Speed Lab 2!

System Center 2012 R2: Introduction to Automation, Service & Application Management

Lab Guide

System Center 2012 R2 is the industry’s leading datacenter management system, providing a variety of infrastructure, automation, self-service, IT service management, VM and application management capabilities. Join Symon Perriman, Microsoft’s Private Cloud Senior Technical Evangelist, to learn the basics of every System Center 2012 R2 automation, services and application component, including Orchestrator, Configuration Manager, Endpoint Protection, and Service Manager.

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Login: contoso\administrator
Password: PasswOrd!
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Lab Overview

Estimated Lab Duration
Up to 120 minutes. This is a long lab as it covers multiple System Center components with an introduction exercise along with a few additional exercises for each component. All the labs are independent of each other and can be performed in any order, with the exception of the Orchestrator runbook design exercises (Exercise 5).

Exercises
After completing this lab, you will be able to navigate the following System Center 2012 R2 components:
1. Configuration Manager
2. Orchestrator
3. Service Manager

Prerequisites
A basic understanding of datacenter components, including servers, virtualization, storage and networking.

Overview of Lab
System Center 2012 R2 is the industry’s leading datacenter management system, providing a variety of infrastructure, automation, self-service, IT service management, VM and application management capabilities. Join Symon Perriman, Microsoft’s Private Cloud Senior Technical Evangelist, to learn the basics of every System Center 2012 R2 automation, services and application component, including Orchestrator, Configuration Manager, Endpoint Protection, and Service Manager.

Virtual Machine Technology
The computers in this lab are virtual machines that are implemented using Microsoft Hyper-V. Before starting each virtual machine, ensure you apply the Start-Lab snapshot. When you have started a virtual machine, log on by pressing CTRL+ALT+END and supply the credentials listed in the lab instructions.
Computers in this Lab

This lab uses virtual machines as described in the following table. Before you begin the lab, you must start the virtual machines and then log on to the computers.

User: contoso\administrator
Password: Passw0rd!

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1 - Configuration Manager

1.1 - Configure Manager Overview

In this exercise the user will learn about the different workspaces and functions of System Center 2012 R2 Configuration Manager and Endpoint Protection, including Assets and Compliance, Software Library, Monitoring, and Administration.

Estimated time to complete: 20 minutes

Perform the following on SCCM01

1) From SCCM01, open the Configuration Manager Console by clicking the icon in the taskbar.

2) Navigate to the Assets and Compliance workspace.

3) Explore the nodes of the Assets and Compliance workspaces. The Assets and Compliance workspace is used to manage the organization's assets (users, computers, and software) as well as compliance configuration (settings
management, previously known as desired configuration management in Configuration Manager 2007), and configuring Endpoint Protection policies.

4) Click Users. Here all the users that have been discovered and may display "sticky nodes" for any user collections that members were displayed during this console session. The users in this lab have been imported through Active Directory Discovery.

5) Select a user, then click the triangle in the lower right corner to expand the details, then select the Client Settings tab. This shows the policies which have been applied to this particular user or user group.

6) Navigate to Devices. This area is used to view all devices that have been discovered and may display any sticky nodes for any device collections whose members have been displayed during this console session. The devices in this lab have been imported through Active Directory Discovery. Select a device, then browse the various tabs under the details.

7) Go to User Collections. Here collections based on users and user groups can be managed. There are three built-in user collections.

8) Click on Device Collections. This is used to manage collection based on system information. There are four built-in device collections (and this lab environment has three custom device collections).
9) Navigate to **User State Migration**. State Migration is used to manage the migration of user state between computers, including defining computer associations.

10) Click on **Asset Intelligence**. This is used to manage software assets with the Asset Intelligence feature, including a dashboard of Asset Intelligence statistics and status, inventoried software, catalog customizations, and hardware requirements.

11) Click on **Software Metering** which is used to configure rules for monitoring the usage of software.

12) Click on **Compliance Settings** which is used to manage compliance using the compliance and settings management feature.

13) Navigate to **Endpoint Protection**, and expand the node. Endpoint Protection is used to configure and deploy antimalware and Windows firewall policies to collections of clients.

14) Click on **Antimalware Policies**. Antimalware policies can be deployed to collections of Microsoft System Center 2012 Configuration Manager client computers to specify how Endpoint Protection protects them from malware and other threats. These antimalware policies include information about the scan schedule, the types of files and folders to scan, and the actions to take when malware is detected. When you
enable Endpoint Protection, a default antimalware policy is applied to client computers. You can also use additional policy templates that are supplied or create your own custom antimalware policies to meet the specific needs of your environment.

15) Click **Windows Firewall Policies**. Firewall policies for Endpoint Protection in System Center 2012 Configuration Manager let you perform basic Windows Firewall configuration and maintenance tasks on client computers in your hierarchy. You can use Windows Firewall policies to control whether Windows Firewall is on or off, to control whether incoming connections are allowed to client computers and to control whether users are notified when Windows Firewall blocks a new program.

16) Navigate to the **Software Library** workspace. The Software Library workspace Overview page appears. Notice that the Software Library Overview page displays options similar to those of the Assets and Compliance Overview page, including nodes in the navigation page in a "Navigation Index" section. You will also notice that the Overview page includes a section for Recent Alerts. These are alerts generated when application or software update deployments are below the administrator configured threshold for success, as well as when synchronization of the software update point site system fails.
17) Click on **Application Management** and expand the node. This area is used to manage software deployments to users and clients, including applications and packages/programs, approving application requests from users, managing global conditions, configuring App-V Virtual Environments and deploying Windows Sideload Keys for Windows 8 Apps. Also included here are alerts for deployments that are below the configured threshold for success, as well as alerts for any deployments that experience a failure rate of a designated percentage.

18) Select **Applications** to view applications that are available for client deployment to managed clients.
19) Navigate to **Software Updates** and expand the node. Software Updates are used to manage aspects of software update deployment to clients, including update metadata, software update groups, software update deployment packages, and automatic deployment rules. Also included here are alerts for deployments that are below the configured threshold for success as well as any failed synchronization attempts (which you see in this lab environment).

20) Select **All Software Updates** and browse some updates and review the details pane.

21) Select **Operating Systems** and expand the node. All aspects of operating system deployment to systems, including drivers, driver packages, operating system images, operating system installers, boot images, Hyper-V virtual hard disks (VHDs), and task sequences can be managed here.

22) Select the **Drivers** node and review the drivers that are available for deployment.
23) Select the **Operating System Images** node and note the server and client OS that is available for deployment.

![Operating System Images](image)

24) Select the **Task Sequences** node. This shows a collection of tasks used to deploy an operating system or a virtual hard disks.

![Task Sequences](image)

25) Navigate to the **Monitoring** workspace and click on it. The Monitoring workspace Overview page appears. Notice that the Monitoring Overview page displays options similar to those of the other workspace’s Overview pages, including nodes in the navigation page in a “Navigation Index” section. You will also notice that the Overview page includes a section for **Recent Alerts**. An example of an alert displayed here would be when the database replication between two sites in a hierarchy has been determined to be down due to link issues (as you may see depending on if images for both site servers are available and started). Other nodes in the console, including other workspaces, can also display alerts.
26) Expand the Alerts folder. These alerts (Active Alerts and All Alerts) are used to manage alerts generated in the environment. By associating them with a Subscription, they can be configured to automatically email or notify an administrator.

27) Click on Queries. This area is used to manage queries, both built-in and custom.

28) Expand the Reporting folder, and select the Reports node. This is used to display results of built-in or custom reports (using SQL Server Reporting Services) and configure report subscriptions.
29) Next click on **Site Hierarchy**. This is used to display a ‘map’ of the site hierarchy, including central administration site, primary sites, and any secondary sites. This lab environment uses a single site.

30) Expand the **System Status** folder. Browse through the options: **Site Status**, **Component Status**, **Conflicting Records**, and **Status Message Queries**.
31) Click on **Deployments**. This is used to monitor all deployments of applications, packages and programs, software updates, operating system images, and configuration baselines.

32) Click on **Client Operations**. This area is used to monitor all 'real-time actions' initiated from the Configuration Manager Console to clients (System Center 2012 SP1 and later), such as computer policy retrievals and Endpoint Protection actions.

33) Expand the **Client Status** folder. Both **Client Activity** and **Client Check** are used to monitor the health and activity of Configuration Manager clients in the site and hierarchy.

34) Next, click **Database Replication**. This is used to monitor the status of the replication of Configuration Manager data between sites using SQL-based database replication.

35) Expand the **Distribution Status** folder. Click on the node and note that these are used to monitor content distribution status, distribution point group status, and distribution point health.
36) Click **Software Update Point Synchronization Status**. This is used to monitor the status of software update catalog synchronizations.

37) Expand **Endpoint Protection Status**. These two dashboards provide a quick view into the 'health' of the site's clients in terms of any malware activities.

38) Click **System Center 2012 R2 Endpoint Protection**. A dashboard containing the a summary of the security state of the collection is displayed.
39) Click **Malware Detected**. Any malware detected by System Center Endpoint Protection will be displayed here.

40) Navigate to the **Administration** workspace. The Administration workspace Overview page appears. Notice that the Administration Overview page displays options similar to those of the other workspace’s Overview pages, including nodes in the navigation page in a “Navigation Index” section.

![Administration workspace](image)

41) On the Ribbon, click the drop-down arrow above “All Objects”. A new menu appears displaying options for the Configuration Manager console. These options include connecting to a different Configuration Manager site, connect via Windows PowerShell (to get access to the PowerShell provider to run cmdlets against Configuration Manager), get information about the Configuration Manager version, access product documentation (which is all web-based), configure integration with the Customer Experience Improvement Program, and closing the console.

![Configuration Manager console](image)

42) **Close** the drop down menu by clicking away from it.

43) From the navigation pane expand **Site Configuration**.
44) Click **Sites**. The sites in the hierarchy from the local site database (the local site and any child sites) appear in the results pane. Notice that there is only one site displayed for this portion of the hierarchy, and that is the local site.

45) In the navigation pane, click **Servers and Site System Roles**. The site systems and installed roles for the site appear in the results pane. Here the primary site SCCM01.contoso.com is displayed.

46) In the results pane, select **SCCM01.contoso.com** and expand the details pane. This site system roles installed for the select site are displayed.
47) In the navigation pane, select **Client Settings**. This displays user and device settings that can be saved as templates and applied to an individual user or a group.

48) Select **Default Client Settings**, then click **Properties** from the upper ribbon.

49) Browse the different tabs of the Default Settings, then click **Cancel**.

50) Expand the **Security Tab** and select **Security Roles**. Browse the different types of user roles that can interact with Configuration Manager.
51) In the navigation pane, click **Distribution Points**. Configuration Manager uses distribution points to store files that are required for software to run on client computers. These distribution points function as distribution centers for the content files and let users download and run the software. Clients must have access to at least one distribution point from which they can download the files.
1.2 - Deploy an Application

In this exercise an application will be deployed by Configuration Manager to other servers. The application used this exercise is the Visio Web Viewer.

Estimated time to complete: 10 minutes

Perform the following on SCCM01

1) From SCCM01, open the Configuration Manager Console by clicking the icon in the taskbar.

2) Navigate to the Software Library workspace.

3) Expand Application Management and select Applications.
4) Select the **Microsoft Visio Viewer 2010** application. If the details pane is not visible, select the icon in the lower right corner to display this information.

5) From the upper ribbon, click **Create Deployment Type**.

6) On the General page, keep the default Type as **Windows Installer (*.msi file)** and default option for **Automatically identify information about this deployment type from installation files**.
7) For **Location**, select the **Browse** button.

8) Navigate to `\SCCM01\SCCMApps`, select `vviewer.msi`, then click **Open**.

9) After returning to the General page click **Next**. This will take a moment to complete.

10) On the Import Information screen, click **Next**.
11) On the General Information page keep the default settings and click Next.
12) On the Requirements page click Add.
13) From the Category dropdown ensure that Device is selected.
14) Under Condition select Total physical memory.
15) Under Rule type ensure that Value is selected.
16) Under Operator ensure that Greater than or equal to is selected.
17) Under Value enter the number 3000, then click OK.
18) After returning to the Requirements page, click **Next**.

19) On the Dependencies page, click **Next**.

20) On the Summary page, click **Next**. This process will take a minute to complete.

21) On the Completion screen, click **Close**.
22) After return to the Software Library, under **Applications** select **Microsoft Visio Viewer 2010**.

23) From the upper ribbon click **Deployment** and select **Distribute Content**.

24) On the **Distribute Content Wizard** under **General** click **Next**.
25) Under **Review the content to distribute** click **Next**.

26) Under **Specify the content destination** click **Add** and select **Distribution Point**.

27) On the **Add Distribution Points** page, select the checkbox for **SCCM01.contoso.com** and click **OK**.
28) After returning to the **Specify the content destination** page, click **Next**.

29) On the **Confirm the settings** page click **Next**.

30) Once the wizard has completed click **Close**.

31) After return to the Software Library, under **Applications** select **Microsoft Visio Viewer 2010**.
32) From the upper ribbon, click **Deployment** and select **Deploy**.

33) On the Deploy Software Wizard after **Collection** click **Browse**.

34) On the Select Collection screen, click the drop down in the upper left corner and click **Device Collections**.

35) Under Name select **Contoso Datacenter** and click **OK**.

36) After returning to the Deploy Software Wizard, click **Next**.
37) On the Content page click Next.
38) Under Deployment Settings, click Next.

39) On the Scheduling page click Next.

40) Under User Experience click Next.

41) Under Alerts select the checkbox for Generate System Center Operations Manager alert when a software installation fails.

42) Click Next.

43) On the Summary page click Next.
44) On the Completion screen click Close. This application will show up on the client computers as available for installation.

45) After returning to the Applications view, select Microsoft Visio Viewer 2010 and from the upper ribbon click the View Relationships button and select Global Conditions from the dropdown.

46) When the Microsoft Visio Viewer 2010 Global Condition dialog appears, note the relationship that this application has on the physical memory of the system.
47) Click **OK** to close the window.
1.3 - Manage Server Compliance

In this exercise a Configuration Baseline is created which ensures that all computers in a collection meet a specific requirement, in this example it is a minimum SQL Server version number. Many of these baselines can include an option to automatically remediate the computer if it drifts from that desired setting.

Estimated time to complete: 10 minutes

Perform the following on SCCM01

1) From SCCM01, open the Configuration Manager Console by clicking the icon in the taskbar.

2) Navigate to the Assets and Compliance workspace.

3) Expand Compliance Settings and select Configuration Items.
4) From the upper ribbon, select **Create Configuration Item**.

5) On the General page, enter **System Center SQL Configuration** in the **Name** field.

6) Under **Assigned categories to improve searching and filtering**, click **Categories**. Select **IT Infrastructure** and **Server**. Click **OK**.
7) After returning to the General page, click **Next**.

9) Click Next.

10) On the Settings page, click New. In the Name field, enter SQL Server Version Minimum. Under Description, enter Requires version 11.0 or later.

11) Under Hive Name, select Browse. On the Browse Registry window, expand HKEY_LOCAL_MACHINE | Software | Microsoft | MSSQLSERVER | MSSQLSERVER and select Current Version. Note the Registry Value shows the current version of 11 or better.

12) From the Data type dropdown, select Version.

13) Click OK.
10) Click **Apply**.

11) Click the **Compliance Rules** tab.

12) Click **New**. For **Name**, enter **Minimum Version Number**.

13) For **Rule type**, select **Value**.

14) For **The Setting must comply with the following rule**, set SQL Server Version Minimum **Greater than** and set the following values to **11.0**.

15) Check **Report noncompliance if this setting instance is not found**.

16) Under **Noncompliance for severity reports**, select **Warning**.
17) Click **OK**. Click **Apply** and then click **OK**.

18) Click **Next**. On the Compliance Rules page, click **Next**.

19) On the Summary page, review the information and click **Next**. This will take a minute to complete.

20) On the completion page, click **Close**.
21) Navigate to **Compliance Settings | Configuration Baselines**.

22) From the upper ribbon, select **Create | Create Configuration Baseline**.
23) In the Name field, enter **System Center SQL Baseline**. Under Configuration data, click **Add**. Select **Configuration Items** from the dropdown.

![Select Configuration Items](image)

24) On the Add Configuration Items page, filter for **SQL**.

![Add SQL Configuration Items](image)

25) Select **System Center SQL Configuration**, then click **Add**. Click **OK**.

26) On the Create Configuration Baseline page, click **Add** and click **Software Updates**.

![Add Software Updates](image)

27) Under **Look for**, enter **SQL** and click **Find Now**.
28) Select all of the updates, except for the first one (Update for SQL Server 2000) and then click **OK**.

29) Select **Categories**. On the Manage Administrative Categories page, select **IT Infrastructure** and **Server** and click **OK**.
30) After returning to the Create Configuration Baseline page, click **OK**.
31) After returning to the Assets and Compliance workspace, in the Search bar enter SQL then click Search.

32) Select the newly created baseline, System Center SQL Baseline. Right-click it and select Show Members. This will create a new node under Configuration Baselines.

33) Right-click the System Center SQL Baseline node in the navigation pane and click Deploy.
On the Deploy Configuration Baselines page, Select Remediate noncompliant rules when supported, Generate an alert, and Generate System Center Operations Manager Alert.

After Collection, click Browse.

Select the dropdown and change it to Device Collections. Select Contoso Datacenter.

Click OK to return to the Deploy Configuration Baselines page.
38) Click **OK**, this will deploy the configuration baseline.

39) Under Configuration Baselines, select **Remote Connection Profiles**.

40) In the right-pane select Contoso Remote Connections. In the upper ribbon, select **Properties**.
41) Select the **Profile Settings** tab, then for the Full name and port of the Remote Desktop Gateway Server field enter **ContosoRD.contoso.com:8080**.

42) Click **OK**.

43) From the Remote Connections Profile view, click **Contoso Remote Connections** and from the upper ribbon, click **Deploy**.
44) Under Collection, click **Browse** and select **All Systems**. Click **OK**.

45) Select the checkbox for **Remediate noncompliant rules when supported**.

46) Click **OK** to deploy the profile.
47) Select the Monitoring workspace and select Deployments.
48) Select System Center SQL Baseline and Contoso Remote Connections and from the upper ribbon, select Run Summarization.

49) Click OK on the prompt. This will take several minutes to complete. Continue to the next exercise.

<--------END OF LAB--------->
2 - Orchestrator

2.1 - Orchestrator Overview

In this exercise the user will learn about the different workspaces and functions of System Center 2012 R2 Orchestrator, including the Deployment Manager, Runbook Designer, Integration Packs, and the Orchestration Console.

Estimated time to complete: 10 minutes

Perform the following on SCO01

1) From SCO01, click the Windows key and search for Deployment Manager to open System Center 2012 R2 Orchestrator Deployment Manager.

2) Click Integration Packs. Orchestrator includes over 40 built-in workflow standard activities that perform a wide variety of functions. Orchestrator is extensible and can integrate with other Microsoft and third-party platforms and products by installing Integration Packs. Integration Packs for Orchestrator contain additional activities that extend the functionality of Orchestrator.
3) Click **Runbook Designers**. The Runbook Designer is the tool used to create, manage, and run runbooks in System Center 2012 - Orchestrator. The Runbook Designer is intended for users who must create or modify runbooks. Users who only have to run runbooks and view their status should use the Orchestration console which is documented in the Using the Orchestration Console in System Center 2012 - Orchestrator.

4) Click **Runbook Servers**. This tab displays the list of runbook servers assigned to run this runbook. If the list is empty, the runbook uses the setting defined in the Runbook Servers folder found in the Connections pane of the Runbook Designer. If the runbook server that uses the Primary role is available, the runbook runs on it. If the primary runbook server is not available, each runbook server that uses a Standby role is checked until one is found that can run the runbook.
5) Open the **Runbook Designer** by clicking the icon in the taskbar.

6) Expand **Runbooks**, then expand **SC2012 Solutions**. Navigate through the sample runbooks by clicking on the different folders, sub-folders, and tabs. The power of System Center 2012 - Orchestrator lies in providing runbooks and the individual activities that make up a runbook. Runbooks contain the instructions for an automated task or process. The individual steps throughout a runbook are called activities. Within the runbook, additional controls provide information and instructions to control the sequence of activities in the runbook. Runbooks, activities, and each runbook control have configurable properties.

7) Adjust the display panes, then click the following Activity nodes and review them.
8) From the desktop click the Windows key and search for "Orchestration Console" then click the shortcut to open System Center 2012 R2 Orchestrator Console.

9) If prompted about keeping Silverlight up to date, click No. Do not keep Silverlight up to date. then click OK.

10) Click the Runbooks tab. Any runbooks configured to run will be listed here.

11) Click the Runbook Servers workspace. Each Runbook server will be listed here along with the status of jobs.
12) Click **Events**. Events will be listed in this pane. Warnings, errors and successfully completed jobs will appear in the details pane.
2.2 - Runbook Design: Create a New Runbook

Exercises 5.2 through 5.7 should be completed together in order to successfully build and test this Runbook and will take about 30 minutes.

In this exercise a new Runbook will be created in the Orchestrator Runbook Designer, then checked out so that it can be edited.

Perform the following on **SCO01**

1) From **SCO01**, open the **Runbook Designer** by clicking the icon in the taskbar.

2) Right-click **Runbooks** and click **New | Runbook**.

3) Right-click the **New Runbook** tab and click **Check Out**.
4) Right-click the New Runbook tab and click Rename.
5) Type Contoso-AddVM and press Enter.
2.3 - Runbook Design: Initialize Data Activity
Exercises 5.2 through 5.7 should be completed together in order to successfully build and test this Runbook and will take about 30 minutes.

In this exercise the Initialize Data activity is configured, which takes input parameters and uses that data later in the workflow. Information gets passed between different activities using a "data bus" which converts information from different systems into plain strings and integers, so that it can then be injected into another system.

Perform the following on SCO01

1) From SCO01, open the Runbook Designer by clicking the icon in the taskbar.

2) In the Activities pane expand Runbook Control. This is at the very bottom of the list of Integration Packs, below Microsoft SharePoint. Drag the frame down if it is not visible.

3) Click and drag Initialize Data into the workspace.

4) Double-click Initialize Data.

5) Under the Details tab click Add.

6) Click Parameter 1.
7) Append the line to read **Parameter 1 – User** and click **OK**.

8) Click **Add** and click **Parameter 2**.

9) Append the line to read **Parameter 2 – Email** and click **OK**.

10) Click **Add** and click **Parameter 3**.

11) Append the line to read **Parameter 3 – VMName** and click **OK**.

12) Click **Add** and click **Parameter 4**.

13) Append the line to read **Parameter 4 – VMTemplate** and click **OK**.

14) Click **Add** and click **Parameter 5**.

15) Append the line to read **Parameter 5 – Reason** and click **OK**.

16) Click **Add** and click **Parameter 6**.

17) Append the line to read **Parameter 6 – Host** and click **OK**.
18) Click Finish.
2.4 - Runbook Design: Create VM from Template Activity
Exercises 5.2 through 5.7 should be completed together in order to successfully build and test this Runbook and will take about 30 minutes.

In this exercise the Create VM from Template activity is configured which uses Virtual Machine Manager to deploy a virtual machine from a template.

**Perform the following on SCO01**

1) From SCO01, open the Runbook Designer by clicking the icon in the taskbar.

2) In the Activities pane expand the SC 2012 Virtual Machine Manager Integration Pack.

3) Click and drag Create VM from Template to the workspace.

4) Hover over Initialize Data until an arrow appears. Click and drag the arrow from Initialize Data to Create VM from Template.

5) Double-click the new blue arrow. Notice that it is defined as success, and click Cancel.
6) Double-click Create VM From Template.

7) In the Configuration area, click the ellipsis (...), select SC2012 VMM and click OK. Wait a minute for the Properties page to populate.

8) Click in the Destination Type field, then click the ellipsis (...).
9) Select **Host** and click **OK**.

10) Click in the Destination field, then click the **ellipsis (…)** and note the options.
11) Click Cancel.

12) Right-click in the Destination field and click Subscribe | Published Data.

13) Ensure Initialize Data is selected in the Activity dropdown, select Parameter 6 - Host and click OK. This will use the cloud that the user specified as the host which this VM is deployed to and will use the data which was provided to this parameter from the Initialize Data activity.
14) Click in the **Path** field, click the ellipse (…), select `C:\ProgramData\Microsoft\Windows\Hyper-V` and click **OK**.

15) Right-click in the **VM Name** field, and click **Subscribe | Published Data**.
16) Select **Parameter 3 - VMName** and click **OK**. This will use the VM name that the user specified as the name of the VM.

17) Click in the **Source Template Name** field, click the **ellipsis** (…) and note the options. This virtual machine template is stored in the Virtual Machine Manager Library on SCVMM01.
18) Click Cancel.

19) Right-click in the Source Template Name field, and click Subscribe | Published Data.

20) Select Parameter 4-VMTemplate and click OK. This will use the template name that the user specified as the name of the VM.
21) Click in the Cloud Capability Profile field, click the ellipsis (...), select Hyper-V and click OK.

22) Click Finish.
2.5 - Runbook Design: Send Email Activity

Exercises 5.2 through 5.7 should be completed together in order to successfully build and test this Runbook and will take about 30 minutes.

In this exercise the Send Email activity is configured which will use an SMTP server to send an email if the VM is successfully created from a template.

Perform the following on SCO01

1) From SCO01, open the Runbook Designer by clicking the icon in the taskbar.

2) In the Activities pane expand Email.

3) Drag Send Email to the right of Create VM From Template.

4) Hover over Create VM From Template until an arrow appears. Click and drag the arrow from Create VM From Template to Send Email.

5) Double-click Send Email.

6) Click in the Subject Line and type New Hyper-V VM Creation Request.
7) Next to Recipients, click Add.

8) Right-click in the Email address field and click Subscribe | Published Data.

9) Click the Activity Dropdown and select Initialize Data. This will use the email address that the user specified as the email request that will receive a notification once the VM has been deployed.

10) Select Parameter 2 - Email and click OK.
11) Click **OK**.

12) Right-click in the **Message** field and click **Expand**.
13) Type the following text: **A Virtual Machine has been successfully created:**

14) Right-click after the message text and click **Subscribe | Published Data**.

15) Select **Initialize Data** in the **Activity** dropdown and click **Parameter 3 - VMName**. This will use the name of the VM that the user specified within the text of the email.
16) Click OK.

17) Click OK.

18) On the Send Email Properties window, select the Connect tab.
19) Type Administrator@contoso.com in the Email address field and DC01 in the Computer field.

20) Click Finish.
2.6 - Runbook Design: Create Incident with Template Activity

Exercises 5.2 through 5.7 should be completed together in order to successfully build and test this Runbook and will take about 30 minutes.

In this exercise the Create Incident with Template activity is configured which will create an incident in Service Manager if the VM is not successfully created.

Perform the following on SCO01

1) From SCO01, open the Runbook Designer by clicking the icon in the taskbar.

2) In the Activities pane expand SC 2012 Service Manager.

3) Click and drag Create Incident with Template to below Create VM from Template in the workspace.

4) Hover over Create VM from Template until an arrow appears. Click and drag the white arrow from Create VM from Template to Create Incident with Template. There should now be two arrows leading away from Create VM From Template.
5) Double-click the blue arrow between Create VM From Template and Create Incident From Template.

6) Click the success link.

7) When the Results dialog appears, deselect the success checkbox and click to select the warning and failed checkboxes.

8) Click OK.
9) On the **Link Properties** page select the **Options** tab.

10) Press the black rectangle to open the color picker and select **red**. Click **OK**.

11) Click **Finish**.
12) Double-click Create Incident with Template.

13) The Create Incident with Template Properties will open. Select the Details tab.

14) Click the ellipsis (…) next to Connection, select SC2012 SM and click OK.

15) Click the ellipsis (…) next to Class, select Incident and click OK. These options are created based on information retrieved from Service Manager.
16) Click the **ellipsis (…)** next to **Template**, select **Default Incident Template** and click **OK**.

17) Click **Select Optional fields**.
18) Select **Description**, click the >> button.

19) Select **ID**, click the >> button

20) Select **Title**, click the >> button, then click **OK**.

![](image1.png)

21) In the **ID** field, click in front of the { character and type **Contoso-VM-**. The completed ID line should read **Contoso-VM-{0}**.

![](image2.png)

22) In the **Title** field, type **Contoso VM Incident**.

![](image3.png)
23) Right-click in the Description field and click Expand.
24) Type the following:

   A Contoso VM Request has Failed or has Warnings!
   Host:
   VM Name:
   Impacted User:

25) Right-click after Host: and click Subscribe | Published Data.

26) Select Initialize Data from the Activity menu, click Parameter 6 - Host and click OK. This will use the name of the cloud that the user specified within the text of the incident report.

27) Right-click after VM Name: and click Subscribe | Published Data.

28) Select Initialize Data from the Activity menu, click Parameter 3 - VMName and click OK. This will use the name of the VM that the user specified within the text of the incident report.
29) Right-click after **Impacted User**: and click **Subscribe | Published Data**.

30) Select **Initialize Data** from the **Activity** menu, click **Parameter 1 - User** and click **OK**. This will use the name of the user within the text of the incident report.

31) Click **OK**.
32) Click Finish.

33) From the upper ribbon, click **Check In** to save the Runbook.
2.7 - Runbook Design: Test a Runbook

Exercises 5.2 through 5.7 should be completed together in order to successfully build and test this Runbook and will take about 30 minutes.

In this exercise the Runbook Tester will be used to step through the workflow that was created. The workflow will attempt to deploy a virtual machine using Virtual Machine Manager, and if this process fails then Orchestrator will create a new incident in Service Manager. In this virtualized lab environment, it is not possible to deploy a VM from within a VM, so the deployment will fail and an incident will be created.

Perform the following on SCO01

1) From **SCO01**, open the **Runbook Designer** by clicking the icon in the taskbar.

2) Select the **Runbook Tester** from the upper ribbon.

3) On the **Confirm Check out** dialog select **Yes**.

4) From the **Runbook Tester** select **Run**.
5) In the **Initialize Data Parameters** dialog, enter the following data to test the Runbook, then click **OK**. Note the parameters may appear in a different order.

   a. Parameter 1- User: **Contoso\Developer**
   b. Parameter 2- Email: **Developer@contoso.com**
   c. Parameter 3- VMName: **VM11**
   d. Parameter 4- VMTemplate: **VM_PetShop_Web**
   e. Parameter 5- Reason: **Lab Environment**
   f. Parameter 6- Host: **SCVMM01.contoso.com**

6) The **Runbook Tester** will start and their progress can be seen in the **Log**. This will take several minutes to complete.

7) When the test completes, the results should be a **Pass** for **Initialize Data**, followed by a **Fail** for **Create VM From Template**, followed by a **Pass** for **Create incident with Template**. The deployment will fail, this is expected in this virtualized lab environment. This lab is built using virtual machines, and it is not possible to run VMs within Hyper-V VMs ("nested virtualization"). A user can create and configure VMs, but cannot start the VM.
8) Expand **Show Details** for the Activity **Create VM From Template**. In the Error summary text, notice that VMM was unable to fulfill the request.

9) Expand **Show Details** for **Create Incident with Template**. Scroll to **ID** and notice the Service Manager incident ID generated for this test (**Contoso-VM-"Variable"**). Make a note of this ID number.

10) Close the **Runbook Tester**.

11) In **Runbook Designer**, click **Check In**.
3 - Service Manager

3.1 - Service Manager Overview
In this exercise, the Service Manager console is used to browse the Administration, Library, Work Items, and Configuration Items workspaces. Service Manager is used for both IT Service Management (ITSM) and self-service capabilities.

Estimated time to complete: 15 minutes

Perform the following on SCSM01

1) From SCSM01, open the Service Manager Console by selecting the icon from the taskbar.

2) Navigate to the Administration workspace. The Administration workspace is used to configure and manage administrative items and settings, such as connectors, management packs, notifications, Self-Service Portal settings, security, service-level management, general settings, and workflow settings.
3) **Expand Notifications** and select **Templates**. New Email Notifications can be created here and existing templates can be reviewed.

4) **Click Connectors.** Connectors are used to import data as configuration items from Active Directory Domain Services (AD DS), System Center Configuration Manager, System Center 2012 - Orchestrator, System Center 2012 – Virtual Machine Manager (VMM), and System Center Operations Manager.

5) **Expand Security and click User Roles.** In System Center 2012 – Service Manager, the security rights that allow users to access or update information are defined in a user role profile. A user role profile is a named collection of access rights, and it usually corresponds to an employee’s business responsibilities. Each user role profile controls access to such artifacts as knowledge articles, work items (incidents, change requests), authoring, administration, and other credentials.

6) **Click Settings.** Here various settings relating to services can be set.
7) Expand **Workflows** and click **Status**. A workflow is a sequence of activities that automate a business process. The status node shows all the Workflows in the environment and their status.

8) Select the **Library** workspace. The **Library** pane allows the user to configure and manage library items, such as catalog groups, knowledge articles, lists, work item queues, runbooks, service catalog offerings, console tasks, and templates.

10) Select **Lists**. This node should be used to manage lists.
11) Click Runbooks. Runbooks contain the instructions for an automated task or process. The individual steps throughout a runbook are called activities. Within the Runbook, additional controls provide information and instructions to control the sequence of activities in the Runbook.

12) Expand Service Catalog then expand Request Offerings and click All Request Offerings. Request offerings are catalog items that describe the item, assistance, or action that is available to end users in the service catalog in System Center 2012 – Service Manager. Request offerings are normally placed in logical groups of service offerings. Both service offerings and their request offerings are available to Self-Service Portal users when the status of the offerings is set to Published and users have been assigned a corresponding Service Manager user role. Only users who have been assigned a user role associated with a catalog group that contains catalog items can use the Self-Service Portal to access the service catalog.

13) Expand Service Offerings and click All Service Offerings. Service offerings are logical groups of request offerings. For a service offering to appear in the Self-Service Portal, each service offering must have at least one request offering added to it. After a service offering and a request offering are published, it is a straightforward process to associate them as a collection.

14) Select the Work Items workspace to open the Work Items pane. The Work Items workspace will be used for creating and managing work items, such as activities, change requests, incidents, problem records, release records and service requests.
15) Click **Activity Management**. This node is used to approve a review activity, complete or fail a manual activity and skip a failed activity.

16) Click **Change Management**. This node is used to create a new change request, add related items to a change request, add Manual activities to a change request, edit a change request, unblock a failed change request and close a change request.

17) Click **Incident Management**. This node is used to create a parent incident from an incident form, link an open incident to a parent incident, resolve a parent incident, reactivate a resolved parent incident, view a parent incident from a child incident, link a new incident to a parent incident, manually create a new incident, change an existing incident, contact a user from an incident form, create an incident view and personalize it and resolve and close an incident.
18) Click **Problem Management**. This node is used to create and edit problem records, resolve problem records and related incidents automatically and link an incident or change request to a problem record.

19) Click **Release Management**. This node is used to create a release record, promote a release record to a parent release record, demote a parent release record to a child release record, link a child release record to the current release record, unlink a child release record from the current release record, create a build configuration item, create an environment configuration item, add release package information to a release record, chose changes to deploy, plan release activities, skip a failed activity and determine status and progress for a change request in the release record.

20) Click **Service Request Fulfillment**. This node shows services requests submitted through the Service Manager Self-Service Portal (SMPortal). It can manage service requests, create a service request using the Service Manager console, approve and complete a service request using activities, cancel a service request, close a service request and view service request details.

21) From the Navigation pane, click **Configuration Items**.

22) The **Configuration Items** pane allows the user to create and manage configurations items, such as builds, business services, computers, build environments, printers, software, software updates, and Service Manager users.

![Configuration Items Pane](image)

20) Click **Computers**. In this node of the Configuration Items workspace, user can perform tasks that are common to all configuration items.

21) Expand **Computers** and select **All Windows Computers**. This node is used to inventory all machines in the environment.
Perform the following on SCSM02

22) From SCSM02, open the Service Manager Portal by selecting the Internet Explorer icon from the taskbar.

23) If the site does not open, browse to http://SCSM02:81/SMPortal/SitePages/Service%Catalog.aspx. One or two prompts may appear. Log in with a username of contoso\Developer and a password of Passw0rd!

24) While on the Home menu click List view to display customized IT service offerings that have been published by the IT Department.
25) From the menu on the left, click **Help Articles**. This page would display any articles published by the IT department. In this lab, this page is blank.

26) From the menu on the left, click **My Requests**. This page would display any requests previously made by this user. In this lab, this page is currently blank.

27) From the menu on the left, click **My Activities**. This page would display any actions and tasks that the user needs to perform. In this lab, this page is currently blank.
3.2 - Create & Review an Incident

In this exercise, the Service Manager Portal is used to create an incident request as a self-service user. An administrator will then review the incident using Service Manager.

Estimated time to complete: 10 minutes

Note: Some items in the Service Manager console may not display correctly when it is maximized and running in a virtual machine. If any display issues are encountered, resize the Service Manager console so that it is not maximized.

Perform the following on SCSM02

1) From SCSM02, open the Service Manager Portal by selecting the Internet Explorer icon from the taskbar.

2) If the site does not open, browse to http://SCSM02:81/SMPortal/SitePages/Service%Catalog.aspx. One or two prompts may appear. Log in with a username of contoso\Developer and a password of Passw0rd
   - The site may already be open. If so, look on the Home page, in the upper right corner, to ensure that it is logged in as contoso\Developer. If not, log out and log back in using the correct credentials.
3) Wait for the Server Manager Portal to load. This will take a minute to complete.

4) From the upper right corner, click the list view button.

5) Under Request name select Generic Incident Request.

6) In the upper right corner of the Generic Incident Request page click the Go to request button.
7) On the Generic Incident Request page in the Please enter the title for the issue text box enter: SQL Server performance issue.

8) In the Please describe the symptoms of the issue in details text box enter: Contoso SQL Server running slowly, please investigate.

9) In the Please select a category of the issue drop down select: Enterprise Application Problems.

10) In the How urgent is the issue drop down select Medium.

11) In the Please enter alternate contact information if needed text box enter: Developer@contoso.com

12) Scroll down to the bottom of the form using the inner grey scroll bar and click Next.

   - If the bottom of the window is not visible, try resizing the view or zooming out (Ctrl -)

13) On the Generic Incident Request review and summary page, review that the information is correct and click Submit.

14) On the confirmation screen you will see that the request has been submitted and there will also be an incident request that has been created in service manager. Note the number after IR. In the screenshot below the ID is IR48.
15) Click View my requests.

16) Once the My Request page loads, note under SQL Server performance issue the status of the request is Active.

17) From SCSM01, open the Service Manager Console by selecting the icon from the taskbar.

18) Navigate to the Work Items workspace.
19) From the Work Items workspace expand Incident Management and select All Open Incidents.

20) Select the incident request that was created in the previous exercise. It should match the ID number that was noted earlier. In this example it is ID IR48.

21) Under tasks click Edit to open the request.

22) Review the settings on the general tab. For Support group select the drop down and click Tier 2.

23) For Assigned to select the ellipses (...) button.

24) On the Select users dialog under username select Tier2 and click OK.
25) Under Primary owner select the ellipses button.
26) On the Select users dialog under User Name select Administrator and click OK.

27) Under Affected Services click Add... and select Operations Manager Management Group and click Add then click OK.
28) Under Affected Items click Add... then select DC01.contoso.com, click Add and then select SCOM01 and click Add. Click OK.
29) Click Apply.

30) Select the Resolution tab from the top menu.
31) In the right column under Tasks click Assign then select Assign to Me.
32) Under Time Worked adjust the hours to 1 hour and click Add.

33) Click Apply then click OK.

34) On the Work Items workspace navigate to Incident Management | Assigned To Me. The incident should now appear in the center display pane.

35) In the right column under Tasks select Request User Input.

36) On the Request User Input dialog under Message type The SQL Server is slow because it running out of free capacity. Please confirm SQL Server can be taken offline at 18:00 tonight. Click OK.
The SQL Server is slow because it running out of free capacity. Please confirm SQL Server can be taken offline at 18:00 tonight.

END OF LAB

[103]