

Module 7

Monitoring Cloud Infrastructure

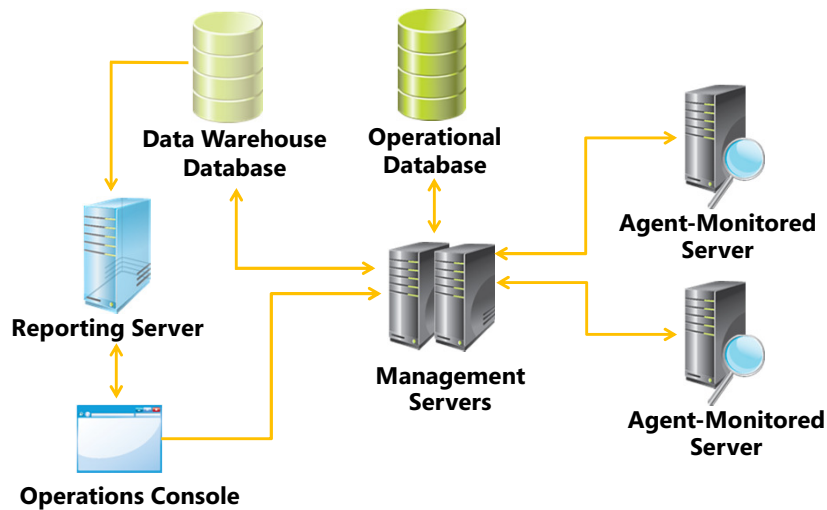
Module Overview

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

Lesson 1: Operations Manager Architecture and Security

- Operations Manager Architecture
- What are Resource Pools?
- Operations Manager Installation Prerequisites
- Monitoring Hybrid Cloud Infrastructure Components
- Deploying the Operations Manager Agent
- Providing Security for Agent Communication
- Securing User Access
- Demonstration: Deploying the Operations Manager Agent

Operations Manager Architecture



What are Resource Pools?

A resource pool is a group of management servers that operate as peers to provide high availability and increased capacity.

The default resource pools are:

- All Management Servers resource pool
- Notifications resource pool
- AD Assignment resource pool

You can:

- Modify the membership of any resource pool except for the All Management Servers Resource Pool
- Create additional resource pools for specific purposes

Operations Manager Installation Prerequisites

Component	Prerequisites
AD DS	<ul style="list-style-type: none"> • Windows 2000 Server native or Windows Server 2003 interim
Hardware	<ul style="list-style-type: none"> • Determine based on Operations Manager Sizing Helper
Management server	<ul style="list-style-type: none"> • Windows Server 2008 R2 SP1 or later • .NET Framework 4
Database server	<ul style="list-style-type: none"> • SQL Server 2008 R2 SP1 64-bit or later • .NET Framework 4

Monitoring Hybrid Cloud Infrastructure Components

In addition to Windows servers and clients, you can monitor:

- Networks
- .NET Framework-based applications
- Java Enterprise Edition applications
- UNIX and Linux computers

Deploying the Operations Manager Agent

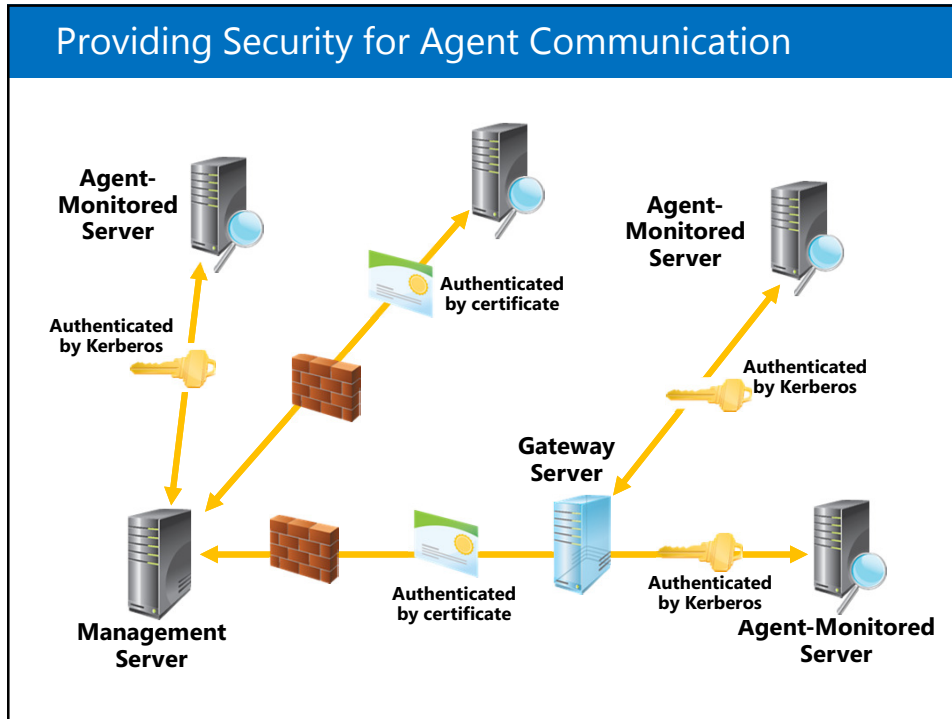
You can deploy Operations Manager agent by using:

- Computer and Device Discovery Wizard
- Manual installation
- Configuration Manager

You can place agent configuration information in AD DS

With agentless monitoring:

- You may encounter limited functionality
- Use a proxy agent through firewalls



Securing User Access

Users roles are composed of profiles, scopes, tasks, and views

The following security roles are available:

- Administrator
- Operator
- Advanced Operator
- Read-only Operator
- Application Monitoring Operator
- Author
- Report Operator

Demonstration: Deploying the Operations Manager Agent

In this exercise you will see how the Operations Manager agent is deployed using the Operations console.

Lesson 2: Operations Manager Installation Considerations

- Considerations for Planning a New Operations Manager Management Group
- Considerations for Upgrading or Migrating to System Center 2012 R2 Operations Manager
- Planning for High Availability
- Planning for Disaster Recovery

Considerations for Planning a New Operations Manager Management Group

- Planning considerations for a new Operations Manager Management Group include:
 - Monitoring Requirements
 - Security Considerations
 - Data Center Environment

Considerations for Upgrading or Migrating to System Center 2012 R2 Operations Manager

- When upgrading to System Center 2012 R2 Operations Manager keep the following in mind:
 - *Current Version* – Your existing environment must be 2012 SP1 at a minimum.
 - *Backup* – You should ensure your environment is fully backed up before upgrading.
 - *Current Deployment* – A number of hardware requirements have changed since System Center 2012, such as the requirement to run on x64 infrastructure. You should be aware of this and ensure your current environment meets the minimum specifications.

Planning for High Availability

- When planning for high-availability in Operations Manager you should include:
 - Agents
 - Gateways
 - Management Servers
 - Network Monitoring
 - Notifications
 - Operations Manager Databases

Planning for Disaster Recovery

- Factors to consider when planning for disaster recovery in Operations Manager include:
 - Management Servers
 - Management Packs
 - Custom Reports
 - SQL Servers
 - Data Protection Manager

Lesson 3: Configuring User Roles and Notifications

- Configuring Operations Manager User Roles
- Configuring Notification Channels
- Configuring Notification Subscribers
- Configuring Notification Subscriptions

Configuring Operations Manager User Roles

- When creating a User Role in Operations Manager you include the:
 - User role name
 - Profile type
 - User role members
 - Operations Manager groups
 - Operations Manager tasks
 - Dashboards and views

Configuring Notification Channels

Notification channels are methods that you can use to send notifications

Operations Manager provides the following notification channels:

- Email (SMTP)
- Instant messaging (IM)
- Text message (SMS)
- Command

Configuring Notification Subscribers

Notification subscribers are people or lists of people that Operations Manager can notify:

When configuring notification subscribers:

- You can add one or more subscriber addresses
- Each subscriber address is for a specific notification channel
- You can schedule notifications with a default schedule, and configure overrides for specific subscribers as needed

Configuring Notification Subscriptions

Notification subscriptions define which subscribers receive which alerts

A subscription contains:

- Subscription criteria that define the applicable alerts
- Subscribers to be notified
- Channels to be used for notification
- Alert aging to prevent unnecessary notifications

Lesson 4: Configuring Management Packs

- Overview of Management Packs
- Obtaining and Installing Management Packs
- Configuring the Azure Management Pack
- Configuring the VMM Fabric Management Pack
- Tuning a Management Pack
- Creating a Management Pack

Overview of Management Packs

Management packs contain the settings that allow you to monitor infrastructure components

Management packs can contain:

- Object discoveries
- Monitors
- Rules
- Tasks
- Knowledge
- Views
- Reports
- Run As profiles

Obtaining and Installing Management Packs

Management packs:

- Can be obtained from Microsoft System Center Marketplace
- Can be obtained from non-Microsoft vendors
- May need to be purchased

Missing dependencies are identified during the import process

Configuring the Azure Management Pack

- The Windows Azure Management Pack includes the following features:
 - Discovers cloud services running in Windows Azure.
 - Provides role instance health state.
 - Monitors and collects role instance performance information.
 - Monitors and collects role instance events.
 - Monitors and collects role instance Microsoft .NET Framework trace messages.
 - Grooms event, performance, and .NET Framework trace data from storage in Windows Azure.
 - Discovers storage in Windows Azure.
 - Discovers virtual machines in Windows Azure.

Configuring the VMM Fabric Management Pack

- The Fabric Management Pack for Operations Manager include the following monitoring:
 - Cloud Health
 - Fabric Health Dashboard
 - Fabric Monitoring Diagram

Tuning a Management Pack

To tune a management pack, you can create overrides at the appropriate level:

- For all objects of a class
- For a group
- For a specific object of a class

Also consider the following:

- Most management packs are sealed
- Overrides are stored in a new management pack
- Tuning a management pack is an important part of the implementation process
- The Enforced option is effective only for overrides that are applied at the same level

Creating a Management Pack

Operations Manager includes the following templates to help you create your own management packs:

- .NET Application Performance Monitoring
- OLE DB Data Source
- Process Monitoring
- TCP Port
- UNIX or Linux Log file
- UNIX or Linux Service
- Web Application Transaction Monitoring
- Windows Service

You can seal management packs that you create to prevent modification

Lesson 5: Configuring Integration with System Center 2012 R2

- Operations Manager Integration with VMM
- Configuring Operations Manager and VMM Integration
- Operations Manager Integration with DPM
- Configuring Operations Manager and DPM Integration

Operations Manager Integration with VMM

Operations Manager integration with VMM provides:

- A complete overview of virtualization hosts and their virtual machines
- PRO tips

PRO functions as follows:

- A PRO monitor identifies an opportunity for optimization
- A PRO monitor generates a PRO tip
- If automatic remediation is enabled, then the remediation script runs
- If automatic remediation is not enabled, the PRO tip prompts the administrator to approve remediation script execution

Configuring Operations Manager and VMM Integration

Use the Virtual Machine Manager Administrator Console to configure integration

The prerequisites are:

- Windows PowerShell 2.0 on all Operations Manager management servers
- Operations Manager console on the Virtual Machine Manager server
- SQL Server management pack in Operations Manager
- IIS management pack in Operations Manager

Test and verify integration with the following cmdlets:

- Test-SCPROTip
- Write-SCOpsMgrConnection

Operations Manager Integration with DPM

The DPM central console:

- Integrates with the Operations Manager console
- Centralizes monitoring

When Operations Manager generates an alert, you can:

- Resume backups
- Take recommended action
- Perform troubleshooting

Configuring Operations Manager and DPM Integration

To enable integration, install the DPM central console on an Operations Manager management server

After installing the DPM central console, you need to:

- Override the health monitor settings for the DPM servers
- Add registry keys on the Operation Manager management server
- Modify registry keys on the DPM server
- Configure DPM-specific security roles

Lab: Monitoring the Private Cloud Infrastructure

Exercise 1: Deploying Agents

Exercise 2: Deploying and Configuring Management Packs

Exercise 3: Configuring Roles and Notifications

Exercise 4: Configuring VMM Integration

Exercise 5: Configuring DPM Integration

Logon Information

Virtual Machines: 20247D-LON-DC1, 20247D-LON-SQ1,
20247D-LON-VM1, 20247D-LON-DM1, 20247D-LON-OM1,
20247D-LON-AP1

User Name: Contoso\Administrator

Password: Pa\$\$w0rd

Estimated Time: 90 minutes

Lab Scenario

Contoso, Ltd has implemented a new private cloud infrastructure. You now need to set up private cloud infrastructure monitoring, so that IT staff can identify and resolve problems quickly.

The Operations Manager server components are already in place. You need to complete the Operations Manager agent deployment, and configure integration with other System Center 2012 R2 components.

Lab Review

- What is the default port number that agents and gateways use when communicating with a management server?
- Which security profile for Operations Manager can resolve alerts but not create overrides?

Module Review and Takeaways

- Review Question(s)
- Real-world Issues and Scenarios