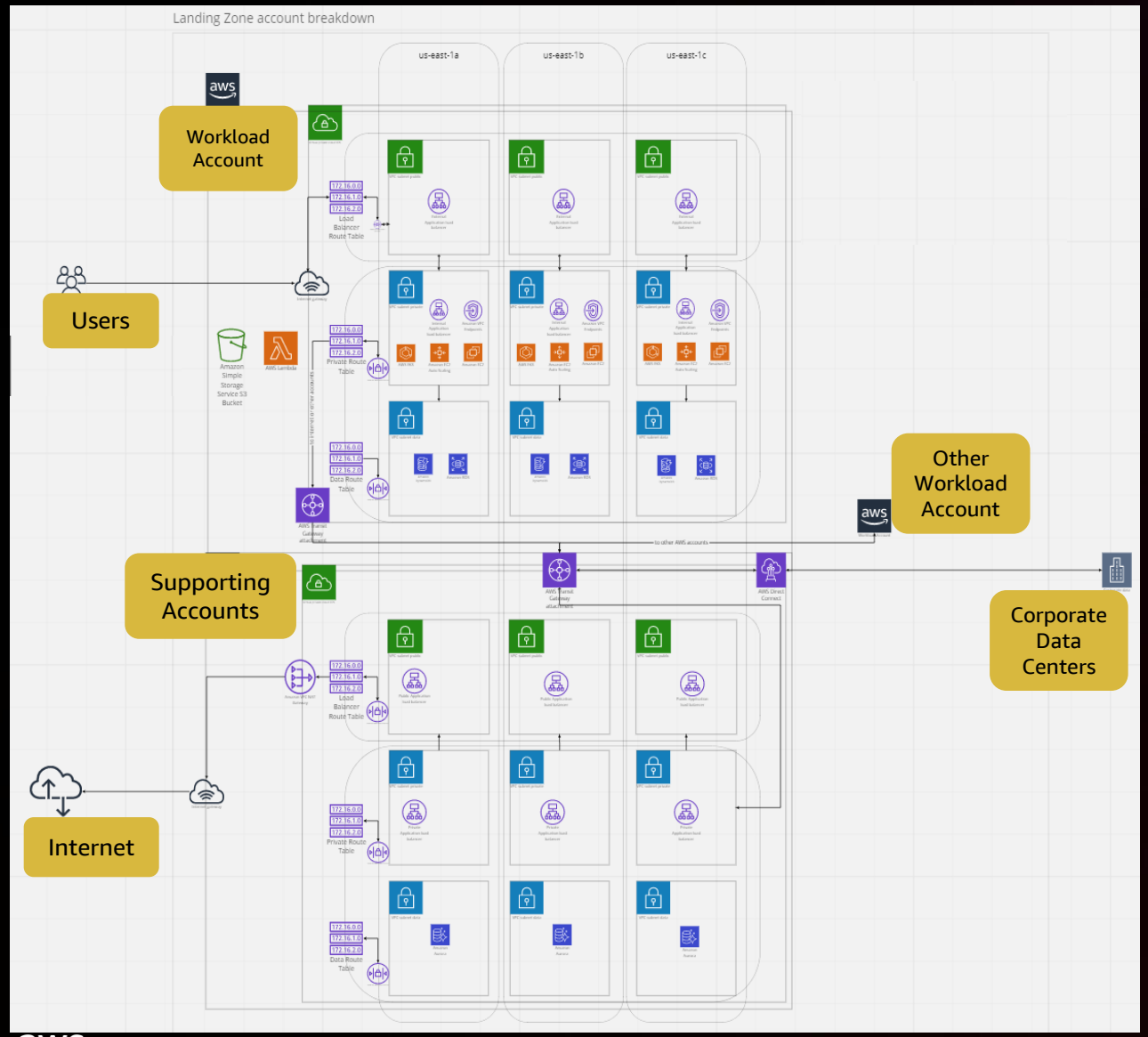
- Disaster Recovery
- Backup
- Support

Finance

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- Records Management
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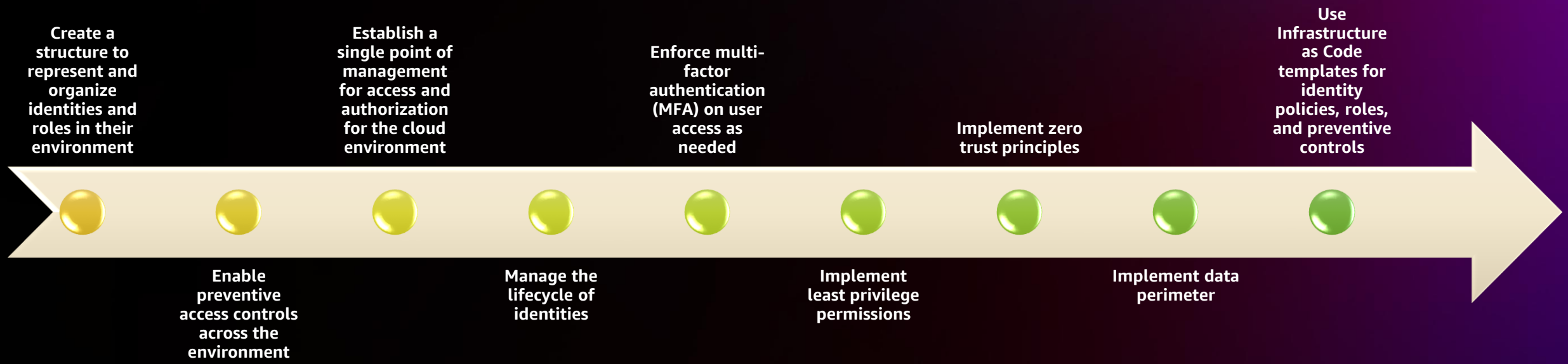
Our multi-account strategy



- Isolate Workloads
- De-centralize Decision Making
- Centralize Policy Control

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Security – IAM posture



Well documented Roles & Responsibilities → Segregated Environments for Teams & Applications → Federation in play using Identity Center → Use of AD Groups to manage permissions → SSO SAML authentication with MFA → All accounts vended thru Landing Zone following Least Access Privilege. → All actions and operations only supported thru IaC.

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Operations, Governance, Business Continuity, and Finance

Operations

- Automation First Approach
- GITOPs Pattern
- Developer Experience and Tools
- Improved Observability

Governance

- Tagging Strategy
- Architectural Decision Record

Business Continuity

- High Availability
- Capacity Planning/Failover Drills
- Chaos Engineering

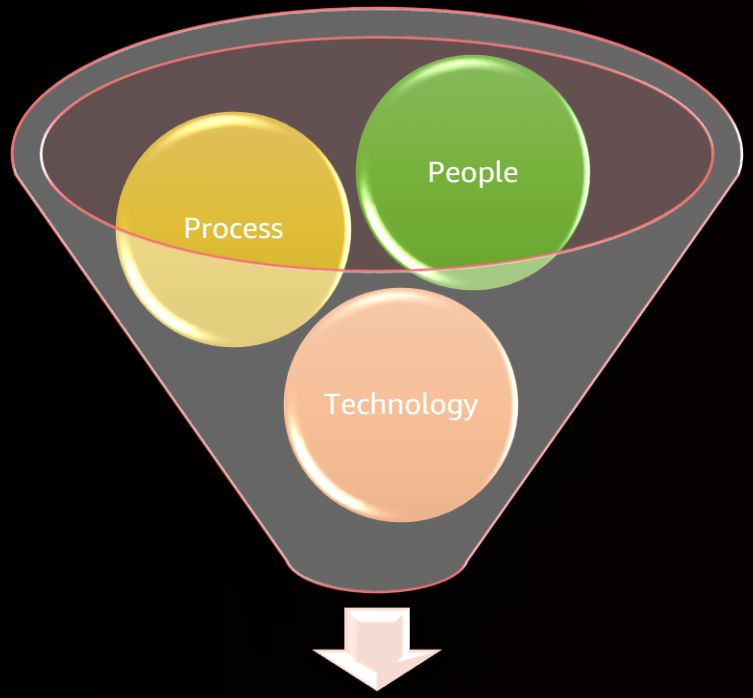
Finance

- Cloud Financial Management
- Real-time visibility
- Fit-for-purpose Spending Plans

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Summarizing



Balanced growth

People

Boosted Developer Velocity and Agility, along with intrinsic passion for Engineers

Process

Matured Cloud Governance model thru establishing Cloud Center of Excellence

Technology

Enabled focusing on Differentiated work by leveraging self-service Cloud Native Solutions

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Summarizing

EBSCO continues its journey to

- Keep looking at adopting more cloud native managed solutions
- Improving governance thru Thinnest Viable Platform
- Delivering business value incrementally by carefully prioritizing work and managing Risks.
- Partnering with AWS and the **Cloud Foundations Team** to pursue higher degree of maturity across all disciplines.

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Back to Team Cloud Foundations!

Key takeaways

01

Cloud enables the enterprise

Cloud efficiency and agility enable IT and operating models to drive business outcomes

02

How you establish your cloud environment matters

Decisions impact the business outcomes you can support and how easy it is to expand for future needs

03

Cloud Foundations can help

A guided path to help you quickly establish an enterprise-class AWS Cloud environment

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Recommended next steps



Review Cloud Foundations Framework

Framework

Whitepaper

Plan your journey using the capabilities and scenarios

Define your approach to establishing your AWS environment, with options to engage AWS Partners, AWS Professional Services, and AWS Managed Services (AMS)

Review available AWS Solutions

https://aws.amazon.com/solutions/cloud-foundations/

Reach out for additional information

Engage AWS Partners, AWS Professional Services, and AWS Managed Services (AMS), or contact us, https://aws.amazon.com/contact-us/

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Cloud Foundations and multi-account strategy sessions

#CLOUD-FOUNDATIONS-TRACK

Architecture



[ARC205 – Breakout]
Establishing your cloud foundation on AWS – beyond your landing zone

[ARC321 – Chalk Talk]
Using a multi-account strategy to enable hyperscale

[ARC318 – Chalk Talk]
Best practices for disaster recovery of workloads on AWS

[COP305 – Breakout]
Best practices for organizing and operating on AWS

Implementation



[COP325 – Chalk Talk]
Best practices for automating AWS account migration

[ARC319 – Chalk Talk]
Designing a multi-account environment for disaster recovery

[DOP322 – Chalk Talk]
Optimizing runtime performance with AWS X-Ray and Amazon CodeGuru Profiler

[DOP402 – Chalk Talk]
Implementnig DevSecOps pipelines with compliance in mind

Discussion



[COP324 – Chalk Talk]
Extend your multi-account governance with automation

[ARC317 – Chalk Talk]
Architecting security and governance across your multi-account environment

[COP323 – Chalk Talk]
Delegating access in a multi-account environment with IAM Identity Center

Hands-on



[COP206 – Workshop]
Build a complete DevSecOps pipeline on AWS

[ARC301 – Workshop]
Building a monitoring strategy

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Thank you!

Alex Torres

Dipankar Biswas

Sam Elmalak



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