Manage Azure identities and governance (15-20%)
Manage Azure AD objects

- Create users and groups ○ [Creating a new user in Azure AD](#)

  ○ [Create a basic group and add members using Azure Active Directory](#) ○ [Add or delete users using Azure Active Directory](#) ○ [Create Azure users and groups in Azure Active Directory](#) (Learn)

- Manage user and group properties ○ [Edit your group information using Azure Active Directory](#) ○ [Add or update a user's profile information using Azure Active Directory](#) ○ [Manage users and groups in Azure Active Directory](#) (Learn)

- Manage device settings ○ [Manage device identities using the Azure portal](#) ○ [How To: Manage stale devices in Azure AD](#) ○ [What is enterprise state roaming?](#)

  ○ [Manage device identity with Azure AD join and Enterprise State Roaming](#) (Learn)

- Perform bulk user updates ○ [Bulk create users in Azure Active Directory](#)

  ○ [Manage users and groups in Azure Active Directory](#) (Learn)

- Manage guest accounts ○ [What is guest user access in Azure Active Directory B2B?](#)

  ○ [Manage guest access with Azure AD access reviews](#) ○ [Quickstart: Add guest users to your directory in the Azure portal](#) ○ [Create Azure users and groups in Azure Active Directory](#) (Learn)

- Configure Azure AD join

  ○ [How to: Plan your Azure AD join implementation](#) ○ [Tutorial: Configure hybrid Azure Active Directory join for managed domains](#) ○ [Manage device identity with Azure AD join and Enterprise State Roaming](#) (Learn)

- Configure self-service password reset ○ [Plan an Azure Active Directory self-service password reset](#) ○ [How it works: Azure AD self-service password reset](#) ○ [Licensing requirements for Azure AD self-service password reset](#) ○

[Allow users to reset their password with Azure Active Directory self-service password reset](#) (Learn)

Manage role-based access control (RBAC)

- Create a custom role o [Custom roles for Azure resources](#)
  - o [Create custom roles for Azure resources with role-based access control](#) (Learn)

- Provide access to Azure resources by assigning roles (subscriptions, resource groups. resources) o [What is role-based access control (RBAC) for Azure resources?](#) o [Add or remove role assignments using Azure RBAC and the Azure portal](#) o [List role definitions in Azure RBAC](#) o [Secure your Azure resources with role-based access control](#) (Learn)

- Interpret access assignments o [List role assignments using Azure RBAC and the Azure portal](#) o [Understand deny assignments for Azure resources](#)
  - o [Manage access to an Azure subscription by using Azure role-based access control](#) (Learn)

- Manage multiple directories o [Understand how multiple Azure Active Directory organizations interact](#)

Manage subscriptions and governance

- Configure Azure policies o [What is Azure Policy?](#) o [Quickstart: Create a policy assignment to identify non-compliant resources](#) o [Tutorial: Create and manage policies to enforce compliance](#) o [Apply and monitor infrastructure standards with Azure Policy](#) (Learn)

- Configure resource locks
  [Lock resources to prevent unexpected changes](#)

- o
  [Control and organize Azure resources with Azure Resource Manager](#) (Learn)

- Apply tags o [Use tags to organize your Azure resources](#) o [Control and organize Azure resources with Azure Resource Manager](#) (Learn)

- Create and manage resource groups (move and remove) o [Manage Azure Resource Manager resource groups by using the Azure portal](#) o [Move Azure resources to another resource group](#) (Learn)

- Manage subscriptions o [Create an additional Azure subscription](#) o [Change your Azure subscription to a different offer](#) o [Transfer billing ownership of an Azure subscription to another account](#)

- Configure Cost Management o [What is Azure Cost Management and Billing?](#) o [Quickstart: Explore and analyze costs with cost analysis](#) o [Analyze costs and create budgets with Azure Cost Management](#) (Learn) o [Predict costs and optimize spending for Azure](#) (Learn)

- Configure management groups o [Create management groups for resource organization and management](#) o [Manage your resources with management groups](#)

Implement and manage storage (10-15%)

Manage storage accounts

- Configure network access to storage accounts
  o [Introduction to Azure Storage](#)
  o [Configure Azure Storage firewalls and virtual networks](#) o [Secure access to your storage account](#) (Learn)

- Create and configure storage accounts o [Storage account overview](#) o [Create an Azure Storage account](#)
  o [Upgrade to a general-purpose v2 storage account](#) o [Create an Azure Storage account](#) (Learn)

- Generate shared access signature o [Delegate access with a shared access signature](#)

- o
  - o [Grant limited access to Azure Storage resources using shared access signatures (SAS)](#) o [Control access to Azure Storage with shared access signatures](#)

- Manage access keys o [Manage storage account access keys](#) o [Secure your Azure Storage account](#) (Learn)

- Implement Azure storage replication o [Azure Storage redundancy](#)

- Configure Azure AD Authentication for a storage account o [Authorize access to blobs and queues using Azure Active Directory](#)

Manage data in Azure Storage

- Export from Azure job o [Use the Azure Import/Export service to export data from Azure Blob storage](#) o [Export large amounts of data from Azure by using Azure Import/Export](#) (Learn)

- Import into Azure job o [Use the Azure Import/Export service to import data to Azure Blob Storage](#) o [Move large amounts of data to the cloud by using Azure Data Box family](#) (Learn) o [Get started with Storage Explorer](#)
  - o [Upload, download, and manage data with Azure Storage Explorer](#)

- Copy data by using AZCopy o [Get started with AzCopy](#)
  - o [Copy and move blobs from one container or storage account to another from the command line and in code](#) (Learn)

Configure Azure files and Azure blob storage

- Create an Azure file share o [What is Azure Files?](#)

  - o

○ Create an Azure file share ○ Quickstart: Create and manage Azure file shares with the Azure portal ○ Store and share files in your application with Azure Files (Learn)

- Create and configure Azure File Sync service
  ○ Planning for an Azure File Sync deployment ○ Tutorial: Extend Windows file servers with Azure File Sync ○ Create and configure Azure File Sync service (Learn)

- Configure Azure blob storage ○ What is Azure Blob storage?
  Quickstart: Upload, download, and list blobs with the Azure portal
  Store application data with Azure Blob storage (Learn)

- Configure storage tiers for Azure blobs ○
  Azure Blob storage: hot, cool, and archive access tiers
  ○ Optimize storage performance and costs using Blob storage tiers (Learn)

Deploy and manage Azure compute resources (25-30%)

Configure VMs for high availability and scalability

- Configure high availability ○ Availability options for virtual machines in Azure ○ Manage the availability of Windows virtual machines in Azure ○ Microsoft Azure Well-Architected Framework - Reliability

- Deploy and configure scale sets ○ What are virtual machine scale sets? ○ Quickstart: Create a virtual machine scale set in the Azure portal ○ Build a scalable application with virtual machine scale sets (Learn)

Automate deployment and configuration of VMs

○

o

- Modify Azure Resource Manager (ARM) template o [Azure Resource Manager templates overview](#) o [Extend Azure Resource Manager template functionality](#)
  - o [Tutorial: Create and deploy your first Azure Resource Manager template](#) o [Build Azure Resource Manager templates](#) (Learn)

- Configure VHD template o [Create a VM from a VHD by using the Azure portal](#) o [Deploy Azure virtual machines from VHD templates](#) (Learn)

- Deploy from template o [Quickstart: Create and deploy ARM templates by using the Azure portal](#)

- Save a deployment as an ARM template o [Download the template for a VM](#)
  - o [Single and multi-resource export to a template in Azure portal](#)

- Automate configuration management by using custom script extensions o [Custom Script Extension for Windows](#)
      [Use the Azure Custom Script Extension Version 2 with Linux virtual machines](#)

o

[Protect your virtual machine settings with Azure Automation State Configuration](#) (Learn)

Create and configure VMs

- Configure Azure Disk Encryption ○ [Azure Disk Encryption for Linux VMs](#) ○ [Azure Disk Encryption for Windows VMs](#) ○ [Secure your Azure virtual machine disks](#) (Learn)

- Move VMs from one resource group to another ○ [Move a Windows VM to another Azure subscription or resource group](#)

- Manage VM sizes ○ [Sizes for Linux virtual machines in Azure](#) ○ [Sizes for Windows virtual machines in Azure](#) ○ [Resize a Windows VM](#)

- Add data discs ○ [Attach a managed data disk to a Windows VM by using the Azure portal](#) ○ [Use the portal to attach a data disk to a Linux VM](#) ○ [Choose the right disk storage for your virtual machine workload](#) (Learn) ○ [Add and size disks in Azure virtual machines](#) (Learn)

- Configure networking ○ [Virtual networks and virtual machines in Azure](#) ○ [Configure the network for your virtual machines](#) (Learn)

- Redeploy VMs ○ [Redeploy Windows virtual machine to new Azure node](#) ○ [Redeploy Linux virtual machine to new Azure node](#)

Create and configure containers

- Create and configure Azure Kubernetes Service (AKS) ○ [Azure Kubernetes Service (AKS)](#)

o [Quickstart: Deploy an Azure Kubernetes Service (AKS) cluster using the Azure portal](#) o [Introduction to Azure Kubernetes Service](#) (Learn) o [Azure Kubernetes Service Workshop](#) (Learn)

- Create and configure Azure Container Instances (ACI)
  [What is Azure Container Instances?](#)
      [Quickstart: Deploy a container instance in Azure using the Azure portal](#) o
  [Run Docker containers with Azure Container Instances](#) (Learn)

Create and configure Web Apps

- Create and configure App Service o
  [App Service overview](#)
    - o [Configure an App Service app in the Azure portal](#)
    - o [Deploy and run a containerized web app with Azure App Service](#) (Learn)

- Create and configure App Service Plans
  o [Azure App Service plan overview](#) o
  [Manage an App Service plan in Azure](#)
    - o [Scale an App Service web app to efficiently meet demand with App Service scale up and scale out](#) (Learn)

Configure and manage virtual networking (30-35%)

Implement and manage virtual networking

- Create and configure VNET peering o [Virtual network peering overview](#)
    - o [Create, change, or delete a virtual network peering](#)
    - o [Azure Virtual Network frequently asked questions (FAQ) VNet Peering](#) o
  [Tutorial: Connect virtual networks with virtual network peering using the Azure portal](#)
    - o [Create a virtual network peering – different deployment models, same subscription](#) o [Distribute your services across Azure virtual networks and integrate them by using virtual network peering](#) (Learn)

- Configure private and public IP addresses, network routes, network interface, subnets, and virtual network o [What is Azure Virtual Network?](#) o [Quickstart: Create a virtual network using the Azure portal](#) o [Virtual network traffic routing](#)

- o   [Networking limits](#)
- o   [Create, change, or delete a public IP address](#)
- o   [Add, change, or remove IP addresses for an Azure network interface](#) o
[Associate a public IP address to a virtual machine](#)
- o   [Subnet extension](#) o [Virtual network traffic routing](#)
- o   [Add network interfaces to or remove network interfaces from virtual machines](#)
- o [Design an IP addressing schema for your Azure deployment](#) (Learn)
  [Manage and control traffic flow in your Azure deployment with routes](#) (Learn)

Configure name resolution

- Configure Azure DNS o [What is Azure DNS?](#) o [What is Azure Private DNS?](#) o
  [Quickstart: Create an Azure DNS zone and record using the Azure portal](#) o
  [Host your domain on Azure DNS](#) (Learn)

- Configure custom DNS settings o [Name resolution for resources in Azure
  virtual networks](#) o [Add your custom domain name using the Azure Active
  Directory portal](#) o [Use Azure DNS to provide custom domain settings for an
  Azure service](#)

- Configure a private or public DNS zone o [Tutorial: Host your domain in
  Azure DNS](#)
  o [Quickstart: Create an Azure private DNS zone using the Azure portal](#)

Secure access to virtual networks

- Create security rules o [Network Security
  Groups](#)
  o [Create, change, or delete a network security group](#)
  o [Tutorial: Filter network traffic with a network security group using the Azure portal](#)

- Associate an NSG to a subnet or network
  interface o [Secure and isolate access to Azure
  resources by using network security groups
  and](#) [service endpoints](#) (Learn)

- Evaluate effective security rules o [Diagnose a virtual machine network traffic filter problem](#)
  - o [Troubleshoot inbound network connectivity for Azure Load Balancer](#) (Learn)

- Deploy and configure Azure Firewall o [Azure Firewall documentation](#)
  - o [Tutorial: Deploy and configure Azure Firewall using the Azure portal](#)

- Deploy and configure Azure Bastion Service o [Azure Bastion documentation](#)

Configure load balancing

Configure Application Gateway o [Application Gateway configuration overview](#) o [Quickstart: Direct web traffic with Azure Application Gateway - Azure portal](#) o [Load balance your web service traffic with Application Gateway](#) (Learn)

- Configure an internal load balancer o [What is Azure Load Balancer?](#) o [Azure Load Balancer Components](#)
  - o [Tutorial: Balance internal traffic load with a Basic load balancer in the Azure portal](#) o [Improve application scalability and resiliency by using Azure Load Balancer](#) (Learn)

- Configure load balancing rules o [Tutorial: Load balance internet traffic to VMs using the Azure portal](#)

- Configure a public load balancer o [Quickstart: Create a Load Balancer to load balance VMs using the Azure portal](#) o [Troubleshoot Azure Load Balancer](#)

Monitor and troubleshoot virtual networking

- Monitor on-premises connectivity o [Diagnose on-premises connectivity via VPN gateways](#)

- Use Network Performance Monitor o [Network Performance Monitor solution: Performance monitoring](#)

- Use Network Watcher ○ What is Azure Network Watcher?
  ○ Monitor and troubleshoot your end-to-end Azure network infrastructure by using
    network monitoring tools (Learn)

- Troubleshoot external networking ○ Troubleshoot connections
  with Azure Network Watcher using the Azure portal

- Troubleshoot virtual network connectivity ○ Troubleshooting
  connectivity problems between Azure VMs

Integrate an on-premises network with an Azure virtual network

- Create and configure Azure VPN Gateway
  ○ What is a VPN Gateway? ○ Create a
  route-based VPN gateway using the Azure
  portal
    ○ Connect your on-premises network to Azure with VPN Gateway (Learn)

- Create and configure VPNs ○ Create a Site-
  to-Site connection in the Azure portal

- Configure ExpressRoute ○ ExpressRoute
  overview
    ○ Tutorial: Create and modify an ExpressRoute circuit
    ○ Connect your on-premises network to the Microsoft global network by using
      ExpressRoute

- Configure Azure Virtual WAN ○ About
  Azure Virtual WAN
    ○ Tutorial: Create a Site-to-Site connection using Azure Virtual WAN

Monitor and back up Azure resources (10-15%)

Monitor resources by using Azure Monitor

- Configure and interpret metrics (Analyze metrics across subscriptions) ○ Metrics in
  Azure Monitor
    ○ Quickstart: Monitor an Azure resource with Azure Monitor

- o [Monitor the health of your Azure virtual machine by collecting and analyzing diagnostic data](#) (Learn)

- Configure Log Analytics (Implement a Log Analytics workspace, Configure diagnostic settings)
  - o [Get started with Log Analytics in Azure Monitor](#) o [Manage access to log data and workspaces in Azure Monitor](#) o [Create a Log Analytics workspace in the Azure portal](#) o [Create diagnostic setting to collect resource logs and metrics in Azure](#) o [Analyze your Azure infrastructure by using Azure Monitor logs](#) (Learn)

- Query and analyze logs (Create a query, Save a query to the dashboard, Intepret graphs) o [Overview of log queries in Azure Monitor](#) o [Get started with log queries in Azure Monitor](#)

- Set up alerts and actions (Create and test alerts, Create action groups, View alerts in Azure Monitor, Analyze alerts across subscriptions) o [Create, view, and manage metric alerts using Azure Monitor](#) o [Metric Alerts with Dynamic Thresholds in Azure Monitor](#) o [Create Metric Alerts for Logs in Azure Monitor](#) o [Improve incident response with alerting on Azure](#) (Learn)
- Configure Application Insights o [Manage Application Insights resources using PowerShell](#)
  - o [Capture and view page load times in your Azure web app with Application Insights](#) (Learn)

Implement backup and recovery

- Configure and review backup reports o [Configure Azure Backup reports](#)

- Perform backup and restore operations by using Azure Backup Service o [Back up a virtual machine in Azure](#)
  - o [Restore a disk and create a recovered VM in Azure](#) o [Protect your virtual machines by using Azure Backup](#) (Learn)

- Create a Recovery Services Vault (Use soft delete to recover Azure VMs) o [Recovery Services vaults overview](#) o [Create a Recovery Services vault](#)
  - o [Soft delete for virtual machines](#)

- Create and configure backup policy ○ Manage Azure VM backups with Azure Backup service

- Perform site-to-site recovery by using Azure Site Recovery ○ About Site Recovery
    - Set up disaster recovery of on-premises VMware virtual machines or physical servers to a secondary site
    - Protect your Azure infrastructure with Azure Site Recovery (Learn)

Happy learning!