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10750: Monitoring and Operating a Private Cloud with System Center 2012

Duration: Five Days

Course Outline

Module 1: Introduction to the Private Cloud

This module gives students an overview of a private cloud infrastructure, including what it is, the business and technical drivers behind implementing it, and how they can use System Center 2012 to monitor and operate it. Students will understand the key concepts of a private cloud and verify key components of System Center 2012.

Lessons

- Overview of the Cloud Computing Model
- Requirements for the Private Cloud
- Operating a Private Cloud Infrastructure with System Center
- Maintaining the Health of the Private Cloud
- Integrating System Center Components
- Verifying the Compliance of the Private Cloud Infrastructure

Lab : Verifying the Private Cloud Infrastructure

- Verifying the Infrastructure
- Verifying System Center Components

Lab : Verifying the Compliance of the Private Cloud Infrastructure

- Exercise: Checking Compliance

After completing this module, students will be able to:

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- Describe the features of a cloud computing model.
- Describe the requirements for the private cloud.
- Describe how you can use System Center to monitor and manage the private cloud.
- Describe how to maintain the health of the private cloud infrastructure.
- Describe how to integrate System Center components.
- Verify the compliance of the private cloud infrastructure.

Module 2: Configuring and Optimizing Business Unit Clouds

This module explains how to configure a new business unit cloud within Virtual Machine Manager.

Lessons

- Overview of System Center Virtual Machine Manager
- Managing a Virtual Environment with Virtual Machine Manager
- Creating Business Unit Clouds

Lab : Configuring and Optimizing Business Unit Clouds

- Configuring Network Resources
- Creating the Business Unit Cloud
- Configuring Security

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 it plays in the private cloud.
- Use Virtual Machine Manager to manage private cloud infrastructure.
- Describe how to build and configure resources and security for a business unit cloud.

Module 3: Deploying Cloud Services

This module explains how to deploy pre-packaged applications and create a new service template to deploy a service into the cloud.

Lessons

- Overview of Service Templates
- VMM Profiles
- Web Deploy Packages
- Overview of Server App-V
- Data-Tier Application Packages

Lab : Importing and Deploying the Stock Trader Application

- Deploying a Single Tier Service
- Configuring Prerequisites
- Preparing the Stock Trader Service Template
- Deploying the Service Template

After completing this module, students will be able to:

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- Create service templates in VMM by using the Service Template Designer.
- Describe the process of creating VMM profiles.
- Describe the process of creating Web Deploy packages.

- Describe the process of sequencing by using Server App-V.
- Describe the process of creating data-tier application packages.

Module 4: Monitoring Private Cloud Services

This module provides an overview of System Center Operations Manager. The students are shown how Operations Manager is used to monitor the various services that underpin the private cloud. The students are then shown how to deploy agents to key service components running within the private cloud. Custom monitoring is then applied to these components which include the creation of a distributed application model to give a holistic view of the health of the private cloud infrastructure.

Lessons

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

Lab : Monitoring Private Cloud Services

- Deploying an Agent
- Configuring Custom Monitoring
- Creating a Distributed Application Model
- Detecting and Recovering from a Failure

After completing this module, students will be able to:

- Describe the key features of Operations Manager.
- Describe the architecture of Operations Manager, including databases, management servers, management server pools, consoles, gateways, and reporting.
- Describe how to secure access to Operations Manager by using User Roles.

Module 5: Configuring Application Performance Monitoring

This module gives students a deep insight into the Application Performance Monitoring (APM) feature of Operations Manager. A .NET application has been installed into the lab environment that will be used for this module. Students will learn to configure APM to monitor the performance and availability of this application. A break in the application is then instigated where students will see how Operations Manager detects and reports this with the Alerting and Diagnostics tools that are built into Operations Manager.

Lessons

- Application Performance Monitoring
- Advanced Monitoring in Application Performance Monitoring
- Viewing Application Performance in Operations Manager

Lab : Configuring Application Performance Monitoring

- Configuring Basic Monitoring in Application Performance Monitoring

- Customizing the Performance Thresholds
- Validating Monitoring
- Creating a Distributed Application Model for the DinnerNow Application

After completing this module, students will be able to:

- Describe the core components in APM and the best practices when implementing them.
- Describe how to implement advanced monitoring features that are available in APM.
- Describe how to view application performance in Operations Manager.

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

This module explains the core functionality of Service Manager and the steps to create and manage change requests, incidents, and release records. The module also describes about the security model behind Service Manager so that students can customize and extend the integral functionality of the service.

Lessons

- Overview of Service Manager
- Configuring Security and User Roles
- Configuring Work Items
- Configuring Incident Queues
- Configuring Service Offerings

Lab : Operating and Extending Service Management in the Cloud

- Configuring Security Roles
- Configuring Notifications
- Publishing an Incident Service Offering
- Raising an Incident
- Creating an Approving a Change Request
- Creating an Assigning a Release Record

After completing this module, students will be able to:

- Describe Service Manager.
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- Describe configuring security and user roles.
- Describe configuring work items.
- Describe configuring incident queues.
- Describe configuring service offerings.

Module 7: Automatic Incident Creation, Remediation, and Change Requests

This module provides an overview of Orchestrator and explains how Orchestrator integrates with

Operations Manager and Service Manager.

Lessons

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

Lab : Automating Incident Creation, Remediation, and Change Requests

- Configuring the Incident Template
- Configuring Incidents That Affect the StockTrader Service
- Automating Incident Remediation and Change Requests

After completing this module, students will be able to:

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- 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 provides an overview of problem management and explains how students can use it within a service management framework. Additionally, this module explains its implementation as a manual feature of Service Manager. Finally, this module describes how to create a custom event monitor in Operations Manager and then use it to identify and route incidents and problems to Service Manager.

Lessons

- Overview of Problem Management
- Creating Custom Rules

Lab : Automating Problem Management in the Private Cloud

- Manually Creating a Problem Record
- Creating a Custom Event Rule in Operations Manager
- Configuring Automated Problem Record Creation

After completing this module, students will be able to:

- Describe problem management.
- Create custom rules.

Module 9: Automating Self-Service Provisioning

This module explains about automating self-service provisioning by using the System Center Cloud Service Process Pack, including the configuration items that are created and the request items that are contained in the System Center Cloud Service Process Pack.

Lessons

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

Lab : Automating Self-Service Provisioning

- Completing the Prerequisites for the System Center Cloud Services Process Pack

- Installing the System Center Cloud Services Process Pack
- Configuring the System Center Cloud Services Process Pack
- Deploying a Virtual Machine for StockTrader by using the Cloud Services Process Pack

After completing this module, students will be able to:

- Describe how 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 Service Process Pack.
- Describe the various Cloud Services request items that are included in the System Center Cloud Services Process Pack.

Module 10: Private Cloud Protection and Recovery

This module explains how to protect the resources in the private cloud by using Data Protection Manager. It also explains how to implement a recovery action by using Orchestrator to recover a database.

Lessons

- Protecting Data in the Private Cloud
- Recovering Data in the Private Cloud

Lab : Private Cloud Protection and Recovery

- Configuring Manual Protection and Recovery of Key Service Data
- Configuring Automatic Protection and Recovery of Key Service Data
- Monitoring Protection Status

After completing this module, students will be able to:

- Configure data protection in the private cloud.
- Configure data recovery in the private cloud.

Module 11: Configuring Compliance in the Private Cloud

This module explains how to implement IT Governance, Risk Management, and Compliance (GRC) in a private cloud environment by using System Center 2012. It also explains how to implement Software Update Compliance in Virtual Machine Manager to verify whether key private cloud infrastructure is correctly updated with the latest software updates. The module also describes how to implement the IT GRC Management Pack in Service Manager to check for compliance across key Service Components and remediate non-compliant items.

Lessons

- Overview of the Process Pack for IT GRC
- Installing and Configuring the Process Pack for IT GRC
- Implementing an IT GRC Control Management Program
- Maintaining Compliance through VMM Security Baselines and System Center Advisor

Lab : Configuring Compliance in the Private Cloud

- Creating an IT GRC Control Management Program
- Adding Test Results to a Manual Control Activity and View Compliance Reports

- Assigning a Baseline

After completing this module, students will be able to:

- Describe the System Center 2012 Process Pack for IT GRC.
- Describe installing and configuring the Process Pack for IT GRC.
- Describe implementing an IT GRC Control Management Program.
- Describe maintaining compliance by using VMM Security Baselines and System Center Advisor.

Module 12: Configuring SLAs, Dashboards, and Widgets

This module describes the various methods for surfacing service and performance-related data from Operations Manager and Service Manager to SharePoint and Microsoft Excel.

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
- Overview of PerformancePoint

Lab : Configuring SLAs, Dashboards, and Widgets

- Configuring Service Level Tracking
- Configuring Service Level Management
- Configuring Microsoft Excel Analytics
- Configuring PerformancePoint Analytics

After completing this module, students will be able to:

- Describe Service Level Tracking in Microsoft System Center 2012 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.
- Describe using Microsoft PerformancePoint.