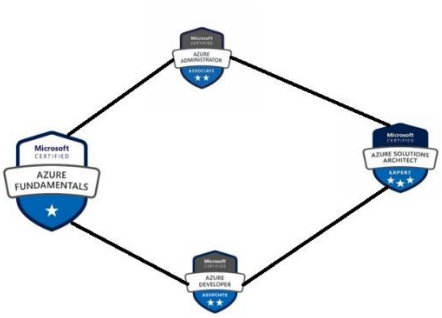
Learning roadmap for an Azure Cloud Engineer



1. Microsoft Azure Fundamentals

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➢ **Describe cloud concept**.	• Describe cloud computing. • Describe the benefit of using cloud services. • Describe cloud service types
➢ **Describe azure architecture and services.**	• Describe the core architectural component of Azure. • Describe Azure Compute and networking services. • Describe Azure storage services. • Describe Azure identity, access, and security.
➢ **Describe Azure management and governance.**	• Describe cost management in Azure. • Describe features and tools in Azure for governance and compliance. • Describe features and tools for managing and deploying Azure resources. • Describe monitoring tools in Azure.

2. Microsoft Azure Administrator

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➢ **Prerequisites for Azure administrator.**	• Configure Azure resources with tools. • Use Azure Resource Manager • Configure resources with azure resource Manager templates. • Automate Azure task using scripts with PowerShell. • Control Azure services with the CLI. • Deploy Azure infrastructure by using JSON ARM template.
➢ **Manage identities and governance in Azure.**	• Configure Azure Active Directory. • Configure user and group accounts. • Configure subscriptions. • Configure Azure policy. • Configure role-based access control. • Create azure users and groups in Azure Active Directory. • Secure your Azure resources with Azure role-based access control (Azure RBAC). • Allow users to reset their password with Azure Active Directory Self-Service password reset.
➢ **Implement and manage storage in Azure.**	• Configure storage Accounts. • Configure Azure Blob Storage. • Configure Azure Storage security. • Configure Azure files and Azure files Sync. • Configure Azure storage with tools. • Create an Azure Storage account. • Control access to Azure Storage with shared access signatures. • Upload, download, and mange data with azure storage Explorer.
➢ **Deloy and manage Azure compute resources.**	• Configure virtual machines. • Configure virtual machine availability. • Configure virtual machine extensions. • Configure Azure App Service plans. • Configure Azure App Service. • Configure Azure Container Instances. • Configure Azure Kubernetes Service.

	• Manage virtual machines with Azure CLI. • Create a Windows virtual machine in Azure. • Host a web application with Azure App service. • Protect your virtual machine settings with Azure Automation State configuration.
➢ **Configure and manage virtual network for Azure administrators.**	• Configure virtual networks. • Configure network security groups. • Configure Azure Firewall. • Configure Azure DNS. • Configure Azure Virtual Network peering. • Configure Azure VPN Gateway. • Configure Azure ExpressRoute and Azure Virtual WAN. • Configure network routing and endpoints. • Configure Azure Load Balancer. • Configure Azure Application Gateway. • Design an IP addressing schema for Azure deployment. • Distribute your service across Azure virtual networks and integrate them by using virtual network peering. • Host your domain on Azure DNS. • Manage and control traffic flow in your Azure deployment with routes. • Improve application scalability and resiliency by using Azure Load Balancer.
➢ **Monitor and back up Azure resources.**	• Configure file and folder backups. • Configure virtual machine backups. • Configure Azure Monitor. • Configure Azure alerts. • Configure Log Analytics • Configure Network Watcher. • Improve incident response with alerting on Azure. • Analyze your Azure infrastructure by using Azure Monitor logs. • Monitor performance of virtual machines by using Azure Monitor VM insights

3. Microsoft Azure Developer Associate.

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➢ **Create Azure App Service web apps.**	• Explore Azure App Service • Configure web app settings. • Scale apps in Azure App Service. • Explore Azure App service deployment slots.
➢ **Implement Azure Functions.**	• Explore Azure Functions. • Develop Azure Functions. • Implement durable functions
➢ **Develop solutions that use Blob Storage.**	• Explore Azure Blob Storage. • Mange the Azure Blob storage Lifecycle. • Work with Azure Blob storage.
➢ **Develop solutions that use Azure Cosmos DB.**	• Explore Azure Cosmos DB. • Implement partitioning in Azure Cosmos DB. • Work with Azure Cosmos DB.
➢ **Implement infrastructure as a service solutions..**	• Provision virtual machine in Azure. • Create and deploy Azure Resource Manager templates. • Manage container images in Azure Container Registry. • Run container images in Azure Container Instances.
➢ **Implement user authentication and Authorization.**	• Explore the Microsoft identity platform. • Implement authentication by using the Microsoft Authentication Library. • Implement shared access signature. • Explore Microsoft Graph.
➢ **Implement secure cloud solutions.**	• Implement Azure Key Vault. • Implement managed identities. • Implement Azure App Configuration.
➢ **Implement API Management.**	• Explore API Management
➢ **Develop event-based solutions**	• Explore Azure Event Grid. • Explore Azure Event Hubs.
➢ **Develop message-based solutions.**	• Discover Azure message queues.
➢ **Instrument solutions to support monitoring and logging.**	• Monitor app performance.
➢ **Integrate caching and content delivery within solutions.**	• Develop for Azure Cache for Redis. • Develop for storage on CDNs

4. Designing Microsoft azure infrastructure solutions.

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➢ **Microsoft Azure Architect Design Prerequisites.**	• Design core Azure architectural components. • Build a cloud governance strategy on Azure. • Microsoft cloud Adoption Framework for Azure. • Introduction to the Microsoft Azure Well-Architected Framework. • Secure access to your applications by using Azure identity services. • Explore Azure compute services. • Discover Azure message queues. • Explore Azure networking services. • Explore Azure Storage services. • Explore Azure database and analytics services.
➢ **Design identity, governance, and monitor solutions.**	• Design governance. • Design authentication and authorization solutions. • Design a solution to log and monitor Azure resources.
➢ **Design business continuity solutions.**	• Describe high availability and disaster recovery strategies. • Design a solution for backup and disaster recovery.
➢ **Design data storage solutions.**	• Design a data storage solution for non-relational data. • Design a data storage solution for relational data. • Design data integration.
➢ **Design infrastructure solutions.**	• Design an Azure compute solution. • Design an application architecture. • Design network solution. • Design migrations.
➢ **Build great Solutions with the Microsoft Azure Well-Architected Framework.**	• Introduction to Microsoft Azure well-Architected Framework. • Microsoft Azure Well-Architected Framework-Cost optimization.

	• Microsoft Azure Well-Architected Framework – Performance efficiency. • Microsoft Azure well -Architected Framework – reliability. • Microsoft Azure Well-Architected Framework – Security.
➢ **Accelerate cloud adoption with the Microsoft Cloud Adoption Framework for Azure.**	• Getting started with Microsoft cloud Adoption Framework for Azure. • Prepare for successful cloud Adoption Framework for Azure. • Prepare for Cloud adoption with a data-driven plan. • Choose the best Azure landing zone to support your requirements for cloud operations. • Migrate to Azure through repeatable processes and common tools. • Address tangible risks with the Govern methodology of the cloud Adoption Framework for Azure. • Ensure stable operations and optimization across all supported workloads deployed to the cloud. • Innovate application by using Azure cloud technologies. • Prepare for cloud security by using the Microsoft cloud Adoption framework for Azure.