

# AWS to Azure services comparison

Article • 11/12/2021 • 28 minutes to read •  +56

[Is this page helpful?](#)

## In this article

[Azure and AWS for multicloud solutions](#)

[Marketplace](#)

[AI and machine learning](#)

[Big data and analytics](#)

[Compute](#)

[Database](#)

[DevOps and application monitoring](#)

[Internet of things \(IoT\)](#)

[Management and governance](#)

[Messaging and eventing](#)

[Mobile services](#)

[Networking](#)

[Security, identity, and access](#)

[Storage](#)

[Web applications](#)

[End-user computing](#)

[Miscellaneous](#)

[More learning](#)

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

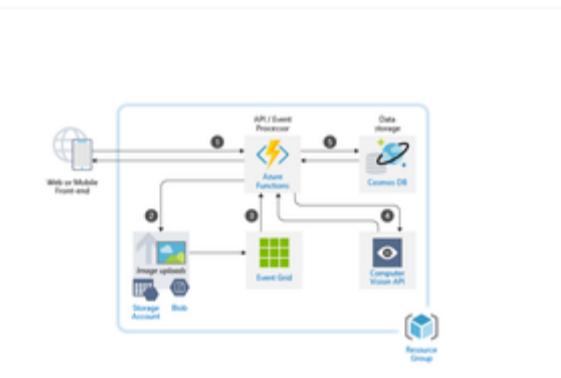
AWS service	Azure service	Description
AWS Marketplace	Azure Marketplace	Easy-to-deploy and automatically configured third-party applications, including single virtual machine or multiple virtual machine solutions.

## AI and machine learning

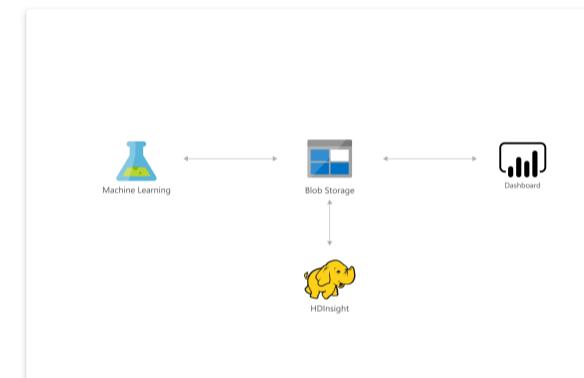
AWS service	Azure service	Description
SageMaker	Machine Learning	A cloud service to train, deploy, automate, and manage machine learning models.

AWS service	Azure service	Description
Alexa Skills Kit	Bot Framework	Build and connect intelligent bots that interact with your users using text/SMS, Skype, Teams, Slack, Microsoft 365 mail, Twitter, and other popular services.
Lex	Speech Services	API capable of converting speech to text, understanding intent, and converting text back to speech for natural responsiveness.
Lex	Language Understanding (LUIS)	Allows your applications to understand user commands contextually.
Polly , Transcribe	Speech Services	Enables both Speech to Text, and Text into Speech capabilities.
Rekognition	Cognitive Services	Computer Vision : Extract information from images to categorize and process visual data. Face : Detect, identify, and analyze faces and facial expressions in photos.
Skills Kit	Virtual Assistant	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.

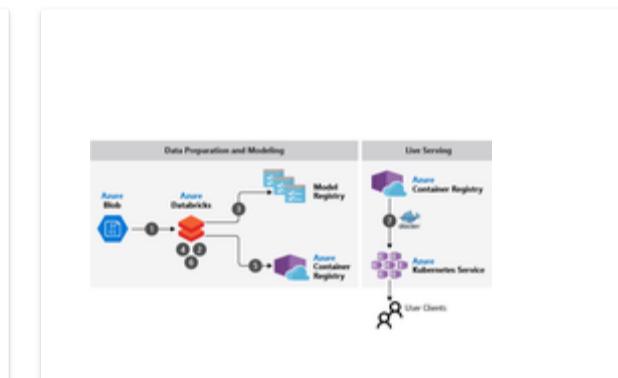
## AI and machine learning architectures



**Image classification on Azure**  
7/05/2018 4 min read  
Learn how to build image processing into your applications by using Azure services such as the Computer Vision API and Azure Functions.



**Predictive Marketing with Machine Learning**  
12/16/2019 2 min read  
Learn how to build a machine-learning model with Microsoft R Server on Azure HDInsight Spark clusters to recommend actions to maximize the...



**Scalable personalization on Azure**  
5/31/2019 6 min read  
Use machine learning to automate content-based personalization for customers.

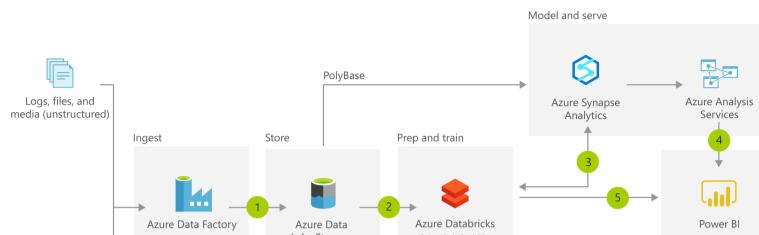
[view all](#)

## Big data and analytics

### Data warehouse

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

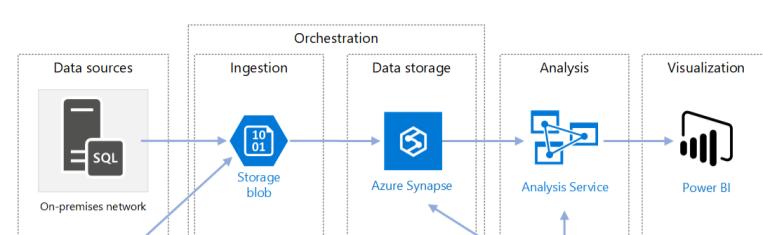
## Data warehouse architectures



### Modern Data Warehouse Architecture

12/16/2019 2 min read

Explore a cloud data warehouse that uses big data. Modern data warehouse brings together all your data and scales easily as your data grows.



### Automated enterprise BI

6/03/2020 13 min read

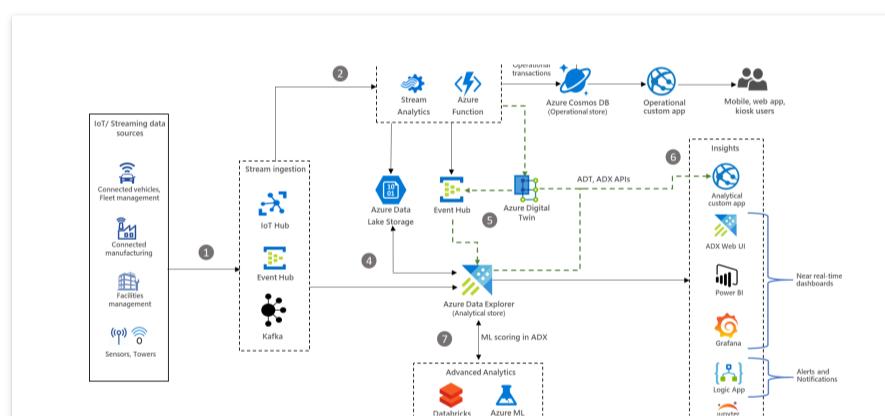
Automate an extract, load, and transform (ELT) workflow in Azure using Azure Data Factory with Azure Synapse Analytics.

[view all](#)

## Time series

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.

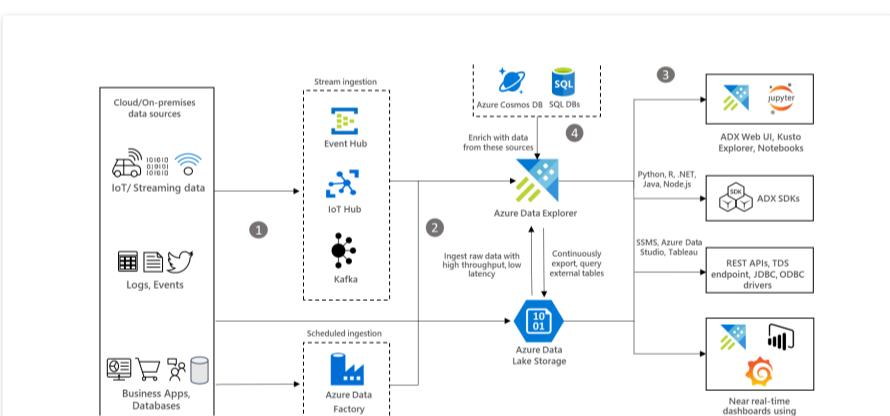
## Time series architectures



### IoT analytics with Azure Data Explorer

8/11/2020 3 min read

IoT Telemetry Analytics with Azure Data Explorer demonstrates near real-time analytics over fast flowing, high volume, wide variety of streaming data from IoT devices.



### Azure Data Explorer interactive analytics

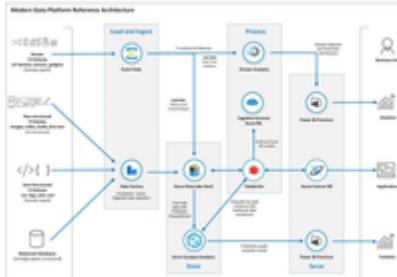
8/11/2020 3 min read

Interactive Analytics with Azure Data Explorer focuses on its integration with the rest of the data platform ecosystem.

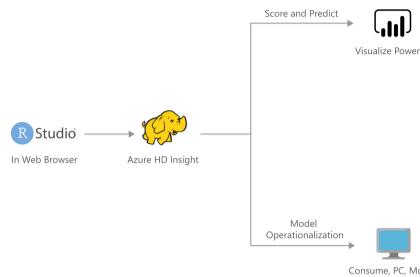
## Big data processing

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

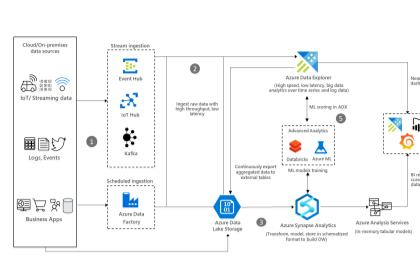
## Big data architectures



**Azure data platform end-to-end**  
1/31/2020 7 min read  
Use Azure services to ingest, process, store, serve, and visualize data from different sources.



**Campaign Optimization with Azure HDInsight Spark Clusters**  
12/16/2019 4 min read  
This solution demonstrates how to build and deploy a machine learning model with Microsoft R Server on Azure HDInsight Spark clusters to...



**Big data analytics with Azure Data Explorer**  
8/11/2020 3 min read  
Big Data Analytics with Azure Data Explorer demonstrates Azure Data Explorer's abilities to cater to volume, velocity, and variety of data, the three...

[view all](#)

## Data orchestration / ETL

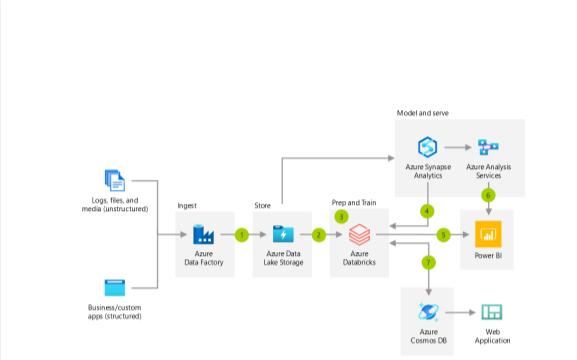
AWS service	Azure service	Description
Data Pipeline , Glue	Data Factory	Processes and moves data between different compute and storage services, as well as on-premises data sources at specified intervals. Create, schedule, orchestrate, and manage data pipelines.
Glue	Azure Purview	A unified data governance service that helps you manage and govern your on-premises, multicloud, and software as a service (SaaS) data.
Dynamo DB	Table Storage , Cosmos DB	NoSQL key-value store for rapid development using massive semi-structured datasets.

## Analytics and visualization

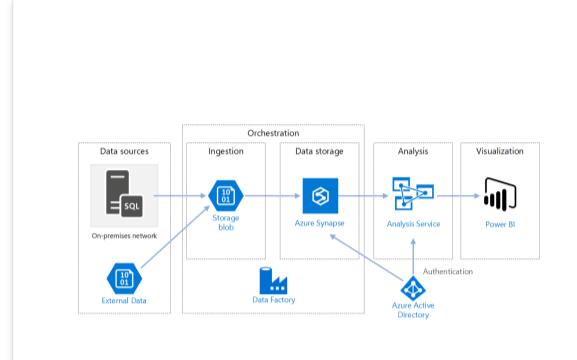
AWS service	Azure service	Description
Kinesis Analytics	Stream Analytics	Storage and analysis platforms that create insights from large quantities of data, or data that originates from many sources.
	Azure Data Explorer	
	Data Lake Analytics	
	Data Lake Store	
QuickSight	Power BI	Business intelligence tools that build visualizations, perform ad hoc analysis, and develop business insights from data.
CloudSearch	Cognitive Search	Delivers full-text search and related search analytics and capabilities.

AWS service	Azure service	Description
Athena	Data Lake Analytics	Provides a serverless interactive query service that uses standard SQL for analyzing databases.
	Azure Synapse Analytics	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.
Elasticsearch Service	Elastic on Azure	Use the Elastic Stack (Elastic, Logstash, and Kibana) to search, analyze, and visualize in real time.

## Analytics architectures



**Advanced Analytics Architecture**  
12/16/2019 2 min read  
Get near real-time data analytics on streaming services. This big data architecture allows you to combine any data at any scale with custom machin...



**Automated enterprise BI**  
6/03/2020 13 min read  
Automate an extract, load, and transform (ELT) workflow in Azure using Azure Data Factory with Azure Synapse Analytics.



**Mass ingestion and analysis of news feeds on Azure**  
2/01/2019 5 min read  
Create a pipeline for ingesting and analyzing text, images, sentiment, and other data from RSS news feeds using only Azure services, including Azure...

[view all](#)

## Compute

### Virtual servers

AWS service	Azure service	Description
Elastic Compute Cloud (EC2) Instances	Virtual Machines	Virtual servers allow users to deploy, manage, and maintain OS and server software. Instance types provide combinations of CPU/RAM. Users pay for what they use with the flexibility to change sizes.
Batch	Batch	Run large-scale parallel and high-performance computing applications efficiently in the cloud.
Auto Scaling	Virtual Machine Scale Sets	Allows you to automatically change the number of VM instances. You set defined metric and thresholds that determine if the platform adds or removes instances.
VMware Cloud on AWS	Azure VMware Solution	Seamlessly move VMware-based workloads from your datacenter to Azure and integrate your VMware environment with Azure. Keep managing your existing environments with the same VMware tools you already know while you modernize your applications with Azure native services. Azure VMware Solution is a Microsoft service, verified by VMware, that runs on Azure infrastructure.
Parallel Cluster	CycleCloud	Create, manage, operate, and optimize HPC and big compute clusters of any scale

## Containers and container orchestrators

AWS service	Azure service	Description
Elastic Container Service (ECS)	Container Instances	Azure Container Instances is the fastest and simplest way to run a container in Azure, without having to provision any virtual machines or adopt a higher-level orchestration service.
Fargate		
Elastic Container Registry	Container Registry	Allows customers to store Docker formatted images. Used to create all types of container deployments on Azure.
Elastic Kubernetes Service (EKS)	Kubernetes Service (AKS)	Deploy orchestrated containerized applications with Kubernetes. Simplify monitoring and cluster management through auto upgrades and a built-in operations console. See <a href="#">AKS solution journey</a> .
App Mesh	Service Fabric Mesh	Fully managed service that enables developers to deploy microservices applications without managing virtual machines, storage, or networking.

## Container architectures

**Baseline architecture on Azure Kubernetes Service (AKS)**  
07/20/2020 37 min read  
Deploy a baseline infrastructure that deploys an AKS cluster with focus on security.

**Microservices architecture on Azure Kubernetes Service (AKS)**  
5/07/2020 17 min read  
Deploy a microservices architecture on Azure Kubernetes Service (AKS)

**CI/CD pipeline for container-based workloads**  
7/05/2018 7 min read  
Build a DevOps pipeline for a Node.js web app with Jenkins, Azure Container Registry, Azure Kubernetes Service, Cosmos DB, and Grafana.

[view all](#)

## Serverless

AWS service	Azure service	Description
Lambda	Functions	Integrate systems and run backend processes in response to events or schedules without provisioning or managing servers.

## Serverless architectures

**Social App for Mobile and Web with Authentication**  
12/16/2019 3 min read

**HIPAA and HITRUST compliant health data AI**  
12/16/2019 2 min read

**Cross Cloud Scaling Architecture**  
12/16/2019 1 min read  
Learn how to improve cross cloud

View a detailed, step-by-step diagram depicting the build process and implementation of the mobile client app architecture that offers social...

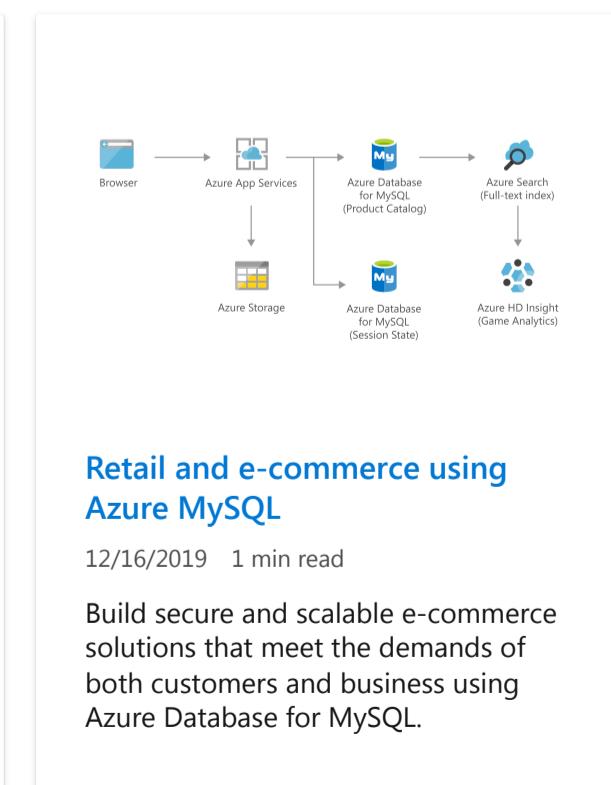
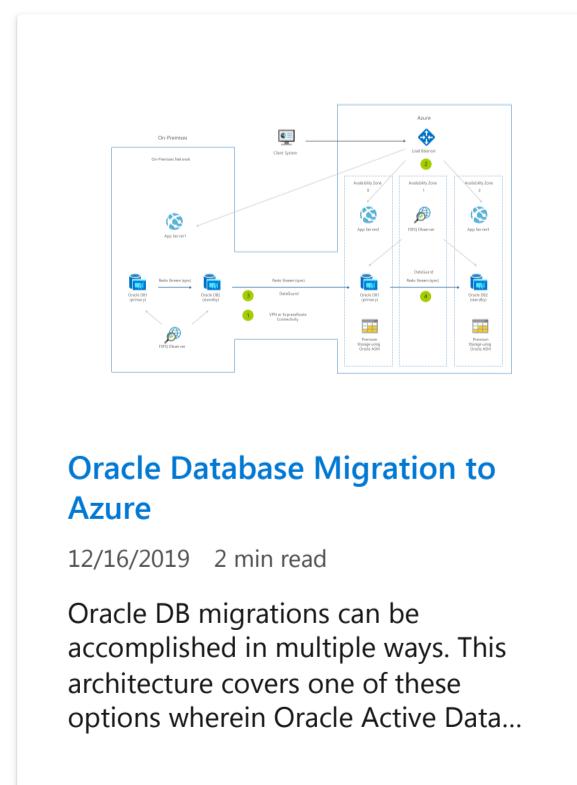
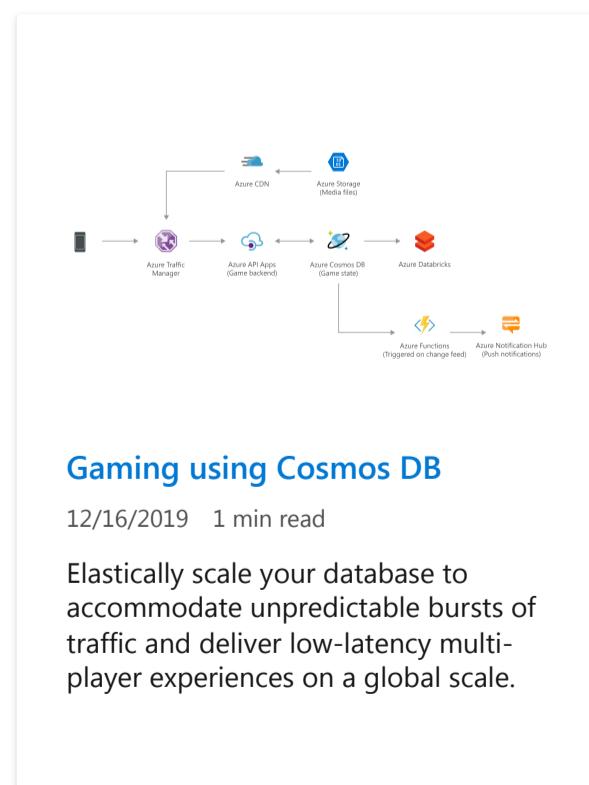
Manage HIPAA and HITRUST compliant health data and medical records with the highest level of built-in security.

scalability with solution architecture that includes Azure Stack. A step-by-step flowchart details instructions for...

# Database

Type	AWS Service	Azure Service	Description
Relational database	RDS	SQL Database	Managed relational database services in which resiliency, scale and maintenance are primarily handled by the Azure platform.
		Database for MySQL	
		Database for PostgreSQL	
		Database for MariaDB	
Serverless relational database	Amazon Aurora Serverless	Azure SQL Database serverless	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).
		Serverless SQL pool in Azure Synapse Analytics	
NoSQL/ Document	DynamoDB	Cosmos DB	Cosmos DB is a globally distributed, multi-model database that natively supports multiple data models including key-value pairs, documents, graphs and columnar.
	SimpleDB		
	Amazon DocumentDB		
Caching	ElastiCache	Cache for Redis	An in-memory-based, distributed caching service that provides a high-performance store typically used to offload nontransactional work from a database.
Database migration	Database Migration Service	Database Migration Service	A service that executes the migration of database schema and data from one database format to a specific database technology in the cloud.

## Database architectures



[view all](#)

# DevOps and application monitoring

AWS service	Azure service	Description
CloudWatch X-Ray	Monitor	Comprehensive solution for collecting, analyzing, and acting on telemetry from your cloud and on-premises environments.
CodeDeploy	DevOps	A cloud service for collaborating on code development.
CodeCommit		
CodePipeline		
Developer Tools	Developer Tools	Collection of tools for building, debugging, deploying, diagnosing, and managing multiplatform scalable apps and services.
CodeBuild	DevOps Pipeline	Fully managed build service that supports continuous integration and deployment.
	Github Actions	
Command Line Interface	CLI	Built on top of the native REST API across all cloud services, various programming language-specific wrappers provide easier ways to create solutions.
	PowerShell	
eksctl	az aks	Manage Azure Kubernetes Services.
AWS CloudShell	Azure Cloud Shell	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.
OpsWorks (Chef-based)	Automation	Configures and operates applications of all shapes and sizes, and provides templates to create and manage a collection of resources.
CloudFormation	Resource Manager	Provides a way for users to automate the manual, long-running, error-prone, and frequently repeated IT tasks.
	Bicep	
	VM extensions	
	Azure Automation	

## DevOps architectures

Diagram illustrating a Container CI/CD pipeline using Jenkins and Kubernetes on Azure Kubernetes Service (AKS). The flow starts with Visual Studio Code and Bitbucket pushing code to GitHub. GitHub triggers a Jenkins job, which then pushes code to an Azure Container Registry. The Jenkins job also triggers a build in AKS, which then pushes to an Azure Container Registry. Finally, the Jenkins job triggers a deployment to AKS.

**Container CI/CD using Jenkins and Kubernetes on Azure Kubernetes Service (AKS)**  
12/16/2019 2 min read  
Containers make it easy for you to continuously build and deploy applications. By orchestrating the deployment of those containers usin...

Diagram illustrating the architecture for running a Jenkins server on Azure. It shows a Jenkins server running on a Virtual Machine (VM) within a Virtual Network. The Jenkins server is connected to a Source Control (GitHub) and an Authentication provider (Azure Active Directory). The Jenkins server also interacts with a Data Disk, a Build VM, and a Build Agent. Various monitoring and management services are integrated, including Azure Monitor, Azure Key Vault, Azure Blob Storage, and Azure Web Storage. Artifacts are stored in Azure Blob Storage.

**Run a Jenkins server on Azure**  
11/19/2020 6 min read  
Recommended architecture that shows how to deploy and operate a scalable, enterprise-grade Jenkins server on Azure secured with single sign-on...

Diagram illustrating DevOps in a hybrid environment. It shows a developer using Azure Boards to manage tasks. GitHub is used for version control. Artifacts are stored in Azure DevOps. The developer triggers a build in Azure Pipelines, which then deploys to a VM (Release) in an On-Premises environment. The VM (Release) connects to an Azure Environment, which contains an App Service (CD), Azure AD, and Azure SQL Database. The VM (Release) also connects to a SQL Server on-premises. The Azure Environment is connected to an Azure AD and an Azure SQL Database.

**DevOps in a hybrid environment**  
12/16/2019 3 min read  
The tools provided in Azure allow for the implementation of a DevOps strategy that capably manages both cloud and on-premises environments...

[view all](#)

# Internet of things (IoT)

AWS service	Azure service	Description
IoT Core	IoT Hub	A cloud gateway for managing bidirectional communication with billions of IoT devices, securely and at scale.
Greengrass	IoT Edge	Deploy cloud intelligence directly onto IoT devices, catering to on-premises scenarios.
Kinesis Firehose , Kinesis Streams	Event Hubs	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.
IoT Things Graph	Digital Twins	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

### [IoT Architecture](#) Azure IoT Subsystems

12/16/2019 1 min read

Learn about our recommended IoT application architecture that supports hybrid cloud and edge computing. A flowchart details how the subsystems...

### [Azure IoT reference architecture](#)

9/10/2020 12 min read

Recommended architecture for IoT applications on Azure using PaaS (platform-as-a-service) components

### [Process real-time vehicle data using IoT](#)

11/17/2020 5 min read

This example builds a real-time data ingestion/processing pipeline to ingest and process messages from IoT devices into a big data analytic platform in...

[view all](#)

# Management and governance

AWS service	Azure service	Description
AWS Organizations	Management Groups	Azure management groups help you organize your resources and subscriptions.
AWS Well-Architected Tool	Azure Well-Architected Review	Examine your workload through the lenses of reliability, cost management, operational excellence, security, and performance efficiency.
Trusted Advisor	Advisor	Provides analysis of cloud resource configuration and security, so that subscribers can ensure they're making use of best practices and optimum configurations.
AWS Billing and Cost Management	Azure Cost Management and Billing	Azure Cost Management and Billing helps you understand your Azure invoice (bill), manage your billing account and subscriptions, monitor and control Azure spending, and optimize resource use.

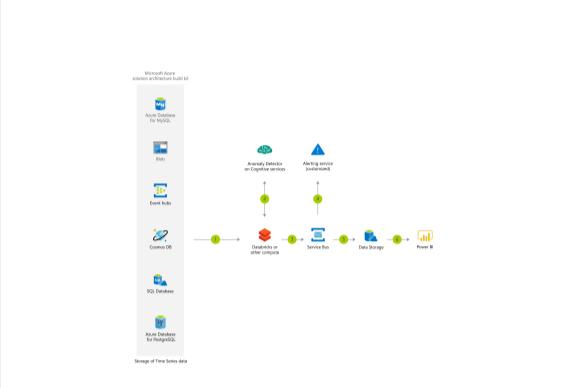
AWS service	Azure service	Description
Cost and Usage Reports	Usage Details API	Services to help generate, monitor, forecast, and share billing data for resource usage by time, organization, or product resources.
Management Console	Portal	A unified management console that simplifies building, deploying, and operating your cloud resources.
Application Discovery Service	Migrate	Assesses on-premises workloads for migration to Azure, performs performance-based sizing, and provides cost estimations.
Systems Manager	Monitor	Comprehensive solution for collecting, analyzing, and acting on telemetry from your cloud and on-premises environments.
Personal Health Dashboard	Resource Health	Provides detailed information about the health of resources, as well as recommended actions for maintaining resource health.
CloudTrail	Activity log	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.
CloudWatch	Application Insights	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.
Config	Application Change Analysis	Application Change Analysis detects various types of changes, from the infrastructure layer all the way to application deployment.
Cost Explorer	Cost Management	Optimize costs while maximizing cloud potential.
Control Tower	Blueprints	Set up and govern a multi account/subscription environment by creating landing zones.
Resource Groups and Tag Editor	Resource Groups and Tags	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.
AWS AppConfig	Azure App Configuration	Azure App Configuration is a managed service that helps developers centralize their application and feature settings simply and securely.
Service Catalog	Azure Managed Applications	Offers cloud solutions that are easy for consumers to deploy and operate.
SDKs and tools	SDKs and tools	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

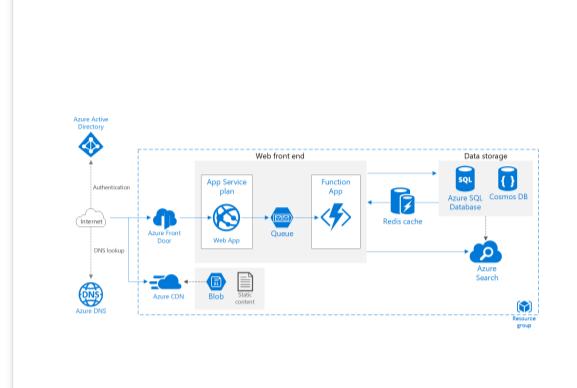
AWS service	Azure service	Description
Simple Queue Service (SQS)	Queue Storage	Provides a managed message queueing service for communicating between decoupled application components.
Simple Notification Service (SNS)	Service Bus	Supports a set of cloud-based, message-oriented middleware technologies, including reliable message queuing and durable publish/subscribe messaging.
Amazon EventBridge	Event Grid	A fully managed event routing service that allows for uniform event consumption using a publish/subscribe model.

AWS service	Azure service	Description
Amazon Kinesis	Event Hub	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.
Amazon MQ	Service Bus	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



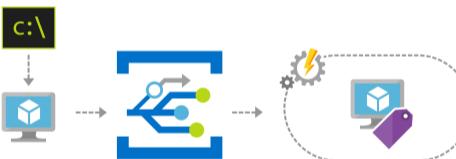
**Anomaly Detector Process**  
12/16/2019 1 min read  
Learn more about Anomaly Detector with a step-by-step flowchart that details the process. See how anomaly detection models are selected with...



**Scalable web application**  
10/03/2019 7 min read  
Use the proven practices in this reference architecture to improve scalability and performance in an Azure App Service web application.



**Enterprise integration using queues and events**  
12/03/2018 5 min read  
Recommended architecture for implementing an enterprise integration pattern with Azure Logic Apps, Azure API Management, Azure Service Bus,...



**Ops automation using Event Grid**  
12/16/2019 1 min read  
Event Grid allows you to speed automation and simplify policy enforcement. For example, Event Grid can notify Azure Automation when a...

## Mobile services

AWS service	Azure service	Description
Mobile Hub	App Center	Provides backend mobile services for rapid development of mobile solutions, identity management, data synchronization, and storage and notifications across devices.
	Xamarin Apps	
Mobile SDK	App Center	Provides the technology to rapidly build cross-platform and native apps for mobile devices.
Cognito	Azure Active Directory	Provides authentication capabilities for mobile applications.

AWS service	Azure service	Description
Device Farm	App Center	Provides services to support testing mobile applications.
Mobile Analytics	App Center	Supports monitoring, and feedback collection for the debugging and analysis of a mobile application service quality.

## Device Farm

The AWS Device Farm provides cross-device testing services. In Azure, [Visual Studio App Center](#) provides similar cross-device front-end testing for mobile devices.

In addition to front-end testing, the [Azure DevTest Labs](#) provides back-end testing resources for Linux and Windows environments.

## Mobile architectures

**Scalable web and mobile applications using Azure Database for PostgreSQL**  
12/16/2019 1 min read  
Use Azure Database for PostgreSQL to rapidly build engaging, performant, and scalable cross-platform and native apps for iOS, Android, Windows, or...

**Social App for Mobile and Web with Authentication**  
12/16/2019 3 min read  
View a detailed, step-by-step diagram depicting the build process and implementation of the mobile client app architecture that offers social...

**Task-Based Consumer Mobile App**  
12/16/2019 3 min read  
Learn how the task-based consumer mobile app architecture is created with a step-by-step flow chart that shows the integration with Azure App Servic...

[view all](#)

## Networking

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	Direct Connect	ExpressRoute	Establishes a dedicated, private network connection from a location to the cloud provider (not over the Internet).
Load balancing	Network Load Balancer	Load Balancer	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	Application Load Balancer	Application Gateway	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	Custom Route Tables	User Defined Routes	Custom, or user-defined (static) routes to override default system routes, or to add more routes to a subnet's route table.
Private link	PrivateLink	Azure Private Link	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	VPC endpoints	Private Endpoint	Private Endpoint provides secured, private connectivity to various Azure platform as a service (PaaS) resources, over a backbone Microsoft private network.
Virtual network peering	VPC Peering	VNET Peering	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	Cloud Front	Azure CDN	The Azure Content Delivery Network is designed to send audio, video, apps, photos, and other files to your customers faster and more reliably, using the servers closest to each user. Acceleration Data Transfer provides dynamic site acceleration of non-cacheable, dynamic content that is generated by your web applications.
Network Monitoring	VPC Flow Logs	Azure Network Watcher	Azure Network Watcher allows you to monitor, diagnose, and analyze the traffic in Azure Virtual Network.

## Networking architectures

**Deploy highly available NVAs**  
12/08/2018 7 min read  
Learn how to deploy network virtual appliances for high availability in Azure. This article includes example architectures for ingress, egress, and...

**Hub-spoke network topology in Azure**  
9/30/2020 7 min read  
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.

**Implement a secure hybrid network**  
1/07/2020 9 min read  
See a secure hybrid network that extends an on-premises network to Azure with a perimeter network between the on-premises network an...

[view all](#)

## Security, identity, and access

### Authentication and authorization

AWS service	Azure service	Description
Identity and Access Management (IAM)	Azure Active Directory	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.
Identity and Access Management (IAM)	Azure role-based access control	Azure role-based access control (Azure RBAC) helps you manage who has access to Azure resources, what they can do with those resources, and what areas they have access to.
Organizations	Subscription Management + Azure RBAC	Security policy and role management for working with multiple accounts.
Multi-Factor Authentication	Azure Active Directory	Safeguard access to data and applications, while meeting user demand for a simple sign-in process.
Directory Service	Azure Active Directory Domain Services	Provides managed domain services, such as domain join, group policy, LDAP, and Kerberos/NTLM authentication, which are fully compatible with Windows Server Active Directory.
Cognito	Azure Active Directory B2C	A highly available, global, identity management service for consumer-facing applications that scales to hundreds of millions of identities.
Organizations	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

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 (HSM).

## Firewall

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

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

## Security architectures



**Real-time fraud detection**  
7/05/2018 4 min read  
Detect fraudulent activity in real-time using Azure Event Hubs and Stream Analytics.



**Securely managed web applications**  
5/09/2019 8 min read  
Learn about deploying secure applications using the Azure App Service Environment, the Azure Application Gateway service, and We...



**Threat indicators for cyber threat intelligence in Azure Sentinel**  
4/13/2020 13 min read  
Import threat indicators, view logs, create rules to generate security alerts and incidents, and visualize threat intelligence data with Azure Sentinel.

[view all](#)

## Storage

### Object storage

AWS service	Azure service	Description
Simple Storage Services (S3)	Blob storage	Object storage service, for use cases including cloud applications, content distribution, backup, archiving, disaster recovery, and big data analytics.

### Virtual server disks

AWS service	Azure service	Description
Elastic Block Store (EBS)	managed disks	SSD storage optimized for I/O intensive read/write operations. For use as high-performance Azure virtual machine storage.

## Shared files

AWS service	Azure service	Description
Elastic File System	Files	Provides a simple interface to create and configure file systems quickly, and share common files. Can be used with traditional protocols that access files over a network.

## Archiving and backup

AWS service	Azure service	Description
S3 Infrequent Access (IA)	Storage cool tier	Cool storage is a lower-cost tier for storing data that is infrequently accessed and long-lived.
S3 Glacier , Deep Archive	Storage archive access tier	Archive storage has the lowest storage cost and higher data retrieval costs compared to hot and cool storage.
Backup	Backup	Back up and recover files and folders from the cloud, and provide offsite protection against data loss.

## Hybrid storage

AWS service	Azure service	Description
Storage Gateway	StorSimple	Integrates on-premises IT environments with cloud storage. Automates data management and storage, plus supports disaster recovery.
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

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.
Import/Export Snowball , Snowball Edge , Snowmobile	Data Box	Petabyte- to exabyte-scale data transport solution that uses secure data storage devices to transfer large amounts of data to and from Azure.

## Storage architectures

**HIPAA and HITRUST compliant health data AI**  
12/16/2019 2 min read  
Manage HIPAA and HITRUST compliant health data and medical records with the highest level of built-in security.

**HPC Media Rendering**  
11/04/2020 2 min read  
Optimize the media rendering process with a step-by-step HPC solution architecture from Azure that combines Azure CycleCloud and HPC Cache.

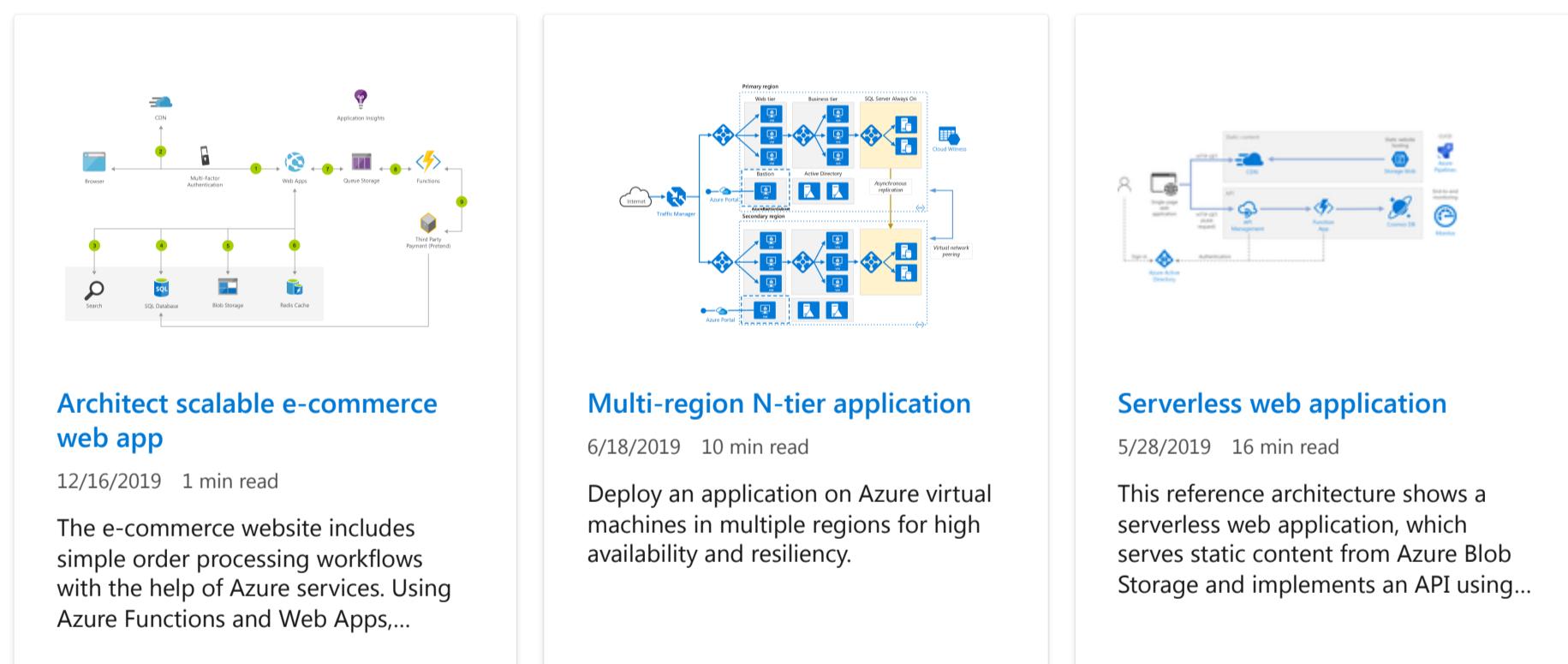
**Medical Data Storage Solutions**  
12/16/2019 2 min read  
Store healthcare data effectively and affordably with cloud-based solutions from Azure. Manage medical records with the highest level of built-in...

[view all](#)

# Web applications

AWS service	Azure service	Description
Elastic Beanstalk	App Service	Managed hosting platform providing easy to use services for deploying and scaling web applications and services.
API Gateway	API Management	A turnkey solution for publishing APIs to external and internal consumers.
CloudFront	Content Delivery Network	A global content delivery network that delivers audio, video, applications, images, and other files.
Global Accelerator	Front Door	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.
Global Accelerator	Cross-regional load balancer	Distribute and load balance traffic across multiple Azure regions via a single, static, global anycast public IP address.
LightSail	App Service	Build, deploy, and scale web apps on a fully managed platform.
App Runner	Web App for Containers	Easily deploy and run containerized web apps on Windows and Linux.
Amplify	Static Web Apps	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



[view all](#)

# End-user computing

AWS service	Azure service	Description
WorkSpaces AppStream 2.0	Azure Virtual Desktop	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.
WorkLink	Application Proxy	Provides access to intranet applications, without requiring VPN connectivity. Amazon WorkLink is limited to iOS and Android devices.

# Miscellaneous

Area	AWS service	Azure service	Description
Backend process logic	Step Functions	Logic Apps	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	WorkMail , WorkDocs , Chime	Microsoft 365	Fully integrated cloud service that provides communications, email, and document management in the cloud and is available on a wide variety of devices.
Gaming	GameLift	PlayFab	Managed services for hosting dedicated game servers.
Media transcoding	Elastic Transcoder	Media Services	Services that offer broadcast-quality video streaming services, including various transcoding technologies.
Workflow	Simple Workflow Service (SWF)	Logic Apps	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	Outposts	Stack	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	Elemental MediaConvert	Media Services	Cloud-based media workflow platform to index, package, protect, and stream video at scale.
Satellite	Ground Station	Azure Orbital	Fully managed cloud-based ground station as a service.
Quantum computing	Amazon Braket	Azure Quantum	Managed quantum computing service that developers, researchers, and businesses can use to run quantum computing programs.

## More learning

If you are new to Azure, review the interactive [Core Cloud Services - Introduction to Azure](#) module on [Microsoft Learn](#).

## Recommended content

### [AWS vs. Azure accounts and subscriptions - Azure Architecture Center](#)

Learn the differences in accounts and subscriptions between Azure and AWS. Understand the types of administrator accounts in Azure.

### [Comparing AWS and Azure compute services - Azure Architecture Center](#)

Compare the compute services in Azure and AWS. Explore the differences in virtual servers, containers and container orchestrators, and serverless architectures.

### [Compare AWS and Azure resource management - Azure Architecture Center](#)

Compare resource management between Azure and AWS. See the difference between Azure resource groups and AWS resource groups. Explore Azure management interfaces.

### [Comparing AWS and Azure regions and zones - Azure Architecture Center](#)

Review a comparison of the regions and zones between Azure and AWS. Explore availability sets, availability zones, and paired regions in Azure.

Show more ▾

