

Microsoft Azure Fundamentals AZ - 900

by SHAILESH KUMAR ...

- Exam Info
- Cloud Concepts
 - ↳ Cloud computing, Benefits, Cloud Services
- Azure Architecture & Services
 - ↳ Core Architecture, Compute & N/w, Storage & Access
- Management & Governance
 - ↳ Cost Management, Deployment, Monitoring Tools
- Key Points to Remember

Azure Fundamentals - AZ 900 by Shailesh Kumar

Target Audience : Sales and Management , developer (familiar cloud concepts) , QA / BA

- Great first Azure Certification

Time Required : 8 hours (for dev / QA)

Where to take exam : Pearson Vue , Home or Office

What does it take to pass : Read Notes (MS Official) , Do hands on , Online Exam

Exam Guide : Content Outline

- Cloud Concepts
- Azure Core Services
- Security , Privacy , compliance , Trust
- Pricing

Pass : 700 / 1000 + *Scaled Scoring*

Format : Multiple choice , answer , drag and drop , hot area

Exam time : 60 mins

Seat Time : 90 mins , *don't Panic if you start your exam late*

Module 1 : Describe Cloud Concepts

1.1 What is cloud :

- <https://learn.microsoft.com/en-us/certifications/azure-fundamentals/> You only run , managed by someone else
- Dedicated server : physical machine to a single business
- Virtual Private Server : One physical machine but divided into sub machine
- Shared Hosting : multiple hosting sharing single machine
- Cloud Hosting : multiple machine and multiple business

Common Cloud Services

- Compute
- Storage
- Networking
- Databases

What is Microsoft ? best known for OS

Azure : Cloud provided service , Azure means bright blue colour of cloudless sky

1.2 Benefits of Cloud

1. Cost Effective : share with other
2. Global : launch anywhere in world
3. Security and Governance

4. Reliable and Predictable
5. High Availability and high Scalability
6. Elastic : Automate
7. Manageability : Pre configure templates

Benefits :

1. High Availability : remain available , no single point of failure
2. High Scalability : increase your capacity
 - a. Vertical : upgrade bigger server
 - b. Horizontal : scaling out , Add more server of same size
3. High Elasticity : increase , decrease your capacity based on current demand of traffic
4. High Durability : recover from Disaster , Disaster Recovery

1.3 Type of Cloud Computing

1. SaaS : Software as Service
 - a. Information and data
 - b. Devices
 - c. Accounts and Identities
 - d. E.g : email and messaging , business productivity apps
 - i. Finance and app tracking
2. PaaS : Platform as service : Google app engine , for dev
 - a. Identity and directory infrastructure
 - b. Applications
 - c. Network Control
 - d. E.g : Development Framework : develop cloud based app worrying without server load etc
 - i. Analytics and Business Intelligence : Analyze and mine data , find insights , pattern and predicting outcome.
3. IaaS : Infrastructure as Service : for Networking , ex Azure , AWS , For Admins , Hardware
 - a. Operating system (Licence and Patching)
 - b. E.g : Lift and Shift migrations : on prem to cloud
 - i. Testing and dev : different environment (servers)
 - ii. Virtual Machines comes under this
4. On Premises
 - a. Physical host
 - b. Physical network
 - c. Physical datacenter

Azure Deployment Model (Cloud Model)

1. Public cloud :
2. Private cloud : on Premises of org
3. Hybrid : both on prem and cloud (can be public or private)
 - a. Public cloud is a part of hybrid , vice versa not true

Multi Cloud : Using multiple cloud partners

Azure Arc : set of technology that helps manage your cloud env in any formation

Total Cost of Ownership

1. On Prem : More cost
2. Azure : Cost Effective

(Definitely one question from this!)

✂✂

Consumption based Model :

Capital vs Operational Expenditure

1. CAPEX : spending money upfront on Physical infra
 - a. Reserved instances are CapEx
2. Operational Expenditure : Pay as you go , rent
 - a. Cloud computing

Module 2 : Azure Architecture and Services

2.1 Core Architecture component of Azure

Regions , AZ , Data centre , Subscriptions and Management Group

✂

Azure Accounts > Subscriptions > Resource Group > Resources

Azure CLI , Azure Portal

Physical Infrastructure

Regions

Availability Zone

Data Center

Region Pair : nearest region for backup

✂

Sovereign Region

US Gov : only US government , agencies and partner

China : via 21vianet , microsoft doesn't directly maintain the DataCenter

Resource Group :

- A resource in only one resource group
- can't be nested
- can be moved to different group
- Any action on RG is applied on each and every resource
- Delete a RG : all resources deleted

Azure Subscription

- Locally organise your RG and facilitate billing

Management Group :

- To create hierarchy
- User access to multiple subscription

2.2 : Azure compute and networking services

Virtual Machines (VMs)

- IaaS , control over OS , custom softwares

Azure Virtual Desktop : Cloud hosted version of windows from any location

Azure Containers : Virtual environment , multiple VM on single host

- Instance of OS
- Light weight and more agile

Azure Functions ; Serverless

- No infra management
- Scalability -
- Only pay what you use

Azure Virtual private network : encrypted tunnel withing another network

Azure DNS : Name resolution , DNS record

Module 2.3 : Storage service

Imp ! One Question from this

Azure Redundancy Options

- Locally redundant storage (LRS) : 11 nine , three time in single data centre
- Zone Redundant storage (ZRS) : 12 nine , 99.999... , three AZ
- Geo Redundant Storage (GRS) : 16 nine , three time in single physical location in primary region + secondary region

Storage Service

1. Azure Blobs : Massive amount of data , text or binary , Big data analytics
Storage Tier
 1. Hot : user frequently
 2. Cool : not used frequently
 3. Archive : Archived
2. Azure Files : Network file system , Managed file share for cloud
3. Azure Queues : reliable messages service between two applications
4. Azure Disks : Block storage volumes for VMs

Azure Data Migration options

Azure Migrate : On Prem to cloud

Azure Data Box : Physical migration service upto 80 TB

Azure File Movement Options

1. AzCopy : CMD utility to copy blob or files
2. Azure Storage Explorer
3. Azure File Sync

Module 2.4 : Azure Identity , Access and Security

Azure AD : sign into Microsoft cloud app and other apps you develop.

- Authentication : verify identity
- SSO : single sign on
- App Management
- Device Management

Active Directory Domain Services : AD DS

- benefit of domain services without the need to deploy, manage, and patch domain controllers (DCs) in the cloud.



Authentication methods :

- SSO : sign in one time and use that credential to access multiple resources and applications from different providers
- MFA : high security , inconvenient
- Passwordless : high security , high convenience
 - PIN or fingerprint
 - Windows Hello , MS Authenticator app

Azure AD conditional access : go for authentication if you login from new location

RBAC : Role Based Access Control : Role and scope

- Role-based access control, using an allow model, grants all of the permissions assigned in all of the assigned roles.

Zero Trust Model : Zero Trust is a security model that assumes the worst case scenario and protects resources with that expectation.

Microsoft Defender for Cloud :

Module 3 : Azure Management and Governance

3.1 : Cost

Factors that affect cost

Pricing Calculator : estimated cost for provisioning resource

Total Cost of Ownership (TCO) :

- The Total Cost of Ownership calculator lets you input your current infrastructure and requirements and provides you an estimate for running in the cloud.

Azure Cost Management Tool

- Cost Management provides the ability to quickly check Azure resource costs, create alerts based on resource spend, and create budgets that can be used to automate management of resources.

Tags

- Tags allow you to associate metadata with a resource to help keep track of resource management, costs and optimization, security, and so on.

3.2 : Governance and Compliance

Azure Blueprint : define repeatable settings and policies that are applied as new subscriptions are created

Azure Policy

Resource Locks : prevents from accidentally deleted or changed

- Delete : Read + Modify
- Read only : Read

Service Trust Portal : Access to various content, tools, and other resources about Microsoft security, privacy, and compliance practices

3.3 : Manage and deploy Azure Resources

Azure Portal

Azure Arc : Bridge bw building apps and services that could operate across DC, edge and multi cloud env

ARM and ARM Templates

3.4 : Monitoring

Azure Advisor : Evaluate > make recommendation to improve security , performance and reduce cost.

Azure Service Health :

Azure Monitor : Collecting and analysing data of each resource .

More Content regarding AZ-900 on my [Youtube](#) channel :

Some other points to remember

Management Group > Subscriptions > Resource Group > Resources

API

Cassandra , MongoDB : Key value pair API

Azure Government : US gov

Azure Machine Learning Studio : Build , test and deploy predictive and analytical solution

Azure Firewall : grant or deny access based on the originating IP address

Attack : DDos , Perimeter Layer

Rule : Firewall

Allow/Deny : NSG

Azure Key Vault : server apps

Data Lake : use to store data from device and sensors

IOT hub : data processing

Trust Center : data integrity in the cloud

Azure Advisor : Reduce cost of running Azure Virtual Machines.

Identity Protection : Anonymous IP address use

Azure Information Protection : document and email messages

Active Dir ID protection : MFA

Azure Sentinel : create advance threat rules

Azure Sphere : IOT high security Microcontroller

NOTE :-

If you have any doubt regarding Exam / Note
just shoot me a message over Linked In or schedule
a call with me over Topmate.

If these notes are of any help for you, don't forget
to tag me in Linked In Post after you clear your
Certification. GOOD LUCK !

Happy learning,
SHAILESH KUMAR