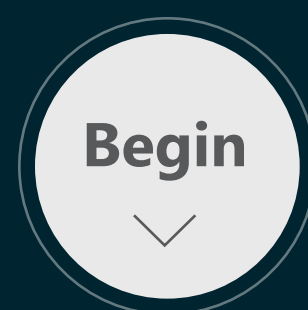Microsoft

Microsoft Azure & AWS

Cloud Service Map

Whether you are planning a multicloud solution with Azure and AWS, or migrating to Azure, now you can compare the cloud capabilities of Azure and AWS services in all categories.

Begin

Azure for Developers

Microsoft Azure is a growing collection of integrated cloud services that developers and IT professionals use to build, deploy, and manage applications through our global network of datacenters. With Azure, you get the freedom to build and deploy wherever you want, using the tools, applications, and frameworks of your choice.

For hybrid cloud environments, Azure Stack extends Azure to bring the agility and fast-paced innovation of cloud computing to your on-premises environments. Only Azure Stack lets you deliver Azure services from your organization's datacenter, while balancing the right amount of flexibility and control—for truly-consistent hybrid cloud deployments.
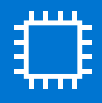
Azure & AWS Cloud Service Map

This document defines how common cloud services are made available via Azure and Amazon Web Services (AWS). We hope that this guide helps developers understand the services that Azure offers, whether they are new to the cloud or just new to Azure. We've structured the guide using a table that explains each cloud service capability sorted by service popularity, and maps the capability to the service offering name for both Azure and AWS.

NOTE: Not all Azure products and services are available in all regions. Consult the Products by Region page for details. You can find the uptime guarantees and downtime credit policies for each Azure product or service on the Service Level Agreements page.

Additional Resources

Compute

Marketplace

Storage

Enterprise Integration

Networking & Content Delivery

Developer Tools

Database

Security, Identity, & Access

Analytics & Big Data

Mobile Services

Intelligence

Management & Monitoring

Internet of Things (IoT)

**Select one of the solution categories above to get started**

Compute

Compute commonly refers to the collection of cloud
computing resources that your application can run on.

Service	Description	AWS	Azure
Virtual servers	Allows users to deploy, manage, and maintain OS and server software; instance types provide configurations of CPU/RAM.	Elastic Compute Cloud (EC2) VMs	Virtual Machines
	Offers a lightweight, simplified product offering users can choose from from when building out a virtual machine.	Amazon Lightsail	Virtual Machine Images
Container management	Supports Docker containers and allows users to run applications on managed instance clusters.	EC2 Container Service (ECS)	Container Service
	Allows customers to store Docker formatted images. Used to create all types of container deployments on Azure.	EC2 Container Registry	Container Registry
Microservice-based applications	Orchestrates and manages the execution, lifetime, and resilience of complex, interrelated code components that can be either stateless or stateful.		Service Fabric
Backend process logic	Integrates systems and runs backend processes in response to events or schedules without provisioning or managing servers.	Lambda	Functions Event Grid

Compute

Service	Description	AWS	Azure
Job orchestration	When processing across hundreds or thousands of compute nodes, this tool orchestrates the tasks and interactions between compute resources that are necessary.	AWS Batch	Batch
Scalability	Automatically changes the number of instances providing a compute workload. Users set defined metrics and thresholds that determine if the platform adds or removes instances.	AWS Auto Scaling	Virtual Machine Scale Sets App Service Scale Capability (PAAS) AutoScaling
Pre-defined templates	Community-led templates for creating and deploying virtual machine-based solutions.	AWS Quick Start	Quickstart templates
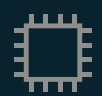
Storage

Storage services offer durable, highly available, and massively scalable cloud storage for your application, whether it runs in the cloud or not.

Service | Description | AWS | Azure

Service	Description	AWS	Azure
Object storage	Object storage service for use cases including cloud apps, content distribution, backup, archiving, disaster recovery, and big data analytics.	Simple Storage Services (S3)	Storage—Block Blob (for content logs, files) (Standard—Hot)
Virtual Server disk infrastructure	SSD storage optimized for I/O intensive read/write operations.	Elastic Block Store (EBS)	Disk Storage—Page Blobs (for VHDs or other random-write type data) Disk Storage—Premium Storage
Shared file storage	A simple interface to create and configure file systems quickly as well as share common files.	Elastic File System	File Storage (file share between VMs)
Archiving—cool storage	A lower cost tier for storing data that is infrequently accessed and long-lived.	S3 IA Glacier	Storage—Hot, Cool & Archive Tier
Backup	Backup and archival solutions that allow files and folders to be backed-up and recovered from the cloud, and provide off-site protection against data loss.	Backup and Recovery	Backup

Service

Description

AWS

Azure

Service	Description	AWS	Azure
Hybrid storage	Integrates on-premises IT environments with cloud storage. Automates data management and storage, plus supports disaster recovery.	Storage Gateway	StorSimple
Bulk data transfer	A data transport solution that uses secure disks and appliances to transfer substantial amounts of data.	AWS Import/Export Disk	Import/Export
	Petabyte- to Exabyte-scale data transport solution.	AWS Import/Export Snowball AWS Snowball Edge AWS Snowmobile	Data Box
Disaster recovery	Automates protection and replication of virtual machines with health monitoring, recovery plans, and recovery plan testing.		Site Recovery

Networking & Content Delivery

Allows you to easily provision private networks, connect your cloud application to your on-premises datacenters, and more.

Service | Description | AWS | Azure

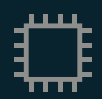| Service	Description	AWS	Azure
Cloud virtual networking	Provides an isolated, private environment in the cloud.	Virtual Private Cloud	Virtual Network
Cross-premises connectivity	Connects Azure virtual networks to other Azure virtual networks or customer on-premises networks. It also supports VPN tunneling.	AWS VPN Gateway	VPN Gateway
Domain name system management	Manage DNS records using the same credentials, billing, and support contract as other Azure services.	Route 53	DNS
	Service that hosts domain names, routes users to Internet applications, manages traffic to apps, and improves app availability with automatic failover.	Route 53	Traffic Manager
Content delivery network	Global content delivery network that transfers audio, video, applications, images, and other files.	CloudFront	Content Delivery Network
Dedicated network	Establishes a dedicated, private network connection from a location to the cloud provider.	Direct Connect	ExpressRoute
Load balancing	Automatically distributes incoming application traffic to add scale, handle failover, and route to a collection of resources.	Elastic Load Balancing	Load Balancer Application Gateway
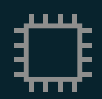
Database

Database services refers to options for storing data, whether it's a managed relational SQL database that's globally distributed, or a multi-model NoSQL database designed for any scale.

Service

Description

AWS

Azure

Service	Description	AWS	Azure
Relational database	SQL Database is a high-performance, reliable, and secure database you can use to build data-driven applications and websites, without needing to manage infrastructure.	RDS	SQL Database including Postgres and MySQL
NoSQL—document storage	A globally-distributed, multi-model database that natively supports multiple data models: key-value, documents, graphs, and columnar.	DynamoDB	Cosmos DB
NoSQL—key/value storage	A non-relational data store for semi-structured data.	DynamoDB and SimpleDB	Table Storage
Caching	An in-memory–based, distributed-caching service that provides a high-performance store typically used to offload non-transactional work from a database.	ElastiCache	Redis Cache
Database migration	Focuses on migration of database schema and data from one database format to a specific database technology in the cloud.	Database Migration Service (Preview)	SQL Database Migration Wizard

Analytics & Big Data

Make the most informed decision possible by analyzing all the data you need in real time.

Service | Description | AWS | Azure

Service	Description	AWS	Azure
Elastic data warehouse	A fully managed data warehouse that analyzes data using business intelligence tools.	Redshift	SQL Data Warehouse
Big data processing	Supports technologies that break up large data processing tasks into multiple jobs, and then combine the results to enable massive parallelism.	Elastic MapReduce (EMR)	HDInsight
Data orchestration	Processes and moves data between different compute and storage services, as well as on-premises data sources at specified intervals.	Data Pipeline	Data Factory
	Cloud-based ETL/data integration service that orchestrates and automates the movement and transformation of data from various sources.	AWS Glue Data Catalog	Data Factory + Data Catalog
Analytics	Storage and analysis platforms that create insights from massive quantities of data, or data that originates from many sources.	Kinesis Analytics	Stream Analytics Data Lake Analytics Data Lake Store

Service	Description	AWS	Azure
Visualization	Business intelligence tools that build visualizations, perform ad-hoc analysis, and develop business insights from data.	QuickSight (Preview)	Power BI
	Allows visualization and data analysis tools to be embedded in applications.		Power BI Embedded
Search	A scalable search server based on Apache Lucene.	Elasticsearch Service	Marketplace—Elasticsearch
	Delivers full-text search and related search analytics and capabilities.	CloudSearch	Search
Machine learning	Produces an end-to-end workflow to create, process, refine, and publish predictive models from complex data sets.	Machine Learning	Machine Learning
Data discovery	Provides the ability to better register, enrich, discover, understand, and consume data sources.		Data Catalog
	A serverless interactive query service that uses standard SQL for analyzing databases.	Amazon Athena	Data Lake Analytics
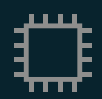
Intelligence

Intelligence services enable natural and contextual interaction within your applications, using machine learning and artificial intelligence capabilities that include text, speech, vision, and search.

Service	Description	AWS	Azure
Conversational user interfaces virtual personal assistant	Suite that covers intelligence cognitive services, machine learning, analytics and more.	Alexa Skills Kits	Cortana Intelligence Suite — Cortana Integration
	Builds and connects intelligent bots that interact with users via text messaging, Skype, Teams, Slack, Twitter and other popular collaboration services.	Amazon Lex	Microsoft Bot Framework + Bot Service
Speech recognition	API capable of converting speech to text, understanding intent, and converting text back to speech for natural responsiveness.	Amazon Lex	Bing Speech API
	Allows applications to understand user commands contextually.	Amazon Lex	Language Understanding Intelligent Service (LUIS)
	Gives the app the ability to recognize individual speakers.		Speaker Recognition API
	Fine-tunes speech recognition to eliminate barriers such as speaking style, background noise, and vocabulary.		Custom Recognition Intelligent Service (CRIS)

Service | Description | AWS | Azure

Service	Description	AWS	Azure
Text to Speech	Enables both speech-to-text, and text-to-speech capabilities.	Amazon Polly	Bing Speech API
Visual recognition	Distills actionable information from images, generates captions, and identifies objects in images.	Amazon Rekognition	Computer Vision API
	Detects, identifies, analyzes, organizes, and tags faces in photos.		Face API
	Recognizes emotions in images.		Emotions API
	Intelligent video processing which produces stable video output, detects motion, creates intelligent thumbnails, detects and tracks faces.		Video API

Internet of Things (IoT)

Internet of Things (IoT) services connect your devices, assets, and sensors to collect and analyze untapped data.

Service	Description	AWS	Azure
Internet of Things	Provides a preconfigured solution for monitoring, maintaining, and deploying common IoT scenarios.	AWS IoT Other Services (Kinesis, Machine Learning, EMR, Data Pipeline, SNS, QuickSight)	IoT Suite (IoT Hub, Machine Learning, Stream Analytics, Notification Hubs, Power BI)
	A cloud gateway for managing bi-directional communication with billions of IoT devices securely and at scale.	AWS IoT	IoT Hub
	Infrastructure and modules to create IoT gateway solutions.	AWS Greengrass — Software for Connected Devices	IoT Edge
Streaming data	Allow mass ingestion of small data inputs, typically from devices and sensors, to process and route data.	Kinesis Firehose Kinesis Streams	Event Hubs
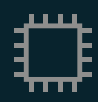
Management & Monitoring

Management and monitoring services provide visibility into the health, performance, and utilization of your applications, workloads, and infrastructure.

Service	Description	AWS	Azure
Cloud advisor	Provides analysis of cloud resource configuration and security so subscribers can ensure they use best practices and optimum configurations.	Trusted Advisor	Advisor
Deployment orchestration (DevOps)	Configures and operates applications of all shapes and sizes, and provides templates to create and manage a collection of resources.	OpsWorks (Chef-based)	Automation
	Provides a way for users to automate manual, long-running, error-prone, and frequently repeated IT tasks.	CloudFormation	Resource Manager VM extensions Automation
Management & monitoring (DevOps)	A unified console that simplifies building, deploying, and managing cloud resources.	CloudWatch	Portal Monitor
	An extensible analytics service that helps users understand the performance and usage of their live web application.	CloudWatch	Application Insights + Monitor
	An extensible application performance management service for web developers on multiple platforms.	AWS X-Ray	Application Insights + Monitor

| Service	Description	AWS	Azure
Management & monitoring (DevOps)	Services to help generate, monitor, forecast, and share billing data by time, organization, or product resources.	AWS Usage and Billing Report	Billing API
	A unified management console that simplifies building, deploying, and operating cloud resources.	AWS Management Console	Portal
	Connect with Azure using an authenticated, browser-based shell experience that's hosted in the cloud and accessible from virtually anywhere.		Cloud Shell
Administration	Provides deeper insights into application and workloads by collecting, correlating, and visualizing all machine data, such as event logs and more.	AWS Application Discovery Service	Log Analytics in Operations Management Suite
	Enables continuous IT services and compliance through process automation and configuration management.	Amazon EC2 Systems Manager	Microsoft Operations Management Suite—Automation and Control functionalities
	Provides detailed information about the health of resources as well as recommended actions for maintaining resource health.	AWS Personal Health Dashboard	Resource Health
	Standalone app from Microsoft that allows users to easily work with Azure Storage data on the OS of your choice.	Third Party	Storage Explorer

Mobile Services

Mobile services enable you to reach and engage your customers everywhere, on every device. DevOps services make it easier to bring a higher quality app to market faster, and a number of engagement services make it easier to deliver performant experiences that feel tailored to each user.

Service	Description	AWS	Azure
Pro app development	Provides backend mobile services for rapid development of mobile solutions, identity management, data synchronization, storage and notifications across devices.	Mobile Hub	Mobile Apps Xamarin Apps
	Offers the technology to rapidly build cross-platform and native apps for mobile devices.	Mobile SDK	Mobile Apps
	Provides authentication capabilities for mobile applications.	Cognito	Mobile Apps AAD B2C
App testing	Services to support testing mobile applications.	AWS Device Farm	Xamarin Test Cloud (front end)
Analytics	Supports monitoring and feedback collection for the debugging and analysis of a mobile application service quality.	Mobile Analytics	HockeyApp Application Insights
Enterprise mobility management	Provides mobile device management, mobile application management, and PC management capabilities from the cloud.		Intune
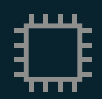
Security, Identity, & Access

A range of capabilities that protect your services and data in the cloud, while enabling you to extend your existing user accounts/identities, or provision entirely new ones.

Service	Description	AWS	Azure
Authentication and authorization	Allows users to securely control access to services and resources while offering data security and protection.	Identity and Access Management (IAM)	Active Directory Active Directory Premium Managed Service Identity
	Security policy and role management for working with multiple accounts.	AWS Organizations	Subscription and Service Management + RBAC
	Helps safeguard access to data and applications while meeting user demand for a simple sign-in process while delivering a range of verification options.	Multi-Factor Authentication	Multi-Factor Authentication
Information protection	Service to help control and secure email, documents, and sensitive data shared outside of users' own companies.		Information Protection
Encryption	Helps protect and safeguard data while meeting organizational security and compliance commitments.	Server-side encryption with Amazon S3 Key Management Service	Storage Service Encryption
	Provides security solutions and works with other services by offering a way to manage, create, and control encryption keys stored in hardware security modules.	Key Management Service CloudHSM	Key Vault
Firewall	A firewall that protects web applications from common web exploits.	Web Application Firewall	Application Gateway Web Application Firewall (preview)

Service	Description	AWS	Azure
Security	Automated security assessment service that improves the security and compliance of applications.	Inspector	Security Center
	Service that allows customers to create, manage, and consume certificates in the cloud.	Certificate Manager	App Service Certificates available on the Portal
Directory services	Comprehensive identity and access management cloud solution that provides a robust set of capabilities to manage users and groups.	AWS Directory Service + Windows Server Active Directory on AWS	Active Directory Domain Services + Windows Server Active Directory on IaaS
	A highly available, global, identity management service for consumer-facing applications that scales to hundreds of millions of identities.		Active Directory B2C
	Services for supporting Microsoft Active Directory in the cloud.	AWS Directory Service	Windows Server Active Directory
Compliance	Provides access to audit reports, compliance guides, and trust documents from across cloud services.	AWS Artifact	Microsoft Service Trust Portal
Security	Provides cloud services with protection from distributed denial of services attacks.	AWS Shield	Marketplace—Security

Developer Tools

Developer tools empower you to quickly build, debug, deploy, diagnose, and manage multiplatform, scalable apps and services.

Service	Description	AWS	Azure
Media transcoding	Services that offer broadcast-quality video streaming, including various transcoding technologies.	Elastic Transcoder	Media Services
Email	Services for integrating email functionality into applications.	Simple Email Service (SES)	Marketplace—Email
Messaging	Offers managed message queuing service for communicating between decoupled application components.	Simple Queue Service (SQS)	Queue Storage
	Supports a set of cloud-based, message-oriented middleware technologies, including reliable message queuing and durable publish/subscribe messaging.	Simple Queue Service (SQS)	Service Bus Queues, Topics, Relays
Workflow	Serverless technology for connecting apps, data, and devices anywhere.	Simple Workflow Service (SWF)	Logic Apps
API management	A turnkey solution for publishing APIs to external and internal consumers.	API Gateway	API Management
Enterprise app integration	Provides out-of-the box trading partner management, cloud to on-premises, and line-of-business application integration for SAP, Oracle, SQL Server, and Websphere MQ.		Logic Apps

Service	Description	AWS	Azure
Backend process logic	Technology to provide a way to run scripts or programs as background processes in an application context.	Lambda	Functions
Application development	Connects apps, data, and devices anywhere with a large ecosystem of SaaS and cloud-based connectors that includes Salesforce, Office 365, Twitter, Dropbox, Google Services, and more.		Logic Apps
	Managed hosting platforms which provide easy-to- use services for deploying and scaling web applications and services.	Elastic Beanstalk	Web Apps (App Service) Cloud Services API Apps (App Service)
	Developer tools for scripting application deployment.	CodeDeploy CodeCommit CodePipeline	Visual Studio Team Services
	Collection of tools for building, debugging, deploying, diagnosing, and managing multi-platform, scalable apps and services.	AWS Developer Tools	Developer Tools
	Technology to rapidly build business solutions by connecting to existing services and data sources such as Excel and more using a visual designer.		PowerApps

Service | Description | AWS | Azure

Service	Description	AWS	Azure
App testing	Testing technology to build out heterogeneous solutions for testing cross-platform functionality to dev/test environments.		DevTest Labs (backend)
App customer payment service	Cloud service that provides developers with a payment service.	Amazon Flexible Payment Service and Amazon Dev Pay	
Game development (cloud-based tools)	AWS managed service for hosting dedicated game servers.	GameLift	
	Game engine integrated with AWS and Twitch.	Lumberyard	
DevOps	Fully managed build service that supports continuous integration and deployment.	AWS CodeBuild	Visual Studio Team Services
Backend process logic	Cloud technology to build distributed applications using out-of-the-box connectors to reduce integration challenges.	AWS Step Functions	Logic Apps
Programmatic access	Provide command-line tooling to create and automate solutions.	Command Line Interface	Command Line Interface (CLI) PowerShell

Enterprise Integration

Enterprise integration makes it easier to build and manage B2B workflows that integrate with third-party software-as-a-service apps, on-premises apps, and custom apps.

Service | Description | AWS | Azure

| Service	Description	AWS	Azure
Enterprise app integration	Connects apps, data, and devices anywhere with cloud-based connectors that includes Salesforce, Office 365, Twitter, Dropbox, Google services, and more.		Logic Apps
Enterprise application services	Delivers the full spectrum of CRM through five individual apps that work together seamlessly: Sales, Customer Service, Field Service, Project Service Automation, and Marketing.		Dynamics 365
	Fully integrated cloud service providing communications, email, and document management in the cloud and available on a wide variety of devices.	Amazon WorkMail Amazon WorkDocs	Office 365
Content management in the cloud	A tool for individuals, teams, and organizations to intelligently discover, share, and collaborate on content from anywhere and on any device.		SharePoint Online
Commercial PAAS-IAAS-DBaaS framework	A hybrid cloud platform that lets users deliver Azure services from their organization's datacenter.		Stack

Marketplace

Cloud marketplace services bring together native and partner service offerings in a single place, making it easier for customers and partners to understand what they can do.

Service

Description

AWS

Azure

Marketplace

Easy-to-deploy and automatically configure third-party applications, including single or multiple virtual machine solutions.

AWS Marketplace

Marketplace

Microsoft Azure

Additional Resources

Get Started with Azure in 5 minutes

The Developer's Guide to Microsoft Azure (2nd Edition) Downloadable eBook

Build and host your first web or mobile app using the languages, tools, and platform you love

Use relational database-as-a-service to host your high-performance and data-driven apps

Manage and monitor apps to help diagnose issues, improve performance, and assess usage

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