

19.12.2024

Report on MICROSOFT AZURE FUNDAMENTALS(AZ-900)Global Certification Program

The Corporate Academia Relationship Cell in association with Dept. of CSE, had organized a Global Professional Certification skilling program **MICROSOFT AZURE FUNDAMENTALS(AZ-900)** Co organized by MOU partner Active Edutech Pvt. Ltd. From 25th NOVEMBER 2024 to 30th NOVEMBER 2024 at college premises.

The program was well received by the enthusiastic students of 2nd, 3rd and final year students of Dept. of CSE. Total number of participants was 40. Learnt and underwent the training for 4 days.

Active Edutech Pvt.Ltd facilitated trainer from Microsoft under CSR program. The Resource Person **Mr. Mohammad Afzal**, Certified Microsoft Trainer well versed in corporate trainings and institutional trainings in various certifications conducted the session satisfactorily and supported the learners through study materials, Mock exams and participatory sessions.

The participants were welcomed and training program was briefed and updated about the contents. **Prof. Malini K V** Head- C A R & EDC welcomed the participants, **Dr. Smitha J A** HOD, CSE appreciated the trainer and advised the students to pay attention during training. Highlighted the importance of skill building, appreciated the students for their interest in career building and skilling. Prof. Malini K V, Head- C A R & EDC introduced the trainer and the trainer was welcomed to the session. The trainer briefed the importance and features of the training, modules and job roles, the potential of the program. The trainers were facilitated and Prof. Malini K V thanked the Principal **Dr. B. Shadaksharappa** **Dr. R. Arunkumar** COO, Sairam Institutions for giving an opportunity to this skill building program. Thanked the Coordinator of the Program **Prof. Shobha V** and HOD, CSE for their keen interest in organizing the program.

The 5 days of training program concluded with the proctored exam and we are glad to see 100% certification with the high scores achievement by the students. All the 40 students successfully got certified with the professional certification. Prof. Malini K V thanked Active Edutech for their end to end support and copartnering the program.

Thanking You,

Sincerely,

1. Prof. Malini K V
Head- C A R & EDC

2. Dr. Smitha J A
HOD, CSE

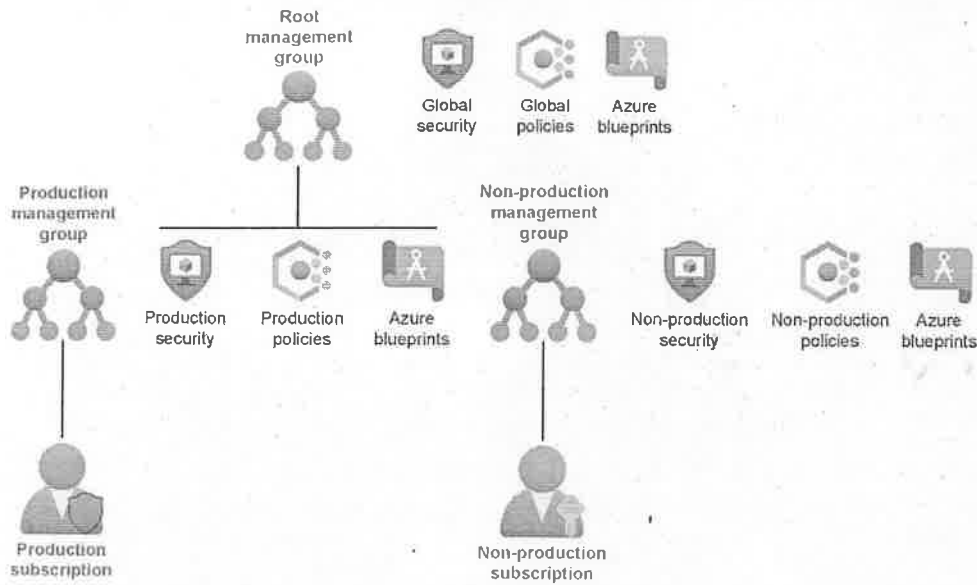
Malini K.V.
19/12/24

Shobha V
20/12/24

Shobha V
20/12/2024

PRINCIPAL
Sri Sai Ram College Of Engineering
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Describe Azure management and governance (30–35%)



- **Azure Policy:** A service that enables organizations to create, assign, and manage policies to enforce specific rules and effects on Azure resources. This helps ensure compliance and resource consistency.
- **Azure Blueprints:** A tool for defining a repeatable set of Azure resources and policies, allowing organizations to automate the setup of environments that adhere to compliance standards.
- **Role-Based Access Control (RBAC):** A method for managing permissions in Azure. RBAC allows administrators to assign specific roles to users or groups, ensuring that individuals only have access to the resources they need.
- **Azure Cost Management and Billing:** A suite of tools that helps users track and manage their Azure spending, set budgets, and analyze cost trends, promoting efficient use of resources.
- **Resource Locks:** A feature that helps protect Azure resources from accidental deletion or modification by applying locks at the subscription, resource group, or resource level.
- **Azure Monitor:** A comprehensive service for monitoring applications and infrastructure, providing insights into performance and operational health through metrics, logs, and alerts.
- **Azure Security Center:** A unified infrastructure security management system that provides advanced threat protection across hybrid cloud workloads, helping organizations maintain security compliance.
- **Management Groups:** A feature that allows organizations to manage multiple Azure subscriptions together, enabling policies and access controls to be applied at a broader level.
- **Tags:** Metadata that can be applied to Azure resources for organization and cost

Microsoft Azure Fundamentals: AZ-900 TRAINING

[25.NOV.2024 - 30.NOV.2024]

Objective Domains

Describe cloud concepts (25–30%)

➤ Describe cloud computing

- Define cloud computing
- Describe the shared responsibility model
- Define cloud models, including public, private, and hybrid
- Identify appropriate use cases for each cloud model
- Describe the consumption-based model
- Compare cloud pricing models

➤ Describe the benefits of using cloud services

- Describe the benefits of high availability and scalability in the cloud
- Describe the benefits of reliability and predictability in the cloud
- Describe the benefits of security and governance in the cloud
- Describe the benefits of manageability in the cloud

➤ Describe cloud service types

- Describe infrastructure as a service (IaaS)
- Describe platform as a service (PaaS)
- Describe software as a service (SaaS)
- Identify appropriate use cases for each cloud service (IaaS, PaaS, SaaS)

Describe Azure architecture and services (35–40%)

➤ Describe the core architectural components of Azure

- Describe Azure regional, regional pairs, and sovereign regions
- Describe availability zones
- Describe Azure datacentres

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Microsoft Certified Azure Fundamentals

Sudhanshu Pandit

has successfully completed the requirements for
Azure Fundamentals

Date issued: December 4, 2024



Microsoft Certified Azure Fundamentals

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Describe cloud concepts (25–30%)

- **Cloud Computing:** The delivery of computing services over the internet, allowing on-demand access to resources like storage, processing power, and applications.
- **Infrastructure as a Service (IaaS):** A cloud service model that provides virtualized computing resources over the internet. Users can rent IT infrastructure (servers, storage, networking) without having to buy hardware.
- **Platform as a Service (PaaS):** A cloud model that provides a platform allowing developers to build, deploy, and manage applications without worrying about the underlying infrastructure.
- **Software as a Service (SaaS):** Software distribution model where applications are hosted in the cloud and made available to users over the internet, typically via subscription.
- **Public Cloud:** Cloud services offered over the public internet, available to anyone who wants to purchase them, usually maintained by third-party providers.
- **Private Cloud:** A cloud infrastructure dedicated to a single organization, offering greater control and security over data and resources.
- **Hybrid Cloud:** A combination of public and private clouds, allowing data and applications to be shared between them for greater flexibility and optimization.
- **Cloud Storage:** A service model that allows data to be stored and accessed via the internet, enabling scalable storage solutions.
- **Serverless Computing:** A cloud execution model where the cloud provider dynamically manages the allocation of machine resources, allowing developers to focus on code without managing servers.
- **Cloud Security:** The set of policies, technologies, and controls used to protect cloud data, applications, and infrastructure from threats.

SUMMARY

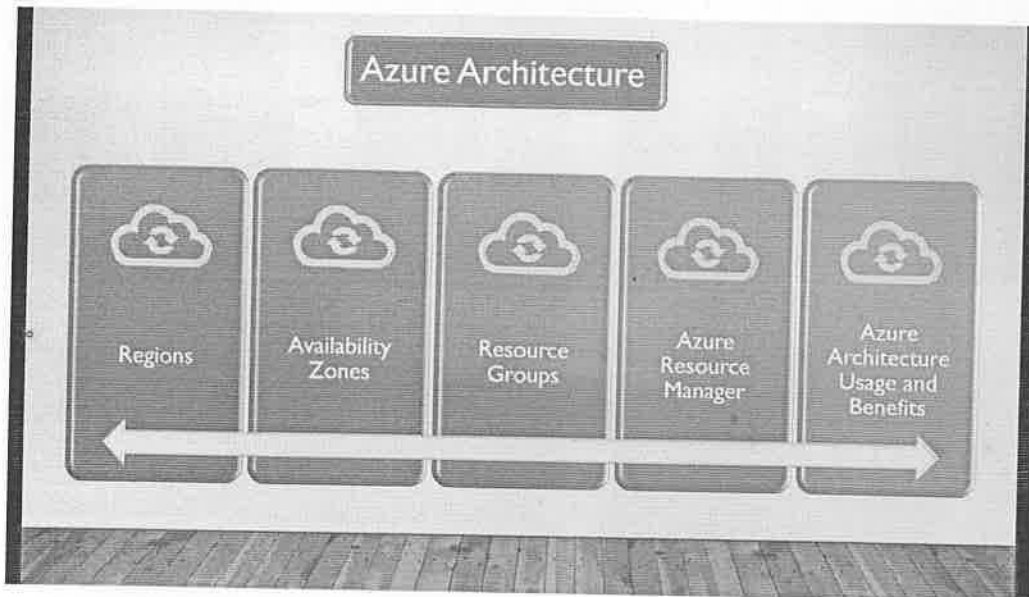
Cloud computing delivers IT resources online, reducing physical infrastructure needs and enhancing flexibility.

In the ****Shared Responsibility Model****, cloud providers handle infrastructure security, while users manage data and access.

****Cloud models****:

- ****Public**** (shared resources, flexible),

- ****Private**** (dedicated, secure),



- **Databases:** Azure supports various database services, including Azure SQL Database, Cosmos DB (a globally distributed database), and Azure Database for MySQL/PostgreSQL.
- **AI and Machine Learning:** Azure offers services like Azure Machine Learning and Cognitive Services, enabling developers to build intelligent applications with AI capabilities.
- **Security and Compliance:** Azure incorporates built-in security features, including Azure Security Center and Azure Active Directory, to help manage identity, access, and compliance.
- **Monitoring and Management:** Azure Monitor and Azure Log Analytics provide tools for tracking performance, monitoring applications, and analysing logs for better management and troubleshooting.

SUMMARY

Azure's architecture includes **regions** (global data centres), **availability zones** (for high availability), and **regional pairs** (disaster recovery). Resources are organized in **resource groups** within **subscriptions** and **management groups**.

Compute and networking services offer **VMs, containers,** and **functions** for various workloads, with networking through **Virtual Networks**, **VPN Gateways**, and **ExpressRoute** for secure connections.

Storage services provide different **tiers** and **redundancy options** for data, with tools like **AZ Copy** and **Azure Migrate** for file movement and migration.

Identity and security in Azure use **Azure AD** for directory services, **SSO, multifactor authentication**, and **RBAC** for access control. Security frameworks like **Zero Trust** and **Défense in Depth** ensure comprehensive protection, with **Microsoft Defender for Cloud** for threat management.

- Describe Azure AD Conditional Access
- Describe Azure role-based access control (RBAC)
- Describe the concept of Zero Trust
- Describe the purpose of the defence in depth model
- Describe the purpose of Microsoft Defender for Cloud

Describe Azure management and governance (30–35%)

➤ Describe cost management in Azure

- Describe factors that can affect costs in Azure
- Compare the Pricing calculator and the Total Cost of Ownership (TCO) calculator
- Describe the Azure Cost Management and Billing tool
- Describe the purpose of tags

➤ Describe features and tools in Azure for governance and compliance

- Describe the purpose of Azure Blueprints
- Describe the purpose of Azure Policy
- Describe the purpose of resource locks
- Describe the purpose of the Service Trust Portal

➤ Describe features and tools for managing and deploying Azure resources

- Describe the Azure portal
- Describe Azure Cloud Shell, including Azure CLI and Azure PowerShell
- Describe the purpose of Azure Arc
- Describe Azure Resource Manager and Azure Resource

Manager templates (ARM templates)

➤ Describe monitoring tools in Azure

- Describe the purpose of Azure Advisor
- Describe Azure Service Health
- Describe Azure Monitor, including Log Analytics, Azure Monitor alerts, and Application Insights

- Describe Azure resources and resource groups
- Describe subscriptions
- Describe management groups
- Describe the hierarchy of resource groups, subscriptions, and management groups

➤ **Describe Azure compute and networking services**

- Compare compute types, including container instances, virtual machines (VMs), and functions
- Describe VM options, including Azure Virtual Machines, Azure Virtual Machine Scale Sets, availability sets, and Azure Virtual Desktop
- Describe resources required for virtual machines
- Describe application hosting options, including the Web Apps feature of Azure App Service, containers, and virtual machines
- Describe virtual networking, including the purpose of Azure Virtual Networks, Azure virtual subnets, peering, Azure DNS, Azure VPN Gateway, and Azure Express Route
- Define public and private endpoints

➤ **Describe Azure storage services**

- Compare Azure storage services
- Describe storage tiers
- Describe redundancy options
- Describe storage account options and storage types
- Identify options for moving files, including AzCopy, Azure Storage Explorer, and Azure File Sync
- Describe migration options, including Azure Migrate and Azure Data Box

➤ **Describe Azure identity, access, and security**

- Describe directory services in Azure, including Azure Active

Directory (Azure AD) and Azure Active Directory Domain Services (Azure AD DS)

- Describe authentication methods in Azure, including single sign-on (SSO), multifactor authentication, and password less
- Describe external identities and guest access in Azure

- **Hybrid** (mix of both), suit varying business needs.

The **consumption-based model** charges only for actual use, optimizing costs, while **pricing models** offer flexible payment options.

Cloud benefits include high availability, scalability, reliability, predictability, security, governance, and ease of management.

Cloud service types:

- **IaaS** (infrastructure control),

- **PaaS** (development platform),

- **SaaS** (fully managed applications), each supporting different business needs.

Describe Azure architecture and services (35–40%)

- **Regions and Availability Zones:** Azure is organized into regions worldwide, each containing multiple availability zones that provide redundancy and high availability for applications and data.
- **Resource Groups:** A logical container for Azure resources, resource groups help organize and manage resources like virtual machines, databases, and networks collectively.
- **Azure Resource Manager (ARM):** The deployment and management service for Azure, ARM allows users to create, update, and delete resources in their Azure account through a consistent management layer.
- **Networking:** Azure offers a range of networking services, including Virtual Networks (VNETs), Load Balancers, and Azure ExpressRoute, enabling secure and efficient communication between resources.
- **Compute Services:** Azure provides various compute options such as Virtual Machines, Azure Functions (serverless), and Azure App Service (platform for web apps), allowing users to run applications as needed.
- **Storage Solutions:** Azure Storage includes Blob Storage (for unstructured data), File Storage (for shared files), and Queue Storage (for messaging), offering scalable and durable storage options.



management. Tags help categorize resources for better reporting and management.

- **Compliance Manager:** A tool that helps organizations assess their compliance posture, manage compliance requirements, and maintain regulations across Azure resources.

SUMMARY

Azure **cost management** involves factors like usage, regions, and resource types. Tools like the **Pricing Calculator** and **TCO Calculator** help estimate costs, while **Cost Management and Billing** tracks and optimizes spending. **Tags** help organize resources for tracking purposes.

For **governance and compliance**, **Azure Blueprints** define setups, **Azure Policy** enforces rules, **resource locks** prevent changes, and the **Service Trust Portal** provides compliance information.

To manage and deploy resources, the **Azure Portal** offers a web interface, **Azure Cloud Shell** provides CLI tools, **Azure Arc** extends management to on-premises environments, and **ARM templates** automate deployments.

Monitoring tools include **Azure Advisor** (optimizations), **Service Health** (status updates), and **Azure Monitor** (logs, alerts, and insights for performance tracking).

- **COURSE COMPLETION**
 - **REPORT**
 - **BADGE**
 - **CERTIFICATE**





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