

AZ-305

Azure Solutions Architect Expert



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Study Roadmap & Exam Overview

1 ABOUT THE CERTIFICATION



Design solutions on Microsoft Azure across identity, infrastructure, data, business continuity, governance, monitoring, and cost optimization.



Role focus is architecting secure, scalable, resilient solutions.

2 CERTIFICATION PATH



Required exam: **AZ-305**



Prerequisite: **Azure Administrator Associate**



Current outline updated: **April 17, 2026**

3 SKILLS MEASURED (WEIGHTING)



Design identity, governance, and monitoring solutions

25-30%



Design data storage solutions

20-25%



Design business continuity solutions

15-20%



Design infrastructure solutions

30-35%

4 STUDY ROADMAP

1



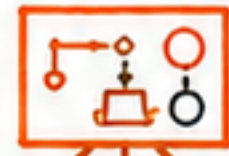
Understand architecture principles

2



Practice Azure design trade-offs

3



Build architecture scenarios and diagrams

4



Take the practice assessment and review weak areas

5 ARCHITECT MINDSET



Secure by design



Scalable



Resilient



Cost-optimized



Operationally observable

6 EXAM DETAILS



Passing score: **700 / 1000**



Question format: **Scenario-based questions**



Focus: **Best architecture choice**



Plan. Design. Validate. Optimize.
Build solutions that are secure, scalable, and future-ready.



Think architecture.
Think Azure.



1. Design Identity, Governance & Monitoring Solutions (25-30%)



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1 IDENTITY & ACCESS ARCHITECTURE



Microsoft Entra ID is the identity foundation.



Tenants, subscriptions, and directories.



Users, Groups & Roles for access management.



App registrations (service principals) for applications.



Managed Identities for apps running in Azure.



RBAC for resource-level authorization.



Conditional Access to enforce security controls.



PIM for just-in-time access and elevation.



Apply least privilege access everywhere.

2 GOVERNANCE & ORGANIZATION



Management Groups to organize and govern at scale.



Subscriptions for billing, access isolation, and limits.



Resource Groups to logically group resources.



Tags to classify, track costs, and enforce policies.



Azure Policy to enforce standards and ensure compliance.



Blueprints & Initiatives to deploy governed environments.



Landing Zones for secure, scalable, and repeatable foundations.



Cost Management to control spend and optimize value.

3 MONITORING & OPERATIONS



Azure Monitor for platform metrics and logs.



Log Analytics for centralized log collection and queries.



Application Insights for application performance monitoring.



Alerts to detect and respond to issues.



Dashboards for real-time visibility.



Workbooks for rich visual analysis.



Advisor to get best practice recommendations.



Define operational baselines and runbooks.

4 PRIVACY, SECURITY & COMPLIANCE



Microsoft Defender for Cloud for threat protection.



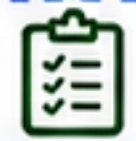
Azure Key Vault for secrets, keys, and certificates.



Encryption for data in transit and at rest.



Data residency & sovereignty considerations.



Regulatory alignment (ISO, SOC, NIST, GDPR, etc.).



Follow secure design principles by default.

5 KEY TAKEAWAY



- ★ Architect for governance from day one.
- ★ Centralize monitoring for visibility and action.
- ★ Design identity & security controls early.



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2. Design Data Storage Solutions (20-25%)

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1 RELATIONAL & TRANSACTIONAL DATA

	Azure SQL Database	Fully managed PaaS Single DB or elastic pools
	Azure SQL Managed Instance	Near 100% compatibility Lift-and-shift & migration
	SQL on Azure VM	Full control & flexibility You manage OS & SQL
	Azure Database for PostgreSQL	Open-source PostgreSQL PaaS with HA & scale
	Azure Database for MySQL	Open-source MySQL PaaS with HA & scale



Choose PaaS vs IaaS:

PaaS = speed, less ops, managed.

IaaS = control, custom, special needs.

2 NOSQL & GLOBALLY DISTRIBUTED DATA

	Azure Cosmos DB	Globally distributed, multi-model database
	Consistency levels	Strong, Bounded Staleness, Session, Consistent Prefix, Eventual
	Partitioning	Partition key drives scale & RU/s distribution
	High-throughput design	Design for scale, low latency, and SLA

3 BLOB, FILES & DATA LAKE

	Storage accounts	Foundation for blobs, files, queues, tables
	Blob storage tiers	Hot (frequent) Cool (infrequent) Cold (rare) Archive (long-term)
	Azure Files	Managed file shares via SMB / NFS
	Azure Data Lake Storage Gen2	Big data analytics with Hadoop compatibility
	Redundancy choices	LRS ZRS GRS GZRS
	Lifecycle management	Automate tiering and retention

4 SECURITY, NETWORKING & RESILIENCE

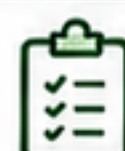
	Encryption	Encrypt in transit (TLS) and at rest (SSE)
	Customer-managed keys (CMK)	Use Key Vault for key management
	Private connectivity	Private Endpoints, Service Endpoints, VNet
	Shared Access Signatures (SAS)	Time-bound, scoped secure access
	Backups & point-in-time restore	Protect and recover your data
	Replication & geo-redundancy	Cross-region DR and high availability

5 ANALYTICS & INTEGRATION

	Azure Synapse Analytics	Unified analytics warehouse at scale
	Azure Data Factory	Orchestrate ETL / ELT workflows
	Azure Event Hubs	Real-time ingestion at massive scale
	Storage choices	Match storage type to workload (performance, cost, access)



KEY TAKEAWAY: Choose the right data storage for the right workload.
Optimize for **access pattern**, **scale**, **latency**, **durability**, and **governance**.



Plan. Design. Validate. Optimize.
Build solutions that are **secure**, **scalable**, and **future-ready**.



Think architecture.
Think Azure.



3. Design Business Continuity Solutions

(15-20%)



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1 HIGH AVAILABILITY DESIGN



Availability Zones
Isolate failures within a region.



Availability Sets
Distribute VMs across fault domains & update domains.



VM Scale Sets
Auto-scale & auto-heal unhealthy instances.



Regional Services
Use zone-redundant or geo-redundant services where available.



Know your SLA

e.g., 99.9% (zones), 99.95% (zone-redundant services).



Design for fault domains and update domains to avoid correlated failures.

2 BACKUP & RESTORE



Azure Backup
Protect workloads running in Azure.



Recovery Services Vault
Centralized backup management.



Backup Policies
Define frequency, retention, and retention tier.



SQL Backup
Use LTR for long-term retention.



File Share Backup
Protect Azure Files using Backup.



Restore Testing
Regularly test restores to ensure reliability.



Follow 3-2-1 rule: 3 copies, 2 media, 1 offsite (or geo-redundant).

3 DISASTER RECOVERY



Azure Site Recovery
Replicate VMs to a paired region.



Cross-Region Design
Replicate to a different Azure region.



RTO & RPO
Define Recovery Time Objective and Recovery Point Objective.



Failover
Trigger planned or unplanned failover.



Failback
Return to primary region when ready.



Paired Regions
Use Azure paired regions for resilience.

4 RESILIENCY PATTERNS



Active-Active
Both regions serve traffic.



Active-Passive
Standby takes over on failure.



Load Balancing
Distribute traffic across instances or regions.



Data Replication
Sync or async replication based on requirements.



Geo-Redundancy
Use GRS/RA-GRS for storage.



Queues & Buffers
Decouple services and absorb spikes.



Retries & Circuit Breakers
Handle transient failures gracefully.



Graceful Degradation
Maintain core functionality during outages.

5 BCDR PLANNING



Business Impact Analysis
Identify critical workloads and dependencies.



Documentation
Maintain DR runbooks, architecture diagrams, and contacts.



Drills & Exercises
Conduct regular DR drills and tabletop exercises.



Operational Readiness
Monitor, alert, and continuously improve.



KEY TAKEAWAY

Plan for failure.
Automate recovery where possible.
Test regularly.



Plan. Design. Validate. Optimize.
Build solutions that are secure, scalable, and future-ready.



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Think Azure.



4. Design Infrastructure Solutions (30-35%) – Compute & App Architecture



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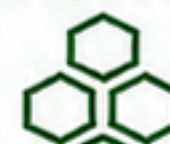
1 COMPUTE CHOICES

	Virtual Machines	Full control over OS and configuration
	VM Scale Sets	Auto-scale VMs based on demand
	App Service	PaaS for web apps, APIs, and mobile backends
	Azure Functions	Serverless, event-driven code execution
	Container Apps	Serverless containers with KEDA scaling
	Azure Kubernetes Service (AKS)	Best for containerized apps needing more control

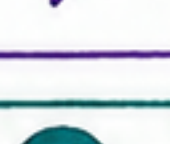


Choose compute based on control, scale, and operational overhead.

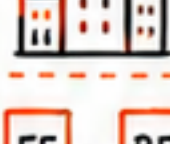
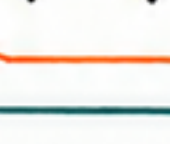
2 APPLICATION ARCHITECTURE

	Stateless vs Stateful	Design for stateless by default; persist state in durable services
	Microservices	Decompose for agility, independent deployment, and fault isolation
	Event-driven Design	Use events to decouple services and build responsive systems
	Caching	Use Azure Cache for Redis to improve performance
	Session Design	Store session in Redis or Cosmos DB; avoid in-process sessions
	Autoscaling	Scale out/in based on metrics, schedules, or queue length

3 INTEGRATION SERVICES

	API Management	Secure, publish, transform, and monitor APIs
	Service Bus	Reliable messaging with queues and topics
	Event Grid	Serverless event routing at scale
	Logic Apps	Workflow automation across services
	Messaging Patterns	Use pub/sub, request/reply, and competing consumers

4 SECURITY & PERFORMANCE

	Managed Identity	Use system or user-assigned managed identities
	Secrets with Key Vault	Store and rotate secrets securely
	Zone Redundancy	Deploy across availability zones for high availability
	Front-end / Back-end Separation	Use App Gateway, Front Door, or WAF. Isolate tiers
	Performance Optimization	Right-size compute, use connection pooling, CDN, compression, and caching

5 ARCHITECT DECISION LENS

 Cost - What's the TCO? - Pay-as-you-go? - Right-sizing?	 Agility - How fast can we deliver? - Reusable & modular?	 Scaling - Will it scale up/out? - Autoscale triggers? - Global scale?	 Resilience - What happens when it fails? - DR & HA strategy?	 Observability - How will we monitor? - Logs, metrics, traces?
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★ KEY TAKEAWAY: Pick the right compute platform, design applications for scale and resilience, integrate with the right services, and secure & optimize from the start.



Think architecture.
Think Azure.



4. Design Infrastructure Solutions (30-35%) – Network, Migration & Hybrid

1 NETWORK ARCHITECTURE



- Virtual WAN for global connectivity
- VNet peering for private connectivity
- Subnets for isolation & organization
- Network Security Groups (NSGs)
- User Defined Routes (UDRs)
- Private Endpoints for PaaS access
- DNS resolution (Private DNS Zones)
- Segmentation by environment/tier

2 CONNECTIVITY CHOICES

- VPN Gateway
- ExpressRoute
- Site-to-Site VPN
- Point-to-Site VPN
- Site-to-Site: Connect networks/datacenters
- Point-to-Site: Connect users securely
- Hybrid connectivity trade-offs:
 - Performance
 - Cost
 - Reliability
 - Security
 - Scale

3 TRAFFIC & DELIVERY

- Load Balancer: Distribute traffic across VMs (L4, high perf.)
- Application Gateway: Web traffic (L7) with WAF, routing, SSL offload
- Front Door: Global anycast entry, CDN, WAF, routing
- Traffic Manager: DNS-based global load balancing & failover
- Choose based on layer (L4/L7), use case, latency, security, and global reach.

4 MIGRATION & MODERNIZATION

- Azure Migrate: Assess, plan, and track migration to Azure
- Database Migration: Azure Database Migration Service, DMS, native tools
- App Modernization: Lift-and-shift, refactor, replatform, or replace
- Landing Zone Planning: Define subscriptions, network, identity, policies, and guardrails
- Discover → Assess → Migrate → Optimize

5 HYBRID & EDGE DESIGN

- Azure Arc: Manage servers, Kubernetes, databases, and apps anywhere
- Governance Across Environments: Consistent policies, compliance, and visibility across clouds and on-prem
- Operate Mixed Estates: Monitoring, identity, backup, security, and automation across hybrid/edge

Design for consistency, security, and control across all environments.

★ KEY TAKEAWAY



✓ Design the network foundation early (Hub, connectivity, security, DNS).

✓ Align migration and hybrid choices with business constraints (cost, performance, compliance, skills).

Good design today = Reliable, secure, and scalable solutions tomorrow.

★ Connect. Protect. Deliver. Modernize.
Build strong infrastructure that scales with your business.

✓ Think architecture. Think Azure. 😊

Quick Revision Guide



Keep learning!

1 EXAM DOMAINS - SUMMARY

Domain	What to Focus On
 1. Design Identity, Governance, and Monitoring	• Entra ID, RBAC, Policies, Blueprints • Monitor, Log Analytics, Alerts
 2. Design and Implement Data Platform Solutions	• Storage, SQL, Cosmos DB, Cache • Data protection, migration, analytics
 3. Design and Implement Infrastructure Solutions	• VNets, DNS, Load Balancing • Compute, Storage, Hybrid networking • HA, DR, Automation
 4. Design and Implement Apps Solutions	• App Service, Functions • Containers, API Management • Integration patterns, Web apps

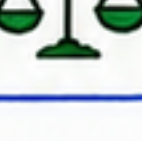
2 IMPORTANT COMPARISONS

 Load Balancer L4, High perf, simple routing	VS	 Application Gateway L7, WAF, path/host based routing
 Front Door Global, CDN, anycast, WAF	VS	 Traffic Manager DNS based routing, failover
 SQL Database Fully managed, single DB	VS	 Managed Instance Near 100% compat with SQL Server
 Cosmos DB Globally distributed, multi-model		
 VM Full control, IaaS		 App Service PaaS for web apps
		 AKS / Container Apps For containers, microservices
 Backup Backs up data, restore	VS	 Site Recovery Replicate & failover
 Private Endpoint Private access via Private Link	VS	 Service Endpoint Secure access over MS backbone

3 AZURE ARCHITECT DESIGN LENS

 Security	Protect identities, data, and workloads. Follow Zero Trust.
 Resilience	Design for high availability, backup, and disaster recovery.
 Scalability	Handle growth with elasticity, auto-scale, and stateless design.
 Governance	Enforce policies, tagging, naming, and compliance.
 Performance	Optimize latency, throughput, and user experience.
 Cost Optimization	Right-size resources, use PaaS, monitor & optimize spend.

4 EXAM DAY TIPS

-  **Read Carefully**
Understand the scenario, requirements, and what is being asked.
-  **Identify Constraints**
Note the must-haves, cannot-changes, compliance, and region limits.
-  **Choose Best-Fit Architecture**
Pick the Azure service(s) that best meet functional and non-functional needs.
-  **Eliminate Wrong Layers**
Remove options that don't meet requirements or add unnecessary complexity.
-  **Think Trade-Offs**
Balance cost, performance, security, and operability.



YOU'VE GOT THIS!

Think architecture. Think Azure.



Plan. Design. Validate. Optimize.
Build solutions that are secure, scalable, and future-ready.



Think architecture.
Think Azure.

