INTEGRATING ON-PREMISES CORE INFRASTRUCTURE WITH MICROSOFT AZURE

Module 1: Module 1: Introduction to Microsoft Azure
This module starts with a general overview of cloud computing, and then focuses on Microsoft Azure and its technologies that offer integration opportunities. It also introduces the most common methods of interacting with Azure, including the Azure portals, Azure PowerShell, Azure Command-Line Interface (CLI), and Microsoft Visual Studio. The module concludes by covering Azure deployment models, which dictate how you provision and manage Azure services.
Lessons

- Overview of cloud computing and Azure
- Overview of the Azure deployment models

Lab : Using Azure portal, Azure PowerShell, Azure CLI, and Visual Studio to deploy-manage Azure resources

- Deploying an Azure VM by using the Azure portal
- Deploying an Azure VM by using Azure PowerShell
- Deploying an Azure VM by using Azure CLI
- Creating and deploying an Azure Resource Manager deployment template
- Identifying and deleting newly deployed resources

Aftercompleting this module, students will be able to:

- Describe Microsoft Azure and its most common management.
- Describe the primary characteristics of Azure Resource Manager and classic deployment models.

Module 2: Integrating with Azure Compute Services
This module explores the different compute resources available in Azure in the context of hybrid scenarios. It first explains the differences between Azure virtual machines and Azure cloud services and how you can use each of them to migrate on-premises workloads. Next, it describes the process of migrating on-premises virtual machines to Azure by using virtual machine images and disks. It also explains the process of extending Big Compute workloads to Azure by integrating them with on-premises high performance computing (HPC) deployments and by using Azure Batch. The module concludes with an explanation on containers and Azure Service Fabric.
Lessons

- Overview of Azure virtual machines and Azure cloud services
- Migrating workloads to Azure virtual machines by using virtual machine images and disks
- Extending HPC workloads to Azure
- Integrating compute workloads by using containers, container orchestration, and Azure Service Fabric

Lab : Uploading an on-premises virtual disk file to Azure

- Preparing for an upload of a virtual disk file to Azure
- Uploading a virtual disk file to Azure

Lab : Moving containers between on-premises Hyper V virtual machines and Azure virtual machines

- Creating a Docker host by using Docker Machine
- Deploying a private Docker Registry in Azure

Aftercompleting this module, students will be able to:

- Describe differences between Azure virtual machines and Azure cloud services.
- Migrate workloads to Azure virtual machines by using virtual machine images and disks.
- Explain how to extend on-premises HPC workloads to Azure.
- Integrate compute workloads by using containers, container orchestration, and Azure Service Fabric.

Module 3: Integrating with Azure virtual networks
This module introduces the Azure Virtual Network Service and its components. It also describes how to implement Azure virtual networks and integrate them with your on-premises computing resources by establishing direct network connectivity between the two environments.
Lessons

- Overview of Azure Virtual Network Service
- Extending on-premises networks to Azure

Lab : Implementing a point-to-site VPN by using Azure Resource Manager

- Preparing Azure resources for implementation and testing of a point-to-site VPN
- Implementing point-to-site VPN
- Establishing and verifying the point-to-site VPN connectivity

Aftercompleting this module, students will be able to:

- Implement Azure virtual networks.
- Configure cross-premises connectivity with Azure virtual networks.

Module 4: Integrating with Azure Storage and data services
This module starts with a description of Azure Storage types and their capabilities. It then describes Azure Backup, StorSimple hybrid storage solution, Microsoft SQL Server Stretch Database, Azure Data Factory with Data Management Gateway, and Azure Content Delivery Network. It concludes with a detailed walkthrough of the implementation of Azure Recovery Services agent-based and Microsoft Azure Backup Server-based

backups.
Lessons

- Overview of Azure Storage and data services
- Implementing Azure Backup for on-premises workloads