

Module 11

Automating and Standardizing a Cloud

Module Overview

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

Lesson 1: Orchestrator Architecture and Components Overview

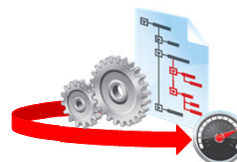
- Orchestrator Overview
- Orchestrator Architecture
- Automating the Cloud Using Runbooks
- Using Integration Packs to Automate Your Cloud
- Orchestrator Systems Requirements

Orchestrator Overview



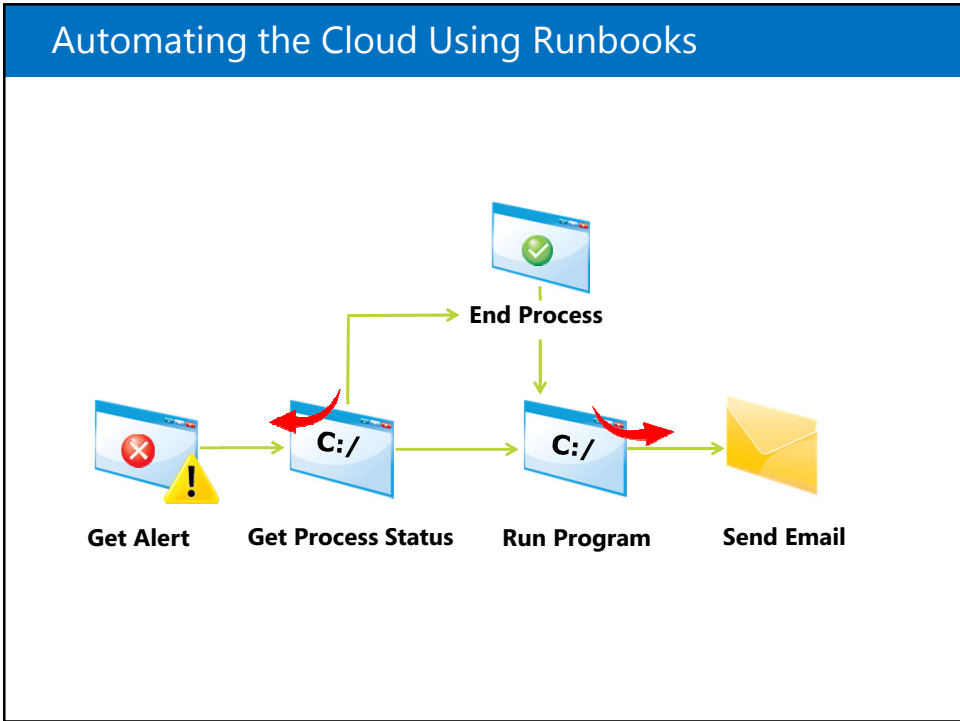
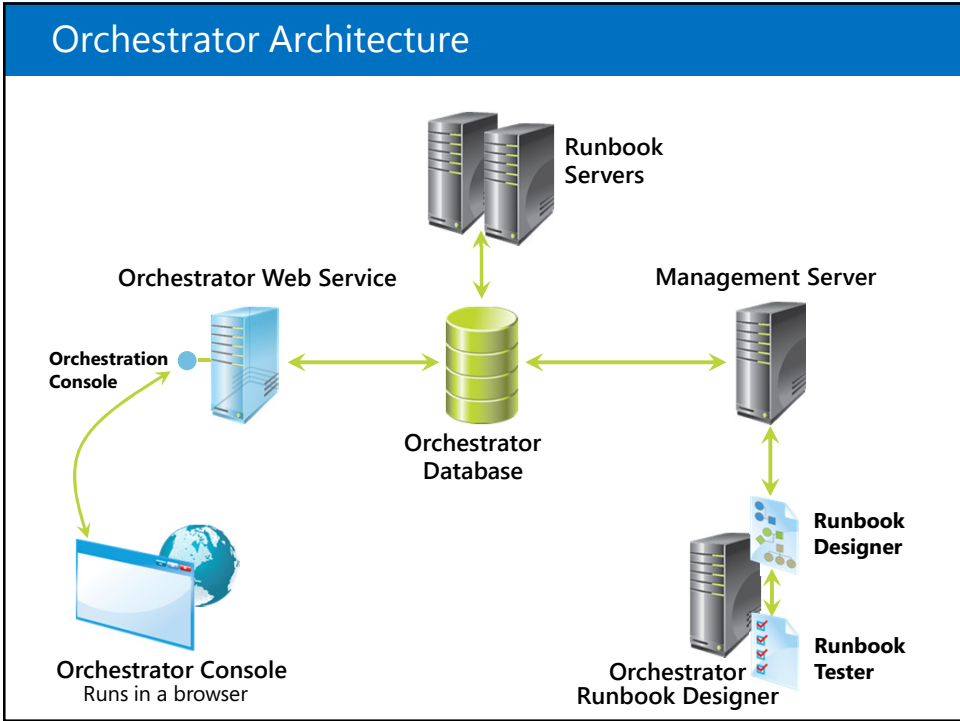
Integration

- Private Cloud
- IT Systems
- Human Resources



Automation

- Deployment
- Account Creation
- Self-Service Enablement



Using Integration Packs to Automate Your Cloud

There are many Integration Packs are available including:

- System Center 2012 R2 Operations Manager
- System Center 2012 R2 Configuration Manager
- System Center 2012 R2 Service Manager
- System Center 2012 R2 Virtual Machine Manager
- System Center 2012 R2 Data Protection Manager
- System Center Operations Manager 2007 R2
- System Center Configuration Manager 2007 R2
- System Center Service Manager 2010
- System Center Machine Manager 2008 R2
- System Center Data Protection Manager 2010
- Active Directory Domain Services
- Exchange Server
- SharePoint Server
- Windows Azure

Orchestrator Systems Requirements

All Components

- Dual Core 2.1 GHz Processor
- 2 Gigabytes of RAM
- 200 MB disk space and Dual Core CPU minimums
- Microsoft .NET Framework 3.5 Service Pack 1

Orchestrator Web Service and Orchestration console

- IIS role installed
- .NET Framework 4.5

Database

- SQL Server 2008 R2 or later
- Local or Remote Instance
- Windows or SQL authentication
- SQL_Latin1_General_CP1_CI_AS Collation

Orchestration console client

- Microsoft Silverlight 5 or higher

Lesson 2: Deploying and Configuring Core Components

- Orchestrator Deployment Tasks
- Deploying Integration Packs
- Configuring Orchestrator Security
- Overview of Orchestrator Console and Runbook Designer

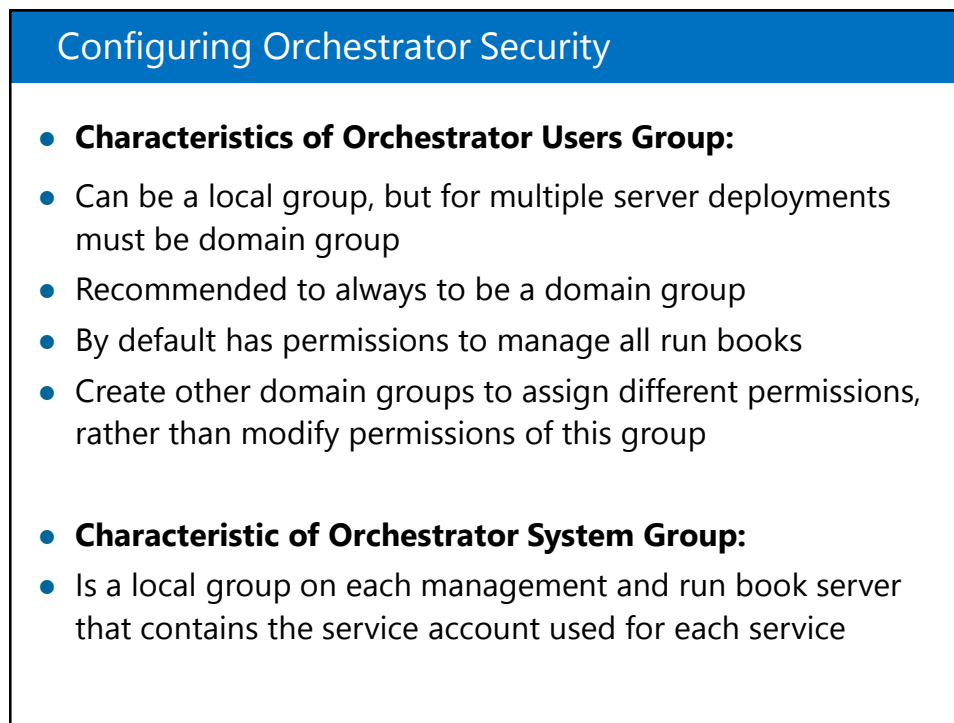
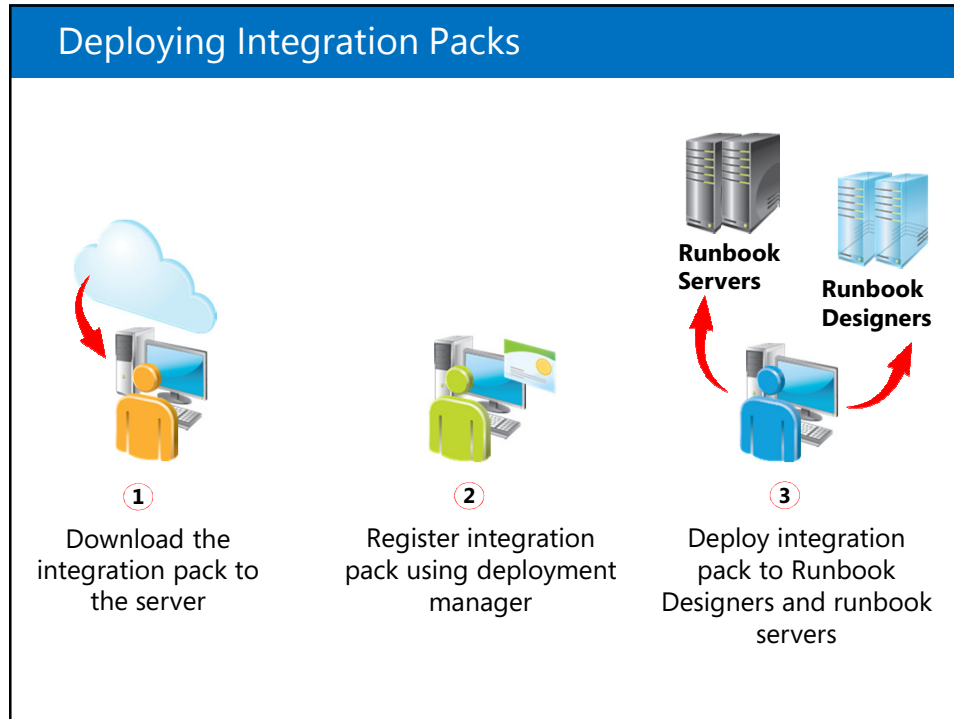
Orchestrator Deployment Tasks

To create a domain account for Orchestrator Management Service:

- Assign permissions to SQL Server
- Assign permissions to resources accessed in runbooks
- Create a domain group for Orchestrator Users

To create Windows Firewall rules for the following:

- Deployment Manager to access OrchestratorRemotingService on runbook servers and Runbook Designers
- Access to Orchestrator web service and Orchestrator console, if accessed from the network
- Remote access to Orchestrator Management Service, if Runbook Designer is run from a separate computer



Overview of Orchestrator Console and Runbook Designer

Microsoft System Center 2012 Orchestrator [Help](#)

Runbooks

SystemCenter2012

Runbooks

Runbook Servers

Events

Details for '\'

Summary Runbooks Jobs Instances

Refresh

Instance Statistics (Historical)		Since 2:00 PM	Last 24 Hours	Last 7 Days
Failed	0	0	0	
Warning	0	0	3	
Success	0	0	0	

Instance Statistics (Current)		Since 2:00 PM	Last 24 Hours	Last 7 Days
In Progress	0	0	0	

Job Statistics (Historical)		Since 2:00 PM	Last 24 Hours	Last 7 Days
Failed	0	0	0	
Canceled	0	0	0	
Completed	0	0	3	
Created	0	0	3	

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Lesson 3: Managing Runbooks

- Working with Runbooks
- Standard Activities
- Workflow Control
- Parameters, Computer Groups, and Global Settings
- Designing Runbooks
- Demonstration: Deploying a secondary Runbook Server in Orchestrator

Working with Runbooks

When working with runbooks version control, you must:

- Check out a runbook to modify
- Make sure only one user can have a runbook checked out at a time
- Make sure changes are committed to the runbook when runbook is checked back in

When testing runbooks, you must:

- Debug checked-in runbooks
- Be sure testing runs in the production environment

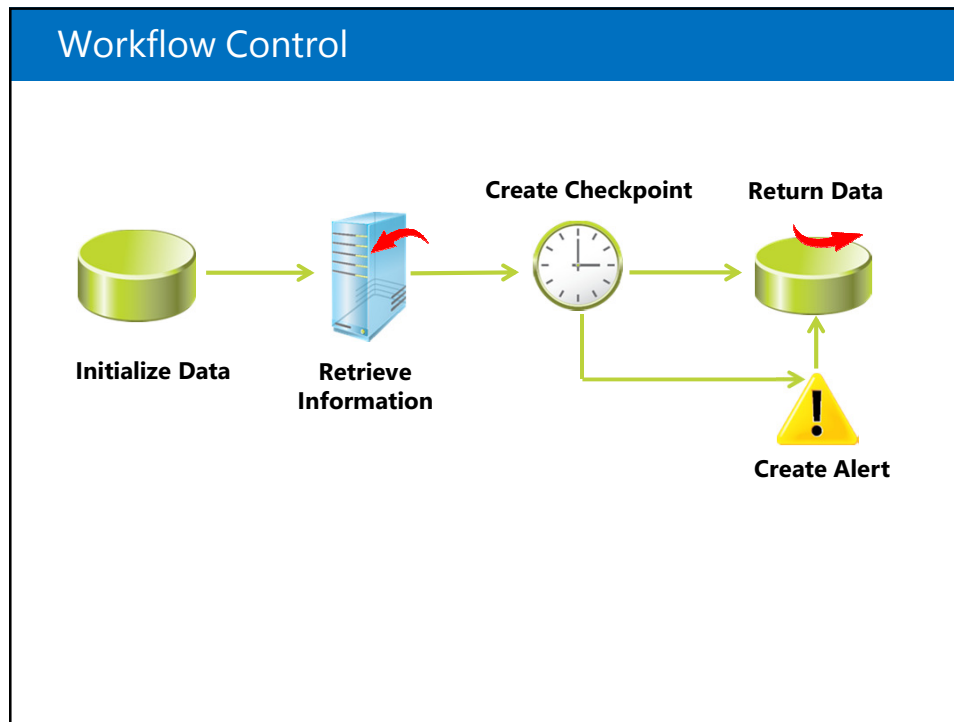
When running runbooks, you:

- Can use Runbook Designer, Orchestration console, API, or Service Manager

Standard Activities

Activities include:

- System
- Schedule and Monitoring
- Monitoring
- File Management
- Email and Notification
- Text File Management
- Runbook Control
- Utilities



Parameters, Computer Groups, and Global Settings

Parameters contain:

- Information that is passed to a runbook by defining them in the Initialize Data activity

Computer Group:

- An object in Orchestrator that can represent a static list of computers or a list of computers based on an Active Directory query
- Can be used in Activities to perform tasks against multiple computers

Global Settings contain:

- Counters - variables used to track of runbook processes
- Schedules - define time at which runbook will or can run
- Variables - a way to set a value that is used by multiple runbooks. Can be used to set things such as file names, server names, passwords, and file paths

Designing Runbooks

- Organize Orchestrator by creating folders
- Create warning and failure logs
- Use descriptive labels for activities
- Use colors for smart links to designate branches for easier troubleshooting
- Limit the size of runbooks

Demonstration: Deploying a secondary Runbook Server in Orchestrator

In this demonstration you will see how to deploy a secondary Runbook Server in Orchestrator.



Lesson 4: Configuring Integration Packs

- Integrating with VMM
- Integrating with DPM
- Integration with Operations Manager
- Integrating with Service Manager
- Integrating with Windows Azure
- Importing and Using Runbooks in Service Manager

Integrating with VMM

VMM integration pack provides the following capabilities:

- Restart virtual machines
- Manage the self-service virtual machine library
- Create VHDs
- Modify existing virtual machines
- Start and shut down virtual machines in batch mode
- Move virtual machines to a new host
- Create and restore virtual machine checkpoints

Create new virtual machines:

- From virtual machine templates
- From VHDs
- Based off other virtual machines

Integrating with DPM

DPM Integration pack provides the following capabilities:

- Automated virtual machine protection and recovery
- Automated SharePoint farm protection and recovery
- Automated SQL Server protection and recovery
- Automated system state protection
- One time backups

Integration with Operations Manager

Operations Manager Integration pack provides the following capabilities:

- Create, Get, Monitor and Update Alert
- Get Monitor
- Monitor State
- Start and Stop Maintenance Mode

Integrating with Service Manager

Service Manager Integration pack provides the following capabilities:

- Create Change with Template
- Create, Get, and Update Object
- Create Incident with Template
- Create Related Object
- Create, Get, and Delete Relationship
- Get and Update Activity
- Upload Attachment

Integrating with Windows Azure

Windows Azure Integration Pack provides capabilities including:

- Certificate management.
- Deployments.
- Configuring Virtual machines (using the REST API).
- Managing Cloud Services.
- Storage allocation.

Importing and Using Runbooks in Service Manager

Additional configuration is required to import runbooks into Service Manager

Steps to connect Service Manager to Orchestrator:

1. Create a new Orchestration connector in Service Manager
 - Orchestrator Web Service URL
 - Run As Account
 - Sync folder
 - Orchestration console URL
2. Create an Orchestrator runbook to automate a task
3. Create a runbook automation activity template in Service Manager
4. Add the Orchestrator activity template to a service request template
5. Create a Service Manager request offering

Lab: Automating a Private Cloud

- Exercise 1: Deploying a Runbook Server and Configuring Integration Packs
- Exercise 2: Configure a Template to Deploy Agents on a New Virtual Machine
- Exercise 3: Creating a Runbook to Protect All Resources on a Virtual Machine Scenario

Logon Information

Virtual Machines: 20247D-LON-DC1, 20247D-LON-SQ1, 20247D-LON-OM1, 20247D-LON-AP1, 20247D-LON-AP2, 20247D-LON-VM1. 20247D-LON-OR1, 20247D-LON-DM1

User Name: Contoso\Administrator

Password: Pa\$\$w0rd

Estimated Time: 60 minutes

Lab Scenario

You are administrator at Contoso, Ltd. You have just deployed Orchestrator, and you want to perform additional configuration and testing.

As part of a company-wide initiative, you need to improve the efficiency of the IT department by automating manual processes.

Furthermore, the IT Department would like to allow users to perform more tasks themselves such as deploying virtual machines by using Service Manager to submit a service request.

Lab Review

- Why should you use folders for variables and runbooks?
- What is a runbook?

Module Review and Takeaways

- Review Question(s)