Monitoring and Operating a Private Cloud

**Código del curso:** 20246

**Duración:** 5 días

**Acerca de este curso**

This course describes how to monitor and operate a cloud with Microsoft® System Center 2012 R2. This course focuses on how to manage and administer a cloud environment, and it describes how you can monitor key infrastructure elements and applications that run within a cloud. It does not discuss planning and implementation, which is covered in 20247: Configuring and Deploying a Cloud with System Center 2012 R2.

**Perfil del usuario objetivo**

This course is intended for cloud administrators who are responsible for monitoring and protecting the cloud infrastructure. It is also intended for solution architects who are responsible for designing cloud architectures and extending existing cloud solutions. The primary audience for this course is administrators who create service requests.

**Al finalizar el curso**

After completing this course, students will be able to:
- Describe the Cloud Model.
- Configure and optimize a Private Cloud.
- Deploy Cloud Services.
- Monitor Cloud Services.
- Configure Application Performance Monitoring in a Cloud Environment.
- Operate and extend Service Management in a Cloud Environment.
- Automate Incident Creation, Remediation, and Change Requests in a Cloud Environment.
- Perform Problem Management in a Cloud Environment.
- Optimize the Cloud Infrastructure.
- Configure SLAs, Dashboards, and Widgets in a Cloud Environment.

Requisitos previos:

This course describes how to monitor and operate a cloud with System Center 2012 R2. Because this is an extensive technical domain that includes several individual products and technologies, it is strongly recommended administrators have prerequisite knowledge in the following areas:

- Windows Server 2012 experience.
- Active Directory Domain Services (AD DS) knowledge.
- Networking experience.
- Working knowledge of previous versions of System Center products.
- Knowledge of configuration of Microsoft SharePoint.
- Hyper-V knowledge.
- Microsoft Azure.
- Knowledge of cloud and data center management processes.
- Storage Area Network (SAN) Knowledge.

**Contenido del curso:**

**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**

**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 it is ready for production use.

**Lessons**
Lab : Configuring and Optimizing a Microsoft 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 StockTrader Application

Module 4: Monitoring Cloud Based Applications

Module 1 explained how the health of the private cloud infrastructure is monitored with Microsoft System Center 2012 R2 Operations Manager. This is important in maintaining the underlying infrastructure that the private cloud relies on. 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

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

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

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 when configuring automation between Service Manager and Operations 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

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

Module 9: 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

Lab: Operating a self-service multi-tenant cloud
Module 10: 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 Site 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

Module 11: Optimizing Your Cloud Infrastructure

You will learn how Configuration Manager can be used to provide update management for Virtual Machines hosted in a cloud infrastructure. You will also learn how System Center Advisor can be used to optimize and manage cloud infrastructure by providing best practice guidelines for the configuration of the servers hosting cloud infrastructure. Finally you will learn how Pro-Tips can be used to optimize the virtualized environment and provide automated remediation when problems are detected in the environment.

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

Module 12: 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**