

Cert Prep: Implementing Azure Infrastructure Solutions (70-533)

with Sharon Bennett

01 Create and Manage Azure Resource Manager Virtual Machines

Objective Overview	Completed	Objective Details	Microsoft Links	Course Link	Your Notes
Deploy workloads on Azure Resource Manager (ARM) virtual machines (VMs)			https://docs.microsoft.com/en-ca/azure/virtual-machines/		
		Identify workloads that can and cannot be deployed	https://support.microsoft.com/en-us/help/2721672/microsoft-server-software-support-for-microsoft-azure-virtual-machines	https://www.lynda.com/Azure-tutorials/Supported-Windows-workloads/534643/579421-4.html	
		Run workloads including Microsoft and Linux	https://docs.microsoft.com/en-us/azure/virtual-machines/linux/	https://www.lynda.com/Azure-tutorials/Deploy-Linux-virtual-machine/534643/579423-4.html	
		Create virtual machines	CLI: https://docs.microsoft.com/en-us/azure/virtual-machines/windows/quick-create-cli Portal: https://docs.microsoft.com/en-us/azure/virtual-machines/windows/quick-create-portal PowerShell: https://docs.microsoft.com/en-us/azure/virtual-machines/windows/quick-create-powershell	https://www.lynda.com/Azure-tutorials/Create-Windows-virtual-machines/534643/579422-4.html	
		Connect to a Windows/Linux VM	https://docs.microsoft.com/en-us/azure/virtual-machines/windows/connect-logon		
		Linux SSH	https://docs.microsoft.com/en-us/azure/virtual-machines/virtual-machines-linux-mac-create-ssh-keys	https://www.lynda.com/Azure-tutorials/Deploy-Linux-virtual-machine/534643/579423-4.html	

Perform configuration management					
		Automate configuration management by using PowerShell Desired State Configuration (DSC) and VM Agent (custom script extensions)	https://docs.microsoft.com/en-us/azure/virtual-machines/windows/extensions-dsc-overview https://docs.microsoft.com/en-us/azure/virtual-machines/windows/extensions-customscript	https://www.lynda.com/Azure-tutorials/DSC-extension-configuration/534643/579426-4.html	
		Configure VMs using a configuration management tool, such as Puppet or Chef	https://azure.microsoft.com/en-us/blog/azure-virtual-machines-using-chef-puppet-and-docker-for-managing-linux-vm/		
		Enable remote debugging	https://docs.microsoft.com/en-us/azure/vs-azure-tools-debug-cloud-services-virtual-machines	https://www.lynda.com/Azure-tutorials/Enable-remote-debugging/534643/579428-4.html	
Design and implement VM storage					
		Configure disk caching	https://docs.microsoft.com/en-us/azure/virtual-machines/windows/sql/virtual-machines-windows-sql-performance		
		Plan storage capacity	https://docs.microsoft.com/en-us/azure/storage/storage-scalability-targets	https://www.lynda.com/Azure-tutorials/VM-disk-storage-overview/534643/579431-4.html	
		Configure operating system disk redundancy	https://docs.microsoft.com/en-us/azure/storage/storage-premium-storage	https://www.lynda.com/Azure-tutorials/Configure-disk-storage/534643/579432-4.html	
		Configure shared storage using Azure File service	https://docs.microsoft.com/en-us/azure/storage/storage-dotnet-how-to-use-files	https://www.lynda.com/Azure-tutorials/Configure-shared-storage/534643/579430-4.html	
		Configure geo-replication			

		Encrypt disks	https://docs.microsoft.com/en-us/azure/security/azure-security-disk-encryption	https://www.lynda.com/Azure-tutorials/Azure-Disk-Encryption/534643/579433-4.html	
		Implement ARM virtual machines with Standard and Premium Storage	https://docs.microsoft.com/en-us/azure/storage/storage-about-disks-and-vhds-windows		
Monitor ARM VMs					
		Configure ARM VM monitoring	https://docs.microsoft.com/en-us/azure/virtual-machines/windows/extensions-diagnostics-template	https://www.lynda.com/Azure-tutorials/Monitor-create-VM-alerts/534643/579435-4.html	
		Configure alerts		https://www.lynda.com/Azure-tutorials/Monitor-create-VM-alerts/534643/579435-4.html	
		Configure diagnostic and monitoring storage location	https://docs.microsoft.com/en-us/azure/virtual-machines/windows/extensions-diagnostics-template	https://www.lynda.com/Azure-tutorials/Configure-diagnostic-storage-monitoring/534643/579436-4.html	
Monitor ARM VM availability					
		Configure multiple ARM VMs in an availability set for redundancy	https://docs.microsoft.com/en-us/azure/virtual-machines/windows/manage-availability	https://www.lynda.com/Azure-tutorials/Create-availability-sets/534643/579439-4.html	
		Configure each application tier into separate availability sets	https://docs.microsoft.com/en-us/azure/virtual-machines/windows/manage-availability	https://www.lynda.com/Azure-tutorials/Availability-set-overview/534643/579438-4.html	
		Combine the Load Balancer with availability sets	https://docs.microsoft.com/en-us/azure/load-balancer/load-balancer-overview	https://www.lynda.com/Azure-tutorials/Combine-load-balancer-availability-sets/534643/579440-4.html	

Scale ARM VMs					
		Scale up and scale down VM sizes	https://blogs.msdn.microsoft.com/madan/2016/09/28/resize-azure-resource-manager-arm-vm-os-data-disk-using-azure-portal/	https://www.lynda.com/Azure-tutorials/Scale-up-scale-down-VM-sizes/534643/579442-4.html	
		Deploy ARM VM Scale Sets (VMSS)	https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/virtual-machine-scale-sets-create	https://www.lynda.com/Azure-tutorials/Create-virtual-machine-scale-sets/534643/579443-4.html	
		Configure ARM VMSS auto-scale	https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/virtual-machine-scale-sets-windows-autoscale	https://www.lynda.com/Azure-tutorials/Modify-VM-scale-set-capacity-PowerShell/534643/579444-4.html	

02 Design and Implement a Storage Strategy

Objective Overview	Completed	Objective Details	Microsoft Links	Course Link	Your Notes
Implement Azure storage blobs and Azure files			https://docs.microsoft.com/en-us/azure/storage/storage-introduction	https://www.lynda.com/Azure-tutorials/Storage-overview/534642/587730-4.html	
		Read data	https://docs.microsoft.com/en-ca/azure/storage/storage-dotnet-how-to-use-blobs		
		Change data	https://docs.microsoft.com/en-us/rest/api/storageservices/fileservices/Blob-Service-Concepts		
		Set metadata on a container	https://docs.microsoft.com/en-us/rest/api/storageservices/fileservices/setting-and-retrieving-properties-and-metadata-for-blob-resources		

		Store data using block and page blobs			
		Stream data using blobs			
		Access blobs securely			
		Implement async blob copy			
		Configure a Content Delivery Network (CDN)	https://docs.microsoft.com/en-us/azure/cdn/cdn-overview	https://www.lynda.com/Azure-tutorials/Configure-content-delivery-network-CDN/534642/587732-4.html	
		Design blob hierarchies			
		Configure custom domains	https://docs.microsoft.com/en-us/azure/storage/storage-custom-domain-name	https://www.lynda.com/Azure-tutorials/Adding-custom-domain/534642/587733-4.html	
		Scale blob storage			
		PowerShell	https://docs.microsoft.com/en-us/powershell/resourcemanager/azurerm.storage/v1.2.0/new-azurerm-storageaccount		
Manage access					
		Create and manage shared access signatures	https://docs.microsoft.com/en-us/azure/storage/storage-dotnet-shared-access-signature-part-1		
		Use stored access policies	https://docs.microsoft.com/en-us/sql/relational-databases/lesson-1-create-stored-access-policy-and-shared-access-signature		
		Regenerate keys	https://docs.microsoft.com/en-us/azure/storage/storage-create-storage-account	https://www.lynda.com/Azure-tutorials/Managing-access/534642/587736-4.html	

Configure diagnostics, monitoring, and analytics					
		Set retention policies and logging levels	https://docs.microsoft.com/en-us/azure/storage/storage-redundancy	https://www.lynda.com/Azure-tutorials/Enable-logs/534642/587738-4.html	
		Analyze logs	https://docs.microsoft.com/en-us/azure/storage/storage-analytics	https://www.lynda.com/Azure-tutorials/View-logs/534642/587739-4.html	
Implement Azure SQL Databases					
		Choose the appropriate database tier and performance level	https://docs.microsoft.com/en-us/azure/sql-database/sql-database-service-tiers	https://www.lynda.com/Azure-tutorials/SQL-databases/534642/587741-4.html	
		Configure point-in-time recovery	https://docs.microsoft.com/en-ca/azure/sql-database/sql-database-recovery-using-backups	https://www.lynda.com/Azure-tutorials/Restoring-SQL-database/534642/587744-4.html	
		Configure geo-replication and data sync	https://docs.microsoft.com/en-us/azure/sql-database/sql-database-geo-replication-portal	https://www.lynda.com/Azure-tutorials/Configuring-SQL-database/534642/587743-4.html	
		Import and export data and schema	https://docs.microsoft.com/en-us/azure/sql-database/sql-database-export		
		Design a scaling strategy	https://docs.microsoft.com/en-us/azure/sql-database/sql-database-design-first-database		
Implement recovery services					
		Create a backup vault	https://docs.microsoft.com/en-us/azure/backup/backup-azure-manage-windows-server	https://www.lynda.com/Azure-tutorials/Creating-Azure-backup-vault/534642/587747-4.html	

		Deploy a backup agent	https://docs.microsoft.com/en-us/azure/backup/backup-azure-manage-windows-server	https://www.lynda.com/Azure-tutorials/Configuring-Azure-Backup-agent/534642/587748-4.html	
		Backup and restore data	https://docs.microsoft.com/en-us/azure/backup/backup-azure-restore-windows-server	https://www.lynda.com/Azure-tutorials/Backing-up-restoring-files/534642/587749-4.html	
		PowerShell	https://docs.microsoft.com/en-us/azure/backup/backup-client-automation		

03 Implement an Azure Active Directory

Objective Overview	Completed	Objective Details	Microsoft Links	Course Link	Your Notes
Integrate an Azure Active Directory (AD) with existing directories			https://docs.microsoft.com/en-us/azure/active-directory/index		
		Implement Azure AD Connect and single sign-on with on-premises Windows Server 2012 R2	https://docs.microsoft.com/en-us/azure/active-directory/connect/active-directory-aadconnect-ssso	https://www.lynda.com/Azure-tutorials/Configure-Azure-AD-Connect/534640/597407-4.html	
		Add custom domains	https://docs.microsoft.com/en-us/azure/active-directory/active-directory-add-domain	https://www.lynda.com/Azure-tutorials/Add-company-branding-custom-domain-Azure-AD/534640/597405-4.html	
		Monitor Azure AD	https://docs.microsoft.com/en-us/azure/active-directory/connect-health/active-directory-aadconnect-health	https://www.lynda.com/Azure-tutorials/Azure-AD-Connect-Health/534640/597408-4.html	
Configure Application Access					
		Configure single sign-on with SaaS applications using federation and password based	https://docs.microsoft.com/en-us/azure/active-directory/active-directory-enable-ssso-scenario	https://www.lynda.com/Azure-tutorials/Configure-SaaS-applications/534640/597412-4.html	

		Add users and groups to applications	https://docs.microsoft.com/en-us/azure/active-directory/active-directory-managing-access-to-apps	https://www.lynda.com/Azure-tutorials/Configure-users-groups/534640/597411-4.html	
		Revoke access to SaaS applications		https://www.lynda.com/Azure-tutorials/Configure-conditional-access-revoke-access/534640/597414-4.html	
		Configure access		https://www.lynda.com/Azure-tutorials/Configure-users-groups/534640/597411-4.html	
		Configure federation with Facebook and Google ID			
Integrate an app with Azure AD			https://docs.microsoft.com/en-us/azure/active-directory/develop/active-directory-integrating-applications		
		Implement Azure AD integration in web and desktop applications			
		Leverage Graph API	https://docs.microsoft.com/en-us/azure/active-directory/develop/active-directory-graph-api		
Implement Azure AD B2C and Azure B2B			https://docs.microsoft.com/en-us/azure/active-directory-b2c/active-directory-b2c-overview		
		Create an Azure AD B2C Directory	https://docs.microsoft.com/en-us/azure/active-directory-b2c/active-directory-b2c-get-started	https://www.lynda.com/Azure-tutorials/Create-Azure-AD-B2C-directory/534640/597418-4.html	
		Register an application	https://docs.microsoft.com/en-us/azure/active-directory-b2c/active-directory-b2c-app-registration	https://www.lynda.com/Azure-tutorials/Register-application/534640/597419-4.html	

		Implement social identity provider authentication	https://docs.microsoft.com/en-us/azure/active-directory-b2c/active-directory-b2c-setup-fb-app	https://www.lynda.com/Azure-tutorials/Create-Microsoft-identity/534640/597420-4.html	
		Enable multi-factor authentication	https://docs.microsoft.com/en-us/azure/active-directory-b2c/active-directory-b2c-reference-mfa		
		Set up self-service password reset	https://docs.microsoft.com/en-us/azure/active-directory-b2c/active-directory-b2c-reference-sspr		
		Implement B2B collaboration		https://www.lynda.com/Azure-tutorials/Implement-B2B-collaboration/534640/597422-4.html	
		Configure partner users			
		Integrate with applications	https://docs.microsoft.com/en-us/azure/active-directory-b2c/active-directory-b2c-app-registration	https://www.lynda.com/Azure-tutorials/Integrate-applications/534640/597416-4.html	
		PowerShell	https://docs.microsoft.com/en-us/powershell/module/azurerms/resources/		

04 Implement Virtual Networks

Objective Overview	Completed	Objective Details	Microsoft Links	Course Link	Your Notes
Configure virtual networks			https://docs.microsoft.com/en-us/azure/virtual-network/virtual-networks-overview		
		Deploy a VM into a virtual network	https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-get-started-vnet-subnet	https://www.lynda.com/Azure-tutorials/Deploy-VM-virtual-network/560058/600127-4.html	

		Configure external and internal load balancing		https://www.lynda.com/Azure-tutorials/Configuring-Azure-load-balancers/560058/600133-4.html	
		Implement Application Gateway		https://www.lynda.com/Azure-tutorials/Creating-application-gateway/560058/600134-4.html	
		Design subnets	https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-vnet-plan-design-arm		
		Configure static, public, and private IP addresses	https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-ip-addresses-overview-arm	https://www.lynda.com/Azure-tutorials/IP-addresses/560058/600124-4.html	
		Set up Network Security Groups (NSGs)	https://docs.microsoft.com/en-us/azure/virtual-network/virtual-networks-create-nsg-arm-pportal	https://www.lynda.com/Azure-tutorials/Configure-NSGs/560058/600130-4.html	
		Set up DNS at the virtual network level	https://docs.microsoft.com/en-us/azure/virtual-network/virtual-networks-name-resolution-for-vms-and-role-instances	https://www.lynda.com/Azure-tutorials/Azure-DNS/560058/600129-4.htm	
		Set up HTTP and TCP health probes			
		Set up User Defined Routes (UDRs)			
		Set up firewall rules			
		Set up direct server return			
Modify network configuration					
		Modify subnets			
		Import and export a network configuration			

Design and implement a multi-site or hybrid network					
		Learn how to use ExpressRoute	https://docs.microsoft.com/en-us/azure/expressroute/		
		Create a site-to-site connection	https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-howto-site-to-site-resource-manager-portal	https://www.lynda.com/Azure-tutorials/Create-site-site-connection/560058/600140-4.html	
		Configure a point-to-site connection	https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-howto-point-to-site-resource-manager-portal	https://www.lynda.com/Azure-tutorials/Create-point-site-connection/560058/600141-4.html	
		Choose the appropriate gateway	https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-plan-design	https://www.lynda.com/Azure-tutorials/Gateway-VPNs/560058/600137-4.html	
		Identify supported devices and software VPN solutions	https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-about-vpn-devices	https://www.lynda.com/Azure-tutorials/Validated-VPN-devices/560058/600138-4.html	
		Identify networking prerequisites			
		Configure virtual networks and multi-site virtual networks	https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-howto-vnet-vnet-resource-manager-portal	https://www.lynda.com/Azure-tutorials/Configure-VNet-VNet/560058/600139-4.html	

05 Design and Deploy ARM Templates

Objective Overview	Completed	Objective Details	Microsoft Links	Course Link	Your Notes
Implement ARM templates					

		Author ARM templates	https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-manager-create-first-template	https://www.lynda.com/Azure-tutorials/Azure-template-overview/572164/604856-4.html	
		Create ARM templates to deploy ARM Resource Providers resources	https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-group-authoring-templates	https://www.lynda.com/Azure-tutorials/Deploying-template-using-portal/572164/604858-4.html	
		Deploy templates with PowerShell	https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-group-template-deploy	https://www.lynda.com/Azure-tutorials/Deploying-template-using-PowerShell/572164/604859-4.html	
		Deploy templates with CLI	https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-group-template-deploy-cli	https://www.lynda.com/Azure-tutorials/Deploying-template-using-CLI/572164/604860-4.html	
		Deploy templates with REST API	https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-group-template-deploy-rest		
Design role-based access control (RBAC)					
		Secure resource scopes such as the ability to create VMs and Azure Web Apps	https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-group-lock-resources	https://www.lynda.com/Azure-tutorials/Securing-Azure-subscriptions/572164/604867-4.html	
		Implement Azure role-based access control (RBAC) standard roles	https://docs.microsoft.com/en-us/azure/active-directory/role-based-access-control-configure	https://www.lynda.com/Azure-tutorials/Assigning-RBAC/572164/604869-4.html	
		Design Azure RBAC custom roles	https://docs.microsoft.com/en-us/azure/active-directory/role-based-access-control-custom-roles	https://www.lynda.com/Azure-tutorials/Design-custom-RBAC-roles/572164/604870-4.html	

06 Design and Implement Azure App Service Apps

Objective Overview	Completed	Objective Details	Microsoft Links	Course Link	Your Notes
Deploy Web Apps		https://docs.microsoft.com/en-us/azure/app-service/app-service-value-prop-what-is			
		Define deployment slots	https://docs.microsoft.com/en-us/azure/app-service-web/web-sites-staged-publishing	560059_01_04_XR15_DeploymentSlotsAndRollback.avi	
		Roll back deployments	https://docs.microsoft.com/en-us/azure/app-service-web/web-sites-staged-publishing		
		Implement pre- and post- deployment actions	https://docs.microsoft.com/en-us/azure/app-service-web/websites-dotnet-deploy-webjobs	560059_01_07_XR15_AzureWebJobs.avi	
		Create, configure, and deploy packages	https://docs.microsoft.com/en-us/azure/app-service-web/web-sites-deploy		
		Create App Service plans		560059_01_02_XR15_CreatingAppServicePlans_tk2.avi	
		Migrate Web Apps between App Service plans		560059_01_03_XR15_DeployingAndMovingApps.avi	
		Create a Web App within an App Service plan	https://docs.microsoft.com/en-us/azure/app-service-web/app-service-web-get-started-dotnet		
Configure Web Apps					
		Define and use app settings	https://docs.microsoft.com/en-us/azure/app-service-web/web-sites-configure	560059_02_01_XR15_ConfigureAppSettings.avi	
		Define and use connection strings, handlers, virtual directories	https://docs.microsoft.com/en-us/azure/app-service-web/web-sites-configure		

		Configure certificates and custom domains	https://docs.microsoft.com/en-us/azure/app-service-web/web-sites-traffic-manager-custom-domain-name	560059_02_02_XR15_AddACustomDomainName.avi	
		Configure SSL bindings and runtime configurations	https://docs.microsoft.com/en-us/azure/app-service-web/web-sites-configure-ssl-certificate		
		Manage Web Apps by using Azure PowerShell and Xplat-CLI	https://docs.microsoft.com/en-us/azure/app-service-web/app-service-web-app-azure-resource-manager-powershell	560059_02_03_XR15_ManageAppsUsingPowerShell.avi 560059_02_04_XR15_ManageAppsUsingCLI.avi	
Configure diagnostics, monitoring, and analytics					
		Retrieve diagnostics data	https://docs.microsoft.com/en-us/azure/app-service-web/web-sites-enable-diagnostic-log	560059_03_03_XR15_RetrieveAndStreamLogs.avi	
		View streaming logs	https://docs.microsoft.com/en-us/azure/app-service-web/web-sites-streaming-logs-and-console	560059_03_03_XR15_RetrieveAndStreamLogs.avi	
		Configure endpoint monitoring, alerts, and diagnostics	https://docs.microsoft.com/en-us/azure/app-service-web/web-sites-monitor	560059_03_01_XR15_ConfiguringAlerts.avi 560059_03_02_XR15_EnableDiagnosticLogs.avi	
		Use remote debugging	https://docs.microsoft.com/en-us/azure/app-service-web/web-sites-dotnet-troubleshoot-visual-studio	560059_03_04_XR15_ConfigureSettingsAndDebuggerUsingVisualStudio.avi	
		Monitor Web App resources		560059_03_05_XR15_MonitorApps.avi	