

AZ-100 Microsoft Azure Infrastructure and Deployment

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Last modified yesterday at 7:14 PM • Glossary

- Additional Resources:
- [Manage Azure subscriptions and resources \(15-20%\)](#)
- [Implement and manage storage \(20-25%\)](#)
- [Deploy and manage virtual machines \(VMs\) \(20-25%\)](#)
- [Configure and manage virtual networks \(20-25%\)](#)
- [Manage identities \(15-20%\)](#)

Additional Resources:

<https://labondemand.com/Event/MSHandsOnLabs/Home>

<https://www.microsoft.com/handsonlabs/selfpacedlabs>

<https://msandbu.org/study-guide-for-azure-certifications-az-100-az-101/>

<https://www.getazureready.com/courses>

Manage Azure subscriptions and resources (15-20%)

Objectives	Resources
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Objectives	Resources
Manage Azure subscriptions	<p>Azure enterprise scaffold: Prescriptive subscription governance Examples of implementing Azure enterprise scaffold</p> <p>Assign administrator permissions;</p> <ul style="list-style-type: none"> • Add or change Azure subscription administrators <p>Configure cost center quotas and tagging</p> <ul style="list-style-type: none"> • Azure Subscription Resource Limits and Quotas • Prevent unexpected charges with Azure billing and cost management • Manage your Azure spend by cost center <p>Configure subscription policies</p> <ul style="list-style-type: none"> • What is Azure Policy? <p>Manage Azure Subscriptions</p> <ul style="list-style-type: none"> • Organizing subscriptions and resource groups within the Enterprise • Manage multiple Azure subscriptions • Windows Azure tutorial Part 1: Set up and manage subscriptions • Blog - Subscription Management <p>Video:</p> <ul style="list-style-type: none"> • https://www.pluralsight.com/courses/microsoft-azure-subscriptions-managing

Objectives	Resources
<p>Analyze resource utilization and consumption</p>	<p>Azure Monitor Documentation</p> <p>Configure diagnostic settings on resources;</p> <ul style="list-style-type: none"> • Automatically enable Diagnostic Settings at resource creation using a Resource Manager template • MANAGING MULTIPLE AZURE DIAGNOSTIC SETTINGS USING AZURE CLI INSTEAD OF POWERSHELL • Collect and consume log data from your Azure resources • What is Azure Diagnostics extension • Monitoring data collected by Azure Monitor <p>Analyze alerts across subscription</p> <ul style="list-style-type: none"> • Prevent unexpected charges with Azure billing and cost management <p>Monitor for unused resources; monitor spend; report on spend; create baseline for resources;</p> <ul style="list-style-type: none"> • Manage Azure resources with these top tips of 2017 • Use Cloudyn reports • Prevent unexpected charges with Azure billing and cost management <p>Analyze metrics across subscription;</p> <ul style="list-style-type: none"> • Azure Monitor Metrics Explorer <p>Create action groups;</p> <ul style="list-style-type: none"> • Create and manage action groups in the Azure portal <p>Utilize Log Search query functions;</p> <ul style="list-style-type: none"> • Log Analytics Examples <p>Create and test alerts;View alerts in Log Analytics</p> <ul style="list-style-type: none"> • Unified alerts in Azure Monitor • Respond to events with Azure Monitor Alerts • Create, view, and manage metric alerts using Azure Monitor • Azure logging and auditing

Objectives	Resources
Manage resource groups	<p>Azure Policy; Allocate resource policies; configure resource policies;</p> <ul style="list-style-type: none"> • Create and manage policies to enforce compliance <p>Resource Locks:</p> <ul style="list-style-type: none"> • Lock resources to prevent unexpected changes <p>Azure Resource Group Tags:</p> <ul style="list-style-type: none"> • Use tags to organize your Azure resources • https://www.pluralsight.com/courses/microsoft-azure-subscriptions-managing <p>Move Resources across resource groups; remove resource groups</p> <ul style="list-style-type: none"> • Move resources to new resource group or subscription • Azure: How to move resources between subscriptions under different tenants? • Remove-AzureRmResourceGroup • Understand limitations <p>https://docs.microsoft.com/en-us/azure/architecture/best-practices/naming-conventions</p>

Implement and manage storage (20-25%)

Objectives	Resources
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Objectives	Resources
Create and configure storage accounts	<p>Create and configure storage account</p> <ul style="list-style-type: none"> • Create a storage account • Introduction to Azure Storage <p>Configure network access to the storage account;Virtual Endpoint for Azure Storage:</p> <ul style="list-style-type: none"> • Configure Azure Storage Firewalls and Virtual Networks • Virtual Network Service Endpoints and Firewalls for Azure Storage now generally available • Announcing Virtual Network integration for Azure Storage and Azure SQL <p>Implement Azure storage replication</p> <ul style="list-style-type: none"> • https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy • Locally-redundant storage (LRS): Low-cost data redundancy for Azure Storage • Zone-redundant storage (ZRS): Highly available Azure Storage applications • Geo-redundant storage (GRS): Cross-regional replication for Azure Storage • Azure Storage scalability and performance targets • Designing highly available applications using RA-GRS Storage • Microsoft Azure Storage redundancy options and read access geo redundant storage <p>Manage access keys; generate shared access signature;</p> <ul style="list-style-type: none"> • Using shared access signatures (SAS) • Shared Access Signatures, Part 2: Create and use a SAS with Blob storage <p>Install and use Azure Storage Explorer;</p> <ul style="list-style-type: none"> • Get started with Storage Explorer <p>Monitor activity log by using Log Analytics;</p> <ul style="list-style-type: none"> • Storage Analytics <p>Video:</p> <ul style="list-style-type: none"> • PLURALSIGHT.DESIGN.A.STORAGE.STRATEGY.FOR.MICROSOFT.AZURE • PLURALSIGHT.IMPLEMENTING.STORAGE.AZURE.INFRASTRUCTURE.70.533 • Lynda.Microsoft.Azure.Design.an.Application.Storage.and.Data.Access.Strategy • LYNDA_MICROSOFT_AZURE_DESIGN_AND_IMPLEMENT_A_STORAGE_STRATEGY

Objectives	Resources
Import and export data to Azure	<p>Create export from Azure job; create import into Azure job;</p> <ul style="list-style-type: none"> • What is Azure Import/Export service? • Azure Import/Export system requirements • Use Azure Import/Export service to import data to Azure Files <p>Configure and use Azure blob storage;</p> <ul style="list-style-type: none"> • Use the Azure Import/Export service to import data to Azure Blob Storage • Use the Azure Import/Export service to export data from Azure Blob storage <p>Configure Azure content delivery network (CDN) endpoints</p> <ul style="list-style-type: none"> • What is a content delivery network on Azure? • Quickstart: Create an Azure CDN profile and endpoint • Create an Azure CDN endpoint • Using the Azure CDN to access blobs with custom domains over HTTPS • https://docs.microsoft.com/en-us/azure/storage/blobs/storage-custom-domain-name
Configure Azure files	<p>Create Azure file share;</p> <ul style="list-style-type: none"> • Introduction to Azure Files • Create a file share in Azure Files • Use an Azure file share with Windows <p>Create Azure File Sync service; troubleshoot Azure File Sync; create Azure sync group;</p> <ul style="list-style-type: none"> • Deploy Azure File Sync • Troubleshoot Azure File Sync • STEP-BY-STEP GUIDE: GETTING STARTED WITH AZURE FILE SYNC SERVICE • Create a sync group and a cloud endpoint • Prepare Windows Server to use with Azure File Sync

Objectives	Resources
Implement Azure backup	<p>Configure and review backup reports;</p> <ul style="list-style-type: none"> • Configure Azure Backup reports <p>Create Recovery Services Vault;</p> <ul style="list-style-type: none"> • Recovery Services vaults overview • Monitor and manage Recovery Services vaults • Set up disaster recovery for Azure VMs to a secondary Azure region. • Delete a Recovery Services vault <p>Perform backup operation;</p> <ul style="list-style-type: none"> • Back up a Windows Server or client to Azure using the Resource Manager deployment model <p>Perform a restore operation</p> <ul style="list-style-type: none"> • Restore files to a Windows server or Windows client machine using Resource Manager deployment model • Use the Azure portal to restore virtual machines • Restore An Azure VM to an Availability Set From Azure Backup in the Azure Portal • Restore Azure Virtual Machines to an Availability Set Using PowerShell • Using templates to customize restored VMs from Azure Backup <p>Create and configure backup policy;</p> <ul style="list-style-type: none"> • Defining a backup policy

Deploy and manage virtual machines (VMs) (20-25%)

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[Microsoft Azure and Security Best Pratices – Part 1 Identity](#)

Objectives	Resources
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Objectives	Resources
Create and configure a VM for Windows and Linux	<p>Configure high availability</p> <ul style="list-style-type: none"> • Understanding Azure Availability Sets • Tutorial: Create and deploy highly available virtual machines with Azure PowerShell • Manage the availability of Windows virtual machines in Azure • Regions and availability for virtual machines in Azure • Design for Virtual Machines with High Availability Using Azure • High availability in Azure <p>Deploy and configure scale sets</p> <ul style="list-style-type: none"> • Understanding Azure Virtual Machine Scale Sets (Part 1) • Understanding Azure Virtual Machine Scale Sets (Part 2) • Virtual Machine Scale Sets • What are virtual machine scale sets? • Quickstart: Create a virtual machine scale set in the Azure portal <p>Configure monitoring,</p> <ul style="list-style-type: none"> • How to monitor virtual machines in Azure • Rich insights for virtual machines from Azure Monitor • Microsoft Azure Virtual Machine Monitoring with Azure Diagnostics Extension • https://docs.microsoft.com/en-us/azure/virtual-machines/windows/tutorial-monitoring <p>Resize Virtual Machines Azure:</p> <ul style="list-style-type: none"> • Resize virtual machines • Resize a Windows VM (Powershell) • Notes on changing Azure VM size • https://blogs.msdn.microsoft.com/madan/2016/09/28/resize-azure-resource-manager-arm-vm-os-data-disk-using-azure-portal/ • How to expand the OS drive of a virtual machine • Expand virtual hard disks on a Linux VM with the Azure CLI <p>Configure networking, storage, and virtual machine size;</p> <ul style="list-style-type: none"> • Overview of Windows virtual machines in Azure • Quickstart: Create a Windows virtual machine in the Azure portal • Tutorial: Create and Manage Windows VMs with Azure PowerShell

Objectives	Resources
<p>Automate deployment of VMs</p> <p>configure location of new VMs;</p>	<p>Modify Azure Resource Manager (ARM) template;</p> <ul style="list-style-type: none"> • Create a Windows virtual machine from a Resource Manager template • Azure Quickstart Templates see 101-vm-* <p>Configure VHD template (links appear outdated)</p> <ul style="list-style-type: none"> • Creating Virtual Machine Templates in VMM • How to Create a Template from a Virtual Hard Disk • How to Create a Virtual Machine Template <p>Deploy Windows and Linux VMs</p> <ul style="list-style-type: none"> • Quickstart: Create a Linux virtual machine in the Azure portal • Quickstart: Create a Windows virtual machine in the Azure portal • New-AzureQuickVM cmdlet <p>Deploy from template; save a deployment as an ARM template;</p> <ul style="list-style-type: none"> • Understand the structure and syntax of Azure Resource Manager Templates • Deploy resources with Resource Manager templates and Azure PowerShell • Export an Azure Resource Manager template from existing resources

Objectives	Resources
Manage Azure VM	<p>Add data discs;</p> <ul style="list-style-type: none"> • 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 • Disks FAQs • Add a disk • Detach a disk • Resize a disk • Snapshot a disk • Back up unmanaged disks • Convert to Managed Disks • Convert disk between Standard and Premium • Copy files to a VM • Migrate to Premium storage with Azure Site Recovery • Find unattached disks • Use File storage • Deploy disks with template <p>Add network interfaces;</p> <ul style="list-style-type: none"> • Add network interfaces to or remove network interfaces from virtual machines <p>Move VMs from one resource group to another;</p> <ul style="list-style-type: none"> • Move a Windows VM to another Azure subscription or resource group • Migrate Azure VMs to another region • Move resources to new resource group or subscription <p>Automate configuration management by using PowerShell Desired State Configuration (DSC) and VM Agent by using custom script extensions;</p> <ul style="list-style-type: none"> • Azure Automation State Configuration Overview (and sub-pages) • Custom Script Extension for Windows • 201-vm-custom-script-windows <p>Redeploy VMs</p> <ul style="list-style-type: none"> • Redeploy Windows virtual machine to new Azure node • Redeploy Linux virtual machine to new Azure node • Set-AzureRmVM -redeploy <p>Manage VM sizes;</p> <ul style="list-style-type: none"> • Virtual machine sizes supported in Azure Stack

Objectives	Resources
Manage VM backups	<p>Perform VM restore</p> <ul style="list-style-type: none"> • Use the Azure portal to restore virtual machines <p>Define backup policies;implement backup policies;</p> <ul style="list-style-type: none"> • Defining a backup policy <p>Configure VM backup;</p> <ul style="list-style-type: none"> • Plan your VM backup infrastructure in Azure • Deploy a Windows VM and enable backup using Azure Backup <p>Review documentation regarding Azure Recovery Services Vault.</p>

Configure and manage virtual networks (20-25%)

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Objectives	Resources
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Objectives	Resources
<p>Create connectivity between virtual networks</p>	<p>Create and configure VNET peering;</p> <ul style="list-style-type: none"> • Virtual network peering • Tutorial: Connect virtual networks with virtual network peering using the Azure portal • Create, change, or delete a virtual network peering • https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-peering-gateway-transit?toc=%2fazure%2fvirtual-network%2ftoc.json <p>Create and configure VNET to VNET;</p> <ul style="list-style-type: none"> • Configure a VNet-to-VNet VPN gateway connection using the Azure portal • What is VPN Gateway? <p>Verify virtual network connectivity;</p> <ul style="list-style-type: none"> • Verify a VPN Gateway connection <p>Site to Site VNET:</p> <ul style="list-style-type: none"> • Create a Site-to-Site connection in the Azure portal • Step-By-Step: Configuring a site-to-site VPN Gateway between Azure and On-Premise <p>ExpressRoute</p> <ul style="list-style-type: none"> • Configure Network Performance Monitor for ExpressRoute • ExpressRoute FAQ • ExpressRoute Premium Add-on & Pricing
<p>Implement and manage virtual networking</p> <p>Configure private and public IP addresses, network routes, network interface, subnets, and virtual network</p>	<p>Configure Private IP address:</p> <ul style="list-style-type: none"> • Configure private IP addresses for a virtual machine using the Azure portal <p>Configure Public IP address:</p> <ul style="list-style-type: none"> • Create a virtual machine with a static public IP address using the Azure portal <p>Network interface, subnets,</p> <ul style="list-style-type: none"> • Create, change, or delete a network interface • Add, change, or delete a virtual network subnet <p>Configure Routing:</p> <ul style="list-style-type: none"> • Virtual network traffic routing <p>IP Addressing VNET:</p> <ul style="list-style-type: none"> • IP address types and allocation methods in Azure

Objectives	Resources
<p>Configure name resolution</p>	<p>Configure Azure DNS;Manage Azure DNS:</p> <ul style="list-style-type: none"> • Azure DNS Documentation • What is Azure DNS? • Overview of DNS zones and records • Azure DNS FAQ • Delegation of DNS zones with Azure DNS • Tutorial: Create DNS records in a custom domain for a web app <p>Configure custom DNS settings;</p> <ul style="list-style-type: none"> • Name resolution for resources in Azure virtual networks • Create, change, or delete a network interface <p>Configure DNS zones</p> <ul style="list-style-type: none"> • How to manage DNS Zones in the Azure portal • Manage DNS records and recordsets in Azure DNS using Azure PowerShell
<p>Create and configure a Network Security Group (NSG)</p> <p>identify required ports;</p>	<p>Create security rules;</p> <ul style="list-style-type: none"> • Create, change, or delete a network security group • Security groups • Azure Network Security Groups (NSG) – Best Practices and Lessons Learned • Filter network traffic with a network security group using PowerShell <p>Associate NSG to a subnet or network interface;</p> <ul style="list-style-type: none"> • Step by Step Azure network security groups NSG – Security Center • Associate network interfaces to an ASG • Associate network security group to subnet <p>Evaluate effective security rules</p> <ul style="list-style-type: none"> • Diagnose a virtual machine network traffic filter problem • Automate NSG auditing with Azure Network Watcher Security group view <p>Microsoft cloud services and network security</p>


Manage identities (15-20%)

Objectives	Resources
Manage Azure Active Directory (AD)	<p>Add custom domains;</p> <ul style="list-style-type: none"> • How to: Add your custom domain name using the Azure Active Directory portal • Managing custom domain names in your Azure Active Directory <p>Configure self-service password reset;</p> <ul style="list-style-type: none"> • How it works: Azure AD self-service password reset • How to successfully roll out self-service password reset • Quickstart: Self-service password reset • Password management frequently asked questions <p>implement conditional access policies;</p> <ul style="list-style-type: none"> • What is conditional access in Azure Active Directory? • Azure Active Directory conditional access settings reference • Azure AD Conditional Access Documentation <p>Manage multiple directories;</p> <ul style="list-style-type: none"> • Creating and Managing Multiple Windows Azure Active Directories • Manage your Azure Active Directory tenant <p>Configure Azure AD Identity Protection, Azure AD Join, and Enterprise State Roaming</p> <ul style="list-style-type: none"> • What is Azure Active Directory Identity Protection? • Enabling Azure Active Directory Identity Protection • Azure Active Directory Identity Protection • Azure AD Join • HOW TO JOIN A WINDOWS 10 COMPUTER TO YOUR AZURE ACTIVE DIRECTORY • What is enterprise state roaming? • Enable Enterprise State Roaming in Azure Active Directory <p>Perform an access review</p> <ul style="list-style-type: none"> • Azure AD access reviews • Review access with Azure AD access reviews

Objectives	Resources
	<ul style="list-style-type: none"> • Manage user access with Azure AD access reviews <p>Azure Identity Security:</p> <ul style="list-style-type: none"> • Microsoft Azure and Security Best Practices – Part 1 Identity
Manage Azure AD objects (users, groups, and devices)	<p>Create users and groups; manage user and group properties;</p> <ul style="list-style-type: none"> • How to: Add or delete users using Azure Active Directory • How to: Create a basic group and add members using Azure Active Directory • Dynamic membership rules for groups in Azure Active Directory • Dynamic membership rules for groups - Create a "Direct reports" rule <p>Manage device settings;</p> <ul style="list-style-type: none"> • How to manage devices using the Azure portal <p>Perform bulk user updates</p> <ul style="list-style-type: none"> • AZURE ACTIVE DIRECTORY - BULK UPDATING USER PROFILE ATTRIBUTES USING POWERSHELL <p>Create Groups Azure AD:</p> <ul style="list-style-type: none"> • How to: Create a basic group and add members using Azure Active Directory
Implement and manage hybrid identities	<p>Prepare of AD Connect Synchronization</p> <ul style="list-style-type: none"> • Install and run the Office 365 IdFix tool • Prepare directory attributes for synchronization with Office 365 by using the IdFix tool <p>configure federation and single sign-on;</p> <ul style="list-style-type: none"> • Azure Active Directory Seamless Single Sign-On • How to configure federated single sign-on for an Azure AD Gallery application • What is application access and single sign-on with Azure Active Directory?

Objectives	Resources
	<p>Install and configure Azure AD Connect;</p> <ul style="list-style-type: none"> • Getting started with Azure AD Connect using express settings • Custom installation of Azure AD Connect <p>AAD Pass-through Authentication</p> <ul style="list-style-type: none"> • User sign-in with Azure Active Directory Pass-through Authentication • Azure Active Directory Pass-through Authentication: Quick start <p>Manage Azure AD Connect;</p> <ul style="list-style-type: none"> • Implement password hash synchronization with Azure AD Connect sync • Enable password synchronization to Azure Active Directory Domain Services • How-to: Configure password writeback <p>Azure AD Connect Health</p> <ul style="list-style-type: none"> • Hybrid identity and Microsoft identity solutions • Azure AD Connect Health Agent Installation <p>Azure AD Connect - Filtering / Objects not replicated</p> <ul style="list-style-type: none"> • ONE OR MORE ON-PREMISE AD OBJECTS DON'T SYNC TO OFFICE 365 (AAD) • Azure AD Connect sync: Understanding the default configuration Especially <ul style="list-style-type: none"> • <code>IsPresent([isCriticalSystemObject])</code>. Ensure many out-of-box objects in Active Directory, such as the built-in administrator account, are not synchronized. <p>Home Realm Discovery</p> <ul style="list-style-type: none"> • Home Realm Discovery Customization • Configure Azure Active Directory sign in behavior for an application by using a Home Realm Discovery policy <p>Active Directory Federation Services</p> <ul style="list-style-type: none"> • What is ADFS? • Active Directory Federation Services

<https://blogs.msdn.microsoft.com/mvpawardprogram/2018/05/01/azure-resource-manager/>

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