1. Application Management – Advanced

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| Computers used in  this Lab | ROUTER01  SRV0001  SRV0002  WKS0001  WKS0002  WKS0004 |
| More information | How to revise and supersede applications in System Center Configuration Manager  <https://docs.microsoft.com/en-us/sccm/apps/deploy-use/revise-and-supersede-applications>  How to create global conditions in System Center Configuration Manager  <https://docs.microsoft.com/en-us/sccm/apps/deploy-use/create-global-conditions>  Simulate application deployments with System Center Configuration Manager  <https://docs.microsoft.com/en-us/sccm/apps/deploy-use/simulate-application-deployments> |
| Description | In this chapter, we will look at all steps required to replace an application with a new version; steps required to deploy an application that requires approval from the SCCM administrator; creating custom deployment requirements as well as perform simulated deployment, so we can test the detection method, requirements and dependencies of an application deployment without installing or uninstalling the application. |

* 1. Preparing the Environment

Before Starting this Module, you will need to:

1. Create a Firefox 40 Application with the Following Information, Deploy and Install

* Specific Settings for this application select Manually specify
* Name: Firefox 40
* Deployment Type: Script
* Name: Firefox 40 Installation for Windows 8.1 and 10
* Content Location: \\srv0001\TrainingFiles\Source\Firefox 40
* Install program: "Firefox Setup 40.0.exe" -ms
* Uninstall program: "C:\Program Files (x86)\Mozilla Firefox\uninstall\helper.exe" -ms
* Detection Rule:
  + Setting Type: File System
  + Type: File
  + File: %ProgramFiles%\Mozilla Firefox
  + File or folder name: firefox.exe
  + This file or folder is associated with a 32-bit application on 64-bit systems checked
  + Property: Version
  + Operator: Greater than or equal to
  + Value: 40.0
* Installation behaviour: Install for a system
* Logon requirement: Whether or not a user is logged on
* Requirements: Operating System, one of, All Windows 10 (64-bit), All Windows 8.1 (64-bit)
* Distribute content to a Distribution Point Group
* Make it available to Users OU collection (Available deployment)
* Log on to WKS0001, WKS0004 as user01 and install the software
* Log on to WKS0002 as user02 and install the software

1. Create a Firefox 49 Application with the Following Information

* Specific Settings for this application select Manually specify
* Name: Firefox 49
* Deployment Type: Script
* Name: Firefox 49 Installation for Windows 8.1 and 10
* Content Location: \\srv0001\TrainingFiles\Source\Firefox 49
* Install program: "Firefox Setup 49.0.1.exe" -ms
* Uninstall program: "C:\Program Files (x86)\Mozilla Firefox\uninstall\helper.exe" -ms
* Detection Rule:
  + Setting Type: File System
  + Type: File
  + File: %ProgramFiles%\Mozilla Firefox
  + File or folder name: firefox.exe
  + This file or folder is associated with a 32-bit application on 64-bit systems checked
  + Property: Version
  + Operator: Greater than or equal to
  + Value: 49.0
* Installation behaviour: Install for a system
* Logon requirement: Whether or not a user is logged on
* Requirements: Operating System, one of, All Windows 10 (64-bit), All Windows 8.1 (64-bit)
* Distribute content to a Distribution Point Group

1. Create a Java 8 Application with the Following Information:

* Specific Settings for this application select Manually specify
* Name: Java8
* Deployment Type: Script
* Name: Java8 for Windows 10
* Content Location: \\srv0001\trainingfiles\Source\Java8
* Install program: "Java8.exe" /s
* Detection Rule:
  + Setting Type: File System
  + Type: fileA
  + File: %ProgramFiles%\Java\jre1.8.0\_101\bin
  + File or folder name: java.exe
  + This file or folder is associated with a 32-bit application on 64-bit systems checked
  + Property: Version
  + Operator: Greater than or equal to
  + Value: 8.0.1010
* Installation behaviour: Install for a system
* Logon requirement: Whether or not a user is logged on
* Requirements: Operating System, one of, All Windows 10 (64-bit)
* Distribute content to a Distribution Point Group

1. Create an Acrobat Reader XI Application with the Following Information:

* Specific Settings for this application select Manually specify
* Name: Acrobat Reader XI
* Deployment Type: Script
* Name: Acrobat Reader XI for Windows 10
* Content Location: \\srv0001\trainingfiles\Source\AdobeXI
* Install program: "AdbeRdr11010\_en\_US.exe" /msi EULA\_ACCEPT=YES REMOVE\_PREVIOUS=YES /qn
* Detection Rule:
  + Setting Type: Windows Installer
  + Product Code: {AC76BA86-7AD7-1033-7B44-AB0000000001}
* Installation behaviour: Install for a system
* Logon requirement: Whether or not a user is logged on
* Requirements: Operating System, one of, All Windows 10 (64-it)
* Distribute content to a Distribution Point Group

This can also be achieved via PowerShell using the commands below:

. c:\TrainingFiles\Scripts\Add-CMDeploymentTypeGlobalCondition.ps1

$SiteCode = "001"

$dkserver = "SRV0002.classroom.intranet"

$AppName = "Firefox 40"

$DTName = "Firefox 40 Installation for Windows 8.1 and 10"

New-CMApplication -Name "$AppName"

$DetectionRule = New-CMDetectionClauseFile -ExpectedValue "40.0" -ExpressionOperator GreaterEquals -FileName "firefox.exe" -Path "%ProgramFiles%\Mozilla Firefox" -PropertyType Version -Value

Add-CMScriptDeploymentType -AddDetectionClause $DetectionRule -ApplicationName $AppName -DeploymentTypeName $DTName -InstallCommand '"Firefox Setup 40.0.exe" -ms' -ContentLocation '\\srv0001\TrainingFiles\Source\Firefox 40' -InstallationBehaviorType InstallForSystem -LogonRequirementType WhereOrNotUserLoggedOn -UninstallCommand '"C:\Program Files (x86)\Mozilla Firefox\uninstall\helper.exe" -ms'

Add-CMDeploymentTypeGlobalCondition -ApplicationName "$AppName" -DeploymentTypeName "$DTName" -sdkserver "$dkserver" -sitecode "$sitecode" -GlobalCondition OperatingSystem -Operator OneOf -Value "Windows/All\_x64\_Windows\_10\_and\_higher\_Clients;Windows/All\_x64\_Windows\_8.1\_Client"

Start-CMContentDistribution -ApplicationName "$AppName" -DistributionPointGroupName "Training Lab"

New-CMApplicationDeployment -CollectionName "Users OU" -Name "$AppName"

$AppName = "Firefox 49"

$DTName = "Firefox 49 Installation for Windows 8.1 and 10"

New-CMApplication -Name "$AppName"

$DetectionRule = New-CMDetectionClauseFile -ExpectedValue "49.0" -ExpressionOperator GreaterEquals -FileName "firefox.exe" -Path "%ProgramFiles%\Mozilla Firefox" -PropertyType Version -Value

Add-CMScriptDeploymentType -AddDetectionClause $DetectionRule -ApplicationName $AppName -DeploymentTypeName $DTName -InstallCommand '"Firefox Setup 49.0.1.exe" -ms' -ContentLocation '\\srv0001\TrainingFiles\Source\Firefox 49' -InstallationBehaviorType InstallForSystem -LogonRequirementType WhereOrNotUserLoggedOn -UninstallCommand '"C:\Program Files (x86)\Mozilla Firefox\uninstall\helper.exe" -ms'

Add-CMDeploymentTypeGlobalCondition -ApplicationName "$AppName" -DeploymentTypeName "$DTName" -sdkserver "$dkserver" -sitecode "$sitecode" -GlobalCondition OperatingSystem -Operator OneOf -Value "Windows/All\_x64\_Windows\_10\_and\_higher\_Clients;Windows/All\_x64\_Windows\_8.1\_Client"

Get-CMDeploymentType -ApplicationName "$AppName" -DeploymentTypeName "$DTName" | Set-CMDeploymentType -MsiOrScriptInstaller -InstallationBehaviorType InstallForSystem

Start-CMContentDistribution -ApplicationName "$AppName" -DistributionPointGroupName "Training Lab"

$AppName = "Java8"

$DTName = "Java8 for Windows 10"

New-CMApplication -Name "$AppName"

$DetectionRule = New-CMDetectionClauseFile -ExpectedValue "8.0.1010" -ExpressionOperator GreaterEquals -FileName "java.exe" -Path "%ProgramFiles%\Java\jre1.8.0\_101\bin" -PropertyType Version -Value

Add-CMScriptDeploymentType -AddDetectionClause $DetectionRule -ApplicationName $AppName -DeploymentTypeName $DTName -InstallCommand '"Java8.exe" /s' -ContentLocation '\\srv0001\TrainingFiles\Source\Java8' -InstallationBehaviorType InstallForSystem -LogonRequirementType WhereOrNotUserLoggedOn

Add-CMDeploymentTypeGlobalCondition -ApplicationName "$AppName" -DeploymentTypeName "$DTName" -sdkserver "$dkserver" -sitecode "$sitecode" -GlobalCondition OperatingSystem -Operator OneOf -Value "Windows/All\_x64\_Windows\_10\_and\_higher\_Clients"

Start-CMContentDistribution -ApplicationName "$AppName" -DistributionPointGroupName "Training Lab"

$AppName = "Acrobat Reader XI"

$DTName = "Acrobat Reader XI for Windows 10"

New-CMApplication -Name "$AppName"

Add-CMScriptDeploymentType -ApplicationName "$AppName" -DeploymentTypeName "$DTName" -InstallCommand '"AdbeRdr11010\_en\_US.exe" /msi EULA\_ACCEPT=YES REMOVE\_PREVIOUS=YES /qn' -ProductCode "{AC76BA86-7AD7-1033-7B44-AB0000000001}" -ContentLocation "\\srv0001\trainingfiles\Source\AdobeXI" -InstallationBehaviorType InstallForSystem -LogonRequirementType WhereOrNotUserLoggedOn

Add-CMDeploymentTypeGlobalCondition -ApplicationName "$AppName" -DeploymentTypeName "$DTName" -sdkserver "$dkserver" -sitecode "$sitecode" -GlobalCondition OperatingSystem -Operator OneOf -Value "Windows/All\_x64\_Windows\_10\_and\_higher\_Clients;Windows/All\_x64\_Windows\_8.1\_Client"

Start-CMContentDistribution -ApplicationName "$AppName" -DistributionPointGroupName "Training Lab"

* 1. Creating an Application Supersedence

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| Perform this task on the SRV0002 virtual machine logged on as sccmadmin |
| 01. Start Configuration Manager Console and Click Software Library. |
| 02. Expand Application Management and click Applications |
| 03. Select Firefox 49 and click Properties |
| 04. Under Firefox 49 Properties, change to the Supersedence tab |
| 05. Under supersedence tab click Add |
| 06. Under Specify supersedence relationship click Browse |
| 07. Under Choose Application, click Firefox 40 and click Ok |
| 08. Once back to the Specify Supersedence Relationship, change the New Deployment Type to Firefox 49 Install for Windows 8.1 and 10, check Uninstall and click Ok twice |

This can also be achieved via PowerShell using the commands below:

$OldAppName = "Firefox 40"

$OldDTName = "Firefox 40 Installation for Windows 8.1 and 10"

$NewAppName = "Firefox 49"

$NewDTName = "Firefox 49 Installation for Windows 8.1 and 10"

$OldDeploymentType = Get-CMDeploymentType -ApplicationName "$OldAppName" -DeploymentTypeName "$OldDTName"

$NewDeploymentType = Get-CMDeploymentType -ApplicationName "$NewAppName" -DeploymentTypeName "$NewDTName"

Add-CMDeploymentTypeSupersedence -SupersededDeploymentType $OldDeploymentType -SupersedingDeploymentType $NewDeploymentType -IsUninstall $true

* 1. Creating an Application Supersedence Deployment

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| Perform this task on the SRV0002 virtual machine logged on as sccmadmin |
| 01. Once back to the select Firefox 49 and click Deploy |
| 02. Under Specify general information for this deployment, select Users OU Collection and click Next |
| 03. Under Specify the content destination, click Next |
| 04. Under Specify settings to control how this software is deployed, select the following:   * Action: Install * Purpose: Available * Automatically upgrade any superseded version of this application: Checked   Click Next |
| 05. Under Specify the schedule for this deployment, click Next |
| 06. Under specify the user experience for the installation of this software on the selected devices, click Next |
| 07. Under Specify Configuration Manager and Operations manager alert options, click Next |
| 08. Under Confirm the settings for this new deployment, click Next |
| 09. Under The Deploy Software Wizard completed successfully, click Close |

This can also be achieved via PowerShell using the commands below:

$SiteCode = "001"

$AppName = "Firefox 49"

$CollName = "Users OU"

New-CMApplicationDeployment -Name "$AppName" -CollectionName "$CollName" -UpdateSupersedence $True

* 1. Installing an Application Supersedence

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| Perform this task on the wks0001 virtual machine logged on as user01 |
| 01. Open Control Panel and then Configuration Manager. |
| 02. Change to the actions tab. Select User Policy Retrieval & Evaluation cycle and click Run now  Note: Using this option will force the client to connect to the server and update its settings. By default, this happen every 60 minutes and can be changed under Client Settings -> Client Policy -> Client policy polling interval (minutes) |
| 03. Once the User Policy Retrieval & Evaluation cycle message appears, click Ok.  Note: Depending on the SCCM environment, the user policy retrieval & evaluation cycle can take few minutes |
| 04. Click Start, Microsoft System Center, Configuration Manager and click Software Center |
| 05. Under Available Software, for a short period you should see both Firefox 40 and Firefox 49 available. Short after you should see the Installation of Firefox 49 start |
| 06. If needed, click Installation Status tab to follow the installation process. Repeat the process on WKS0002 and WKS0004 |

This can also be achieved via PowerShell using the commands below:

$UserSID = ((gwmi -query "select \* from win32\_useraccount where name = '$($env:USERNAME)' and domain='$($env:USERDOMAIN)'").SID).replace('-','\_')

$sched = ([wmi]"root\ccm\Policy\$UserSID\ActualConfig:CCM\_Scheduler\_ScheduledMessage.ScheduledMessageID='{00000000-0000-0000-0000-000000000026}'");

$sched.Triggers = @('SimpleInterval;Minutes=1;MaxRandomDelayMinutes=0');

$sched.Put()

start-sleep 10

$sched = ([wmi]"root\ccm\Policy\$UserSID\ActualConfig:CCM\_Scheduler\_ScheduledMessage.ScheduledMessageID='{00000000-0000-0000-0000-000000000027}'");

$sched.Triggers = @('SimpleInterval;Minutes=1;MaxRandomDelayMinutes=0');

$sched.Put()

start-sleep 60

$AppName = "Firefox 49"

$app = gwmi -Namespace 'root\CCM\ClientSDK' -Class 'CCM\_Application' | Where-Object { ($\_.Name -eq "$($AppName)") -and ($\_.InstallState -eq "NotInstalled") -and ($\_.AllowedActions -contains "Install")}

[int]$code = Invoke-WmiMethod -Namespace 'root\CCM\ClientSDK' -Class 'CCM\_Application' -Name Install -ArgumentList @(0, $app.Id, $app.IsMachineTarget, $false, 'High', $app.Revision) | select -ExpandProperty ReturnValue

if ($code -ne 0) {

throw "Error invoking Installation of '$($app.Name)' ($code)."

} else {

"Successfully invoked Installation of '$($app.Name)'."

}

* 1. Creating a Global Condition

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| Perform this task on the SRV0002 virtual machine logged on as sccmadmin |
| 01. Start Configuration Manager Console and Click Software Library. |
| 02. Expand Application Management and click Global Conditions |
| 03. Click Create Global Condition |
| 04. Under Specify details about this global condition, use the following:   * Name: Computer Model * Device Type: Windows * Condition type: Setting * Setting type: WQL Query * Data Type: String * Namespace: root\cimv2 * Class: Win32\_ComputerSystem * Property: Model   Click Ok  Note: Be sure that you typed the information correctly as, once it is used, it cannot be changed |

This can also be achieved via PowerShell using the commands below:

New-CMGlobalCondition -Class "Win32\_ComputerSystem" -DataType "String" -DeviceType "Windows" -Name "Computer Model" -Property "Model" -Namespace "root\cimv2"

* 1. Using a Custom Global Condition

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| Perform this task on the SRV0002 virtual machine logged on as sccmadmin |
| 01. Start Configuration Manager Console and Click Software Library. |
| 02. Expand Applications Management and click Applications |
| 03. Select the Java8 and click Deployment Types tab at the bottom of the console |
| 04. Select the Deployment Type and click Properties |
| 05. Under Java8 for Windows 10 Properties, change to Requirements tab and click Add |
| 06. Under Create Requirement, create a new requirement with the following information:   * Category: Custom * Condition: Computer Model * Rule Type: Value * Operator: Equals * Value: SVD11225CYB   Click Ok Twice |

* 1. Deploying an Approval Required Application

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| Perform this task on the SRV0002 virtual machine logged on as sccmadmin |
| 01. Start Configuration Manager Console and Click Software Library. |
| 02. Expand Applications Management and click Applications |
| 03. Select Java8 and click Deploy |
| 04. Under Specify general information for this deployment, click Browse (Collection) and select the Collection you want to deploy. Click Next  Note: You can deploy to a Device as well as Users. In this example, we are using Users OU collection |
| 05. Under Specify the content destination, click Next |
| 06. Under specify settings to control how this software is deployed, select Require administrator approval if users request this application and click Next |
| 07. Under Specify the schedule for this deployment, click Next |
| 08. Under Specify the user experience for the installation of this software on the selected devices, click Next |
| 09. Under specify Configuration Manager and Operations Manager alert options, click Next |
| 10. Under Confirm the settings for this new deployment click Next |
| 11. Under Completion, click Close |

This can also be achieved via PowerShell using the commands below:

New-CMApplicationDeployment -CollectionName "Users OU" -Name "Java8" -ApprovalRequired $true

* 1. Requesting application via Software Center

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| Perform this task on the wks0001 virtual machine logged on as user01 |
| 01. Open Software Center under Start -> Microsoft System Center -> Configuration Manager |
| 02. Under Available Software, select Java8 |
| 03. On Java8, type some information on the text box and click Request |
| 04. Once the request is submitted, a message will be displayed that the request was submitted. |

* 1. Approving/Denying application requests

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| Perform this task on the SRV0002 virtual machine logged on as sccmadmin |
| 01. Start Configuration Manager Console and Click Software Library. |
| 02. Expand Application Management and click Approval Requests |
| 03. Right click the visible columns and add Comments |
| 04. Once done, select the application, and click Approve |
| 05. Under Application Request(s) add an Approver’s Comments and click OK |

This can also be achieved via PowerShell using the commands below:

#approve request

Get-CMApprovalRequest -ApplicationName "Java8" -User "CLASSROOM\User01" | Approve-CMApprovalRequest

#deny request

#Get-CMApprovalRequest -ApplicationName "Java8" -User "CLASSROOM\User01" | Deny-CMApprovalRequest

* 1. Installing an approved application

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| Perform this task on the wks0001 virtual machine logged on as user01 |
| 01. Open Control Panel and then Configuration Manager. |
| 02. Change to the actions tab. Select User Policy Retrieval & Evaluation cycle and click Run now  Note: Using this option will force the client to connect to the server and update its settings. By default, this happen every 60 minutes and can be changed under Client Settings -> Client Policy -> Client policy polling interval (minutes) |
| 03. Once the User Policy Retrieval & Evaluation cycle message appears, click Ok.  Note: Depending on the SCCM environment, the user policy retrieval & evaluation cycle can take few minutes |
| 04. Click Start, Microsoft System Center, Configuration Manager and click Software Center |
| 05. Under Available Software, select Java 8 and click Install  Note: The installation will not be completed and the Status will be changed to “This software is not applicable to your device” |

This can also be achieved via PowerShell using the commands below:

$UserSID = ((gwmi -query "select \* from win32\_useraccount where name = '$($env:USERNAME)' and domain='$($env:USERDOMAIN)'").SID).replace('-','\_')

$sched = ([wmi]"root\ccm\Policy\$UserSID\ActualConfig:CCM\_Scheduler\_ScheduledMessage.ScheduledMessageID='{00000000-0000-0000-0000-000000000026}'");

$sched.Triggers = @('SimpleInterval;Minutes=1;MaxRandomDelayMinutes=0');

$sched.Put()

start-sleep 10

$sched = ([wmi]"root\ccm\Policy\$UserSID\ActualConfig:CCM\_Scheduler\_ScheduledMessage.ScheduledMessageID='{00000000-0000-0000-0000-000000000027}'");

$sched.Triggers = @('SimpleInterval;Minutes=1;MaxRandomDelayMinutes=0');

$sched.Put()

start-sleep 60

$AppName = "Java8"

$app = gwmi -Namespace 'root\CCM\ClientSDK' -Class 'CCM\_Application' | Where-Object { ($\_.Name -eq "$($AppName)") -and ($\_.InstallState -eq "NotInstalled")}

if ($App.ApplicabilityState -eq "NotApplicable") {

Write-host "'$($app.Name)' not applicable." -ForegroundColor Yellow

} else {

Write-host "'$($app.Name)' is applicable."

}

* 1. Simulate Application Deployment

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| Perform this task on the SRV0002 virtual machine logged on as sccmadmin |
| 01. Start Configuration Manager Console and Click Software Library. |
| 02. Expand Applications Management and click Applications |
| 03. Select Acrobat Reader XI and click Simulate Deployment |
| 04. Under Specify general information for this deployment, click Browse (Collection) and select the Collection you want to deploy and select Install for Action. Click Next  Note: You can deploy to a Device as well as Users. In this example, we are using Workstation OU collection |
| 05. Under Confirm the settings for this new Deployment, click Next |
| 06. Under Completion, click Close  Note: Once done, refresh the machine policy on WKS0001, WKS0002 and WKS0004 and monitor the application deployment using the same steps as we have seen under the Monitoring Application Deployment module. |

This can also be achieved via PowerShell using the commands below:

Start-CMApplicationDeploymentSimulation -CollectionName "Workstation OU" -Name "Acrobat Reader XI"