



AWS Outpost 提供最佳企業混合雲端解決方案

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Amazon Web Services | Partner Ecosystems

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內容大綱

Overview

Use cases and customer challenges

What is AWS Outposts?

AWS services on-premises

Getting started

Questions



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71%

Organizations
have **hybrid**
deployments

75%

Of enterprise
applications are
still on-premises

Source: <https://www.idg.com/tools-for-marketers/2018-cloud-computing-survey/>

Source: IDC, Rightscale, Forrester, Markets & Markets



混合雲端的客戶效益

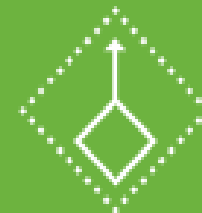
Customer Benefits of Hybrid

加速產品上市時間
ACCELERATE TIME TO MARKET

雲端的延伸
EXTEND TO THE CLOUD

產品無縫的快速移轉
SCALE SEAMLESSLY

AGILITY



COMPLEXITY
AND RISK



成本的優化
OPTIMIZE COSTS

高度安全性
MINIMIZE SECURITY VULNERABILITIES

自動化維運管理
MANAGE ACROSS IT FOOTPRINTS

需要保留在本地端的應用服務

Applications that need to remain on premises



低延遲的應用服務

Need for near real time responses to end user applications

Need to control on-site equipment

Need to communicate with other on-premises systems



在本地數據處理的應用程式

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



具有資料合規性要求

或本地化要求的應用服務

Need to ensure data is stored within designated geographical location(s)

Need to comply with geography-specific security and privacy protections

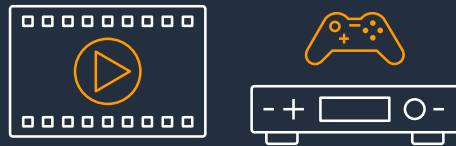
Need to ensure data created within certain borders stay within them

低延遲應用服務和本地資料處理應用場景

Low Latency Apps & Local Data Processing



低延遲電信營運
**Low Latency Telco
Operations**
Virtual Network
Functions



內容製作發行與遊戲
**Content Production,
Distribution & Gaming**
Lossless signal ingestion,
Live Event and Game
streaming



大型應用系統
Legacy Applications
Transaction
Processing,
ERP Applications



即時性應用
Real-time Inference
Autonomous
vehicles, Processing
outdoor sensor data



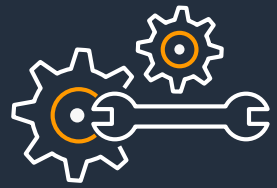
金融服務
Financial Services
High Frequency
Trading,
Exchange Platforms,
Core Banking



工廠自動化
Industrial Automation
Manufacturing, Sensor
control, Robotics

地端應用程式給客戶帶來的挑戰

Customer challenges with on-premises applications



IT Infrastructure

Complex procurement and provisioning cycles across 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

客戶希望在本地和雲端獲得**相同**的體驗

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



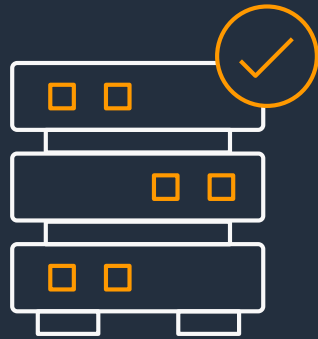
Same tools for
automation,
deployments, and
security controls



Same pace of
innovation as in
the cloud

AWS Outposts: 將AWS雲端服務部署到本地端

AWS INFRASTRUCTURE AND SERVICES IN YOUR ON-PREMISES LOCATION



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



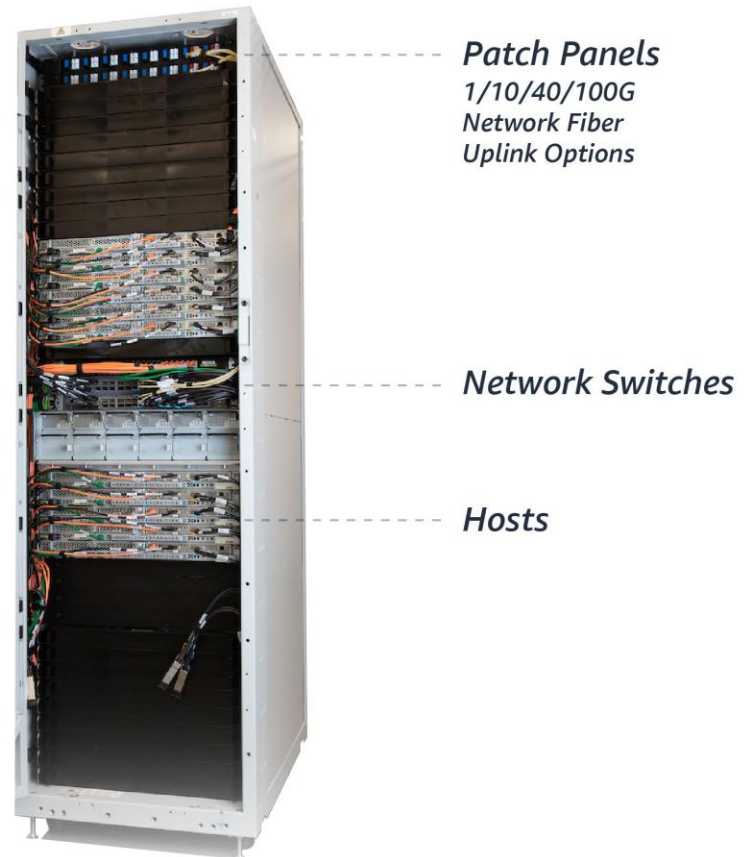
Single pane of management in the cloud providing the same APIs and tools as in AWS Regions

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



支援的國家 Supported countries



支援的AWS區域 Supported regions



Available in two variants

Native AWS

Same AWS APIs, services, and features as in the AWS cloud

EC2 and EBS with support for services including RDS, ECS, EKS, EMR, ALB, others

VMware Cloud on AWS

VMware APIs and services to leverage existing skills, automation, and governance policies

For customers running VMware SDDC on-premises

Real time interactive applications

MCAD Gaming or live streaming **ERP** Medical HER/EMR data **3D modeling**

SharePoint Web apps **Robotics** Factory floors **Health care operations**

Records management systems **Data processing & integrity**

Genomic sequencing Autonomous vehicles eCommerce EDA

Home shares **High fidelity image analysis** **Enterprise apps**

Databases **Manufacturing Automation** PACS or patient imaging Telco CDR

Edge processing **SCADA systems** Sports Books

Processing time series of video, image, or audio data **Inference and training at the Edge**

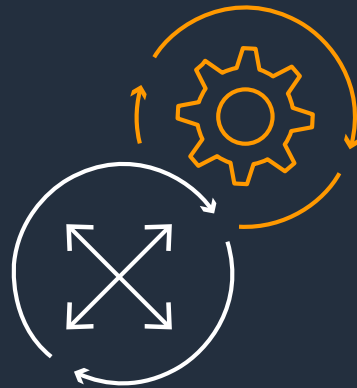
Gaming or live streaming 3D modeling Inference computing

Audio/video processing **Medical imaging**

AWS Outposts: addressing customer challenges



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

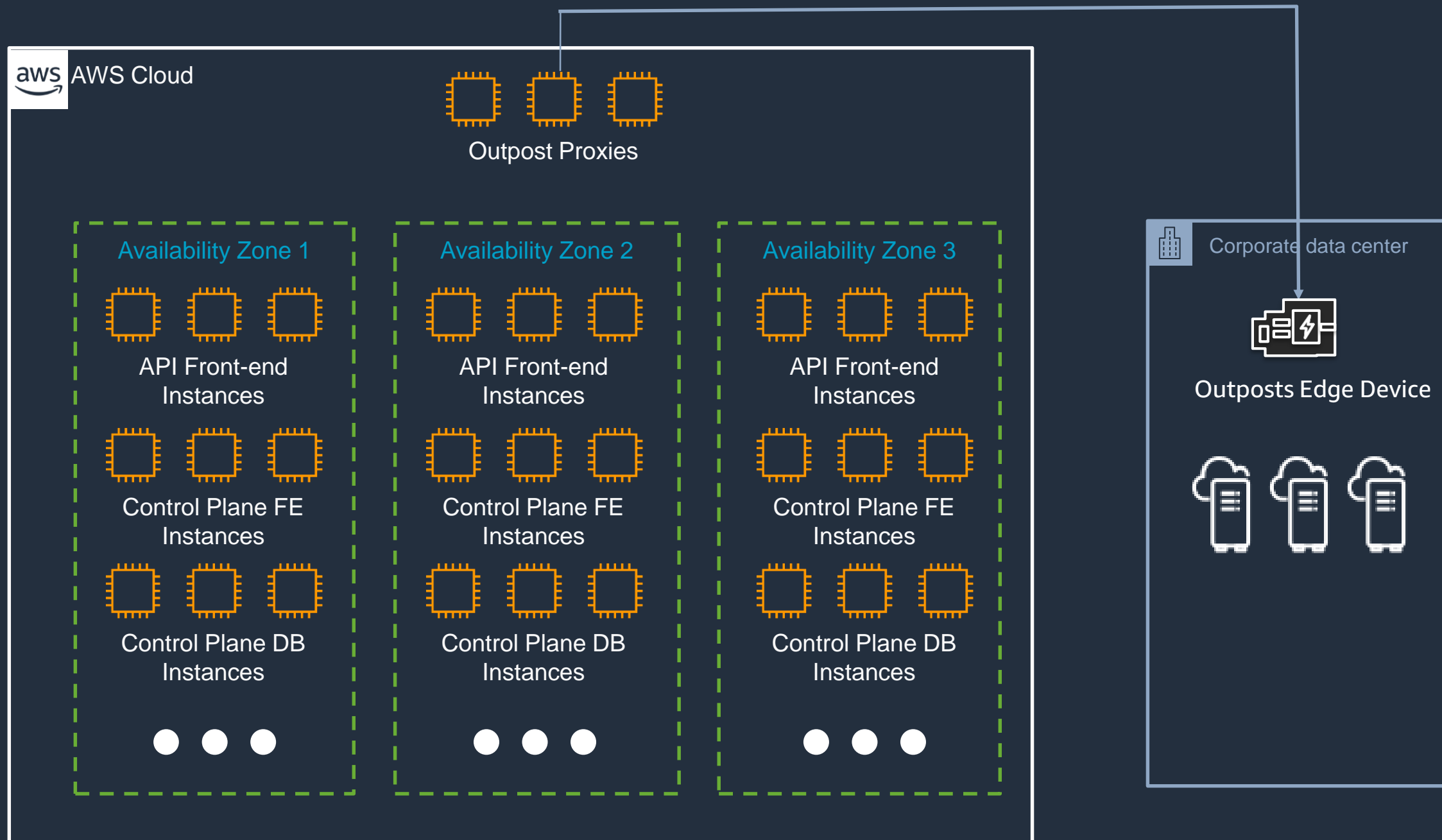


Amplifying developer productivity with same popular AWS API, console, tools, and broad ecosystem of partner solutions



Enabling IT and developers to **accelerate pace of business innovation**

AWS Outposts 架構示意圖



- **Same** AWS control plane
- **Same** Nitro hardware
- **Same** Nitro software
- To give you the **same**

AWS Outposts的運作方式

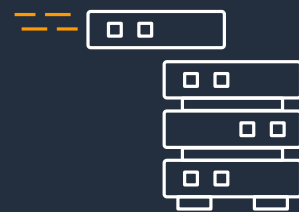


AWS Outposts



Configure

Configure and order Outposts in AWS Console



Connect

Connect Outposts to your local power and network



Launch

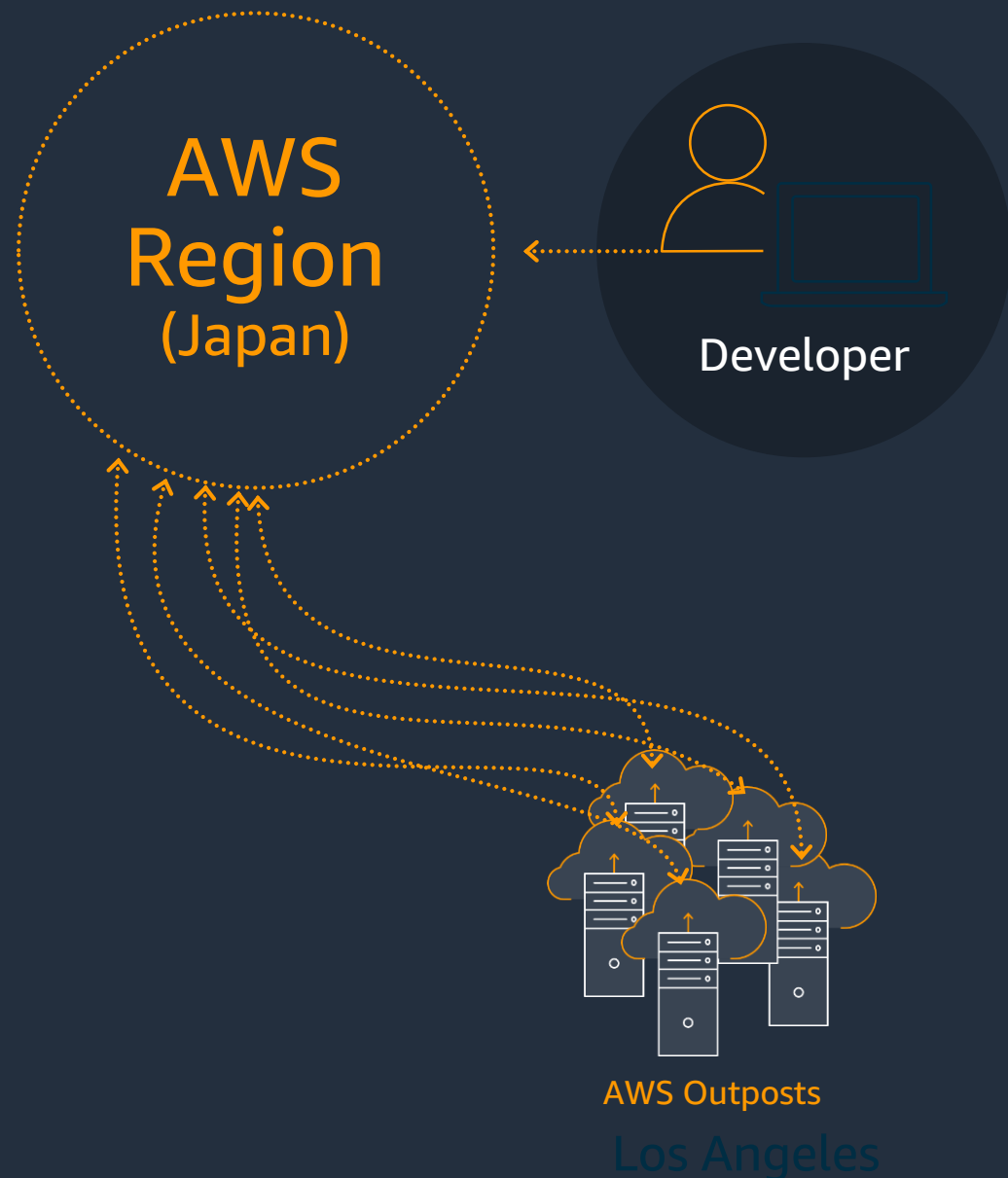
Use AWS Console to launch EC2 instances on Outposts



Build

Build apps using native AWS services to deploy on Outposts or in the AWS Cloud

一次建構，部署全球 Build Once, Deploy Anywhere



Fully featured AWS services delivered by regional AWS control plane

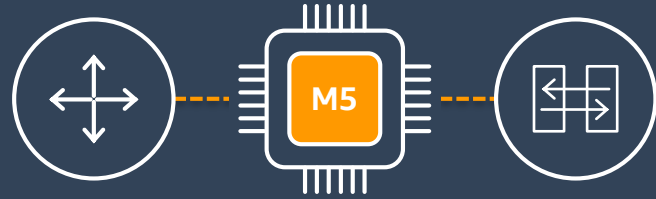
Same Programming Interface —Standard AWS SDK and CLI

Same Functionality — Leverage full functionality of AWS services

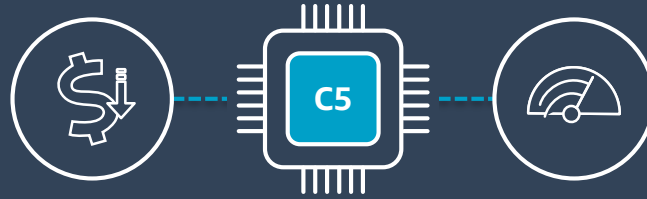
Same Deployment Pipeline—Use the same deployment systems as in the cloud

Same Monitoring and Automation – Use the same metrics, reporting, and operational tools

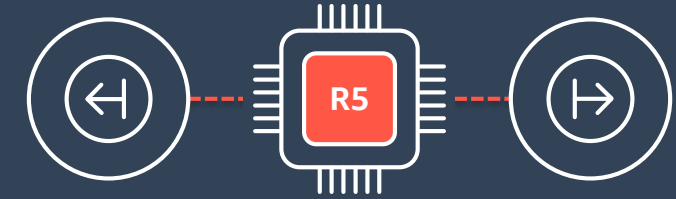
Build on the same EC2 Instances & EBS Volumes



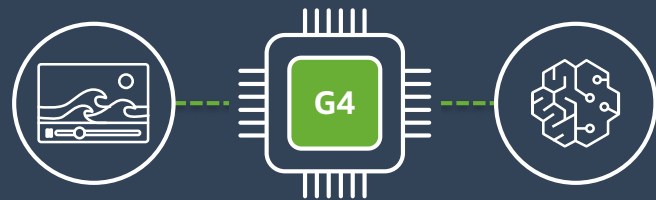
For general purpose applications



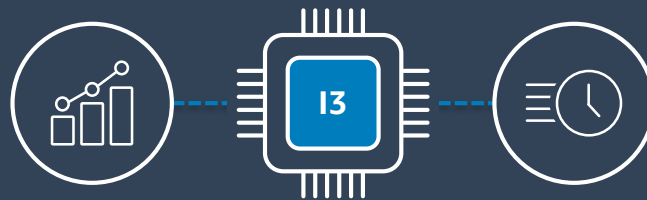
For compute intensive applications
(media transcoding, gaming servers,
machine learning inference)



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



For machine learning inference
and graphics workstations

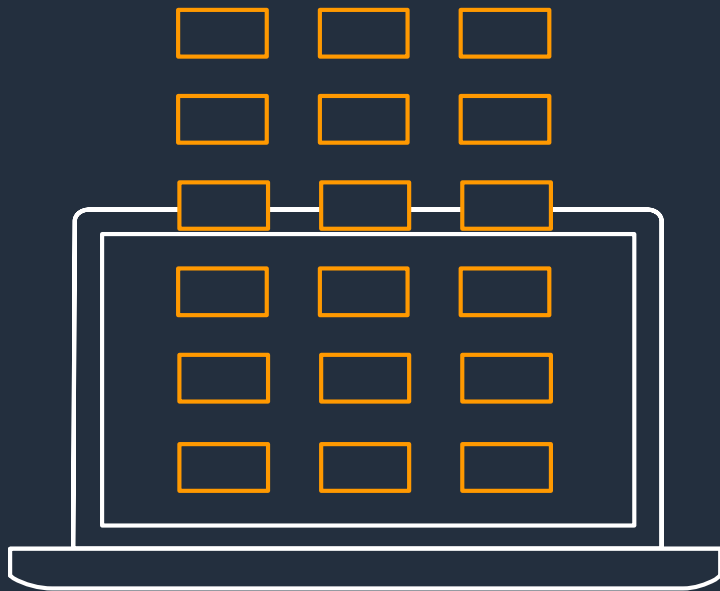


For I/O intensive applications
(NoSQL databases, in-memory
or transactional databases,
distributed file systems)



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

目前在本地端運行的AWS服務 Run AWS services locally



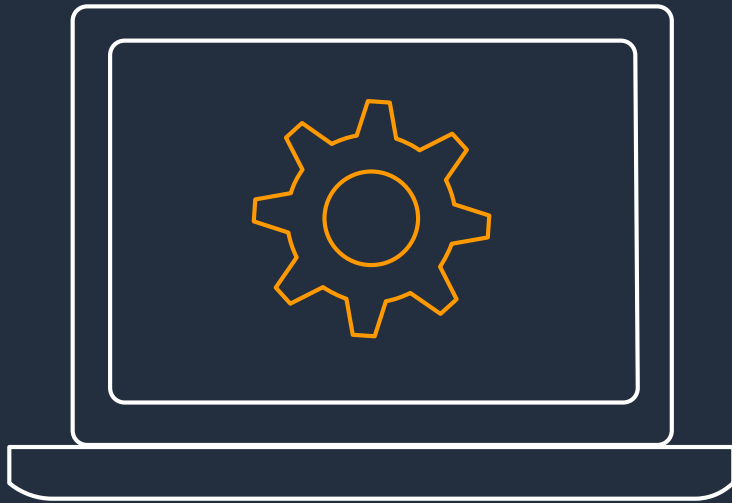
- **Compute & Storage** - Amazon EC2 instances and EBS volumes
- **Networking** - Amazon VPC
- **Database** - Amazon Relational Database Service (RDS)
- **Containers** - Amazon Elastic Container Service (ECS) & Amazon Elastic Kubernetes Service (EKS)
- **Data Processing** - Amazon Elastic Map Reduce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

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 to 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

使用與AWS區域中相同的AWS API和管理工具

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



EC2 Auto Scaling Groups

AWS CloudFormation

CloudWatch

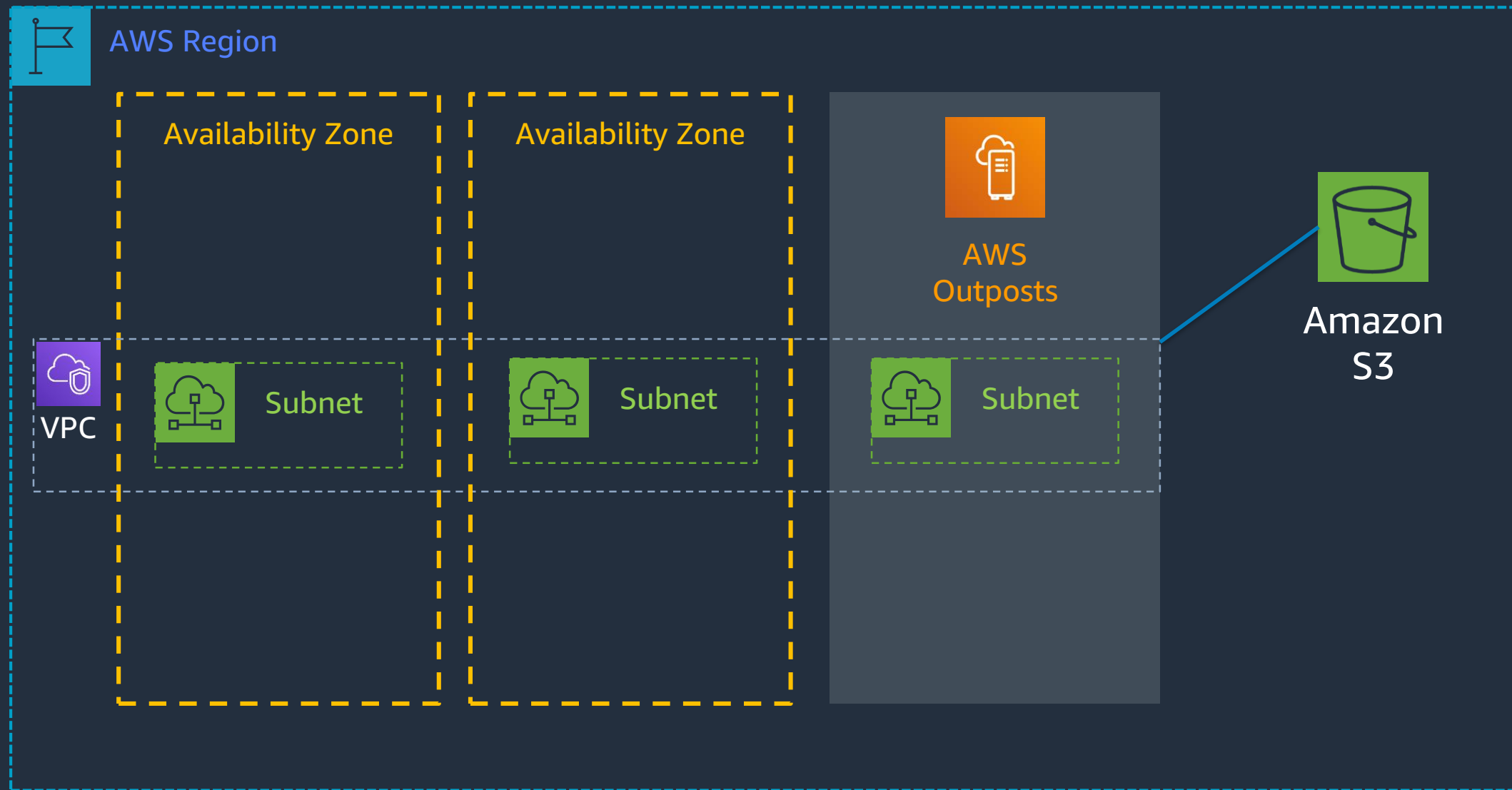
CloudTrail

Elastic BeanStalk

Cloud9

and more...

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

Getting started

AWS Outposts 入門的3個步驟

3 steps to get started with AWS Outposts



1. Order

Select your compute and storage capacity



2. Install

AWS delivers and installs the Outpost



3. Launch

Use standard AWS APIs or Management Console to launch and run AWS resources locally

Pre-requisites

Standard data center **space** (24" X 48" x 80" aisle clearance and rack position) and **power** (minimum 5 kVA)

Network connection to an AWS region

- AWS Direct Connect with public VIF or
- Internet Connection via ISP

Enterprise Support (24x7 Customer Support and more)

launch and run AWS resources locally

Demo

aws

AWS Outposts

Events

Orders

Outposts

Sites

Local Gateways

Route Tables

Outpost

Outposts (160)

View Details

Actions

Create Outpost

Search

12345...8

	Name	Outpost ID	Status	Site ID	Availability zone	Owner ID
<input type="checkbox"/>	my-op-01	op-82049481489ead	Active	si-00000001	us-east-1b	123456789012
<input type="checkbox"/>	my-op-02	op-09123456789abc	Active	si-00000001	us-east-1b	123456789016
<input type="checkbox"/>	my-op-03	op-78423456789uan	Active	si-00000002	us-east-1c	992756789017
<input type="checkbox"/>	my-op-04	op-62123849329spi	Active	si-00000002	us-east-1d	763856789019
<input type="checkbox"/>	my-op-05	op-84923456791tus	Active	si-00000004	us-east-1e	827456789018

Feedback

English

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Security, compliance, and responsibility

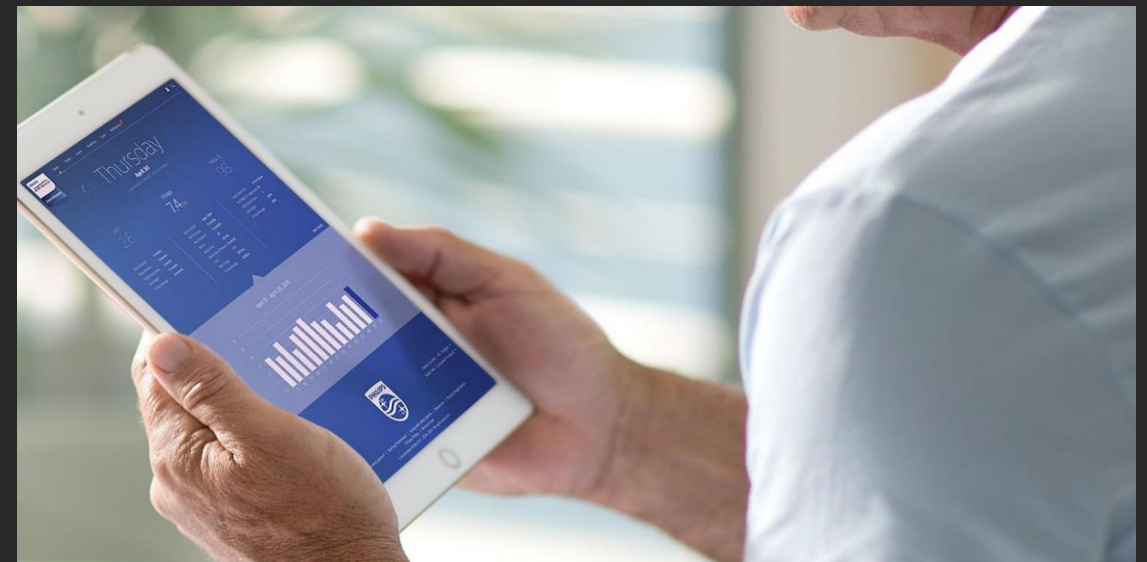
AWS Outposts: security and compliance

- ❑ AWS Outposts have an **updated shared responsibility** model
- ❑ **AWS is responsible for protecting Outposts' infrastructure** similar to securing infrastructure in the cloud today
- ❑ **Customers** are responsible for **securing their applications** running on Outposts as they do in AWS Region
- ❑ Customers are **also responsible** for the **physical security** of their Outpost racks
- ❑ AWS services launched locally on Outposts will go through a separate evaluation for certifications and existing certifications **WILL NOT** apply
- ❑ Compared to certification for other AWS services, with AWS Outposts the customer owns the responsibility for physical security and access controls around the Outpost for compliance certification
- ❑ AWS Outposts has certification for compliance with ISO/IEC 27001:2013, 27017:2015, 27018:2019, and ISO/IEC 9001:2015.

應用案例

Philips - HealthSuite Digital Platform

- Philips is a Dutch-based company that focuses on the areas of healthcare and consumer lifestyle solutions and services
- Delivering solutions in diagnostic imaging, image-guided therapy, patient monitoring and health informatics, as well as in consumer health and home care.
- Connect devices, analyze data, create solutions with cloud-first design
- Integrate data from many sources for seamless, connected and collaborative care
- Enables providers to deliver care that is precise, personal, predictive and proactive



Morningstar

Morningstar is a leading provider of independent investment research around the globe. “Our independent data, research, and solutions empower investor success by delivering insights and experiences that are essential to investing,” said James Rhodes, Chief Technology Officer, Morningstar. “As we continue to modernize our data collection and software, we want to create a containerized hybrid infrastructure and easily deploy using AWS services.

“With AWS Outposts, we can build once and run application on-premises and easily migrate our applications to an AWS Region where possible. Ultimately, this allows us to accelerate the adoption of cloud technologies within our development teams, keep up with accelerating business and customer needs, and support our long-term journey to the cloud.”

– James Rhodes, Chief Technology Officer, Morningstar



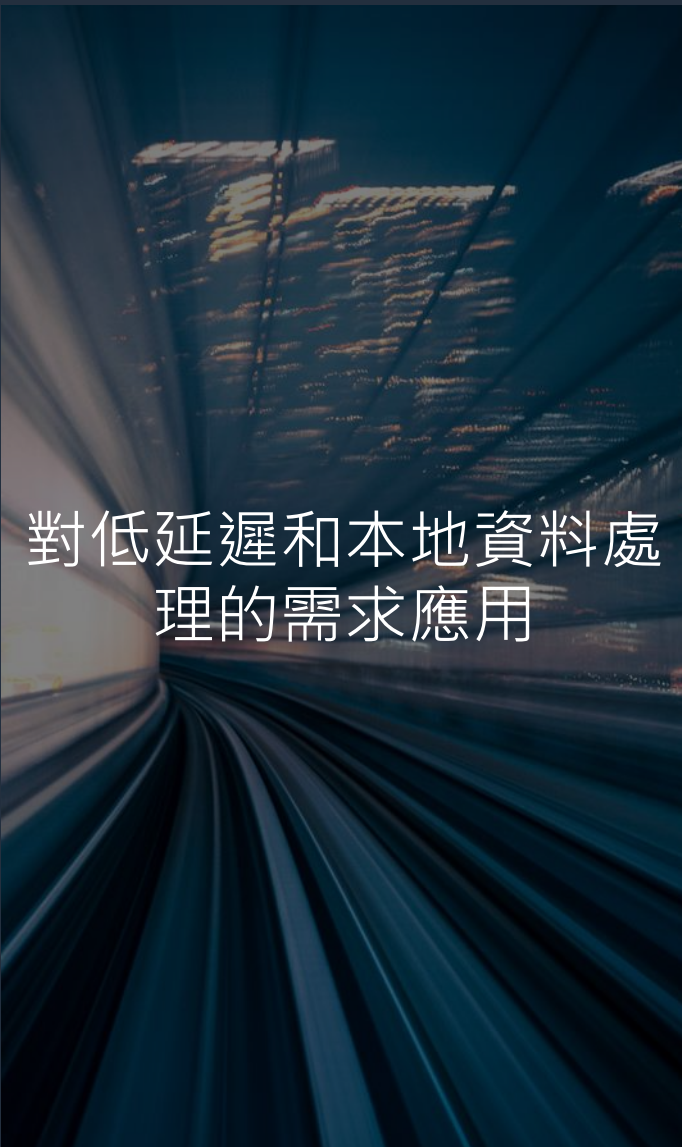
Telefónica Germany / O₂ builds new 5G core network in AWS Outposts

Via its 5G in the cloud, Telefónica Germany / O₂ can offer companies such as car and machine manufacturers, logistics companies or medium-sized businesses **state-of-the-art standardized solutions** for logistics and manufacturing processes in cooperation with their software developers and integrate them. Using AWS Outposts, a fully managed service that extends AWS infrastructure, AWS services, APIs, and tools to virtually any on-premises facility, developers can use tools they are already familiar with, eliminating the need for them to build these solutions independently. Furthermore, the cloud solution can be deployed in close proximity to the companies (edge computing) to ensure extremely low delay times (latencies) when using the network.



*"This is a big moment for Telefónica Germany / O₂ in their digital transformation journey and we're thrilled to be selected for their cloud native 5G core network deployment to realize 5G industrial solutions," says Dave Brown, Vice President Elastic Compute Cloud (EC2) at AWS. "Telefónica's 5G Core will leverage AWS cloud technology within the AWS Frankfurt Region and their on-premises data centers through AWS Outposts. By building their 5G core network on AWS, Telefónica Germany / O₂ is opening the door to cloud native infrastructure, delivering **full automation and elasticity at scale**, with the ability to dynamically scale and allocate 5G network capacity to meet the needs of their business customers."*

總結



對低延遲和本地資料處理的需求應用



客戶希望獲得與本地端和雲端相同的使用體驗



AWS Outposts 提供與雲端中相同的完全託管基礎架構、服務和 API。



簡化 IT 管理,提高 IT 效率。提高開發人員的工作效率。加快創新步伐。



Thank you!

