Configuring and Operating a Hybrid Cloud with Microsoft Azure Stack (20537)

Duration: Approximately 35 hours of coursework to be completed within 90 days.

Price: $895

Delivery Option: Attend via MOC On-Demand

Students Will Learn

- The key features and functionality of Microsoft Azure Stack
- The differences between Microsoft Azure Stack, Microsoft Azure and Windows Azure Pack
- The architecture and components of Microsoft Azure Stack
- Deploying Microsoft Azure Stack
- Windows Server Roles and Features used in Microsoft Azure Stack
- Identity and authentication works in Microsoft Azure Stack
- How Microsoft Azure Stack enables DevOps
- Creating and managing Azure Resource Manager templates
- Creating and managing Plans
- Creating and managing Offers and Delegation
- Managing the Marketplace in Microsoft Azure Stack
- Software Defined Networking in Microsoft Azure Stack
- Understanding how storage is provisioned and managed in Microsoft Azure Stack
- Provisioning Virtual Machines in Microsoft Azure Stack
- Configuring Resource Providers in Microsoft Azure Stack
- Monitoring and troubleshooting Microsoft Azure Stack
- Understanding how licensing and billing works in Microsoft Azure Stack.

Course Description

This is a Microsoft Official Course (MOC) and includes Microsoft courseware and hands-on labs. This course will provide students with the key knowledge required to deploy and configure Microsoft Azure Stack. This course is intended for service administrators, devops, and cloud architects who are interested in using Microsoft Azure Stack to provide cloud services to their end-users or customers from within their own datacenter.

Course Prerequisites

Before attending this course, students must have:

- Working knowledge of Windows Server 2016.
- Working knowledge of SQL Server 2014.
- Working knowledge of Microsoft Azure.

About MOC On-Demand

Microsoft Official Courses On-Demand uses a combination of streaming video, text, lab exercises and assessment checks throughout the course. MOC On-Demand courses are available for 90 days and recommend the following system requirements:

- Browser: Current version of Internet Explorer, Microsoft Edge, Google Chrome or Firefox
- Internet: Broadband Internet connection of over 4Mbps
- Screen Resolution: 1280 x 1024 or higher

Course Overview

Module 1: Overview of Azure Stack

In this first module, the key concepts associated with Azure Stack are described that will help you understand what Azure Stack is and the functionality it provides. You will also learn about the differentiators between Azure Stack, Microsoft Azure and Windows Azure Pack.

Lessons

- What is Azure Stack?
- Comparing Azure Stack with Microsoft Azure.
- Comparing Azure Stack to Windows Azure Pack.

After completing this module, students will be able to:

- Describe the key features and functionality of Azure Stack.
- Understand the differences between Azure Stack and Microsoft Azure.
- Understand the differences between Azure Stack and Windows Azure Pack.

Module 2: Deploying Microsoft Azure Stack

This module introduces some of the internal architecture of Azure Stack and how it forms the basis of the system. It will discuss various Azure Stack concepts such as Regions, Scale Units, Fault Domains, and Validation. In addition, the hardware requirements of Azure Stack are discussed to ensure an understanding of what is required as a minimum.

Lessons

- Microsoft Azure Stack Architecture.
- Azure Stack Prerequisites.
- Installing Azure Stack.

Labs

Confirming the Prerequisites.
- Confirming the installation was successful.

After completing this module, students will be able to:

- Describe the Architecture of Microsoft Azure Stack.
- Understand the prerequisites for Microsoft Azure Stack.
- Install Microsoft Azure Stack.

Module 3: Foundational Components of Microsoft Azure Stack

In this module, you will learn about the Windows Server 2016 features that Azure Stack uses and optional System Center 2016 components that can be added to further manage and maintain the Azure Stack environment. You will also learn how Azure Stack manages authentication and the various authentication providers that are available.

Lessons

- Windows Server 2016 and System Center 2016.
- Identity and Authentication.

Lab

- Reviewing the Azure Stack Infrastructure Components.

After completing this module, students will be able to:

- Understand how Windows Server 2016 and the optional System Center 2016 features are used in Microsoft Azure Stack.
- Understand how identity and authentication works in Microsoft Azure Stack.

Module 4: Microsoft Azure Stack and DevOps

This module discusses the fundamentals of how Azure Stack enables organizations to leverage DevOps. It details the underpinnings of Azure Stack, the Azure Resource Manager, the SDKs and APIs available and also how configuration management technologies such as PowerShell Desired State Configuration and Chef and Puppet can be used to facilitate fast and consistent deployment of applications along with stability.

Lessons

- Technologies used in Microsoft Azure Stack for DevOps.
- Azure Resource Manager Templates.
- How does DevOps use the Azure Stack Technologies?

Labs

- Install the Azure Stack PowerShell Module and obtain the API versions available.
- Debug an ARM Template with Visual Studio.
- Deploying ARM Templates.

After completing this module, students will be able to:

- Understand the technologies used by DevOps in Microsoft Azure Stack.
- Understand Templates in Azure Resource Manager.
- Understand how DevOps use the Azure Stack Technologies.

Module 5: Offering Microsoft Azure Stack Resources

This module discusses some of the key features in Azure Stack that provide the mechanisms used by tenants when consuming resources such as virtual machines and SQL Server databases.

Lessons

- Working with Plans and Offers.
- Microsoft Azure Stack Marketplace.

Labs

- Configuring Plans.
- Configuring Offers.
- Subscribing to an Offer.
- Creating a new Marketplace Item.

After completing this module, students will be able to:

- Configure Offers and Plans in Microsoft Azure Stack.
- Manage the Microsoft Azure Stack Marketplace.

Module 6: Infrastructure as a Service and Microsoft Azure Stack

In this module, you will learn about some of the key components in Azure Stack that IaaS uses such as Software Defined Networking, Storage, and Virtual Machines.

Lessons

- Software Defined Networking improvements with Microsoft Azure Stack and Windows Server 2016.
- Azure Stack Storage.
- Virtual Machines in Microsoft Azure Stack.

Labs

- Creating a Subscription and Resource Group.
- Creating Storage Accounts.
- Creating a Virtual Network.
- Creating Virtual Machines.

After completing this module, students will be able to:

- Understand the Software Defined Networking improvements with Microsoft Azure Stack and Windows Server 2016.
- Configure Azure Stack Storage.
- Deploy Virtual Machines in Microsoft Azure Stack.

Module 7: Platform as a Service and Microsoft Azure Stack

In this module, you will learn the concept of PaaS including how Resource Providers such as SQL Server, My SQL Server and App Service are configured and managed in Azure Stack.

Lessons

- Understanding the concept of PaaS.
- SQL Server and My SQL Server Providers in Microsoft Azure Stack.
- App Service Resource Provider.

Labs

- Installing the Database as a Service Resource Providers.
- Configuring Capacity for Database as a Service.

After completing this module, students will be able to:

- Understand the concept of PaaS.
- Configure the SQL Server and My SQL Server Providers in Microsoft Azure Stack.
- Configure the App Service Resource Provider in Microsoft Azure Stack.

Module 8: Monitoring in Microsoft Azure Stack

In this module, you will learn how Azure Stack is monitored and updated. You will also learn how to monitor guest workloads that tenants have provisioned using Azure stack. Finally, you will learn how to troubleshoot the core components of Azure Stack.

Lessons

- Field Replaceable Unit.
- Azure Stack Control Plane Monitoring.
- Patching the Azure Stack Infrastructure.
- Monitoring Guest Workloads in Microsoft Azure Stack.
- Troubleshooting Azure Stack.

Labs

- Monitoring Azure Stack.
- Monitoring Guest Operating Systems.
- Troubleshooting Azure Stack using the Audit Logs and Alerts.

After completing this module, students will be able to:

- Describe the Field Replaceable Unit concept in Microsoft Azure Stack.
- Describe Control Plane Monitoring in Microsoft Azure Stack.
- Understand how Patching is managed in Microsoft Azure Stack.
- Monitor Guest Workloads in Microsoft Azure Stack.
- Troubleshoot Microsoft Azure Stack.

Module 9: License Microsoft Azure Stack and Billing Tenants

In this module, you will learn how Azure Stack is licensed by Microsoft including the two charging models for Azure Stack and what other costs are typically involved in an Azure Stack deployment.

Lessons

- How to pay for Azure Stack.
- Azure Consistent Usage API.

Labs

- Obtaining Tenant Usage.
- Obtaining Provider Usage.

After completing this module, students will be able to:

- Understand how Azure Stack is billed.
- Understand how to use the Azure Consistent Usage API.

Module 10: Custom and Third-Party Resource Providers for Microsoft Azure Stack

In this module, you will learn how Microsoft Azure Stack can be extended with custom and third-party Resource Providers and how to create your own Resource Providers. Azure Stack differs from Microsoft Azure by allowing you to add Resource Providers created by non-Microsoft entities.

Lessons

- Developing Custom Resource Providers for Azure Stack.
- Third-Party Resource Providers.

Labs

- Configuring a custom Resource Provider.
- Configuring a Third-Party Resource Provider.

After completing this module, students will be able to:

- Develop Custom Resource Providers for Azure Stack.
- Understand Third-Party Resource Providers in Azure Stack.

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