

H6LF7S HPE Deep Dive training for Microsoft Azure Stack

Course Summary

Description

This course will provide students with the knowledge required to evaluate, configure, test, and deploy Azure Stack. Through lectures and the Azure Stack Development Kit, students will gain the knowledge and hands-on experience necessary to understand key features and components of Azure Stack.

This course will provide the fundamental knowledge required for exam 70-537: Configuring and Operating a Hybrid Cloud with Microsoft Azure Stack. Depending on prior Azure Stack experience, some students might require more study and hands-on experience before passing the exam.

Objectives

After taking this course, students will be able to:

- Understand Azure Stack architecture
- Understand Azure Stack deployment
- Understand Azure Stack personas
- Understand how to configure Azure Stack subscriptions with curated offers and plans
- Understand Azure Stack Administration
- Understand Azure Stack Security
- Understand Azure Stack IaaS and PaaS capabilities
- Understand Azure Stack DevOps
- Understand how Azure Stack compares to Azure Public and Azure Pack
- Understand the usage scenarios and benefits of using Azure Stack

Topics

- Introduction and Lab Setup
- Azure Public cloud services
- Azure Stack portal
- PowerShell for Azure
- Azure Stack in your datacenter
- Azure Stack topology
- Usage, billing and the market place
- Azure Resource Manager 101
- Azure Resource Manager
- Azure Stack security
- Azure Active Directory
- Azure Backup
- Resource monitoring
- Physical networking
- Virtual networks
- Hybrid networking
- Internet of Things (IoT)
- Azure Stack PaaS
- Azure Stack IaaS
- Windows Server 2016

Audience

This course is designed for architects who are responsible for an organization's technical strategy for enabling Azure Stack and for infrastructure leads responsible for supporting deployments and ongoing operation of Azure Stack. Application leads for key solutions which are targeted to run on Azure Stack would also find this course beneficial.

Prerequisites

Before attending this course, students should have a working knowledge of Microsoft Azure, Windows Server, Hyper-V, Active Directory, and PowerShell.

Duration

Five days

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically

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Course Outline

- I. Introduction and lab setup**
Introduces the course and provides guidance about how to connect to the Azure Stack Development Kit lab environment
- II. Azure Public cloud services**
Covers the basics of the Azure Public cloud
- III. Azure Stack services**
This topic introduces Azure Stack and provides a high-level overview of Azure Stack key topics, such as:
 - A. Azure Stack is an appliance
 - B. Delivers a Software Driven Datacenter (SDDC) approach
 - C. Provides Infrastructure and Platform capabilities as true services
 - D. Azure Stack Development Kit is free but requires substantial hardware
 - E. Must use OEM hardware solution for production workloads
 - F. Can be used alone, or integrated with other on-premises solutions or Azure Public to deliver hybrid solutions
- IV. Azure Stack portal**
Introduces the Azure Stack portal, which can be used to configure Azure Stack resources and curate content when logged in as an administrator, and used to provision resources when logged in as a tenant.
- V. Azure Stack service provisioning**
Covers plans, subscriptions, offers and services, which are fundamental building blocks of Azure Stack, and important to understand how these work and are configured. This topic also covers portal delegation which might be of interest if a student is a service provider that intends to resell Azure Stack services to their internal or external customers.
- VI. PowerShell for Azure**
Discusses the basics of how to navigate PowerShell modules and commands in general, and Azure Stack related modules in particular
- VII. Azure Stack in your datacenter**
Explains how Microsoft with partners, such as HPE, have taken battle tested technologies that operate at hyper-scale and have "shrunk" them down into an appliance.
- VIII. Azure Stack architecture**
Covers key architecture components, such as ARM and Resource Providers, and also introduces the various infrastructure roles that make up Azure Stack
- IX. Azure Stack topology**
Provides an overview of Azure Stack regions, scale units and servers.
- X. Azure Stack networking**
Gives an introduction to the software-defined network components
- XI. Usage, billing and the market place**
Covers how you can monetize Azure Stack, which can be a valuable revenue stream for resellers, but also enables tracking of internal spending for non-resell partners. Azure Stack provides detailed metrics that can be used to generate spending reports and integrate with commerce systems
- XII. Azure Resource Manager 101**
Discusses Azure Resource Manager (ARM) basics. Having a good understanding of how to use ARM to manage and automate deployments and resources is very important. It makes Azure agile and responsive to application needs.
- XIII. Azure Resource Manager**
Details how to work with ARM template authoring and deployment. Students will see how to use ARM templates, PowerShell and Visual Studio to interact with the Azure Resource Manager.
- XIV. Azure Stack security**
Covers how to manage Role Based Access Control (RBAC) to managed resource authorization.
- XV. Just Enough Administration (JEA)**
Overview of how to use JEA to give fine-grained control over server resources when connecting using PowerShell.

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Course Outline (cont'd)

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| <p>XVI. Storage access keys
Explains how to manager access keys to storage accounts</p> <p>XVII. Azure Security Center
Covers how to use the Security Center to monitor and act on security alerts.</p> <p>XVIII. ARM policies
Outlines how to control ARM templates and why it's different from RBAC.</p> <p>XIX. Identity
Provides an overview of identity providers and identity federation.</p> <p>XX. Azure Stack key vault
Covers how to protect and manage keys and secrets such as storage keys in the cloud.</p> <p>XXI. Azure Active Directory
Introduces Azure Active Directory and how it integrates with Azure Stack.</p> <p>XXII. Azure Backup
Covers how to implement and use Azure Backup with, or instead of, more traditional backup methods. It's not using Azure Stack, but the public cloud to securely store on-premises and cloud artifacts.</p> <p>XXIII. Azure Site Recovery
Explains how to protect your environment by automating the replication of virtual machines, based on policies that you set and control. Azure Site Recovery can protect Microsoft Hyper-V, VMware, and physical servers, and you can use Azure or your secondary datacenter as your recovery site.</p> <p>XXIV. Resource monitoring
Reviews the Health Resource Provider and how it provides health state and alerts.</p> <p>XXV. External monitoring
Gives a brief overview of the SCOM management pack for Azure Stack and an example of a Nagios monitoring plugin that uses Python to integrate with the Health Resource API.</p> | <p>XXVI. Physical networking
Covers the physical networking components in more detail.</p> <p>XXVII. Logical networking
Covers Azure Stack subnetting and virtual IP addressing</p> <p>XXVIII. Virtual networks
Discusses software defined networking components and it's architecture. The main components covered are virtual networks and Software Load Balancer. There is also an introduction to cross-premises connectivity.</p> <p>XXIX. Hybrid networking
Covers the four cross-network connectivity options that can be used for cross-premises or on-premises to cloud connectivity:</p> <ul style="list-style-type: none">A. Site-to-site VPN is a secure connection between your on-premises site and your virtual network over the internet.B. VNet-to-VNet VPN is a secure connection between two Azure virtual networks. Point-to-site VPN is a secure connection between your Windows-based computer and your virtual network without having to deploy any special software.C. ExpressRoute is a private connection between an Azure datacenter and an on premises datacenter over a leased line. <p>XXX. Internet of Things (IoT)
Discusses how to manage IoT devices with Azure clouds, both public and private. Students will get a better understanding of HPE's cloud strategy and how it helps HPE customers figure out their right mix of private and public cloud.</p> <p>XXXI. Azure Stack PaaS
Explains how to setup and configure PaaS for Azure Stack with focus on the App, SQL Server and MySQL resource providers.</p> |
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Course Outline (cont'd)

XXXII. Azure Stack IaaS

Covers the Compute Resource Provider architecture and how to work with compute and storage resources. It will introduce how to use IaaS for traditional workloads as well as for microservices deployment.

XXXIII. Windows Server 2016

Although not directly related to Azure Stack, Windows Server 2016 introduces new features that will help with deploying on-premises and hybrid cloud solutions. Two of those features, containers and software defined storage, are explained in this module

XXXIV. Container deployment

Shows how to use containers to manage software.

XXXV. Appendix A HPE ProLiant for Microsoft Azure Stack

This presentation was developed to educate enterprise accounts about the HPE ProLiant for Azure Stack offering. The presentation covers how the HPE Azure Stack appliance fits into a customer's existing datacenter infrastructure. It also covers HPE ProLiant hardware configuration options.

XXXVI. Labs

- A. Create RDP connection to Azure Stack server
- B. Explore Azure Stack
- C. Create a subscription, plan, offer and subscribe to offer
- D. Adding gallery item to Marketplace using Azure Stack Tools
- E. Working with Azure Stack and PowerShell
- F. Explore Azure Stack admin portal
- G. Register Azure Stack with your Azure subscription
- H. Connect to Azure Stack using PowerShell and Visual Studio
- I. Retrieve usage for all subscriptions
- J. Create delegated provider offer for reselling
- K. Introduction to Azure Resource Manager
- L. Create VM using PowerShell
- M. Create VM using ARM Template
- N. Deploy VM using Visual Studio
- O. Role Based Access Control
- P. Create a Key Vault and add a secret
- Q. Create ARM policy
- R. Working with PowerShell and Azure Active Directory
- S. Azure Stack monitoring
- T. Create a VNET with two subnets
- U. Create a Network Security Group to secure access to Virtual Machines
- V. Create Load Balancer using PowerShell
- W. Create Load Balancer using ARM Template
- X. Create a VM Scale Set
- Y. Install the App Service Resource Provider
- Z. Working with PowerShell and storage
- AA. Deploy Windows Server 2016
- BB. Deploying containers