AWS Outposts

Extend the Value of Cloud Investments On Premises

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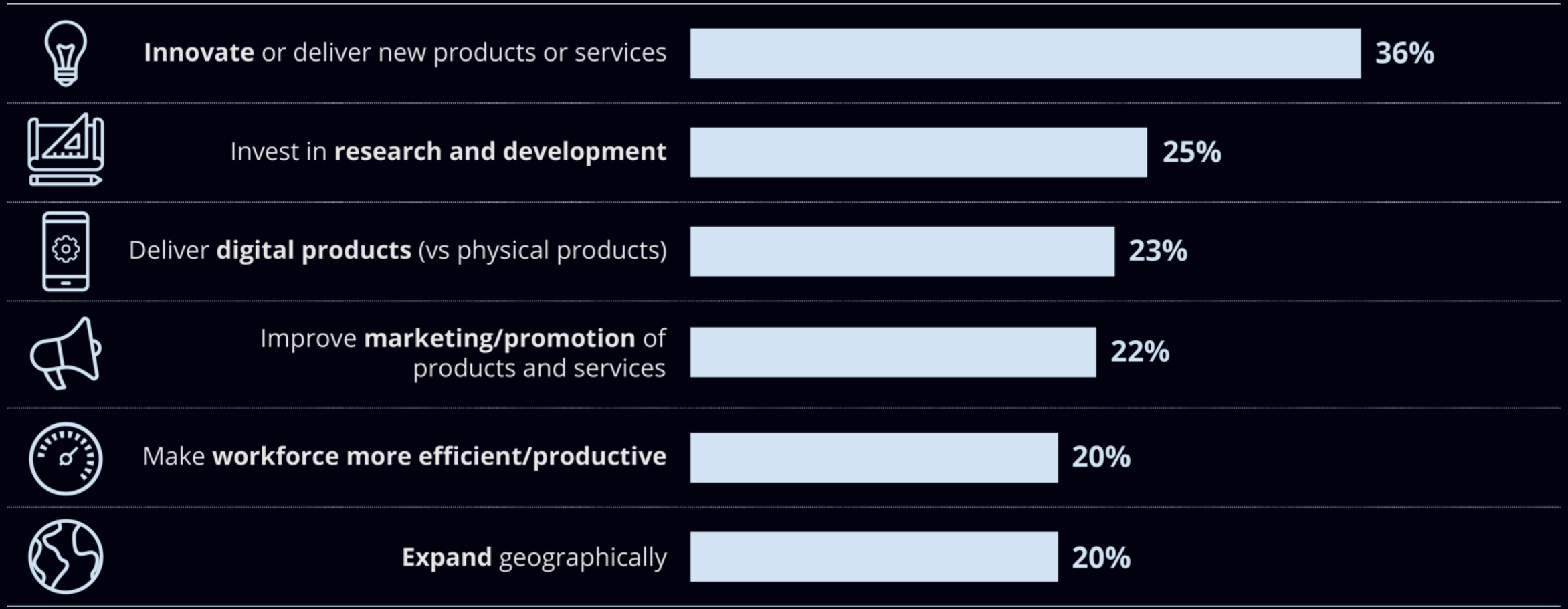
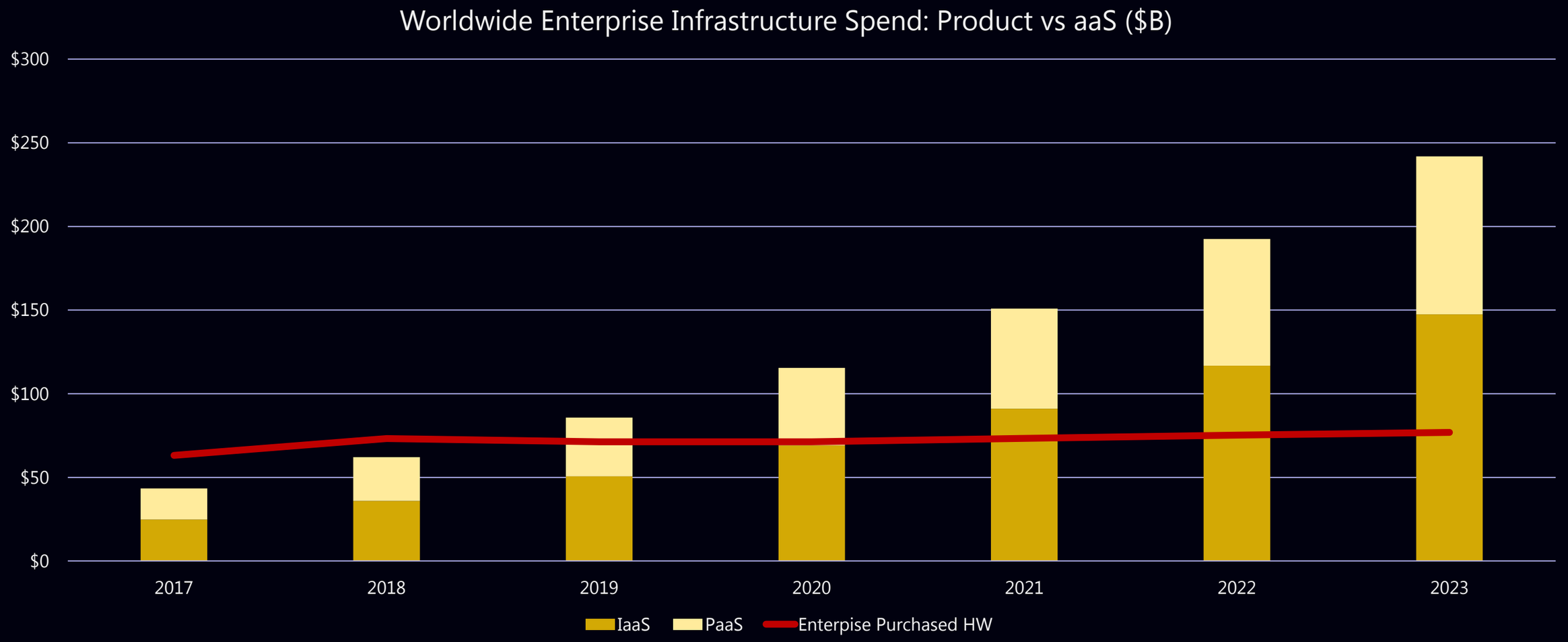
Top Business Goals from Tech Investments



Source: IDC's Cloud and AI Adoption Survey, February 2019, N=400

Changing Infrastructure Spending Patterns



Sources: IDC WW Quarterly Cloud Infrastructure Tracker, Q3 2019 & IDC Semiannual Public Cloud Services Tracker, 1H 2019

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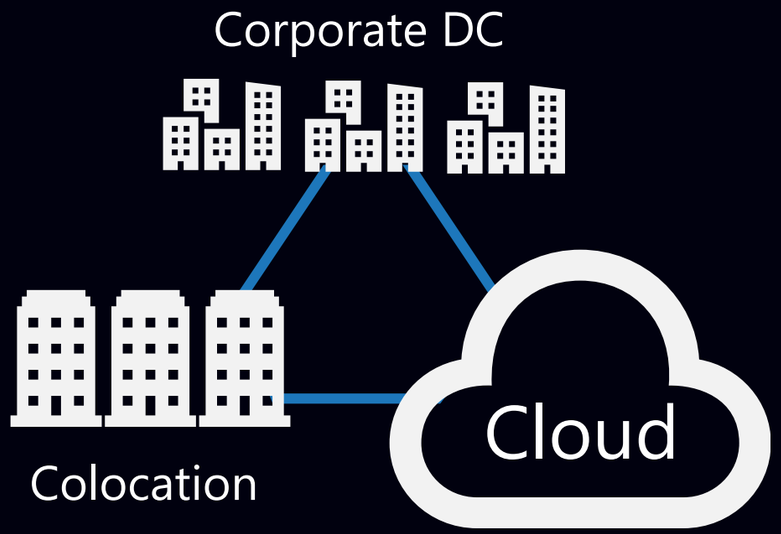
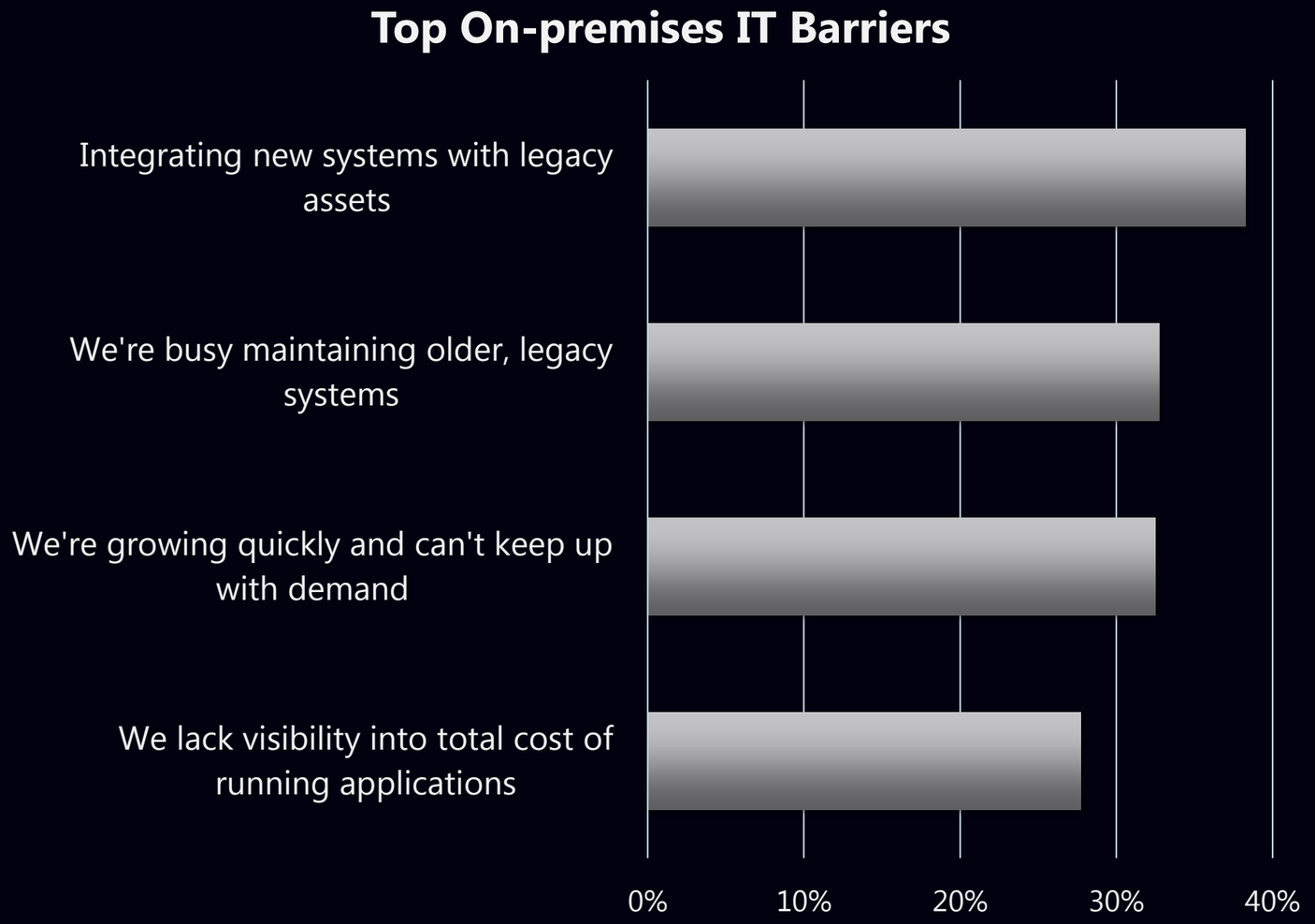
Cloud Is Changing On-premises Expectations

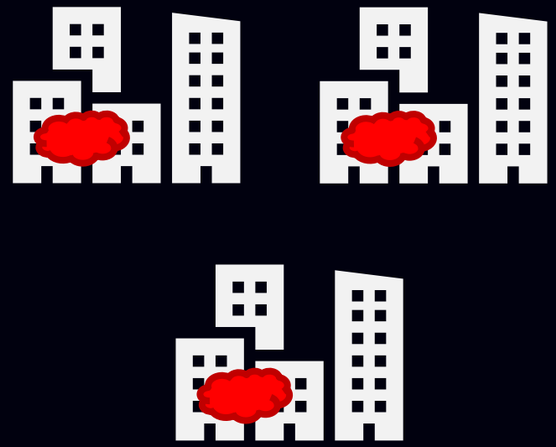




Source: IDC's Datacenter Operational Survey 2019, N = 400

The Evolving Cloud Landscape

??Enterprise Private Clouds??



- Leverage new services
- Optimize usage
- Consistent governance

Improving Cloud in the Corporate Datacenter

The biggest shortcoming with today's private clouds?

Inconsistency

- Every Enterprise Private Cloud is unique
- No two Hosted Private Cloud offerings are the same
- Lack of consistency increases complexity and inhibits use for new service development

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Bringing Cloud to the On-premises

The biggest shortcoming with today's private clouds?

Inconsistency

- Every Enterprise Private Cloud is unique
- No two Hosted Private Cloud offerings are the same
- Lack of consistency increases complexity and inhibits use for new service development

Shifting from isolated private clouds to consistent dedicated clouds

Consistency

- Delivers standard portfolio of cloud services (instances, containers, serverless) across public and dedicated environments
- Addresses extreme latency, availability, and compliance requirements
- Standardization improves manageability and improves attractiveness as platform for new service development

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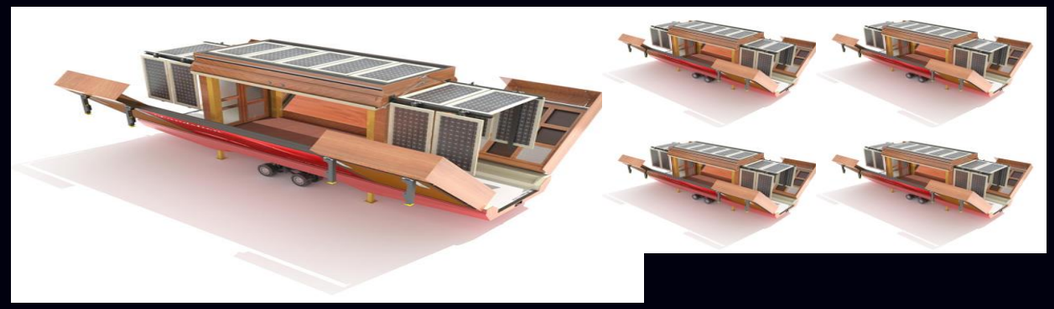
Delivering Modern Cloud Resources On-premises

The biggest problem with how today's private clouds are delivered?

Inflexible Deployment

- Expansion requires significant time and upfront investments
- Hard to leverage new technologies or ensure consistent application of updates
- Incompatible with internal budget, procurement, and process practices

The best dedicated clouds change the rules when it comes to IT delivery



Flexible Deployment

- Rapid deployment and expansion
- Fully managed and continuously enhanced
- No more patches, upgrades or migrations
- Flexible Deployment isn't about a shift to opex; its about enabling alignment of tech investment with business expansion

The Evolving Cloud Landscape

- Leverage new services
- Optimize usage
- Consistent governance

Something's Missing

Dedicated Clouds in Enterprise Datacenters

- Consistent design
- Flexible deployment
- Low latency

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Delivering Innovation Where We Are

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Delivering Cloud On-premises and at the Edge

The most common use for today's private clouds?


Datacenter Modernization

- Focus is on modernizing or replacing existing datacenters
- Reduces the capital and operational cost of running existing workloads

The best clouds drive transformation where we work, live, and play



Service Innovation

- A local cloud that is compatible and integrated with the public cloud platform
- Focus on delivering new cloud-based services to local communities of users/things
- Rapid deployment in many different locations with lights out operation

The Evolving Cloud Landscape

- Leverage new services
- Optimize usage
- Consistent governance

Local Clouds

- Consistent cloud to edge
- Frictionless asset management
- No touch infrastructure

Dedicated Clouds in
Enterprise Datacenters

- Consistent design
- Flexible consumption
- Low latency

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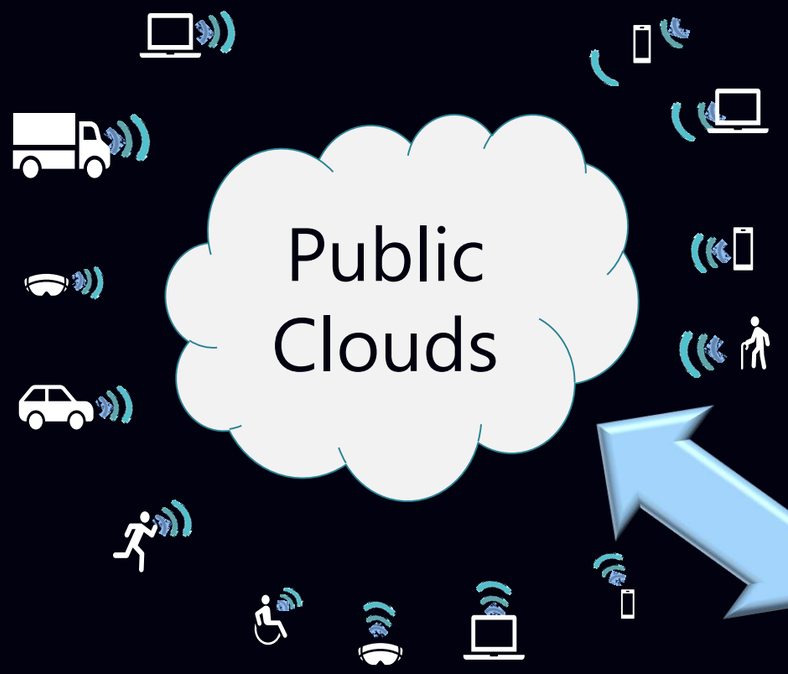
Driving Innovation with **Hybrid** Cloud



- Leverage new services
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Dedicated Clouds in
Enterprise Datacenters

- Consistent design
- Flexible consumption
- Low latency

Local Clouds

- Consistent cloud to edge
- Frictionless asset management
- No touch infrastructure

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Local and Dedicated Cloud Benefits

Reduce the time to market for customer-facing applications and enhanced business operations services

Improve the quality of existing applications and services, including increasing IT employee productivity levels

Quickly propose, test, and scale innovative products and services, anywhere and everywhere

Essential Guidance: Getting Started

1. Select a company-wide standard cloud platform upon which IT teams, developers and software providers can modernize workloads and deliver/build new services
2. Establish standard specifications and processes that IT teams must follow when deploying/managing dedicated cloud solutions across the organization
3. Implement centralized physical, application, and data management and governance policies that enable consistent and secure operation of these distributed resources

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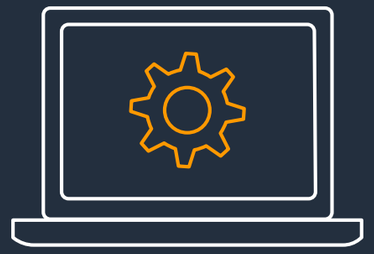
Rob Chen
Head of Infrastructure Solutions Product Marketing

Applications that need to remain on-premises



Applications that are sensitive to latency and variability in latency

Need for near real time responses to end user applications

Need to control on-site equipment

Need to communicate with other on-premises systems

Applications that process data locally

Need to ensure integrity of ingested signal (e.g., at live events before broadcasting)

Need to reliably process messages from industrial equipment to monitor production

Need for managing local data stores

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Customer challenges with on-premises applications

IT Infrastructure

Complex procurement and provisioning cycles across a 6–12 vendors and months to get servers installed on-premises

Significant overhead to patch and upgrade on-premises infrastructure against a complex ‘compatibility matrix’ across various hardware and software components

Application maintenance downtime to safely upgrade impacts business continuity and operations

Developers

Don’t have the same services and APIs to build applications on-premises as in the cloud

Don’t have the same tools for automation, deployment, and security controls as in the cloud

Different code and processes for on-premises and cloud applications creates friction and operational risk

Business

Pace of innovation on-premises lags that in the cloud

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Customers want the same experience across on-premises and the cloud

Same reliable, secure, and high performance infrastructure

Same operational consistency

Same services and APIs

Same tools for automation, deployments, and security controls

Same pace of innovation as in the cloud

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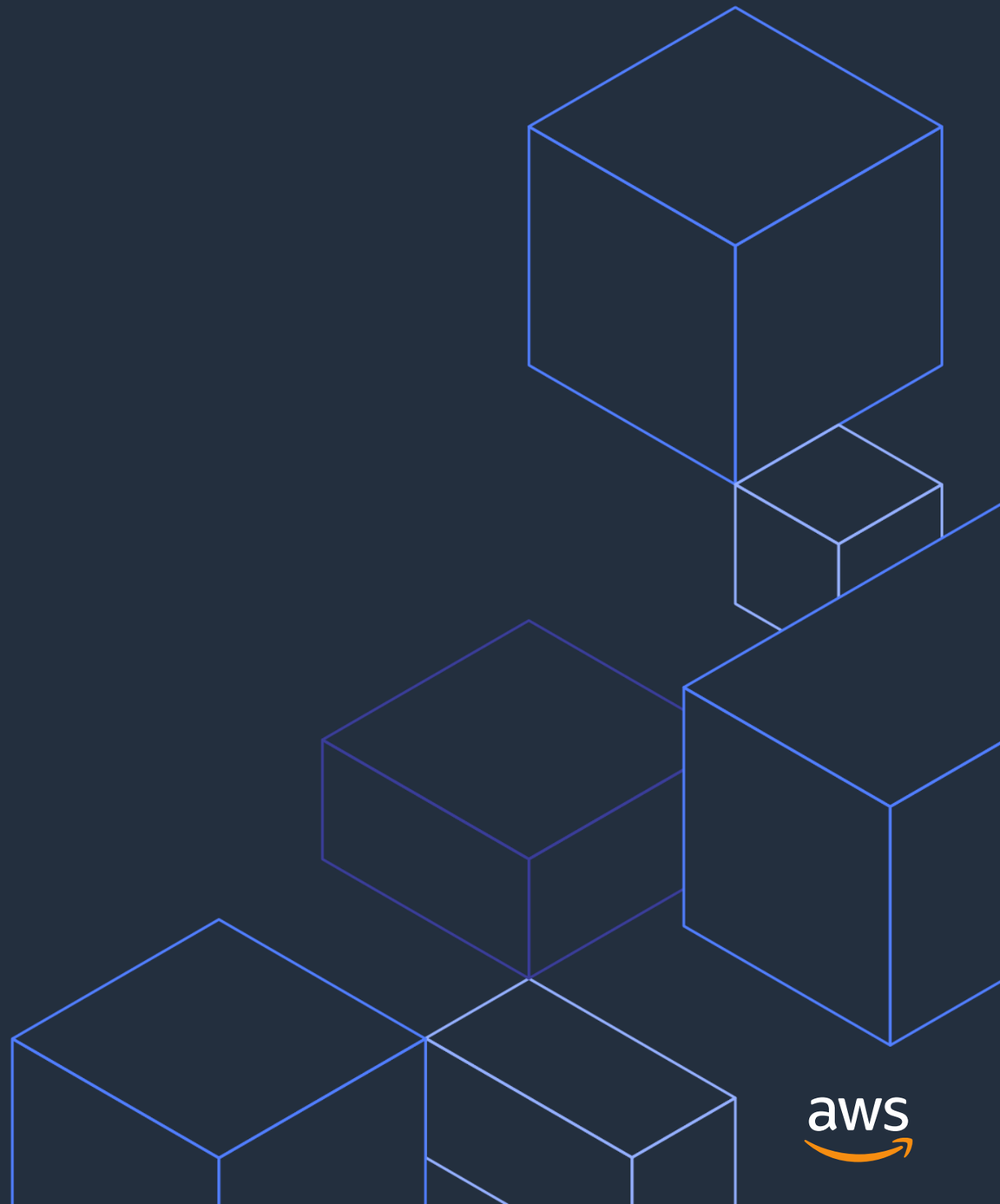
AWS Outposts



AWS Outposts: Bringing AWS on-premises

Same AWS-designed infrastructure
as in AWS
data centers (built on
AWS Nitro System)

Fully managed, monitored,
and operated by AWS
as if in AWS Regions

Single pane of management
in the cloud providing the
same APIs and tools
as in AWS Regions

AWS Outposts rack

- Industry standard 42U rack
- Fully assembled, ready to be rolled into final position
- Installed by AWS, simply plugged into power and network
- Centralized redundant power conversion unit and DC distribution system for higher reliability, energy efficiency, easier serviceability
- Redundant active components including top of rack switches and hot spare hosts

AWS Outposts rack

Patch Panels
1/10/40/100G
Network Fiber
Uplink Options

Network Switches

Hosts

5kVA-15kVA
Power Supply
Redundant feeds supported

Supported countries at GA

Supported regions

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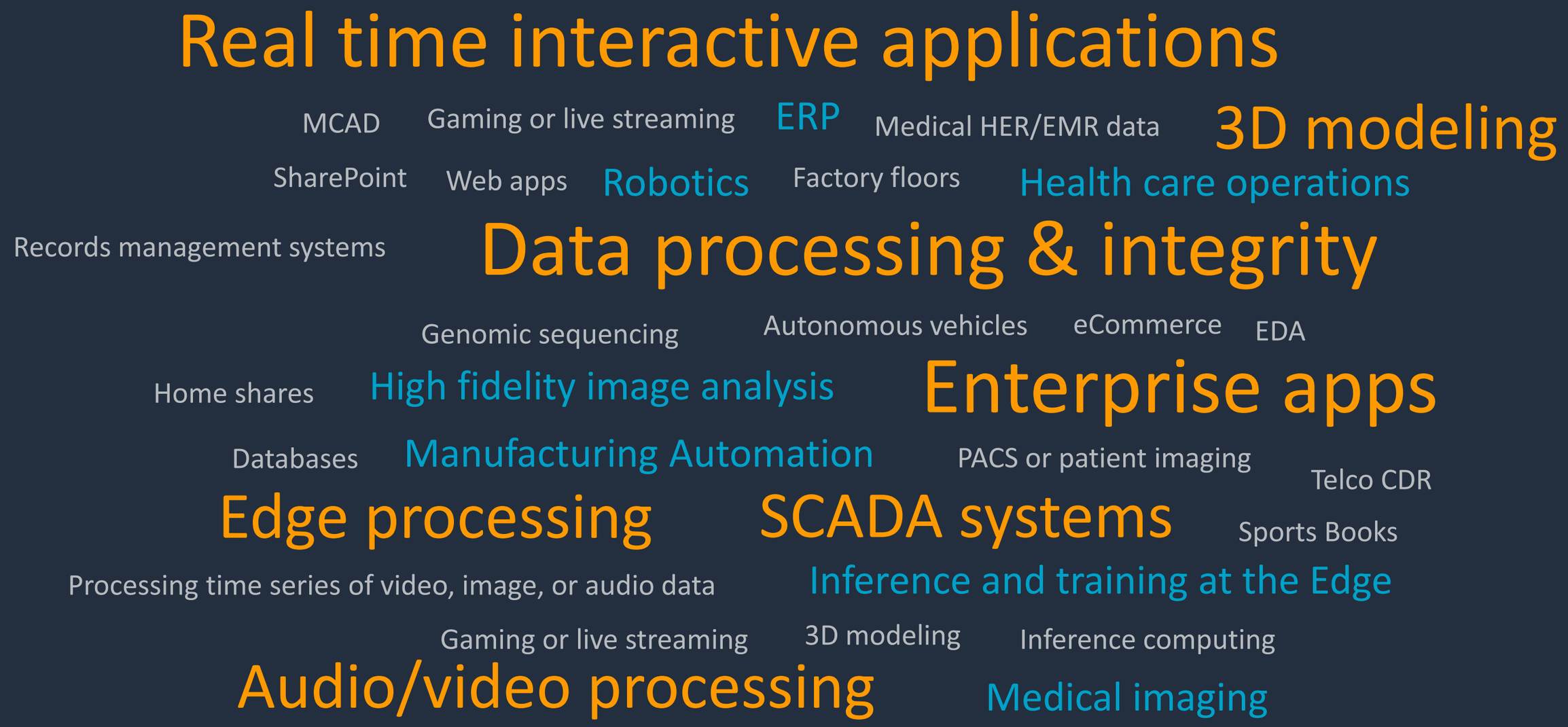

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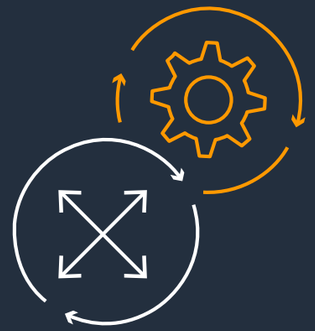
AWS Outposts—addressing customer challenges

Simplifying IT with
fully managed infrastructure,
growing IT efficiency
and responsiveness
to business needs



Amplifying developer productivity
with same
popular AWS API, console,
tools, and broad ecosystem
of partner solutions

Enabling IT and developers
to accelerate pace of
business innovation

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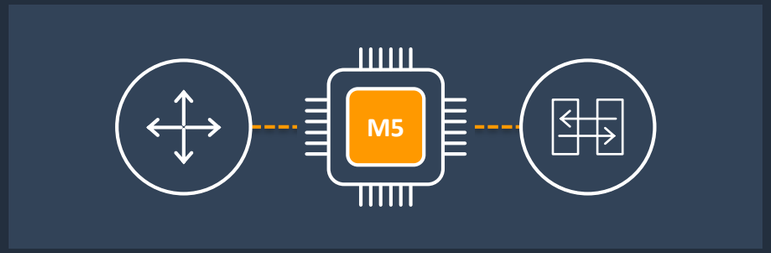
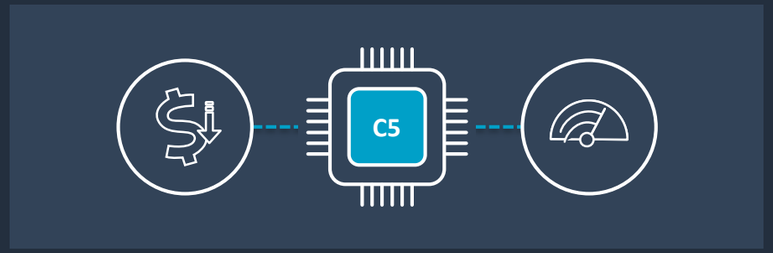
AWS services on-premises

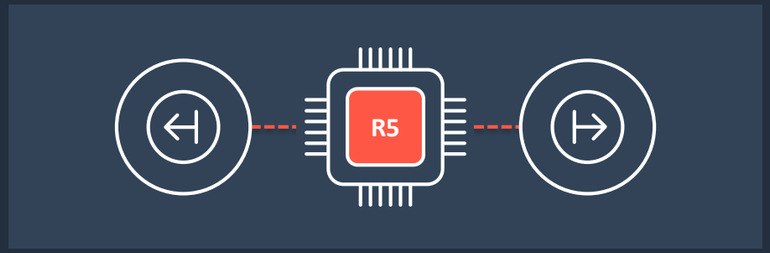
Build on the same EC2 Instances & EBS Volumes



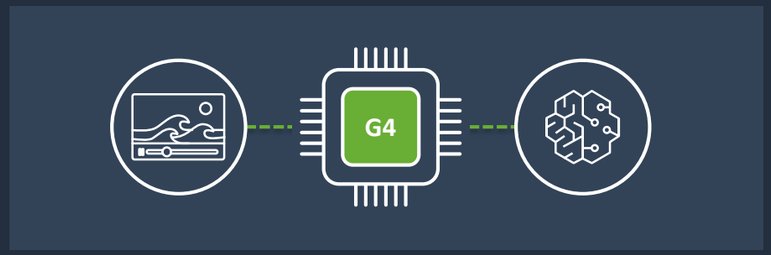
For general purpose applications



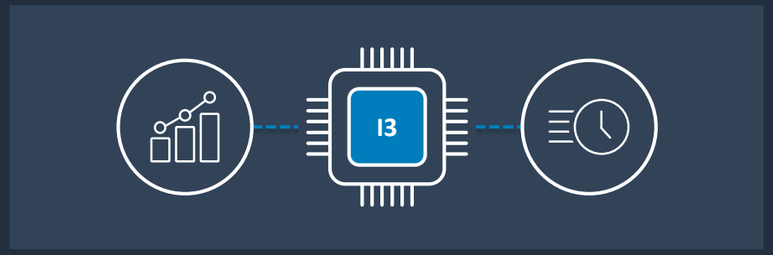
For compute intensive
(media transcoding, gaming servers, machine learning inference)



For memory intensive applications
(databases, in-memory caches, real time data analytics)



For machine learning inference and graphics workstations



For I/O intensive applications
(NoSQL databases, in-memory or transactional databases, distributed file systems)

Local Instance Storage and EBS gp2 volumes for temporary and persistent storage

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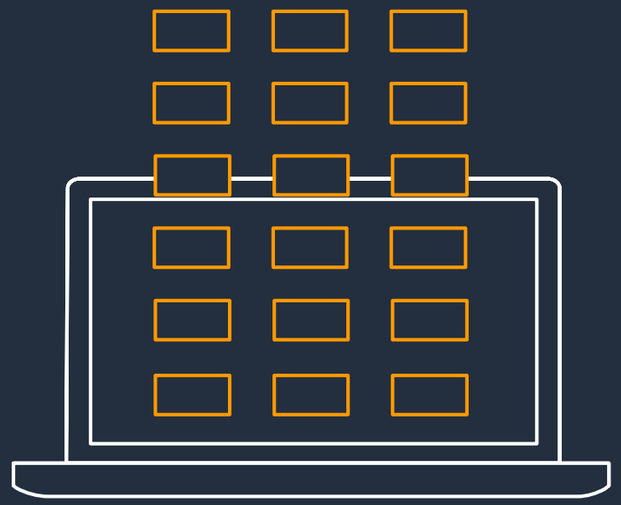
Run AWS services locally

Available at GA or soon after



- Compute & Storage—Amazon EC2 instances and EBS volumes
- Networking—Amazon VPC
- Database—Amazon Relational Database Service (RDS)
- Containers—Amazon Elastic Container Service (ECS) & Amazon Elastic Kubernetes Service (EKS)
- Data Processing—Amazon Elastic Map Reduce (EMR)

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In preview: Amazon RDS on AWS Outposts

- Run Amazon RDS MySQL and PostgreSQL database engines on Outposts
- Run fully managed databases on-premises for workloads that need run in close proximity to on-premises data and resources
- Manage RDS databases in the cloud and on-premises using same AWS Management Console, APIs, and CLI
- Low-cost, high-availability hybrid deployments with disaster recovery back to the AWS Region
- Read replica bursting to Amazon RDS in the cloud
- Long-term archival in Amazon S3 in the cloud

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Coming soon in 2020: Amazon S3 on AWS Outposts

- Store object data on-premises using the S3 API
- Store object data locally or in the region
- Meet real-time local data processing needs
- Store data locally that have on-premises data retention requirements for residency or compliance reasons

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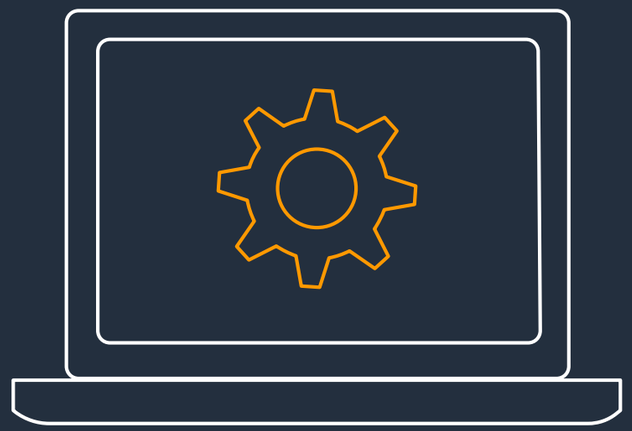
With the same AWS APIs & tools as in the AWS Region



EC2 Auto Scaling Groups

AWS CloudFormation

CloudWatch

CloudTrail

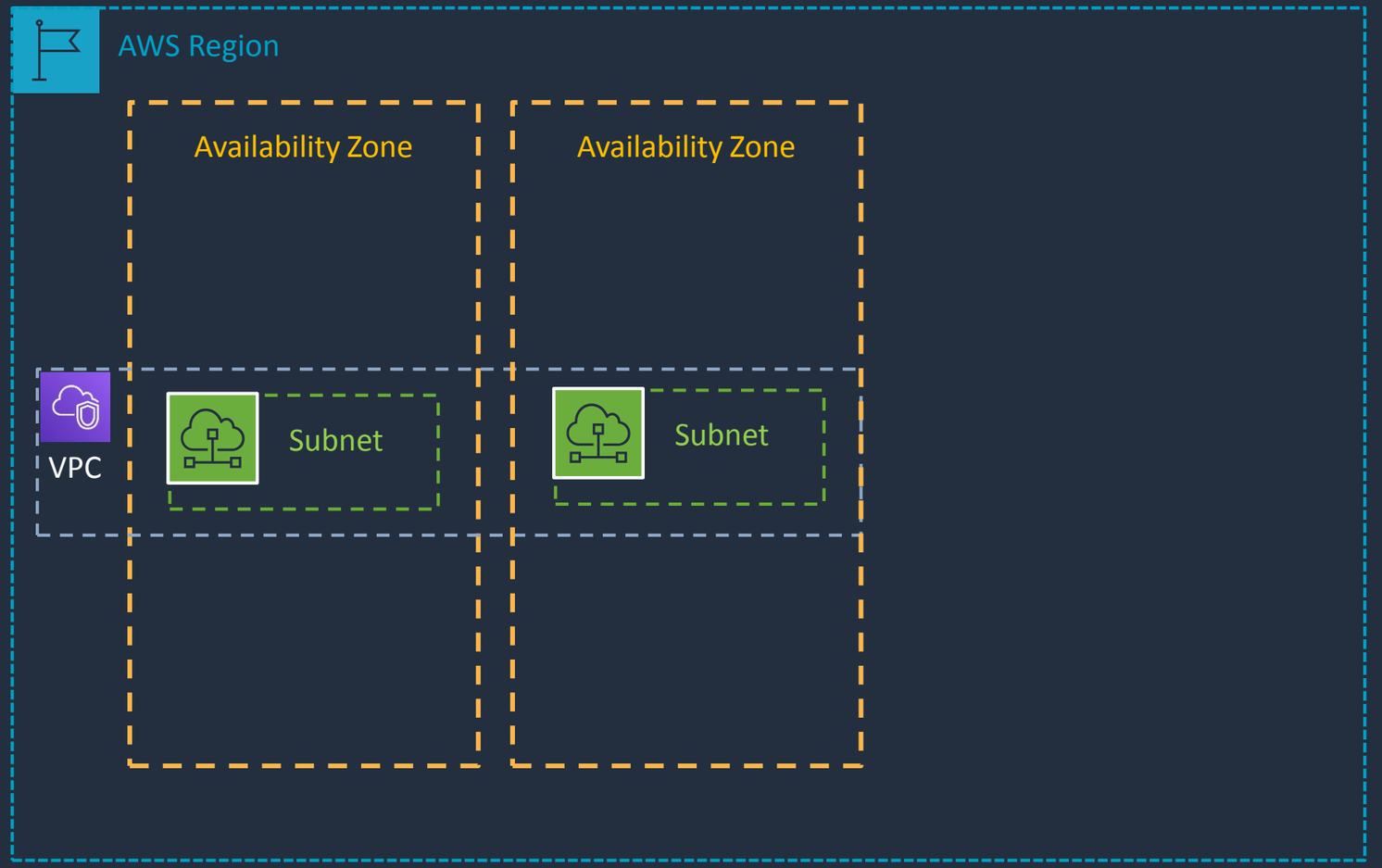
Elastic BeanStalk

Cloud9

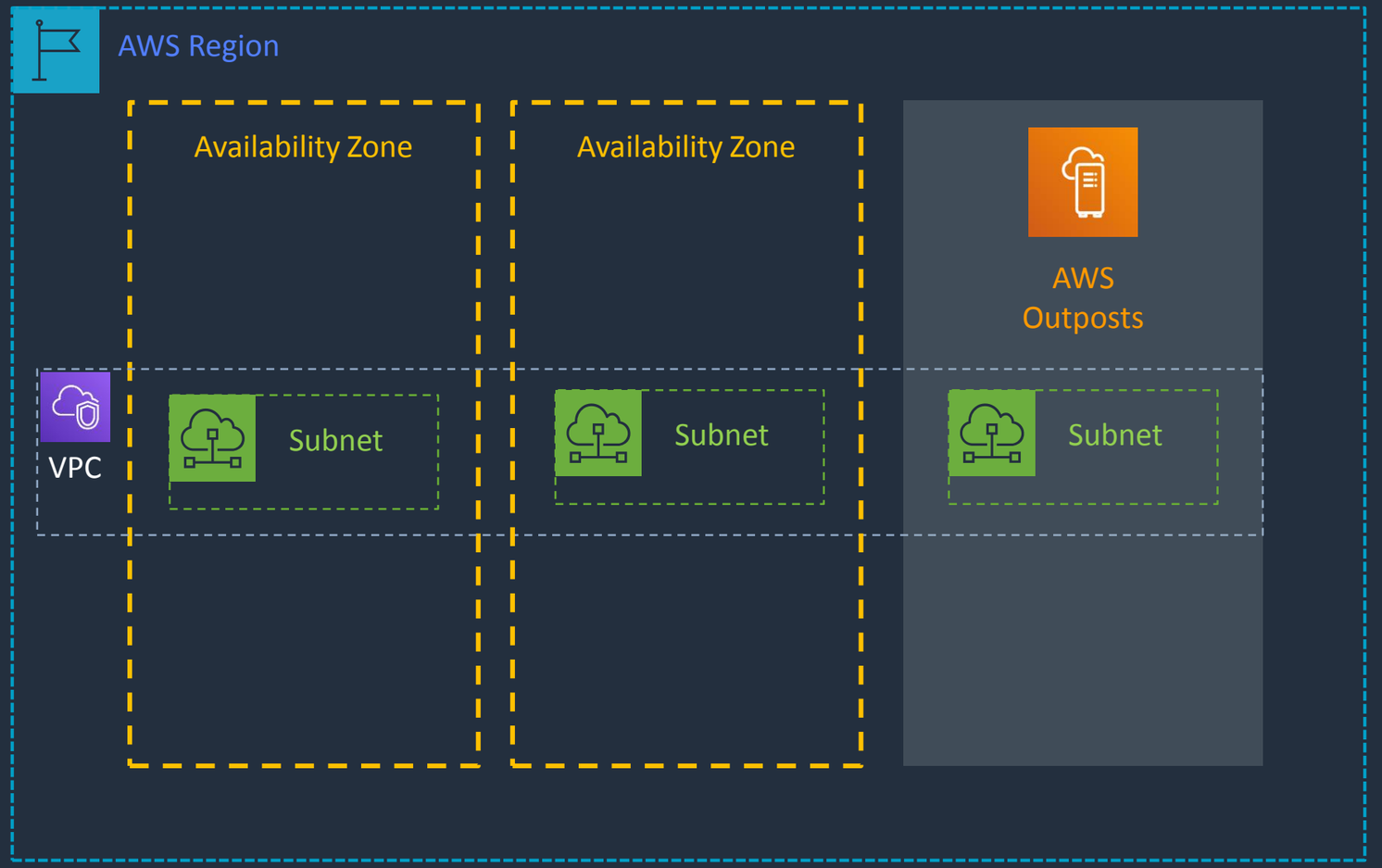
and more…

aws

Seamlessly extend your regional VPC



Seamlessly extend your regional VPC



Instances in the Outpost can securely talk to other instances in the VPC via private IP addresses

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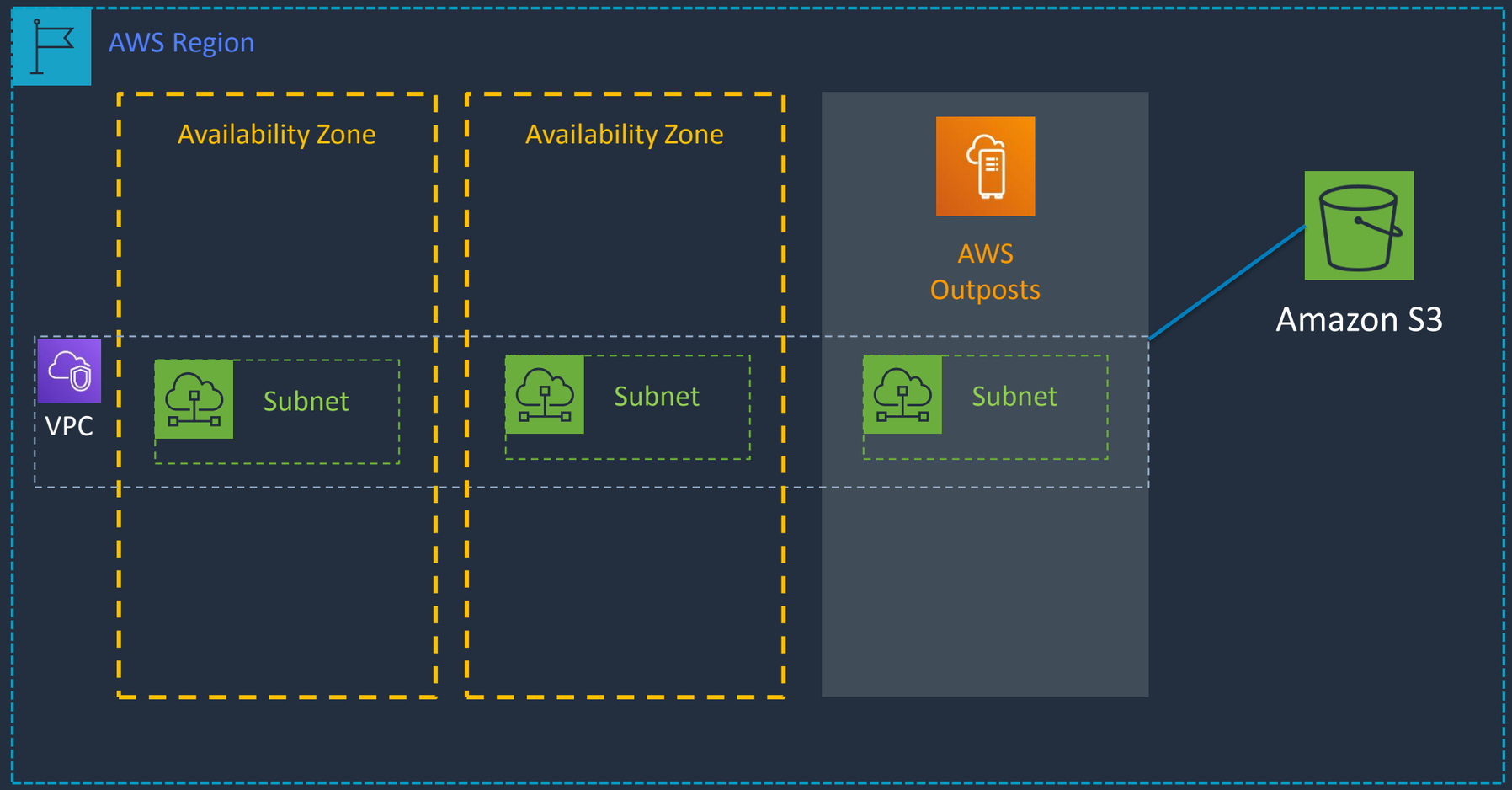
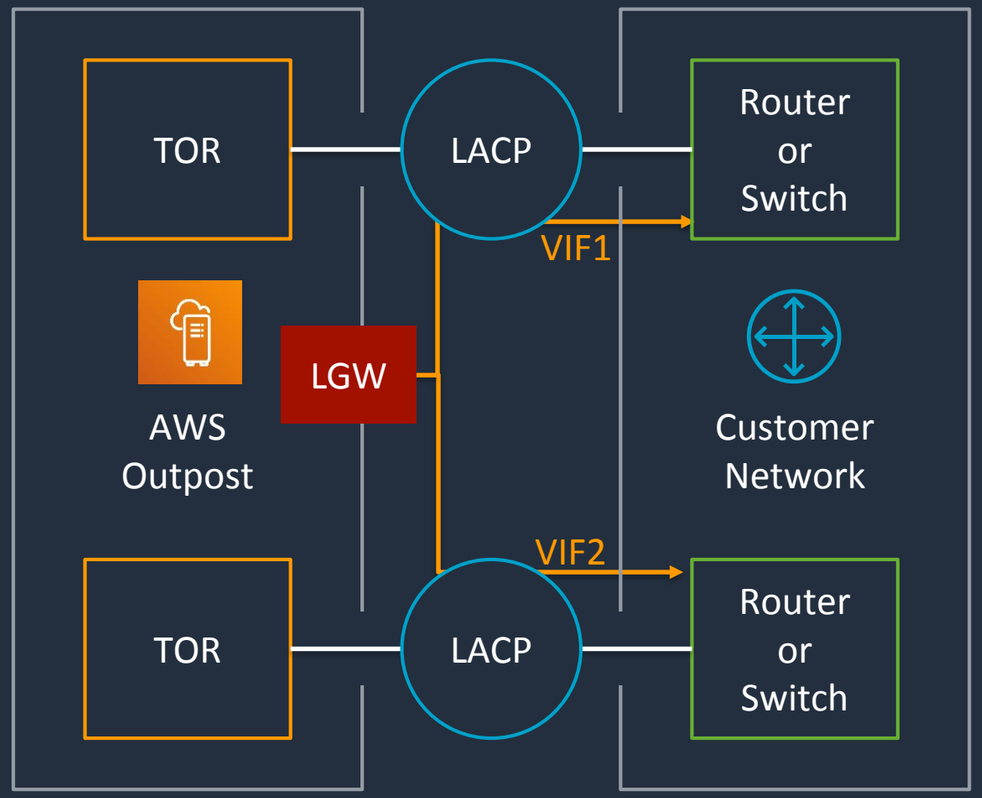
Seamlessly extend your regional VPC



Use **Interface Endpoints** (powered by Private Link) to access all regional AWS services such as DynamoDB and S3 in your private VPC environment

Connect to your local network



- Connect to local network equipment via ports provided in the Outpost's top of rack (TOR) switches
- Configure Virtual Interfaces (VIFs) mapping to your VLANs using Link Aggregation Control Protocol (LACP)
- Configure the new local gateway (LGW) on the Outpost to route traffic to and from your local network using these VIFs

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Wavelength & Local Zones

NEW!

COMING EARLY 2020

Introducing AWS Wavelength

RUN LATENCY-SENSITIVE APPLICATIONS AT THE EDGE USING AWS INFRASTRUCTURE AND SERVICES

EMBEDDED IN 5G NETWORKS

Extends AWS infrastructure, services, APIs, and tools to 5G networks

AWS API & CONSOLE

Single pane of management in the cloud providing the same APIs and tools as in AWS Regions

BUILD ONCE, DEPLOY ANYWHERE

Simple to deploy application from AWS regions to 5G-enabled edge locations

aws

NEW!

COMING EARLY 2020

Introducing AWS Wavelength

RUN LATENCY-SENSITIVE APPLICATIONS AT THE EDGE USING AWS INFRASTRUCTURE AND SERVICES

5G Partners

verizon

vodafone business

KDDI

SK telecom

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NEW!

Introducing AWS Local Zones

RUN LATENCY-SENSITIVE APPLICATIONS AT THE EDGE USING AWS INFRASTRUCTURE AND SERVICES

LOW LATENCY

Extends AWS infrastructure services, APIs, and tools to where customers need it to support low-latency applications

FULLY-MANAGED

Fully owned, managed, and supported by AWS

NEW AWS INFRASTRUCTURE

New type of AWS infrastructure that places AWS compute, storage, networking, and select AWS services closer to where your end users are located

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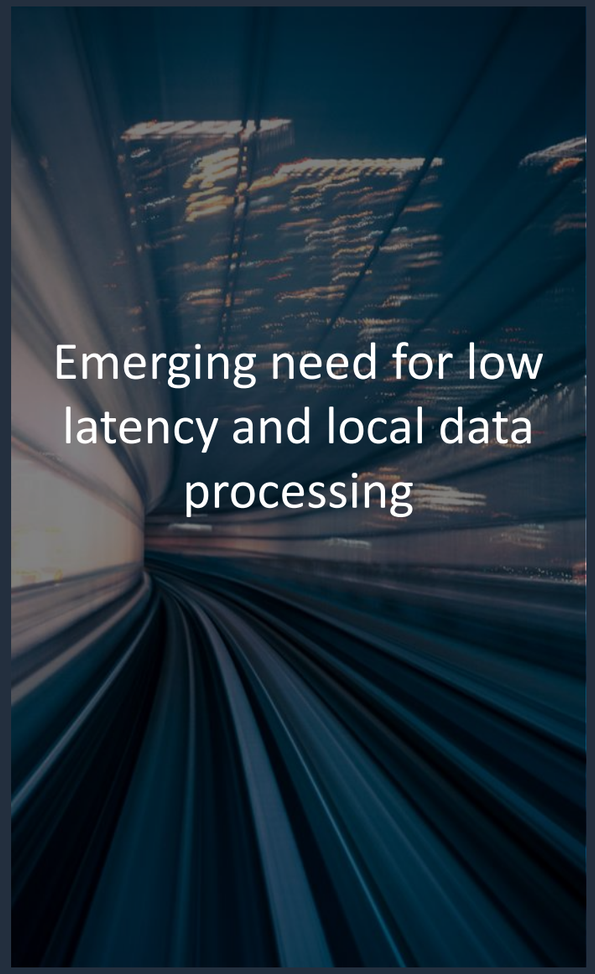
Summary



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Thank you!

Q&A