

# AWS to Azure services comparison

Article • 08/12/2024

This article helps you understand how Microsoft Azure services compare to Amazon Web Services (AWS). Whether you are planning a multicloud solution with Azure and AWS or migrating to Azure, you can compare the IT capabilities of Azure and AWS services in all categories.

This article compares services that are roughly comparable. Not every AWS service or Azure service is listed, and not every matched service has exact feature-for-feature parity.

## Azure and AWS for multicloud solutions

As the leading public cloud platforms, Azure and AWS each offer a broad and deep set of capabilities with global coverage. Yet many organizations choose to use both platforms together for greater choice and flexibility, as well as to spread their risk and dependencies with a multicloud approach. Consulting companies and software vendors might also build on and use both Azure and AWS, as these platforms represent most of the cloud market demand.


For an overview of Azure for AWS users, see [Introduction to Azure for AWS professionals](#).

## Marketplace

 Expand table

AWS service	Azure service	Description
<a href="#">AWS Marketplace</a>	<a href="#">Azure Marketplace</a>	Easy-to-deploy and automatically configured third-party applications, including single virtual machine or multiple virtual machine solutions.

## AI and machine learning

 Expand table

AWS service	Azure service	Description
<a href="#">SageMaker</a>	<a href="#">Machine Learning</a>	A cloud service to train, deploy, automate, and manage machine learning models.
<a href="#">Alexa Skills Kit</a>	<a href="#">Bot Framework</a>	Build and connect intelligent bots that interact with your users using text/SMS, Skype, Teams, Slack, Microsoft 365 mail, Twitter, and other popular services.
<a href="#">Lex</a>	<a href="#">Speech Services</a>	API capable of converting speech to text, understanding intent, and converting text back to speech for natural responsiveness.
<a href="#">Lex</a>	<a href="#">Language Understanding (LUIS)</a>	Allows your applications to understand user commands contextually.
<a href="#">Polly</a> , <a href="#">Transcribe</a>	<a href="#">Speech Services</a>	Enables both Speech to Text, and Text into Speech capabilities.
<a href="#">Rekognition</a>	<a href="#">Cognitive Services</a>	<a href="#">Computer Vision</a> : Extract information from images to categorize and process visual data.  <a href="#">Face</a> : Detect, identify, and analyze faces and facial expressions in photos.
<a href="#">Skills Kit</a>	<a href="#">Virtual Assistant</a>	The Virtual Assistant Template brings together a number of best practices we've identified through the building of conversational experiences and automates integration of components that we've found to be highly beneficial to Bot Framework developers.

## AI and machine learning architectures


[Expand table](#)

Architecture	Description
<a href="#">Image classification on Azure</a>	Learn how to build image processing into your applications by using Azure services such as the Computer Vision API and Azure Functions.
<a href="#">Intelligent product search engine for e-commerce</a>	This architecture describes how to use a dedicated search service to dramatically increase the relevance of search results for your e-commerce customers.

[view all](#)


# Big data and analytics

## Data warehouse

 Expand table

AWS service	Azure service	Description
Redshift	Synapse Analytics	Cloud-based enterprise data warehouse (EDW) that uses massively parallel processing (MPP) to quickly run complex queries across petabytes of data.
Lake Formation	Data Share	A simple and safe service for sharing big data.


## Data warehouse architectures

 Expand table

Architecture	Description
Automated enterprise BI	Automate an extract, load, transform (ELT) workflow in Azure by using Azure Data Factory with Azure Synapse Analytics.


[view all](#)

## Time series

 Expand table


AWS service	Azure service	Description
Amazon Timestream	Azure Data Explorer	Fully managed, low latency, and distributed big data analytics platform that runs complex queries across petabytes of data. Highly optimized for log and time series data.
	Azure Time Series Insights	Open and scalable end-to-end IoT analytics service. Collect, process, store, query, and visualize data at Internet of Things (IoT) scale--data that's highly contextualized and optimized for time series.

## Time series architecture

 [Expand table](#)


Architecture	Description
<a href="#">IoT analytics with Azure Data Explorer</a>	IoT telemetry analytics with Azure Data Explorer demonstrates near real-time analytics over a fast flowing, high volume, wide variety of streaming data from IoT devices.

## Big data processing

 [Expand table](#)

AWS service	Azure service	Description
<a href="#">EMR</a>	<a href="#">Azure Data Explorer</a>	Fully managed, low latency, distributed big data analytics platform to run complex queries across petabytes of data.
<a href="#">EMR</a>	<a href="#">Databricks</a>	Apache Spark-based analytics platform.
<a href="#">EMR</a>	<a href="#">HDInsight</a>	Managed Hadoop service. Deploy and manage Hadoop clusters in Azure.
<a href="#">EMR</a>	<a href="#">Data Lake Storage</a>	Massively scalable, secure data lake functionality built on Azure Blob Storage.


## Big data architectures

 [Expand table](#)

Architecture	Description
<a href="#">Azure data platform end-to-end</a>	Use Azure services to ingest, process, store, serve, and visualize data from different sources.
<a href="#">Personalized offers</a>	This solution builds intelligent marketing systems that provide customer-tailored content by using machine learning models that analyze data from multiple sources.
<a href="#">Big data analytics with Azure Data Explorer</a>	Big data analytics with Azure Data Explorer demonstrates how Azure Data Explorer caters to volume, velocity, and variety of data, the three V's of big data.


[view all](#)

## Data orchestration / ETL

 Expand table


AWS service	Azure service	Description
<a href="#">Data Pipeline</a> , <a href="#">Glue</a>	<a href="#">Data Factory</a>	Processes and moves data between different compute and storage services, as well as on-premises data sources at specified intervals. Create, schedule, orchestrate, and manage data pipelines.
<a href="#">Glue</a>	<a href="#">Microsoft Purview</a>	A unified data governance service that helps you manage and govern your on-premises, multicloud, and software as a service (SaaS) data.

## Analytics and visualization

 Expand table

AWS service	Azure service	Description
<a href="#">Kinesis Analytics</a>	<a href="#">Stream Analytics</a>  <a href="#">Azure Data Explorer</a>  <a href="#">Data Lake Analytics</a>  <a href="#">Data Lake Store</a>	Storage and analysis platforms that create insights from large quantities of data, or data that originates from many sources.
<a href="#">QuickSight</a>	<a href="#">Power BI</a>	Business intelligence tools that build visualizations, perform ad hoc analysis, and develop business insights from data.
<a href="#">CloudSearch</a>	<a href="#">Cognitive Search</a>	Delivers full-text search and related search analytics and capabilities.
<a href="#">Athena</a>	<a href="#">Data Lake Analytics</a>  <a href="#">Azure Synapse Analytics</a>	<p>Provides a serverless interactive query service that uses standard SQL for analyzing databases.</p> <p>Azure Synapse Analytics is a limitless analytics service that brings together data integration, enterprise data warehousing, and big data analytics. It gives you the freedom to query data on your terms, using either serverless or dedicated resources at scale.</p>
<a href="#">Elasticsearch Service</a>	<a href="#">Elastic on Azure</a>	Use the Elastic Stack (Elastic, Logstash, and Kibana) to search, analyze, and visualize in real time.

# Analytics architectures

 Expand table


Architecture	Description
<a href="#">Automated enterprise BI</a>	Automate an extract, load, transform (ELT) workflow in Azure by using Azure Data Factory with Azure Synapse Analytics.
<a href="#">Mass ingestion and analysis of news feeds on Azure</a>	Create a pipeline for ingesting and analyzing text, images, sentiment, and other data from RSS news feeds by using only Azure services, including Azure Cosmos DB and Azure AI services.

[view all](#)

# Compute

## Virtual machines and servers

Virtual machines (VMs) and servers allow users to deploy, manage, and maintain OS and other software. Users pay for what they use, with the flexibility to change sizes.

 Expand table

AWS service	Azure service	Description
<a href="#">Amazon EC2 Instance Types</a>	<a href="#">Azure Virtual Machines</a>	AWS and Azure on-demand VMs bill per seconds used. Although AWS instance types and Azure VM sizes have similar categories, the exact RAM, CPU, and storage capabilities differ. For information about Azure VM sizes, see <a href="#">Azure VM sizes</a> .
<a href="#">VMware Cloud on AWS</a>	<a href="#">Azure VMware Solution</a>	AWS and Azure solutions let you move VMware vSphere-based workloads and environments to the cloud. Azure VMware Solution is a VMware-verified Microsoft service that runs on Azure infrastructure. You can manage existing environments with VMware solution tools, while modernizing applications with cloud native services.
<a href="#">AWS Parallel Cluster</a>	<a href="#">Azure CycleCloud</a>	Create, manage, operate, and optimize HPC and large compute clusters of any scale.

[View all the virtual machines architectures](#)

# Autoscaling

Autoscaling lets you automatically change the number of VM instances. You set defined metrics and thresholds that determine when to add or remove instances.

 Expand table

AWS service	Azure service	Description
<a href="#">AWS Auto Scaling</a>	<a href="#">Virtual machine scale sets</a> , <a href="#">App Service autoscale</a>	In Azure, virtual machine scale sets let you deploy and manage identical sets of VMs. The number of sets can autoscale. App Service autoscale lets you autoscale Azure App Service applications.

[View all the autoscaling architectures](#)

## Batch processing

Batch processing runs large-scale parallel and high-performance computing applications efficiently in the cloud.

 Expand table

AWS service	Azure service	Description
<a href="#">AWS Batch</a>	<a href="#">Azure Batch</a>	<a href="#">Azure Batch</a> helps you manage compute-intensive work across a scalable collection of VMs.

[View all the batch processing architectures](#)

## Storage

Several services provide different types of data storage for VM disks.

 Expand table


AWS service	Azure service	Description
Disk volumes on <a href="#">Amazon Elastic Block Store (EBS)</a>	Data disks in <a href="#">Azure Blob Storage</a>	<a href="#">Data disks</a> in blob storage provide durable data storage for Azure VMs. This storage is similar to AWS EC2 instance disk volumes on EBS.
<a href="#">Amazon EC2 instance store</a>	<a href="#">Azure temporary storage</a>	Azure temporary storage provides VMs with similar low-latency temporary read-write storage

AWS service	Azure service	Description
		to EC2 instance storage, also called ephemeral storage.
<a href="#">Amazon EBS Provisioned IOPS Volume</a>	<a href="#">Azure premium storage</a>	Azure supports higher performance disk I/O with premium storage. This storage is similar to AWS Provisioned IOPS storage options.
<a href="#">Amazon Elastic File System (EFS)</a>	<a href="#">Azure Files</a>	Azure Files provides VMs with similar functionality to Amazon EFS.

[View all the storage architectures](#)


## Containers and container orchestrators

Several AWS and Azure services provide containerized application deployment and orchestration.

 [Expand table](#)

AWS service	Azure service	Description
<a href="#">Amazon Elastic Container Service (Amazon ECS)</a> , <a href="#">AWS Fargate</a>	<a href="#">Azure Container Apps</a>	Azure Container Apps is a scalable service that lets you deploy thousands of containers without requiring access to the control plane.
<a href="#">Amazon Elastic Container Registry (Amazon ECR)</a>	<a href="#">Azure Container Registry</a>	Container registries store Docker formatted images and create all types of container deployments in the cloud.
<a href="#">Amazon Elastic Kubernetes Service (EKS)</a>	<a href="#">Azure Kubernetes Service (AKS)</a>	EKS and AKS let you orchestrate Docker containerized application deployments with Kubernetes. AKS simplifies monitoring and cluster management through auto upgrades and a built-in operations console. See <a href="#">Container runtime configuration</a> for specifics on the hosting environment.
<a href="#">AWS App Mesh</a>	<a href="#">Istio add-on for AKS</a>	The Istio add-on for AKS provides a fully-supported integration of the open-source Istio service mesh.

## Example container architectures

 [Expand table](#)




Architecture	Description
<a href="#">Baseline architecture on Azure Kubernetes Service (AKS)</a>	Deploy a baseline infrastructure that deploys an AKS cluster with a focus on security.
<a href="#">Microservices architecture on Azure Kubernetes Service (AKS)</a>	Deploy a microservices architecture on Azure Kubernetes Service (AKS).
<a href="#">CI/CD pipeline for container-based workloads</a>	Build a DevOps pipeline for a Node.js web app with Jenkins, Azure Container Registry, Azure Kubernetes Service, Azure Cosmos DB, and Grafana.

[View all the container architectures](#)


## Serverless computing

Serverless computing lets you integrate systems and run backend processes without provisioning or managing servers.

 [Expand table](#)

AWS service	Azure service	Description
<a href="#">AWS Lambda</a>	<a href="#">Azure Functions</a> , <a href="#">WebJobs</a> in <a href="#">Azure App Service</a>	Azure Functions is the primary equivalent of AWS Lambda in providing serverless, on-demand code. AWS Lambda functionality also overlaps with Azure WebJobs, which let you schedule or continuously run background tasks.


## Example serverless architectures

 [Expand table](#)

Architecture	Description
<a href="#">Query a data lake or lakehouse by using Azure Synapse Analytics serverless</a>	This architecture can reduce the challenges of extract, transform, load (ETL) operations. You can use this architecture to generate business insights and then solve modeling and ETL tasks.
<a href="#">HIPAA and HITRUST-compliant health data AI</a>	Manage HIPAA and HITRUST-compliant health data and medical records with the highest level of built-in security.
<a href="#">Cross-cloud scaling pattern</a>	Learn how to improve cross-cloud scalability with a solution architecture that includes Azure Stack. A step-by-step flowchart details instructions for implementation.

[View all the serverless architectures](#)

# Database

 [Expand table](#)

Type	AWS Service	Azure Service	Description
Relational database	<a href="#">RDS</a>	<a href="#">SQL Database</a>  <a href="#">Database for MySQL</a>  <a href="#">Database for PostgreSQL</a>  <a href="#">Database for MariaDB</a>	Managed relational database services in which resiliency, scale and maintenance are primarily handled by the Azure platform.
Serverless relational database	<a href="#">Amazon Aurora Serverless</a>	<a href="#">Azure SQL Database serverless</a>  <a href="#">Serverless SQL pool in Azure Synapse Analytics</a>	Database offerings that automatically scales compute based on the workload demand. You're billed per second for the actual compute used (Azure SQL)/data that's processed by your queries (Azure Synapse Analytics Serverless).
NoSQL	<a href="#">DynamoDB (Key-Value)</a>  <a href="#">SimpleDB</a>  <a href="#">Amazon DocumentDB (Document)</a>  <a href="#">Amazon Neptune (Graph)</a>	<a href="#">Azure Cosmos DB</a>	Azure Cosmos DB is a globally distributed, multi-model database that natively supports multiple data models including key-value pairs, documents, graphs, and columnar.
Caching	<a href="#">ElastiCache</a>  <a href="#">Amazon MemoryDB for Redis</a>	<a href="#">Cache for Redis</a>	An in-memory-based, distributed caching service that provides a high-performance store that's typically used to offload nontransactional work from a database.
Database migration	<a href="#">Database Migration Service</a>	<a href="#">Database Migration Service</a>	A service that executes the migration of database schema and data from one

Type	AWS Service	Azure Service	Description
			database format to a specific database technology in the cloud.

## Database architectures

 Expand table

Architecture	Description
<a href="#">Gaming by using Azure Cosmos DB</a>	Elastically scale your database to accommodate unpredictable bursts of traffic and deliver low-latency multi-player experiences on a global scale.

[view all](#)


## DevOps and application monitoring

 Expand table

AWS service	Azure service	Description
<a href="#">CloudWatch</a> , <a href="#">X-Ray</a>	<a href="#">Monitor</a>	Comprehensive solution for collecting, analyzing, and acting on telemetry from your cloud and on-premises environments.
<a href="#">CodeDeploy</a> <a href="#">CodeCommit</a> <a href="#">CodePipeline</a>	<a href="#">DevOps</a>	A cloud service for collaborating on code development.
<a href="#">Developer Tools</a>	<a href="#">Developer Tools</a>	Collection of tools for building, debugging, deploying, diagnosing, and managing multiplatform scalable apps and services.
<a href="#">CodeBuild</a>	<a href="#">DevOps Pipeline</a> <a href="#">GitHub Actions</a>	Fully managed build service that supports continuous integration and continuous deployment (CI/CD).
<a href="#">Command-line interface</a>	<a href="#">CLI</a> <a href="#">PowerShell</a>	Built on top of the native REST API across all cloud services, various programming language-specific wrappers provide easier ways to create solutions.

AWS service	Azure service	Description
<a href="#">eksctl</a>	<a href="#">az aks</a> command group	Manage Azure Kubernetes Service (AKS) using these Azure CLI commands.
<a href="#">AWS CloudShell</a>	<a href="#">Azure Cloud Shell</a>	Azure Cloud Shell is an interactive, authenticated, browser-accessible shell for managing Azure resources. It gives you the flexibility to choose the shell experience that best suits the way you work, either Bash or PowerShell.
<a href="#">OpsWorks (Chef-based)</a>	<a href="#">Automation</a>	Configures and operates applications of all shapes and sizes, and provides templates to create and manage a collection of resources.
<a href="#">CloudFormation</a>	<a href="#">Resource Manager</a>	Provides a way for users to automate the manual, long-running, error-prone, and frequently repeated IT tasks.
	<a href="#">Bicep</a>	
	<a href="#">VM extensions</a>	
	<a href="#">Azure Automation</a>	
<a href="#">Cloud Development Kit</a>	<a href="#">Azure Developer CLI</a>	Developer-friendly imperative commands that enable consistent and repeatable work and standardized infrastructure-as-code modules.
	<a href="#">Azure Verified Modules</a>	


## DevOps architectures

 Expand table

Architecture	Description
<a href="#">CI/CD for AKS apps with GitHub Actions and GitFlow</a>	This architecture is applicable to businesses that want to modernize end-to-end application development by using containers, continuous integration for build, and GitOps for continuous deployment.


[view all](#)

## Internet of Things (IoT)

 Expand table

AWS service	Azure service	Description
<a href="#">IoT Core</a>	<a href="#">IoT Hub</a>	A cloud gateway for managing bidirectional communication with billions of IoT devices, securely and at scale.
<a href="#">Greengrass</a>	<a href="#">IoT Edge</a>	Deploy cloud intelligence directly onto IoT devices, catering to on-premises scenarios.
<a href="#">Kinesis Firehose</a> , <a href="#">Kinesis Streams</a>	<a href="#">Event Hubs</a>	Services that facilitate the mass ingestion of events (messages), typically from devices and sensors. The data can then be processed in real-time micro-batches or be written to storage for further analysis.
<a href="#">IoT Things Graph</a>	<a href="#">Digital Twins</a>	Services you can use to create digital representations of real-world things, places, business processes, and people. Use these services to gain insights, drive the creation of better products and new customer experiences, and optimize operations and costs.


## IoT architectures

 Expand table

Architecture	Description
<a href="#">Azure IoT reference architecture</a>	A recommended architecture for IoT applications on Azure by using platform as a service (PaaS) components.

[view all](#)

## Management and governance

 Expand table

AWS service	Azure service	Description
<a href="#">AWS Organizations</a>	<a href="#">Management Groups</a>	Azure management groups help you organize your resources and subscriptions.
<a href="#">AWS Well-Architected Tool</a>	<a href="#">Azure Well-Architected Review</a>	Examine your workload through the lenses of reliability, cost management, operational excellence, security, and performance efficiency.

AWS service	Azure service	Description
<a href="#">Trusted Advisor</a>	<a href="#">Advisor</a>	Provides analysis of cloud resource configuration and security, so that subscribers can ensure they're making use of best practices and optimum configurations.
<a href="#">AWS Billing and Cost Management</a>	<a href="#">Microsoft Cost Management</a>	Microsoft Cost Management helps you understand your Azure invoice (bill), manage your billing account and subscriptions, monitor and control Azure spending, and optimize resource use.
<a href="#">Cost and Usage Reports</a>	<a href="#">Usage Details API</a>	Services to help generate, monitor, forecast, and share billing data for resource usage by time, organization, or product resources.
<a href="#">Management Console</a>	<a href="#">Portal</a>	A unified management console that simplifies building, deploying, and operating your cloud resources.
<a href="#">Application Discovery Service</a>	<a href="#">Migrate</a>	Assesses on-premises workloads for migration to Azure, performs performance-based sizing, and provides cost estimations.
<a href="#">Systems Manager</a>	<a href="#">Monitor</a>	Comprehensive solution for collecting, analyzing, and acting on telemetry from your cloud and on-premises environments.
<a href="#">Personal Health Dashboard</a>	<a href="#">Resource Health</a>	Provides detailed information about the health of resources, as well as recommended actions for maintaining resource health.
<a href="#">CloudTrail</a>	<a href="#">Activity log</a>	The Activity log is a platform log in Azure that provides insight into subscription-level events, such as when a resource is modified or when a virtual machine is started.
<a href="#">CloudWatch</a>	<a href="#">Application Insights</a>	A feature of Azure Monitor, Application Insights is an extensible Application Performance Management (APM) service for developers and DevOps professionals, which provides telemetry insights and information, in order to better understand how applications are performing and to identify areas for optimization.
<a href="#">Config</a>	<a href="#">Application Change Analysis</a>	Application Change Analysis detects various types of changes, from the infrastructure layer all the way to application deployment.
<a href="#">Cost Explorer</a>	<a href="#">Cost Management</a>	Optimize costs while maximizing cloud potential.
<a href="#">Control Tower</a>	<a href="#">Azure Lighthouse</a>	Set up and govern a multi account/subscription environment.


AWS service	Azure service	Description
<a href="#">Resource Groups and Tag Editor</a>	<a href="#">Resource Groups and Tags</a>	A Resource Group is a container that holds related resources for an Azure solution. Apply tags to your Azure resources to logically organize them by categories.
<a href="#">AWS AppConfig</a>	<a href="#">Azure App Configuration</a>	Azure App Configuration is a managed service that helps developers centralize their application and feature settings simply and securely.
<a href="#">Service Catalog</a>	<a href="#">Azure Managed Applications</a>	Offers cloud solutions that are easy for consumers to deploy and operate.
<a href="#">SDKs and tools</a>	<a href="#">SDKs and tools</a>	Manage and interact with Azure services the way you prefer, programmatically from your language of choice, by using the Azure SDKs, our collection of tools, or both.

# Messaging and eventing

 Expand table


AWS service	Azure service	Description
<a href="#">Simple Queue Service (SQS)</a>	<a href="#">Queue Storage</a>	Provides a managed message queueing service for communicating between decoupled application components.
<a href="#">Simple Notification Service (SNS)</a>	<a href="#">Service Bus</a>	Supports a set of cloud-based, message-oriented middleware technologies, including reliable message queueing and durable publish/subscribe messaging.
<a href="#">Amazon EventBridge</a>	<a href="#">Event Grid</a>	A fully managed event routing service that allows for uniform event consumption using a publish/subscribe model.
<a href="#">Amazon Kinesis</a>	<a href="#">Event Hubs</a>	A fully managed, real-time data ingestion service. Stream millions of events per second, from any source, to build dynamic data pipelines and to immediately respond to business challenges.
<a href="#">Amazon MQ</a>	<a href="#">Service Bus</a>	Service Bus Premium is fully compliant with the Java/Jakarta EE Java Message Service (JMS) 2.0 API. Service Bus Standard supports the JMS 1.1 subset focused on queues.

# Messaging architectures

 Expand table

Architecture	Description
<a href="#">Scalable web application</a>	Use the proven practices in this reference architecture to improve scalability and performance in an Azure App Service web application.
<a href="#">Enterprise integration by using queues and events</a>	A recommended architecture for implementing an enterprise integration pattern with Azure Logic Apps, Azure API Management, Azure Service Bus, and Azure Event Grid.

# Networking


 Expand table

Area	AWS service	Azure service	Description
Cloud virtual networking	<a href="#">Virtual Private Cloud (VPC)</a>	<a href="#">Virtual Network</a>	Provides an isolated, private environment in the cloud. Users have control over their virtual networking environment, including selection of their own IP address range, creation of subnets, and configuration of route tables and network gateways.
NAT gateways	<a href="#">NAT Gateways</a>	<a href="#">Virtual Network NAT</a>	A service that simplifies outbound-only Internet connectivity for virtual networks. When configured on a subnet, all outbound connectivity uses your specified static public IP addresses. Outbound connectivity is possible without a load balancer or public IP addresses directly attached to virtual machines.
Cross-premises connectivity	<a href="#">VPN Gateway</a>	<a href="#">VPN Gateway</a>	Connects Azure virtual networks to other Azure virtual networks, or customer on-premises networks (Site To Site). Allows end users to connect to Azure services through VPN tunneling (Point To Site).
DNS management	<a href="#">Route 53</a>	<a href="#">DNS</a>	Manage your DNS records using the same credentials and billing and support contract as your other Azure services
DNS-based routing	<a href="#">Route 53</a>	<a href="#">Traffic Manager</a>	A service that hosts domain names, plus routes users to Internet applications, connects user requests to datacenters, manages traffic to apps, and improves app availability with automatic failover.



Area	AWS service	Azure service	Description
Dedicated network	<a href="#">Direct Connect</a>	<a href="#">ExpressRoute</a>	Establishes a dedicated, private network connection from a location to the cloud provider (not over the Internet).
Load balancing	<a href="#">Network Load Balancer</a>	<a href="#">Load Balancer</a>	Azure Load Balancer load balances traffic at layer 4 (TCP or UDP). Standard Load Balancer also supports cross-region or global load balancing.
Application-level load balancing	<a href="#">Application Load Balancer</a>	<a href="#">Application Gateway</a>	Application Gateway is a layer 7 load balancer. It supports SSL termination, cookie-based session affinity, and round robin for load-balancing traffic.
Route table	<a href="#">Custom Route Tables</a>	<a href="#">User Defined Routes</a>	Custom, or user-defined (static) routes to override default system routes, or to add more routes to a subnet's route table.
Private link	<a href="#">PrivateLink</a>	<a href="#">Azure Private Link</a>	Azure Private Link provides private access to services that are hosted on the Azure platform. This keeps your data on the Microsoft network.
Private PaaS connectivity	<a href="#">VPC endpoints</a>	<a href="#">Private Endpoint</a>	Private Endpoint provides secured, private connectivity to various Azure platform as a service (PaaS) resources, over a backbone Microsoft private network.
Virtual network peering	<a href="#">VPC Peering</a>	<a href="#">VNET Peering</a>	VNet peering is a mechanism that connects two virtual networks (VNETs) in the same region through the Azure backbone network. Once peered, the two virtual networks appear as one for all connectivity purposes.
Content delivery networks	<a href="#">CloudFront</a>	<a href="#">Front Door</a>	Azure Front Door is a modern cloud content delivery network (CDN) service that delivers high performance, scalability, and secure user experiences for your content and applications.
Network Monitoring	<a href="#">VPC Flow Logs</a>	<a href="#">Azure Network Watcher</a>	Azure Network Watcher allows you to monitor, diagnose, and analyze the traffic in Azure Virtual Network.

## Networking architectures

 Expand table

Architecture	Description
<a href="#">Deploy highly available NVAs</a>	Learn how to deploy network virtual appliances for high availability in Azure. This article includes example architectures for ingress, egress, and both.
<a href="#">Hub-spoke network topology in Azure</a>	Learn how to implement a hub-spoke topology in Azure, where the hub is a virtual network and the spokes are virtual networks that peer with the hub.
<a href="#">Implement a secure hybrid network</a>	See a secure hybrid network that extends an on-premises network to Azure with a perimeter network between the on-premises network and an Azure virtual network.

[view all](#)

# Security, identity, and access


## Authentication and authorization

 Expand table

AWS service	Azure service	Description
<a href="#">Identity and Access Management (IAM)</a>	<a href="#">Microsoft Entra ID</a>	Allows users to securely control access to services and resources while offering data security and protection. Create and manage users and groups, and use permissions to allow and deny access to resources.
<a href="#">Identity and Access Management (IAM)</a>	<a href="#">Azure role-based access control (RBAC)</a>	Azure role-based access control (RBAC) helps you manage who has access to Azure resources, what they can do with those resources, and what areas they have access to.
<a href="#">Organizations</a>	<a href="#">Subscription Management + Azure RBAC</a>	Security policy and role management for working with multiple accounts.
<a href="#">Multi-Factor Authentication</a>	<a href="#">Microsoft Entra ID</a>	Safeguard access to data and applications while meeting user demand for a simple sign-in process.
<a href="#">Directory Service</a>	<a href="#">Microsoft Entra Domain Services</a>	Provides managed domain services, such as domain join, group policy, LDAP, and Kerberos/NTLM authentication, which are fully compatible with Windows Server Active Directory.


AWS service	Azure service	Description
Cognito	Microsoft Entra External ID	A highly available, global identity management service for consumer-facing applications that scales to hundreds of millions of identities.
AWS Config	Policy	Azure Policy is a service in Azure that you use to create, assign, and manage policies. These policies enforce different rules and effects over your resources so those resources stay compliant with your corporate standards and service-level agreements.
Organizations	Management Groups	Azure management groups provide a level of scope above subscriptions. You organize subscriptions into containers called "management groups" and apply your governance conditions to the management groups. All subscriptions within a management group automatically inherit the conditions applied to the management group. Management groups give you enterprise-grade management at a large scale, no matter what type of subscriptions you have.

## Encryption

 Expand table

AWS service	Azure service	Description
Server-side encryption with Amazon S3 Key Management Service	Azure Storage Service Encryption	Helps you protect and safeguard your data and meet your organizational security and compliance commitments.
Key Management Service (KMS) , CloudHSM	Key Vault	Provides security solution and works with other services by providing a way to manage, create, and control encryption keys stored in hardware security modules (HSMs).


## Firewall

 Expand table

AWS service	Azure service	Description
Web Application Firewall	Web Application Firewall	A firewall that protects web applications from common web exploits.


AWS service	Azure service	Description
<a href="#">AWS Network Firewall</a>	<a href="#">Firewall</a>	Provides inbound protection for non-HTTP/S protocols, outbound network-level protection for all ports and protocols, and application-level protection for outbound HTTP/S.

## Security

 Expand table

AWS service	Azure service	Description
<a href="#">Inspector</a>	<a href="#">Defender for Cloud</a>	An automated security assessment service that improves the security and compliance of applications. Automatically assess applications for vulnerabilities or deviations from best practices.
<a href="#">Certificate Manager</a>	<a href="#">App Service Certificates available on the Portal</a>	Service that allows customers to create, manage, and consume certificates seamlessly in the cloud.
<a href="#">GuardDuty</a>	<a href="#">Microsoft Sentinel</a>	Detect and investigate advanced attacks on-premises and in the cloud.
<a href="#">Artifact</a>	<a href="#">Service Trust Portal</a>	Provides access to audit reports, compliance guides, and trust documents from across cloud services.
<a href="#">Shield</a>	<a href="#">DDoS Protection Service</a>	Provides cloud services with protection from distributed denial of services (DDoS) attacks.

## Security architectures


 Expand table

Architecture	Description
<a href="#">Real-time fraud detection</a>	Detect fraudulent activity in real-time by using Azure Event Hubs and Stream Analytics.
<a href="#">Securely managed web applications</a>	Learn about deploying secure applications using the App Service Environment, the Azure Application Gateway service, and Web Application Firewall.
<a href="#">Threat indicators for cyber threat intelligence in Microsoft Sentinel</a>	Import threat indicators, view logs, create rules to generate security alerts and incidents, and visualize threat intelligence data with Microsoft Sentinel.

[view all](#)


# Storage

## Object storage

 Expand table


AWS service	Azure service	Description
<a href="#">Simple Storage Services (S3)</a>	<a href="#">Blob storage</a>	Object storage service for use cases that include cloud applications, content distribution, backup, archive, immutable storage, disaster recovery, and big data analytics.

## Virtual server disks

 Expand table

AWS service	Azure service	Description
<a href="#">Elastic Block Store (EBS)</a>	<a href="#">Managed Disks</a>	SSD storage that's optimized for I/O-intensive read/write operations. For use as high-performance Azure virtual machine storage.
<a href="#">Amazon FSX for NetApp ONTAP</a> iSCSI or NVMe/TCP LUNs	<a href="#">Azure Elastic SAN</a>	Storage area network (SAN) capabilities in the cloud. Uses industry-standard storage protocols.


## Shared files

 Expand table

AWS service	Azure service	Description
<a href="#">Elastic File System</a>	<a href="#">Files</a>	Provides a simple interface for creating and configuring file systems quickly and sharing common files. Supports NFS protocol for connectivity.
<a href="#">Amazon FSx for Windows File Server</a>	<a href="#">Files</a>	Provides a managed SMB file share that can work with Active Directory for access control. Azure Files can also natively integrate with Microsoft Entra ID.


AWS service	Azure service	Description
<a href="#">Amazon FSx for Lustre</a>	<a href="#">Azure Managed Lustre</a>	Provides a managed Lustre file system that integrates with object storage. Primary use cases include HPC, machine learning, and analytics.
<a href="#">Amazon FSx for NetApp ONTAP</a>	<a href="#">Azure NetApp Files</a>	Provides managed NetApp capabilities in the cloud. Includes dual-protocol high-performance file storage.

## Archiving and backup

 Expand table

AWS service	Azure service	Description
<a href="#">S3 Infrequent Access (IA)</a>	<a href="#">Storage cool tier</a>	Cool storage is a lower-cost tier for storing data that is infrequently accessed and long-lived.
<a href="#">S3 Glacier</a>	<a href="#">Cold access storage tier</a>	Cold storage has lower storage costs and higher access costs. Access times remain in the milliseconds.
<a href="#">S3 Glacier Deep Archive</a>	<a href="#">Storage archive access tier</a>	Archive storage has the lowest storage cost and higher data retrieval costs. It can take hours to retrieve data.
<a href="#">Backup</a>	<a href="#">Backup</a>	This option is used to back up and recover files, databases, disks, and virtual machines. Azure Backup also supports backing up compatible on-premises Windows systems.


## Hybrid storage

 Expand table

AWS service	Azure service	Description
<a href="#">AWS Storage Gateway: S3 File Gateway</a>	<a href="#">Azure Data Box Gateway</a> , <a href="#">Azure File Sync</a>	Provides on-premises, locally cached NFS and SMB file shares that are cloud-backed.
<a href="#">AWS Storage Gateway: Tape Gateway</a>	<i>None</i>	Replaces on-premises physical tapes with on-premises, cloud-backed virtual tapes.
<a href="#">AWS Storage Gateway: Volume Gateway</a>	<i>None</i>	Provides on-premises iSCSI based block storage that is cloud-backed.


AWS service	Azure service	Description
DataSync	File Sync	Azure Files can be deployed in two main ways: by directly mounting the serverless Azure file shares or by caching Azure file shares on-premises using Azure File Sync.

## Bulk data transfer

 Expand table

AWS service	Azure service	Description
Import/Export Disk	Import/Export	A data transport solution that uses secure disks and appliances to transfer large amounts of data. Also offers data protection during transit.
Snowball Edge	Data Box	Petabyte-scale to exabyte-scale data transport solution that uses enhanced-security data storage devices to transfer large amounts of data to and from Azure.


## Storage architectures

 Expand table

Architecture	Description
HIPAA and HITRUST-compliant health data AI	Manage HIPAA and HITRUST-compliant health data and medical records with the highest level of built-in security.
HPC log	Optimize the media rendering process with a step-by-step HPC solution architecture from Azure that combines Azure CycleCloud and HPC Cache.
Medical data storage solutions	Store healthcare data effectively and affordably with cloud-based solutions from Azure. Manage medical records with the highest level of built-in security.


[View Azure storage architectures](#)

## Web applications

 Expand table

AWS service	Azure service	Description
<a href="#">Elastic Beanstalk</a>	<a href="#">App Service</a>	Managed hosting platform providing easy to use services for deploying and scaling web applications and services.
<a href="#">API Gateway</a>	<a href="#">API Management</a>	A turnkey solution for publishing APIs to external and internal consumers.
<a href="#">CloudFront</a>	<a href="#">Azure Front Door</a>	Azure Front Door is a modern cloud content delivery network (CDN) service that delivers high performance, scalability, and secure user experiences for your content and applications.
<a href="#">Global Accelerator</a>	<a href="#">Azure Front Door</a>	Easily join your distributed microservices architectures into a single global application using HTTP load balancing and path-based routing rules. Automate turning up new regions and scale-out with API-driven global actions and independent fault-tolerance to your back-end microservices in Azure or anywhere.
<a href="#">Global Accelerator</a>	<a href="#">Cross-regional load balancer</a>	Distribute and load balance traffic across multiple Azure regions via a single, static, global anycast public IP address.
<a href="#">Lightsail</a>	<a href="#">App Service</a>	Build, deploy, and scale web apps on a fully managed platform.
<a href="#">App Runner</a>	<a href="#">Web App for Containers</a>	Easily deploy and run containerized web apps on Windows and Linux.
<a href="#">Amplify</a>	<a href="#">Static Web Apps</a>	Boost productivity with a tailored developer experience, CI/CD workflows to build and deploy your static content hosting, and dynamic scale for integrated serverless APIs.

## Web architectures

 Expand table


Architecture	Description
<a href="#">Architect scalable e-commerce web app</a>	The e-commerce website includes simple order processing workflows with the help of Azure services. Using Azure Functions and Web Apps, developers can focus on building personalized experiences and let Azure take care of the infrastructure.
<a href="#">Multi-region N-tier application</a>	Deploy an application on Azure Virtual Machines in multiple regions for high availability and resiliency.
<a href="#">Serverless web application</a>	This reference architecture shows a serverless web application, which serves static content from Azure Blob Storage and implements an API by



Architecture	Description
	using Azure Functions.


[view all](#)

## End-user computing

 Expand table

AWS service	Azure service	Description
<a href="#">WorkSpaces</a> , <a href="#">AppStream 2.0</a>	<a href="#">Azure Virtual Desktop</a>	Manage virtual desktops and applications to enable corporate network and data access to users, anytime, anywhere, from supported devices. Amazon WorkSpaces support Windows and Linux virtual desktops. Azure Virtual Desktop supports multi-session Windows 10 virtual desktops.
<a href="#">WorkLink</a>	<a href="#">Application Proxy</a>	Provides access to intranet applications without requiring VPN connectivity. Amazon WorkLink is limited to iOS and Android devices.

## Miscellaneous

 Expand table

Area	AWS service	Azure service	Description
Backend process logic	<a href="#">Step Functions</a>	<a href="#">Logic Apps</a>	Cloud technology to build distributed applications using out-of-the-box connectors to reduce integration challenges. Connect apps, data, and devices on-premises or in the cloud.
Enterprise application services	<a href="#">WorkMail</a> , <a href="#">WorkDocs</a> , <a href="#">Chime</a>	<a href="#">Microsoft 365</a>	Fully integrated cloud service that provides communications, email, and document management in the cloud and is available on a wide variety of devices.
Gaming	<a href="#">GameLift</a>	<a href="#">PlayFab</a>	Managed services for hosting dedicated game servers.
Media transcoding	<a href="#">Elastic Transcoder</a>	<a href="#">Media Services</a>	Services that offer broadcast-quality video streaming services, including various

Area	AWS service	Azure service	Description
			transcoding technologies.
Workflow	<a href="#">Step Functions</a>	<a href="#">Logic Apps</a>	Serverless technology for connecting apps, data and devices anywhere, whether on-premises or in the cloud for large ecosystems of SaaS and cloud-based connectors.
Hybrid	<a href="#">Outposts</a>	<a href="#">Stack</a>	Azure Stack is a hybrid cloud platform that enables you to run Azure services in your company's or service provider's datacenter. As a developer, you can build apps on Azure Stack. You can then deploy them to either Azure Stack or Azure, or you can build truly hybrid apps that take advantage of connectivity between an Azure Stack cloud and Azure.
Media	<a href="#">Elemental MediaConvert</a>	<a href="#">Media Services</a>	Cloud-based media workflow platform to index, package, protect, and stream video at scale.
Satellite	<a href="#">Ground Station</a>	<a href="#">Azure Orbital</a>	Fully managed cloud-based ground station as a service.
Quantum computing	<a href="#">Amazon Braket</a>	<a href="#">Azure Quantum</a>	Managed quantum computing service that developers, researchers, and businesses can use to run quantum computing programs.

## Next steps

If you are new to Azure, review the interactive [Microsoft Azure Fundamentals](#) learning path.

## Feedback

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