

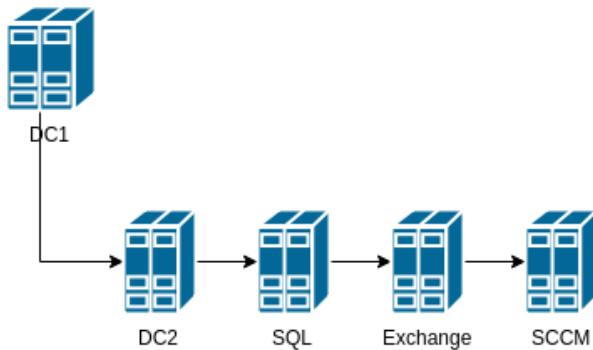
Windows Server: SCCM Server

Jens Du Four

2018 - 2019

1 Introductie

U bent IT-Consultant en krijgt de vraag om een voorstel te maken en te demonstreren van een Windowsomgeving. Deze omgeving moet bestaan uit het volgende . De cliënt wenst een redundante oplossing voor zijn servers. Dit vooral op de domeincontrollers. De cliënt wenst ook dat er een mailomgeving geïnstalleerd wordt en een omgeving die toelaat om op een efficiënte manier Windows toestellen te installeren en te deployen.



2 Server Requirements

1. DC1
 - (a) RAM: 2048 MB
 - (b) HDD: 50 GB
 - (c) Netwerkadapters: NAT en Internal Network (jenduf.gent)
 - i. NAT
 - i. IP: 192.168.1.1
 - ii. SN: 255.255.255.0
 - (d) OS Version: Windows Server 2016

2. DC2

- (a) RAM: 2048 MB
- (b) HDD: 50 GB
- (c) Netwerkadapters: Internal Network (jenduf.gent)
 - i. IP: 192.168.1.2
 - ii. SN: 255.255.255.0
 - iii. DG: 192.168.1.1
- (d) OS Version: Windows Server 2016

3. SQL Server

- (a) RAM: 2048 MB
- (b) HDD: 50 GB
- (c) Netwerkadapters: Internal Network (jenduf.gent)
 - i. IP: 192.168.1.3
 - ii. SN: 255.255.255.0
 - iii. DG: 192.168.1.1
- (d) OS Version: Windows Server 2016
- (e) SQL Version: SQL Server 2013-2016

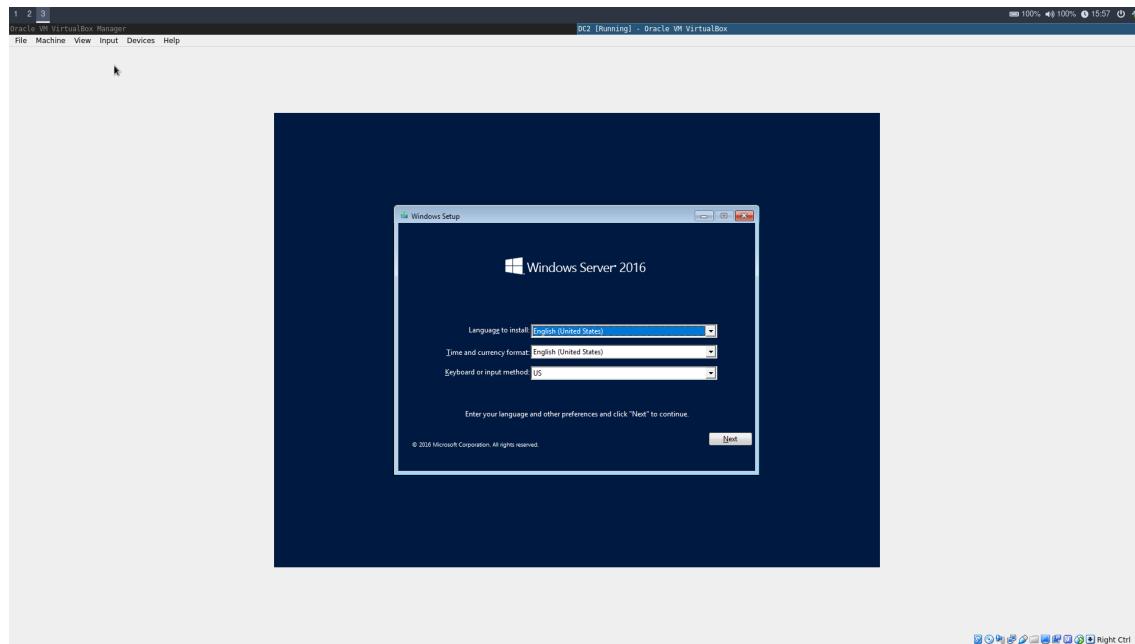
4. Exchange Server

- (a) RAM: 8096 MB
- (b) HDD: 100 GB
- (c) Netwerkadapters: Internal Network (jenduf.gent)
 - i. IP: 192.168.1.4
 - ii. SN: 255.255.255.0
 - iii. DG: 192.168.1.1
- (d) OS Version: Windows Server 2016
- (e) Exchange Version: Exchange Server 2013-2016

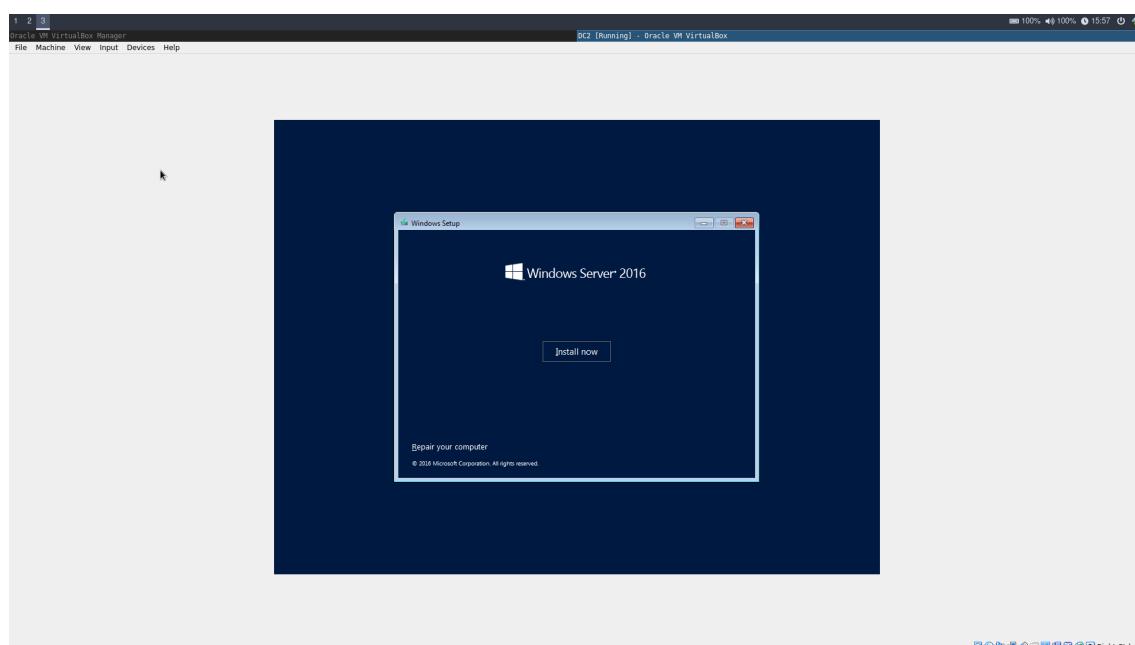
5. SCCM Server

- (a) RAM: 8089 MB
- (b) HDD: 100 GB
- (c) Netwerkadapters: Internal Network (jenduf.gent)
 - i. IP: 192.168.1.5
 - ii. SN: 255.255.255.0
 - iii. DG: 192.168.1.1
- (d) OS Version: Windows Server 2016
- (e) OS Version: Windows Deployment Server 2012

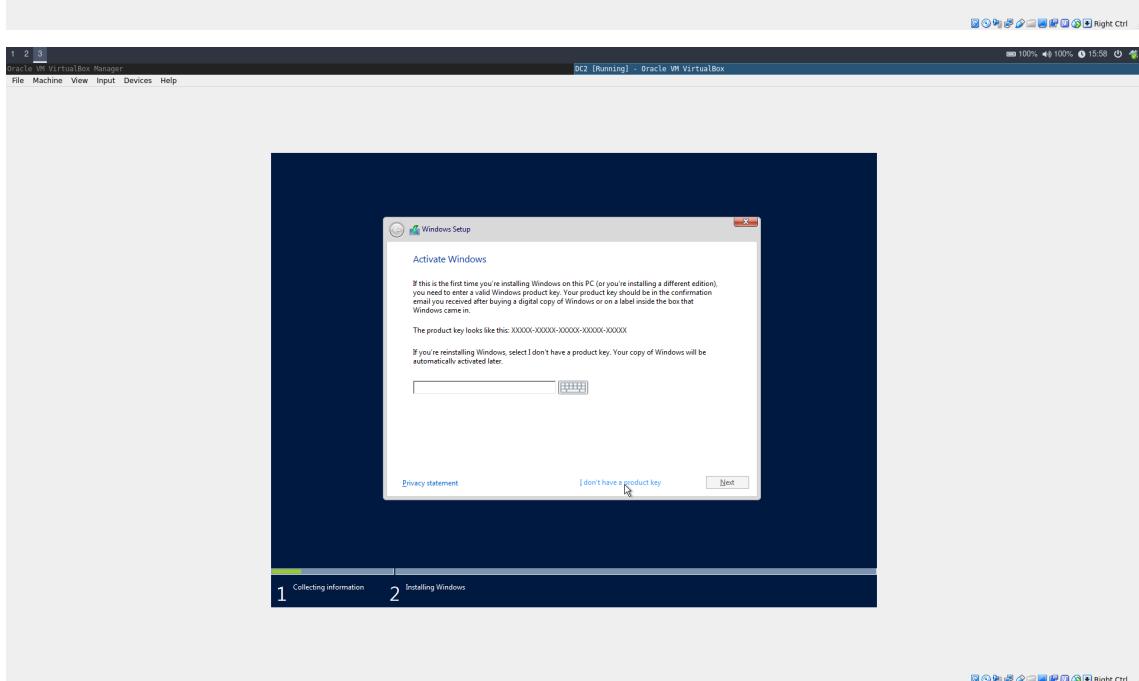
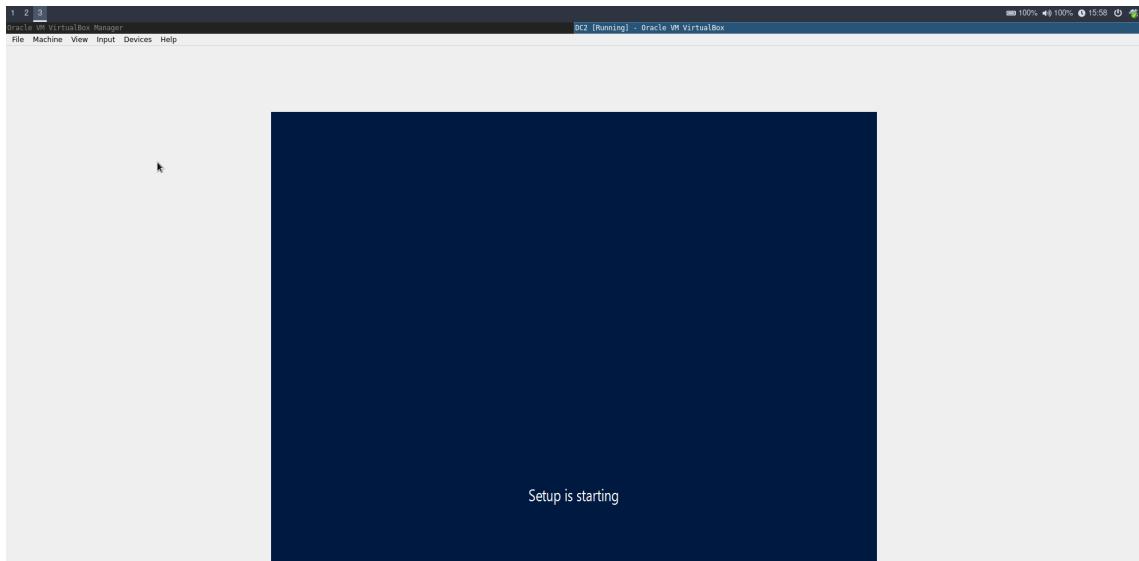
3 Windows Server Installatie



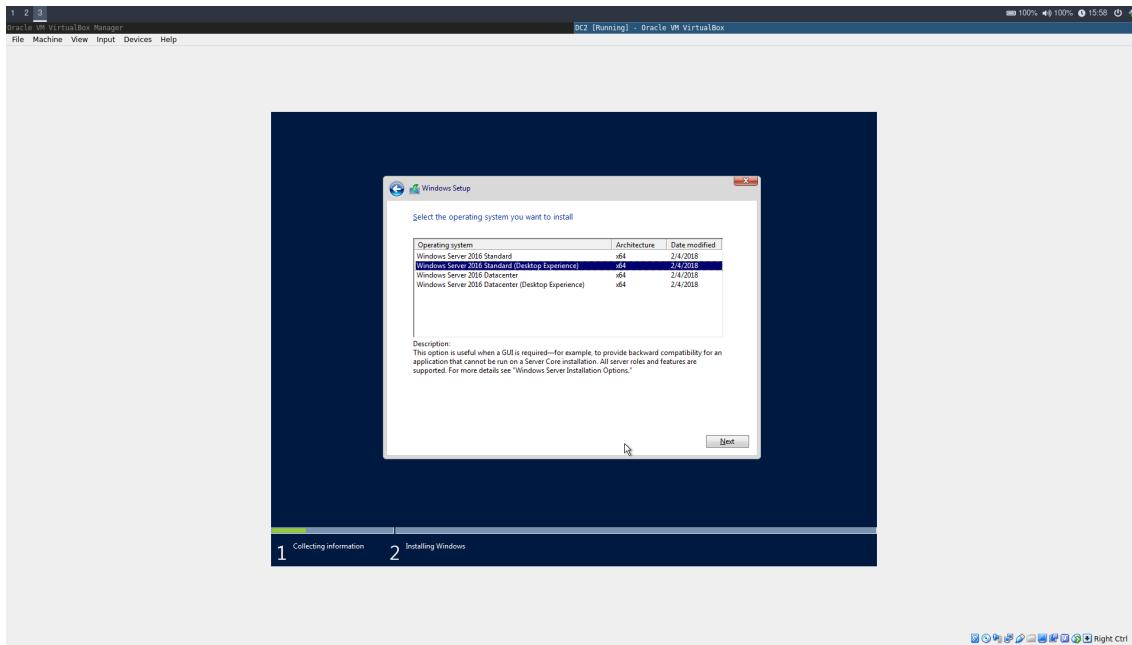
Selecteer de gewenste taalinstellingen.



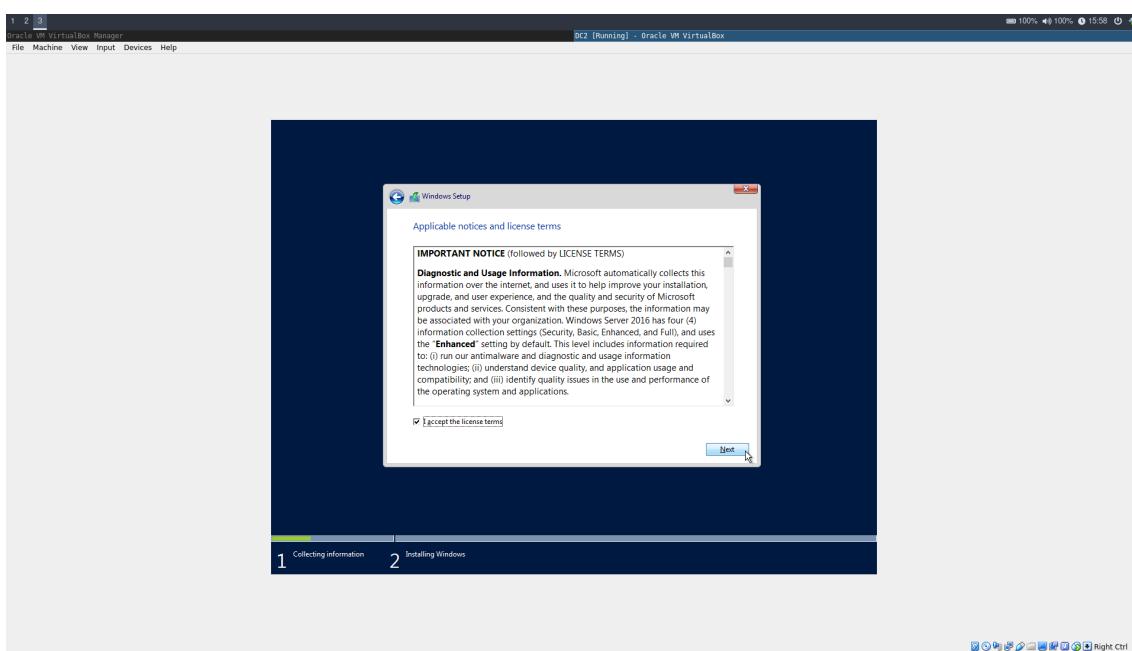
Start de installatie.



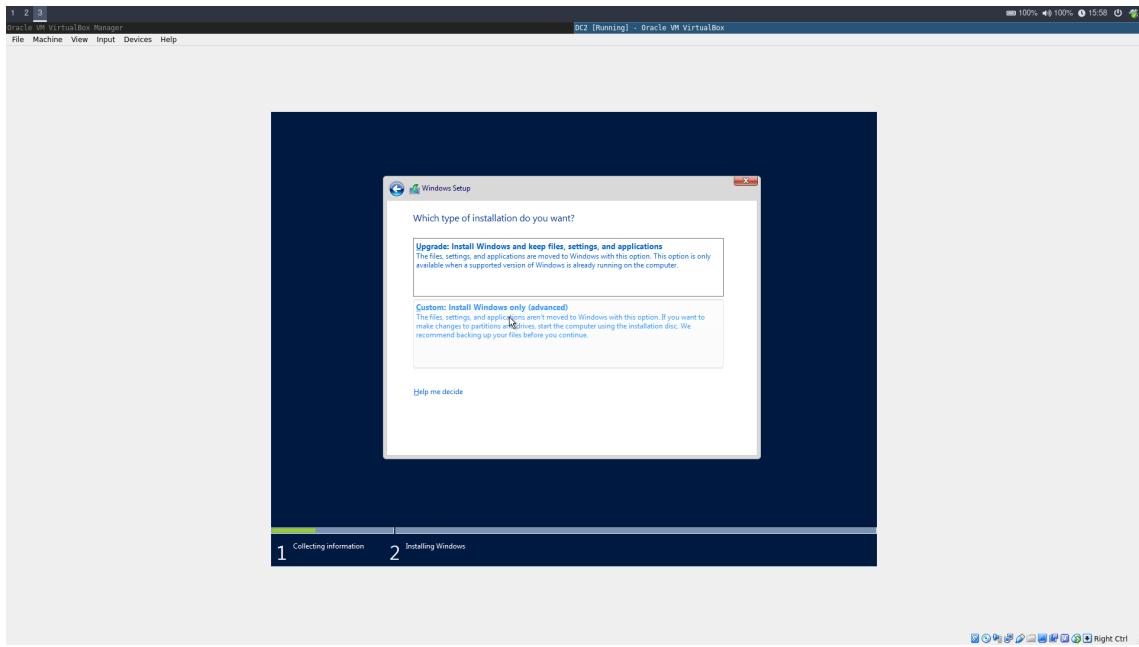
Selecteer "I don't have a product key".



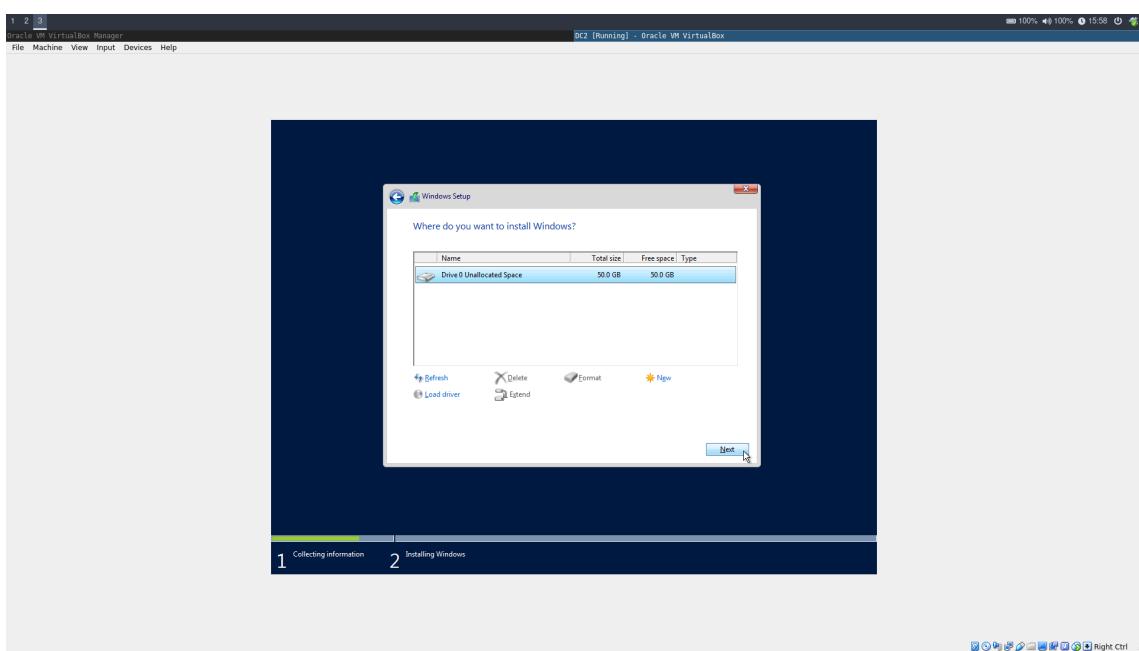
Selecteer "Windows Server 2016 Standard (Desktop Experience)".



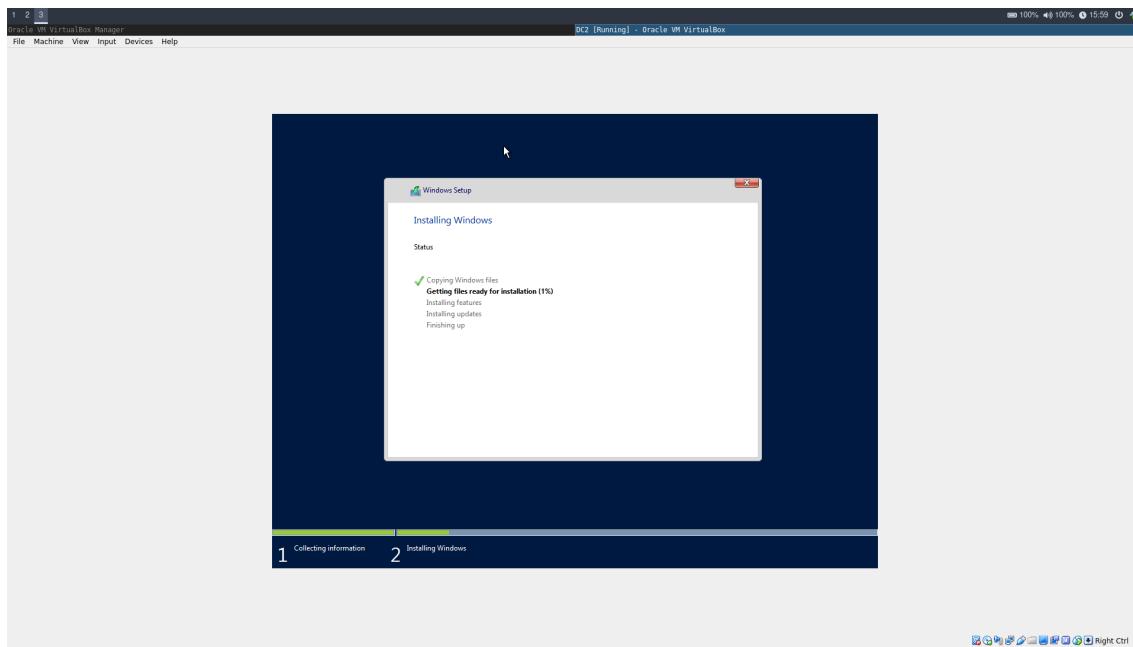
Ga akkoord met de gebruiksvoorwaarden.



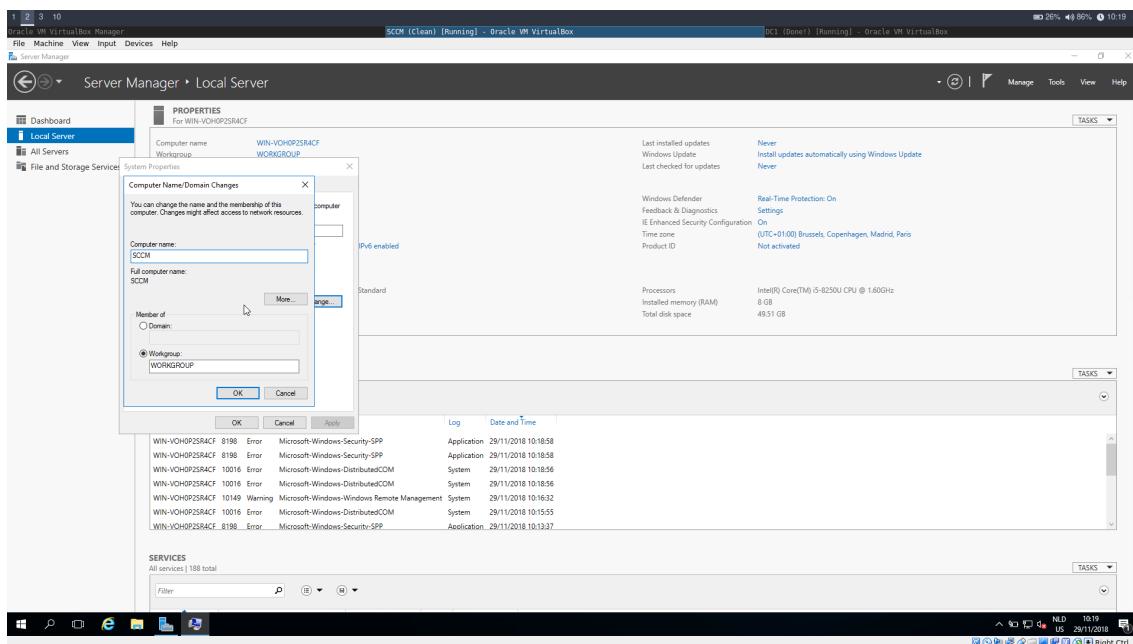
Selecteer "Costum: Install Windows only (Advanced)".



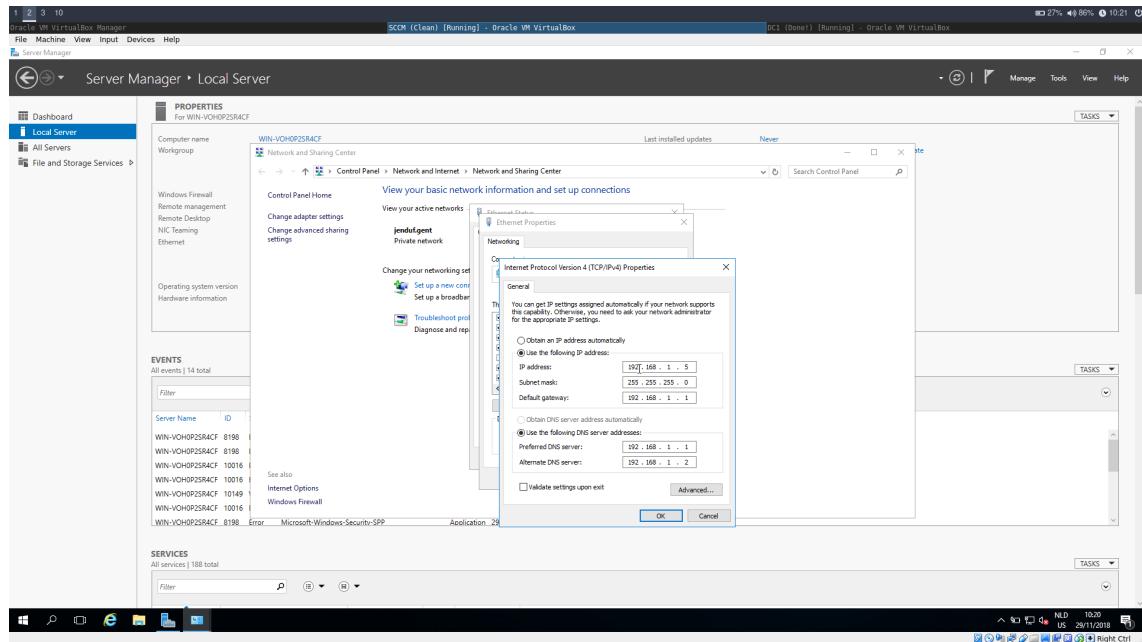
Ga verder.



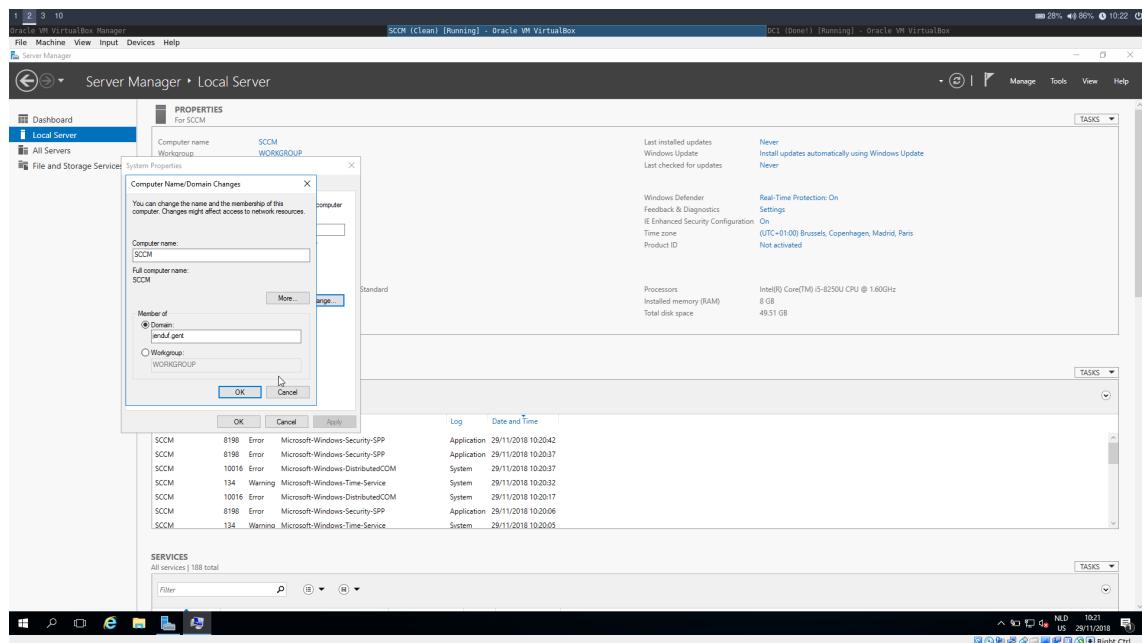
3.1 Server Hernoemen



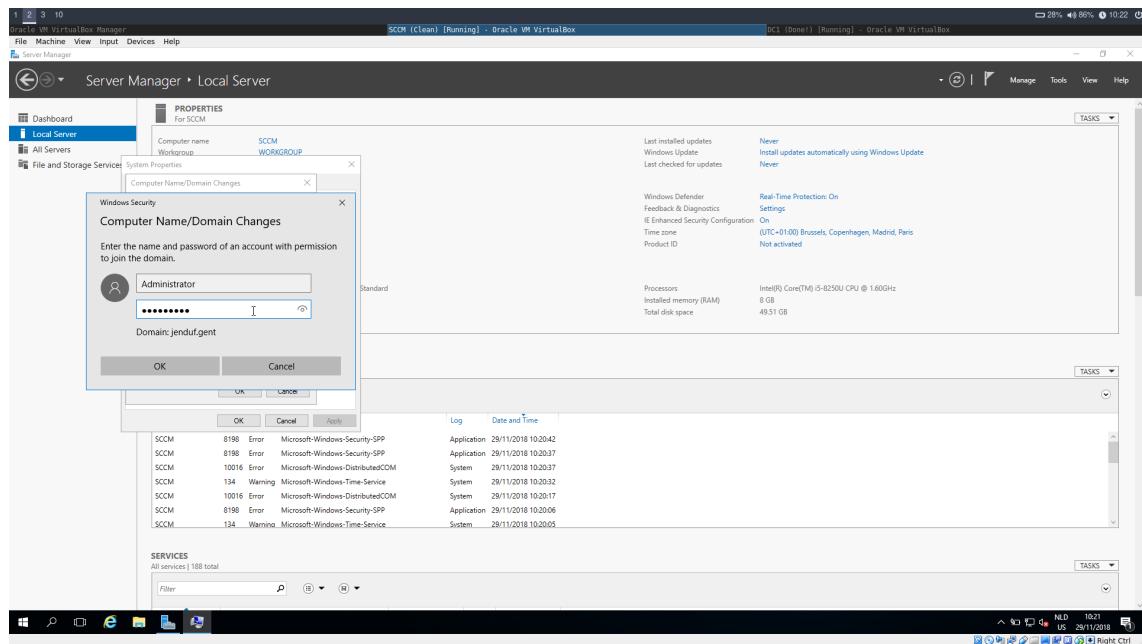
3.2 IP Instellingen



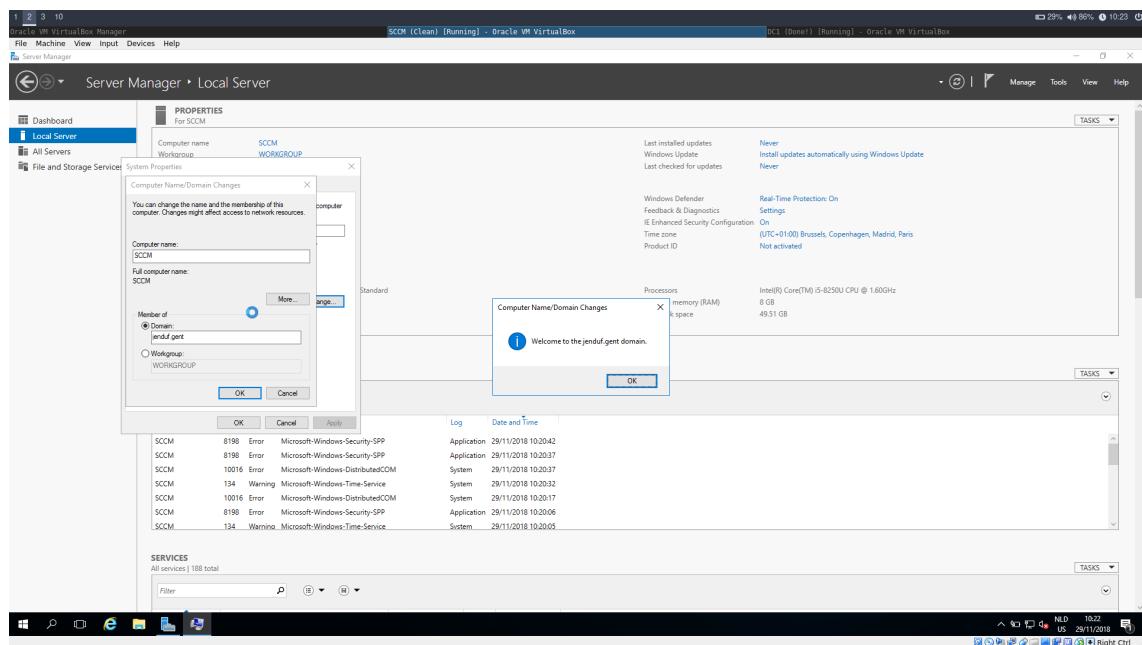
3.3 Toevoegen aan het domein



Geef als domein jenduf.gent in.



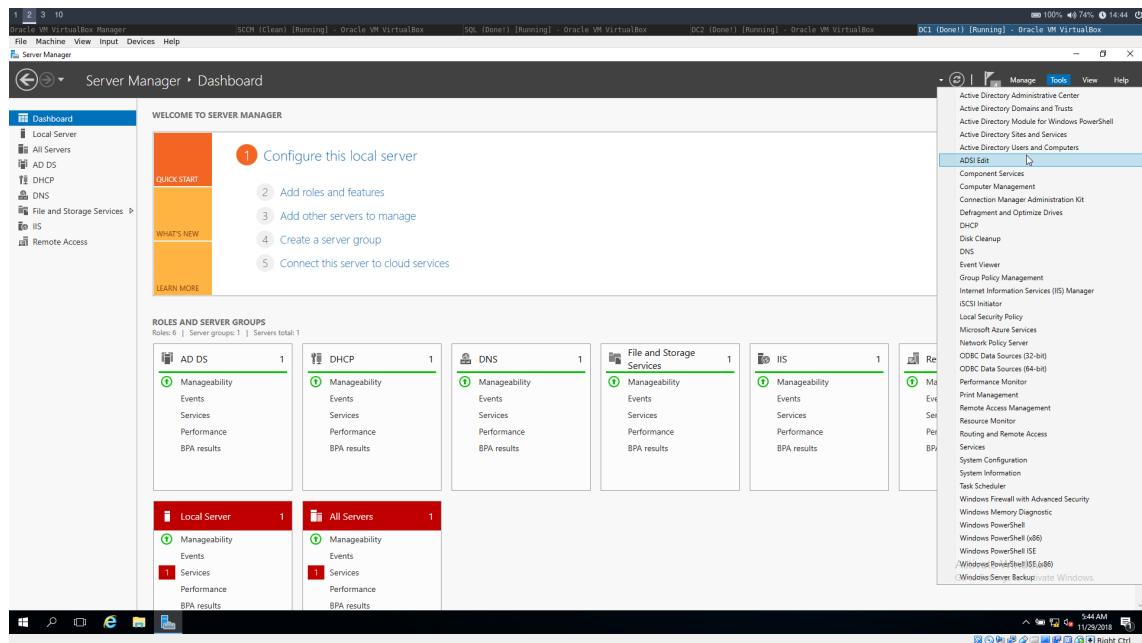
Geef gebruikersnaam "Administrator" in en paswoord "Admin2018".



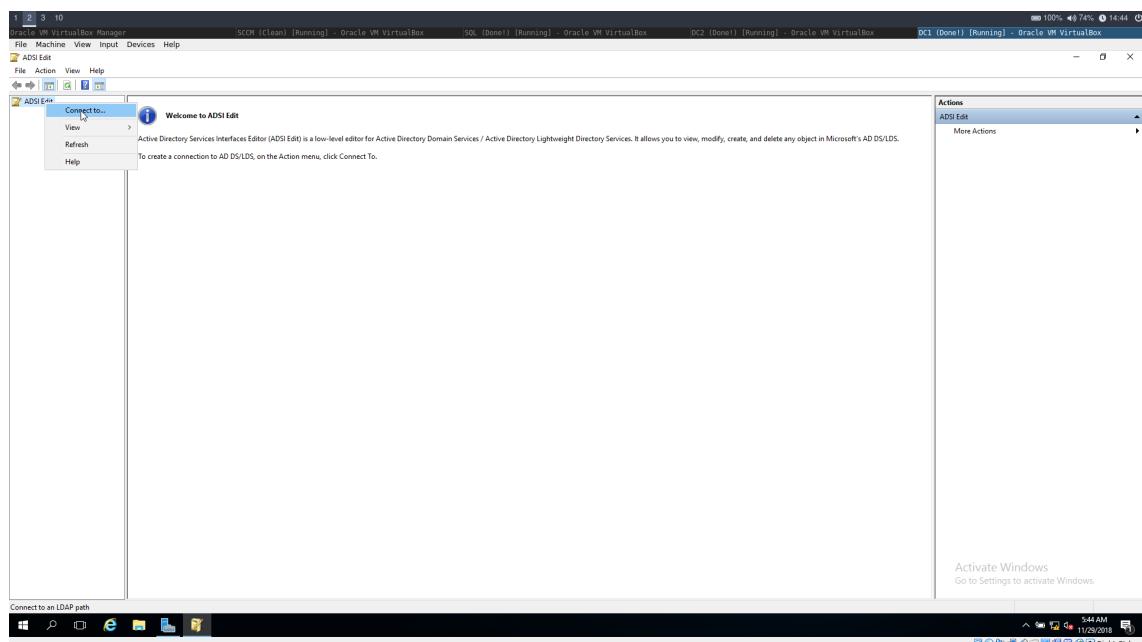
De connectie is geslaagd bij het weergeven van volgende boodschap.

4 Installatie SCCM

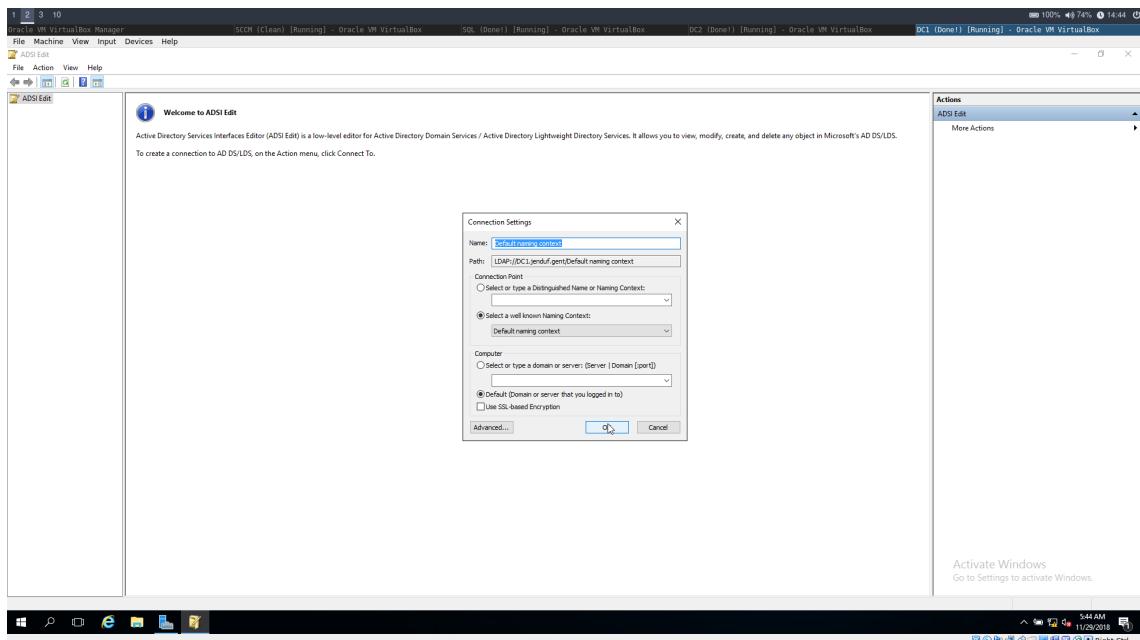
4.1 Prerequisites voor SCCM



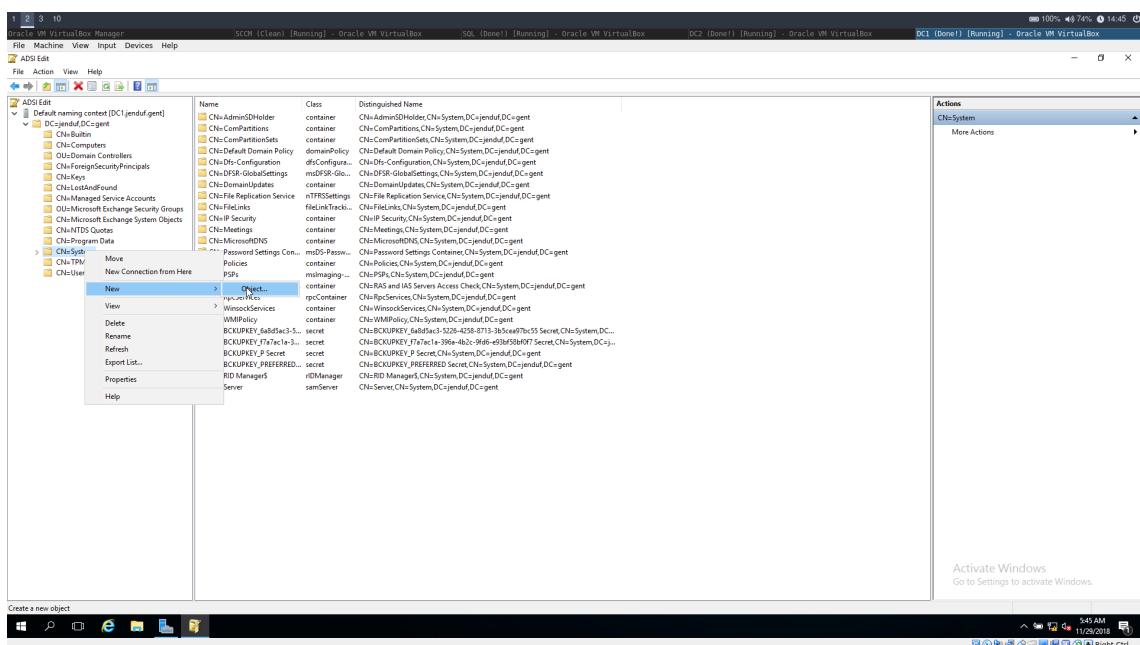
Open "ADSI Edit".



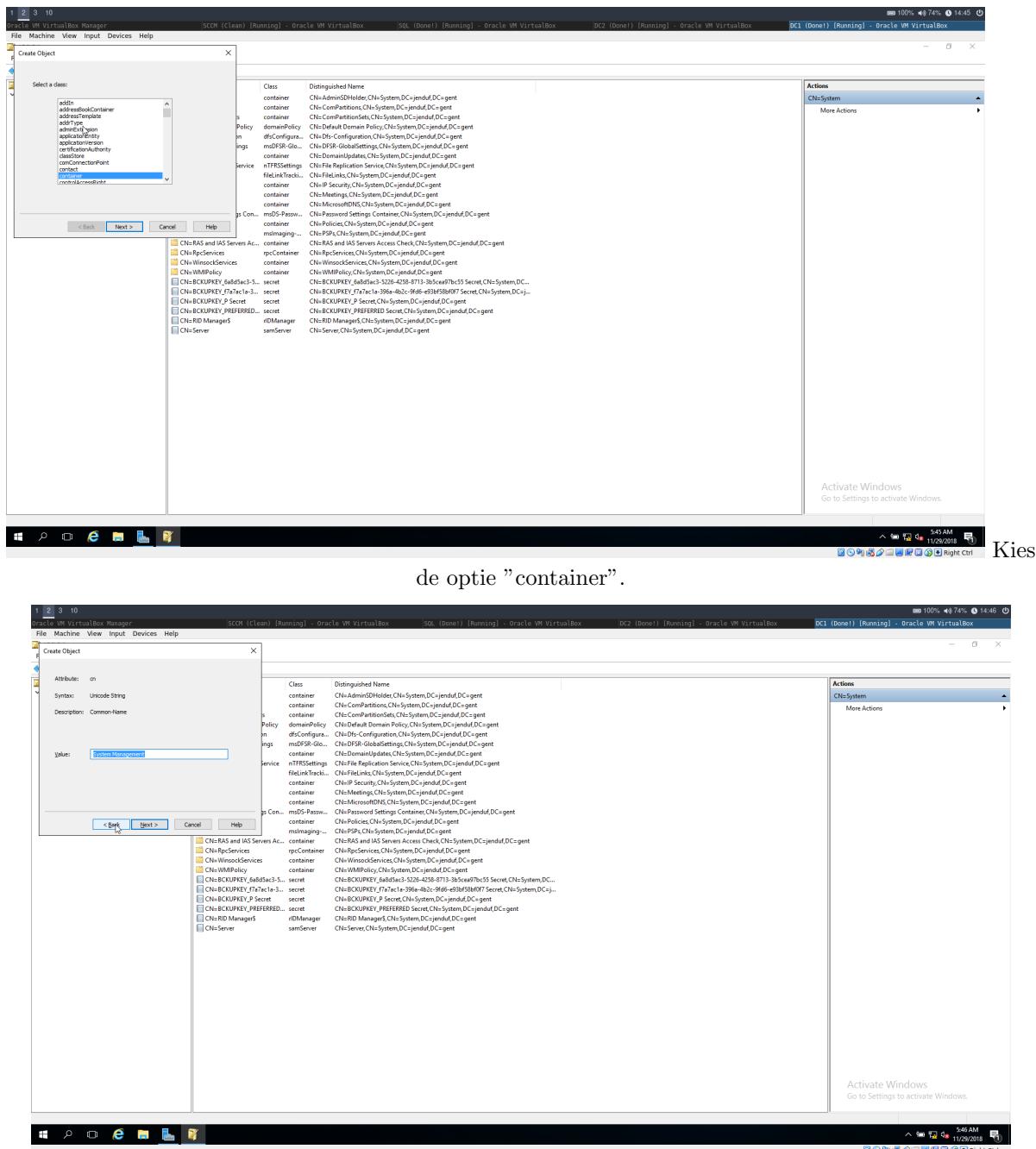
Selecteer de optie "Connect to..."



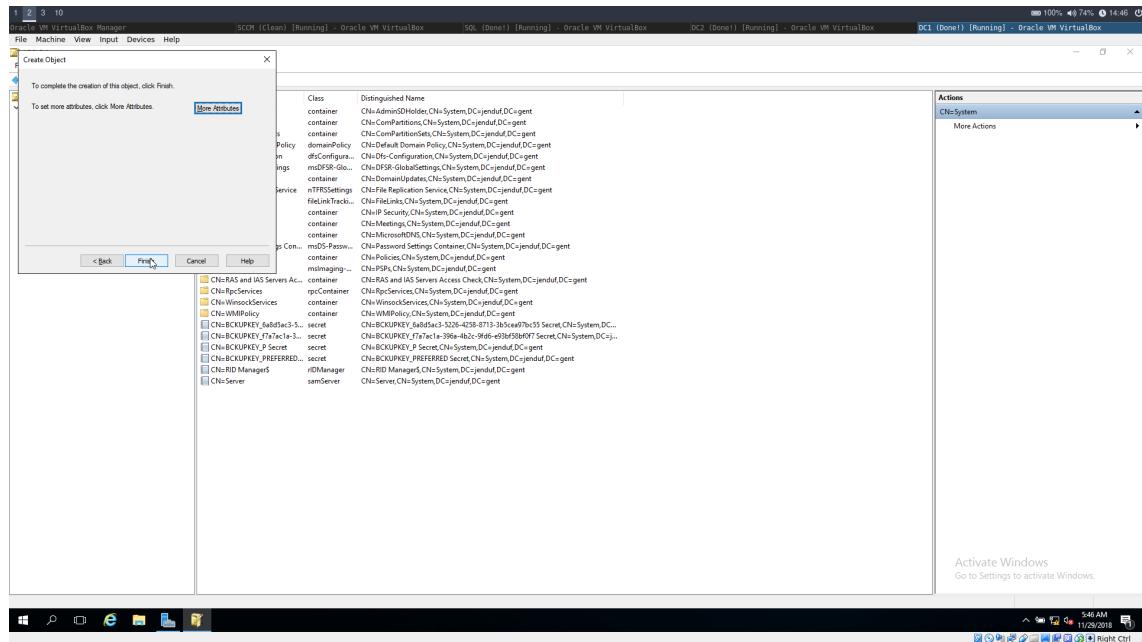
Klik op "Ok".



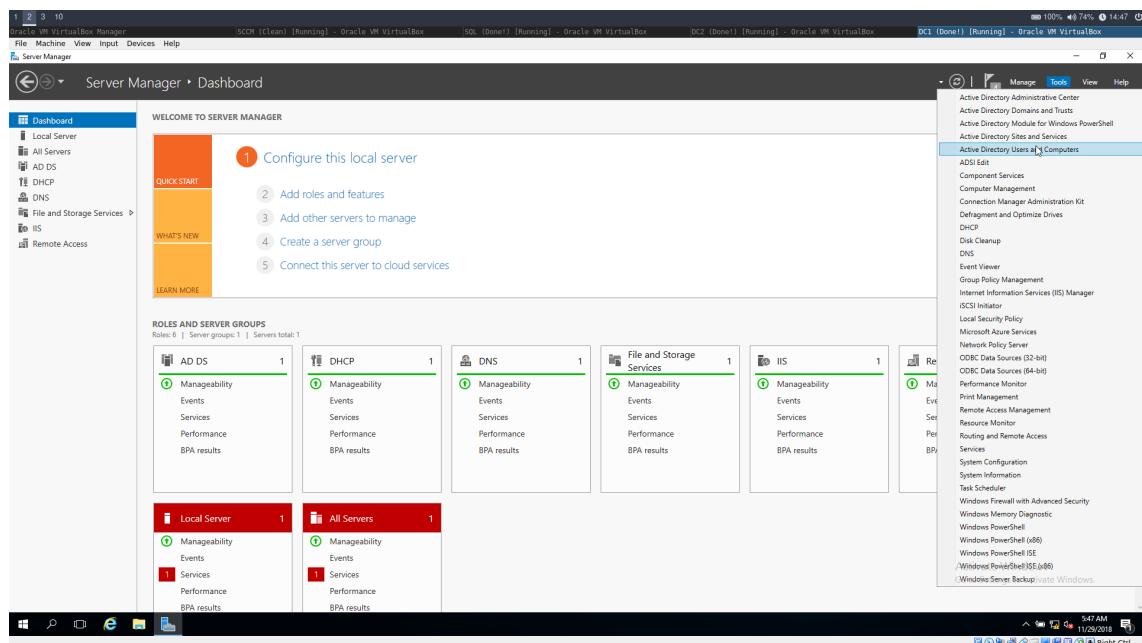
Maak een nieuw object in "CN=System".



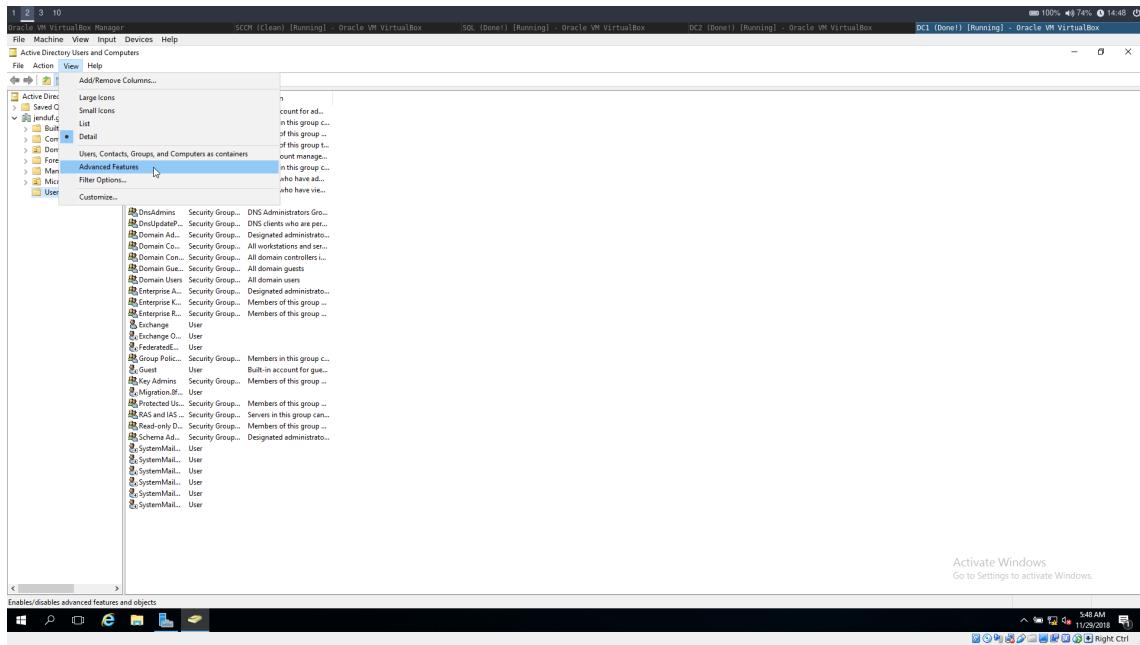
Geef de container de naam "System Management".



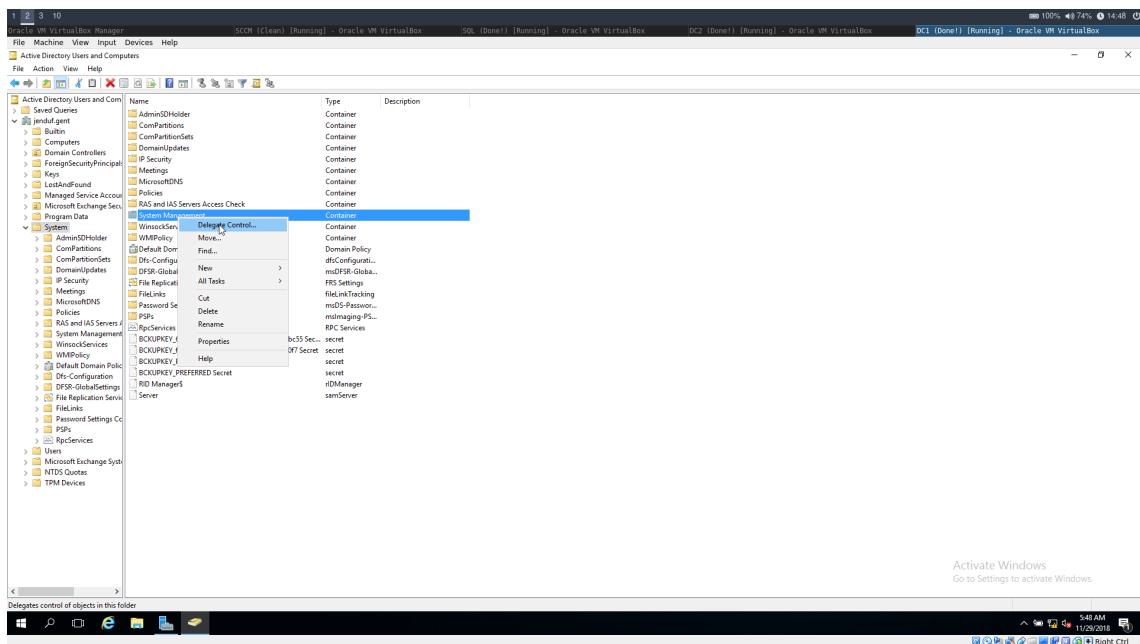
Klik op "Finish".



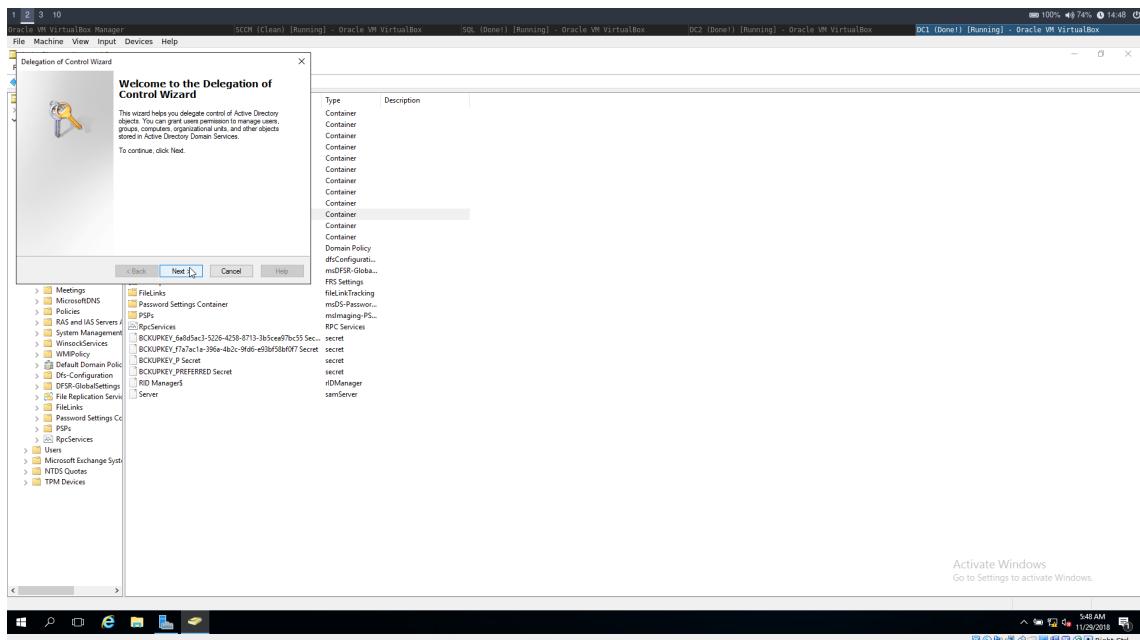
Open "Active Directory Users and Computers".



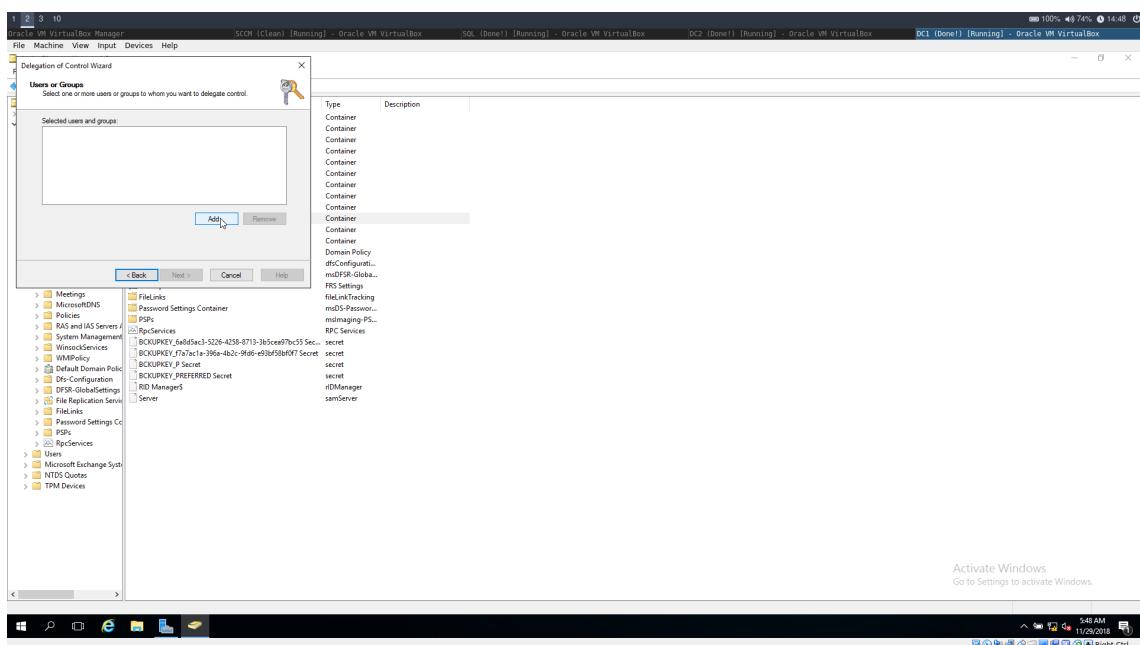
Toon de "Advanced Features".



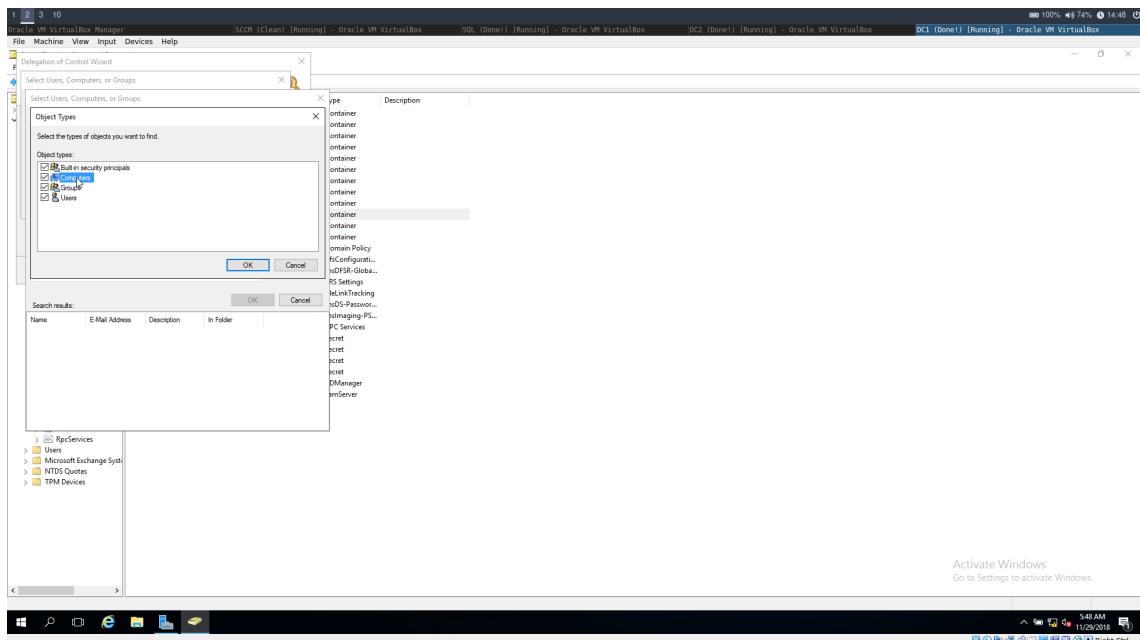
Klik met de rechtermuisknop op "System Management" en selecteer "Delegate Control".



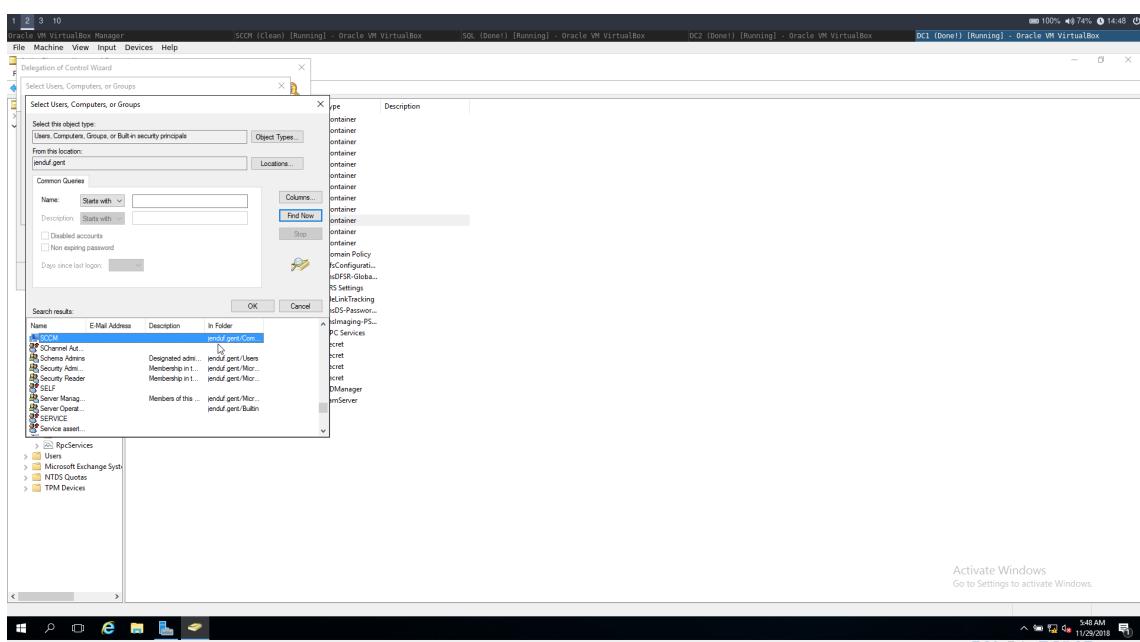
Klik op "Next".



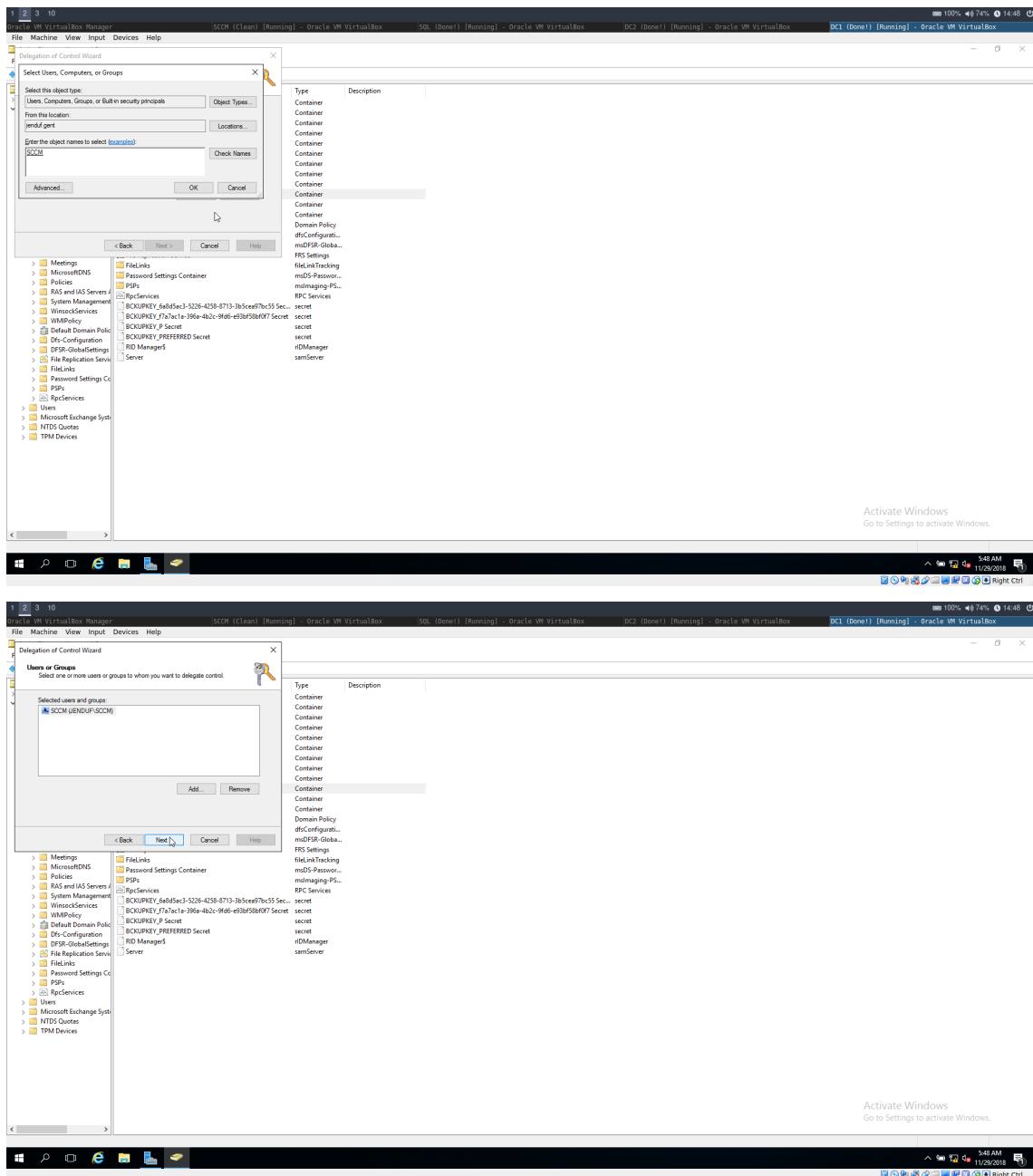
Klik op "Add".



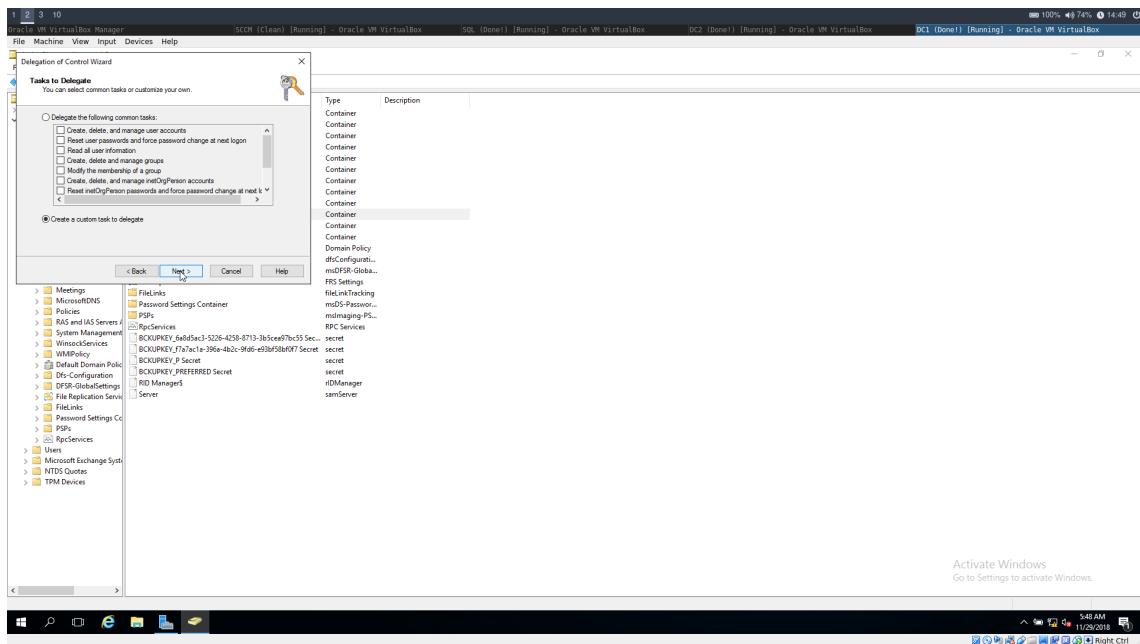
Vink "Computers" aan in de geselecteerde "Object Types".



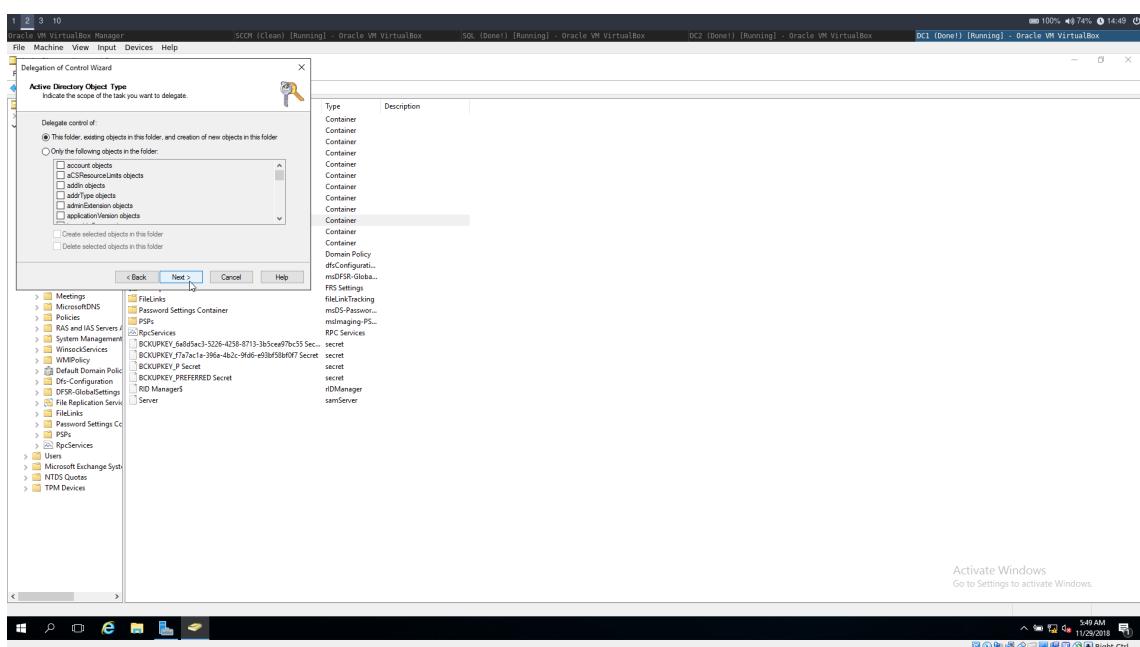
Selecteer de computer "SCCM".



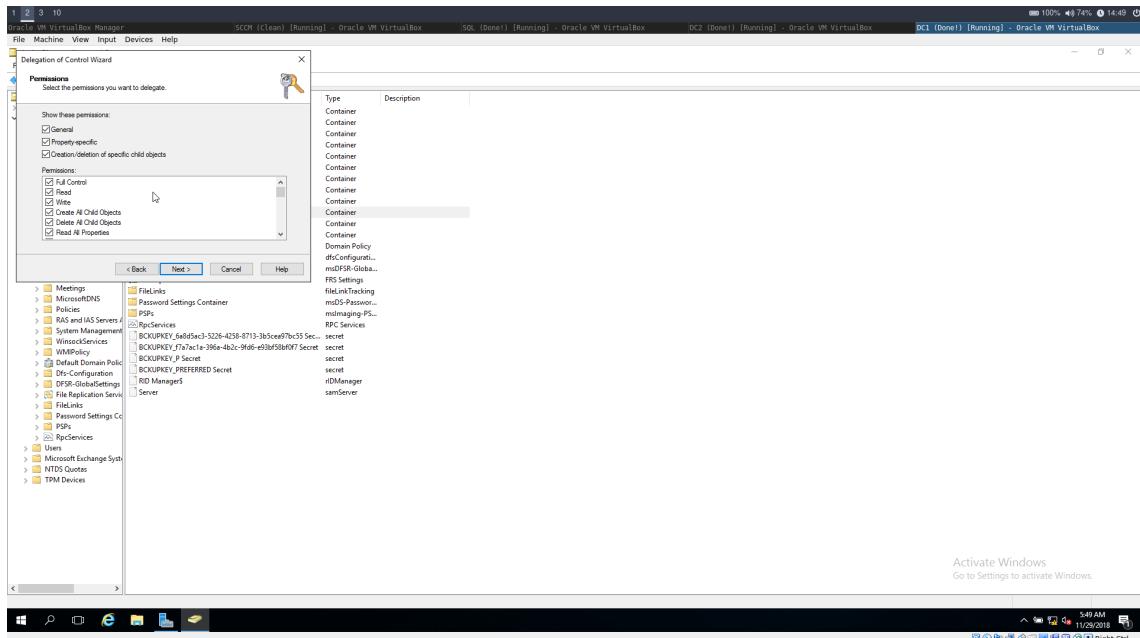
Ga verder met configuratiewizard.



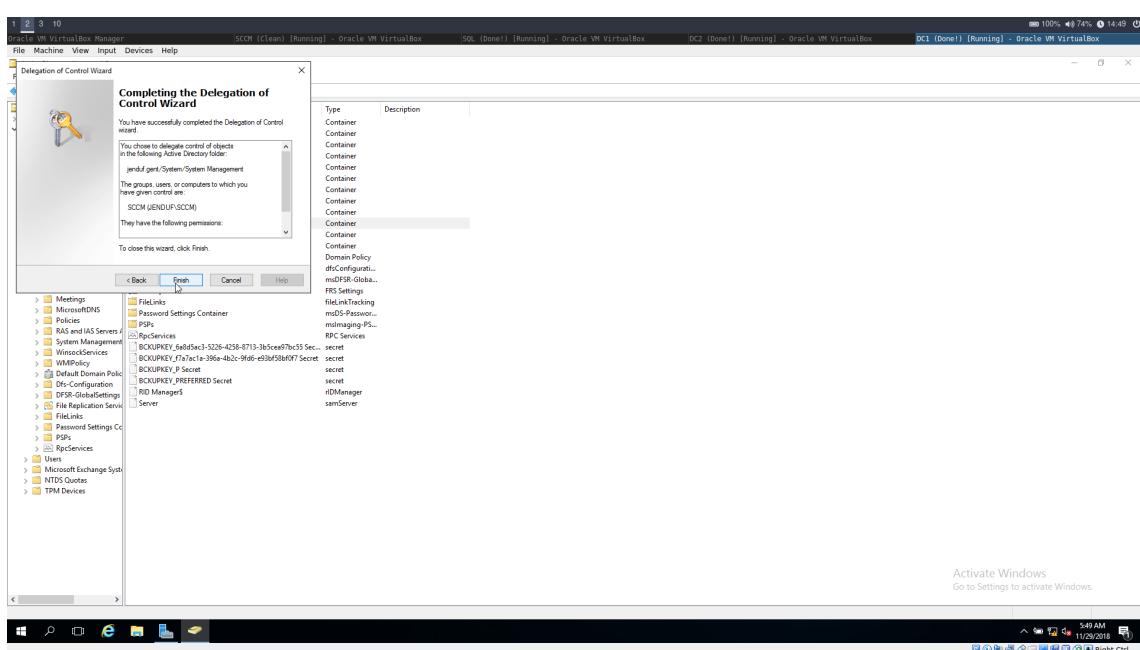
Selecteer "Create a costum task to delegate".



Klik op volgende.

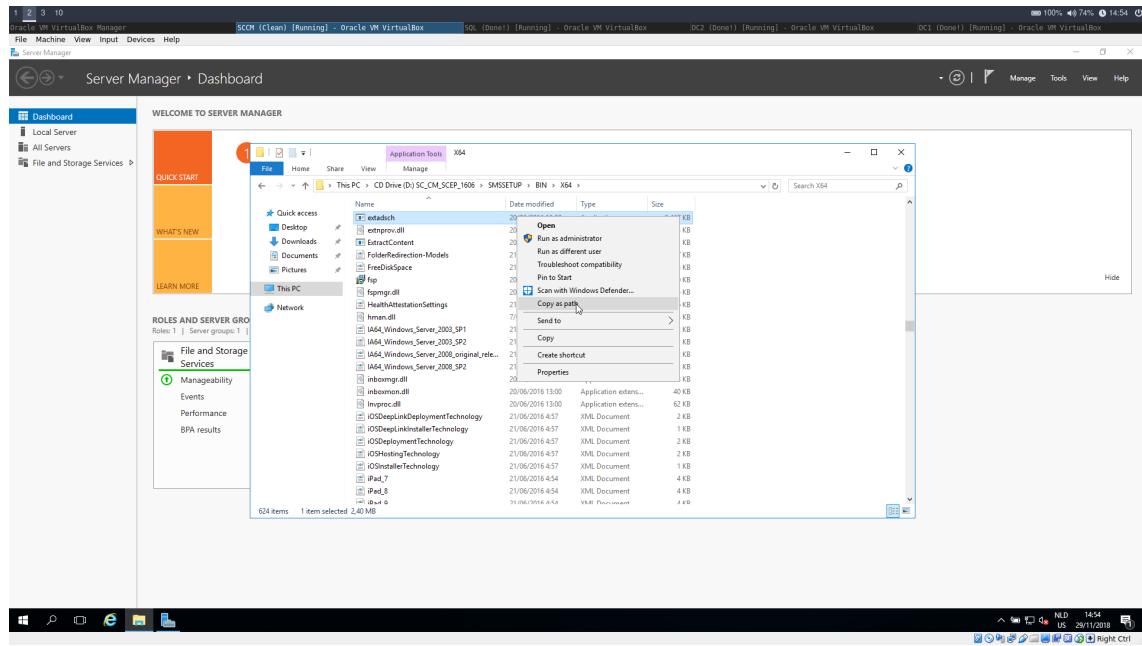


Vink alle bovenstaande opties aan en selecteer "Full Control".

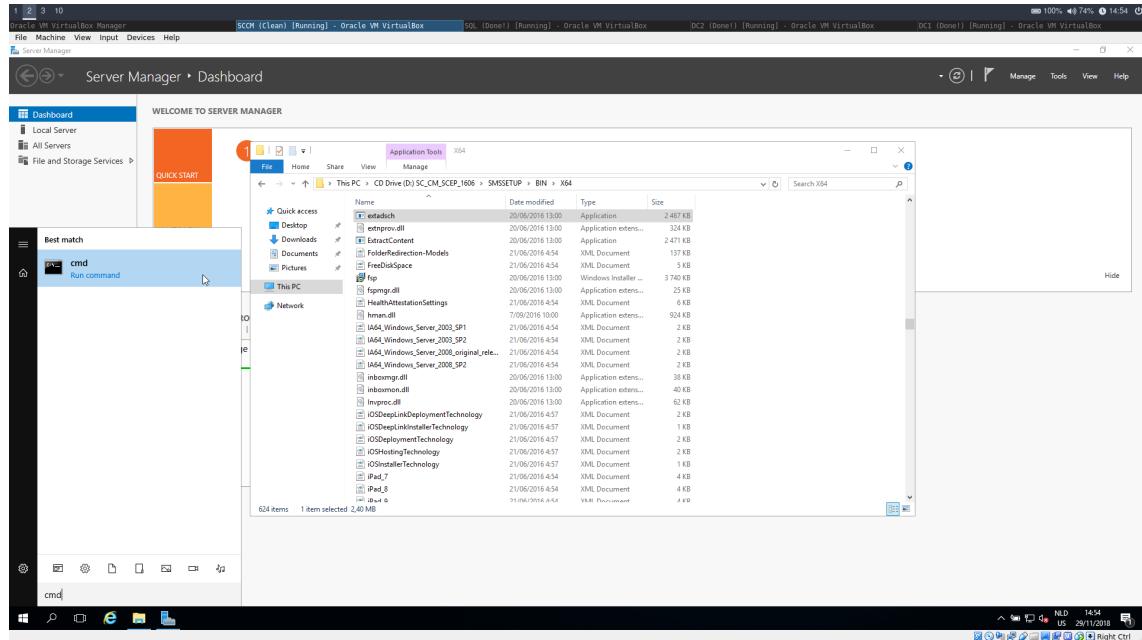


Voltooii de configuratiewizard.

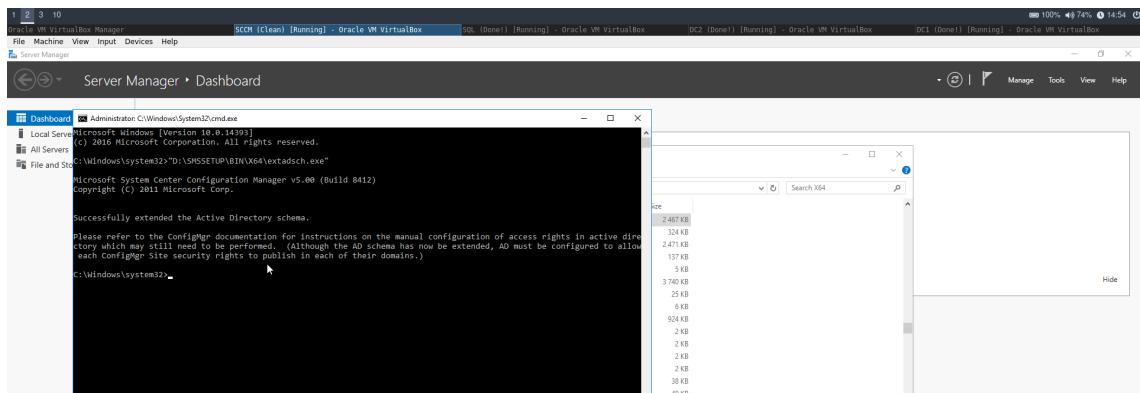
4.2 Extending Active Directory Schema



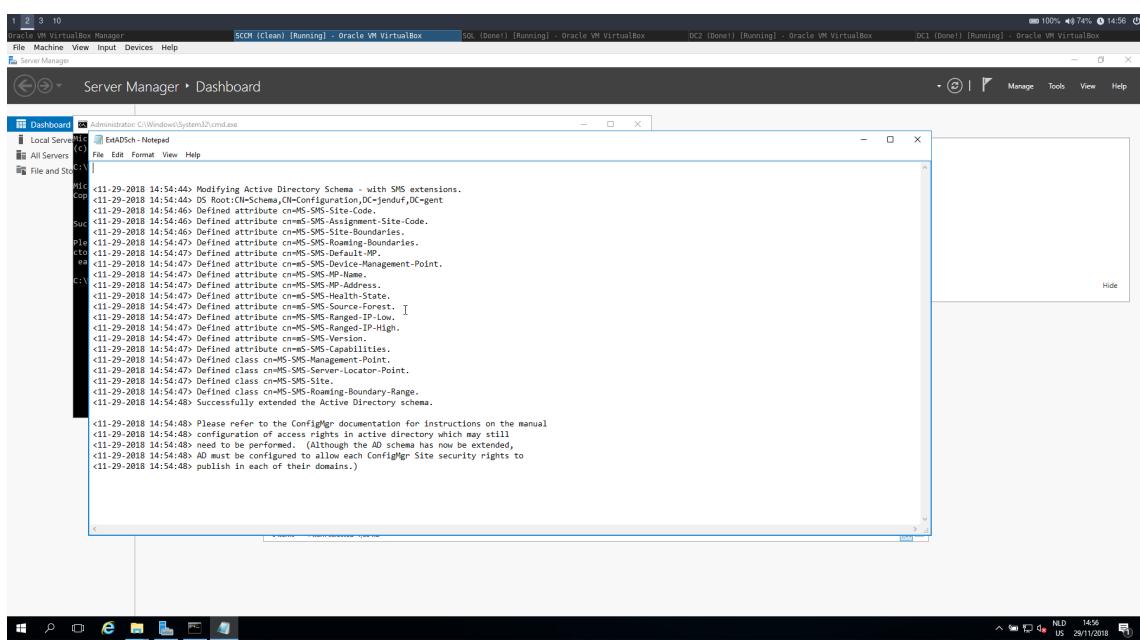
Doe shift + rechtermuisknop op "extadsch.exe" en selecteer "Copy as path".



Open een terminalvenster.

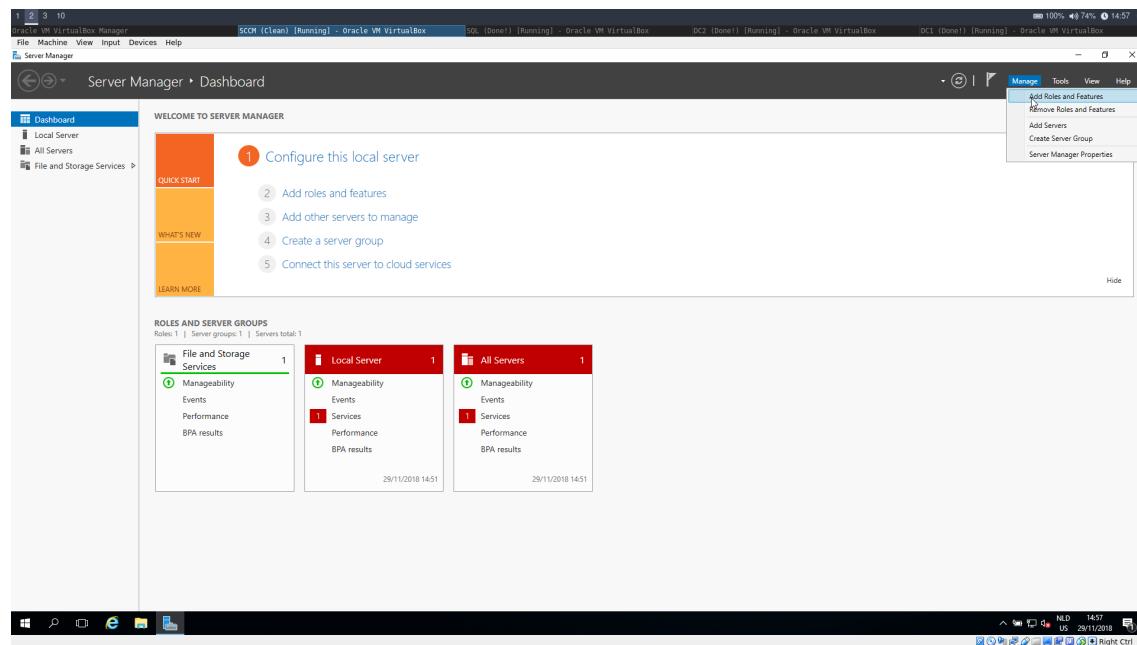


Plak het commando van het klembord.

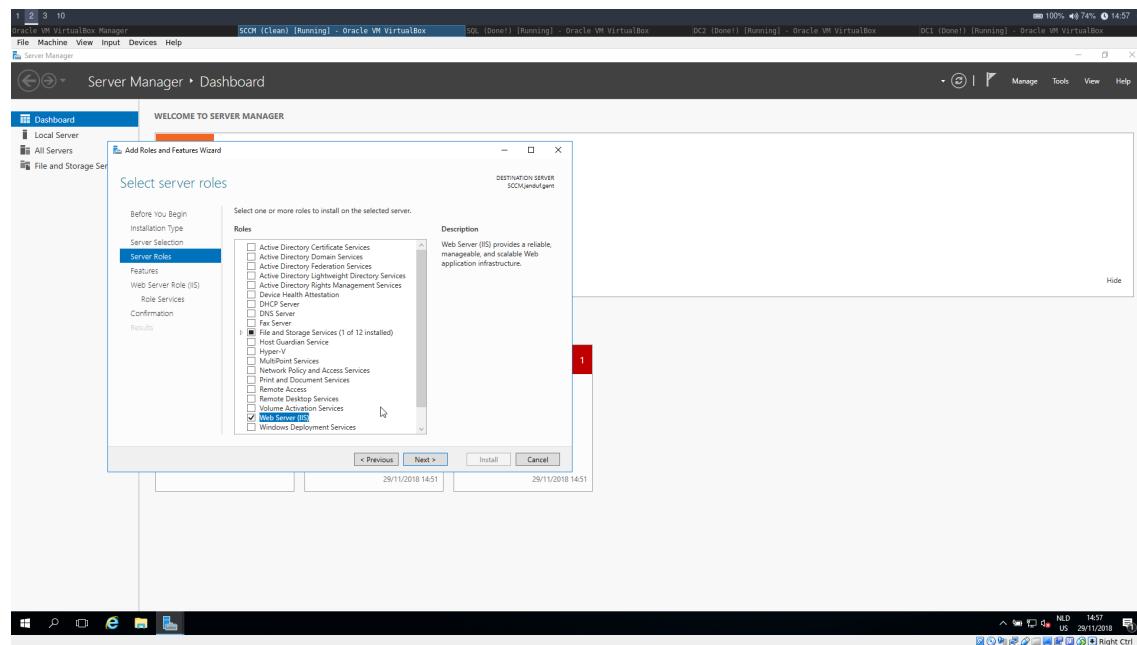


Men kan de uitvoer controleren in "C:\ExtADSch.log"

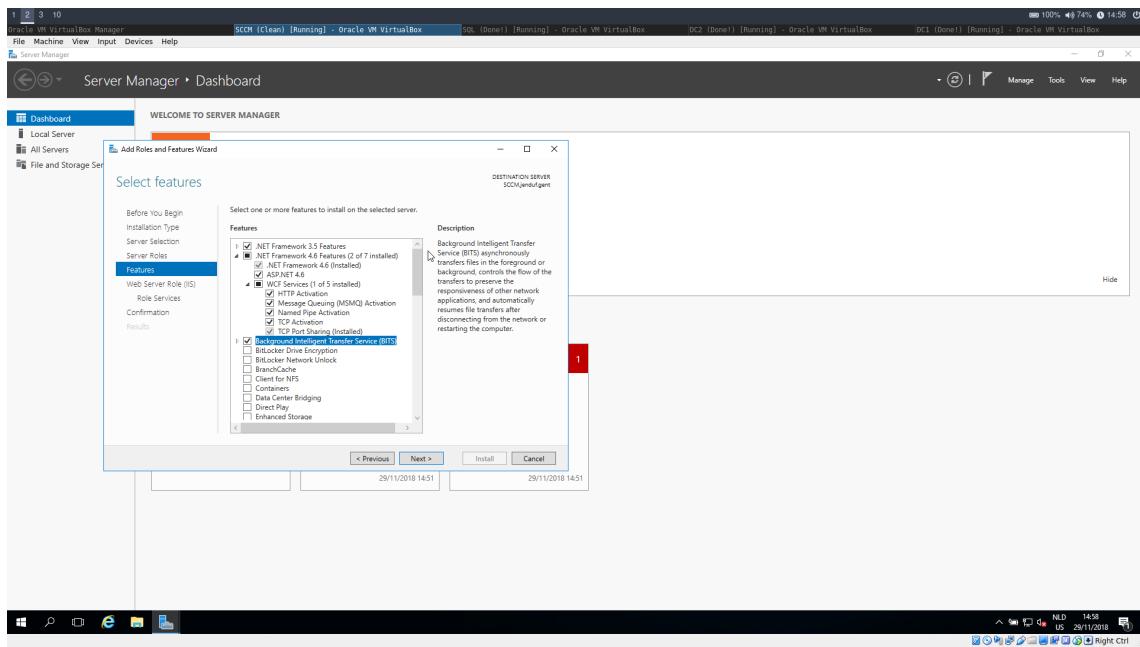
4.3 Installatie van prerequisites



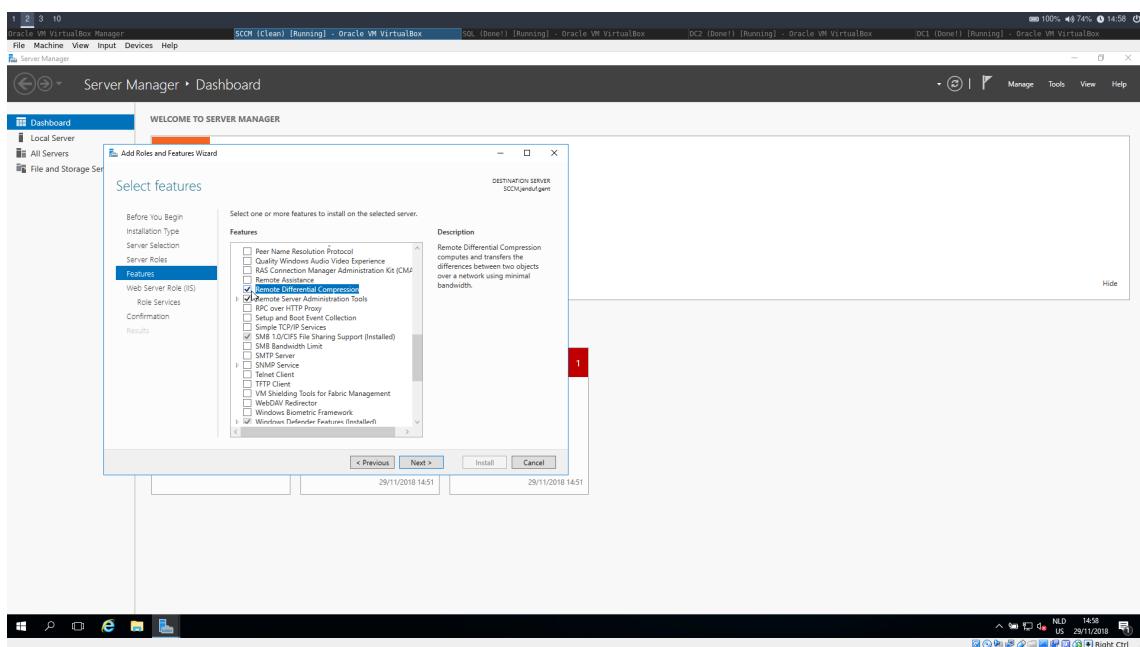
Klik op "Add Roles and Features".



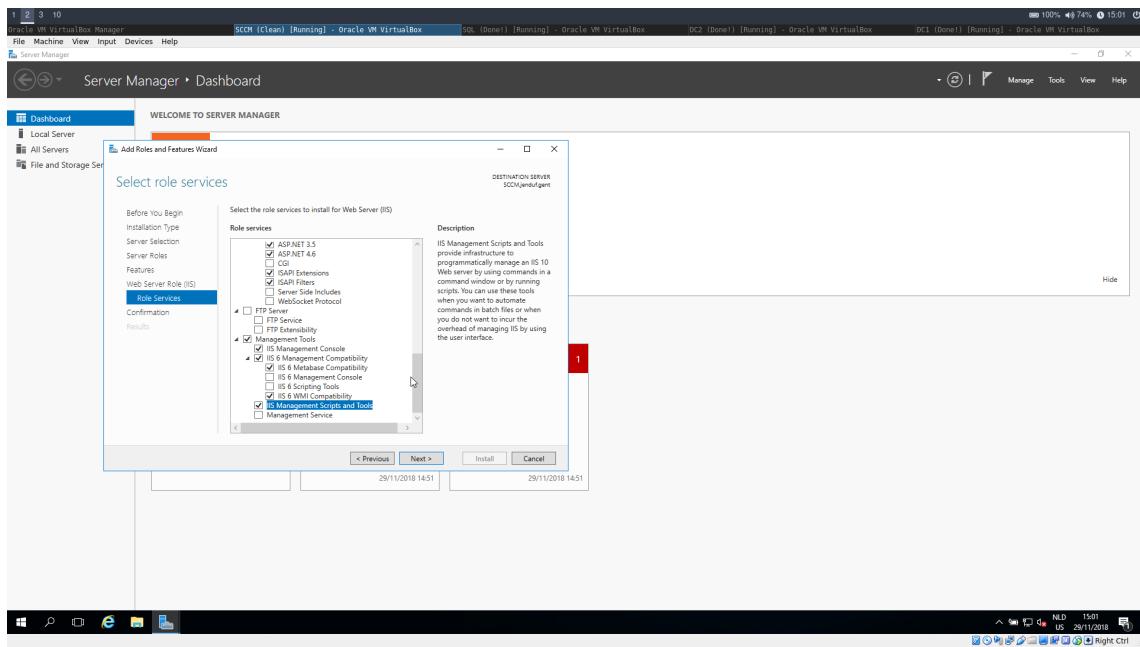
Selecteer de "Web Server (IIS)"



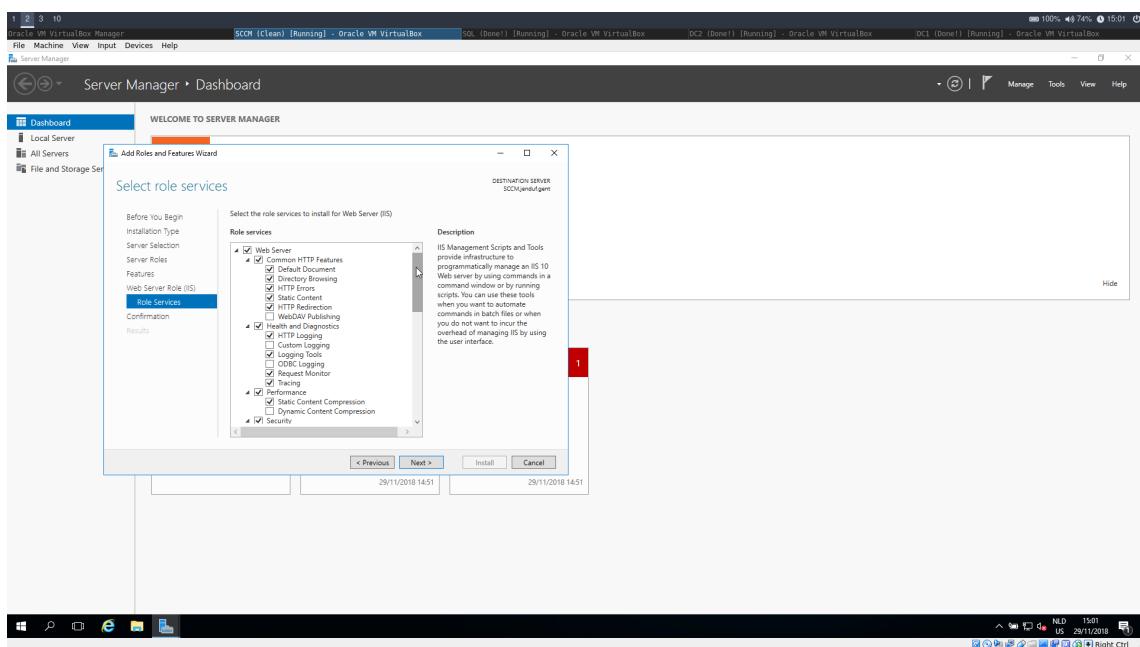
Selecteer de aangevinkte "Features".



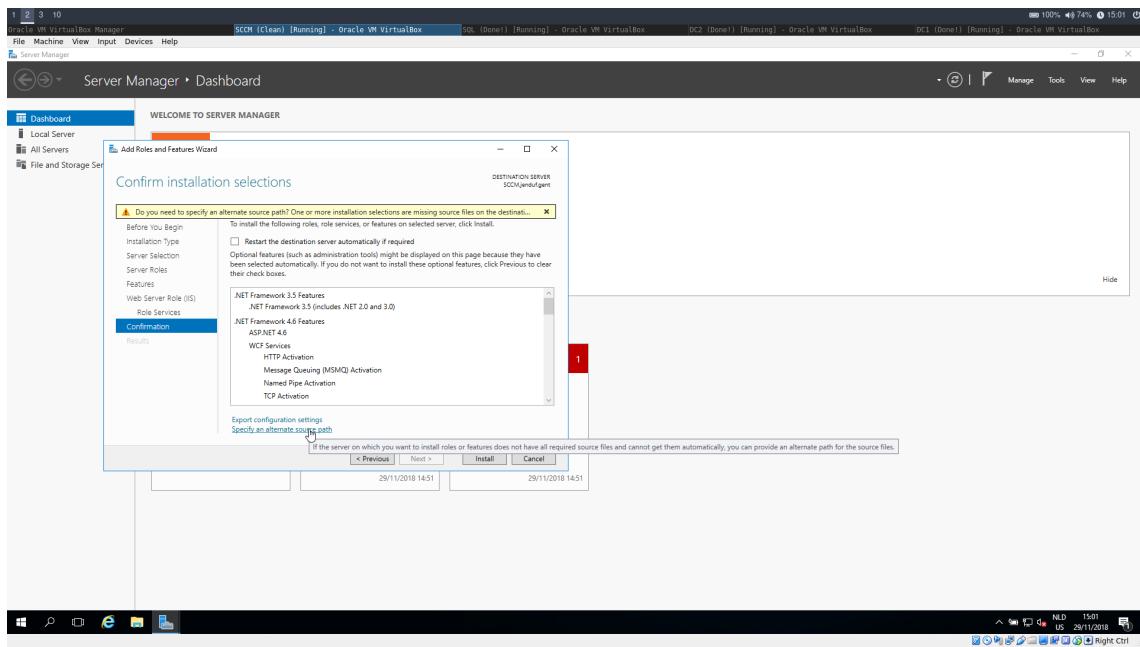
Selecteer de aangevinkte "Features".



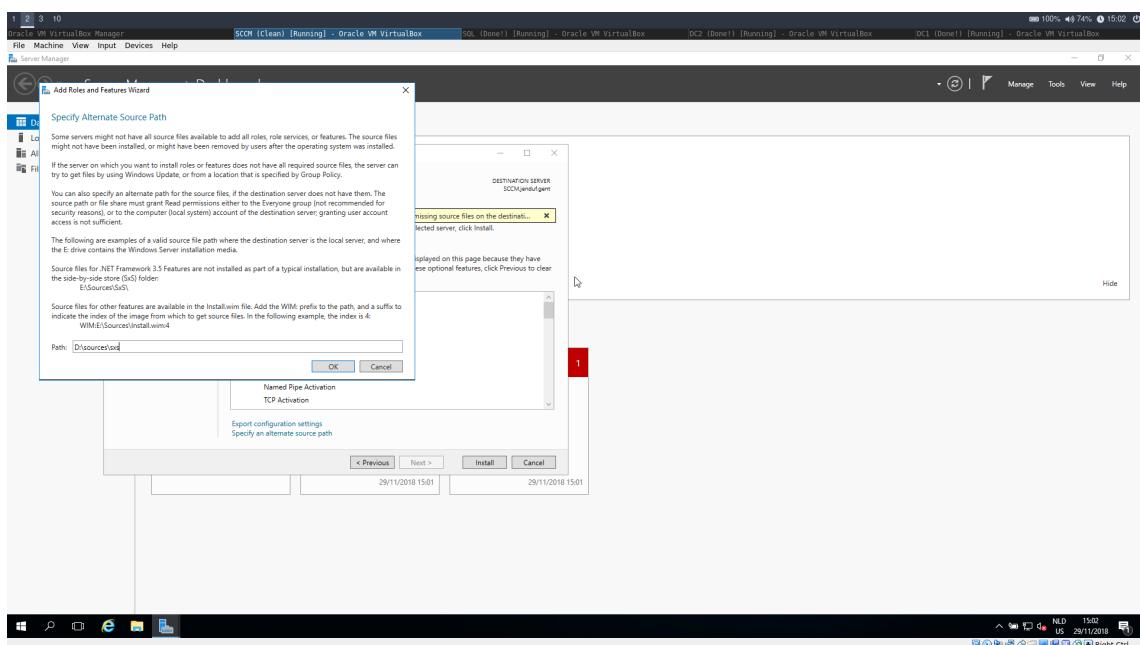
Selecteer de volgende "Role Services".



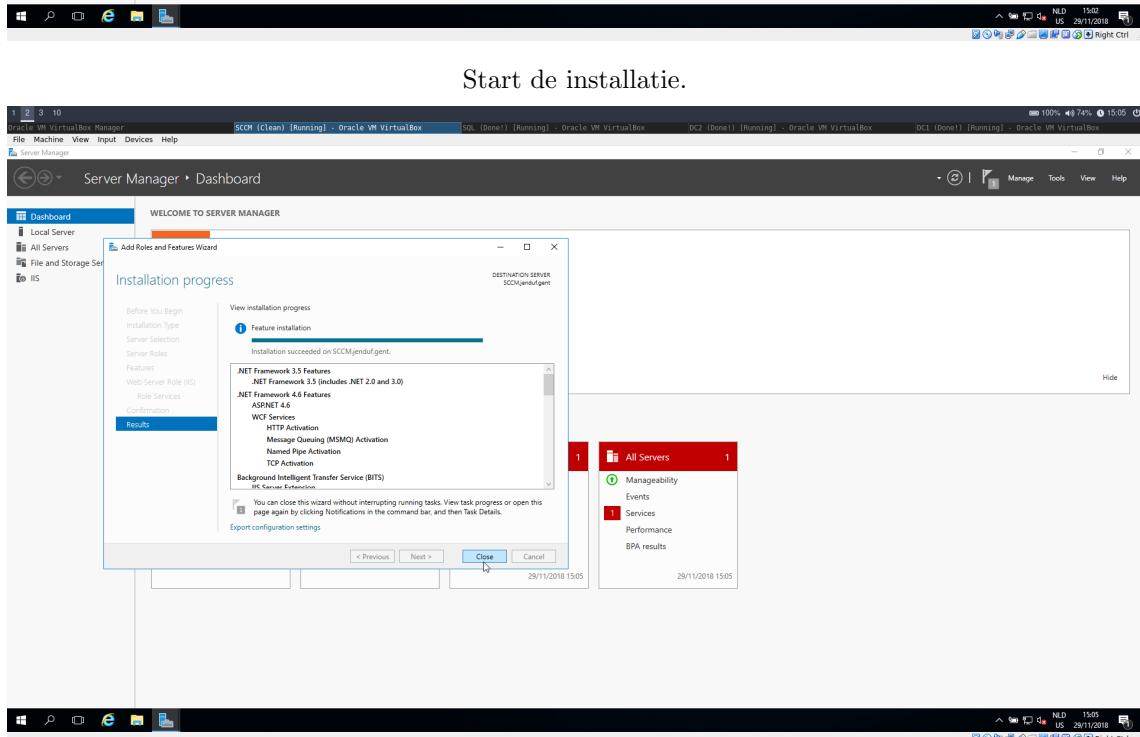
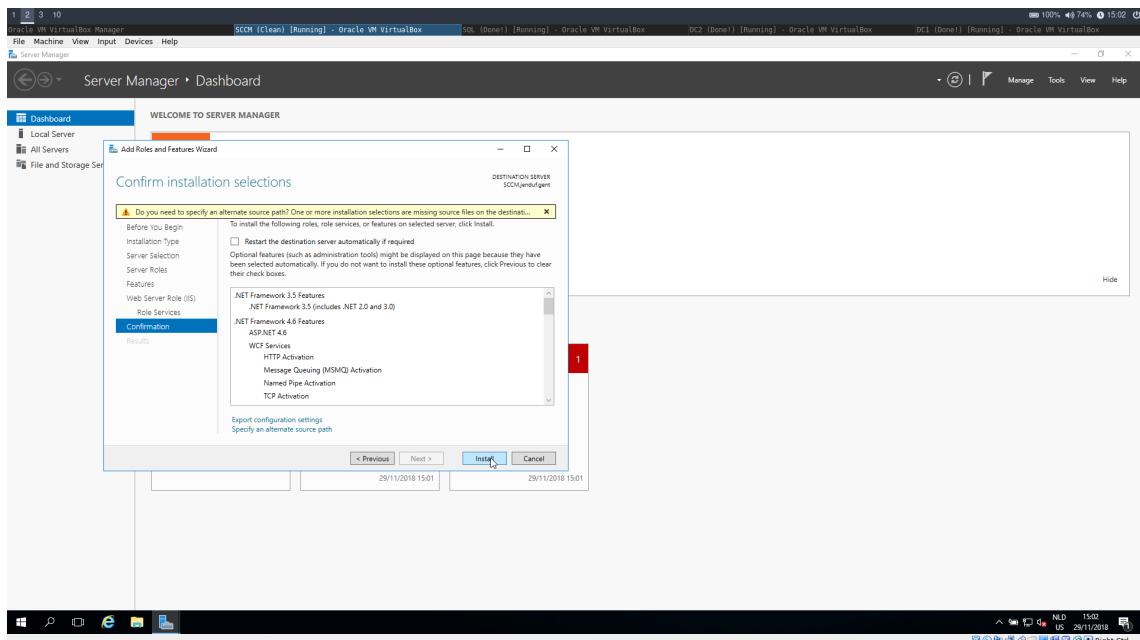
Selecteer de volgende "Role Services".



Klik op "Specify an alternate source path".

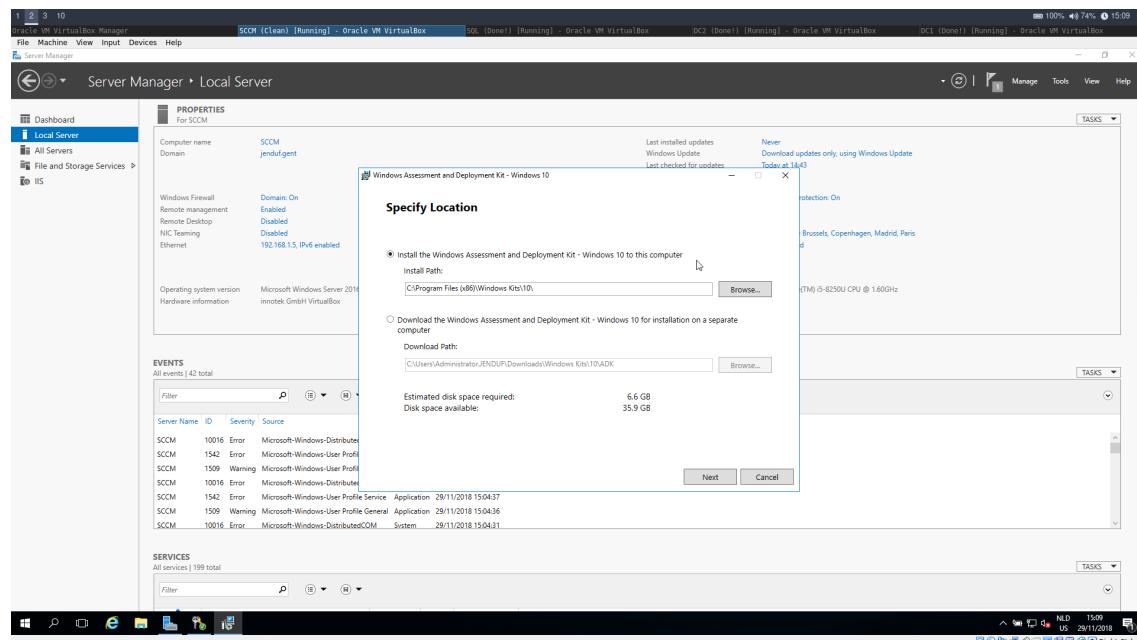


Geef in dit veld de locatie van "sources\SxS" in.

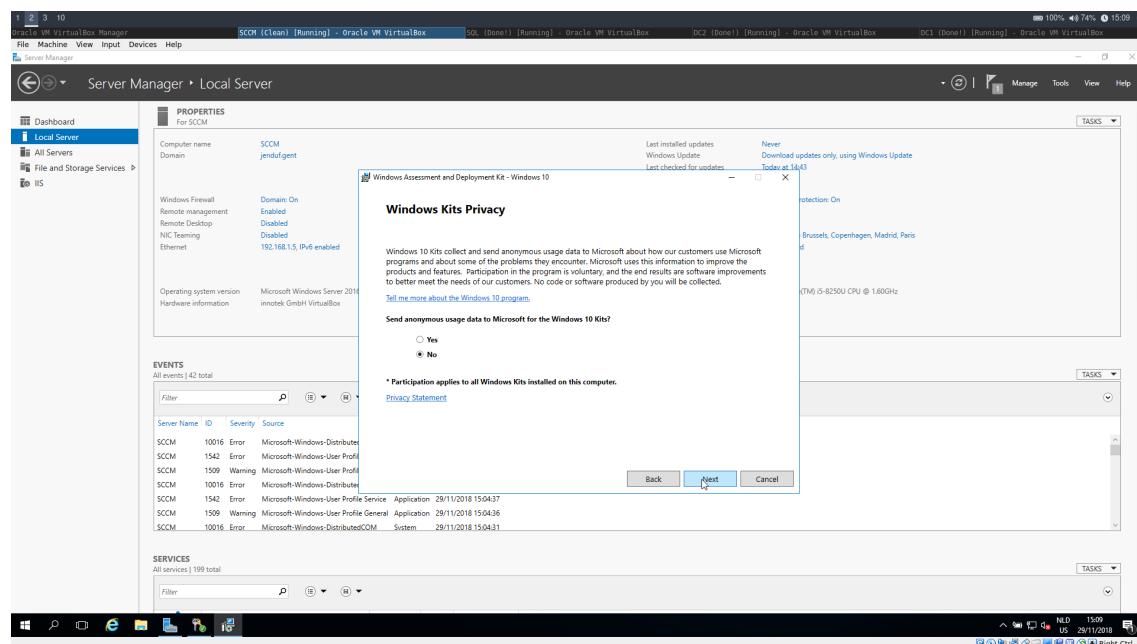


De installatie is voltooid. U mag dit venster sluiten.

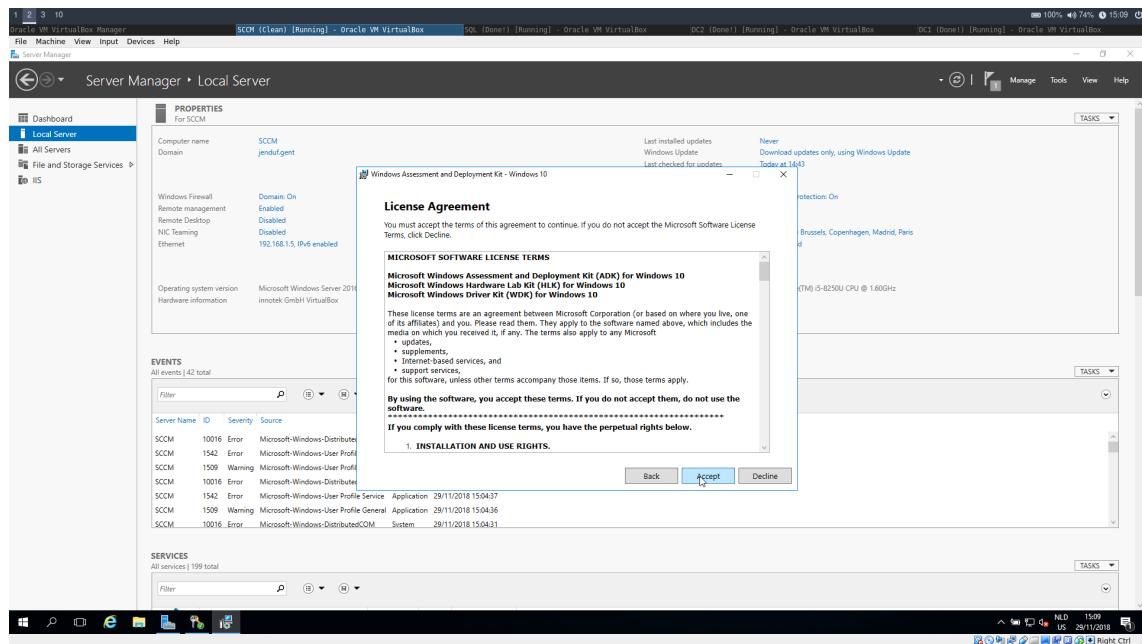
4.4 Installatie van Windows Assessment and Deployment Kit



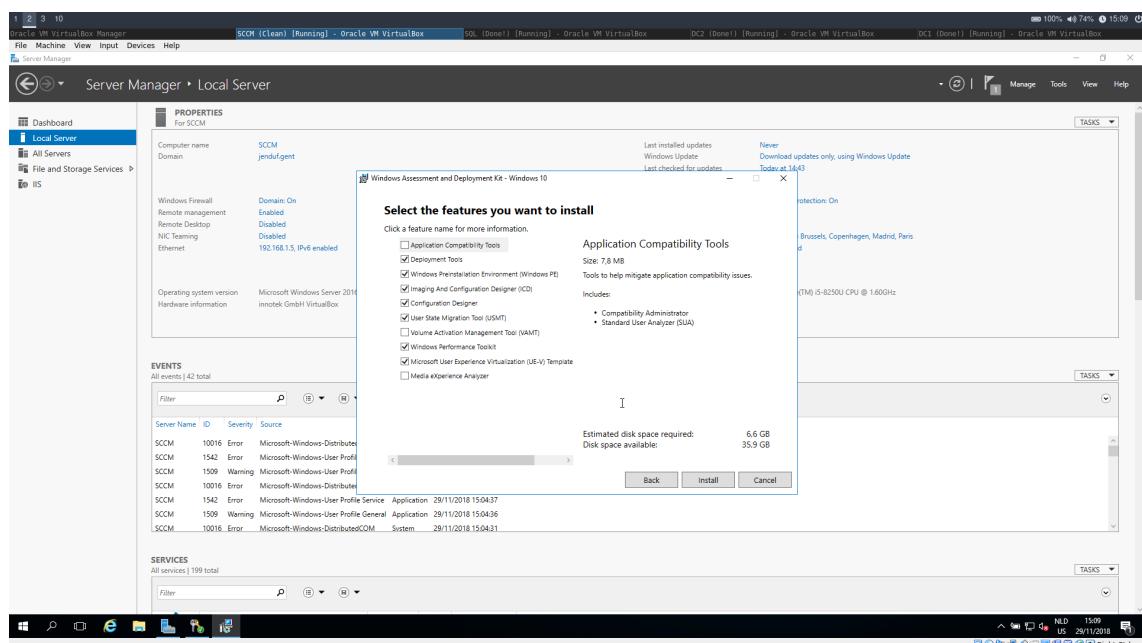
Klik op "Next".



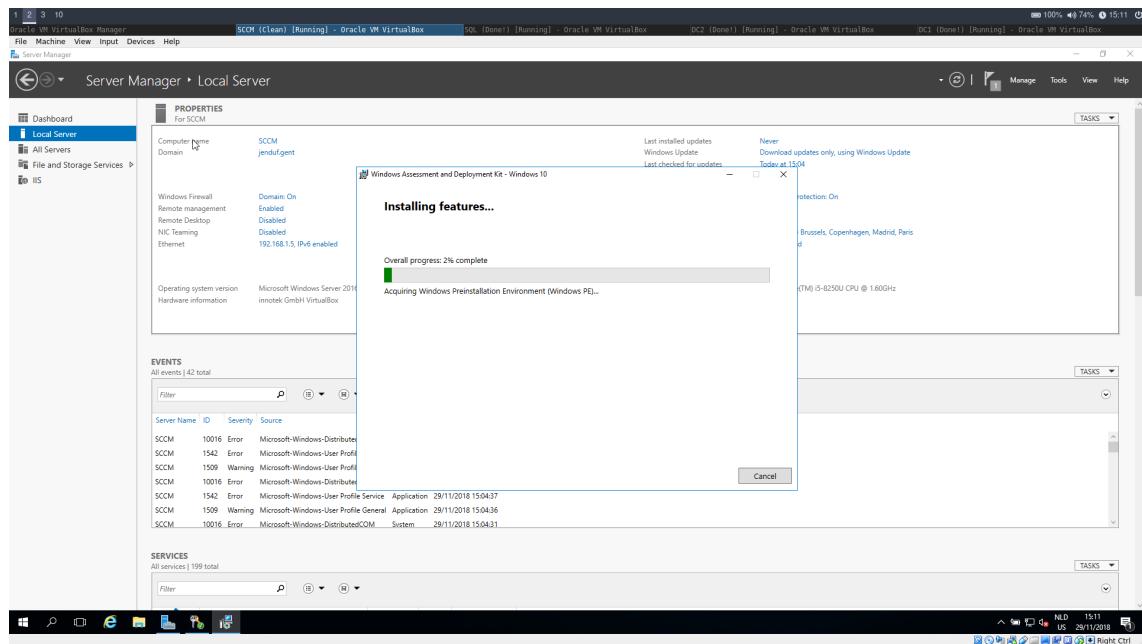
Selecteer "No".



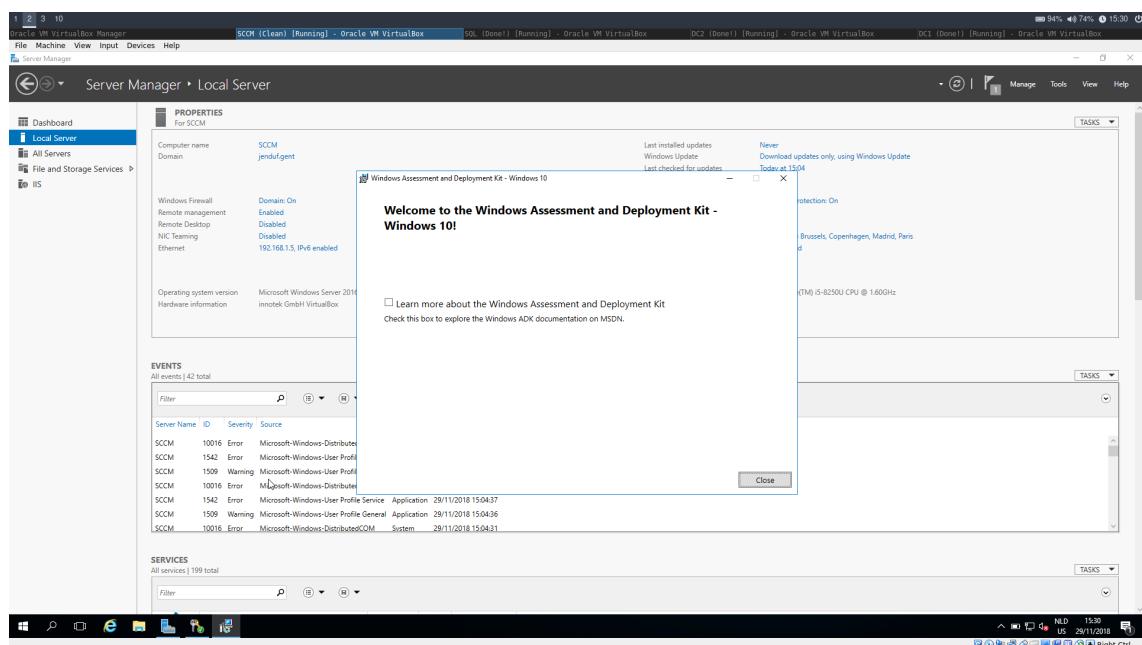
Ga akkoord met de licentievoorwaarden.



Vink de aangeduidde "features" aan.

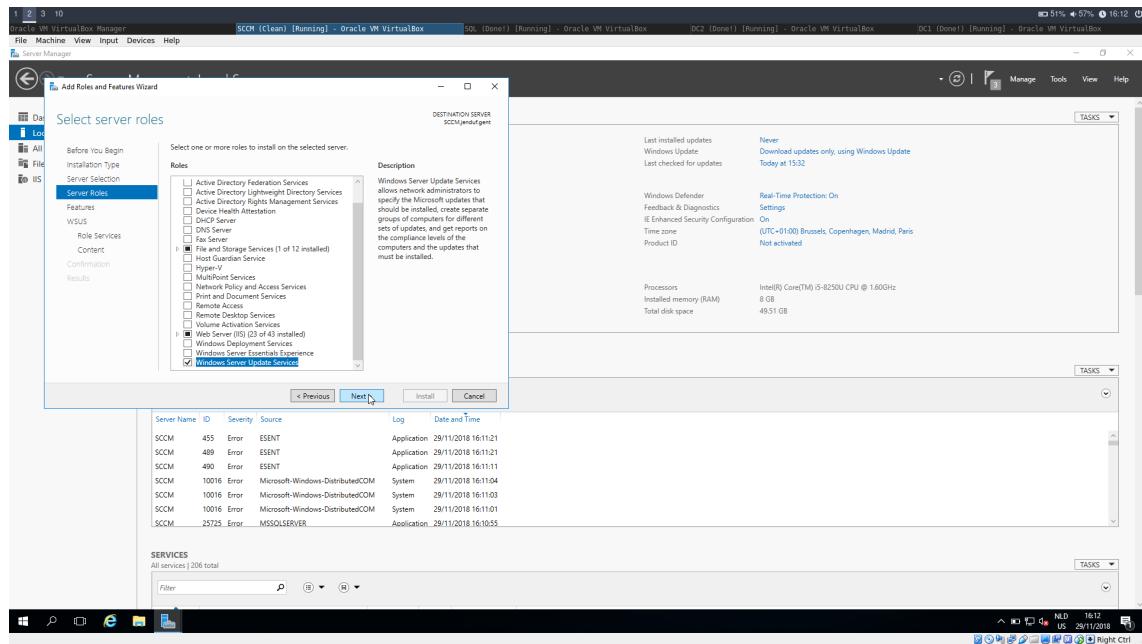


De installatie is succesvol gestart.

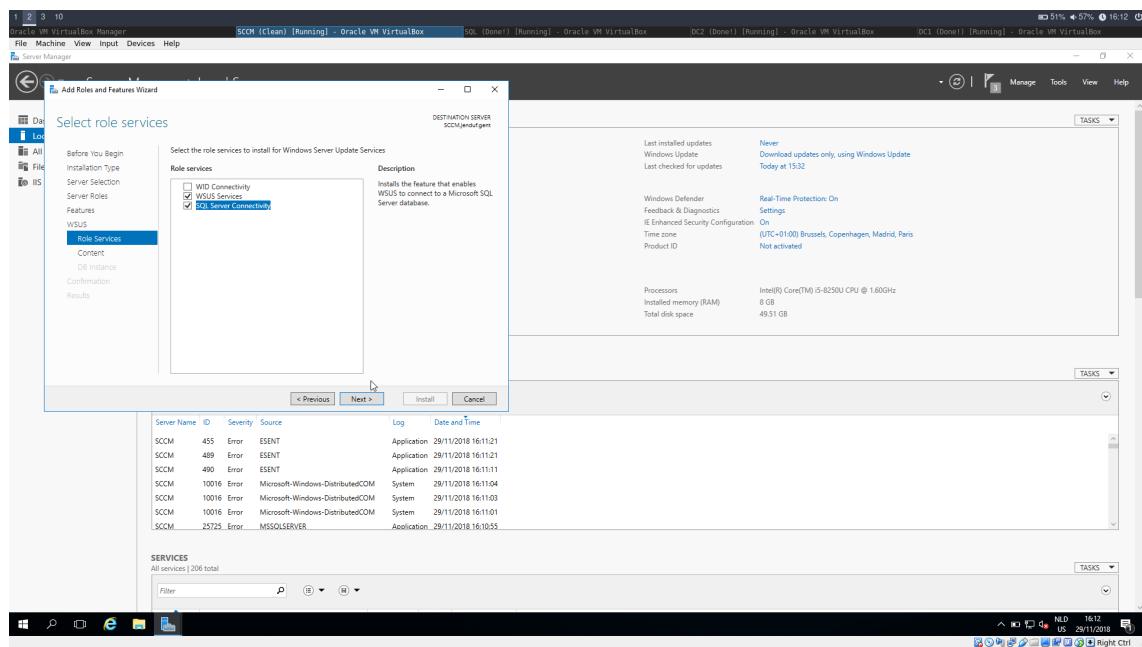


De installatie is succesvol voltooid. U mag dit venster sluiten.

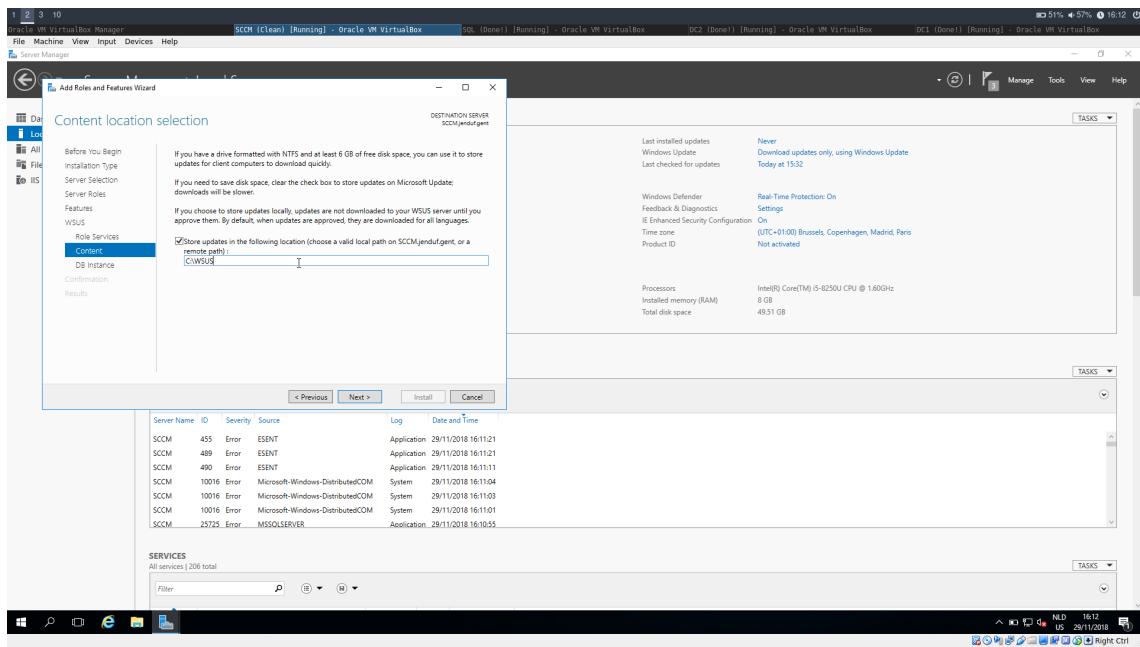
4.5 Installatie WSUS



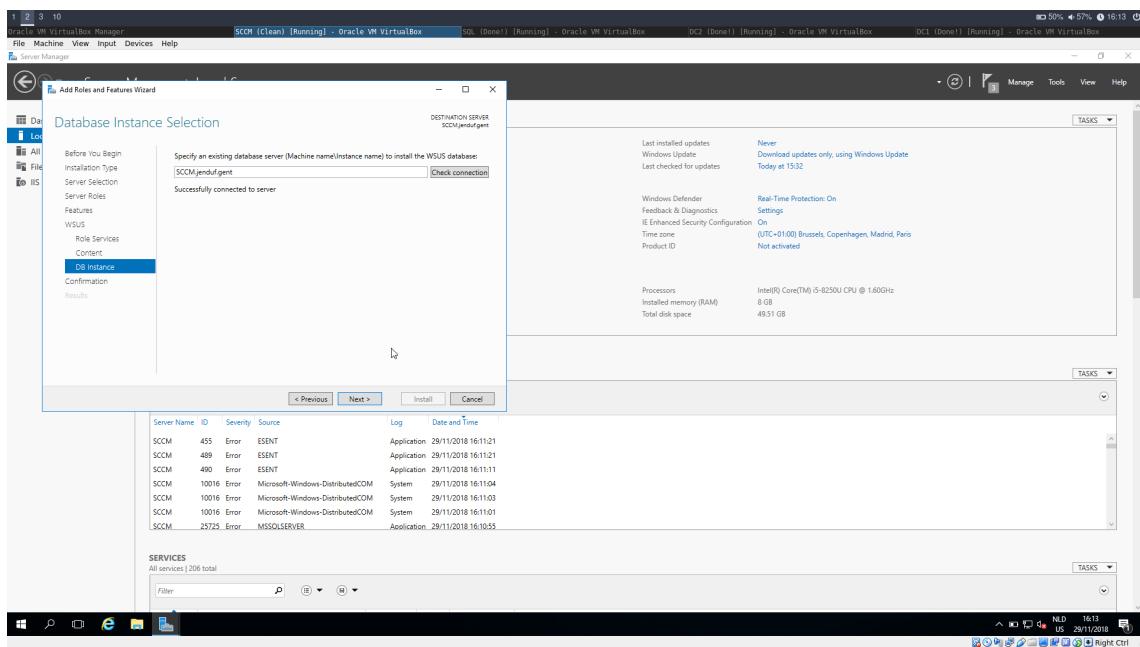
Voeg de "Server Role" "Windows Server Update Service" toe.



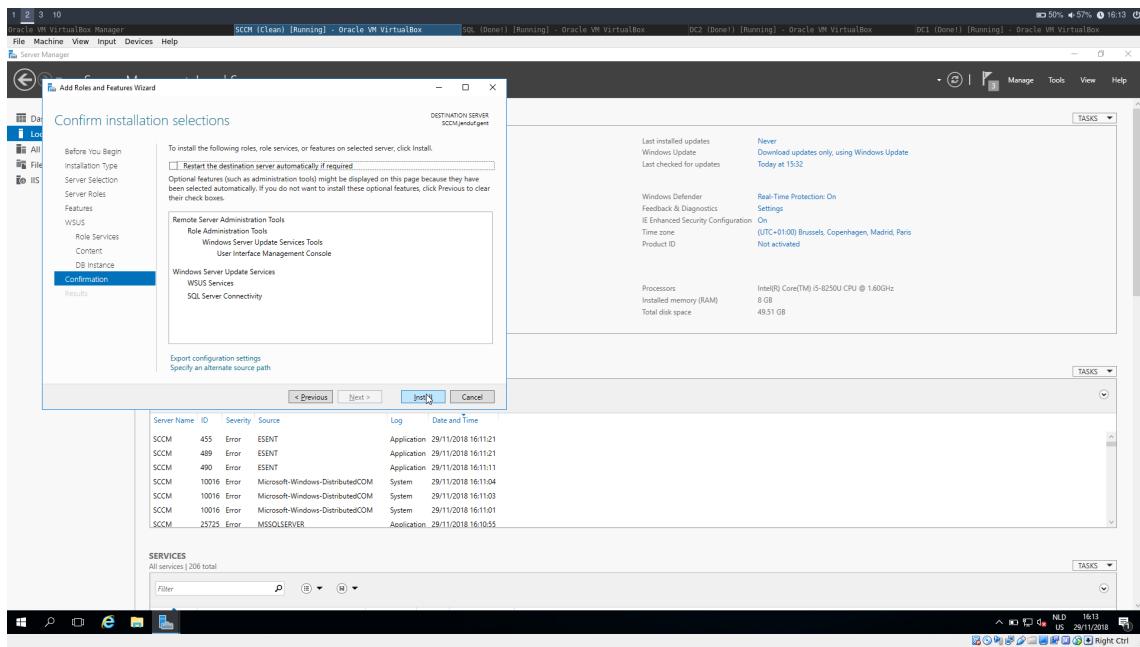
Vink de aangeduidde "Role Services" aan.



Verwijs naar een bestaande map voor het bewaren van de updates.

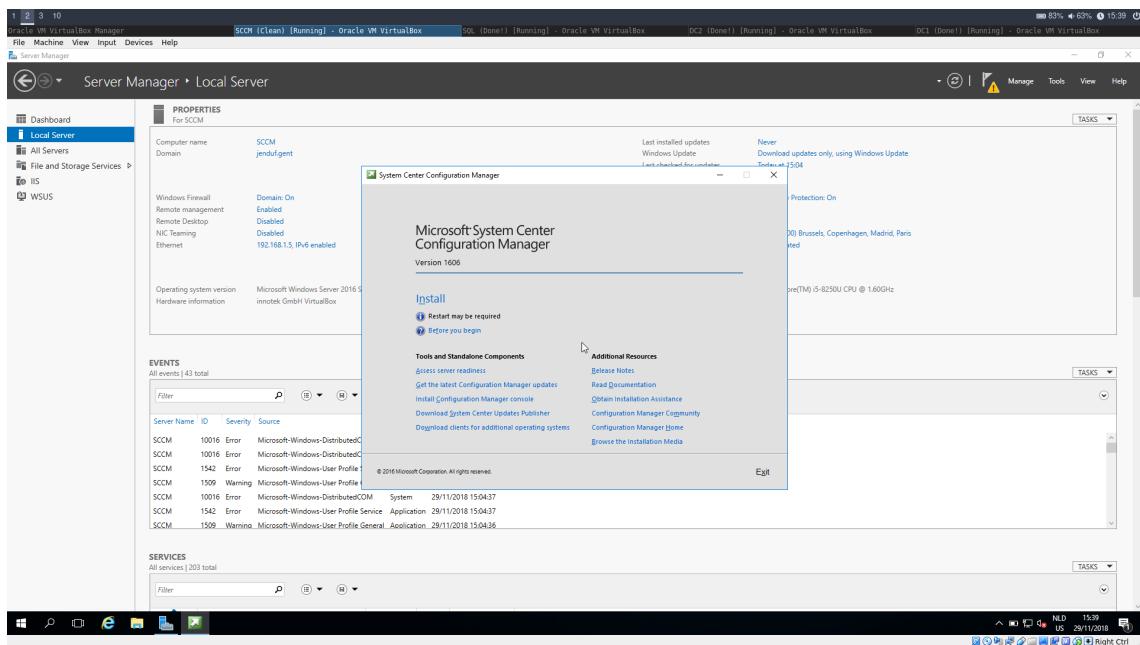


Verbind met de SQL Server op de server "SCCM.jenduf.gent".

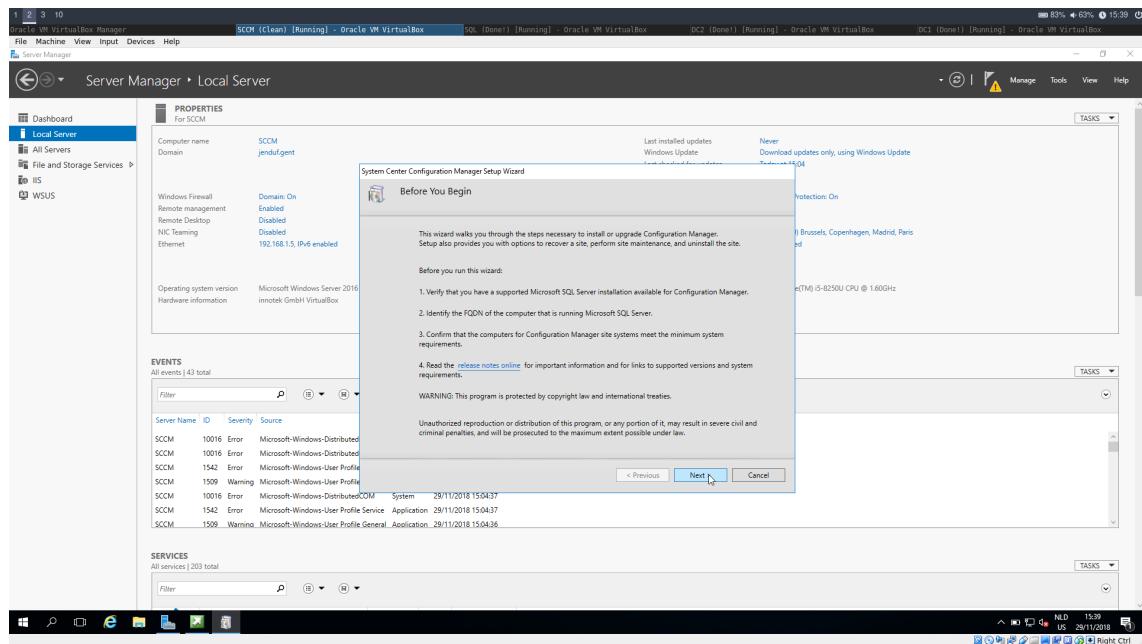


Start de installatie.

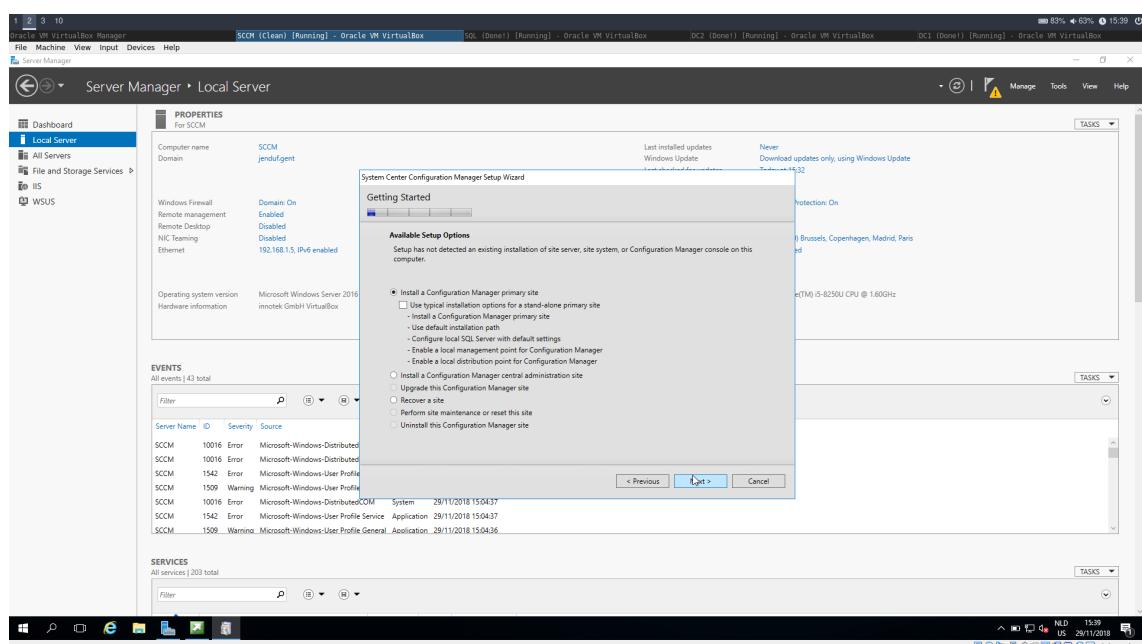
4.6 Installatie SCCM



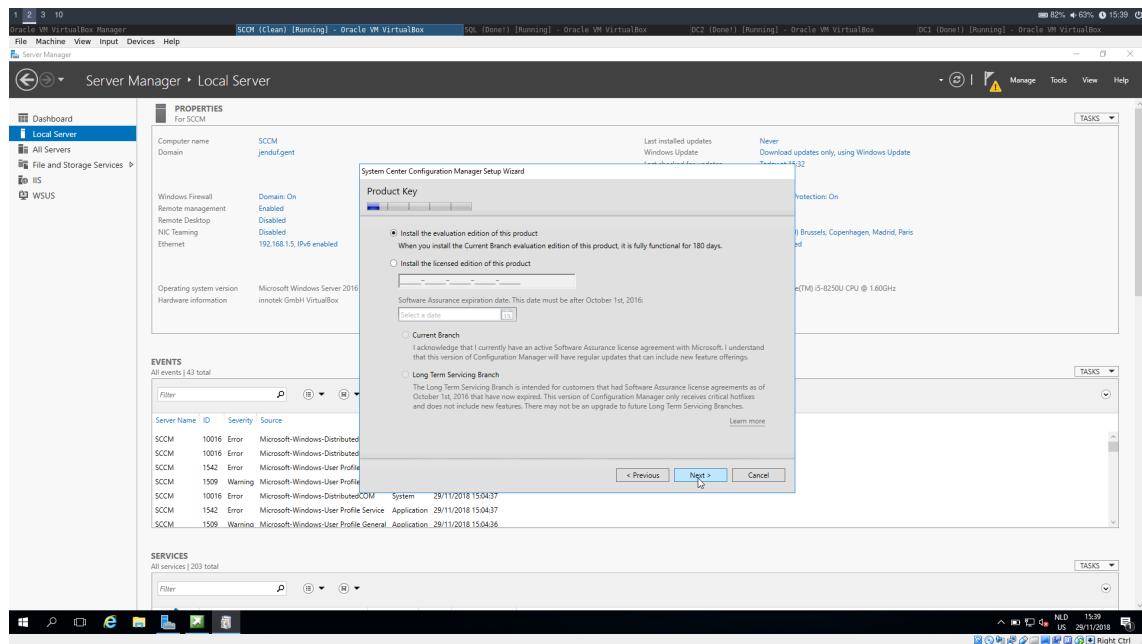
Klik op "Install".



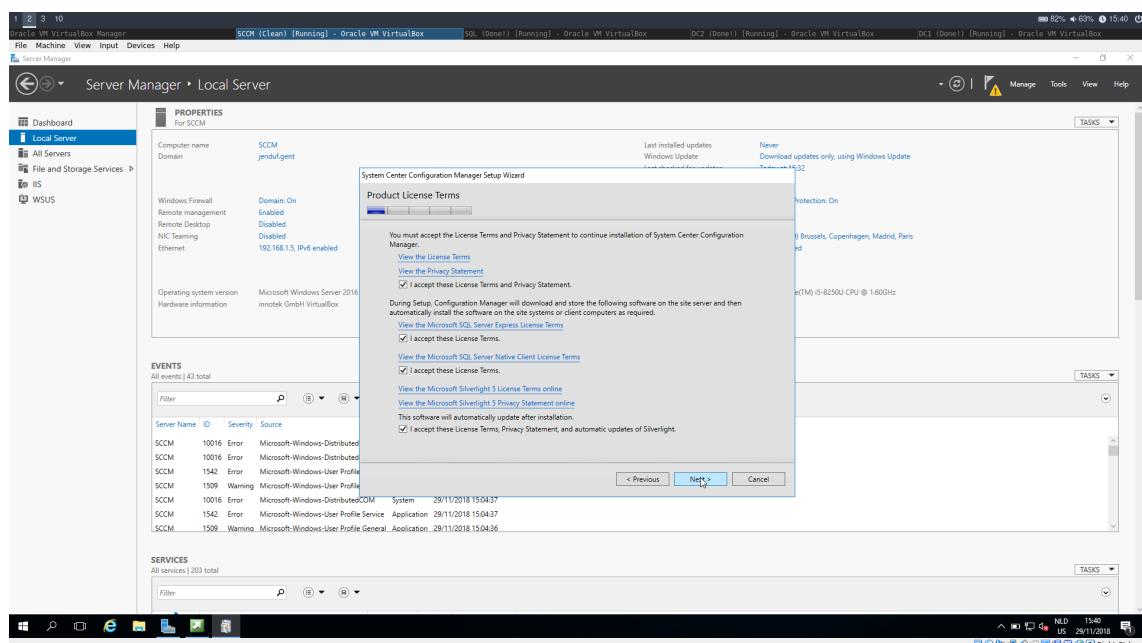
Klik op "Next".



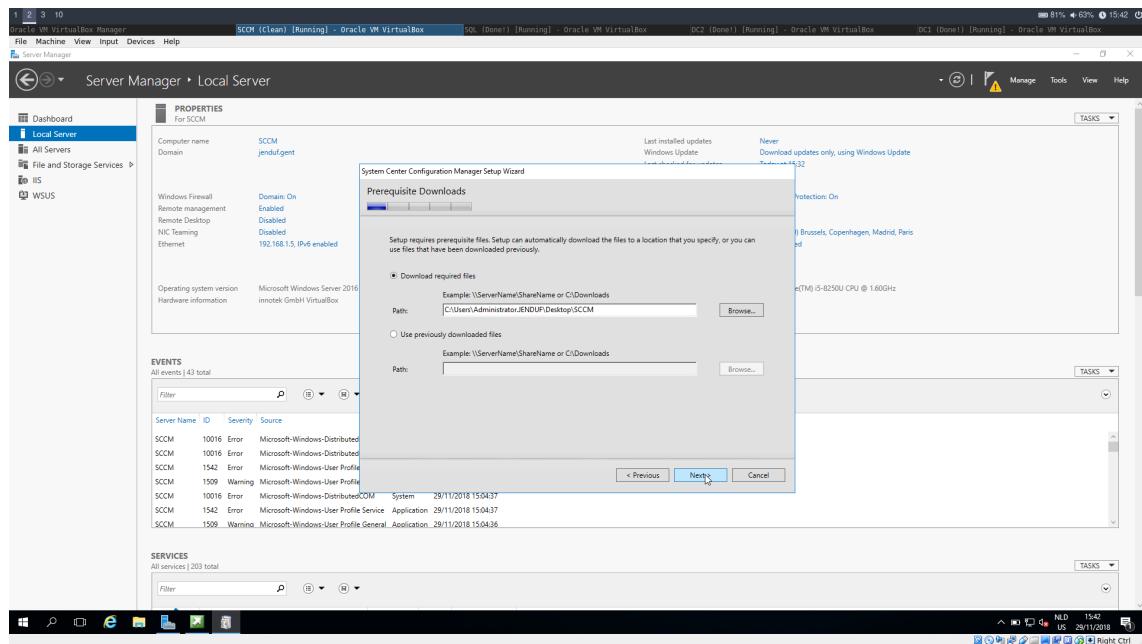
Klik op "Next".



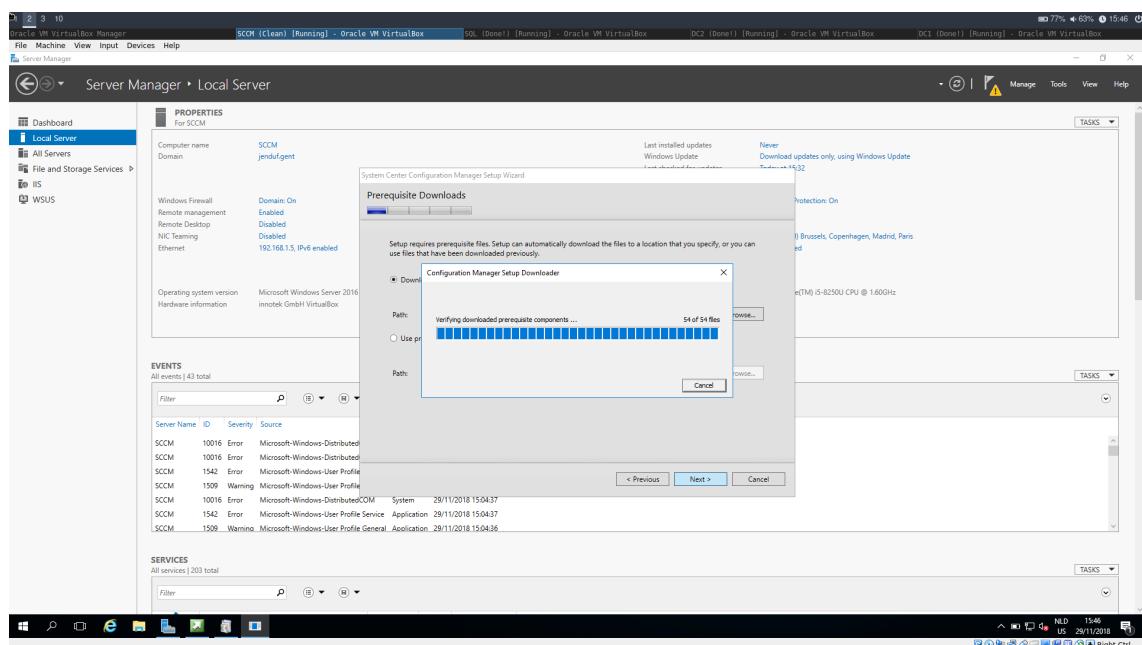
Installeer SCCM als een evaluatieversie.



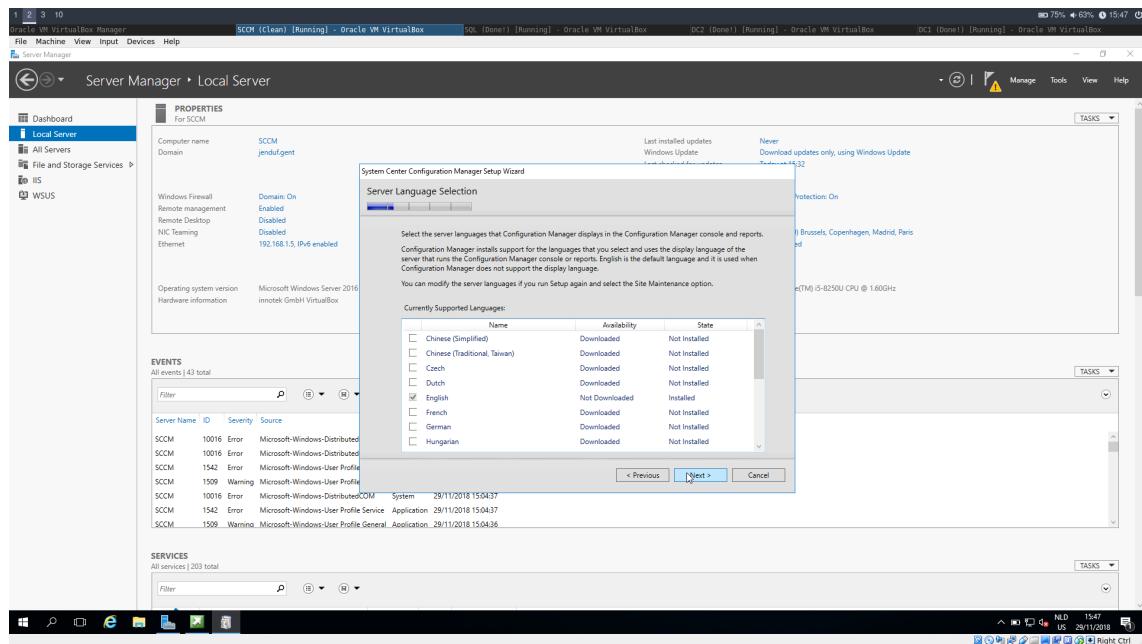
Ga akkoord met de licentievoorwaarden.



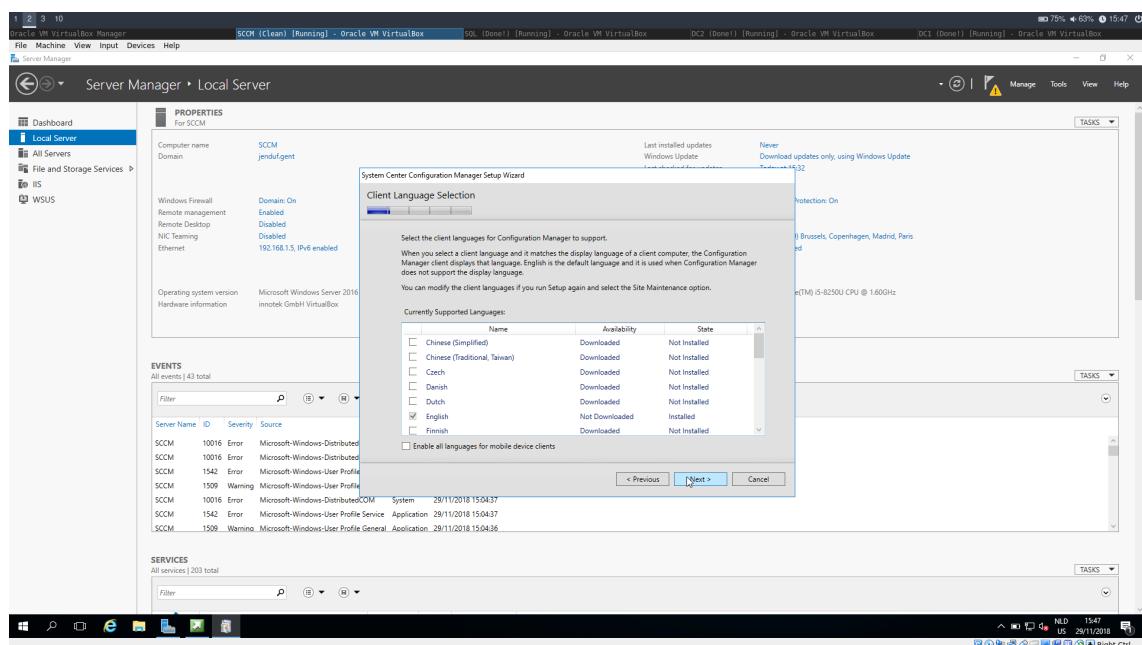
Download de benodigde bestanden en klik op "Next".



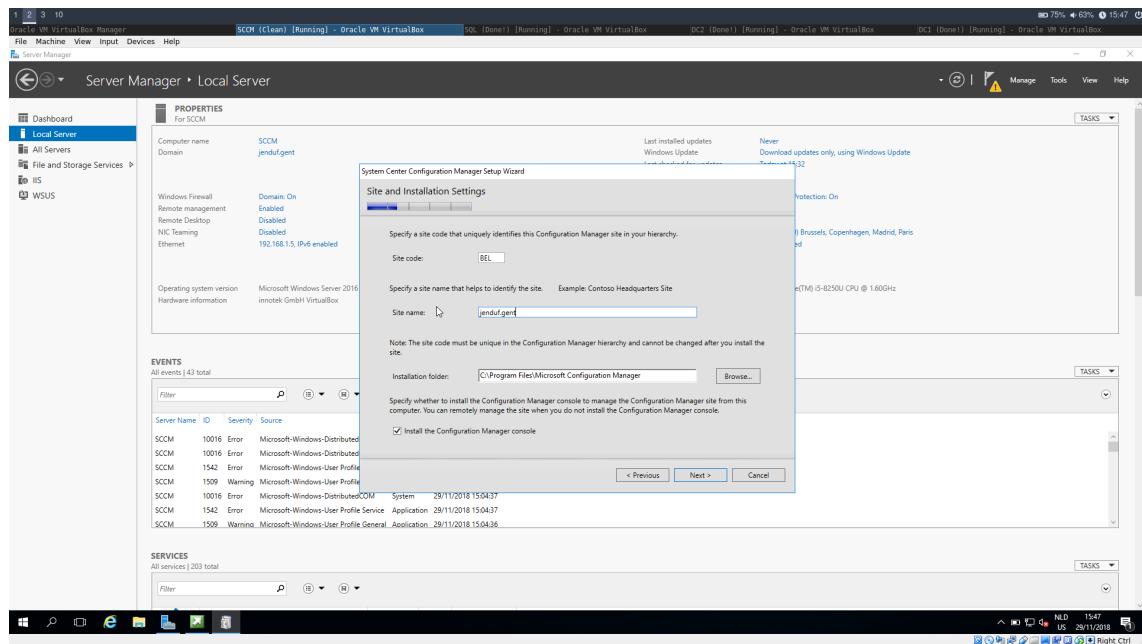
Even geduld tot het downloaden van de bestanden voltooid is.



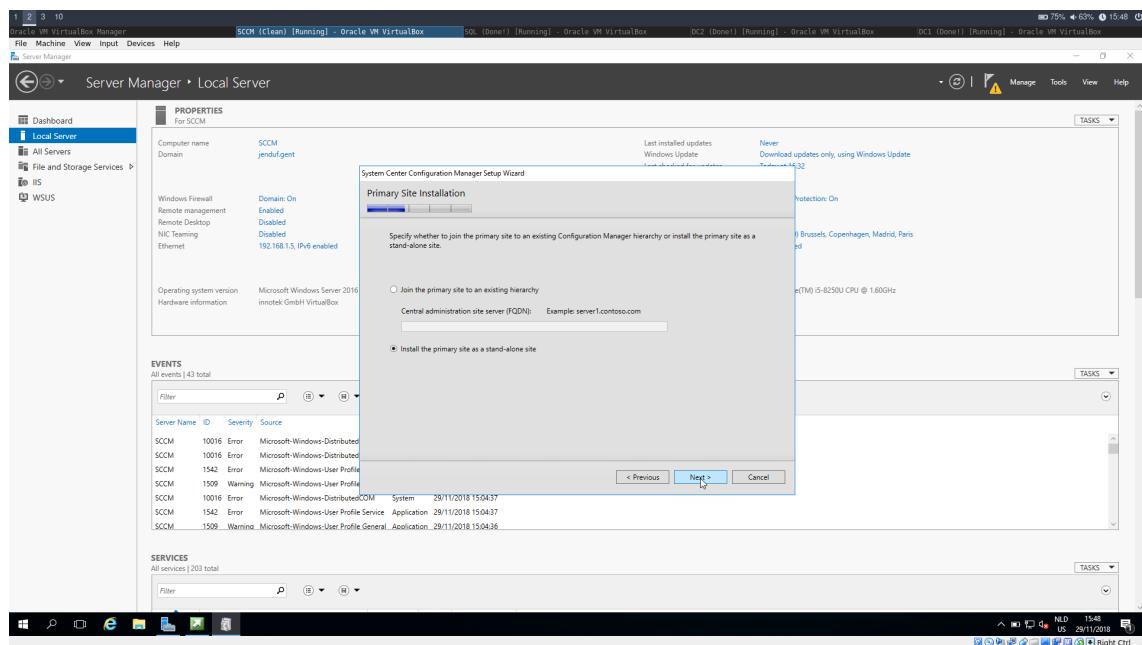
Selecteer de Engelse taal.



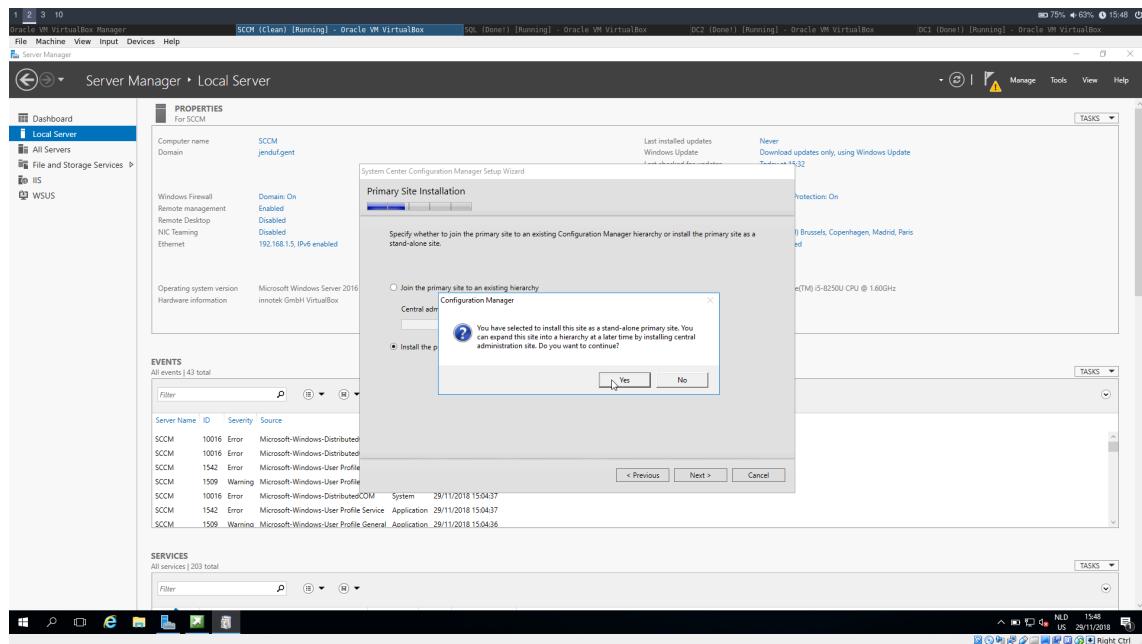
Selecteer de Engelse taal.



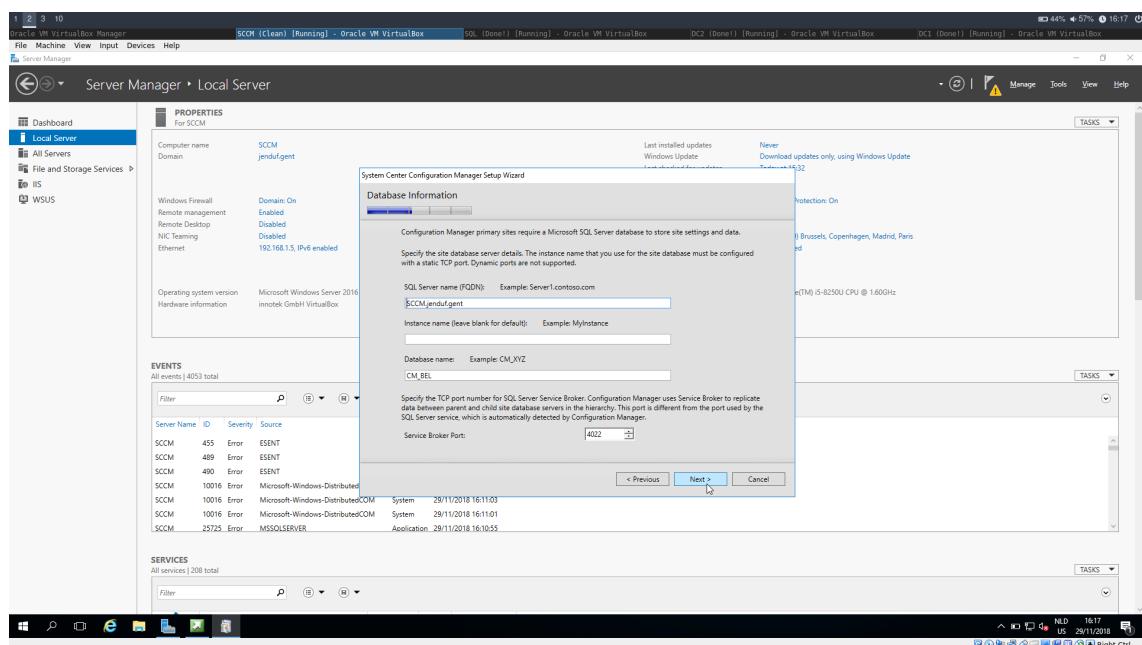
Geef als "Site Code" "BEL" in en als "Site Name" "jenduf.gent" en ga verder met de installatiewizard.



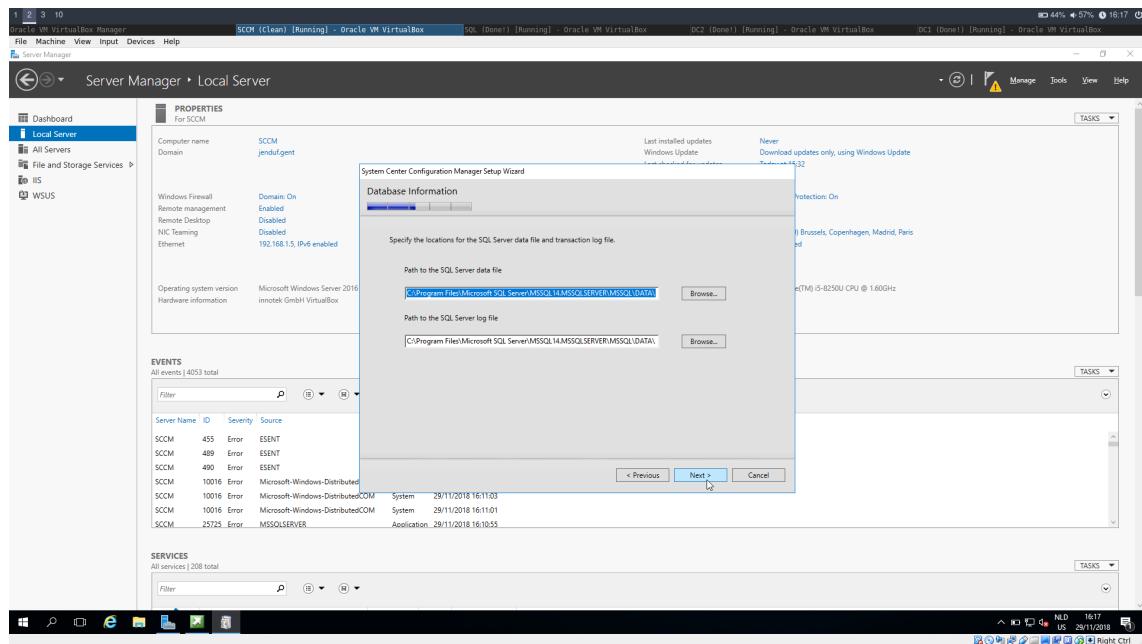
Selecteer "Install the primary site as a stand-alone server".



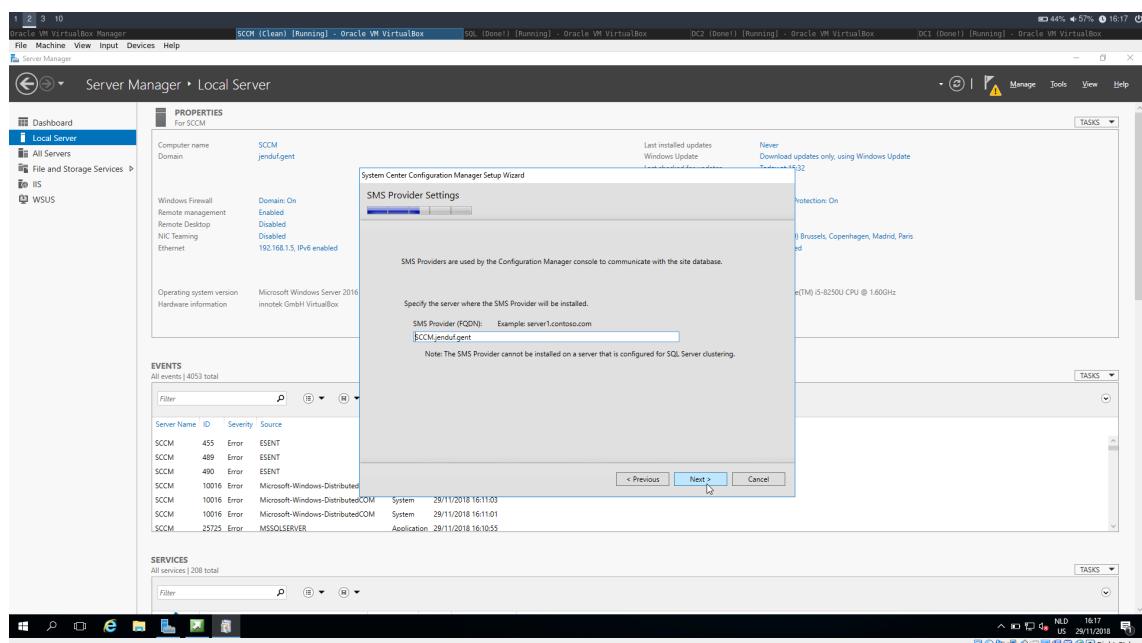
Klik op "Yes".



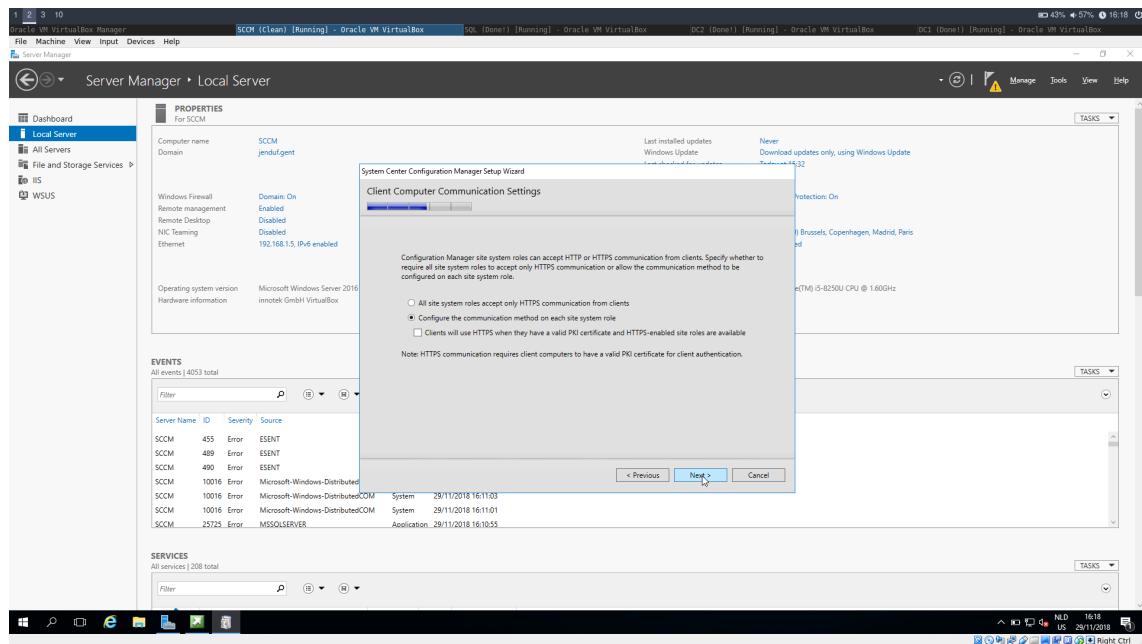
Geef als "SQL Server Name" "SCCM.jenduf.gent" in en ga verder.



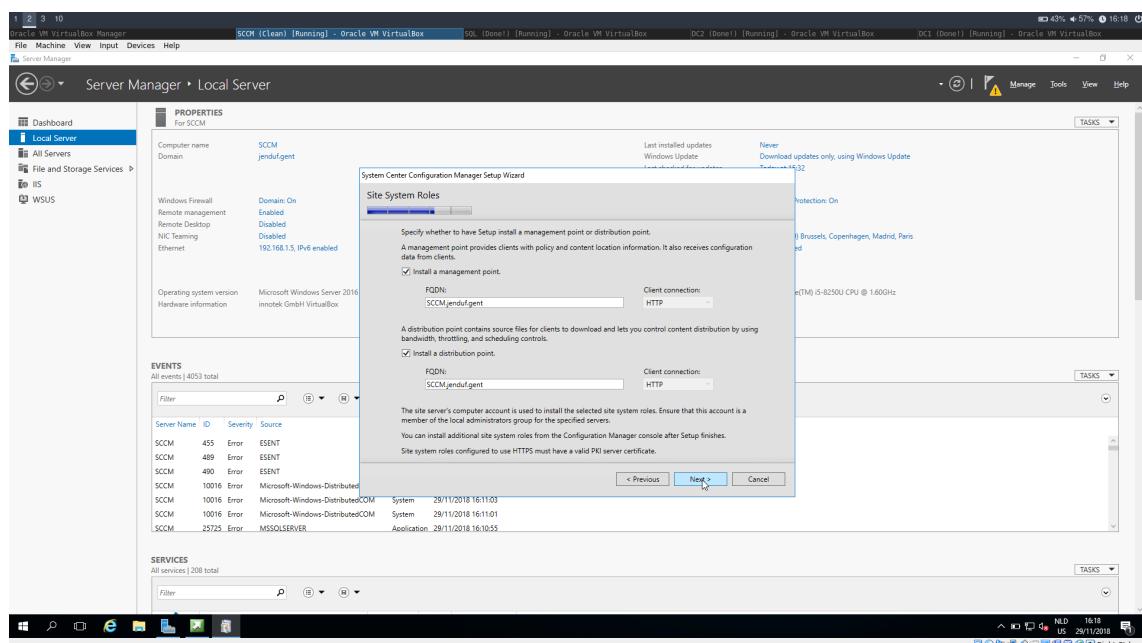
Ga verder met de installatiewizard.



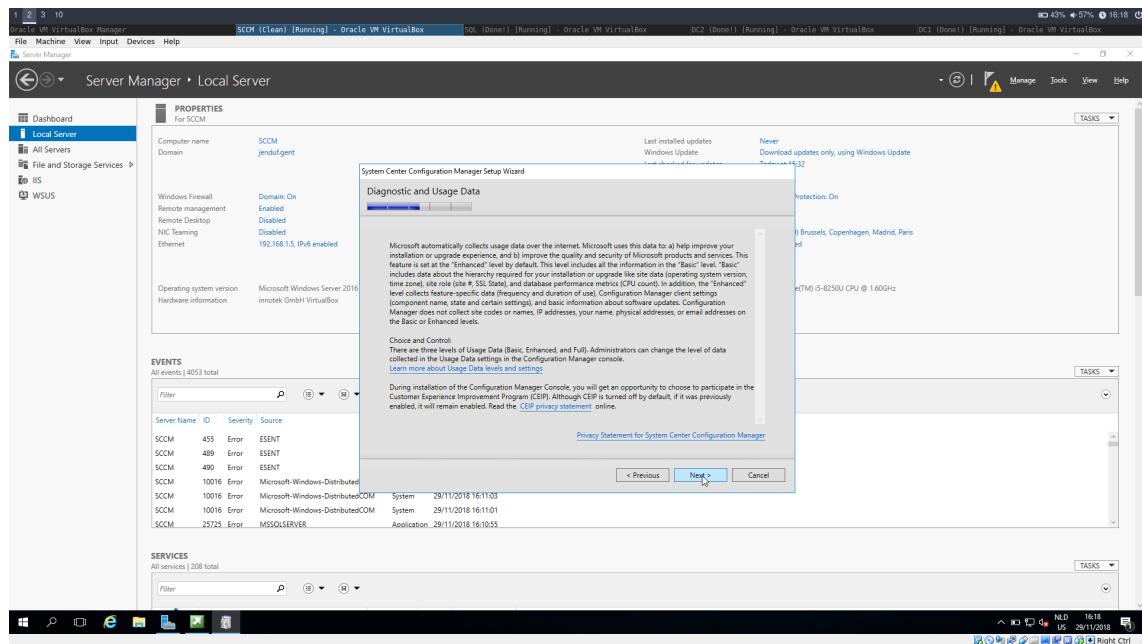
Ga verder met de installatiewizard.



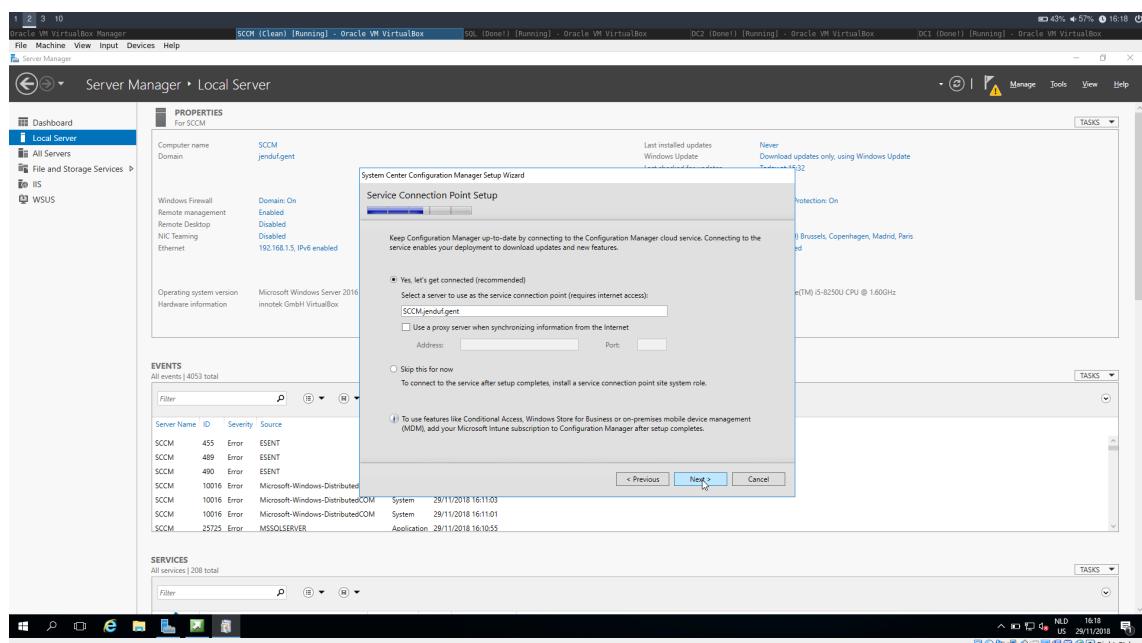
Ga verder met de installatiewizard.



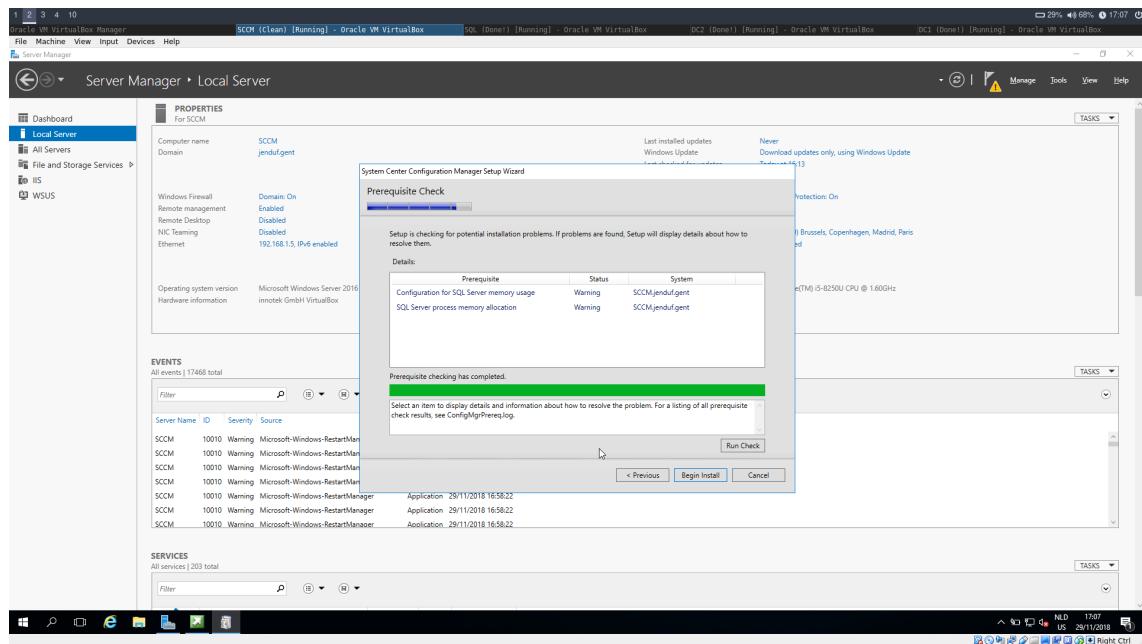
Ga verder met de installatiewizard.



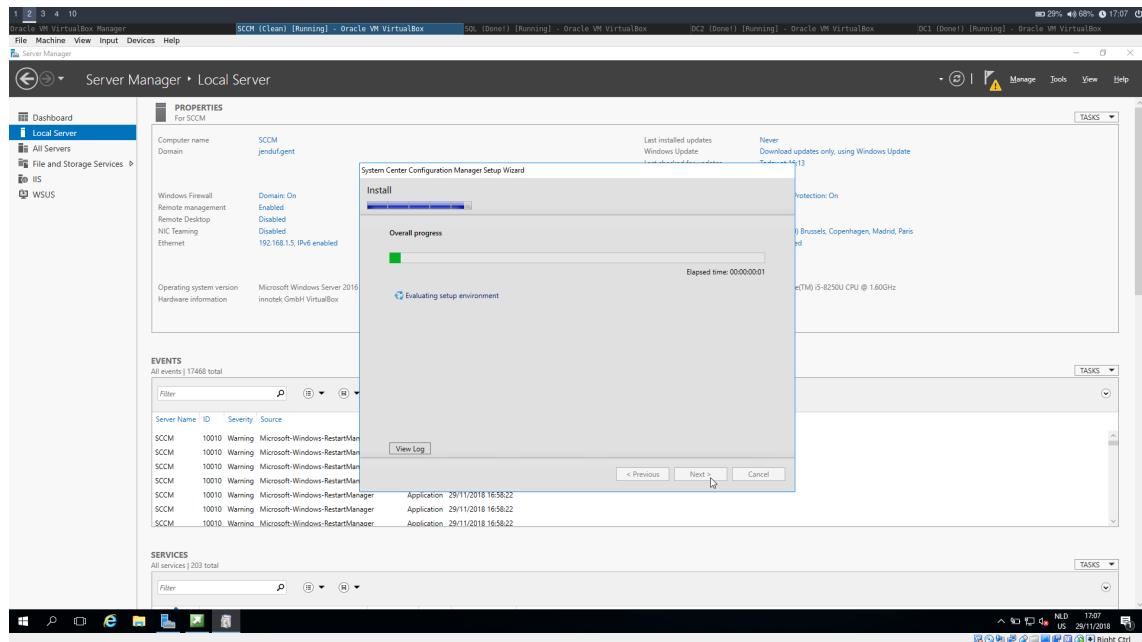
Ga verder met de installatiewizard.

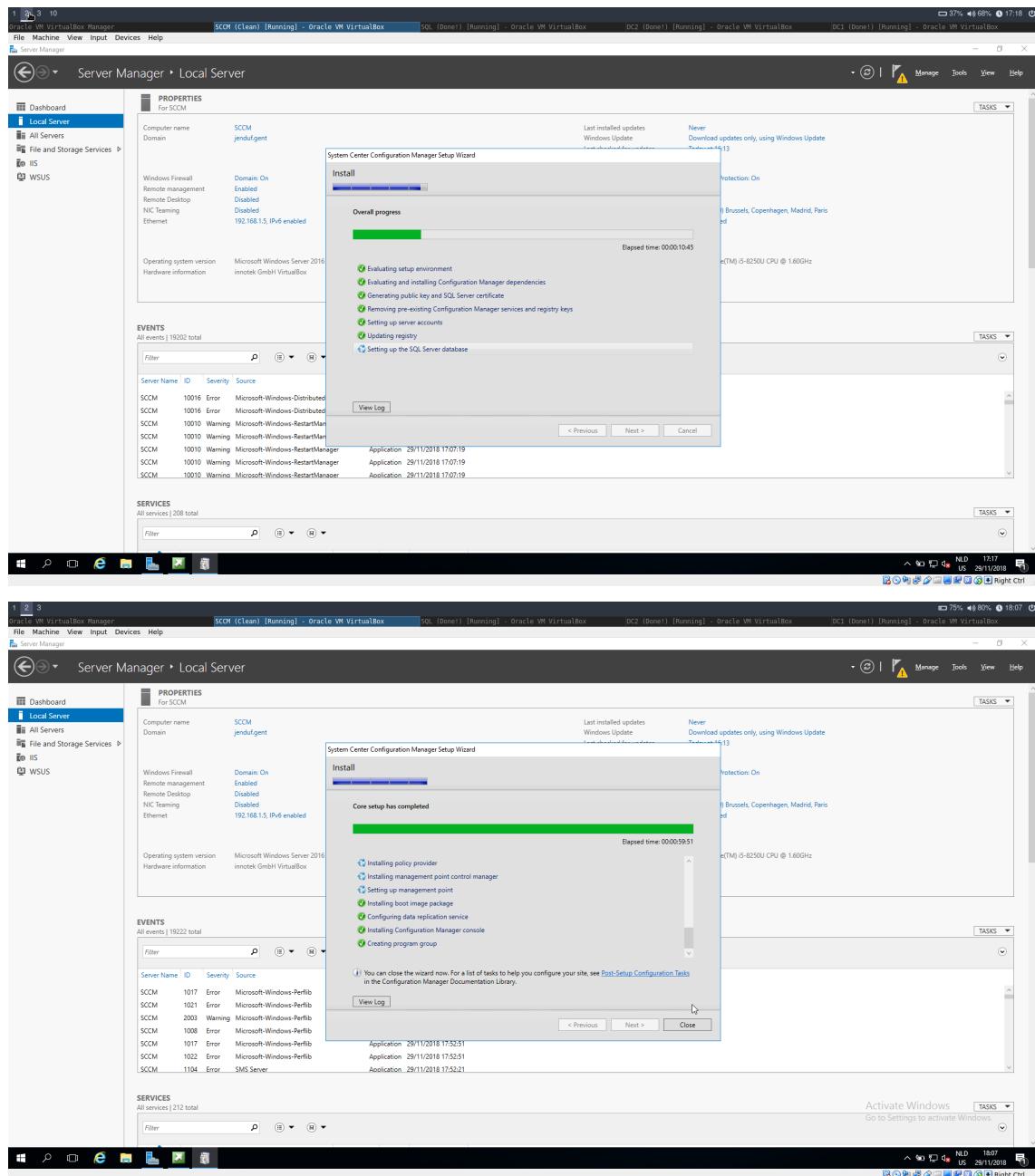


Ga verder met de installatiewizard.



Begin de installatie.





De installatie is voltooid.

4.7 Configuratie SCCM

Voor de configuratie van SCCM wordt gebruik gemaakt van een handleiding van Eddie Jackson. Het benodigde deel werd hieronder toegevoegd.

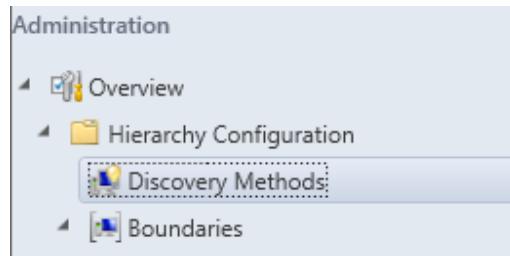
Launch the **SCCM Console**. Ensure the **site and database** report as **healthy** in the **Monitoring** workspace under **System Status > Site Status**.

Site Status 7 items							
Icon	Status	Site System	System Role	Storage...	Total	Site Code	
✓	OK	\sccm.DOMAIN.com	Component server	\SCCM...	60 GB	001	
✓	OK	\sccm.DOMAIN.com	Distribution point	\sccm....	60 GB	001	
✓	OK	\sccm.DOMAIN.com	Service connection point	\SCCM...	60 GB	001	
✓	OK	\sccm.DOMAIN.com	Management point	\SCCM...	60 GB	001	
✓	OK	\sccm.DOMAIN.com	Site server	\sccm....	60 GB	001	
✓	OK	\sccm.DOMAIN.com	Site database server	CM_00...	5 GB	001	
✓	OK	\sccm.DOMAIN.com	Site database server	CM_00...	379.4 MB	001	

Discovery Methods and Boundary Configuration

Once the **Site Status** is all green, now it is time to configure the **Discovery Methods** and **Boundaries**.

Under **Administration**, select **Discovery Methods**.



Now, in the right pane, we want to 'enable' System Discovery and User Discovery.

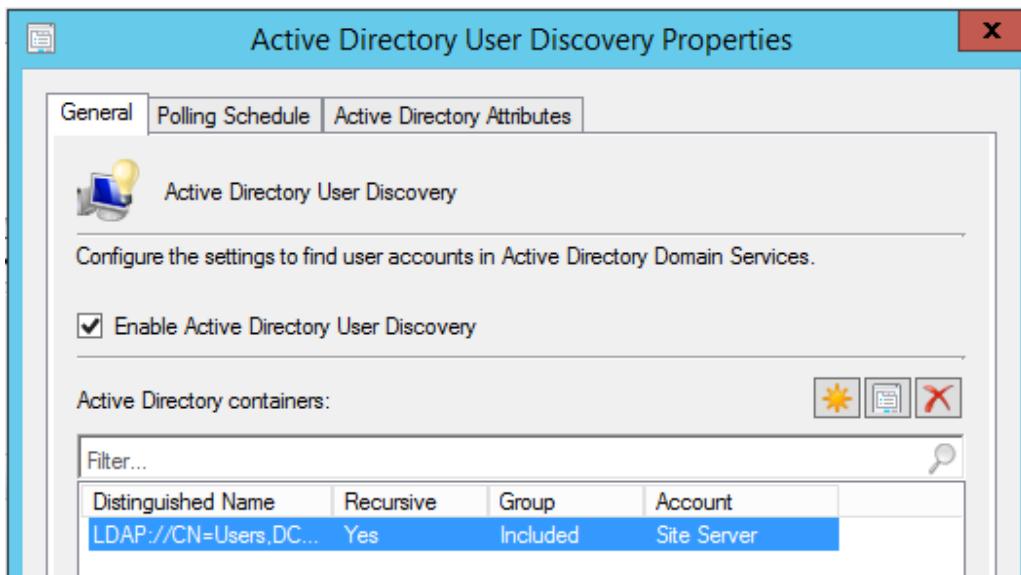
Discovery Methods 6 items				
Icon	Name	Status	Site	
💡	Active Directory Forest Discovery	Disabled	001	
💡	Active Directory Group Discovery	Disabled	001	
💡	Active Directory System Discovery	Disabled	001	
💡	Active Directory User Discovery	Disabled	001	
💡	Heartbeat Discovery	Disabled	001	
💡	Network Discovery	Disabled	001	

Add the appropriate AD Computer OU in System Discovery.

The screenshot shows the 'Active Directory System Discovery Properties' dialog box. The 'General' tab is selected. Under 'Active Directory System Discovery', the 'Enable Active Directory System Discovery' checkbox is checked. In the 'Active Directory containers:' section, there is a table with one row:

Distinguished Name	Recursive	Group	Account
LDAP://CN=Computers,DC...	Yes	Included	Site Server

Add the appropriate AD User OU in System Discovery.



Now, System Discovery and User Discovery should be enabled.

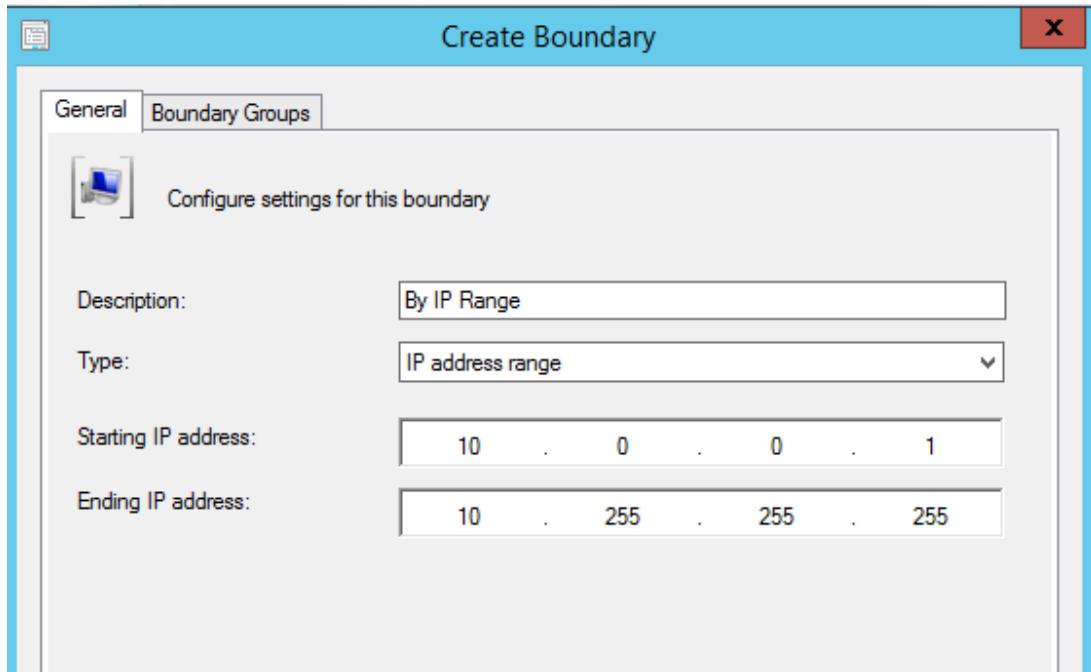
A table showing the status of various Active Directory discovery types:

Active Directory Forest Discovery	Disabled	001
Active Directory Group Discovery	Disabled	001
Active Directory System Discovery	Enabled	001
Active Directory User Discovery	Enabled	001
Heartbeat Discovery	Enabled	001
Network Discovery	Disabled	001

Next, Select Boundaries and right-click to Create Boundary.



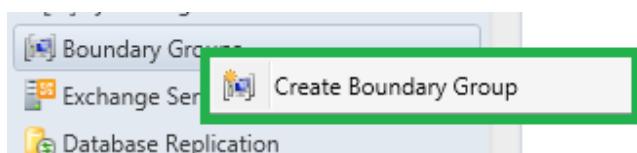
I selected **IP address range**, and entered the range of my network. Eventually, you'll want to select by Active Directory Site.



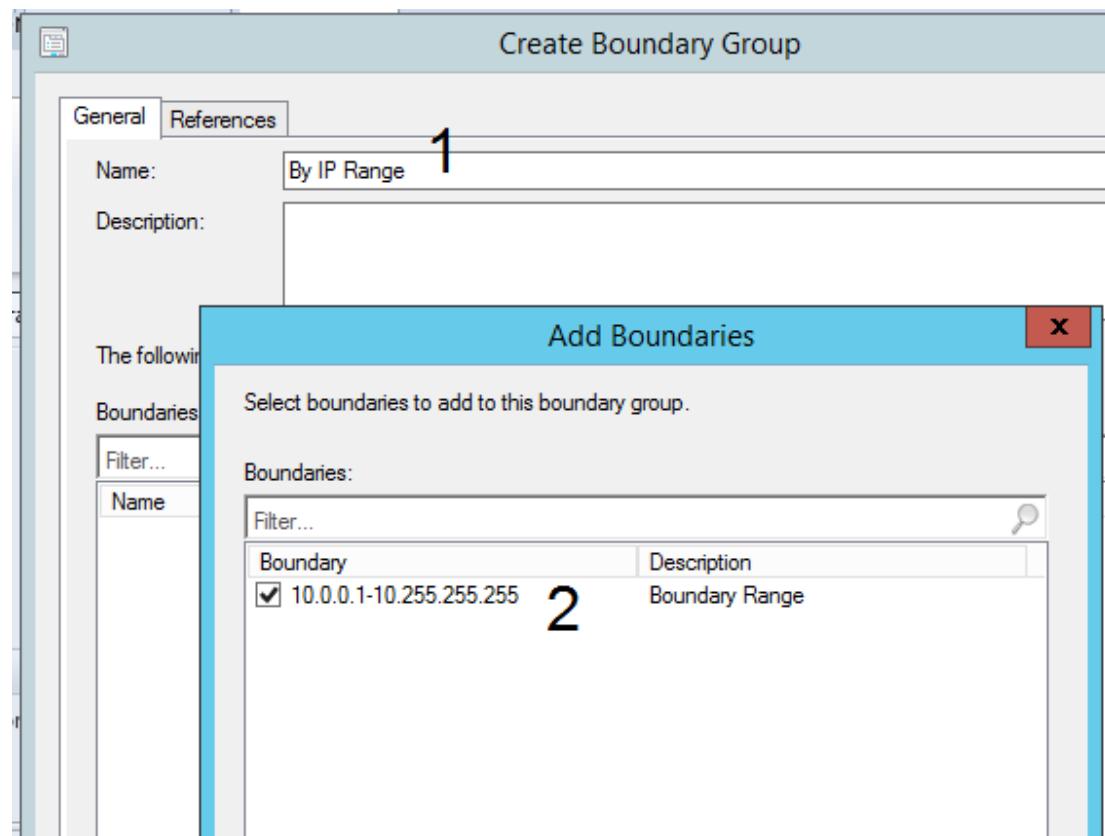
You will see it appear under Boundaries: By IP Range.



Under **Boundary Groups**, right-click to **Create Boundary Group**.



Add Name of Group and click Add Boundary button, select the range, click OK.

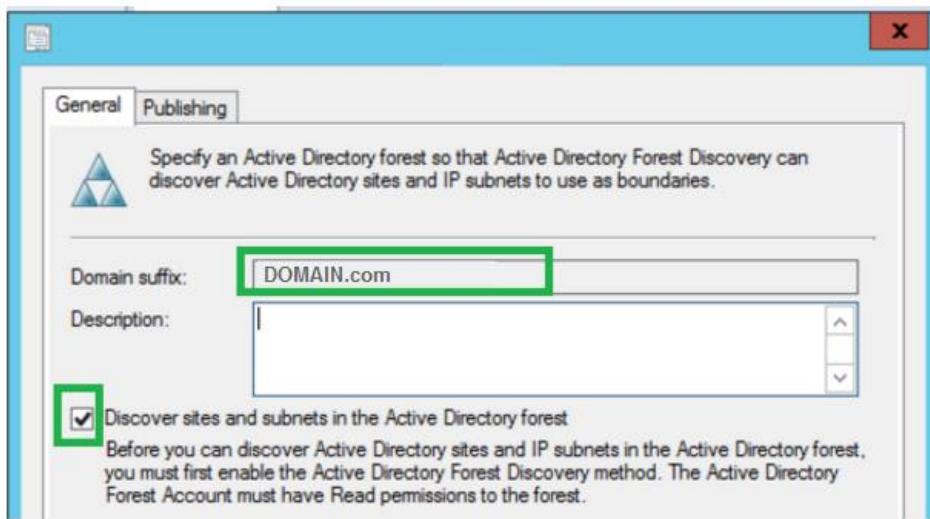


Verify a **Forest** exists in SCCM, if not, add one.

The screenshot shows the SCCM Administration interface under the 'Active Directory Forests' section. A single item, 'DOM..', is listed in the table. The entire row for this item is highlighted with a green border.

Icon	Do...	Description	Date Created
△		DOM..	3/20/2017 11:37 AM

If you need to add a domain suffix, just **add suffix** and check **Discover sites and subnets**.



Prompt a **System Discovery** (this will scan AD looking for devices). **Right-click** and select **Run Full Discovery Now**.

Icon	Name	Status	Site	Description
!	Active Directory Forest Discovery	Disabled	001	Configures set
!	Active Directory Group Discovery	Disabled	001	Configures set
!	Active Directory System Discovery			
!	Active Directory User Discovery			
!	Heartbeat Discovery			
!	Network Discovery			

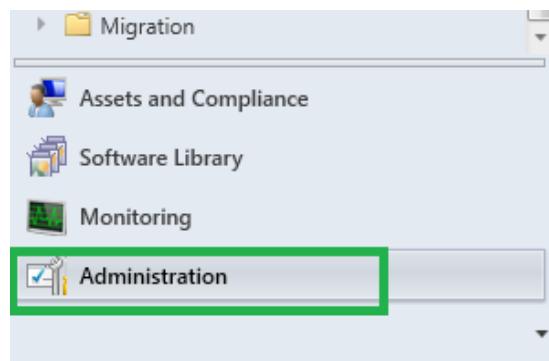
A green arrow points from the 'Run Full Discovery Now' option in the context menu to the 'Properties' button.

Under **Assets and Compliance, Devices**, check devices for **Client Type**, **Site Code**, and **Activity** (this will not be instant; it takes several minutes—let's say 10 minutes).

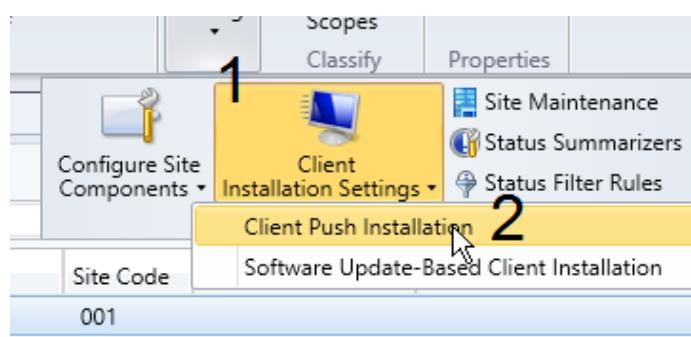
All Systems 1 items					
Icon	Name	Client Type	Client	Site Code	Client Activity
	CLIENTW7	Computer	Yes	001	Active
	SCCM	Computer	Yes	001	Active
	x64 Unknown Computer...	None	No	001	
	x86 Unknown Computer...	None	No	001	

Enable Automatic Client Push

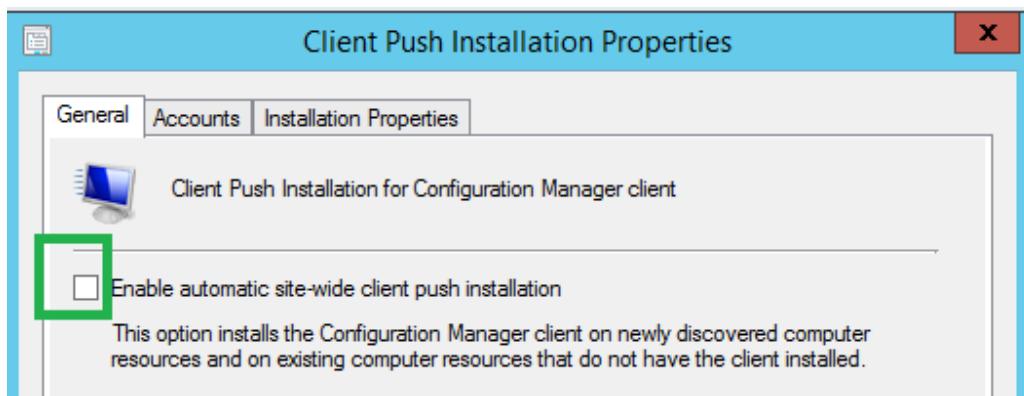
To enable **automatic** client pushes, select **Administration**.



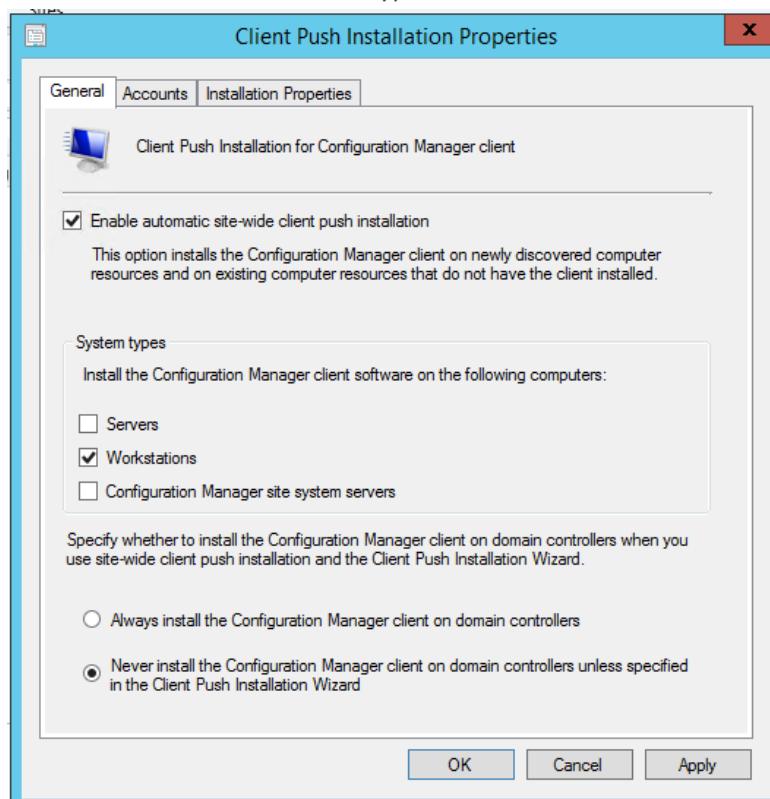
Next, click **Site**, then click the **Client Installation Settings** option on the ribbon and then choose **Client Push Installation**.



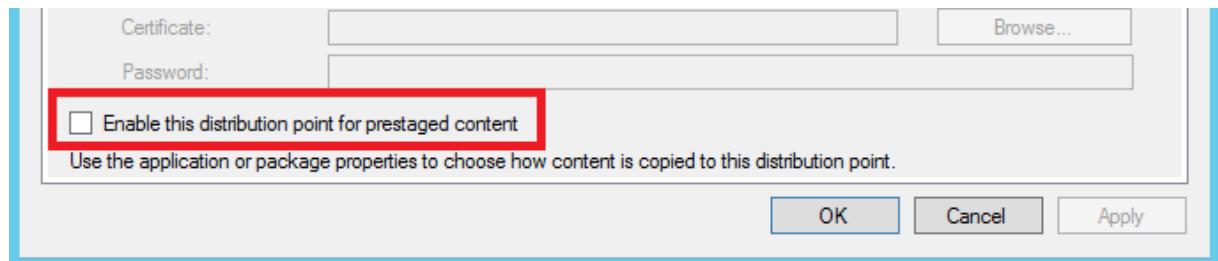
Then, check the **Enable automatic site-wide client push installation**. The jury is out on whether or not this is best practice. Some say this setting should not be used once you roll out to your enterprise; a better solution is to use Group Policy to deploy the client. Though, in all honesty, if the AD schema has been properly extended, and you don't have other primary servers in your enterprise, automatic push should be fine.



Add a **check** next to the device types to **receive the client**, click **OK** to continue.

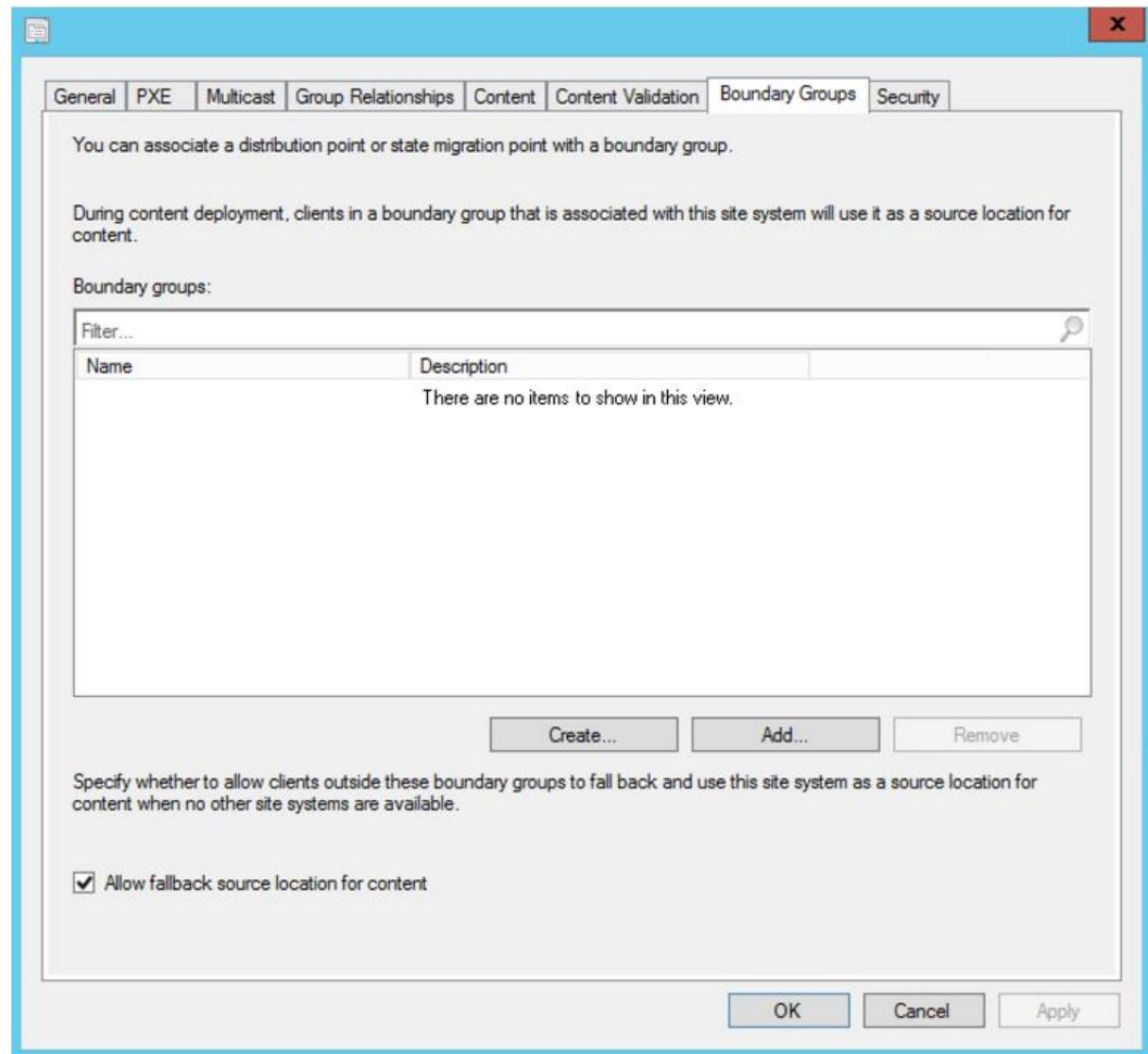


NOTE: If the workstations are **not receiving** the client, make sure **prestaged content** has **NOT** been checked under the **Distribution Point** (right-click on Distribution Point, select properties).

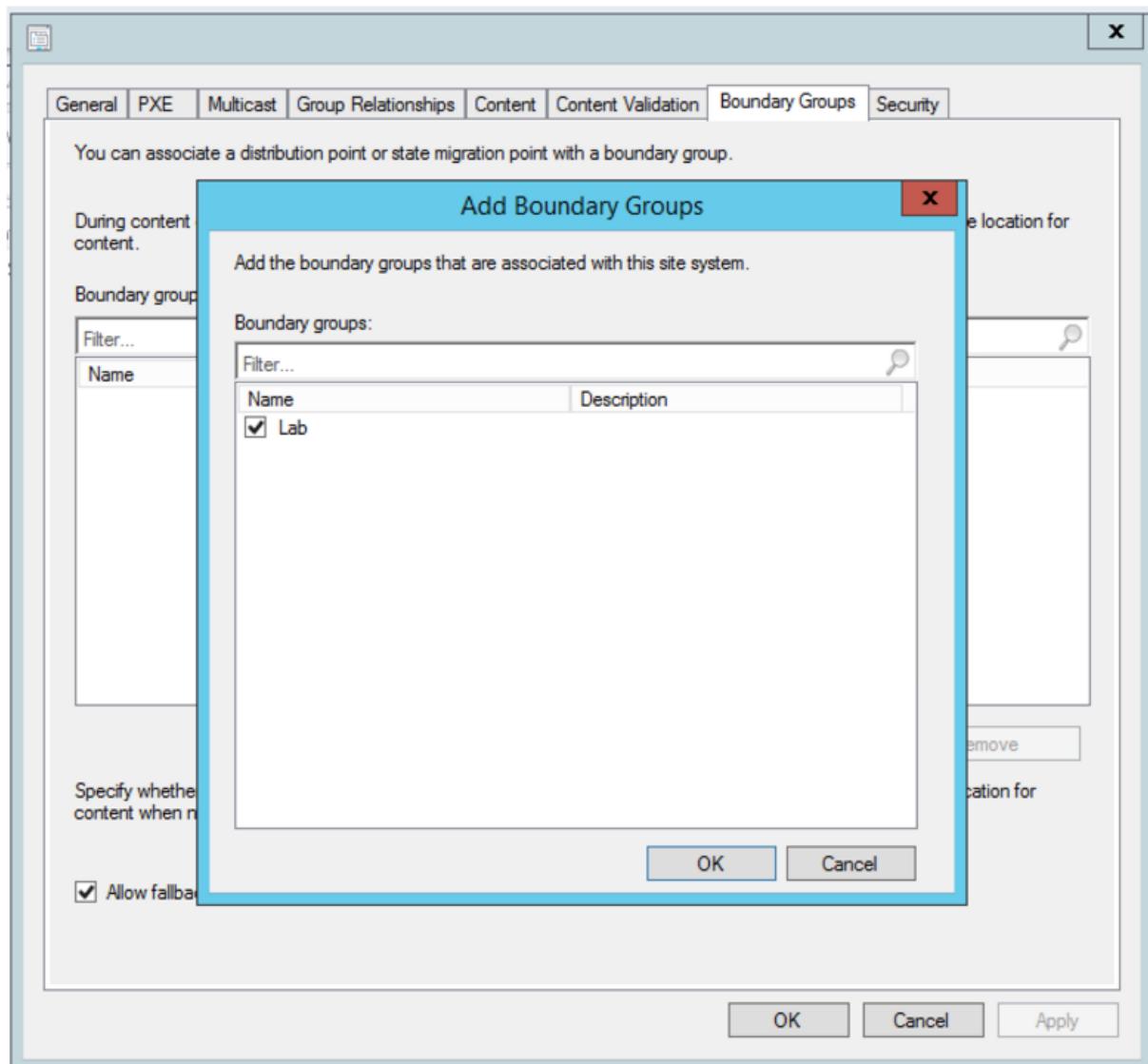


Add Distribution Point to Boundary Groups

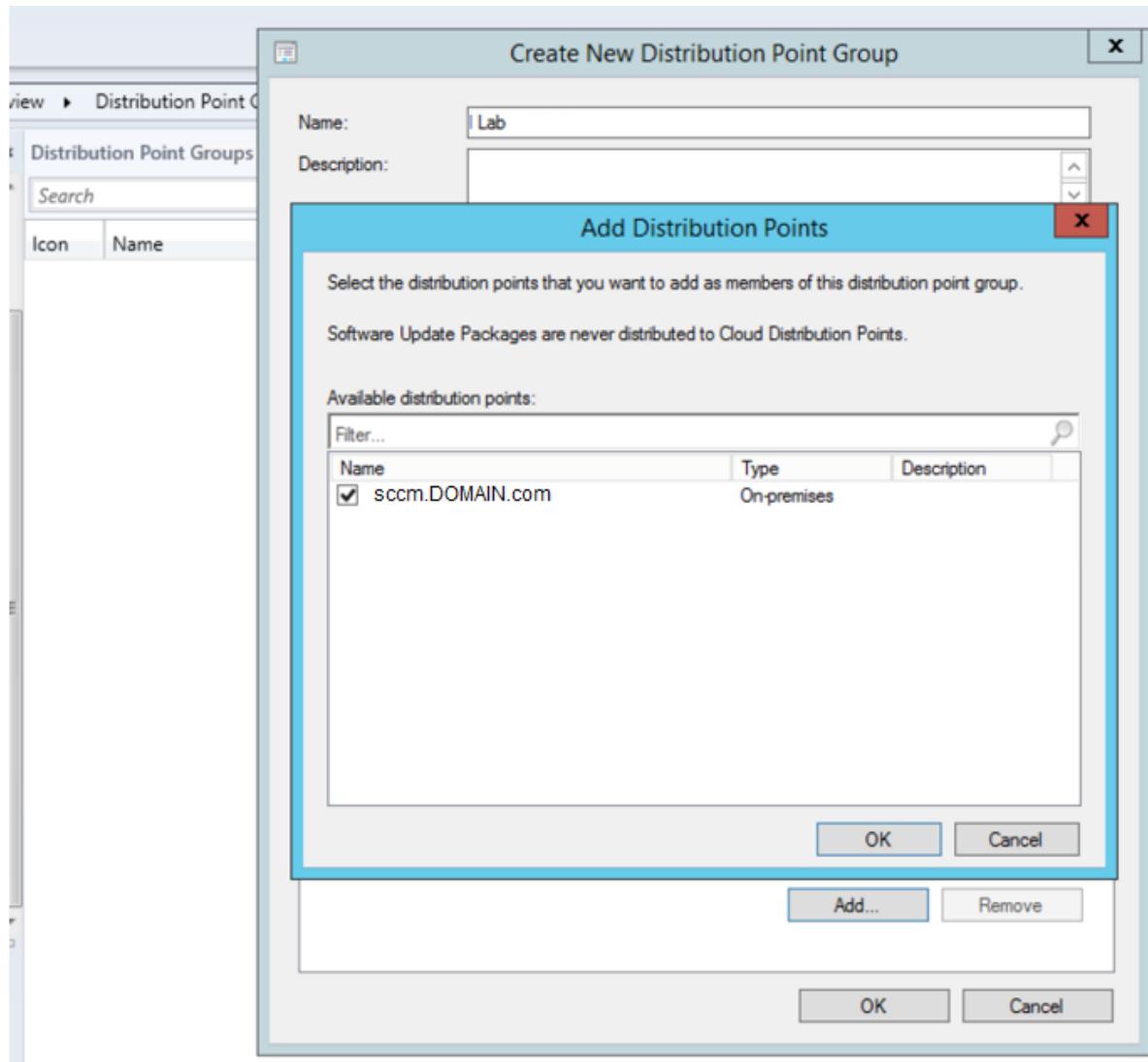
To add a **Boundary Group** to a **Distribution point**, click **Administration > Distribution Points** > right-click on the configured **distribution point** and select **Properties**. Click the **Add** button.



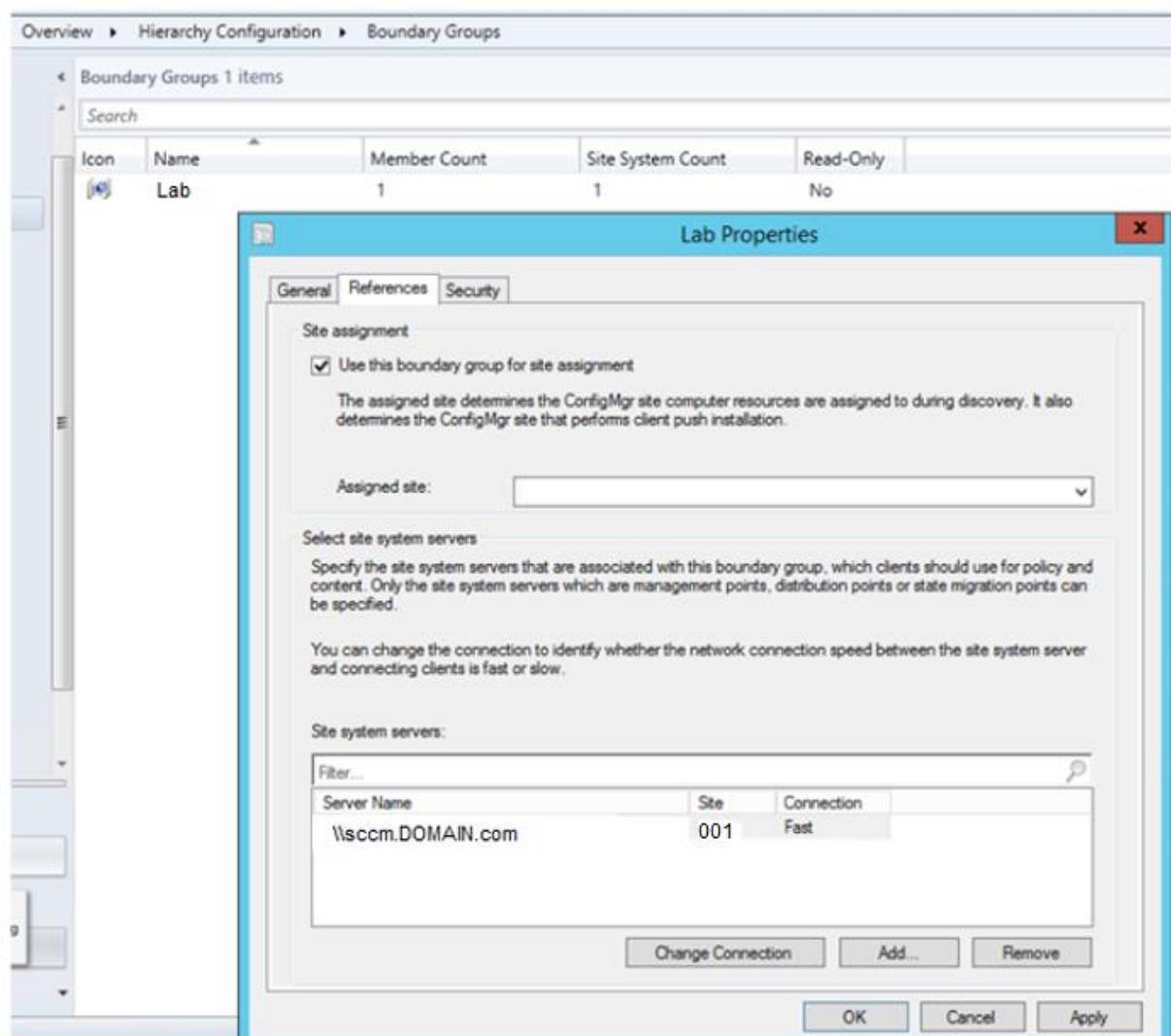
Check the managed **Boundary group**. Select **OK** to continue.



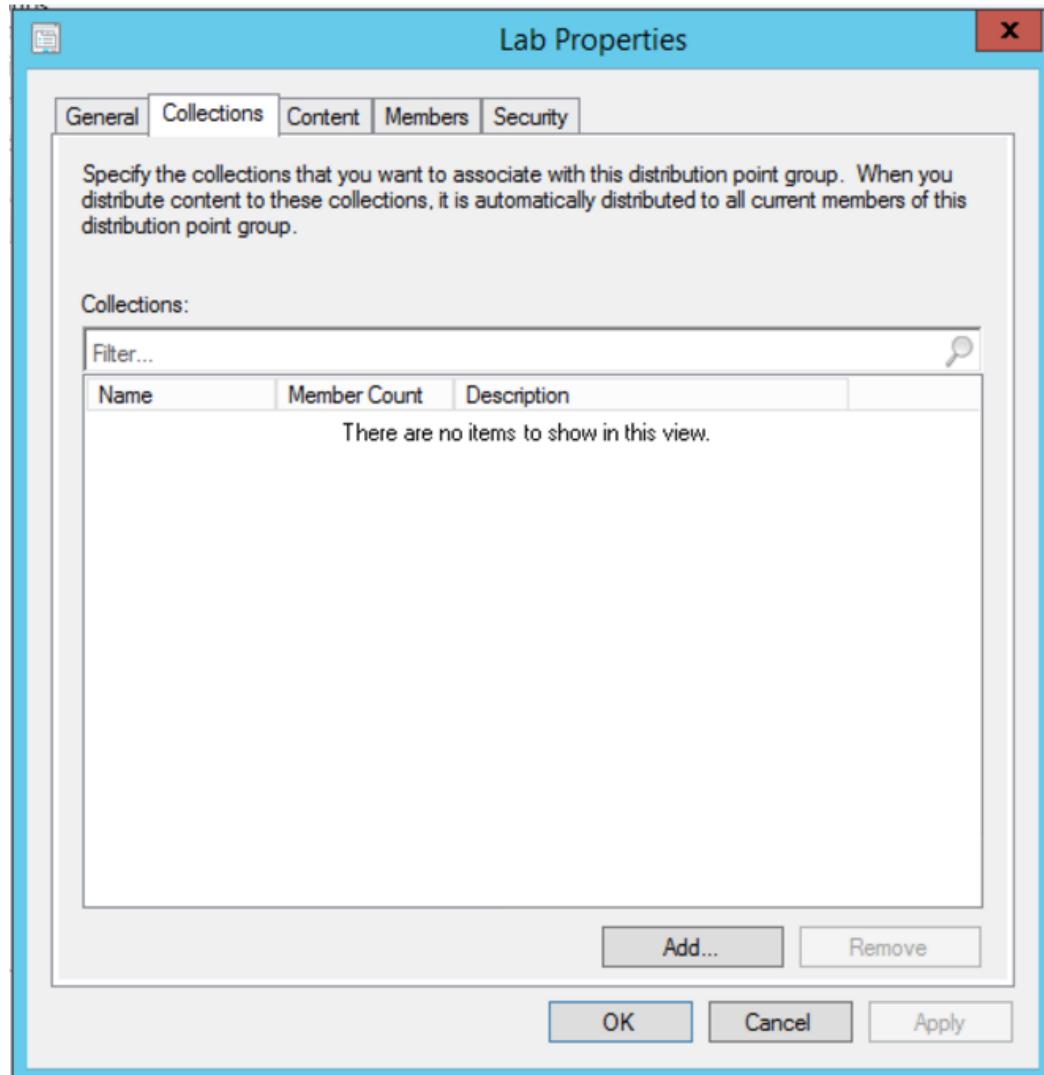
Next, create a **Distribution Group**, and link the group to the managed **Distribution Point**. Click **OK** and **OK** to finish configuring the Distribution setup.



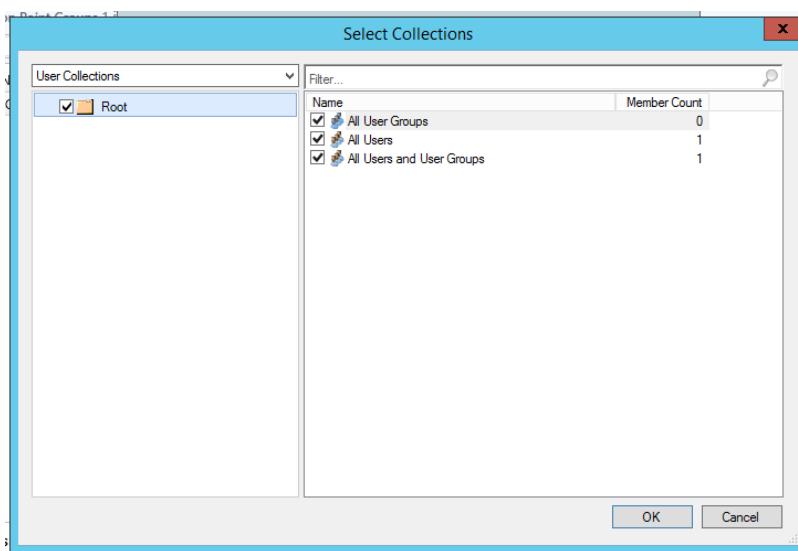
Now, link the managed **Boundary Group Site**, to any **Boundary Groups**. Select the **Boundary Group** (right-click and select properties), open the **References Tab**, and check the **Use this boundary group for site assignment**.



Next, link **Distribution Groups** to **Collections**. Select **Distribution Point Groups** (right-click and properties). Click **Add**.

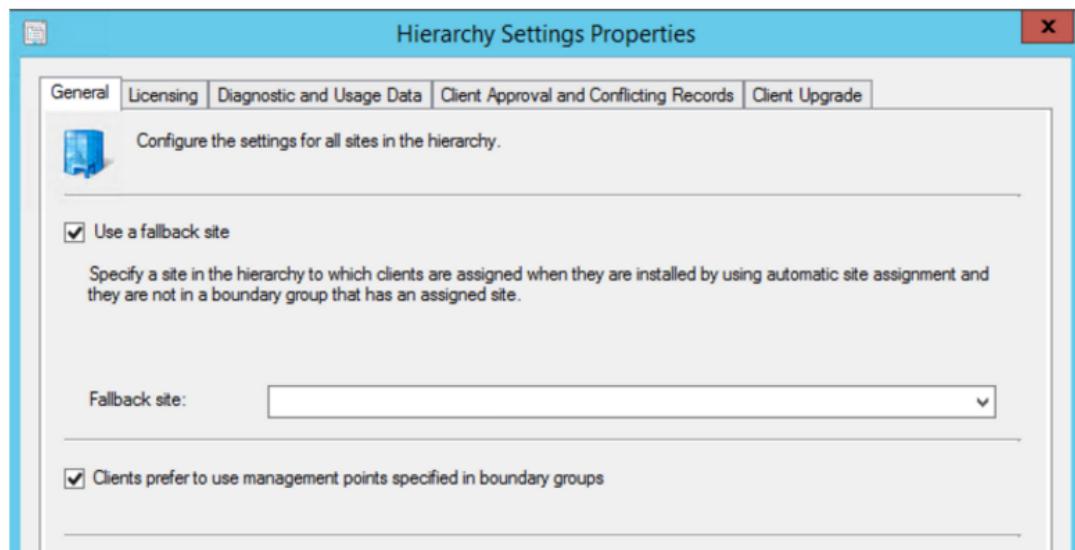


Select **Root**, and **OK** to continue.



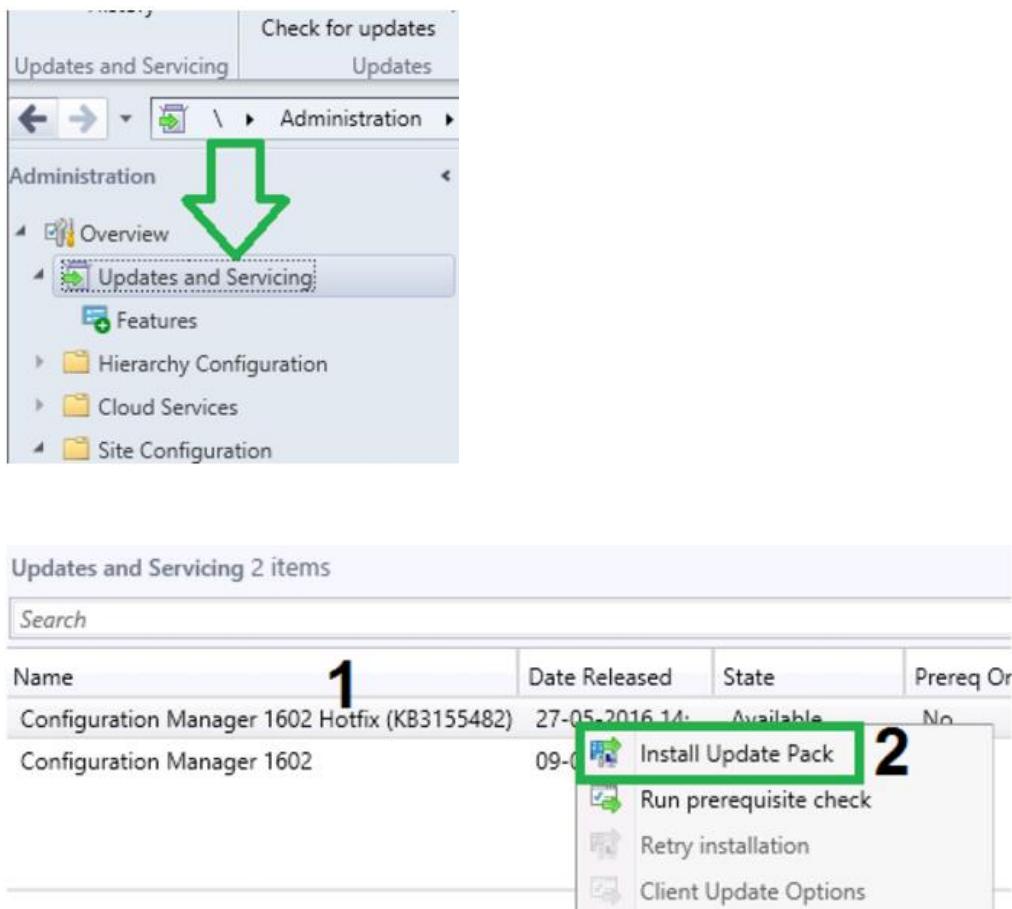
Finally, under **Administration**, select **Sites**, right-click and select Properties. Check **Use a fallback site** (useful for catching clients outside of boundaries) and **Clients prefer to use management points in boundary groups**. **OK** to close.

Note, you may NOT want to select this option if you don't want to manage machines that haven't been specifically added to boundaries.



Updating SCCM Configuration Manager

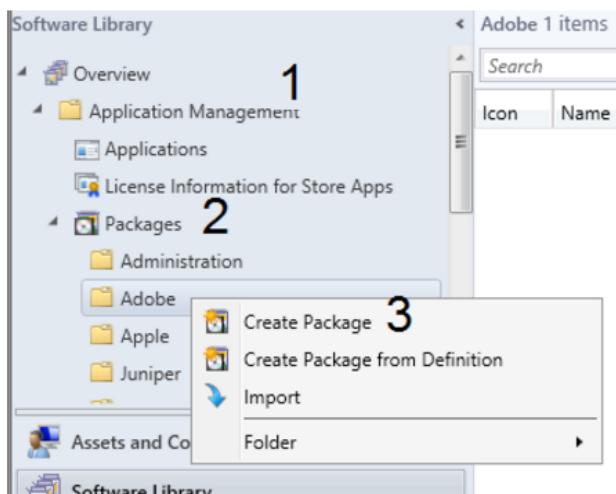
Go to the **Updates and Servicing** under **Cloud Services** (or just below Overview). If there are any updates marked *Available*, the updates can be downloaded and installed. To do this, right-click on the update and select **Install Update Pack**.



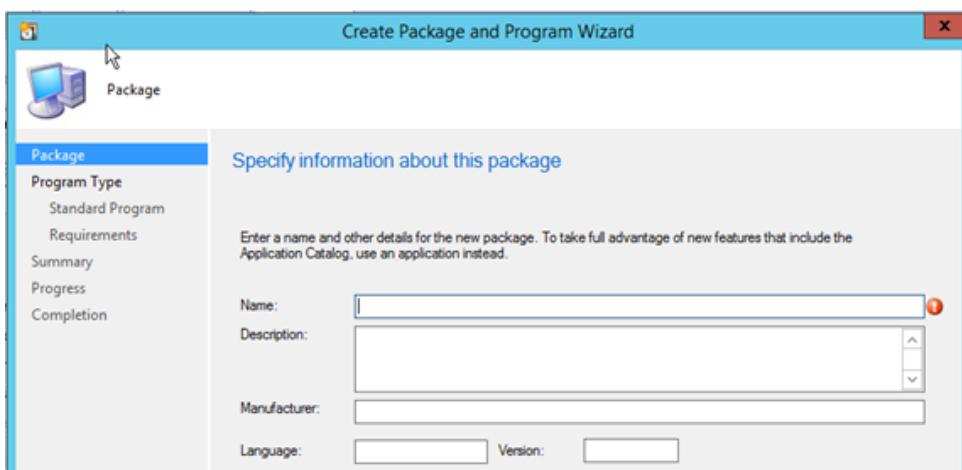
Create a Package

To deploy a package, you must first **Create** the package in SCCM. To start, access **Software Library**.

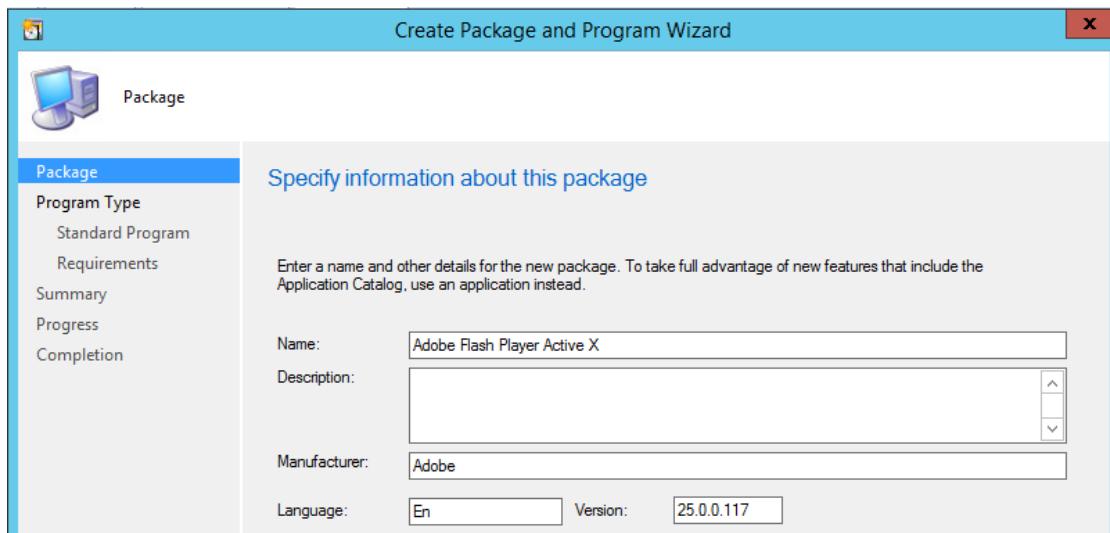
Then, **Application Management > Packages** and right-click on **Packages** and select **Create Package**.



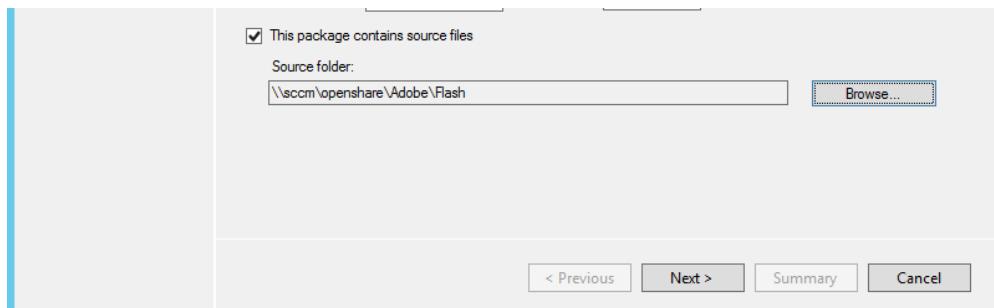
Now, start a package by **entering the details** of the package.



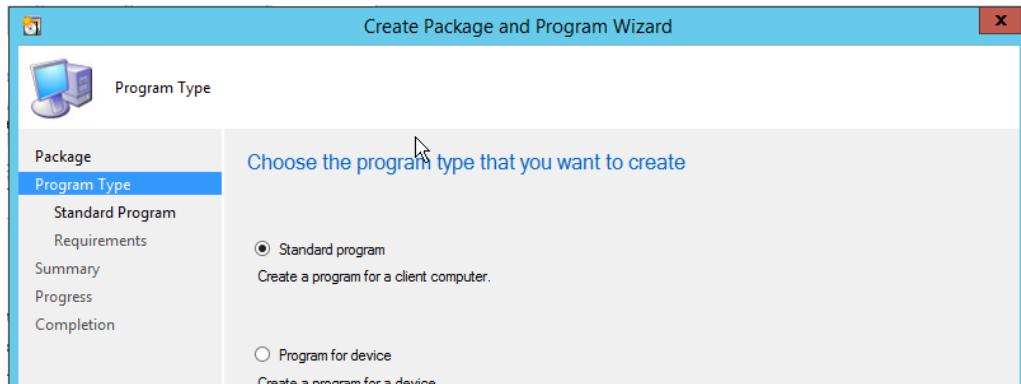
Package with Details



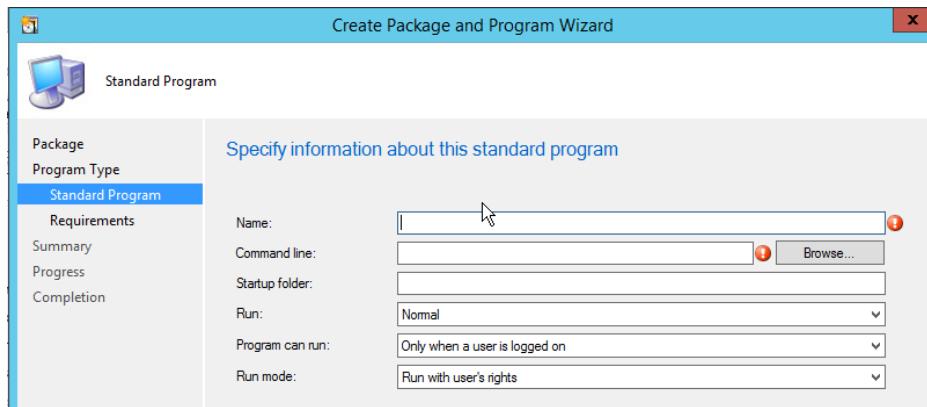
Then, check **This package contains source files** and select **FQDN UNC path** to source files. Click **Next** to continue.



Select **Standard program**. Click **Next** to continue.



Now, enter standard program information.



Once complete, click **Next** to continue.

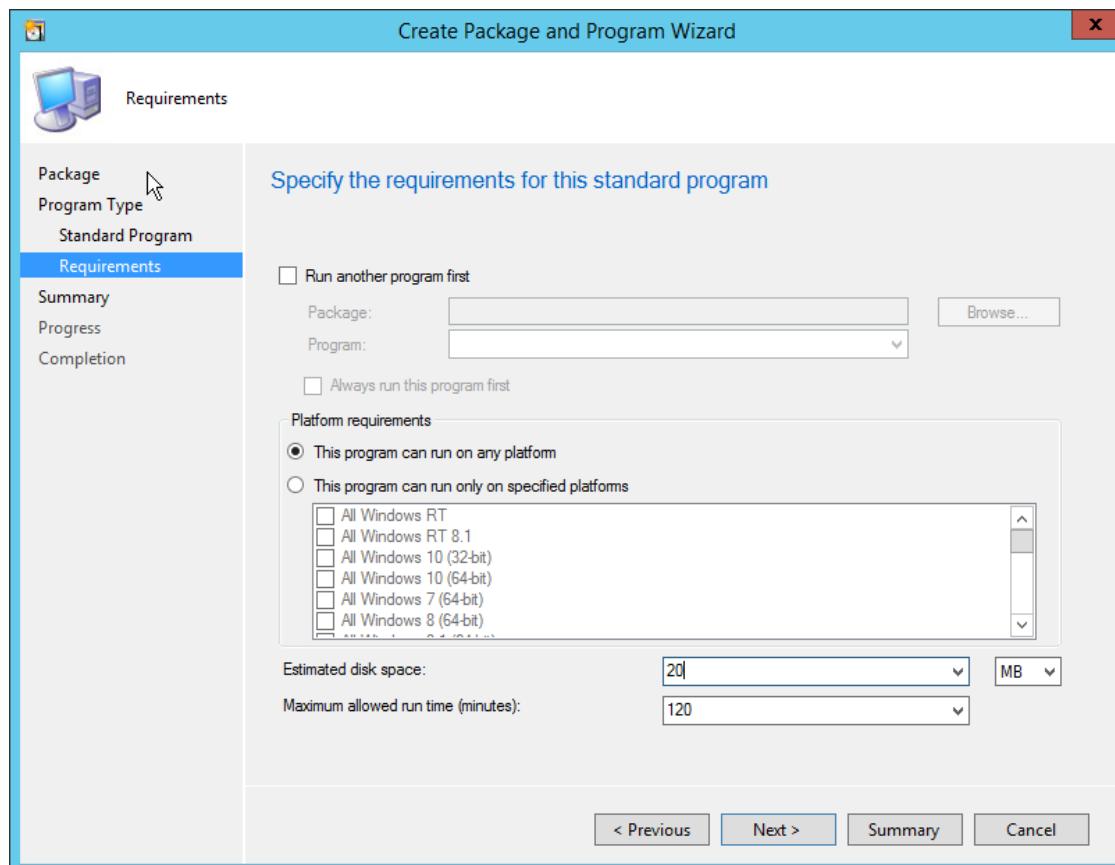
This is a detailed view of the 'Specify information about this standard program' form. It includes the following fields:

- Name: (SDP)
- Command line: Adobe_Flash_Player_25.0.0.148_Active_X_
- Startup folder: [Empty input field]
- Run: Normal
- Program can run: Only when a user is logged on
- Run mode: Run with administrative rights

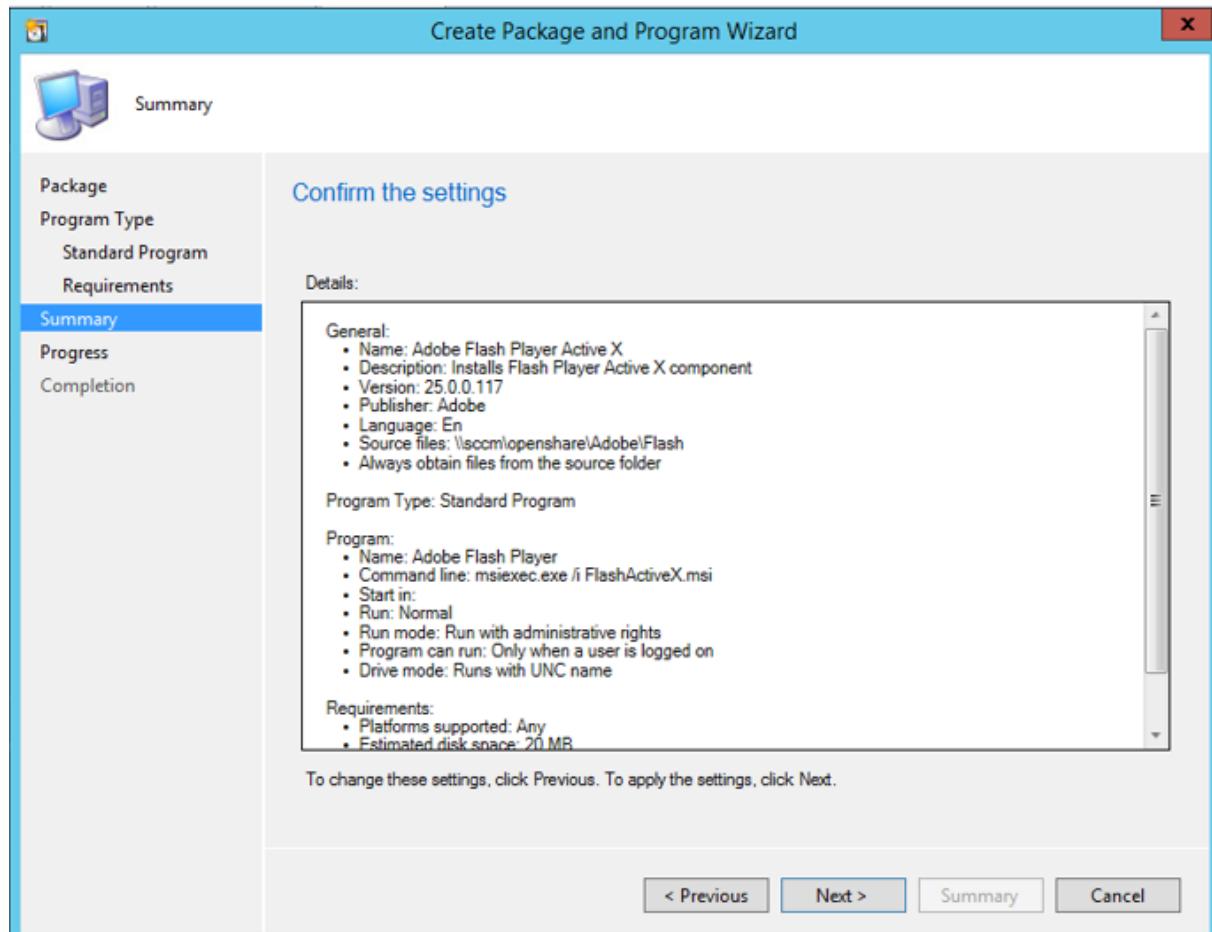
Below these fields are two checkboxes:

- Allow users to view and interact with the program installation
- Reconnect to distribution point at log on

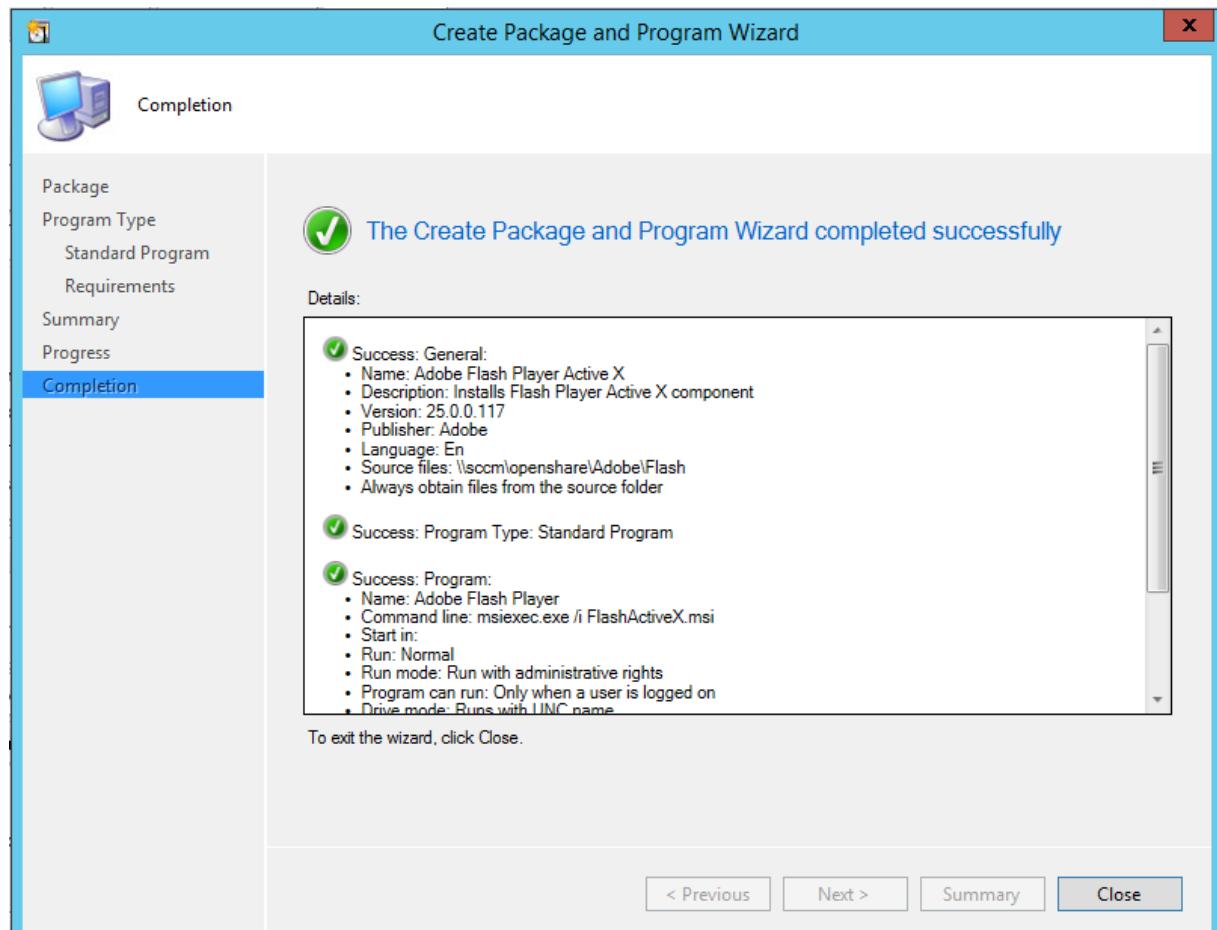
On the next screen, you can specify the **estimated disk space** and **platform**, then click **Next** to continue.



Review the summary screen, if everything is okay, click **Next** to continue.

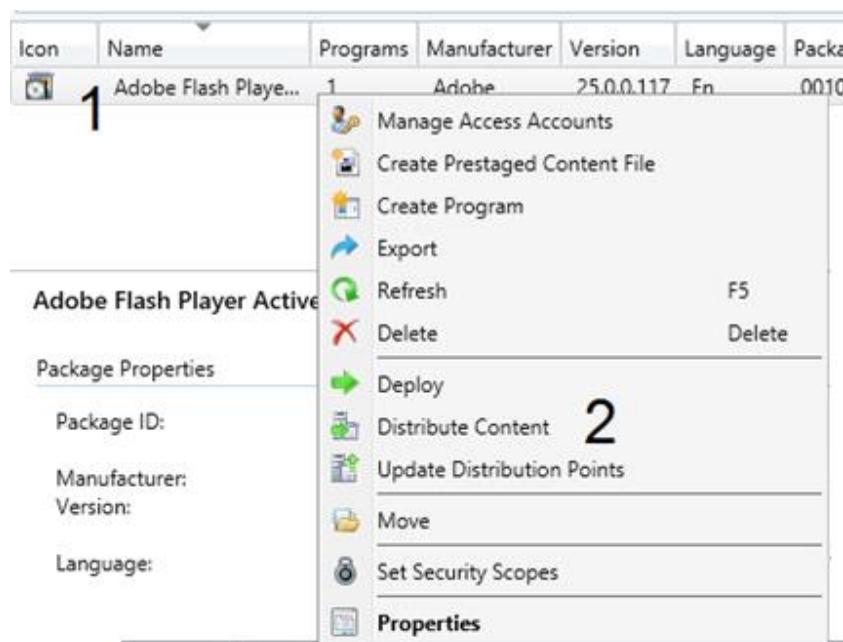


At this point, you have successfully created a package and program in SCCM. Click **Close**.

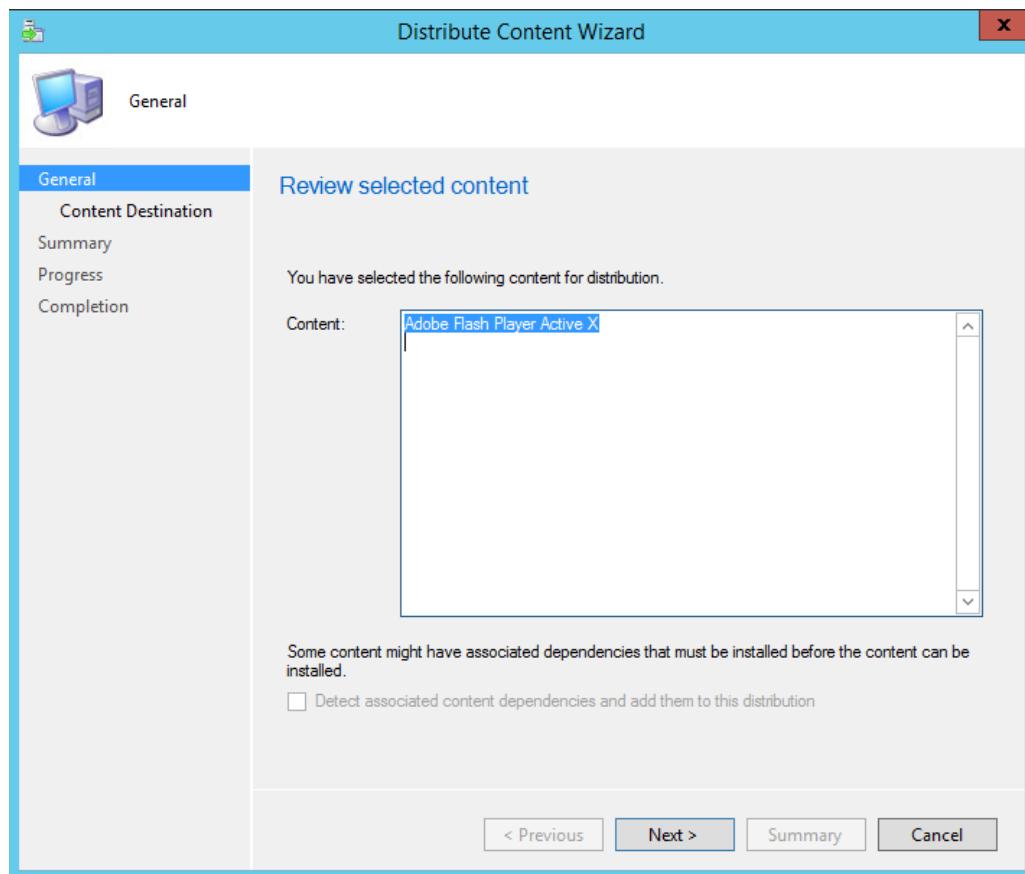


Pre-Deploy a Package

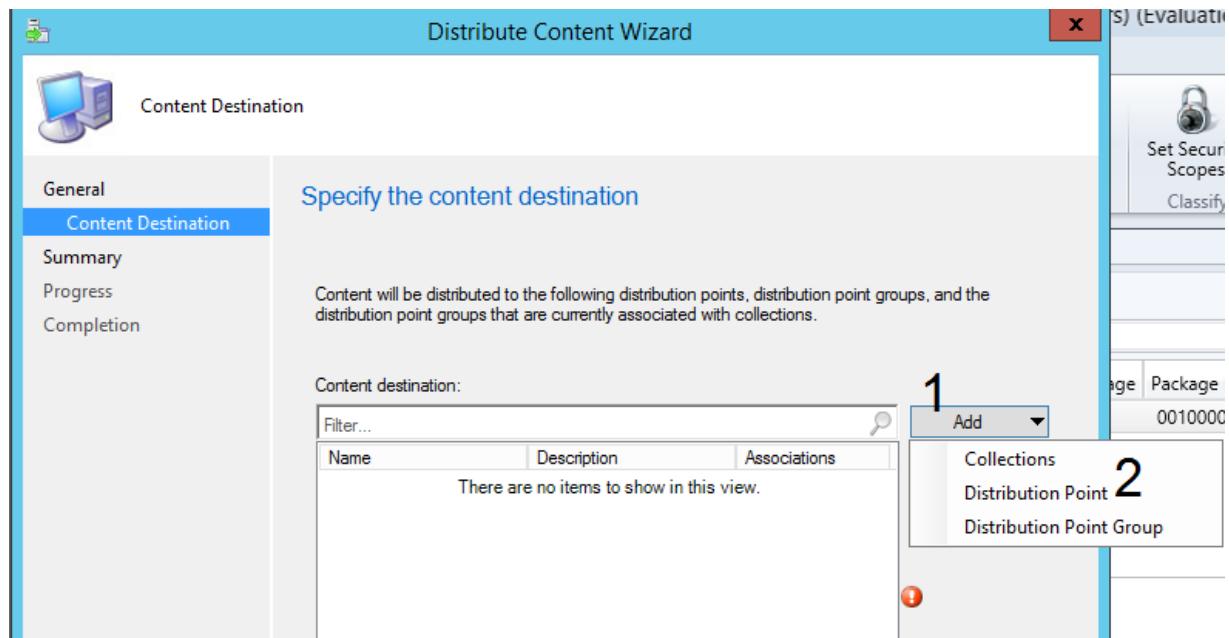
Once a package has been **Created** in SCCM, now you can set up a deployment. It is good practice to make sure the package has been **added to the distribution point** (if it has not, it will not deploy). To do this, right-click on the **package**, and select **Distribute Content**. You can then monitor the distribution status under **Administration > Monitoring > Content Status**.



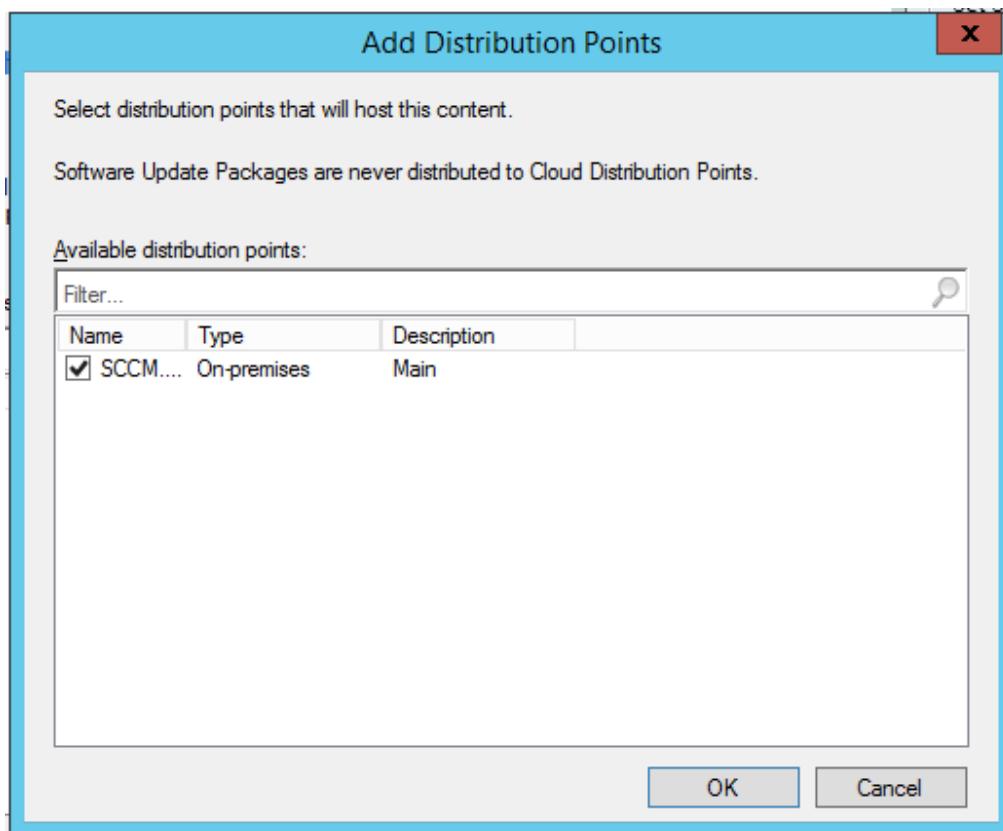
Click **Next** to continue.



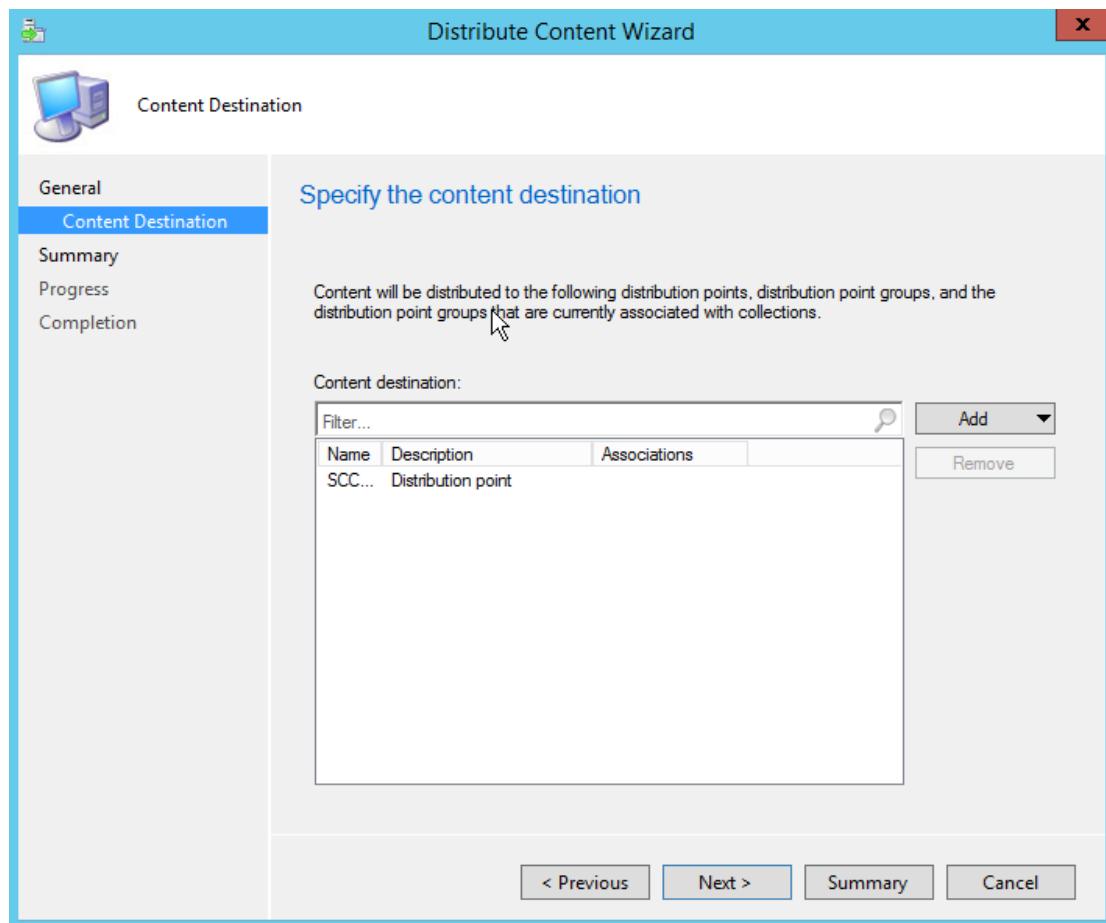
Click the **Add** button and select **Distribution Point**.



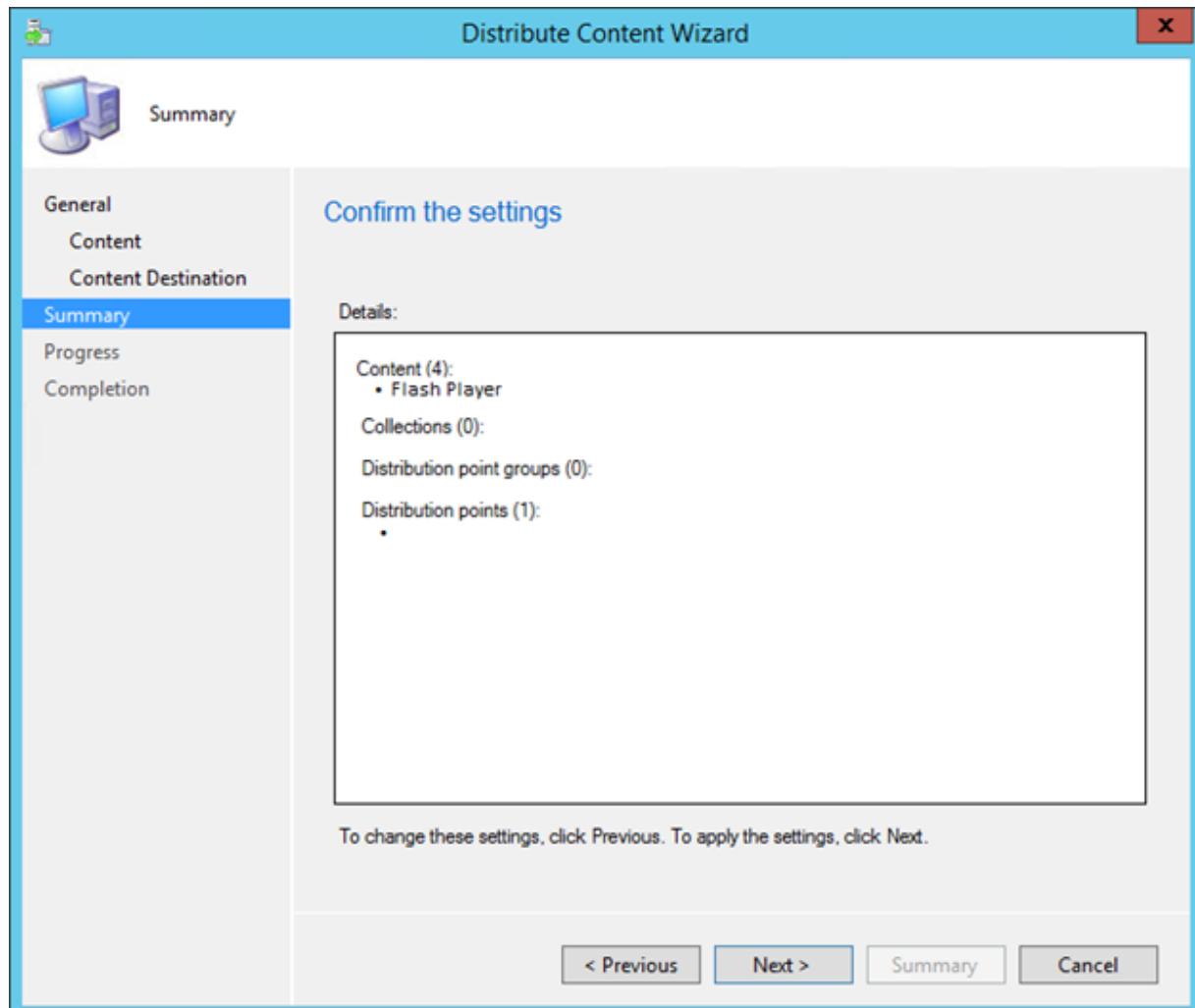
Select available **distribution** point. Click **OK** to continue. If no distribution is available, it means the package is already available on the distribution point. In that case, just **Cancel** and move to **Deploy Package**.



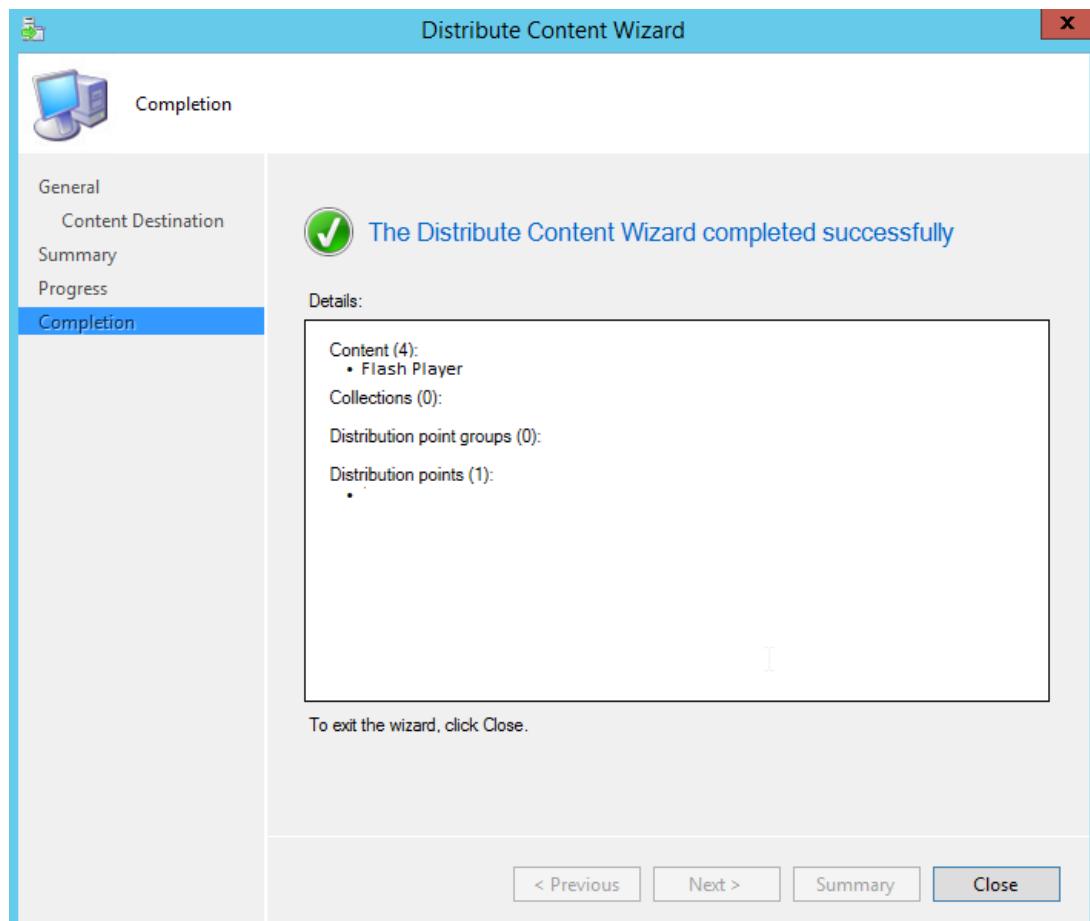
Click **Next**.



Click **Next**.



Click **Close**.



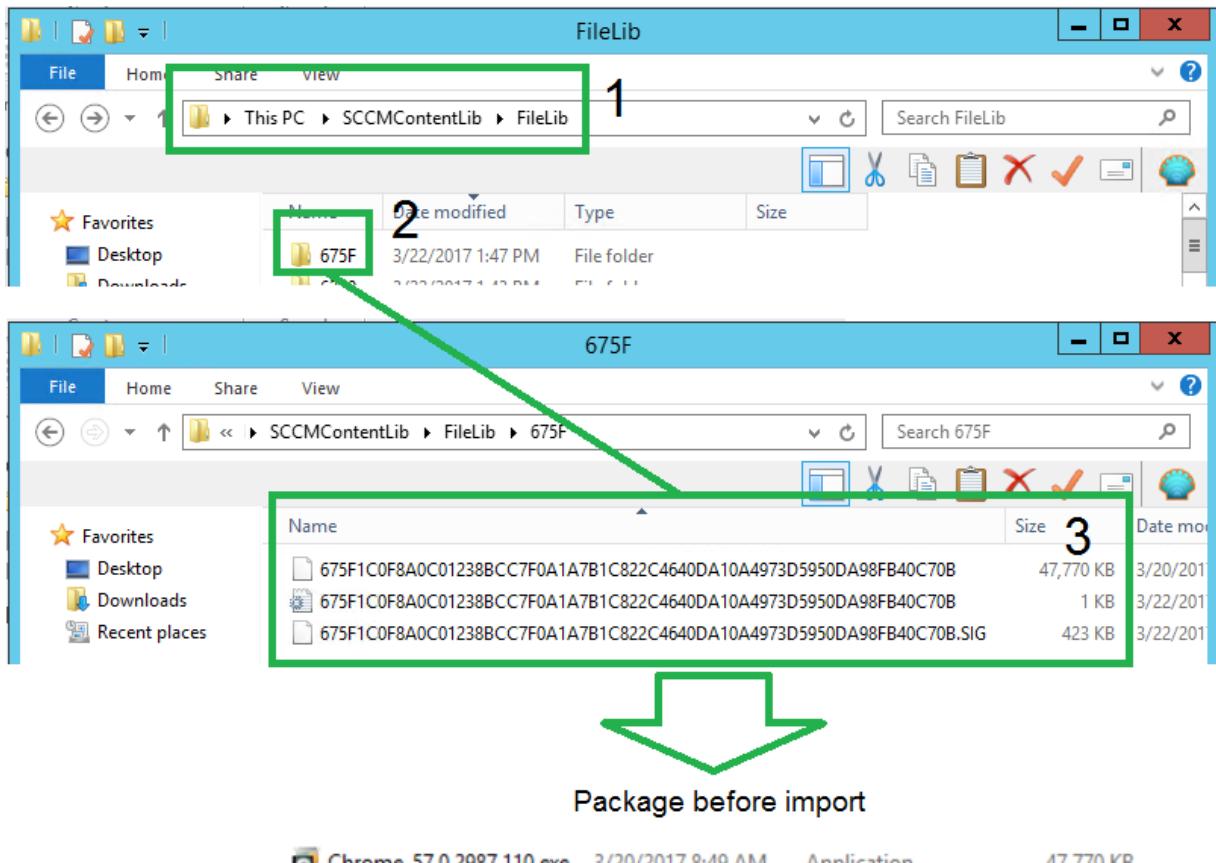
A Successful Content Distribution

The screenshot shows the 'Monitoring' interface with the 'Content Status' node expanded. The right pane displays the 'Content Status' dashboard for 'Adobe Flash Active X 25.0.0.148 En'. It shows a success rate of 100% with 1 asset and a status type of 'Success'. The status bar at the bottom indicates 'Successfully distributed content'.

Status	Assets	Status Type
Successfully distributed content	1	Success

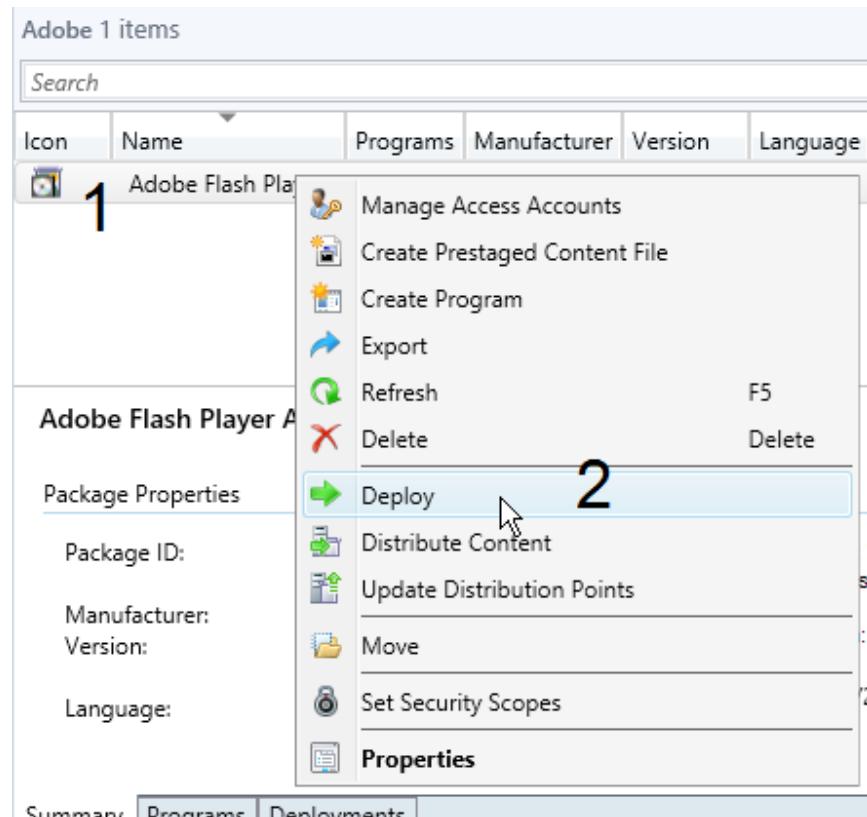
As a side note, packages are not stored in the distribution point in their original form, such as MSI or EXE. Packages in the distribution point can be found in the following location:

SCCMContentLib\FileLib

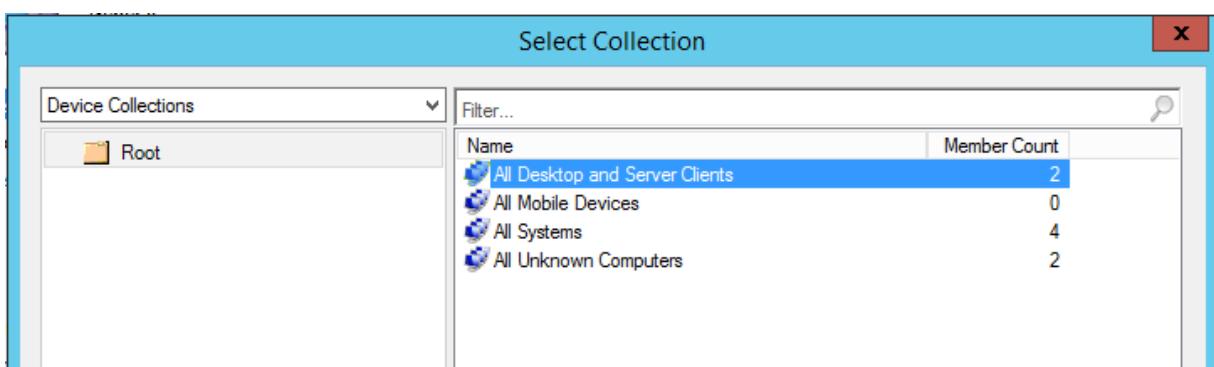
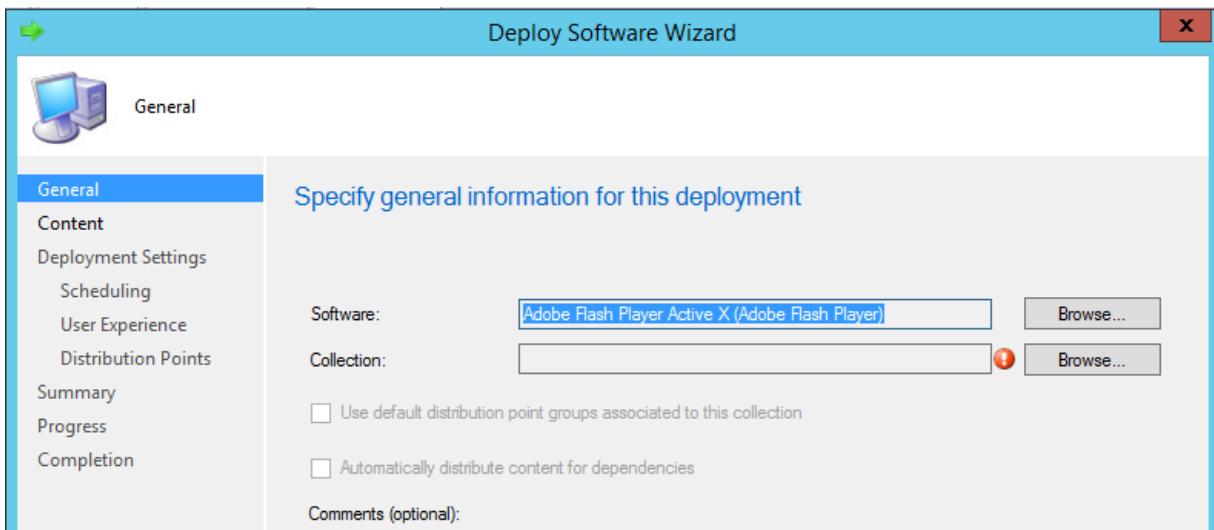


Deploy Package

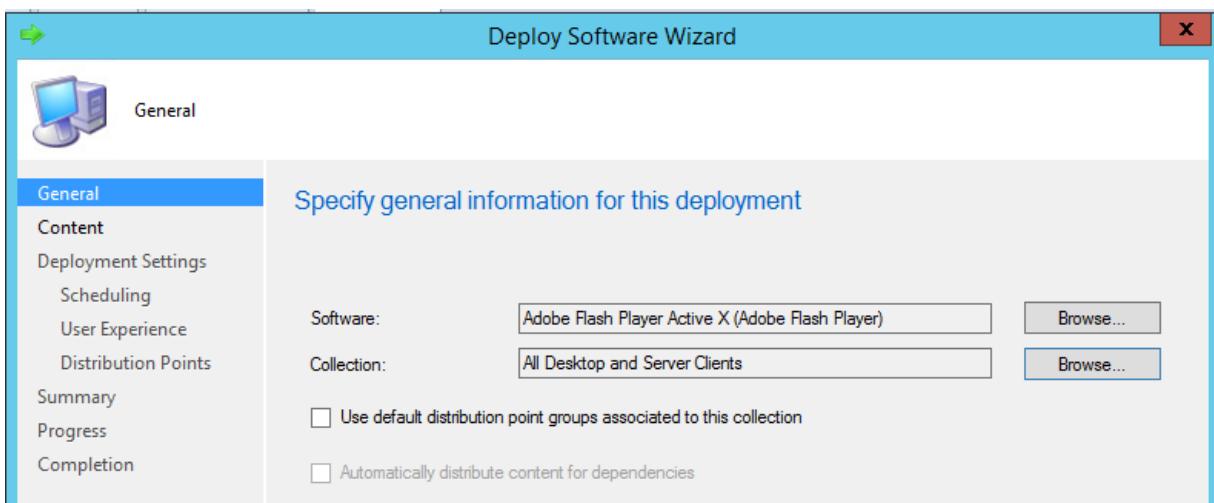
To Deploy a package, right-click on the **package** and select **Deploy** from the menu.



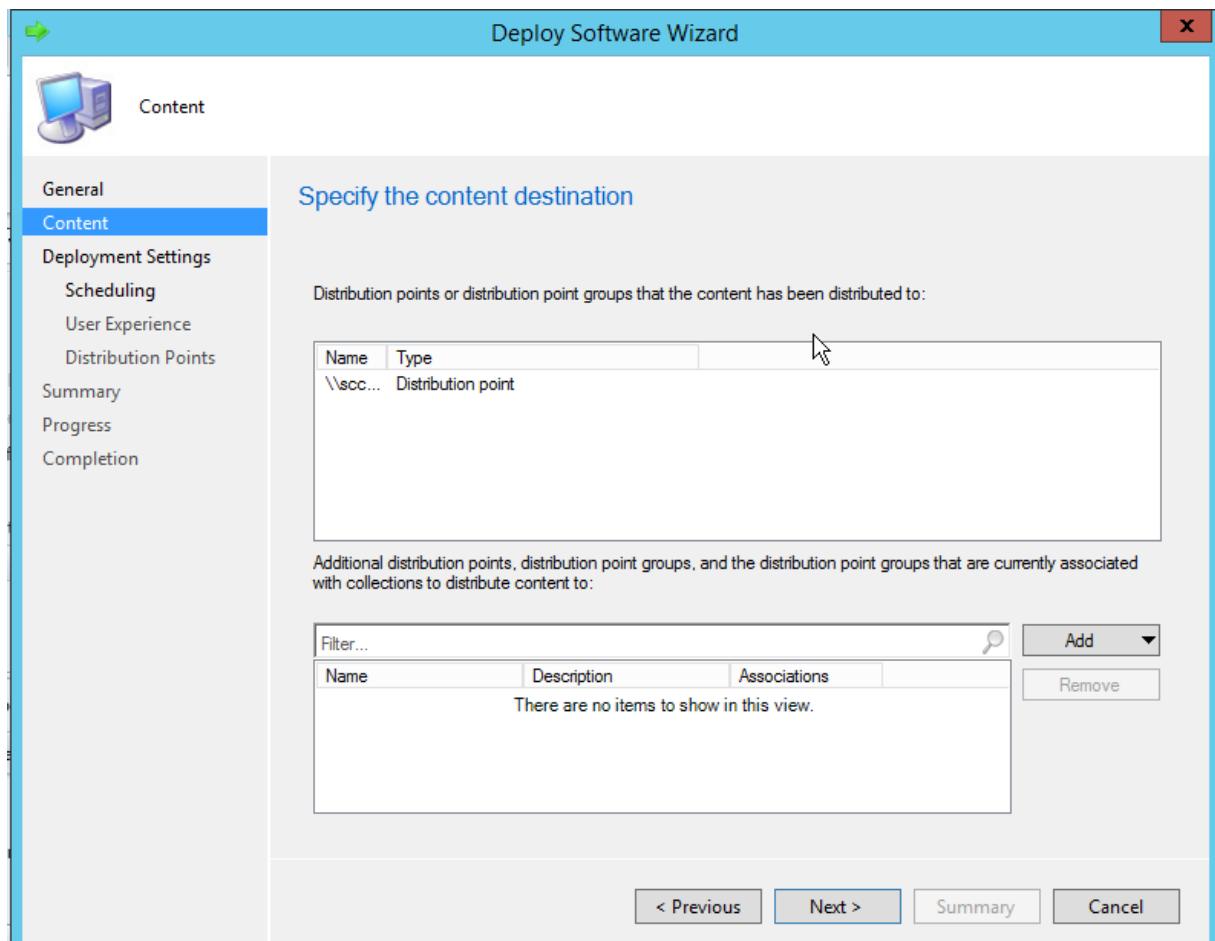
Select which **Collection** should receive the package by **Browsing** to collections.



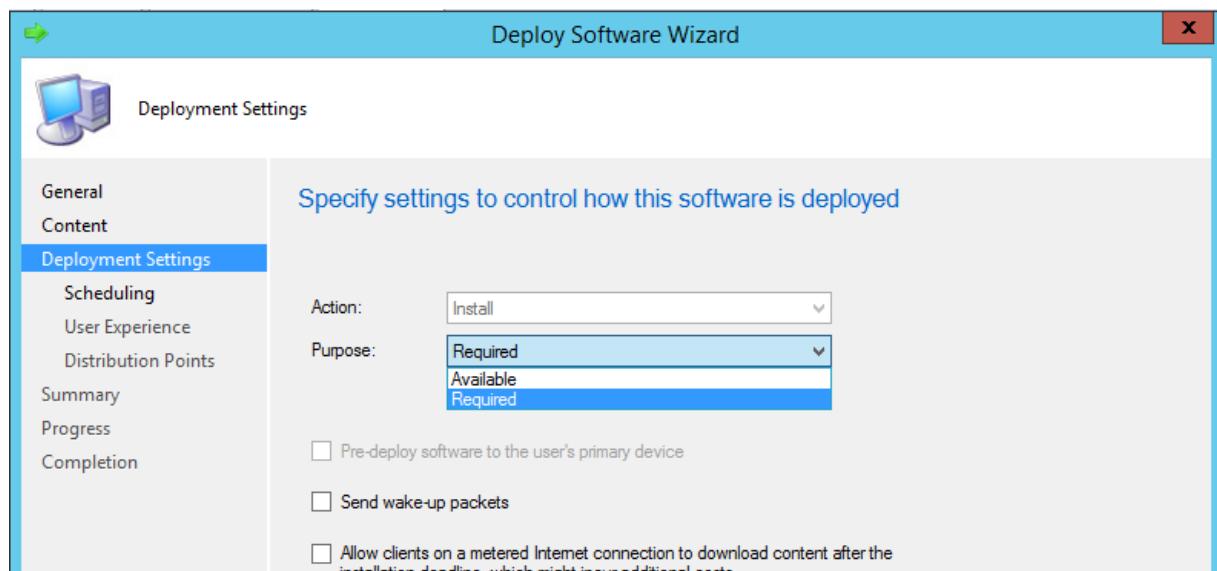
Click **Next** to continue.



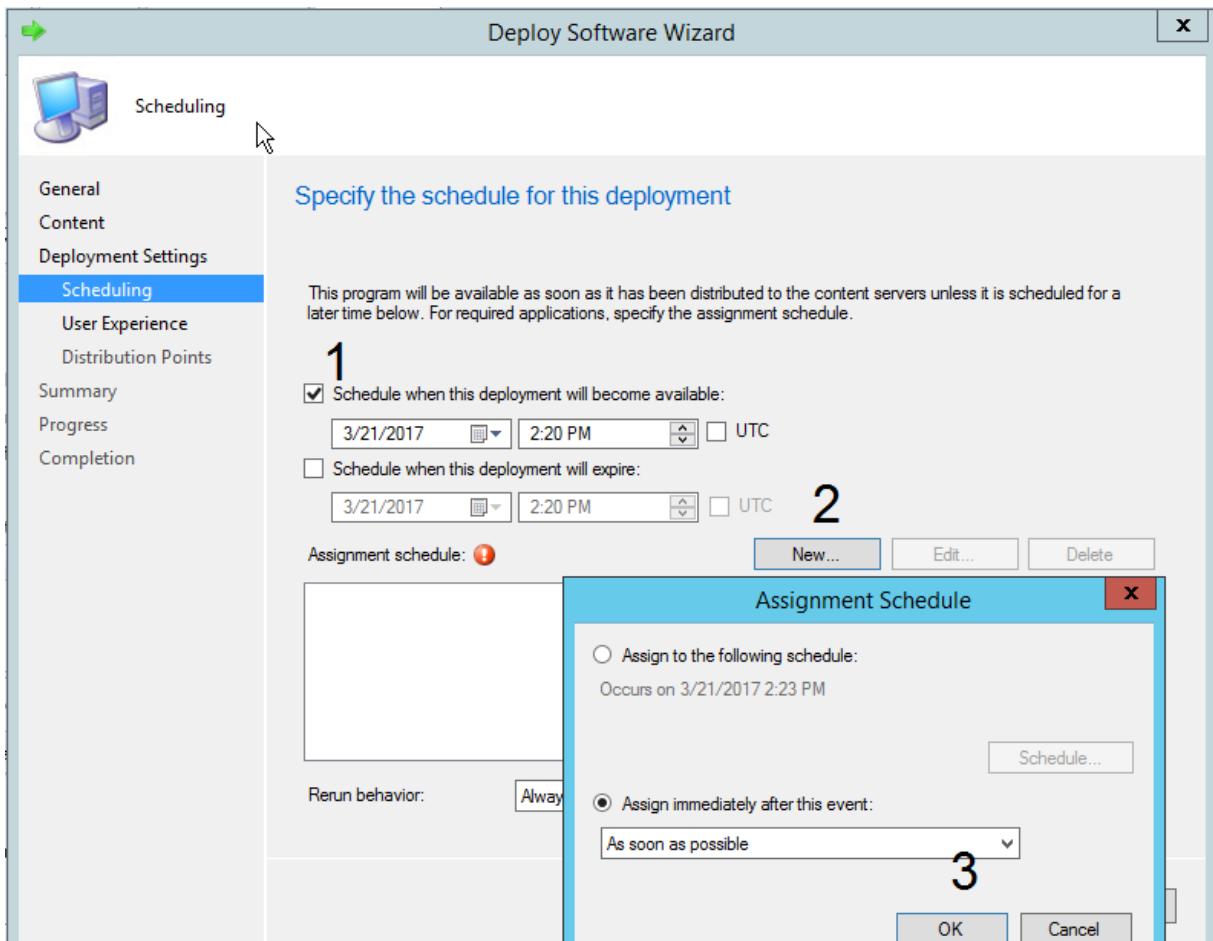
Click **Next** to continue.



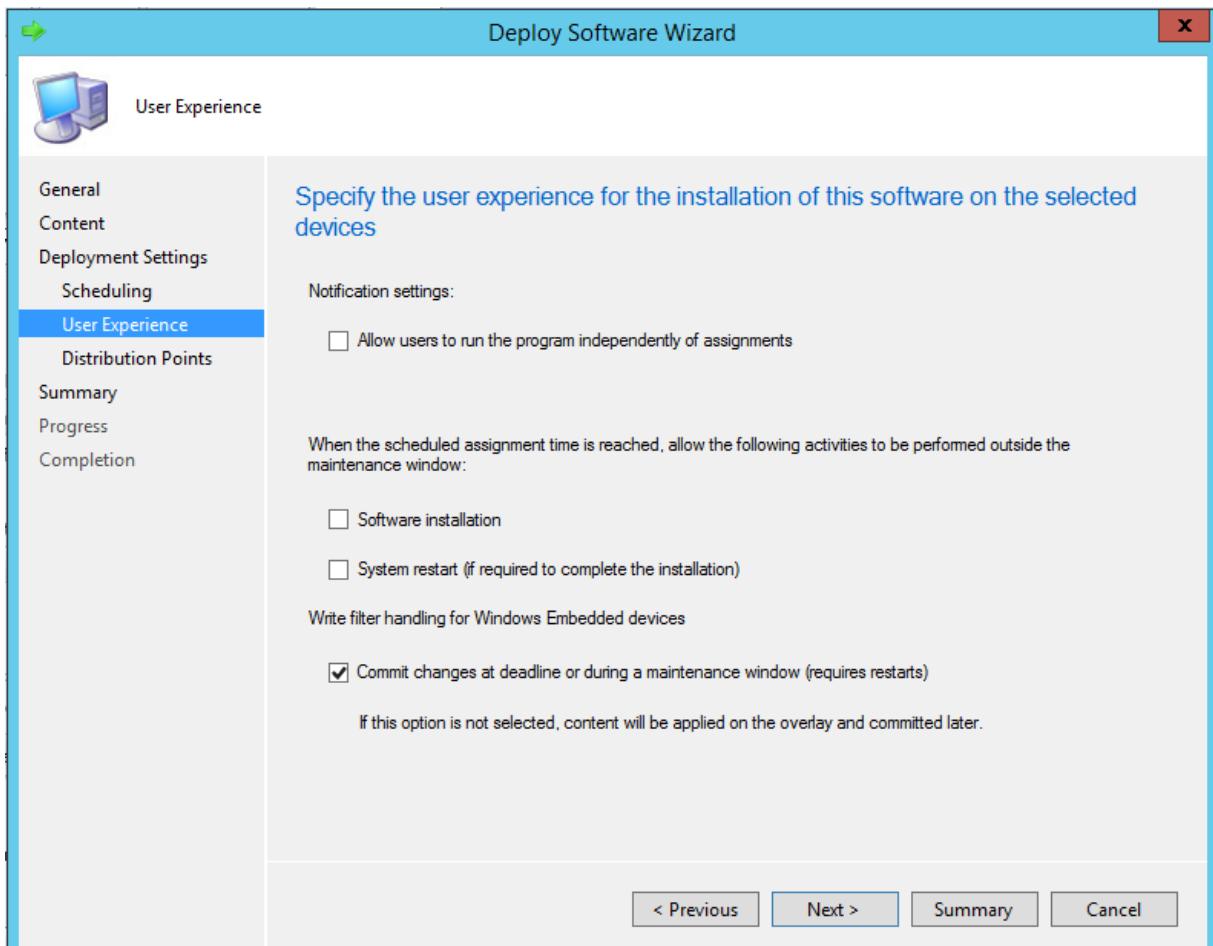
Select whether **Required** or **Available**. Click **Next** to continue.



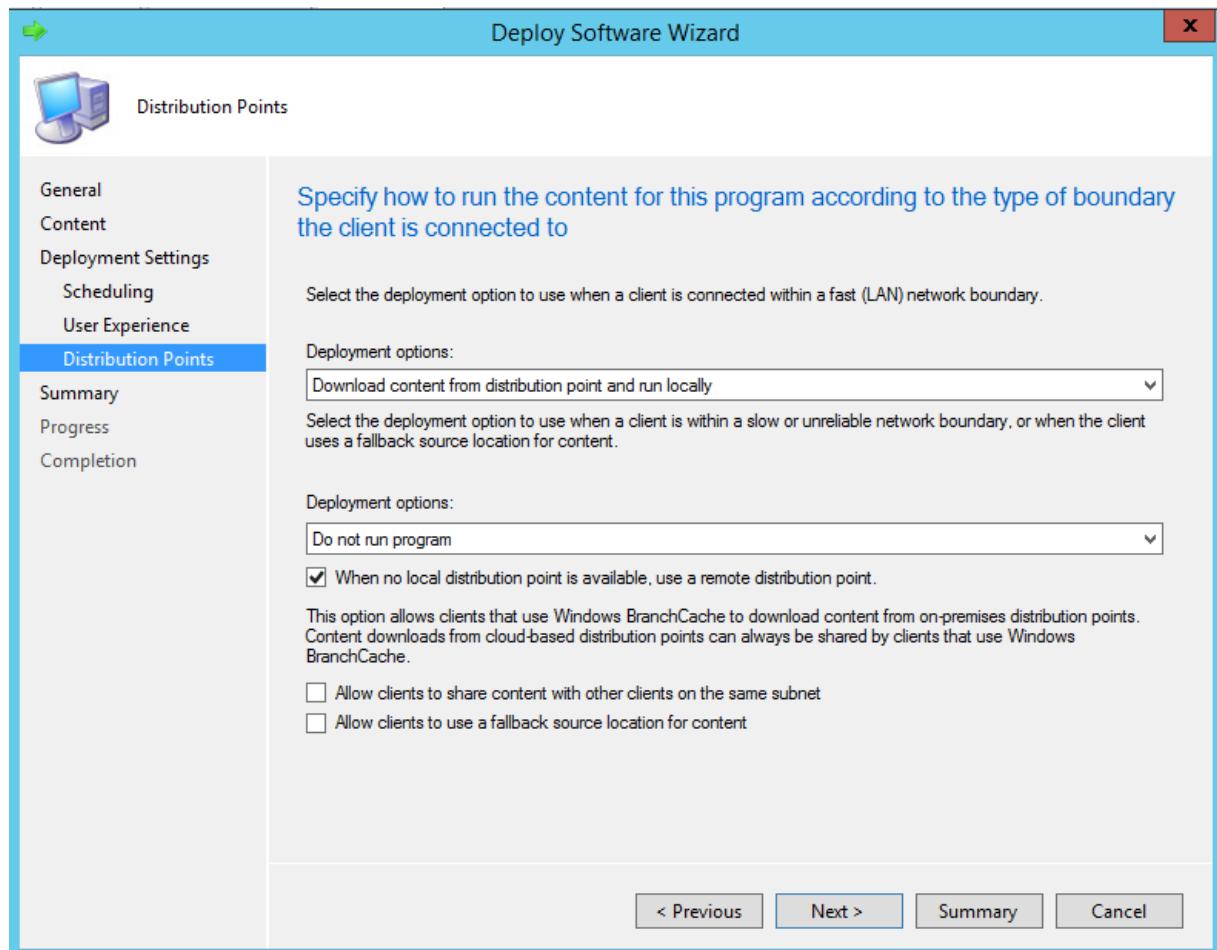
Set up package **Scheduling**. Click **Next** to continue.



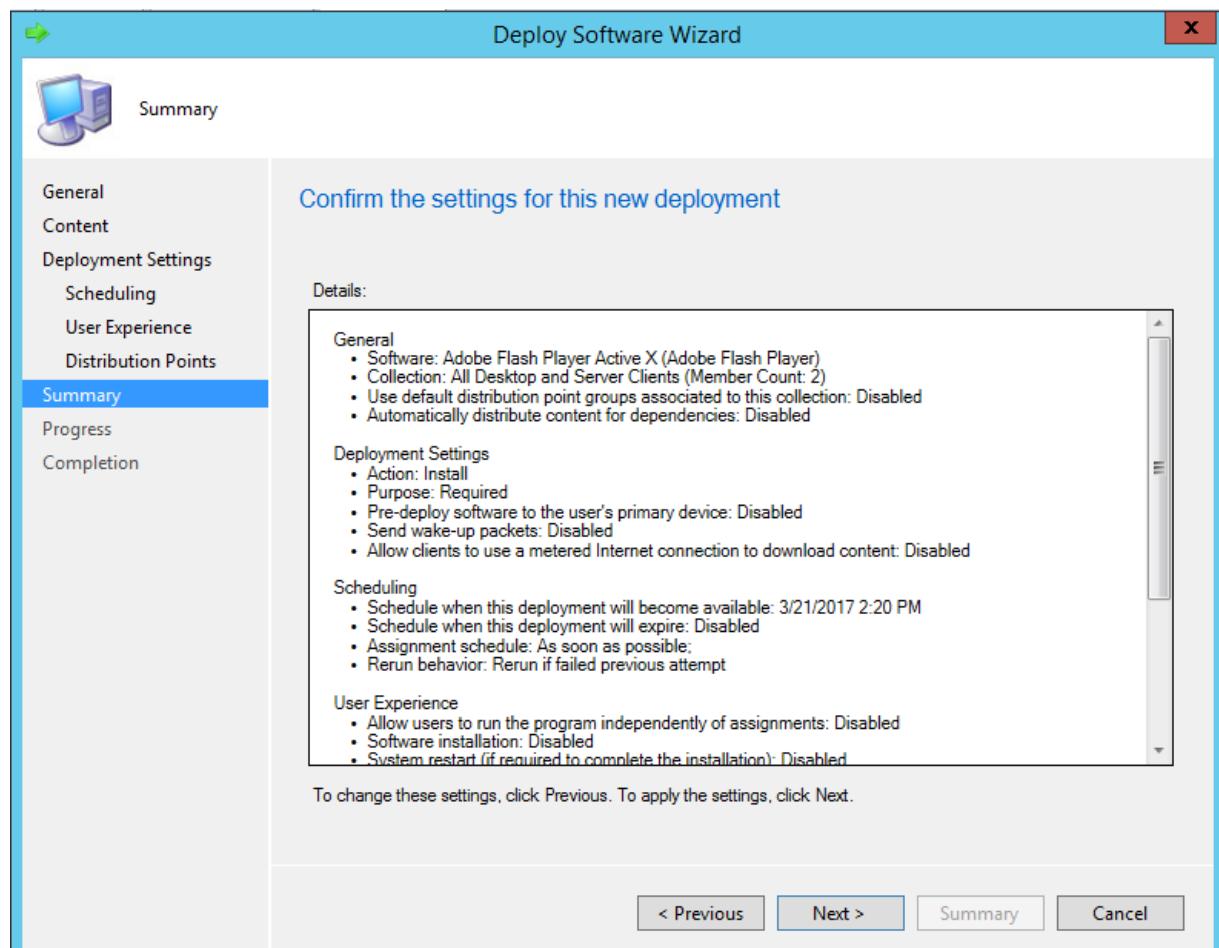
Make changes to the **User Experience**. Click **Next** to continue.



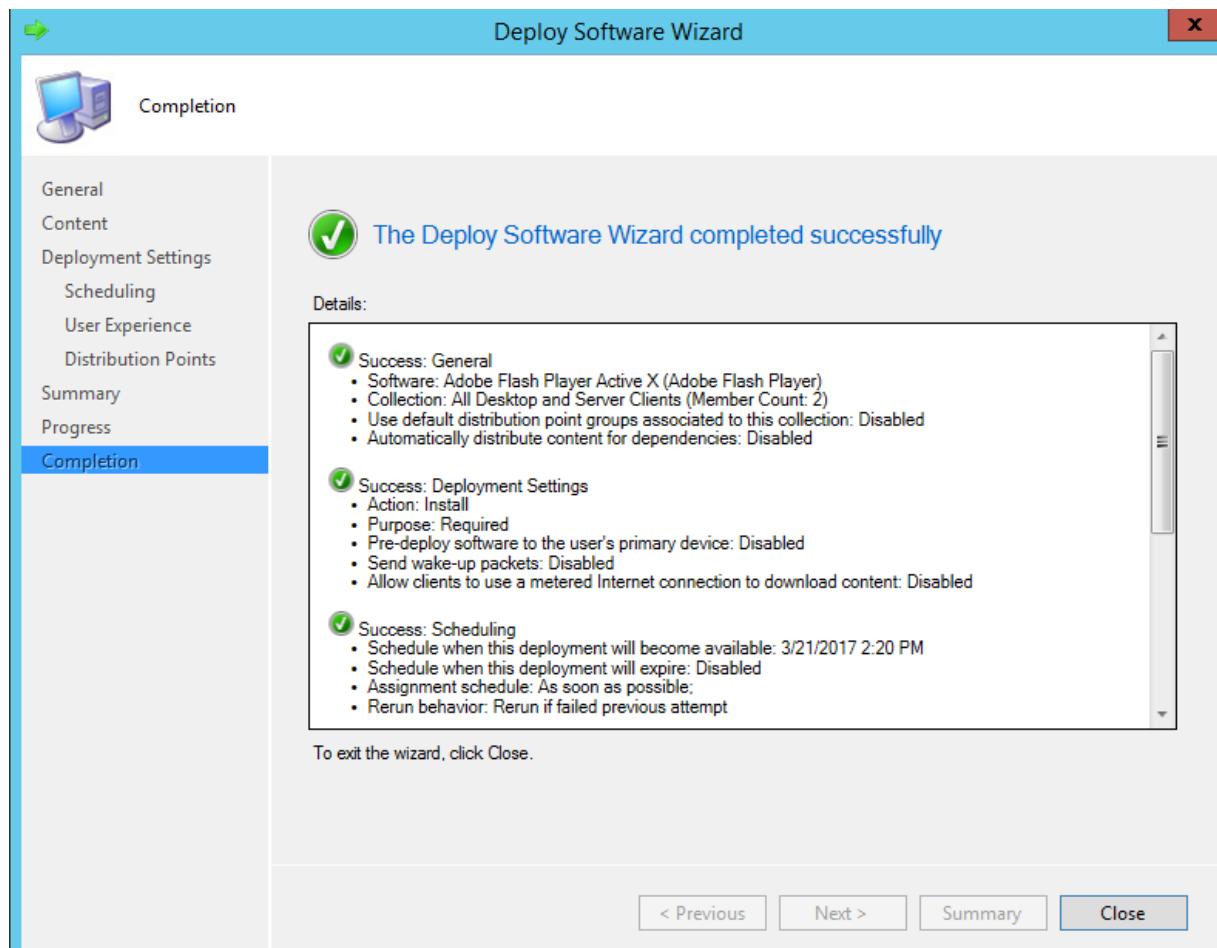
Make changes to **Distribution Options**. Click **Next** to continue.



Review Summary. Click **Next** to continue.



The Deployment has been successful. Click **Close** to exit deploy wizard.

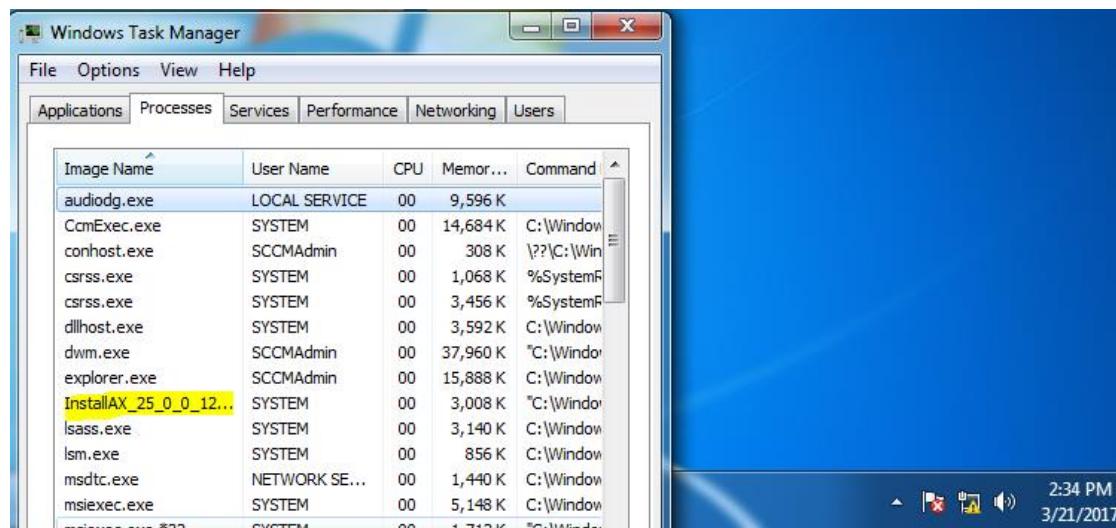


Monitoring a Deployment

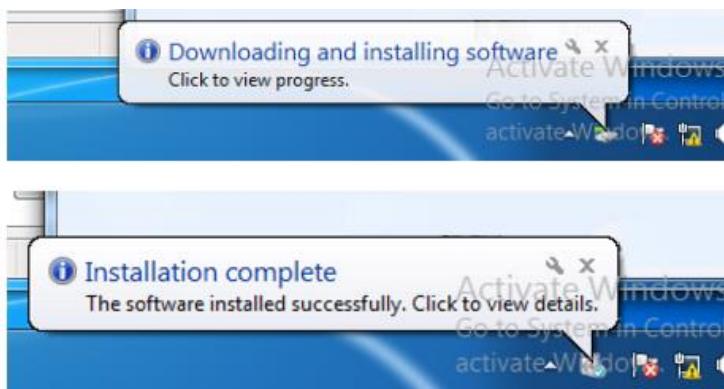
Once a package has been set to be delivered to a **Collection**, the deployment can be monitored from the client or the SCCM server.

On the client, **Task Manager** can be used to track the installation process. Frontend **Notifications** can also be sent, so the end user knows a package is being downloaded, installed, and completed. If you like logs, check out C:\Windows\CCM\logs\AppEnforce.log, which records details about enforcement actions (install and uninstall) taken for applications on the client. **Client cache** can also be monitored, to see if the package is downloading. That is located here: C:\Windows\ccmcache\1

Silent Install - No Notifications



Install - With Notifications



On the SCCM Server, under **Monitoring > Deployments**, the package deployment status can be monitored in **Deployment Status**.

A screenshot of the SCCM Monitoring interface. On the left, there is a navigation tree with categories like System Status, Deployments, and Monitoring. The Monitoring category is currently selected. In the main pane, there is a section titled "Deployment Status" with a sub-section for "Programs". It shows a single item: "Adobe Flash Player Active X (Adobe Flash Player)" with a status of "Success". Below this, there are tabs for "In Progress", "Error", "Requirements Not Met", and "Unknown". A message at the bottom of the main area says "Status information is currently unavailable for this deployment." At the bottom of the interface, there is a section titled "Asset Details" with a message "Asset Detail information is currently unavailable for this deployment.".

A Successful Deployment

The screenshot shows the 'Deployment Status' interface. On the left, a navigation pane includes 'Monitoring' (with 'System Status', 'Site Status', 'Component Status', 'Conflicting Records', 'Status Message Queries', 'Deployments' - expanded to show 'Adobe Flash Player Active X (Adobe Flash Player)', 'Client Operations', and 'Client Status'), 'Assets and Compliance', 'Software Library', 'Monitoring' (selected), and 'Administration'. The main area displays 'Deployment Status' for 'Program: Adobe Flash Player Active X (Adobe Flash Player)' and 'Collection: All Desktop and Server Clients'. A status bar at the top right shows 'Run Summarization | Refresh' and 'Summarization Time: Never'. Below the status bar is a legend: Success (green dot), In Progress (yellow dot), Error (red dot), Requirements Not Met (blue dot), and Unknown (grey dot). A table titled 'Deployment ID' lists one entry: Deployment ID 00120011, Assets 1, Message ID 10008, and Status Type Success. Below this is a section titled 'Asset Details' with a table showing one row: Device CLIENTW7, User NT AUTHORITY\SYSTEM, Message ID 10008, Status Type Success, and Description 'Program completed with success'.

Deployment ID	Assets	Message ID	Status Type
00120011	1	10008	Success

Filter	Device	User	Message ID	Status Type	Description
	CLIENTW7	NT AUTHORITY\SYSTEM	10008	Success	Program completed with success