AWS ↔ Azure Cloud Service Transition Handbook

Created by: **Gaurav Rawat**

■ Preface

This handbook is designed as a quick yet comprehensive guide for professionals transitioning between AWS and Azure cloud platforms. It provides a structured comparison of the most important services, helping you understand equivalent offerings and conceptual differences. Whether you are preparing for certifications like AZ-900 or AWS Cloud Practitioner, or simply working in a multi-cloud environment, this guide will serve as your go-to reference.

Who is this for?

- AWS professionals exploring Azure
- Azure professionals exploring AWS
- Students and cloud beginners
- IT managers working in multi-cloud environments

■ High-Level AWS ↔ Azure Service Mapping

AWS	Category	Azure
AWS: EC2, Lambda, ECS/EKS	Compute	Azure: VMs, Functions, ACI/AKS
AWS: S3, EBS, EFS, Glacier	Storage	Azure: Blob, Disks, Files, Archive
AWS: RDS, DynamoDB, Redshift	Databases	Azure: SQL DB, Cosmos DB, Synapse
AWS: VPC, Route 53, ELB	Networking	Azure: VNet, DNS, Load Balancer, Front Door
AWS: IAM, Cognito	Identity	Azure: Azure AD, AD B2C
AWS: CloudWatch, CloudTrail	Monitoring	Azure: Azure Monitor, Activity Logs
AWS: CodeCommit, CodePipeline	DevOps	Azure: Repos, Pipelines
AWS: Athena, Kinesis, SageMaker	AI/Analytics	Azure: Synapse, Event Hubs, Azure ML
AWS: SQS, SNS, Step Functions	Messaging	Azure: Service Bus, Event Grid, Logic Apps

■ One-Page Quick Reference

Category	AWS	Azure	Notes
Compute	EC2, Lambda, ECS/EKS	VMs, Functions, ACI/AKS	VMs map directly, Functions = serverless, AKS for K8s
Storage	S3, EBS, EFS, Glacier	Blob, Managed Disks, Files, Archive	Similar tiers; naming differs
Databases	RDS, DynamoDB, Redshift	SQL DB, Cosmos DB, Synapse	Cosmos is multi-model, Synapse integrates DW+BI
Networking	VPC, Route 53, ELB, CloudFront	VNet, DNS, LB/AppGW/ Front Door, CDN	Azure splits load balancers
Identity	IAM, Cognito	Azure AD, AD B2C	Azure AD extends to SaaS & hybrid
Monitoring	CloudWatch, CloudTrail, Config	Monitor, Activity Logs, Policy	Azure has stronger governance
DevOps	CodeCommit, CodePipeline	Repos, Pipelines	Azure integrates with GitHub
AI/Analytics	Athena, Kinesis, SageMaker	Synapse, Event Hubs, Azure ML	Event split into Event Hubs + Stream Analytics
Messaging	SQS, SNS, Step Functions	Service Bus, Event Grid, Logic Apps	Azure offers richer workflow orchestration

• Compute

Covers raw processing power, VMs, containers, and serverless compute.

AWS Service	Azure Equivalent	AWS Description	Azure Description
EC2	Virtual Machines	Run scalable virtual servers with multiple OS, instance types, and pricing models.	Provision Windows/Linux VMs. Supports VM Scale Sets for autoscaling and integration with networking.
Lambda	Azure Functions	Event-driven serverless compute, pay only for execution time.	Run serverless code with consumption, premium, or dedicated hosting plans.
ECS / EKS	ACI / AKS	ECS = container orchestration, EKS = managed Kubernetes.	ACI for serverless containers, AKS is managed Kubernetes with Azure AD integration.
Elastic Beanstalk	App Service	PaaS for deploying apps without managing servers.	App Service runs .NET, Java, Python, Node apps with integrated CI/CD.

• Storage

Includes services for object, block, and file storage with lifecycle policies.

AWS Service	Azure Equivalent	AWS Description	Azure Description
S3	Blob Storage	Durable object storage with multiple tiers and lifecycle policies.	Object storage with Hot, Cool, and Archive tiers, integrates with Data Lake.
EBS	Managed Disks	Block storage for EC2 instances.	Persistent block storage for Azure VMs (Standard/Premium SSD).
EFS	Azure Files	Fully managed NFS file storage for Linux/Windows.	Managed SMB/NFS shares with on-prem integration via File Sync.
Glacier	Blob Archive	Cold archival storage with long retrieval times.	Archive tier for long-term storage with flexible restore times.

• Databases

Managed relational, NoSQL, and data warehouse services.

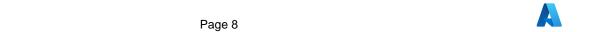| AWS Service	Azure Equivalent	AWS Description	Azure Description
RDS	Azure SQL / Azure DB for MySQL/PostgreSQL	Managed relational DBs (MySQL, PostgreSQL, Oracle, SQL Server).	Cloud-native managed relational DBs, no OS-level patching required.
DynamoDB	Cosmos DB	NoSQL database with automatic scaling and high throughput.	Globally distributed NoSQL supporting multiple APIs (SQL, Mongo, Cassandra, Gremlin).
Aurora	Azure Database Flexible Servers	AWS-proprietary high-performance relational DB.	Azure doesn't have Aurora equivalent; offers managed PostgreSQL/MySQL Flexible Server.
Redshift	Synapse Analytics	Data warehouse for BI and analytics workloads.	Data warehouse + big data integration for BI and reporting.

• Networking

Covers cloud networks, DNS, load balancing, and CDN services.

AWS Service	Azure Equivalent	AWS Description	Azure Description
VPC	VNet	Isolated cloud network environment with routing, subnets, and firewalls.	Logical isolation of network resources with subnets, NSGs, VPN/ExpressRoute.
CloudFront	Front Door / CDN	Content delivery network with caching, edge optimization.	Front Door provides global load balancing + CDN, Azure CDN for content caching.
Route 53	Azure DNS	Scalable DNS with routing policies and health checks.	Managed DNS with traffic routing and integration with Azure services.
ELB / ALB	Load Balancer / App Gateway / Traffic Manager	Regional load balancers at L4/L7, global DNS-based routing.	Multiple services: Load Balancer (L4), App Gateway (L7), Front Door (global), Traffic Manager (DNS-based).

• Identity & Security

Identity management, RBAC, MFA, encryption, and DDoS protection.

AWS Service	Azure Equivalent	AWS Description	Azure Description
IAM	Azure AD	Manage AWS users, groups, and roles.	Identity platform for Azure + SaaS apps. Provides MFA, SSO, RBAC, conditional access.
Cognito	Azure AD B2C	User sign-up/sign-in for web/mobile apps.	Customizable identity platform for external customers.
KMS	Key Vault	Secure key management and encryption.	Store secrets, keys, and certificates securely.
Shield	DDoS Protection	DDoS mitigation service.	Native DDoS protection with advanced plans.

• Management & Monitoring

Monitoring, logging, auditing, compliance, and best practices.

AWS Service	Azure Equivalent	AWS Description	Azure Description
CloudWatch	Azure Monitor	Collect logs, metrics, and alarms for AWS resources.	Unified monitoring + logs + Application Insights for telemetry.
CloudTrail	Activity Logs	Audit service for tracking API calls.	Activity logs track management operations in Azure.
Config	Azure Policy + Blueprints	Enforce compliance, track configuration history.	Governance service to enforce compliance, policy-based automation.
Trusted Advisor	Azure Advisor	Provides best practices and recommendations for cost/security/performance.	Similar service suggesting optimization for resources.

• Developer Tools & DevOps

CI/CD, source control, build/release pipelines, cloud IDEs.

AWS Service	Azure Equivalent	AWS Description	Azure Description
CodeCommit	Azure Repos	Git-based code hosting.	Git-based repositories with Azure DevOps.
CodePipeline	Azure Pipelines	CI/CD pipeline service.	Build and release pipelines with GitHub/Azure integration.
CodeBuild	Azure Pipelines (Build)	Automated build service for compiling source code.	Integrated CI/CD with build agents and hosted runners.
Cloud9	GitHub Codespaces	Online IDE for developing in the cloud.	Microsoft leans on GitHub Codespaces/VS Code for cloud IDE.

• Analytics & AI/ML

Data analytics, streaming, machine learning, and AI platforms.

AWS Service	Azure Equivalent	AWS Description	Azure Description
Athena	Synapse Serverless SQL	Query data in S3 using SQL.	Run SQL queries over blob storage without infrastructure.
EMR	HDInsight / Synapse Spark	Managed Hadoop/Spark clusters for big data.	Managed big data with HDInsight or Synapse Spark pools.
Kinesis	Event Hubs + Stream Analytics	Real-time streaming data ingestion and processing.	Event Hubs for ingestion, Stream Analytics for real-time processing.
SageMaker	Azure ML	End-to-end machine learning service for model building/deployment.	Azure ML provides MLOps, training, deployment with Azure integration.

• Messaging & Integration

Queues, pub/sub, workflow orchestration, and integration tools.

AWS Service	Azure Equivalent	AWS Description	Azure Description
SQS	Service Bus / Storage Queues	Decoupling with reliable message queues.	Service Bus (enterprise messaging), Storage Queues (lightweight queuing).
SNS	Event Grid / Notification Hubs	Pub/sub and push notifications.	Event Grid (event-driven pub/sub), Notification Hubs (mobile push).
Step Functions	Logic Apps / Durable Functions	Workflow orchestration of microservices.	Workflow orchestration with Logic Apps or stateful serverless with Durable Functions.