

Module 7: Planning and configuring service applications

Lab: Planning and configuring service applications

Exercise 1: Provisioning a Managed Metadata Service application with Central Administration

► Task 1: Create a service account to run the Managed Metadata Service

1. On the **Start** screen of NYC-DC1, type **Active Directory Administrative Center**, and then press Enter.
2. In Active Directory Administrative Center, click **Contoso (local)**.
3. In the **Tasks** pane, under **IT**, click **New**, and then click **User**.
4. In the **Create User** dialog box, in the **Full name** text box, type **SharePoint General MMS**.
5. In the **User UPN logon** text box, type **SPGeneralMMS**, and then verify that the **User SamAccountName logon** boxes have automatically populated with the corresponding user name.
6. In the **Password** and **Confirm password** text boxes, type **Pa\$\$w0rd**.
7. Click **Other password options**, select the **Password never expires** and **User cannot change password** check boxes, and then click **OK**.

► Task 2: Register the service account as a SharePoint managed account

1. Switch to **NYC_SP1**.
2. On the **Start** screen, type **Central Administration**, and then press Enter.
3. In Central Administration, click **Security**.
4. On the **Security** page, under **General Security**, click **Configure managed accounts**.
5. On the **Managed Accounts** page, click **Register Managed Account**.
6. On the **Register Managed Account** page, in the **User name** text box, type **contoso\SPGeneralMMS**, in the **Password** text box, type **Pa\$\$w0rd**, and then click **OK**.

► Task 3: Start the Managed Metadata Web Service service

1. Click **System Settings** on the left. Then, under **Servers**, click **Manage services on server**.
2. Locate the **Managed Metadata Web Service** service, and then in that row, click **Start**.

► Task 4: Create a new Managed Metadata Service application instance

1. In Internet Explorer, on a new tab, go to **http://sharepoint.contoso.com**.
2. In the **Windows Security** dialog box, in the **User name** box, type **administrator**, in the **Password** text box, type **Pa\$\$w0rd**, and then click **OK**.
3. Click **Settings** and then click **Site settings**.
4. On the **Site Settings** page, under **Site Collection Administration**, click **Site collection features**.
5. On the **Site Collection Features** page, in the **Content Type Syndication Hub** row, click **Activate**.
6. Refresh the page and verify that the status of the **Content Type Syndication Hub** feature is now **Active**.

7. In Internet Explorer, close the current tab.
8. On the Central Administration site, click **Application Management**, and then under **Service Applications**, click **Manage service applications**.
9. On the ribbon, click **New**, and then click **Managed Metadata Service**.
10. In the **Name** text box, type **Contoso General Managed Metadata**.
11. In the **Database Name** text box, type **ContosoGeneralMMSSDB**.
12. Click **Create new application pool**, and then in the **Application pool name** text box, type **ContosoGeneralMMSAppPool**.
13. In the **Application Pool** section, in the **Select a security account for this application pool** list, click **CONTOSO\SPGeneralMMS**.
14. In the **Content Type hub** text box, type **http://sharepoint.contoso.com**, and then click **OK**.

► **Task 5: Verify that the service application was provisioned successfully and add terms to the term store**

1. On the **Manage Service Applications** page, click the **Contoso General Managed Metadata** service.



Note: Be aware that there were two items created for Contoso General Managed Metadata: The service application and the service application proxy. Make certain that you click the item listed *first*, the service application, in order to manage its settings.

2. Verify that the **Site Settings > Term Store Management Tool** page displays correctly, and then verify that the taxonomy term store contains the default term sets **People**, **Search Dictionaries**, and **System**.



Note: If the page renders incorrectly, or you do not see the **People** and **Search Dictionaries** term sets, then reload the page.

3. Expand **People**, click **Department**, click **Create Term**, in the **Create Term** text box, type **Marketing**, and then press Enter.
4. In the **Create Term** text box, type **Sales**, press Enter, and then click anywhere on the page where there is white space to stop adding terms.

Results: After completing this exercise, you should have enabled, provisioned, and configured a Managed Metadata Service application by using Central Administration.

Exercise 2: Provisioning a Managed Metadata Service application with Windows PowerShell

► Task 1: Create a service account to run the Managed Metadata Service instance

1. Switch to the **NYC-DC1** virtual machine. If you are not already signed in, sign in to the **20339-1A-NYC-DC-D** virtual machine as **administrator@contoso.com** with password **Pa\$\$w0rd**.
2. On the **Start** screen, type **Active Directory PowerShell**, and then press Enter.
3. At the command prompt, run the following commands:

```
New-ADUser -SamAccountName SPSalesMMS -Name "SharePoint Sales MMS" -UserPrincipalName "SPSalesMMS@contoso.com" -AccountPassword (Read-host "enter password" -AsSecureString) -Path "OU=IT,DC=Contoso,DC=com" -Enabled $true -PasswordNeverExpires $true -ChangePasswordAtLogon $false
```

4. The command will stop at a prompt for the password. Use **Pa\$\$w0rd** for the password, and then press Enter.
5. Close the command prompt.



Note: If you add a user without specifying a container, it will be added under Users in Active Directory Domain Services (AD DS).

► Task 2: Register the service account as a SharePoint managed account

1. Switch to the **NYC-SP1** virtual machine. If you are not already signed in, sign in to the **NYC-SP1** virtual machine as **administrator@contoso.com** with the password **Pa\$\$w0rd**.
2. On the **Start** screen, type **SharePoint Management Shell**, and then press Enter.
3. At the command prompt, run the following command:

```
New-SPManagedAccount
```

4. In the **Windows PowerShell credential req...** dialog box, in the **User name** text box, type **SPSalesMMS@contoso.com**, in the **Password** text box, type **Pa\$\$w0rd**, and then click **OK**.
5. At the command prompt, run the following command:

```
Get-SPManagedAccount | Select UserName
```

6. Verify that the **SPSalesMMS** user account appears in the list of registered accounts.

► Task 3: Create a new Managed Metadata Service application instance

1. In Internet Explorer, on a new tab, go to **http://sales.contoso.com**.
2. In the **Windows Security** dialog box, in the **User name** text box, type **administrator**, in the **Password** text box, type **Pa\$\$w0rd**, and then click **OK**.
3. Click **Settings** and then click **Site settings**.
4. On the **Site Settings** page, under **Site Collection Administration**, click **Site collection features**.
5. On the **Site Collection Features** page, in the **Content Type Syndication Hub** row, click **Activate**.
6. Refresh the page and verify that the status of the **Content Type Syndication Hub** feature is now **Active**.
7. In Internet Explorer, close the current tab.

8. In the SharePoint Management Shell, at the command prompt, run the following command:

```
$AppPool = New-SPServiceApplicationPool -Name ContosoSalesMMSAppPool -Account
SPSalesMMS@contoso.com
```

9. At the command prompt, run the following commands:

```
$MMS = New-SPMetadataServiceApplication -Name "Contoso Sales Managed Metadata" -
ApplicationPool $AppPool -DatabaseName ContosoSalesMMS -HubUri
"http://sales.contoso.com"
```

10. At the command prompt, run the following command:

```
New-SPMetadataServiceApplicationProxy -Name "Contoso Sales Managed Metadata" -
ServiceApplication $MMS -DefaultProxyGroup
```

11. On the **Start** screen, type **SharePoint Central Administration**, and then press Enter.
12. Under **Application Management**, click **Manage service applications**, and then verify that there are two Managed Metadata Service instances included in the list (both should also have corresponding proxy connections).

Results: After completing this exercise, you should have enabled, provisioned, and configured a Managed Metadata Service application by using Windows PowerShell.

Exercise 3: Configuring the Word Automation Services service application for document conversion

► Task 1: Start the required service

1. Click **Central Administration**, and then under **System Settings**, click **Manage services on server**.
2. Locate the **Word Automation Services** service, and then in that row, click **Start**.
3. Locate **Document Conversions Load Balancer Services**, and then in that row, click **Start**.
4. Locate **Document Conversions Launcher Services**, and then in that row, click **Start**.
5. On the **Launcher Service Settings** page, in the **Load Balancer server** list, click **NYC-SP1**, and then click **OK**.



Note: If you have any problems outside of this lab starting the Document Conversions Load Balancer or Document Conversions Launcher services, be sure to add the **AcknowledgedRunningOnAppServer** DWORD key (value of 1) to the **LauncherSettings** and **LoadBalancerSettings** nodes in the registry at Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Office Server\16.0\.

► **Task 2: Create a service account to run the Word Automation Services service application**

1. Switch to the **NYC-DC1** virtual machine. If you are not already signed in, sign in to the **NYC-DC1** virtual machine as **administrator@contoso.com** with the password **Pa\$\$w0rd**.
2. On the **Start** screen, type **Active Directory Users and Computers**, and then press Enter.
3. In the Administrator: Active Directory Users and Computers console, double click **IT**, right-click **SharePoint Sales MMS user account**, and then click **Copy**.
4. In the **Copy Object- User** dialog box, in the **Full Name** text box, type **SharePoint Word Automation**.
5. In the **User logon name** text box, type **SPWordAutomation**.
6. Make sure that the **User logon name (pre-Windows 2000)** field is populated with the correct name.
7. Click **Next**.
8. In the **Password** and **Confirm Password** text boxes, type **Pa\$\$w0rd**.
9. Make sure the **User cannot change password** and **Password never expires** check boxes are selected.
10. Click **Next**, then click **Finish**.
11. Close the Active Directory Users and Computers window.

► **Task 3: Register the service account as a SharePoint managed account**

1. Switch to the **NYC-SP1** virtual machine.
2. At the SharePoint Management Shell command prompt, run the following command:

```
New-SPManagedAccount
```

3. In the **Windows PowerShell Credential** dialog box, in the **User name** text box, type **SPWordAutomation@contoso.com**, in the **Password** text box, type **Pa\$\$w0rd**, and then click **OK**.
4. At the command prompt, run the following command:

```
Get-SPManagedAccount | Select UserName
```

5. Verify that the **SPWordAutomation** user account appears in the list of registered accounts.

► **Task 4: Create a new Word Automation Services application instance**

1. At the command prompt, run the following command:

```
$AppPool = New-SPServiceApplicationPool -Name ContosoWordAutomationAppPool -Account SPWordAutomation@contoso.com
```

2. At the command prompt, run the following command:

```
$WCS = New-SPWordConversionServiceApplication -Name "Contoso Word Automation Service" -ApplicationPool $AppPool -DatabaseName ContosoWordAutomation
```

3. On the **Start** screen, type **SharePoint Central Administration**, and then press Enter.

4. Under **Application Management**, click **Manage service applications**, and then verify that the **Contoso Word Automation Service** appears in the list (it should also have a corresponding proxy connection).



Note: You can also configure Word Automation Services by using the **Manage Service Application** page in Central Administration.

► **Task 5: Enable document conversions on the sharepoint.contoso.com and sales.contoso.com web applications**

1. In Central Administration, click **General Application Settings**.
2. On the **General Application Settings** page, under **External Service Connections**, click **Configure document conversions**.
3. On the **Configure Document Conversions** page, verify that the **Web Application** specifies **http://sharepoint.contoso.com**. If it does not, click the address, click **Change Web Application**, and then in the **Select Web Application** dialog box, click **SharePoint - sharepoint.contoso.com80**.
4. Under **Enable document conversions for this site?**, click **Yes**.
5. In the **Load Balancer server** list, click **NYC-SP1**, and then click **Apply**.
6. Under **Web Application**, click **http://sharepoint.contoso.com**, and then click **Change Web Application**.
7. In the **Select Web Application** dialog box, click **SharePointSales - 80**.
8. Under **Enable document conversions for this site?**, click **Yes**.
9. In the **Load Balancer server** list, click **NYC-SP1**, and then click **OK**.
10. Close all open windows.

Results: After completing this exercise, you should have provisioned a document conversion service application by using Windows PowerShell and configured that service by using the SharePoint 2016 Central Administration website.

Exercise 4: Configuring service application proxy groups

► **Task 1: Create a new service application proxy group named General**

1. On the **Start** screen, type **SharePoint Management Shell**, and then press Enter.
2. At the command prompt, run the following command:

```
$proxyGroup = New-SPServiceApplicationProxyGroup "General"
```

3. At the command prompt, run the following command:

```
Get-SPServiceApplicationProxy | select DisplayName
```

4. View the results and verify that the service application proxies that you created in the previous step appear in the list.

- At the command prompt, run the following commands:

```
$proxy = Get-SPServiceApplicationProxy | where {$_.DisplayName -like "Contoso General*"}
Add-SPServiceApplicationProxyGroupMember $proxyGroup -Member $proxy
```

- At the command prompt, run the following commands:

```
$proxy = Get-SPServiceApplicationProxy | where {$_.DisplayName -like "Contoso Word*"}
Add-SPServiceApplicationProxyGroupMember $proxyGroup -Member $proxy
```

► Task 2: Create a new service application proxy group named Sales

- At the command prompt, run the following command:

```
$proxyGroup = New-SPServiceApplicationProxyGroup "Sales"
```

- At the command prompt, run the following commands:

```
$proxy = Get-SPServiceApplicationProxy | where {$_.DisplayName -like "Contoso Sales*"}
Add-SPServiceApplicationProxyGroupMember $proxyGroup -Member $proxy
```

- At the command prompt, run the following commands:

```
$proxy = Get-SPServiceApplicationProxy | where {$_.DisplayName -like "Contoso Word*"}
Add-SPServiceApplicationProxyGroupMember $proxyGroup -Member $proxy
```

- Close all open windows.

► Task 3: Map proxy groups to web applications

- On the **Start** screen, type **SharePoint Central Administration**, and then press Enter.
- Click **Application Management**.
- Under **Service Applications**, click **Configure service application associations**.
- Click **SharePoint - sharepoint.contoso.com80** in the **web application** column.
- In the **Configure Service Application Associations** dialog box, in the **Edit the following group of connections** list, click **General**, and then click **OK**.
- Click **SharePointSales – 80** in the **web application** column.
- In the **Configure Service Application Associations** dialog box, in the **Edit the following group of connections** list, click **Sales**, and then click **OK**.

► Task 4: Verify Managed Metadata term set associations

- In Internet Explorer, go to **http://sharepoint.contoso.com**.
- If you are prompted for credentials, sign in as **Contoso\Administrator** with the password **Pa\$\$w0rd**.
- Click **Settings**, and then click **Site settings**.
- On the **Site Settings** page, under **Web Designer Galleries**, click **Site columns**, and then click **Create**.
- Under **Name and Type**, click **Managed Metadata**.
- After the page refreshes, under **Term Set Settings**, verify that **Contoso General Managed Metadata** is included as the root node.
- In Internet Explorer, go to **http://sales.contoso.com**.

8. If you are prompted for credentials, sign in as **Contoso\Administrator** with the password **Pa\$\$w0rd**.
9. Click **Settings**, and then click **Site settings**.
10. On the **Site Settings** page, under **Web Designer Galleries**, click **Site columns**, and then click **Create**.
11. Under **Name and Type**, click **Managed Metadata**.
12. After the page refreshes, under **Term Set Settings**, verify that **Contoso Sales Managed Metadata** is included as the root node.

► **Task 5: Verify document conversion configuration**

1. In the <http://sales.contoso.com> site, click **Settings**, and then click **Site settings**.
2. Under **Site Collection Administration**, click **Site collection features**.



Note: When adding these features, be sure to click **Activate** only once and then wait. There are a number of actions that take place when these features are activated, even if it might appear that nothing is happening. Clicking **Activate** more than once can interrupt the process. To ensure that all aspects of the features are completed, wait for each feature to activate before proceeding.

3. Locate the **SharePoint Server Publishing Infrastructure** site collection feature, and then in that row, click **Activate**.
4. Click **Site Settings** to return to the **Site Settings** page.
5. Under **Site Actions**, click **Manage site features**.
6. Locate the **SharePoint Server Publishing** site feature, and then in that row, click **Activate**.
7. In the current **Quick Launch** (on the left of the page), click **Documents**.
8. Locate the **ConversionTest** document, and then in that row, click the ellipsis (...).
9. In the **Document** pop-up dialog box, click the ellipsis (...), point to **Convert Document**, and then click **From Word Document to Web Page**.
10. On the **Create Page From Document** page, in the **Title** text box, clear the default text in the box, type **Annual Report**, and then click **Create**.
11. When the page displays, verify that the Word document has been converted to a webpage correctly, and then click **OK**. The source document has images that are not converted in this process. This is expected behavior.
12. On the **Not published yet** bar, click **Publish it**.
13. Verify that the page is now included in the current navigation tree.
14. Close all open windows.

Results: After completing this exercise, you should have created two proxy groups and associated each with a web application. You should have tested that these associations are working correctly and you should have demonstrated Microsoft Word document conversion to a webpage.

► **Task 6: Prepare for the next module**

After you finish the lab, revert the virtual machines to their initial state. To do this, complete the following steps:

1. On the host computer, start **Microsoft Hyper-V Manager**.
2. In the **Virtual Machines** list, right-click **20339-1A-NYC-SP1-D**, and then click **Revert**.
3. In the **Revert Virtual Machine** dialog box, click **Revert**.
4. Repeat steps 2 and 3 for **20339-1A-NYC-DB1-D** and **20339-1A-NYC-DC1-D**.