دوره مهندسی شبکه Azure

این دوره متشکل از دو دوره (AZ–900) Microsoft Azure Fundamentals و (AZ–104) MICROSOFT AZURE ADMINISTRATOR Course می‌باشد.

مروری بر دوره

دوره (AZ–900) Microsoft Azure Fundamentals یک دوره و گواهینامه ورودی برای مفاهیم پایه ابری Microsoft Azure است. در این دوره، شرکت‌کنندگان با مفاهیم اصلی ابر، خدمات Azure، مدیریت قیمت‌گذاری و پشتیبانی، و همچنین حکومت و اطمینان در Azure آشنا می‌شوند. این دوره برای افرادی که تازه وارد دنیای Azure هستند و یا به درک اصولی از محیط ابری علاقه دارند، مناسب است.

دوره (AZ–104) MICROSOFT AZURE ADMINISTRATOR Course به متخصصین IT آموزش می‌دهد که چگونه اشتراکات Azure خود و زیر ساخت ها را مدیریت، هویت ها را به طور ایمن نگهداری و ساختار شبکه مجازی را حفظ کنند ، Azure و سایت‌های on–premises را به هم وصل کنند، ترافیک شبکه را مدیریت کنند، راه های مختلف ذخیره‌سازی را پیاده‌سازی کنند، دستگاه های مجازی را ایجاد کنند و مقیاس بدهند، برنامه‌های وب و container ها را اجرا کنند، داده‌ها را پشتیبان گیری کنند و به اشتراک بگذارند و کاربران را نظارت کنند.

آنچه خواهید آموخت

در دوره AZ–900

- توضیح مفاهیم محاسبات ابری
- توضیح مزایای استفاده از خدمات ابری
- توضیح انواع خدمات ابری
- توضیح مؤلفه‌های معماری اصلی Azure
- توضیح خدمات محاسباتی و شبکه Azure
- توضیح خدمات ذخیره‌سازی Azure
- توضیح هویت، دسترسی و امنیت Azure
- توضیح مدیریت هزینه در Azure
- توضیح ویژگی‌ها و ابزارهای موجود در Azure برای حاکمیت و انطباق
- توضیح ویژگی‌ها و ابزارها برای مدیریت و پیاده‌سازی منابع Azure
- توضیح ابزارهای نظارت در Azure

در دوره AZ–104

- پیکربندی Microsoft Entra ID
- پیکربندی حساب‌های کاربری و گروه‌ها

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- پیکربندی اشتراک‌ها
- پیکربندی Azure Policy
- پیکربندی کنترل دسترسی role-based
- پیکربندی منابع Azure با ابزارها
- استفاده از Azure Resource Manager
- پیکربندی منابع با قالب‌های Azure Resource Manager
- پیکربندی شبکه‌های مجازی
- پیکربندی گروه‌های امنیتی شبکه
- پیکربندی DNS Azure
- پیکربندی peering شبکه مجازی Azure
- پیکربندی مسیریابی و endpoint های شبکه
- پیکربندی Azure Load Balancer
- پیکربندی Gatewayبرنامه Azure
- پیکربندی حساب‌های ذخیره‌سازی
- پیکربندی ذخیره‌سازی Blob Azure
- پیکربندی امنیت ذخیره‌سازی Azure
- پیکربندی فایل ها و همگام‌سازی Azure
- پیکربندی ذخیره‌سازی Azure با ابزارها
- پیکربندی دستگاه های مجازی
- پیکربندی دردسترس بودن دستگاه های مجازی
- پیکربندی برنامه سرویس Azure
- پیکربندی طرح‌های سرویس برنامه Azure
- پیکربندی Azure Container Instances
- پشتیبان گیری از فایل و پوشه
- پشتیبان گیری از دستگاه های مجازی
- پیکربندی Azure Monitor
- پیکربندی هشدارهای Azure
- پیکربندی Log Analytics
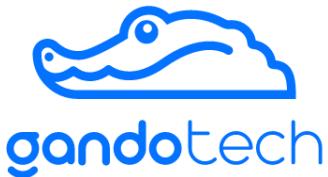- پیکربندی Network Watcher

سرفصل ها

سرفصل های AZ-900

- 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

Module 2: 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

Module 3: 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

Module 4: Describe the core architectural components of Azure

- Describe Azure regions, region pairs, and sovereign regions
- Describe Availability Zones
- Describe Azure datacenters
- Describe Azure resources and Resource Groups
- Describe subscriptions
- Describe management groups
- Describe the hierarchy of resource groups, subscriptions, and management groups

## Module 5: Describe Azure compute and networking services

- Compare compute types, including container instances, virtual machines, and functions
- Describe virtual machine (VM) options, including VMs, virtual machine scale sets, availability sets, Azure Virtual Desktop
- Describe resources required for virtual machines
- Describe application hosting options, including Azure Web Apps, containers, and virtual machines
- Describe virtual networking, including the purpose of Azure Virtual Networks, Azure virtual subnets, peering, Azure DNS, VPN Gateway, and ExpressRoute
- Define public and private endpoints
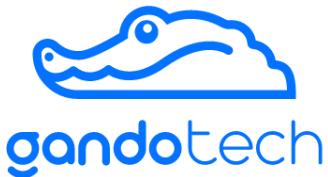
Module 6: Describe Azure storage services

- 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

Module 7: Describe Azure identity, access, and security

- Describe directory services in Azure, including Azure Active Directory (AD) and Azure AD DS
- Describe authentication methods in Azure, including single sign–on (SSO), multifactor authentication (MFA), and passwordless
- Describe external identities and guest access in Azure
- Describe Azure AD Conditional Access
- (Describe Azure Role Based Access Control (RBAC
- Describe the concept of Zero Trust
- Describe the purpose of the defense in depth model
- Describe the purpose of Microsoft Defender for Cloud

Module 8: Describe cost management in Azure

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

Module 9: 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

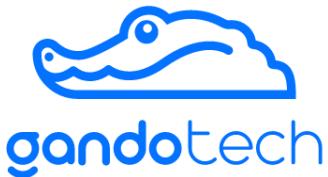## Module 10: Describe features and tools for managing and deploying Azure resources

- Describe Azure portal
- Describe Azure Cloud Shell, including Azure CLI and Azure PowerShell

- Describe the purpose of Azure Arc
- Describe Azure Resource Manager (ARM) and Azure ARM templates

Module 11: Describe monitoring tools in Azure

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

سرفصل AZ-104

Module 1 : Configure Microsoft Entra ID

- Define Microsoft Entra concepts, including identities, accounts, and tenants.
- Describe Microsoft Entra features to support different configurations.
- Understand differences between Microsoft Entra ID and Active Directory Domain Services (AD DS).
- Choose between supported editions of Microsoft Entra ID.
- Implement the Microsoft Entra join feature.
- Use the Microsoft Entra self-service password reset feature.

Module 2: Configure user and group accounts

- Configure users accounts and user account properties.
- Create new user accounts.
- Import bulk user accounts with a template.
- Configure group accounts and assignment types.

Module 3: Configure subscriptions

- Determine the correct region to locate Azure services.
- Review features and use cases for Azure subscriptions.
- Obtain an Azure subscription.
- Understand billing and features for different Azure subscriptions.
- Use Microsoft Cost Management for cost analysis.
- Discover when to use Azure resource tagging.
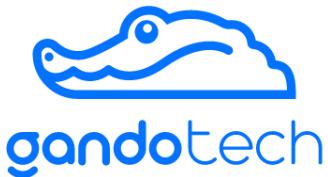- Identify ways to reduce costs.

Module 4: Configure Azure Policy

- Create management groups to target policies and spending budgets.

.Implement Azure Policy with policy and initiative definitions •

.Scope Azure policies and determine compliance •

Module 5: Configure role–based access control

.Identify features and use cases for role–based access control •

.List and create role definitions •

.Create role assignments •

.Identify differences between Azure RBAC and Azure Active Directory roles •

.Manage access to subscriptions with RBAC •

.Review built–in Azure RBAC roles •

Module 6: Configure Azure resources with tools

.Manage resources with the Azure portal •

.Manage resources with Azure Cloud Shell •

.Manage resources with Azure PowerShell •

.Manage resources with Azure CLI •

Module 7: Use Azure Resource Manager

.Identify the features and usage cases for Azure Resource Manager •

.Describe each Azure Resource Manager component and its usage •

.Organize your Azure resources with resource groups •

.Apply Azure Resource Manager locks •

.Move Azure resources between groups, subscriptions, and regions •

.Remove resources and resource groups •

.Apply and track resource limits •

Module 8: Configure resources with Azure Resource Manager templates

.List the advantages of Azure templates •

.Identify the Azure template schema components •

.Specify Azure template parameters •

.Locate and use Azure Quickstart Templates •
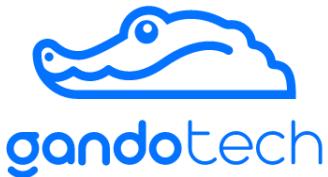
Module 9: Configure virtual networks

.Describe Azure virtual network features and components •

.Identify features and usage cases for subnets and subnetting •
.Identify usage cases for private and public IP addresses •
.Create and determine which resources require public IP addresses •
.Create and determine which resources require private IP addresses •
.Create virtual networks •

Module 10: Configure network security groups

.Determine when to use network security groups •
.Implement network security group rules •
.Evaluate network security group effective rules •
.Examine advantages of application security groups •

Module 11 : Configure Azure DNS

.Identify features and usage cases for domains, custom domains, and private zones •
.Verify custom domain names using DNS records •
.Implement DNS zones, DNS delegation, and DNS record sets •

Module 12 : Configure Azure virtual network peering

.Identify usage cases and product features of Azure virtual network peering •
.Configure your network to implement Azure VPN Gateway for transit connectivity •
.Extend peering by using a hub and spoke network with user–defined routes and service chaining •

Module 13 : Configure network routing and endpoints

.Implement system routes and user–defined routes •
.Configure a custom route •
.Implement service endpoints •
.Identify features and usage cases for private links and endpoint services •

Module 14 : Configure Azure Load Balancer

.Identify features and usage cases for Azure load balancer •
.Implement public and internal Azure load balancers •
.Compare features of load balancer SKUs and configuration differences •
.Configure back–end pools, load–balancing rules, session persistence, and health probes •

Module 15 : Configure Azure Application Gateway

.Identify features and usage cases for Azure Application Gateway •
.Implement Azure Application Gateway, including selecting a routing method •
.Configure gateway components, such as listeners, health probes, and routing rules •

Module 16: Configure storage accounts

.Identify features and usage cases for Azure storage accounts •
.Select between different types of Azure Storage and storage accounts •
.Select a storage replication strategy •
.Configure network access to storage accounts •
.Secure storage endpoints •

Module 17 : Configure Azure Blob Storage

.Identify features and usage cases for Azure Blob Storage •
.Configure Blob Storage and Blob access tiers •
.Configure Blob lifecycle management rules •
.Configure Blob object replication •
Upload and price Blob Storage •

Module 18 : Configure Azure Storage security

.Configure a shared access signature (SAS), including the uniform resource identifier (URI) and SAS parameters •
.Configure Azure Storage encryption •
.Implement customer−managed keys •
.Recommend opportunities to improve Azure Storage security •

Module 19 : Configure Azure Files and Azure File Sync

.Identify storage for file shares and blob data •
.Configure Azure Files shares and file share snapshots •
.Identify features and usage cases of Azure File Sync •
.Identify Azure File Sync components and configuration steps •
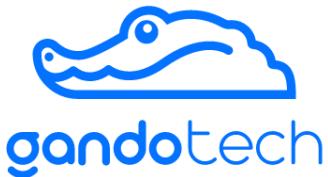
Module 20 : Configure Azure Storage with tools

.Configure and use Azure Storage Explorer •
.Configure the Azure Import/Export service •
.Use the WAImportExport tool with the Azure Import/Export service •

• Configure and use AZCopy.

Module 21 : Configure virtual machines

• Create a virtual machine planning checklist.
• Determine virtual machine locations and pricing models.
• Determine the correct virtual machine size.
• Configure virtual machine storage.

Module 22: Configure virtual machine availability

• Implement availability sets and availability zones.
• Implement update and fault domains.
• Implement Virtual Machine Scale Sets.
• Autoscale virtual machines.

Module 23 : Configure Azure app service plans

• Identify features and usage cases of the Azure App Service.
• Select an appropriate Azure App Service plan pricing tier.
• Scale the App Service Plan.
• Scale out the App Service Plan.

Module 24 : Configure Azure App Services

• Identify features and usage cases for the Azure App Service.
• Create an app with Azure App Service.
• Configure deployment settings, specifically deployment slots.
• Secure your Azure App Service app.
• Configure custom domain names.
• Back up and restore your Azure App Service app.
• Configure Azure Application Insights.

Module 25 : Configure Azure Container Instances

• Identify when to use containers versus virtual machines.
• Identify the features and usage cases of Azure Container Instances.
• Implement Azure Container Groups.

Module 26 : Configure file and folder backups

- Identify features and usage cases for Azure Backup.
- Configure Azure Recovery Services Vault backup options.
- Implement on–premises file and folder backup.
- Configure the Microsoft Azure Recovery Services (MARS) agent for Azure Backup.

Module 27 : Configure virtual machine backups

- Identify features and usage cases for different Azure backup methods.
- Configure virtual machine snapshots and backup options.
- Implement virtual machine backup and restore, including soft delete.
- Compare the Azure Backup agent to the Azure Backup Server .
- Perform site–to–site recovery by using Azure Site Recovery.

Module 28 : Configure Azure Monitor

- Identify the features and usage cases for Azure Monitor.
- Configure and interpret metrics and logs.
- Identify the Azure Monitor components and data types.
- Configure the Azure Monitor Activity Log.

Module 29 : Configure Azure alerts

- Identify Azure Monitor alerts, including alert types and alert states.
- Configure Azure Monitor alerts.
- Create alert rules and action groups.

Module 30 : Configure Log Analytics

- Identify the features and usage cases for Log Analytics.
- Create a Log Analytics workspace.
- Structure a Log Analytics query and review results.

Module 31 : Configure Network Watcher

- Identify the features and usage cases for Azure Network Watcher.
- Configure diagnostic capabilities like IP Flow Verify, Next Hop, and Network Topology.

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