AWS re:Invent

Operating and managing hybrid cloud on AWS

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Enterprise Technologist
Amazon Web Services

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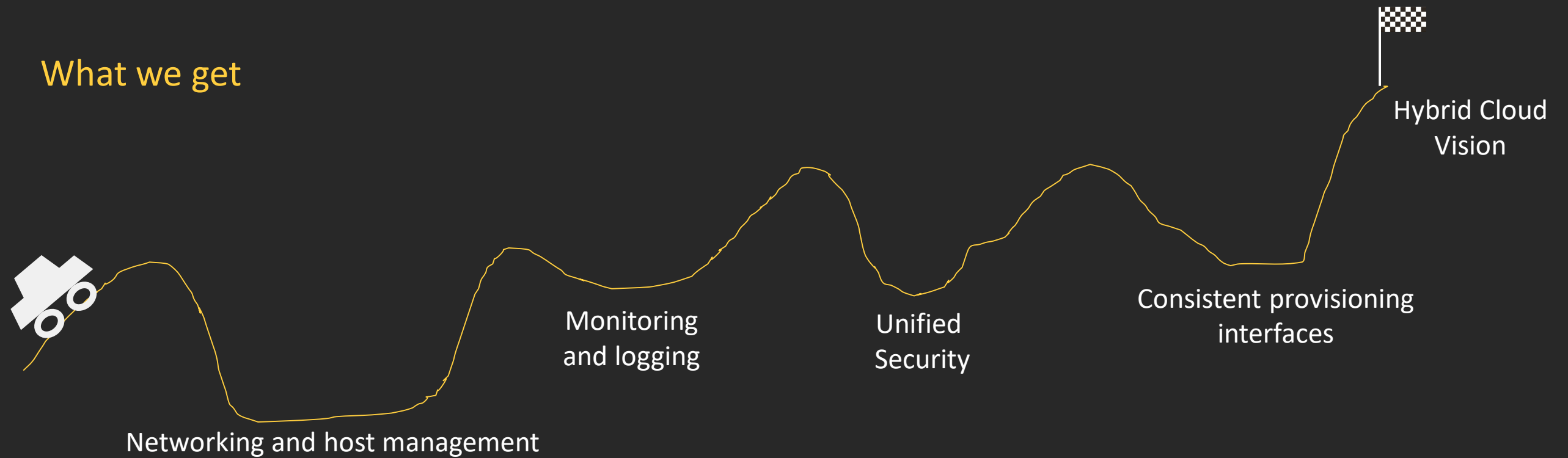Sr. Solutions Architect
Amazon Web Services

AWS re:Invent

aws

Journey to the hybrid cloud...

What we expect

Hybrid Cloud Vision

What we get

Hybrid Cloud Vision

Networking and host management

Monitoring and logging

Unified Security

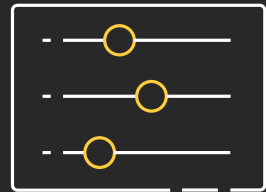Consistent provisioning interfaces

Building a hybrid cloud is hard!

Hybrid architecture goals

Operational consistency

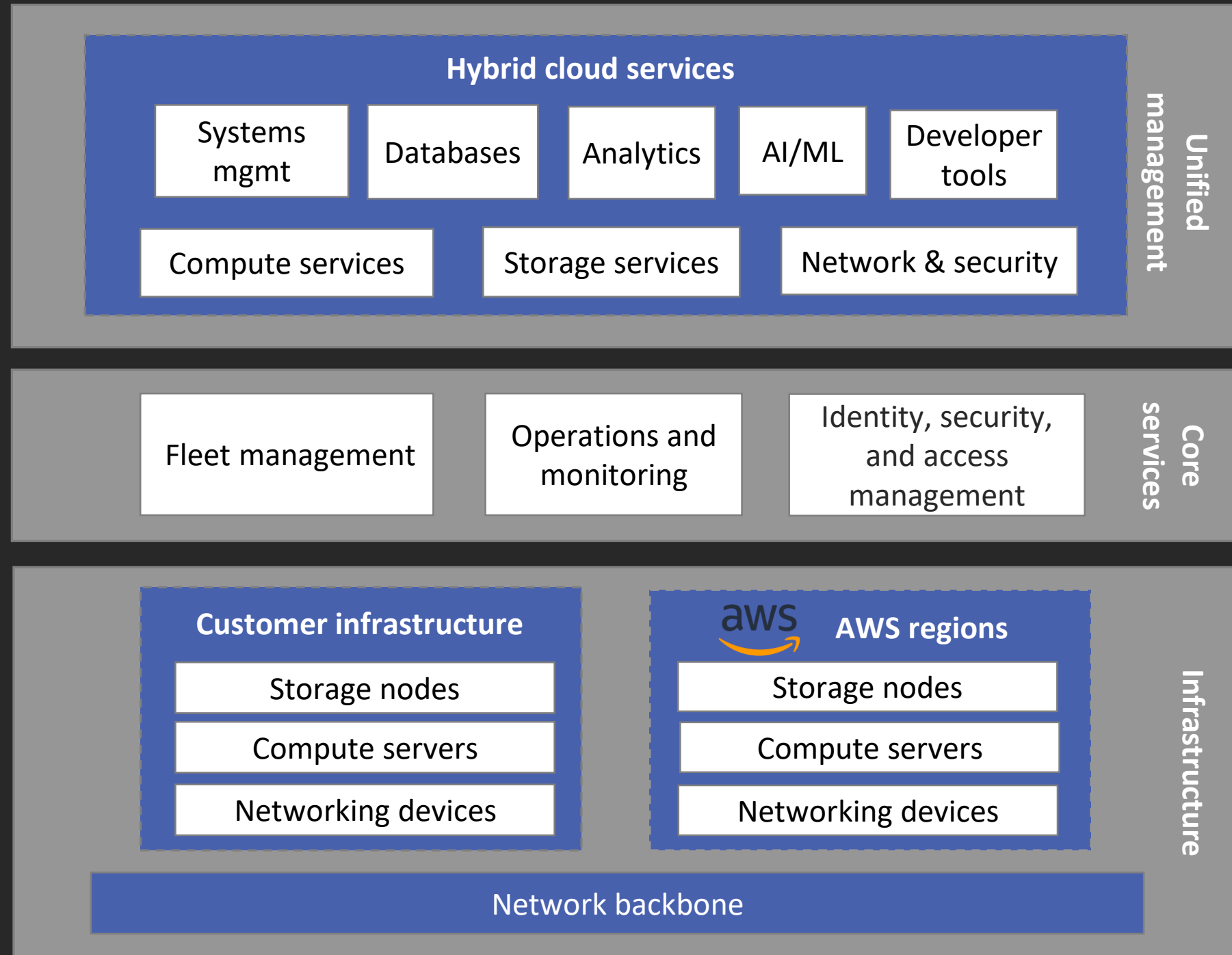**Simple to control, manage, secure**

Build once, deploy anywhere

Enterprise-class app SLA

Existing skill sets and tools

Operations and management framework

Unified management

Hybrid cloud services

| Systems mgmt | Databases | Analytics | AI/ML | Developer tools |

| Compute services | Storage services | Network & security |

Core services

| Fleet management | Operations and monitoring | Identity, security, and access management |

Infrastructure

Customer infrastructure

- Storage nodes
- Compute servers
- Networking devices

aws AWS regions

- Storage nodes
- Compute servers
- Networking devices

Network backbone
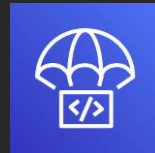
Fleet management

- **Host management** for on-premises compute servers, networking, and storage devices
  - **Inventory management, software installation and updates, metrics collection**
- **Management interfaces for provisioning and monitoring** new instances, storage, and configurations
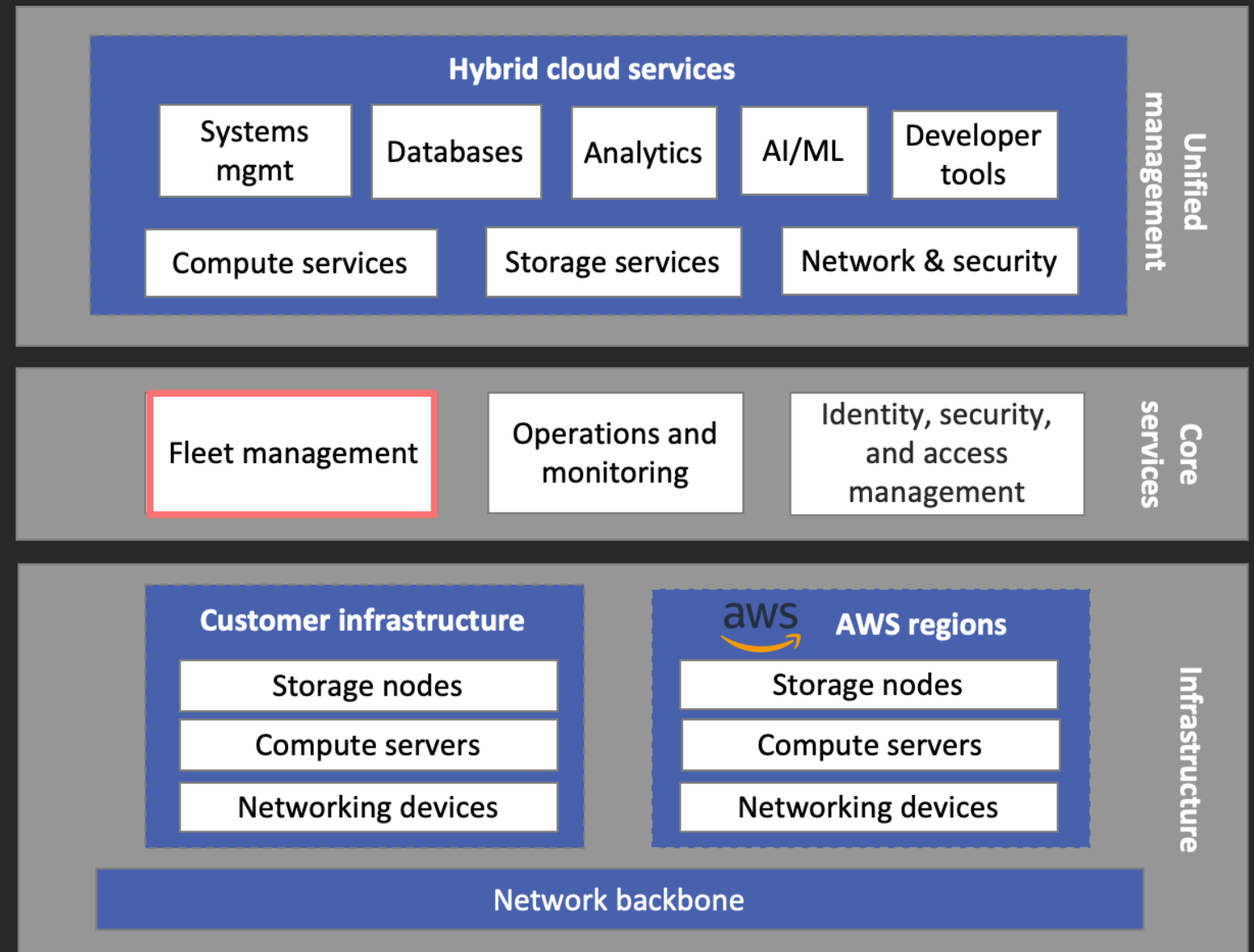
AWS Systems Manager

AWS OpsWorks

AWS CodeDeploy

vmware®

KVM

Xen Project

openstack®

Unified management

Hybrid cloud services

Systems mgmt	Databases	Analytics	AI/ML	Developer tools

Compute services	Storage services	Network & security

Core services

Fleet management	Operations and monitoring	Identity, security, and access management

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aws AWS regions

Storage nodes

Compute servers

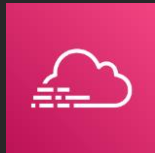Networking devices

Network backbone
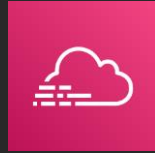
Operations and monitoring

- **Unified metrics, monitoring, alerting, logging, and auditing** for the full stack
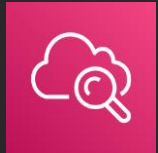
Amazon CloudWatch

AWS CloudTrail

AWS CloudTrail
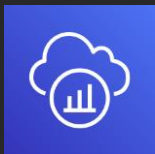
AWS X-Ray

Flow logs

Traffic Mirroring

Unified management

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Operations and monitoring: Partner solutions

Identity, security, and access management
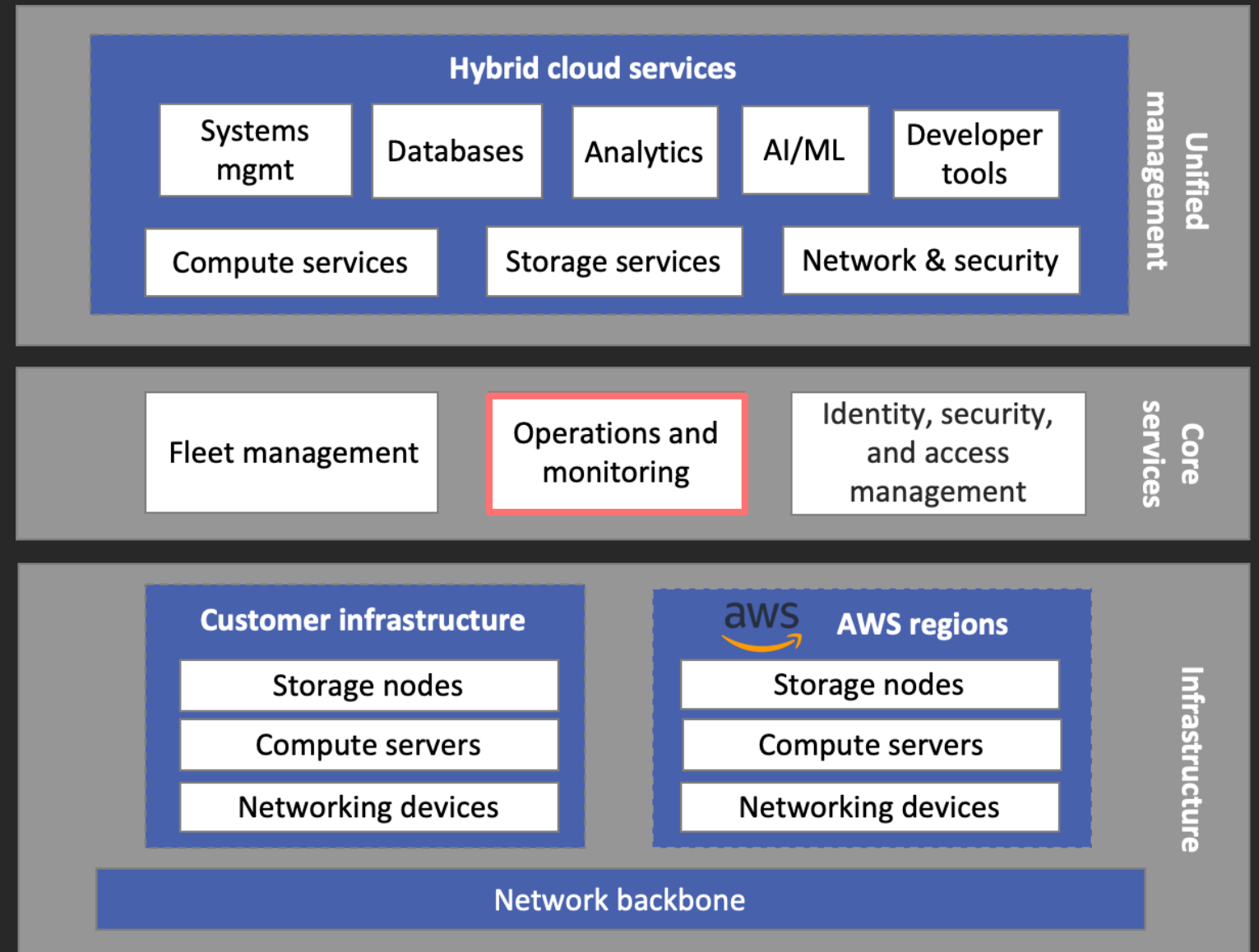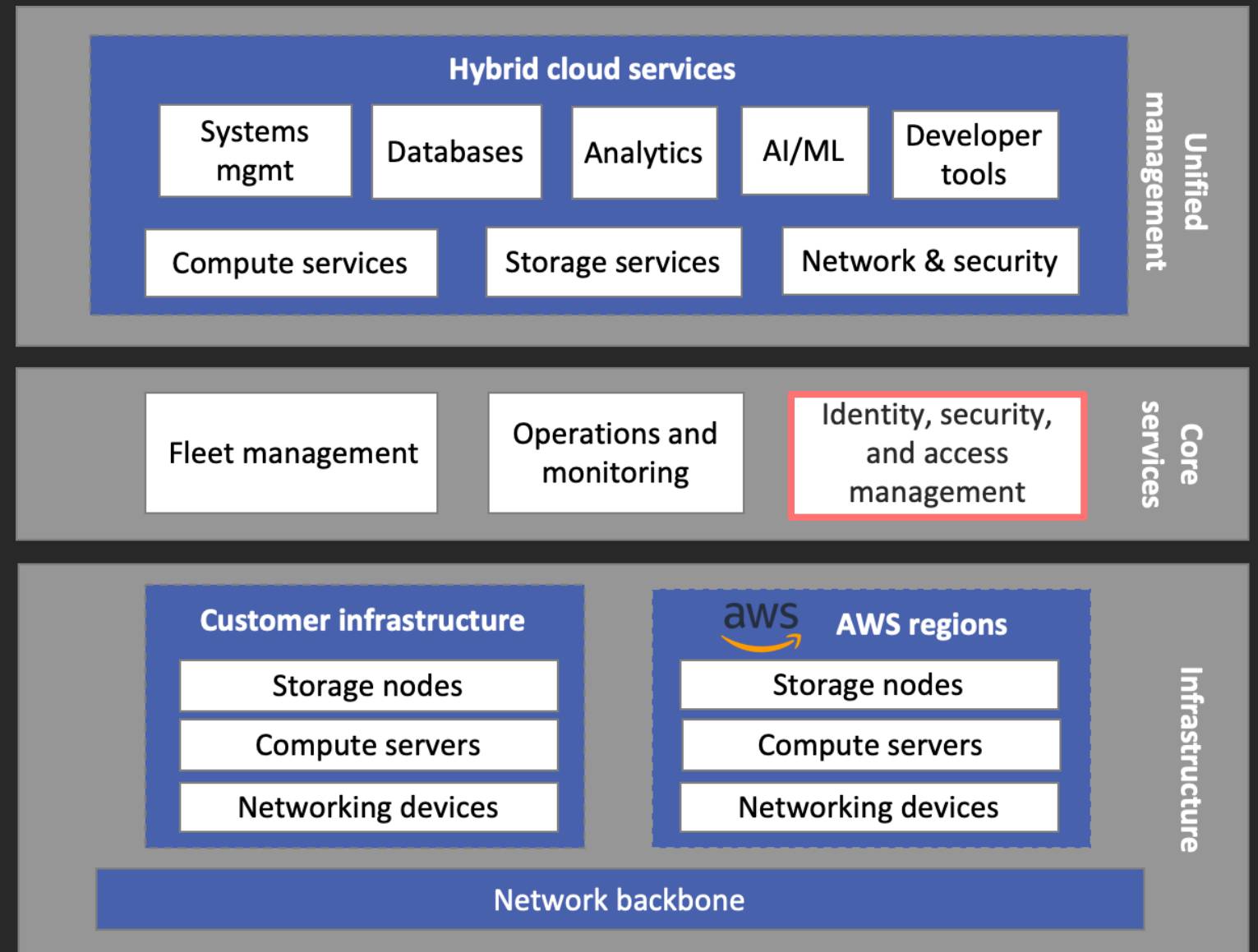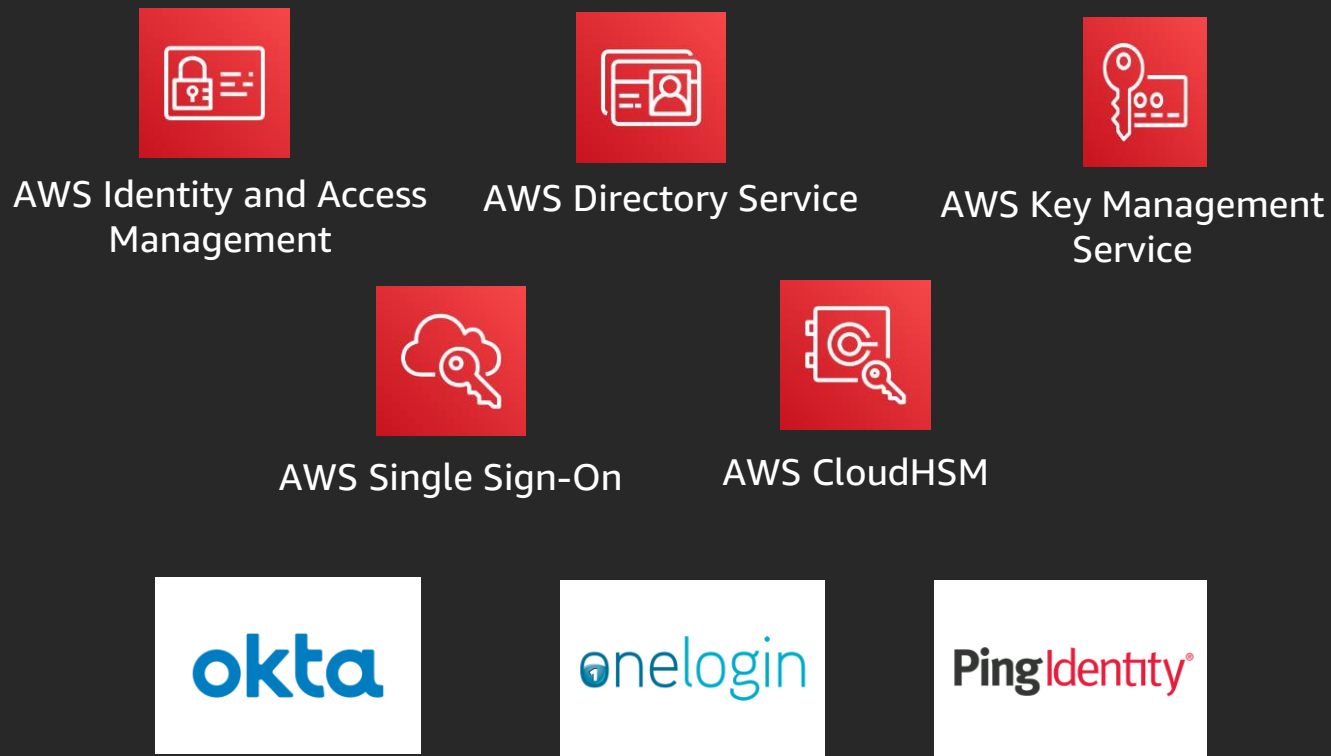
- **Unified identity, security and access** for all entities including services and users

- **Key management**

AWS Identity and Access Management

AWS Directory Service

AWS Key Management Service

AWS Single Sign-On

AWS CloudHSM

okta

onelogin

PingIdentity®

Hybrid cloud services

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Unified management

Fleet management | Operations and monitoring | Identity, security, and access management

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Infrastructure

Network backbone

Hybrid cloud services

- Provide unified **provisioning, monitoring, and operating** interfaces for hybrid cloud computing

- Multi-tenancy, inventory, object configurations

Compute service:

- Instance inventory, launch and runtime configurations, images

AWS Outposts

VMware Cloud on AWS

GreenPages
Technology Solutions
Physical. Virtual. Cloud.

EUCALYPTUS

User

Core services

Identity, security, and access management

Operations and monitoring

Instance compute service

Management interfaces/APIs

Fleet management interfaces/APIs

Amazon EC2 APIs

Hybrid cloud infrastructure

Customer infrastructure

Compute servers

aws **AWS regions**

Compute servers

Network (peering connections, VPN, Internet)

Developer tools

AWS OpsWorks   AWS CodeDeploy   AWS Step Functions

ATLASSIAN	WhiteSource	BlazeMeter
Spinnaker	salesforce heroku	nouvola
cloudbees	Apica	Solano Labs
DELPHIX	Travis CI	CODESHIP by CloudBees
XebiaLabs	GitLab	GitHub

Hybrid cloud services

Systems mgmt	Databases	Analytics	AI/ML	Developer tools

Compute services	Storage services	Network & security

Unified management

Fleet management	Operations and monitoring	Identity, security, and access management

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Case studies

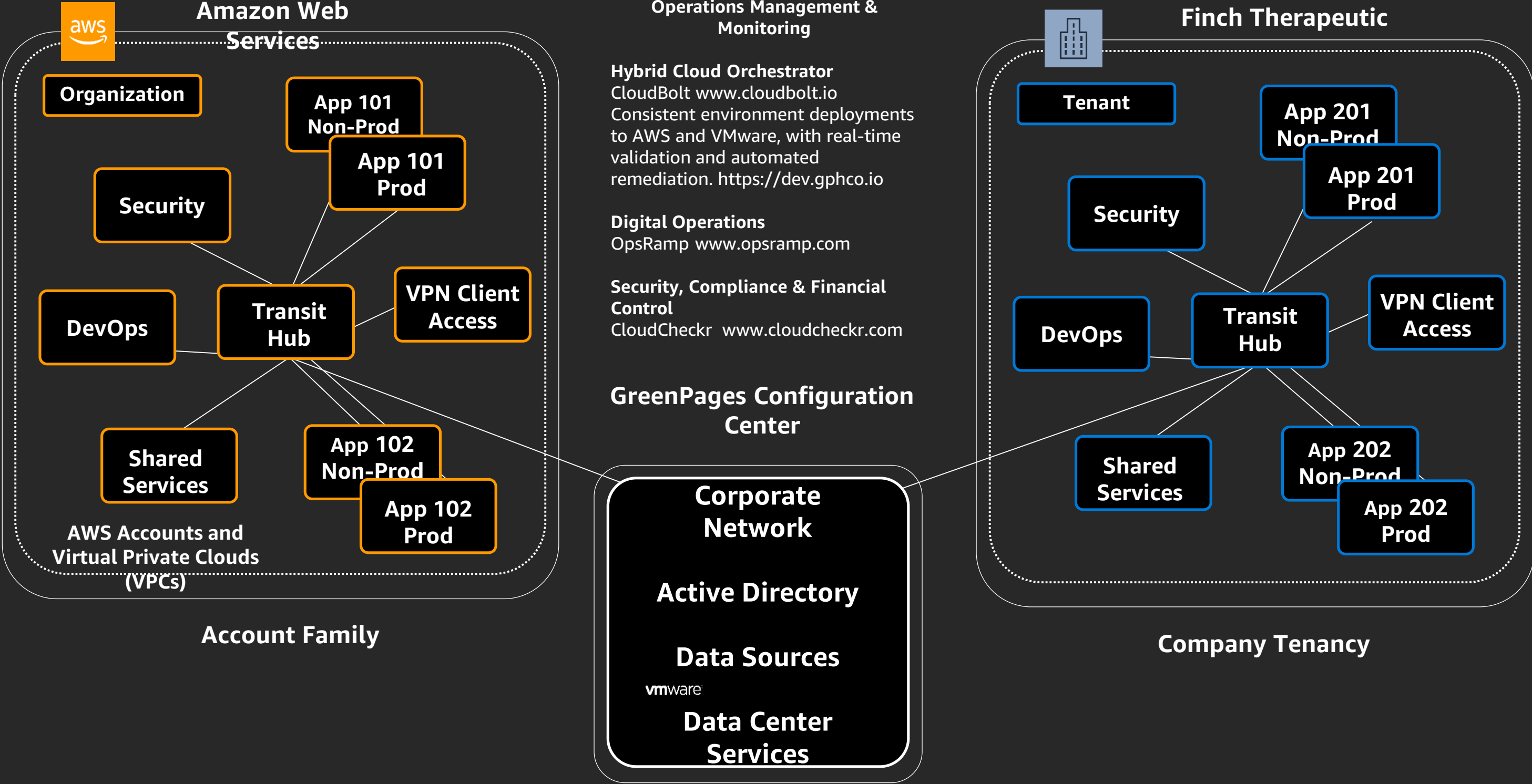# MassMutual: Governance, risk, and compliance

AWS tools

- AWS CloudTrail
- AWS Config
- AWS Trusted Advisor
- Amazon CloudWatch
- AWS Systems Manager
- AWS Lambda
- AWS KMS
- AWS Certificate Manager
- AWS CloudFormation

Other tools

- Splunk
- Ansible
- Cloud Custodian
- Securonix
- Carbon Black
- QAS
- Qualys
- Symantec
- Okta

GreenPages – **Cloud Xcelerator Platform**

Amazon Web Services

Organization

App 101 Non-Prod

App 101 Prod

Security

VPN Client Access

DevOps

Transit Hub

Shared Services

App 102 Non-Prod

App 102 Prod

AWS Accounts and Virtual Private Clouds (VPCs)

Account Family

Operations Management & Monitoring

Hybrid Cloud Orchestrator
CloudBolt www.cloudbolt.io
Consistent environment deployments to AWS and VMware, with real-time validation and automated remediation. https://dev.gphco.io

Digital Operations
OpsRamp www.opsramp.com

Security, Compliance & Financial Control
CloudCheckr www.cloudcheckr.com

GreenPages Configuration Center

Corporate Network

Active Directory

Data Sources

vmware

Data Center Services

Finch Therapeutic

Tenant

App 201 Non-Prod

App 201 Prod

Security

DevOps

Transit Hub

VPN Client Access

Shared Services

App 202 Non-Prod

App 202 Prod

Company Tenancy

AWS hybrid solutions

Same AWS infrastructure & services on premises

AWS Outposts

AWS-designed, AWS Nitro infrastructure for the *same* security and performance

Automatically managed and updated as part of AWS Regions

Single point of service and support

- Same infrastructure
- Same programming interface
- Same monitoring & operations
- Use existing skillset

Available in two options:

- **Native AWS**
- **VMware Cloud on AWS**

Frequently Asked Questions

- **Why** do customers need a Hybrid Cloud?

- Do you see hybrid cloud as an **temporary solution** while customers migrate to AWS?

- Do you have **customers** deploying Hybrid Cloud with AWS?

- What are AWS thoughts on **multi-cloud**?

  - Does the operations and management framework apply to multi-cloud?

Related sessions

CMP302-R AWS Outposts: Extend the AWS experience to on-premises environments

CMP337-R AWS Outposts: Build for low latency and local data processing

**ENT306-R** Getting hands on with VMware Cloud and native AWS service integrations

ENT212-S Transform your business with the VMware & AWS hybrid cloud

**ENT318-R** Building hybrid cloud architectures with VMware and AWS

CMP320 How Dropbox leverages hybrid cloud for scale and innovation

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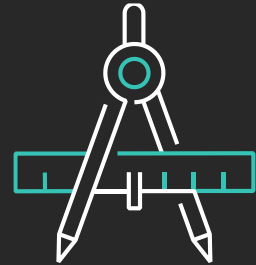
Free foundational to advanced digital courses cover AWS services and teach architecting best practices
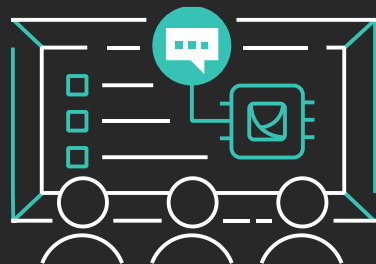
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aws training and certification

Thank you!

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