

Microsoft Private Cloud Boot Camp Courses

**Bootcamp Title – MCSE: Cloud Platform & Infrastructure (Private Cloud) - (1 Cert)**   
Number of Days – 6  
Number of Exams – 2  
Number of Certifications – 1  
Cost - $5,595.00

Certifications:

MCSE: Cloud Platform & Infrastructure (Private Cloud)

Exams:

**70-246:** Monitoring and Operating a Private Cloud with System Center 2012

**70-247:** Configuring and Deploying a Private Cloud with System Center 2012

Course Description:

The MCSE Cloud Platform & Infrastructure (Private Cloud) certification boot camp is a 6-day comprehensive deep dive into Private Cloud covering topics such as configuring, deploying and monitoring. This instructor led face to face training camp will teach you the skills needed to support a Private Cloud environment.

Class Objectives (*Following information customized from Microsoft Learning Test Objectives)*

**Module 1: Introduction to the Cloud Model**

This module explains the key business and technical requirements behind choosing a cloud model and the elements it contains. The module also shows how to use Microsoft System Center 2012 R2 to monitor and operate clouds, ensuring that it is configured correctly and running in a healthy state. Finally, you will use System Center to verify cloud infrastructure for the cloud environment.

**Lessons**

* Overview of the Cloud Computing Model
* Requirements for a Private Cloud
* Requirements for a Public or Hybrid Cloud
* Operating a Hybrid Cloud Infrastructure with System Center
* Maintaining the Health of a Cloud
* Integrating System Center Components

**Lab : Verifying the Private Cloud Infrastructure**

After completing this module, students will be able to describe:

* The features of a cloud computing model.
* The requirements for a private cloud.
* The requirements for a public cloud.
* How you can use System Center to monitor and manage a hybrid cloud.
* How to maintain the health of a hybrid cloud infrastructure.
* How to integrate System Center components.

**Module 2: Configuring a Private Cloud Environment**

This module examines how Microsoft System Center 2012 R2 - Virtual Machine Manager (VMM) plays a pivotal role in the private cloud. The module first provides an overview of Virtual Machine Manager, and will then show how it is used to manage a virtual environment. Additionally, this module explains how to create private clouds by using Virtual Machine Manager. In the lab, you will create a private cloud and then optimize it so that is ready for production use.

**Lessons**

* Overview of System Center 2012 R2 Virtual Machine Manager
* Managing the Virtual Environment with Virtual Machine Manager
* Creating Clouds

**Lab : Configuring and Optimizing a Microsoft Private Cloud**

After completing this module students will be able to:

* Describe the core components, key features, architecture, and security features of Virtual Machine Manager, and the role that it plays in a cloud environment.
* Use Virtual Machine Manager to manage cloud infrastructure.
* Build and configure resources and security for a private cloud.

**Module 3: Deploying Cloud Services**

This module reviews the key elements that form a service in VMM and how the service is deployed to the private cloud.

**Lessons**

* Overview of Service Templates
* VMM Profiles
* Web Deploy Packages
* Overview of Server App-V
* Data-Tier Application Packages
* Deploying Services through App Controller

**Lab : Importing and Deploying the Stock**

**Trader Application**

After completing this module, students will be able to:

* Create service templates in VMM by using the Service Template Designer.
* Create VMM machine profiles.
* create Web Deploy packages.
* Sequencing applications by using Server App-V.
* Create data-tier application packages.
* Deploy services by using App Controller.

**Module 4: Monitoring Cloud Based Applications**

When you provide services in a cloud, performance and availability of the service must be monitored and maintained. Monitoring of the service should be proactive and should provide detailed information, including alert notifications and reports to let you know when potential issues are about to occur in the environment that the service is running in. When issues do occur, you should have the ability to automatically take action and remediate where appropriate, which helps keep the service available and provides the performance and usability that end users expect. This module shows how Operations Manager is used to monitor the services deployed in a cloud.

**Lessons**

* Overview of System Center 2012 R2 Operations Manager
* Agent Deployment in Operations Manager
* Configuring Custom Monitoring
* Monitoring the Network Infrastructure
* Monitoring Distributed Applications

**Lab : Monitoring Private Cloud Services**

After completing this module, students will be able to:

* Describe what Operations Manager is, including the architecture, key features, and security.
* Deploy Operations Manager agents to application servers.
* Configure custom monitoring for applications and services in the cloud.
* Monitor the networking infrastructure that applications and services rely upon.
* Monitor Distributed Applications.

**Module 5: Configuring Application Performance Monitoring**

This module explains how to configure APM to monitor the performance and availability of a .NET application. Additionally, it discusses how Operations Manager 2012 R2 detects and reports failure of these monitors with its alerting and diagnostics tools.

**Lessons**

* Application Performance Monitoring
* Advanced Monitoring in APM
* Viewing Application Performance Data in Operations Manager

**Lab : Configuring Application Performance Monitoring**

After completing this module, students will be able to:

* Describe the core components in APM and the best practices when implementing them.
* Implement advanced monitoring features that are available in APM.
* View application performance in Operations Manager.

**Module 6: Operating and Extending Service Management in the Private Cloud**

This module covers the core features of Service Manager and the security model that supports it. It also covers how to map critical IT processes to Service Manager, and how to use the features of Service Manager to administer these processes. Additionally, the module describes methods to create and manage change requests, incidents, and release records.

**Lessons**

* Overview of Service Manager
* Configuring Security and User Roles
* Configuring Work Items
* Configuring Incident Queues
* Configuring Service Offerings for a Cloud

**Lab : Operating and Extending Service Management in a Cloud**

After completing this module, students will be able to:

* Describe Service Manager.
* Configure security and user roles.
* Configure work items.
* Configure incident queues.
* Configure service offerings.

**Module 7: Automating Incident Creation, Remediation, and Change Requests**

This module describes Orchestrator, reviews the integration features that are available through the installation of the System Center Integration Packs, and explains the processes to follow in setting up automation between Operations Manager and Service Manager.

**Lessons**

* Overview of System Center 2012 R2 Orchestrator
* Integrating Orchestrator with Operations Manager and Service Manager

**Lab : Automating Incident Creation, Remediation and Change Requests**

After completing this module, students will be able to:

* Describe the Orchestrator components and the available Integration Packs.
* Integrate Orchestrator with Operations Manager and Service Manager.

**Module 8: Problem Management in the Private Cloud**

This module explains how a defined set of processes can help reduce the time to resolve problems. It also reviews how incidents and problems are managed within Service Manager. Additionally, this module explains how the integration of Microsoft System Center 2012 R2 Service Manager, System Center 2012 R2 Orchestrator, and System Center 2012 R2 Operations Manager can provide an automated method of generating problem records in Service Manager.

**Lessons**

* Overview of Problem Management
* Creating Custom Rules

**Lab : Automating Problem Management in the Private Cloud**

After completing this module, students will be able to:

* Describe problem management.
* Create custom rules in Operations Manager.

**Module 9: Automating Self-Service Provisioning**

The process of managing public or private clouds involves many processes, activities, and functions. To provide services through a public or private cloud, you should perform many data center activities, such as provisioning the virtual machines, network, and storage. Once the service is deployed, you need to manage and maintain it, which involves a different set of processes and activities. This module introduces the Microsoft System Center 2012 Cloud Services Process Pack that delivers many of the functions and processes that are required to deliver services to a private cloud.

Additionally, this module explains how to install and configure the System Center Cloud Services Process Pack, including integrating it with other System Center 2012 R2 components.

**Lessons**

* Installing and Configuring the System Center Cloud Services Process Pack
* Cloud Services Configuration Items
* Cloud Services Request Items

**Lab : Automating Self-Service Provisioning**

After completing this module, students will be able to:

* Install and configure the System Center Cloud Services Process Pack.
* Describe the various Cloud Services configuration items that make up the System Center Cloud Services Process Pack.
* Describe the various Cloud Services request items that are included in the System Center Cloud Services Process Pack.

**Module 10: Operating a Self-Service, Multi-tenant Cloud with Windows Azure Pack**

In this module you will learn how the Windows Azure Pack can be used to provide a self-service portal for tenants and administrators, and a multi-tenant framework for onboarding users. You will also learn how to provision web site, virtual machine and service bus clouds as well as looking at providing database services and automation.

**Lessons**

* Windows Azure Pack Key Concepts
* Administer Windows Azure Pack
* Windows Azure Pack Providers

After completing this module students will be able to:

* Describe the core components, key features, architecture and security features of Windows Azure Pack.
* Describe the Windows Azure Pack concepts.
* Provision and Configure services in the Windows Azure Pack.

**Module 11: High Availability, Protection, and Recovery for the Cloud**

This module explains how to manage a highly available cloud Infrastructure using SQL Server 2012 Always-On, Hyper-V Replica and Azure Cloud Recovery. This module also details how to use Microsoft System Center 2012 R2 - Data Protection Manager (DPM) to provide data protection for a cloud.

**Lessons**

* High Availability for a Cloud
* Protecting Data in the Private Cloud
* Recovering Data in the Private Cloud

**Lab : Cloud Protection and Recovery**

After completing this module, students will be able to configure:

* High availability for a cloud.
* Data protection for a cloud.
* Data recovery for a cloud.

**Module 12: Optimizing Your Cloud Infrastructure**

It is important that your cloud infrastructure is managed and maintained at all times to ensure it is operating at optimum levels. To facilitate this you should ensure that the cloud infrastructure is kept current with the most recent security and application updates. Virtual Machines hosted in the cloud infrastructure should also be kept up to date. In this module you will learn how Virtual Machine Manager can be used to keep your cloud infrastructure up to date.

**Lessons**

* Using Virtual Machine Manager to Keep the Cloud infrastructure Up-To-Date
* Using Configuration Manager to Keep Virtual Machines Up-To-Date
* Using System Center Advisor to Optimize Cloud infrastructure
* Using Pro-Tips to Optimize Cloud infrastructure

**Lab : Optimizing Your Cloud Infrastructure**

After completing this module, students will be able to:

* Apply security updates to the host infrastructure with Virtual Machine Manager.
* Apply security updates to the host and guest infrastructure with Configuration Manager.
* Optimize your platform with System Center Advisor.
* Optimize your virtual machine workloads with Pro-Tips.

**Module 13: Configuring SLAs, Dashboards, and Widgets**

As an IT operations toolset, Microsoft System Center 2012 R2 produces and collects a vast array of data. The challenge for IT organizations as a whole is to gather this information and present it in a meaningful way to the relevant stakeholders. This module explains the various available methodologies within System Center to collect, measure, and scorecard the performance and availability of the private cloud infrastructure.

**Lessons**

* Service Level Tracking
* Configuring and Deploying Widgets and Dashboards
* Publishing Real-Time State with Microsoft Visio Snap-in
* System Center Analytics
* Using Excel and SSRS to View Data
* Configuring Service Reporting

**Lab : Configuring SLAs, Dashboards, and Widgets**

After completing this module, students will be able to:

* Describe Service Level Tracking in Microsoft System Center 2012 R2 - Operations Manager.
* Configure and deploy widgets and dashboards.
* Describe publishing in real-time state with Microsoft Visio.
* Describe using System Center analytics.
* View data with Microsoft Office Excel and Microsoft SQL Server Reporting Services (SSRS).
* Install, configure and use Service Reporting to create chargeback reports.

**Module 1: Planning for the Cloud**

Students learn how to plan for a hybrid cloud. This includes the various cloud models, understanding the requirements for a private and public cloud and designing a private cloud infrastructure. They are also provided with an overview of the System Center 2012 R2 components.

**Lessons**

* Understanding Cloud Models
* Benefits for Deploying a Private Cloud
* Designing a Private Cloud Infrastructure
* Overview of Windows Server 2012 R2 Hyper-V
* Overview of System Center 2012 R2 Components
* Deploying Hyper-V Clustering with VMM

**Lab : Preparing the Private Cloud Infrastructure**

After completing this module, you will be able to:

* Describe the private cloud.
* Understand the requirements for deploying a private cloud.
* Design the private cloud infrastructure.
* Describe the Microsoft System Center 2012 R2 components.
* Deploy Hyper-V host clustering with Microsoft System Center 2012 R2 Virtual Machine Manager (VMM).

**Module 2: Configuring and Deploying the Private Cloud with Microsoft System Center 2012 R2 Virtual Machine Manager**

Students learn how to configure and deploy a private cloud using Virtual Machine Manager. This includes an overview of the various Virtual Machine Manager components including Security Roles and host groups.

**Lessons**

* Overview of VMM Architecture and Components
* Configuring Advanced Networking in VMM
* Installing and Upgrading VMM
* Configuring VMM Security and Roles
* Understanding Host Groups

**Lab : Configuring and Deploying the Private Cloud Infrastructure**

After completing this module, you will be able to:

* Define and describe the components of VMM and its architecture.
* Configure advanced networking in VMM.
* Install and upgrade VMM.
* Configure VMM security and roles.
* Understand host groups.

**Module 3: Extending and Maintaining Cloud Infrastructure**

Students learn how to extend and maintain the private cloud infrastructure. This includes how VMM integrates with WDS and WSUS and how to deploy bare-metal Hyper-V host servers. They also learn how to configure software updates for the private cloud fabric using VMM.

**Lessons**

* Overview of the PXE and Update Server Roles
* Deploying Bare-Metal Hyper-V Host Servers
* Configuring the Update Server Role
* Creating and Using an Update Baseline

**Lab : Maintaining Cloud Infrastructure**

After completing this module, you will be able to:

* Describe how VMM integrates with WDS and WSUS to provide Pre-Boot eXecution Environment (PXE) Server role and Update Server roles.
* Describe how to deploy bare-metal Hyper-V host servers.
* Configure the Update Server role.
* Create and remediate a software update compliance baseline.

**Module 4: Configuring Application Delivery**

Students learn how to configure application delivery for the private cloud using VMM. This includes configuring dynamic application deployment and sequencing applications using Server App-V.

**Lessons**

* Dynamic Application Deployment Overview
* Web Deployment Packages
* Server Application Virtualization Overview
* Configuring Server App-V Components
* Sequencing and Deploying Virtual Applications

**Lab : Configuring Virtual Application Delivery**

After completing this module, you will be able to:

* Describe dynamic application deployment.
* Create web deployment packages by using the Web Deployment Tool.
* Configure the Server App-V Sequencer and agent.
* Sequence and then deploy a Server App-V virtualized application.

**Module 5: Creating the Private Cloud Building Blocks**

Students learn about the private cloud building blocks which include configuring virtual machine templates and profiles in VMM. They also learn how to configure the Service Provider Foundation and networking in VMM.

**Lessons**

* Configuring Guest Operating System Profiles
* Configuring Hardware Profiles
* Configuring SQL Server Using SQL Server Profiles
* Configuring Application Profiles
* Configuring Virtual Machine Templates
* Configuring Service Provider Foundation
* Configuring User Roles

**Lab : Creating the Private Cloud Building Blocks**

After completing this module, you will be able to:

* Configure the guest operating system profiles.
* Configure hardware profiles.
* Configure SQL Server by using SQL Server profiles.
* Configure application profiles.
* Configure virtual machine templates.
* Configure the Service Provider Foundation.
* Configure the self-service user role.

**Module 6: Deploying and Configuring Access to a Private Cloud**

Students learn how to deploy and access a private cloud. This includes configuring private cloud resources and private cloud capacity. They also learn how to install and configure App Controller and how to manage services and service templates.

**Lessons**

* Understanding Private Cloud Computing
* Installing and Configuring App Controller
* Creating and Managing Service Templates

**Lab : Deploying and Configuring Accessing to a Hybrid Cloud**

After completing this module, you will be able to:

* Describe a private cloud.
* Install and configure App Controller.
* Create and manage services and service templates.

**Module 7: Monitoring Cloud Infrastructure**

Students learn how to monitor the hybrid cloud infrastructure with Operations Manager. This includes installing and configuring Operations Manager and integrating Operations Manager with other System Center 2012 R2 components.   
**Lessons**

* Operations Manager Architecture and Security
* Operations Manager Installation Considerations
* Configuring User Roles and Notifications
* Configuring Management Packs
* Configuring Integration with System Center 2012 R2

**Lab : Monitoring the Private Cloud Infrastructure**

After completing this module, you will be able to:

* Describe the security considerations and architecture of Operations Manager.
* Plan for high availability and disaster recovery.
* Upgrade from Operations Manager 2012 SP1 to Operations Manager 2012 R2.
* Configure notification subscriptions in Operations Manager.
* Install, configure, and upgrade management packs.
* Configure integration between Operations Manager and other System Center 2012 R2 components.

**Module 8: Extending and Customizing Monitoring of the Cloud Infrastructure**

Students learn how to extend and customize the monitoring of the hybrid cloud infrastructure. This includes configuring System Center Advisor to assess the hybrid cloud infrastructure configuration, integrating Operations Manager with SharePoint and how monitoring templates are used in Operations Manager. They also learn how to implement distributed application monitoring in Operations Manager.

**Lessons**

* Configuring System Center Advisor
* Configuring the SharePoint Server Portal
* Monitoring Templates
* Distributed Application Monitoring

**Lab : Extending and Customizing Monitoring**

After completing this module, you will be able to:

* Configure System Center Advisor.
* Configure the Operations Manager SharePoint Web Part.
* Describe how to use Management Pack templates in Operations Manager.
* Configure distributed application monitoring.

**Module 9: Implementing Service Management for the Cloud**

Students learn how to implement service management for the private cloud using Service Manager. This includes an overview of Service Manager including the architecture, understanding work items and configuring connectors in Service Manager. They also learn how to configure notifications in Service Manager.

**Lessons**

* Service Manager Architecture Overview
* Upgrading to System Center 2012 R2 Service Manager
* Understanding Service Manager Work Items
* Configuring Service Manager Connectors
* Configuring Service Manager Notifications

**Lab : Implementing Service Management for a Cloud**

After completing this module, you will be able to:

* Describe the Service Manager architecture.
* Upgrade to System Center 2012 R2 Service Manager.
* Understand Service Manager work items.
* Configure Service Manager connectors.
* Configure Service Manager notifications.

**Module 10: Configuring High Availability, Disaster Recovery and Protection for a Cloud**

Students learn how to configure protection and disaster recovery for the private cloud. This includes configuring Hyper-V Recovery Manager. Students are also provided with an overview of Data protection Manager (DPM) and learn how to configure data protection and recovery in DPM.

**Lessons**

* Planning for Azure Site Recovery
* Planning DPM Deployment
* DPM Architecture and Components
* Upgrading DPM
* Configuring DPM for the Private Cloud
* Configuring Application Protection for a Cloud
* Restoring Applications to the Cloud

**Lab : Protecting the Private Cloud Infrastructure**

After completing this module, you will be able to:

* Configure Azure Site Recovery.
* Plan DPM deployment.
* Describe DPM architecture and components.
* Upgrade DPM.
* Configure DPM for the private cloud.
* Configure application protection for the private cloud.
* Restore applications to the private cloud.

**Module 11: Automating and Standardizing a Cloud**

Students learn how to automate and standardize the private cloud using System Center 2012 R2 Orchestrator. This includes an overview of Orchestrator including its architecture and components. They also learn how to configure Integration Packs and Runbooks in Orchestrator and how these can be used to automate processes in the private cloud.

**Lessons**

* Orchestrator Architecture and Components Overview
* Deploying and Configuring Core Components
* Managing Runbooks
* Configuring Integration Packs

**Lab : Automating a Private Cloud**

After completing this module, you will be able to:

* Describe Orchestrator architecture and components.
* Deploy and configure Orchestrator components.
* Create and execute run books.
* Configure integration packs.

**Module 12: Configuring a Self-Service Multi-Tenant Cloud with the Windows Azure Pack**

Students learn how to configure a multi-tenant private cloud by Windows Azure Pack including how to configure virtual machine clouds, website clouds and SQL clouds.

**Lessons**

* Configuring the Windows Azure Pack

**Lab : Configuring the Windows Azure Pack**

After completing this lesson, you will be able to:

* Describe the Windows Azure Pack, configure VM Clouds, configure Website Clouds, configure SQL Clouds, and configure Plans.