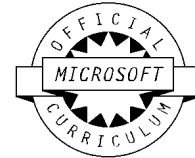


Course Outline

20533- Implementing Microsoft Azure Infrastructure Solutions

Duration: 5 day (30 hours)



Target Audience:

This course is intended for IT professionals who have some knowledge of cloud technologies and want to learn more about Azure.

- IT professionals who want to deploy, configure, and administer services and virtual machines (VMs) in Azure.
- IT professional who use Microsoft System Center to manage and orchestrate server infrastructure.
- Windows Server administrators who are looking to evaluate and migrate on-premises Active Directory roles and services to the cloud.
- IT professionals who want to use Windows Azure to host websites and mobile app backend services.
- IT professionals who are experienced in other non-Microsoft cloud technologies, meet the course prerequisites, and want to cross-train on Azure.
- IT professionals who want to take the Microsoft Certification exam 70-533, Implementing Azure Infrastructure Solutions.

Prerequisites:

Before attending this course, students must have the following technical knowledge:

- Completed the Microsoft Certified Systems Administrator (MCSA) certification in Windows Server 2012.
- Understanding of on-premises virtualization technologies, including: virtual machines, virtual networking, and virtual hard disks (VHDs).
- Understanding of network configuration, including: TCP/IP, Domain Name System (DNS), virtual private networks (VPNs), firewalls, and encryption technologies.
- Understanding of websites, including: how to create, configure, monitor and deploy a website on Internet Information Services (IIS).
- Understanding of Active Directory concepts, including: domains, forests, domain controllers, replication, Kerberos protocol, and Lightweight Directory Access Protocol (LDAP).
- Understanding of database concepts, including: tables, queries, Structured Query Language (SQL), and database schemas.

- Understanding of resilience and disaster recovery, including backup and restore operations.

Topics Covered:

- Module 1: Introduction to Azure
 - Cloud technology overview
 - Overview of Azure
 - Managing Azure with the Azure portal
 - Managing Azure with Windows PowerShell
 - Overview of Azure Resource Manager
 - Azure management services
 - Lab : Managing Microsoft Azure
 - Use the Azure portals.
 - Use Azure Resource Manager features via the Azure portal.
 - Use Azure PowerShell.

After completing this module, students will be able to:

- Identify suitable apps for the cloud.
- Identify services and capabilities that Microsoft Azure provides.
- Use Azure portals to manage Azure services and subscriptions.
- Use Windows PowerShell to manage Azure services and subscriptions.
- Use Azure Resource Manager to manage Azure resources.
- Use Azure Resource Manager to manage Azure resources.

- Module 2: Implementing and managing Azure networking
 - Overview of Azure networking
 - Implementing and managing Azure virtual networks
 - Configuring Azure virtual networks
 - Configuring Azure virtual network connectivity
 - Overview of Azure networking in an infrastructure as a service (IaaS) version 1 (v1)
 - Lab : Using a deployment template to implement Azure virtual networks
 - Creating an Azure virtual network by using a deployment template
 - Creating a virtual network by using PowerShell
 - Configure virtual networks
 - Lab : Configuring connectivity between the IaaS v1 and IaaS version 2 (v2)
 - Using a PowerShell script to Connect IaaS v1 VNet and IaaS v2 VNet
 - Configuring a point-to-site VPN
 - Using a PowerShell script to connect IaaS v1 VNet and IaaS v2 VNet

After completing this module, students will be able to:

- Plan virtual networks in Azure.
- Implement and manage virtual networks.
- Configure intersite connectivity with virtual networks in Azure.
- Configure networking components.

- Plan virtual networks in IaaS v1.

➤ Module 3: Implementing virtual machines

- Overview of IaaS v2 virtual machines
- Planning for Azure virtual machines
- Deploying Azure IaaS v2 virtual machines
- Authoring Azure Resource Manager templates
- Overview of IaaS v1 virtual machines
 - Lab : Creating IaaS v2 virtual machines in Azure
 - Creating virtual machines by using the Azure portal and Azure PowerShell
 - Validating virtual machine creation
 - Lab : Deploying IaaS v2 virtual machines by using Azure Resource Manager templates
 - Using Visual Studio and an Azure Resource Manager template to deploy IaaS v2 virtual machines
 - Using Azure PowerShell and an Azure Resource Manager template to deploy virtual machines

After completing this module, students will be able to:

- Explain IaaS v2 VMs.
- Plan for Azure Virtual Machines.
- Deploy IaaS v2 VMs.
- Author Azure Resource Manager templates.
- Explain IaaS v1 virtual machines.

➤ Module 4: Managing virtual machines

- Configuring virtual machines
- Configuring virtual machine disks
- Managing and monitoring Azure virtual machines
- Managing IaaS v1 virtual machines
 - Lab : Managing Azure virtual machines
 - Configuring availability
 - Implementing desired state configuration (DSC)
 - Implementing storage space-based volumes

After completing this module, students will be able to:

- Configure virtual machines.
- Configure virtual machine disks.
- Manage and monitor virtual machines

➤ Module 5: Implementing Azure App services

- Introduction to App Service
- Planning app deployment in App Service

- Implementing and maintaining web apps
- Configuring web apps
- Monitoring web apps and WebJobs
- Implementing mobile apps
- Traffic Manager
 - Lab : Implementing websites
 - Creating web apps
 - Deploying a web app
 - Managing web apps
 - Implementing Traffic Manager

After completing this module, students will be able to:

- Explain the different types of apps that you can create by using the Microsoft Azure App Service.
- Select an App Service plan and deployment method for apps in Microsoft Azure.
- Use Microsoft Visual Studio, File Transfer Protocol (FTP) clients, and Azure PowerShell to deploy web and mobile apps to Azure.
- Configure web apps and use the Azure WebJobs feature to schedule tasks.
- Monitor the performance of web apps.
- Create and configure mobile apps.
- Use Azure Traffic Manager to distribute requests between two or more app services.

➤ **Module 6: Planning and implementing storage, backup, and recovery services**

- Planning storage
- Implementing and managing storage
- Implementing Azure Content Delivery Networks
- Implementing Azure Backup
- Planning for and implementing Azure Site Recovery
 - Lab : Planning and implementing storage
 - Creating and configuring storage
 - Using Azure file storage
 - Protecting data with Microsoft Azure Backup

After completing this module, students will be able to:

- Choose appropriate Microsoft Azure Storage options to address business needs.
- Implement and manage Azure Storage.
- Improve web application performance by implementing Azure Content Delivery Networks (CDNs).
- Protect on-premises systems and Azure virtual machines (VMs) by using Azure Backup.
- Describe Azure Site Recovery capabilities.

- Module 7: Planning and implementing Azure SQL Database
 - Planning and deploying Azure SQL Database
 - Implementing and managing Azure SQL Database
 - Managing Azure SQL Database security
 - Monitoring Azure SQL Database
 - Managing Azure SQL Database business continuity
 - Lab : Planning and implementing Azure SQL Database
 - Creating, securing, and monitoring an Azure SQL Database
 - Migrating a Microsoft SQL Server database to Azure SQL Database
 - Restoring a database

After completing this module, students will be able to:

- Identify relational database services in Microsoft Azure.
- Provision, configure, and manage the Azure SQL Database data-management service.
- Configure security for Azure SQL Database.
- Monitor Azure SQL Database.
- Manage data recovery and availability for Azure SQL Database.

- Module 8: Implementing PaaS cloud services
 - Planning and deploying PaaS cloud services
 - Managing and maintaining cloud services
 - Lab : Implementing PaaS cloud services
 - Deploying a PaaS cloud services
 - Configuring deployment slots and Remote Desktop Protocol (RDP)
 - Monitoring cloud services

After completing this module, students will be able to:

- Plan and deploy a platform as a service (PaaS) cloud service in Microsoft Azure.
- Configure PaaS cloud services by using configuration files or the Azure portal.
- Monitor the performance of cloud services and diagnose bottlenecks.

- Module 9: Implementing Azure Active Directory
 - Creating and managing Azure AD tenants
 - Configuring application and resource access with Azure AD
 - Overview of Azure AD Premium
 - Lab : Implementing Azure AD
 - Administering Active AD
 - Configuring SSO
 - Configuring Multi-Factor Authentication
 - Configuring SSO from a Windows 10-based computer that is joined to Azure AD

After completing this module, students will be able to:

- Create and manage Azure AD tenants.
- Configure single sign-on (SSO) for cloud applications and resources, and implement Azure Role-Based Access Control (RBAC) for cloud resources.
- Explain the functionality of Azure AD Premium and implement Azure Multi-Factor Authentication.

➤ Module 10: Managing Active Directory in a hybrid environment

- Extending on-premises Active Directory domain to Azure
- Implementing directory synchronization by using Azure AD Connect
- Implementing federation
 - Lab : Implementing and managing Azure AD synchronization
 - Configuring directory synchronization
 - Synchronizing directories

After completing this module, students will be able to:

- Extend an on-premises Active Directory domain to Microsoft Azure.
- Synchronize user accounts between on-premises AD DS and Azure AD.
- Set up SSO by using federation between on-premises Active Directory and Azure AD.

➤ Module 11: Implementing Azure-based management and automation

- Implementing Microsoft Operations Management Suite (OMS)
- Implementing Azure Automation
- Implementing Automation runbooks
- Managing Azure Automation
 - Lab : Implementing Automation
 - Configuring Automation accounts
 - Creating runbooks

After completing this module, students will be able to:

- Implement Microsoft Operations Management Suite (OMS) solutions.
- Implement the core components of Microsoft Azure Automation.
- Implement different types of Azure Automation runbooks.
- Manage Azure Automation by publishing runbooks and scheduling their execution.