



ScaleArc Storage Management Pack for Microsoft System Center Operations Manager (SCOM)

Install Guide

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Contents

Introduction to SCOM	3
About this Guide	3
Intended Audience	3
ScaleArc Management Packs	3
ScaleArc Monitoring Pack	3
ScaleArc Monitoring Task Management Pack	4
Prerequisites	4
Installing the ScaleArc SCOM Management Packs	6
Importing Management Packs from Disk	6
Creating ScaleArc Management Pack	9
Creating Accounts and Associate Profiles	17
Creating ScaleArc Database Instance	31
Deleting Management Packs and Importing Updated Ones	34
Clearing SCOM Cache	58

Introduction to SCOM

The Microsoft System Center Operations Manager (SCOM) is a cross-platform data center management system for monitoring operating systems and applications. The SCOM plugin integrates ScaleArc with Microsoft SCOM.

The SCOM plug-in developed for ScaleArc, is essentially a set of management packs, which are configured to monitor a set of ScaleArc servers. This plug-in communicates with ScaleArc servers using predefined REST APIs.

About this Guide

The ScaleArc Storage Management Pack for Microsoft System Center Operations Manager (SCOM) guide describes how to install and configure management pack for SCOM with ScaleArc.

Intended Audience

This information is intended for anyone who needs to install or configure management pack for SCOM.

ScaleArc Management Packs

The ScaleArc management packs when installed in a SCOM server can perform the following tasks -

- 1) Discover a single instance of ScaleArc server for monitoring
- 2) Discover multiple instances of ScaleArc servers for monitoring by:
 - a. manual entry of server IP & API Key
 - b. specifying a range of IP's with a user id and password.
- 3) Monitor the system counters data for the configured / added ScaleArc servers
- 4) Monitor cluster counters data for the configured / added ScaleArc servers
- 5) Monitor server counters data for the clusters configured for discovered ScaleArc servers
- 6) Generate alerts based on rules defined on system / cluster counters values
- 7) Display alerts generated on ScaleArc servers in the alerts view in SCOM
- 8) Perform following tasks on selected cluster:
 - a. turn off / on cache
 - b. start / stop clusters
- 9) An administrator can also remove a ScaleArc server already added in SCOM.

Management packs are either sealed or unsealed. A sealed management pack is a binary file that cannot be edited. An unsealed management pack is an XML file that can be edited. Sealed management packs should have an .mp extension, while unsealed management packs should have an .xml extension.

ScaleArc Discovery Management Pack

This is a sealed management pack. The objective of this management pack is to:

- 1) Perform discovery of ScaleArc servers in the network that is being monitored by SCOM Server.
- 2) It uses single/multiple or IP-range based methods to add, remove or manage the set of ScaleArc servers to be monitored on SCOM server.

ScaleArc Monitoring Pack

This is the management pack responsible for monitoring system and cluster counter data. There are rules configured for:

- 1) Fetching counter data by calling the REST API at a fixed interval.

- 2) Applying a pre-defined formula on the values received to decide whether any policies are violated or not.
E.g. a rule has been configured on system CPU %. IF the value of this system counter exceeds 80% then SCOM will generate an alert and will show it in the Alerts view.

This management pack is not sealed since the the user is able to configure these threshold values for generating alerts for various counters.

There are three views that get populated based on this management pack:

- 1) System performance data
- 2) Cluster performance data
- 3) Cluster DB performance data

The alerts view and the dashboard view also get data based on this management pack.

ScaleArc Monitoring Task Management Pack

This is a sealed management pack. The objective of this management pack is to:

- 1) Prepare an environment for ScaleArc monitoring management pack to run successfully.
- 2) Perform the tasks like turn on/off cache, start/ stop clusters etc.

Installation and Configuration Requirements

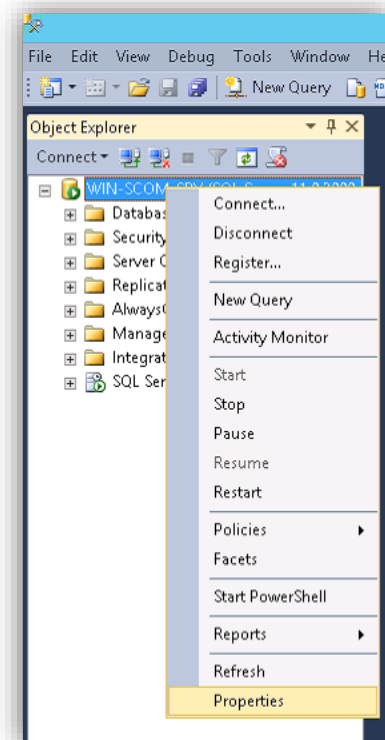
Before you install the management pack for SCOM, verify that your SCOM server meets certain requirements. For running the ScaleArc management packs from SCOM, we recommend hardware settings on the SCOM server as follows:

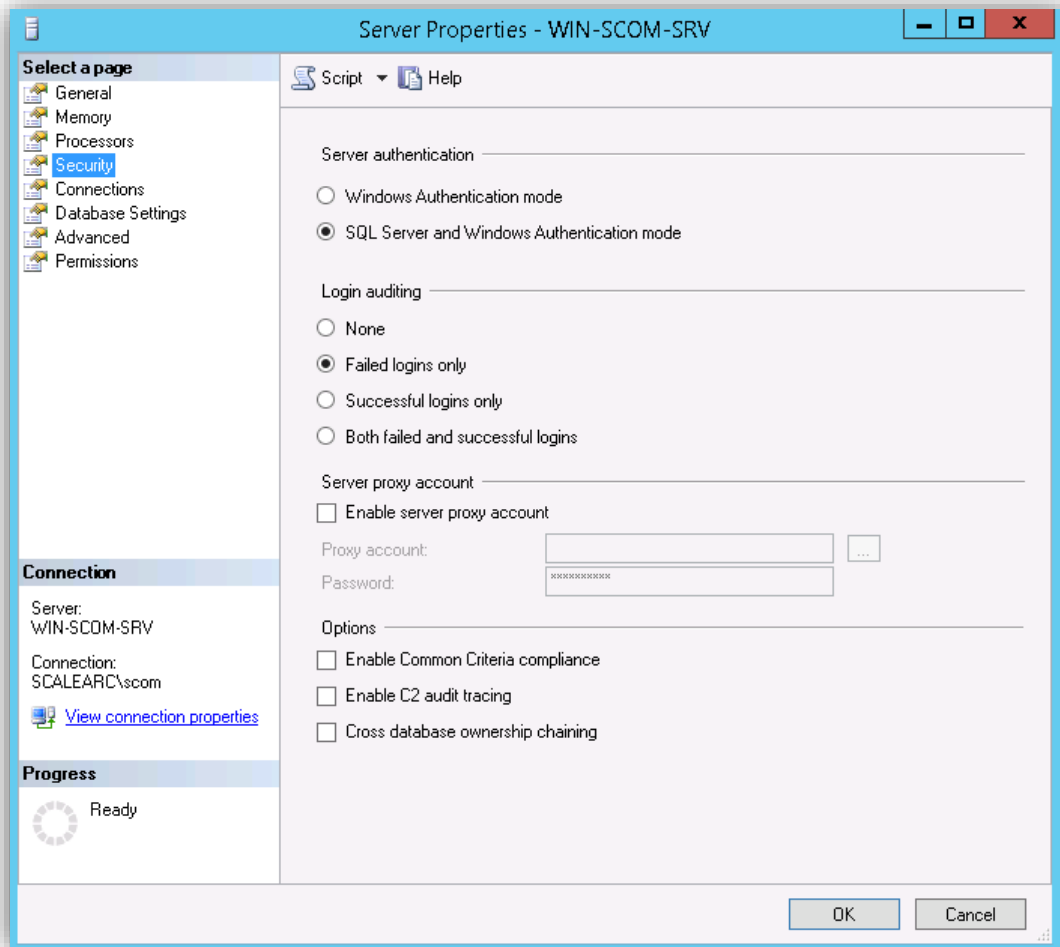
- 1) 8 core processor, preferably with 8GB RAM
- 2) SCOM server 2012 R2
- 3) Powershell 3.0 or above

Prerequisites

Before installing the management packs you must make sure the following prerequisites are met:

1. SQL Server and Windows authentication mode is enabled.
To enable SQL Server and Windows Authentication mode:
 - a. Access the **SCOM DB Server** via SQL Server Management Studio, and right rclick to select the **Properties** menu.
 - b. Navigate to **Security** node in the tree view at the left side, and select the **Server Authentication as SQL Server and Windows Authentication mode** and click **OK**.





Installing the ScaleArc SCOM Management Packs

The installation of ScaleArc SCOM management packs will be covered in 3 steps:

1. Importing management packs
2. Creating ScaleArc management pack
3. Creating accounts and associate profiles

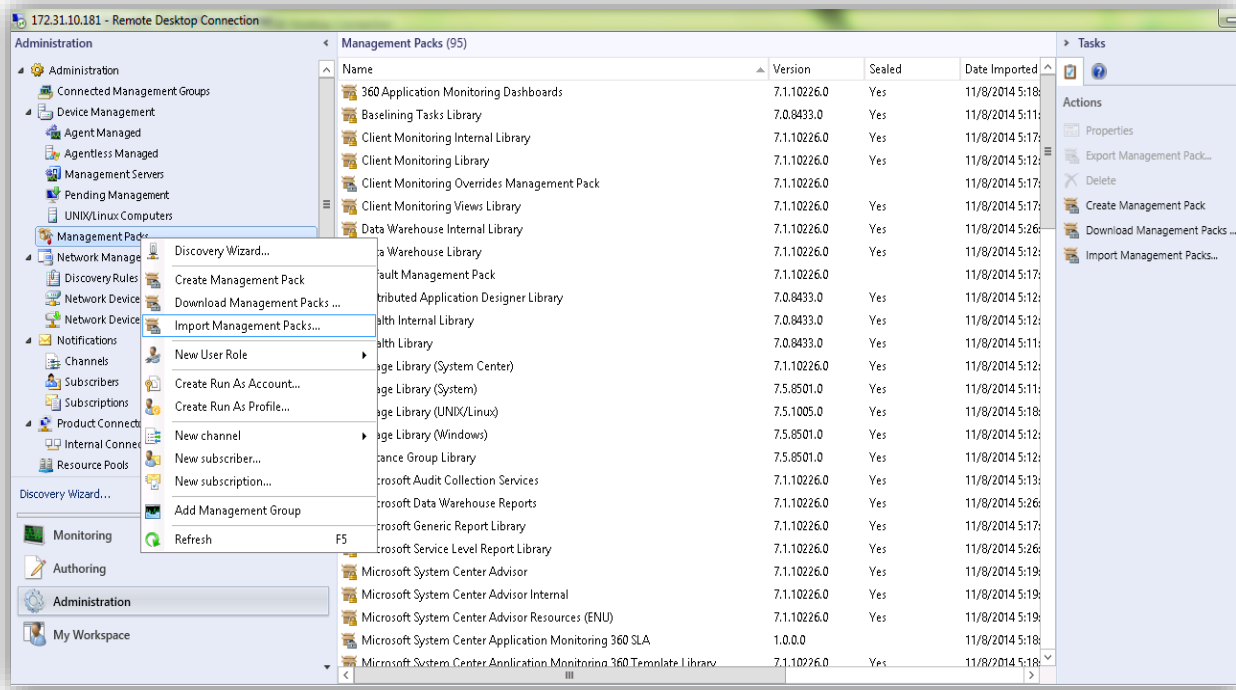
Importing Management Packs from Disk

Import the following management packs to SCOM console (make sure the user has SCOM Administrator privileges).

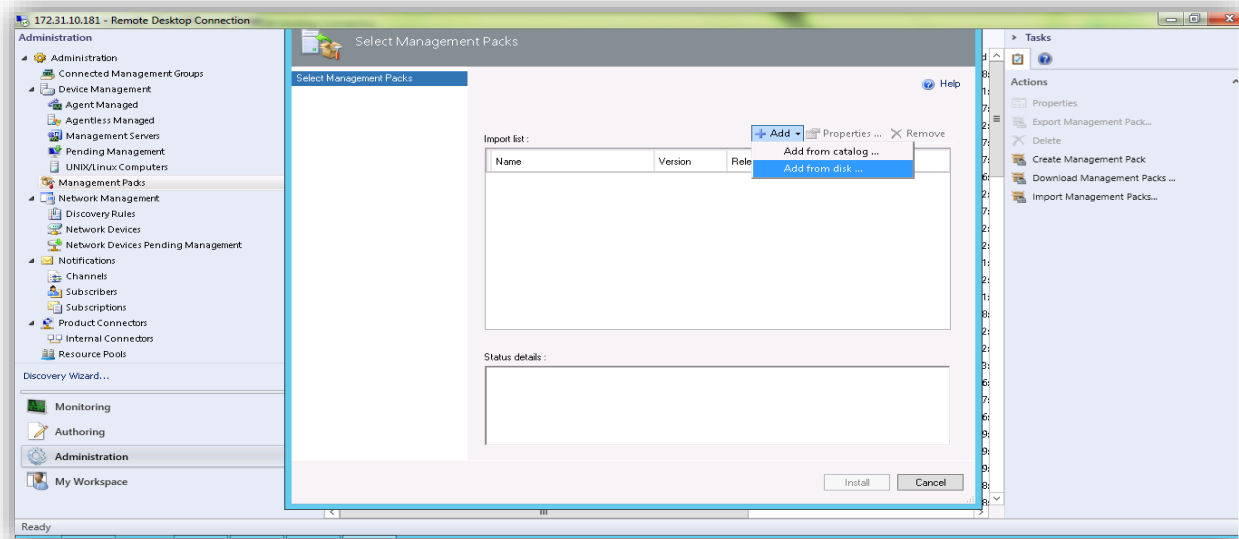
- a. ScaleArc.3.3.API.Discovery.mp
- b. ScaleArc.3.3.API.Monitoring.xml
- c. ScaleArc.3.3.API.Monitoring.Tasks.mp

From the Operations console:

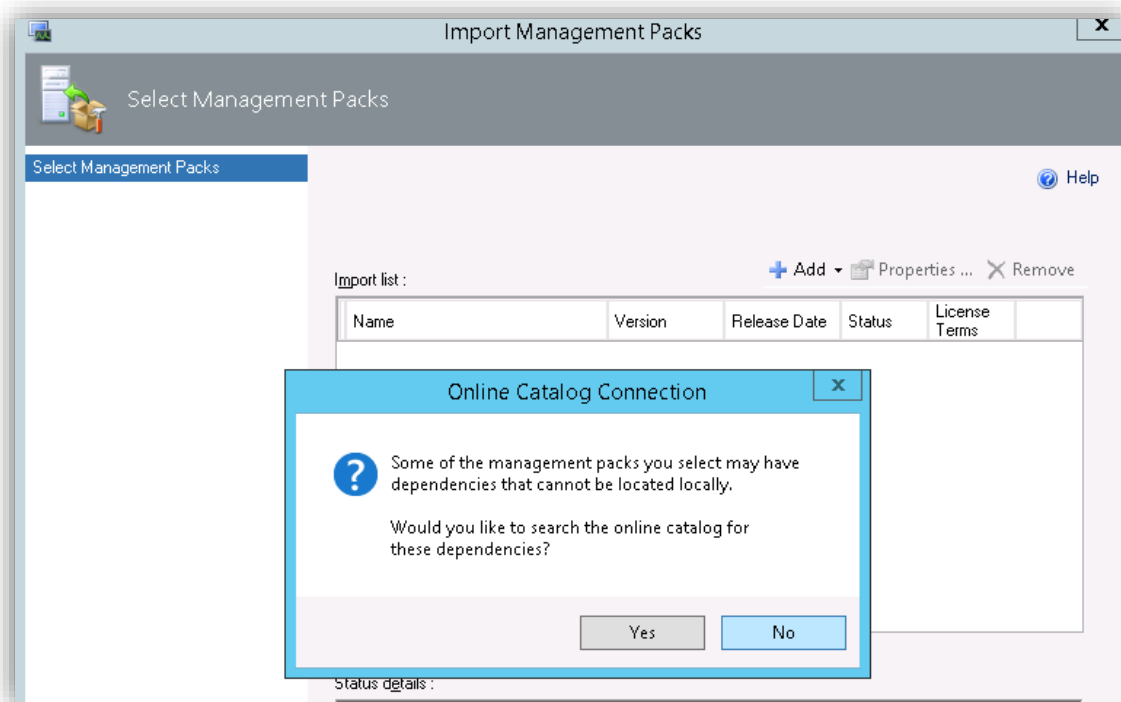
1. Click on the **Administration** tab.
2. Right click **Management Packs** node, and then click on **Import Management Packs**.



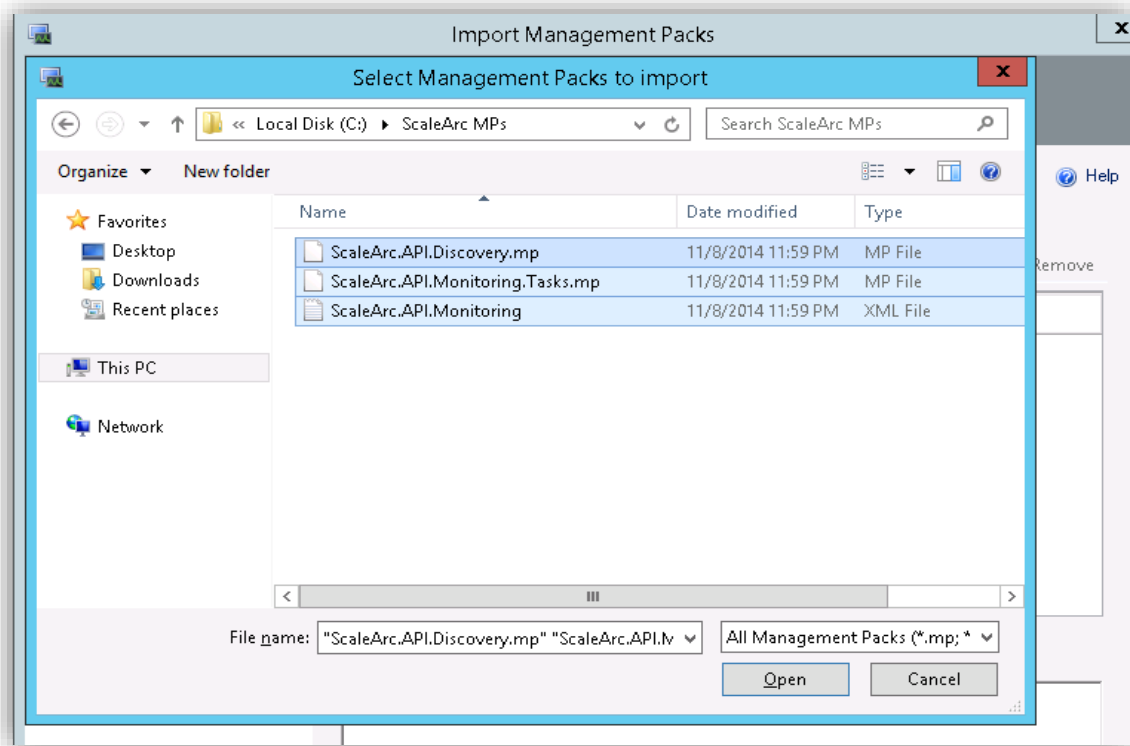
3. The Select Management Packs window is displayed. Click on Add and select Add from disk option.



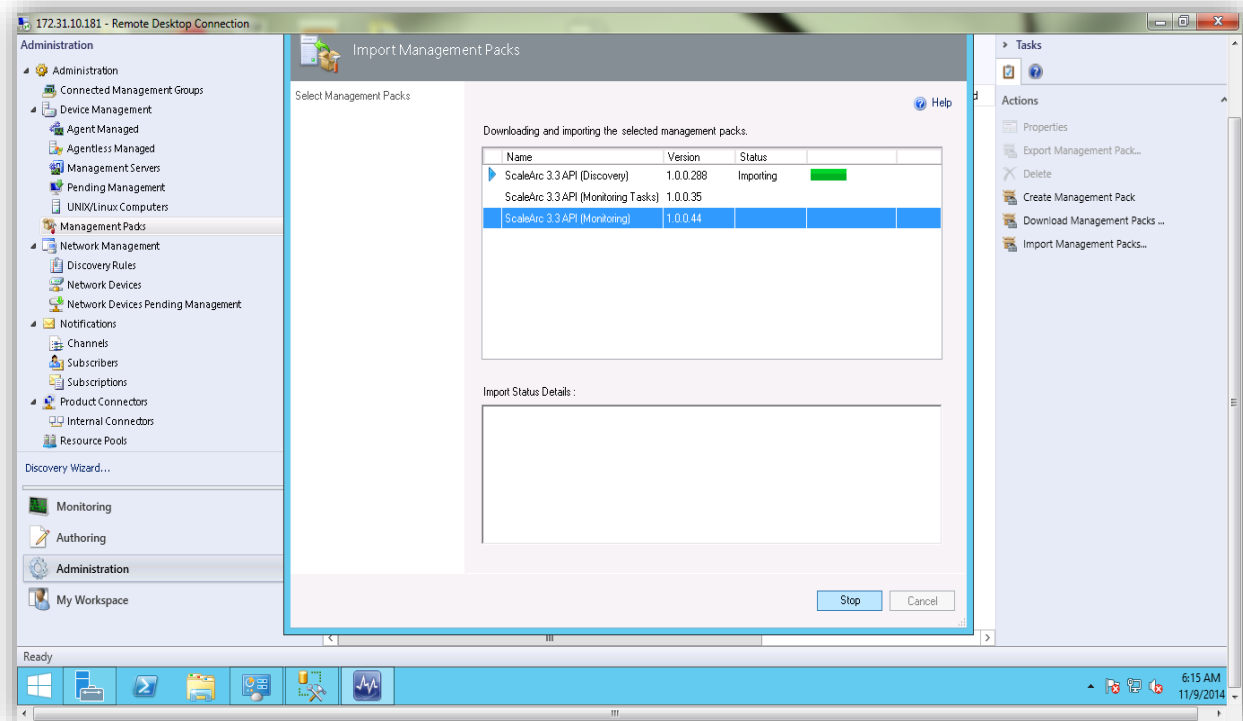
4. Online Catalog Connection popup is displayed. Click No.



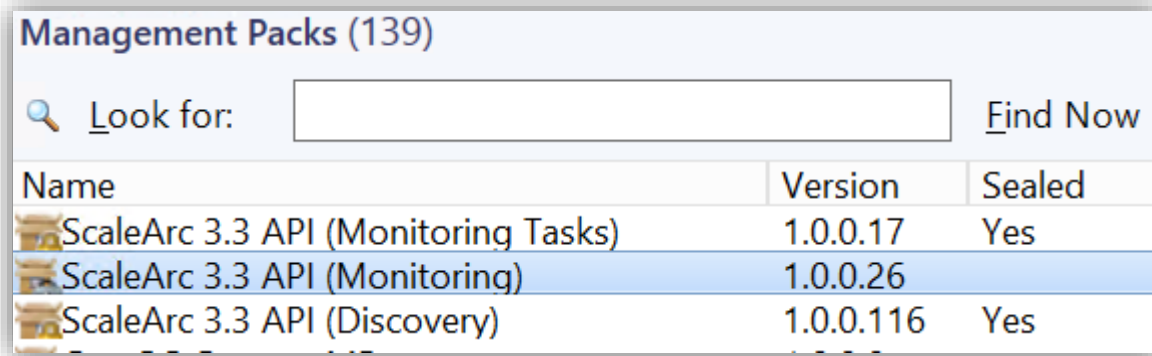
5. Browse and select one or more management packs to import from the directory, and then click on **Open**.



6. Click on **Install** button.



7. The management packs would get installed and the version will vary for every updated management pack.



Management Packs (139)

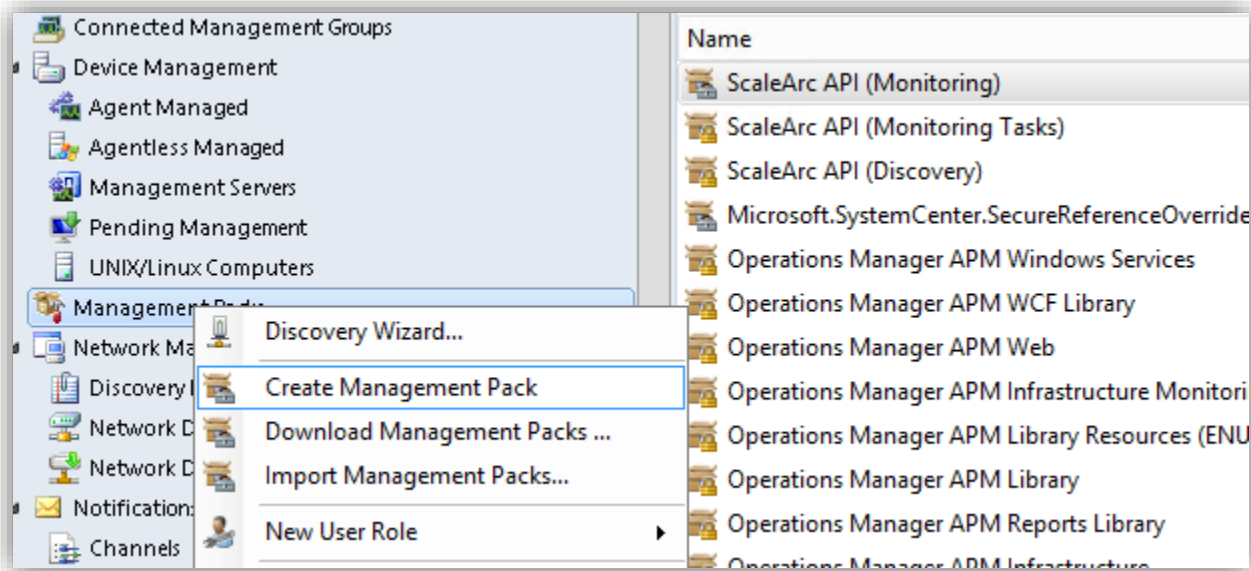
Look for: Find Now

Name	Version	Sealed
ScaleArc 3.3 API (Monitoring Tasks)	1.0.0.17	Yes
ScaleArc 3.3 API (Monitoring)	1.0.0.26	
ScaleArc 3.3 API (Discovery)	1.0.0.116	Yes

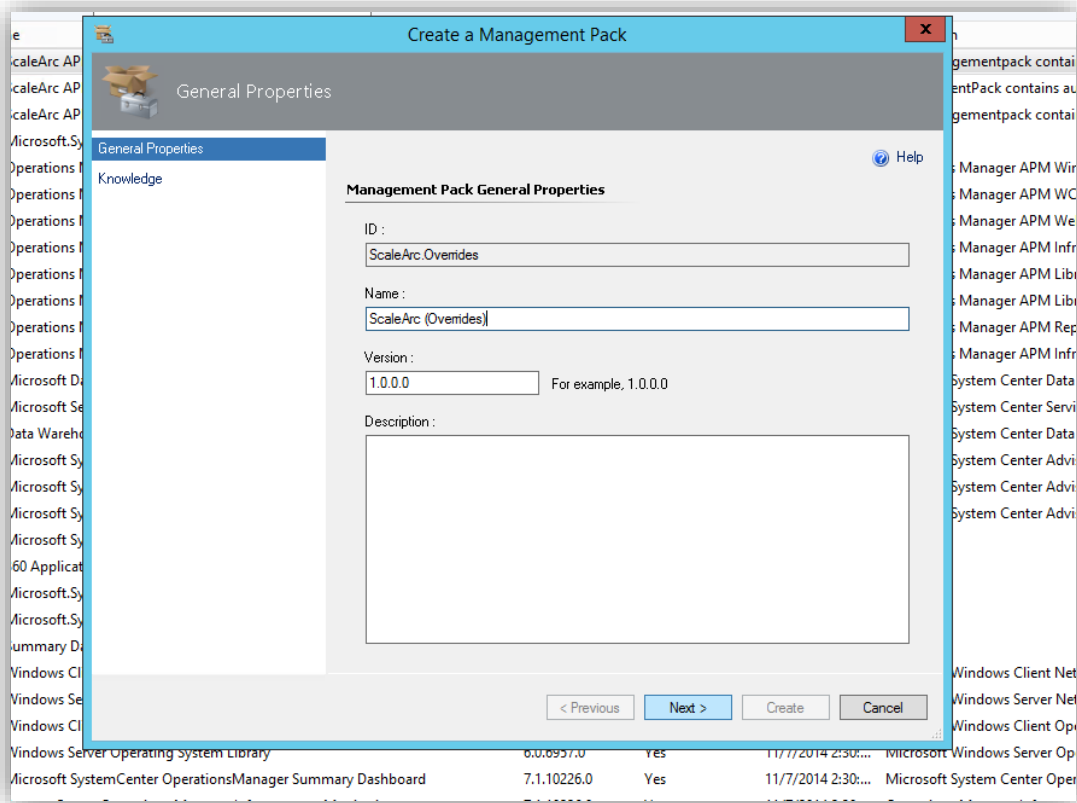
Creating ScaleArc Management Pack

The following section describes creating ScaleArc management packs.

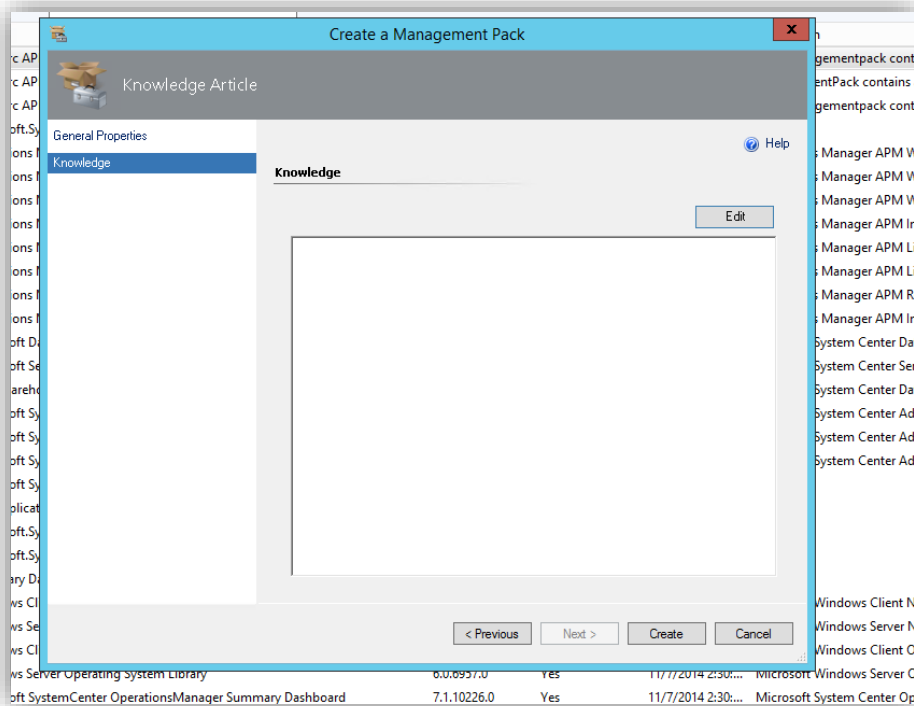
- 1) Go to **Administration** tab at the lower left panel.
- 2) Right click the **Management Packs** node above in the same left panel.
- 3) Select the **Create Management Pack** option.



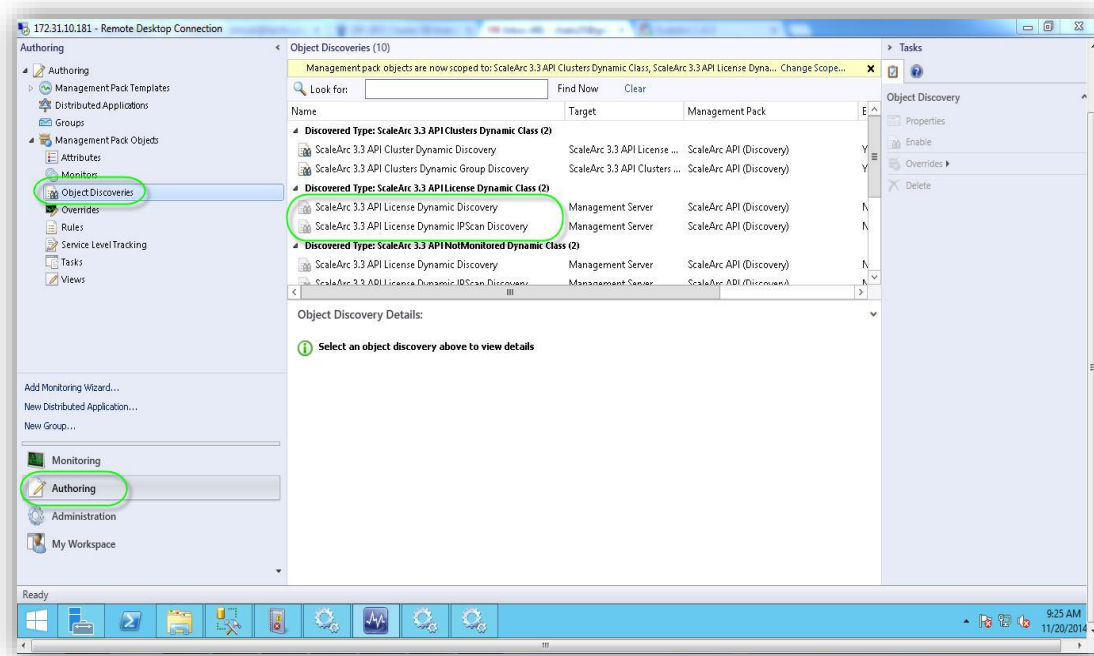
4) On **Create a Management Pack** wizard, enter the **Name** field as **ScaleArc (Overrides)**.



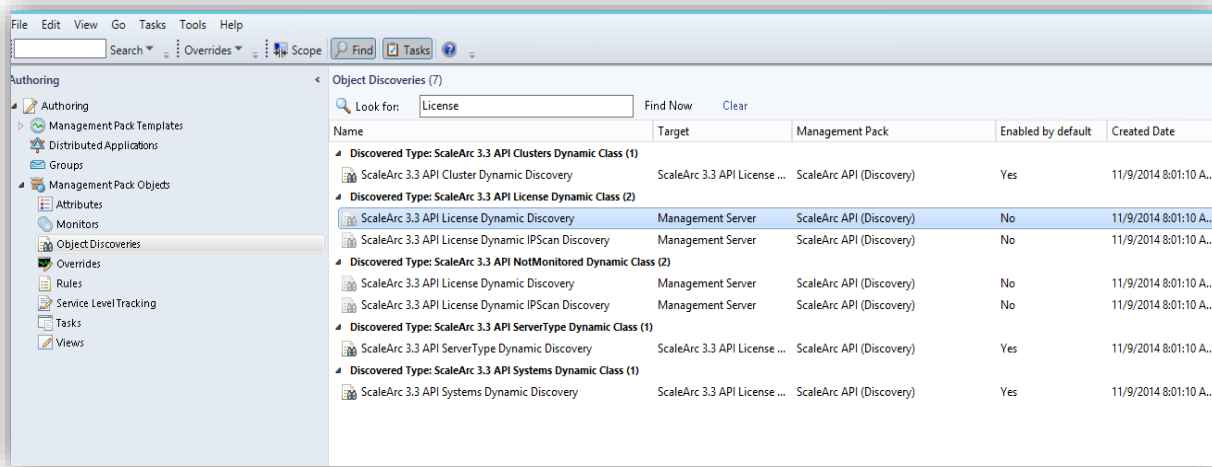
5) Click **Next** and click **Create**.



- 6) Go to **Authoring** tab at the lower left panel.
- 7) Select the **Object Discoveries** node above in the same left panel.

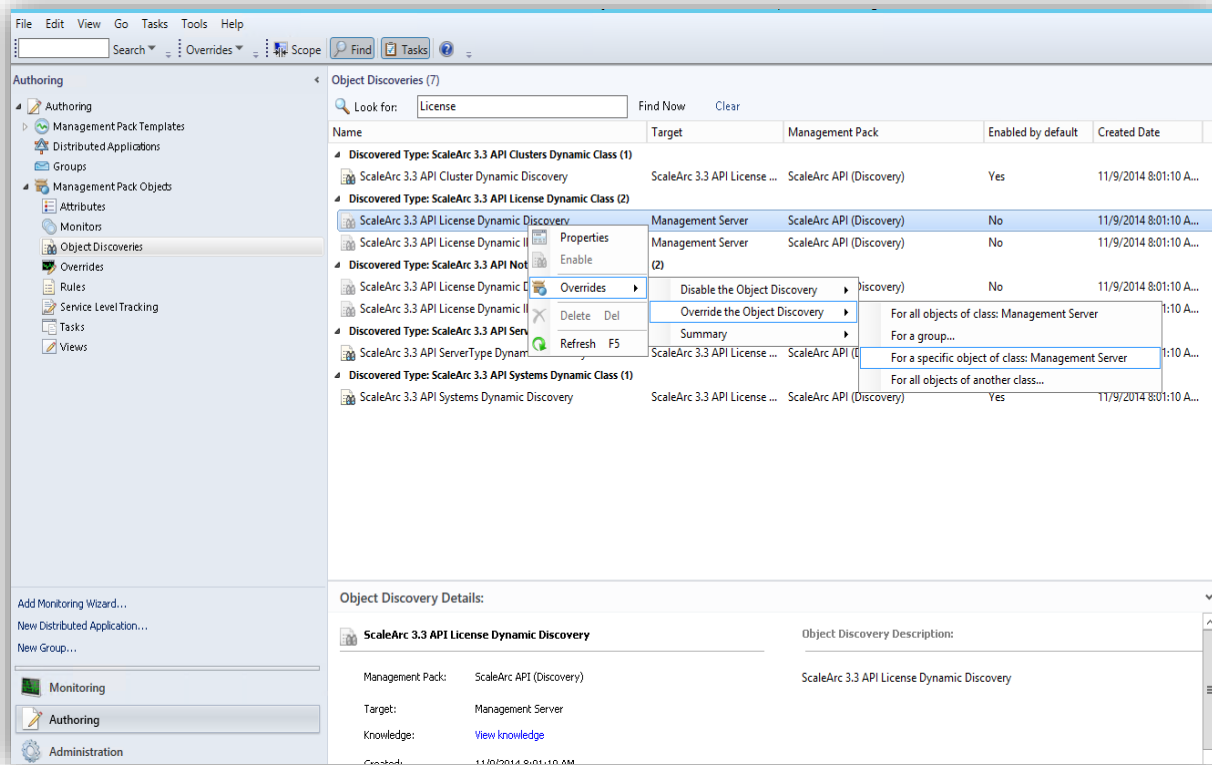


- 8) Search for the term **License** in the **Look for** search bar.

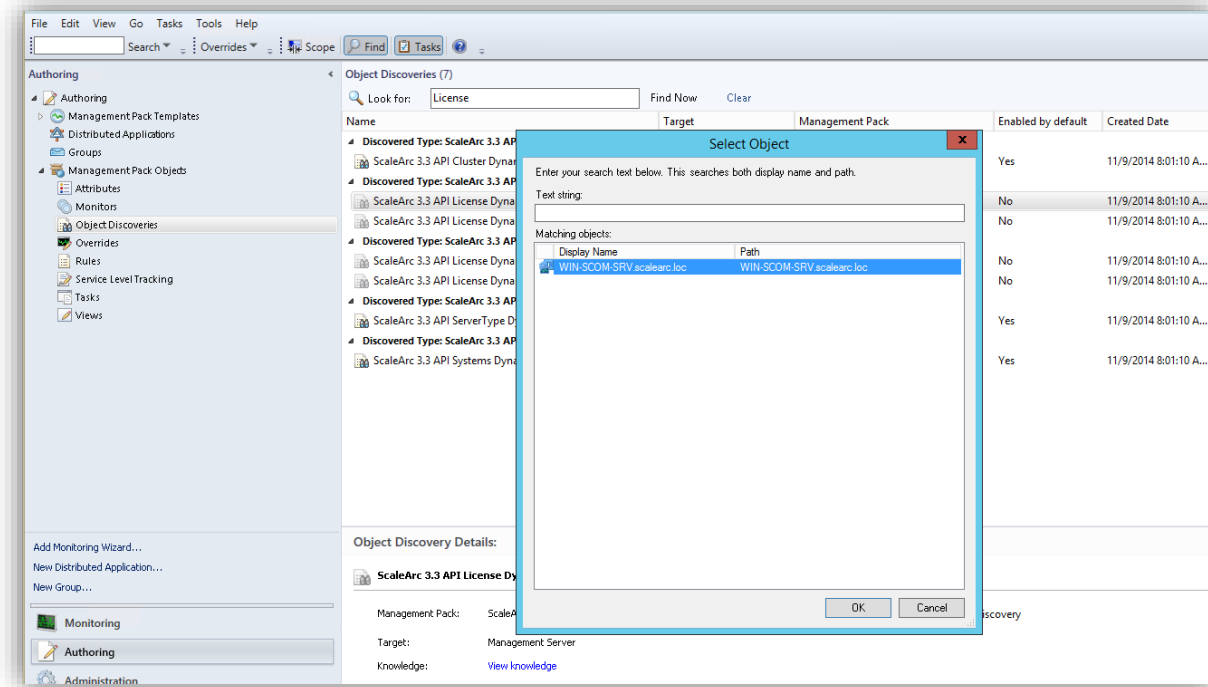


- 9) Right click on the **ScaleArc 3.3 API License Dynamic Discovery** pack under the **Discovered Type: ScaleArc 3.3 API License Dynamic class(2)**.

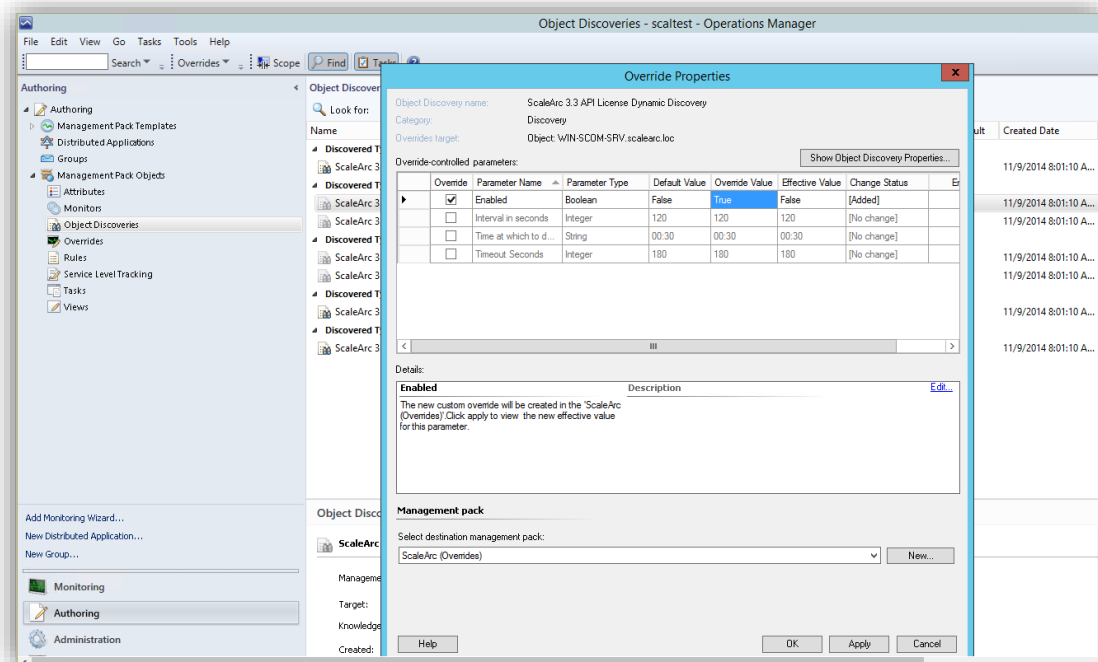
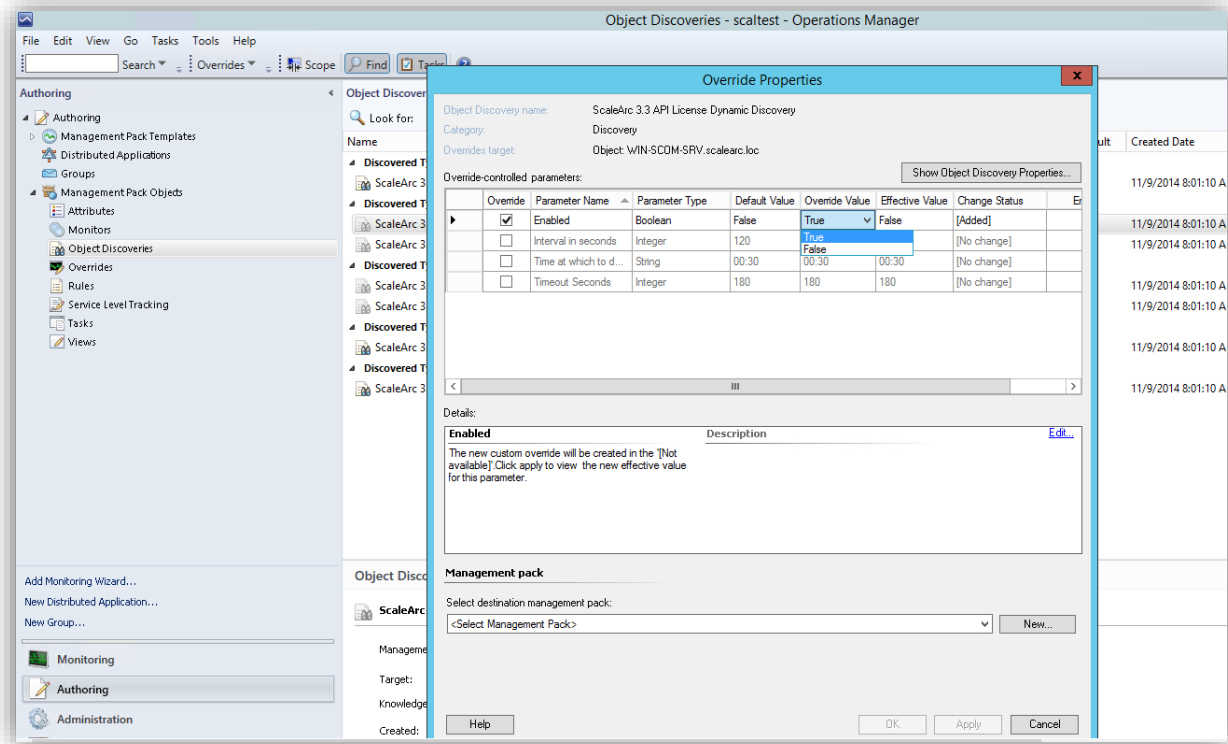
10) Select the following sub-options: **Overrides** → **Override the Object Discovery** → **For a specific object of class: Management Server**.



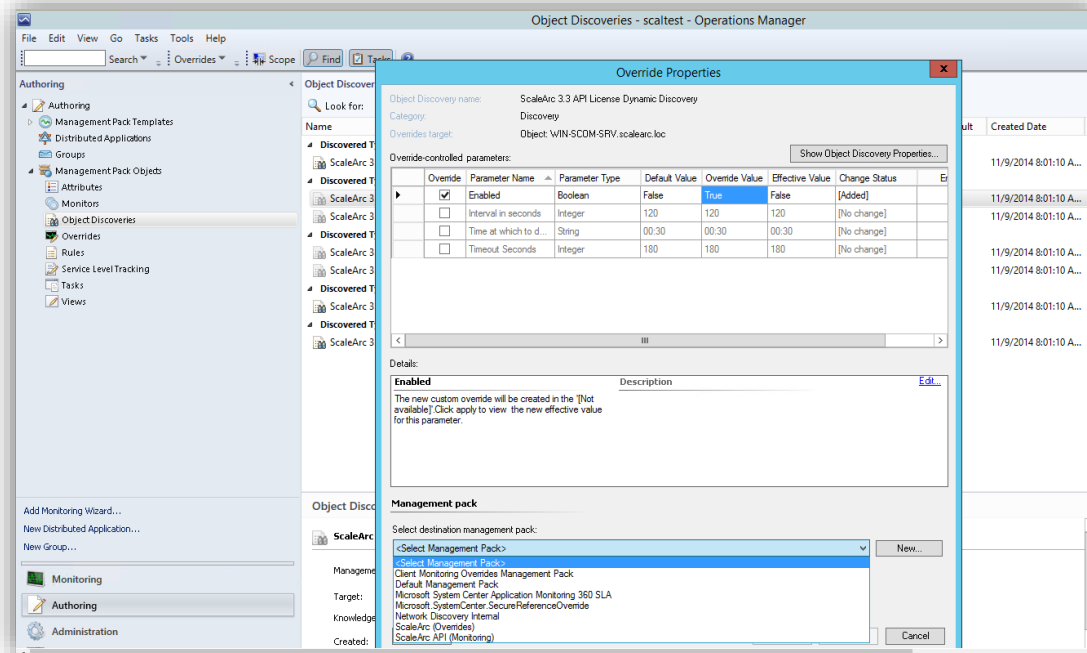
11) A **Select Object** wizard opens. Select the object of the windows Host machine; and click **OK**.



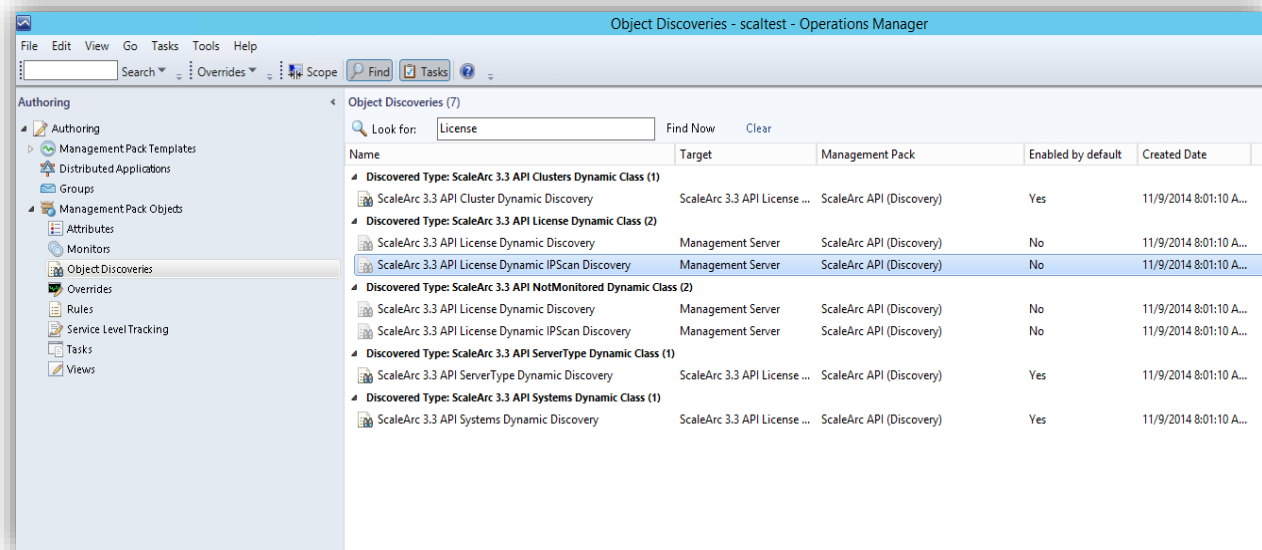
- 12) **Override Properties** wizard opens. Select the checkbox of first row having the parameter named as **Enabled**. Also, select the **Override value** as **True**.



- 13) At the bottom of the wizard, under **Management pack**, **Select the destination management pack as ScaleArc (Overrides)**.
- 14) Click the **Apply** button at the bottom and **Save** the changes.

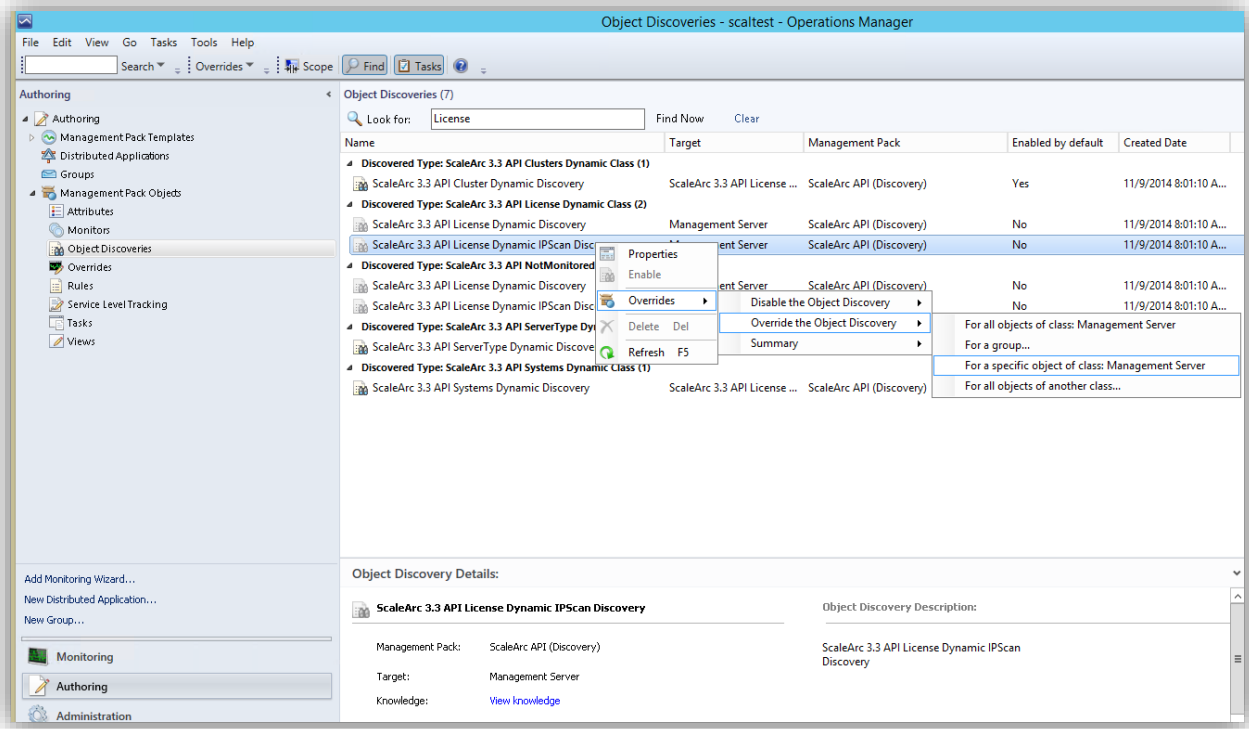


15) Repeat the same steps for the **ScaleArc 3.3 API License Dynamic IP Scan Discovery** pack.

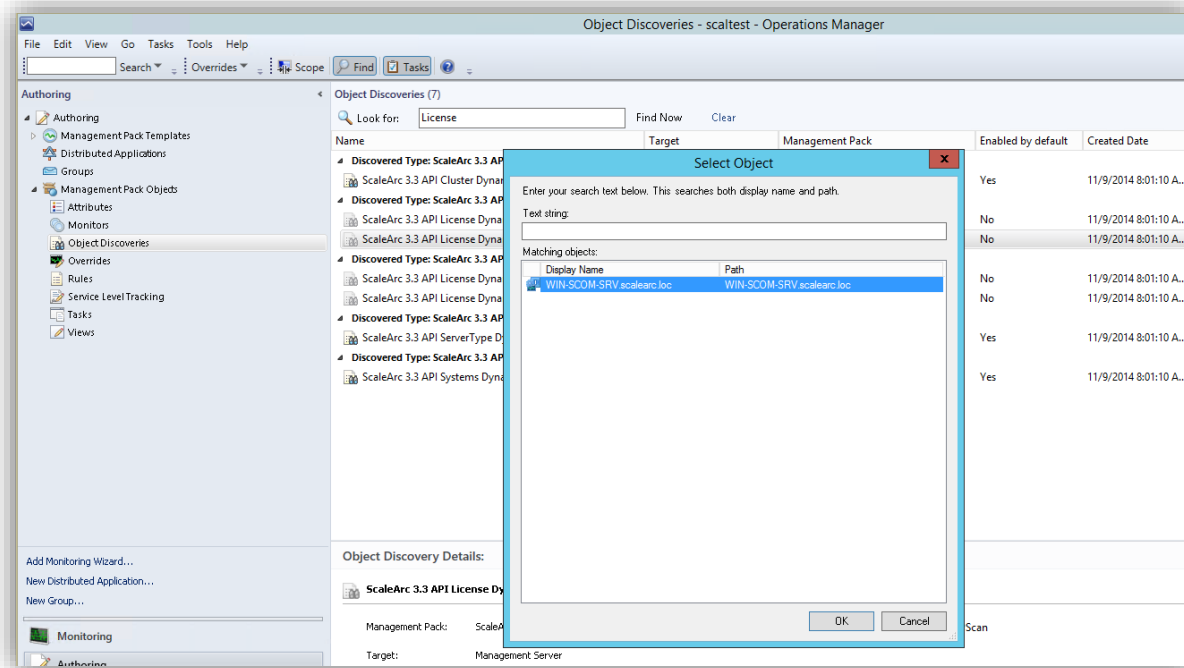


16) Right click on the **ScaleArc 3.3 API License Dynamic IP Scan Discovery** pack under the **Discovered Type: ScaleArc 3.3 API License Dynamic class(2)**.

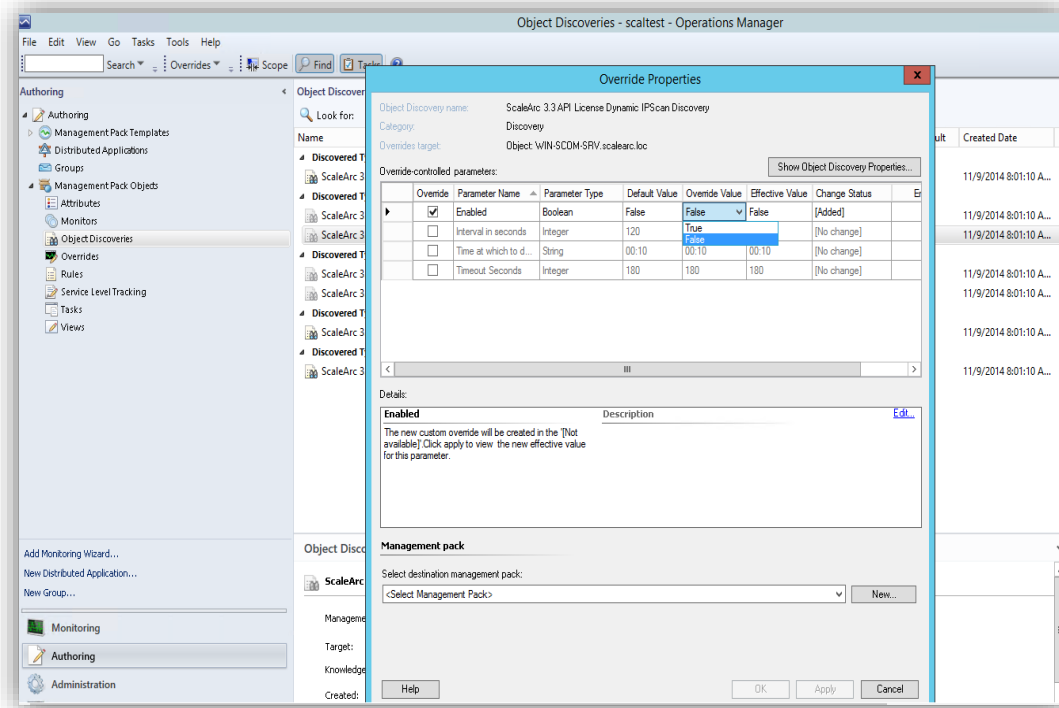
17) Select the following sub-options: **Overrides** → **Override the object discovery** → **For a specific object of class: Management Server**.



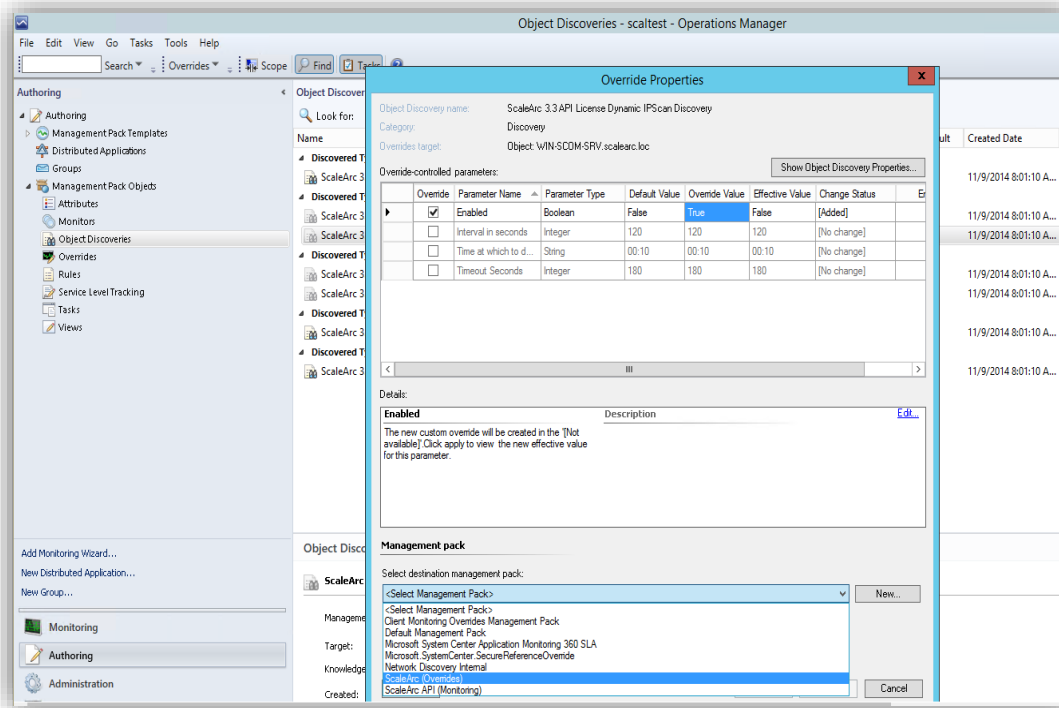
18) A **Select Object** wizard opens. Select the object of the windows Host machine; and click **OK**.



- 19) **Override Properties** wizard opens. Select the checkbox of first row having the parameter named as **Enabled**. Also, select the **Override Value** as **True**.



- 20) At the bottom of the wizard, select the **destination management pack as ScaleArc (Overrides)**.



- 21) Click on the **Apply** button at the bottom and save the changes.

Creating Accounts and Associate Profiles

A management pack can include one or more Run As profiles. Run As profiles and Run As accounts are used to select users with the privileges needed for running rules, tasks, and monitors. Configure Run As accounts and associate the Run As accounts to appropriate Run As profiles.

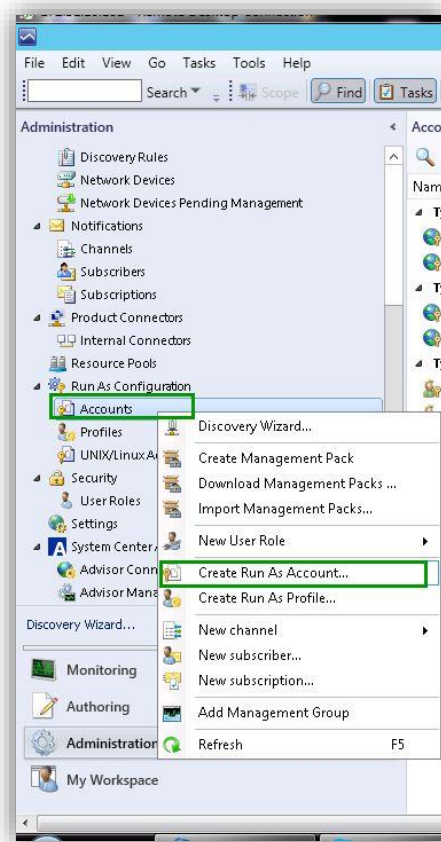
1) Run As accounts and their functions

Create two Run As accounts as following:

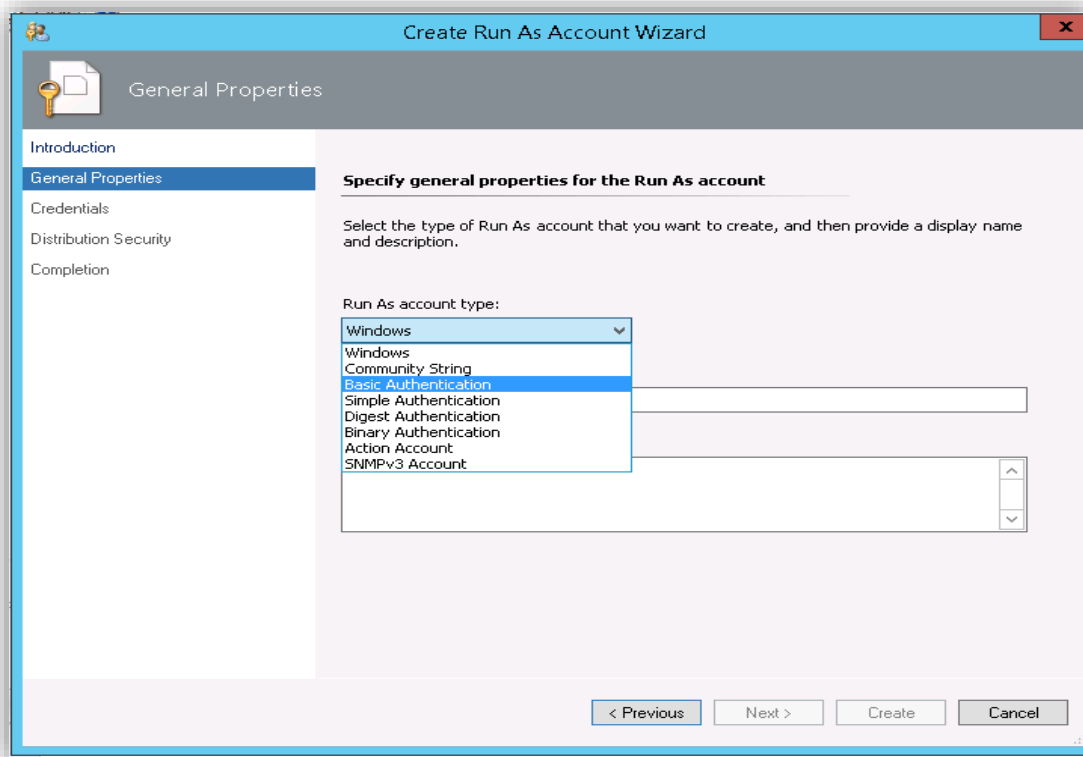
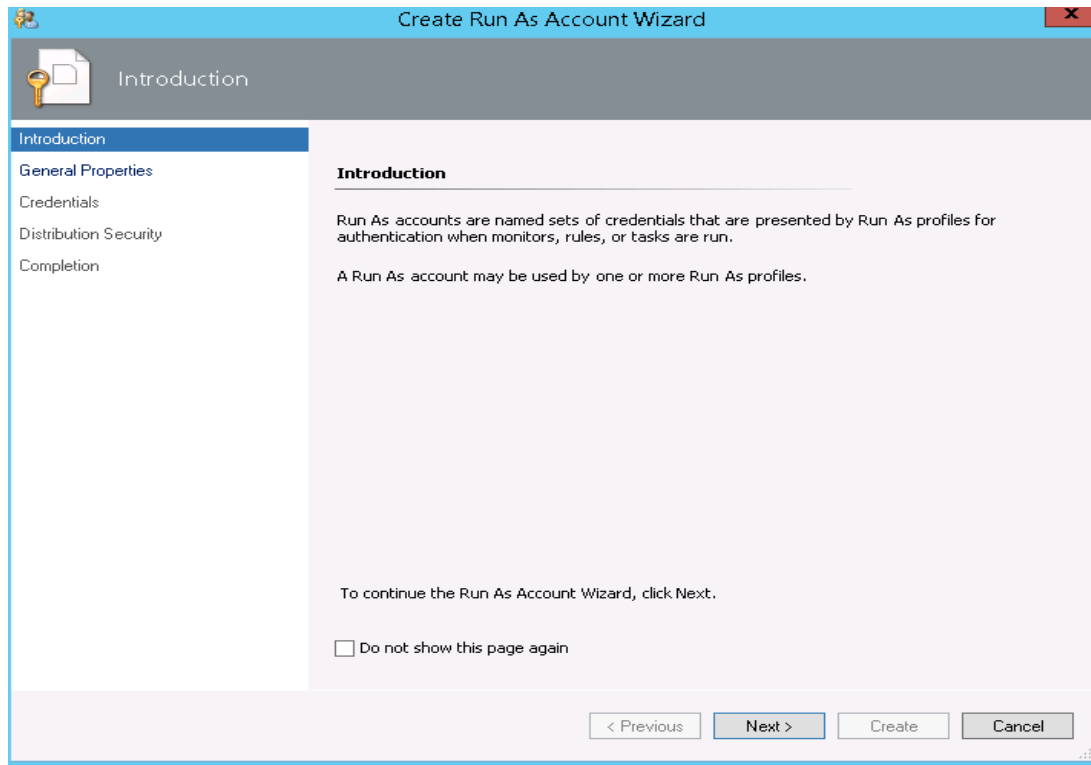
- a. ScaleArc APIKey Generate Account Basic Authentication account, pass the credentials to generate API Keys. IPScan Discovery will leverage it.
From the Run As account window-
Display name: ScaleArc admin account / ScaleArc server login (this is the user name and password used for ScaleArc UI login).
Account name: admin
Pwd: scom123
- b. ScaleArc APIKey ScaleArcMon_Utility DB Connect Account (basic authentication account, pass the desired account & password details. The monitoring prep task will proceed further create a SQL account based on this details and all ScaleArc discoveries and tasks will be using it).
Display name: ScaleArc DB connect
Account Name: ScaleArcmon
pwd: ScaleArcmon

2) General steps to create an account:

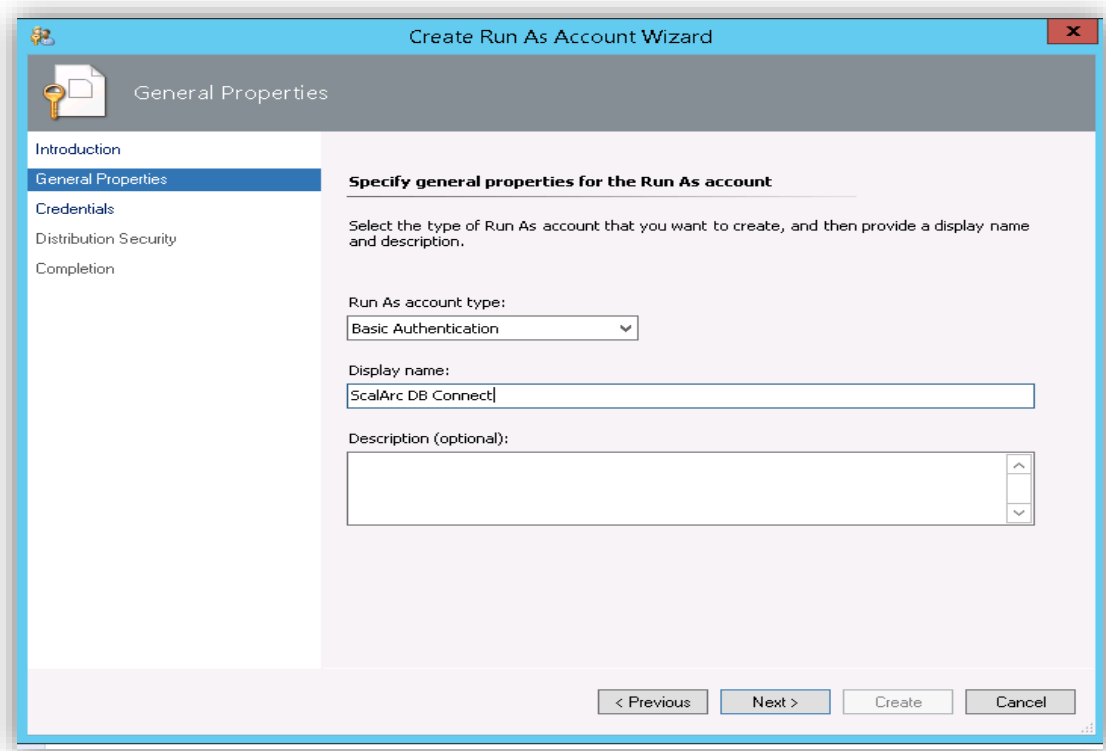
- (i). Go to **Accounts node**. Right click on it and click on **Run As Account**.



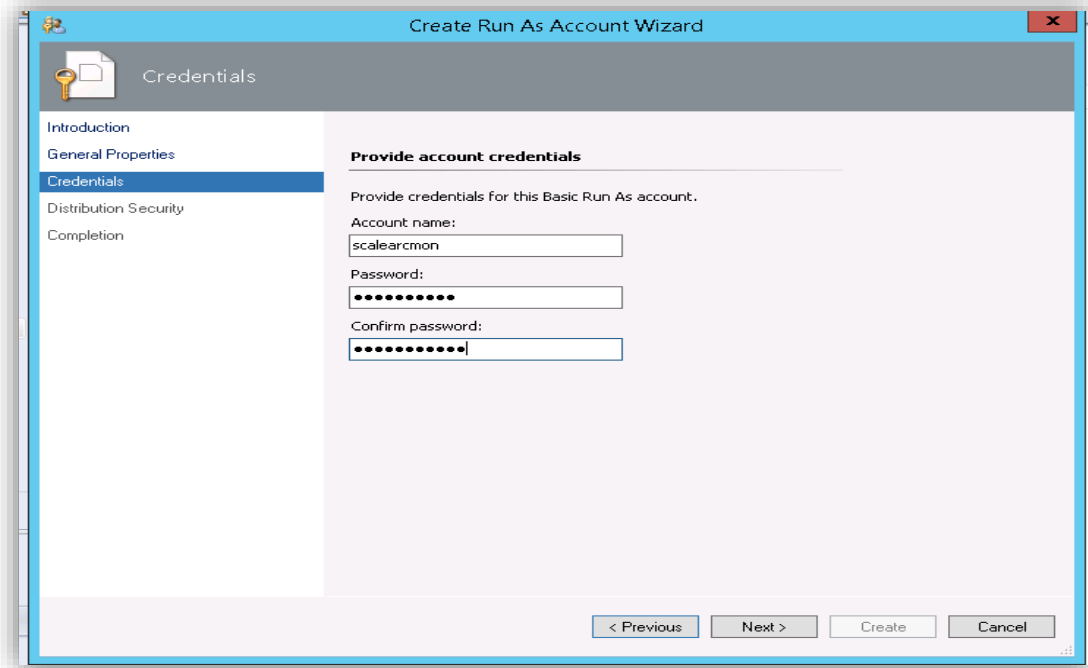
(ii). Run As Account Wizard opens. Click Next.



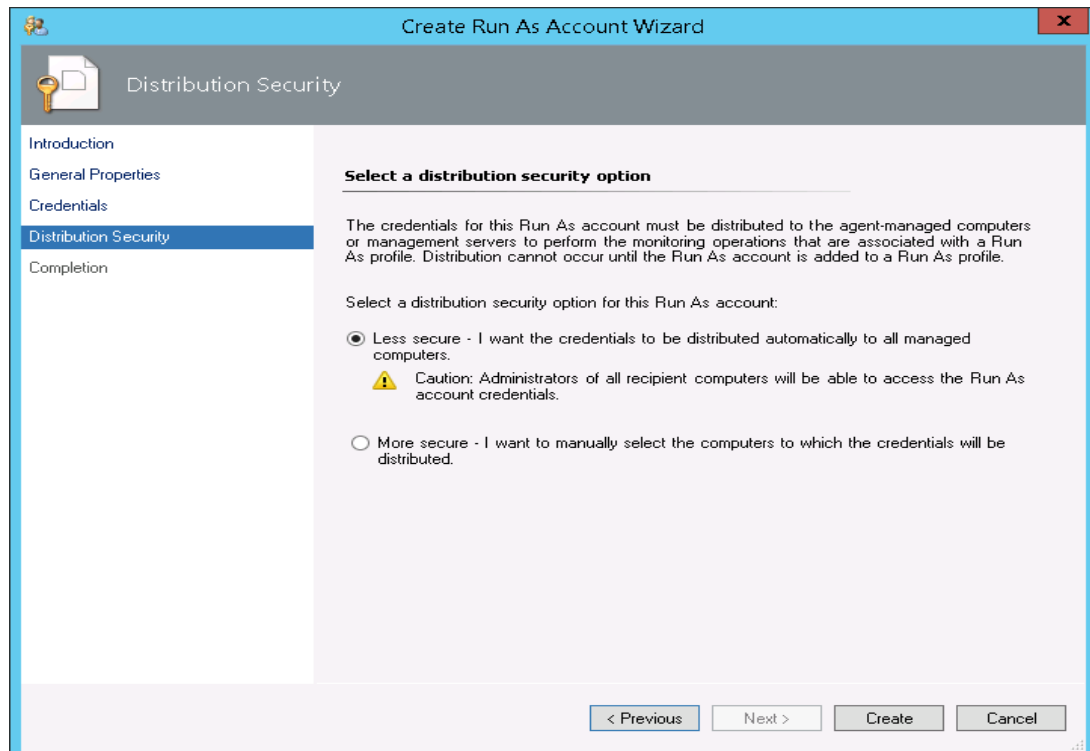
- (iii). Select **Account type** as **Basic Authentication**.
- (iv). Type **Display Name** as **ScaleArc DB Connect**.



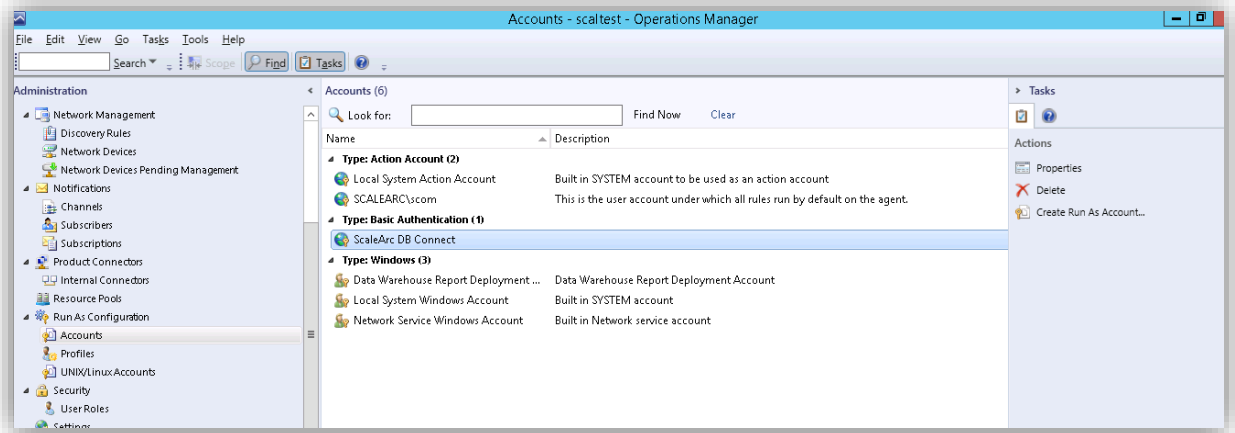
- (v). Provide account credentials as follows and click on **Next**.
Account name: ScaleArcmon
Password : ScaleArcmon
Confirm password: ScaleArcmon



(vi). Select a distribution security option as **Less Secure** and click **Create**.



(vii). Left click on **Accounts** node in the left panel and check your recently created account listed there.



2) Run As profiles and their functions

The ScaleArc management packs contains three Run As profiles, which are created to provide permission for SCOM discoveries and tasks to perform certain functions.

a. ScaleArc API-Key Generate Account:

This profile should be associated with the ScaleArc API-Key Generate Account (1st account) Run As account that will be used to generate API Keys.

b. ScaleArcMon Utility DB Connect Discovery Account:

This profile should be associated with the ScaleArc APIKey ScaleArcMon_UTILITY DB Connect Account (2nd account) Run As account that will be intended to be used to connect to the SQL Database via SCOM Discoveries. Note: Based on this account details 'ScaleArc Monitoring Prep Task' will create the SQL Login.

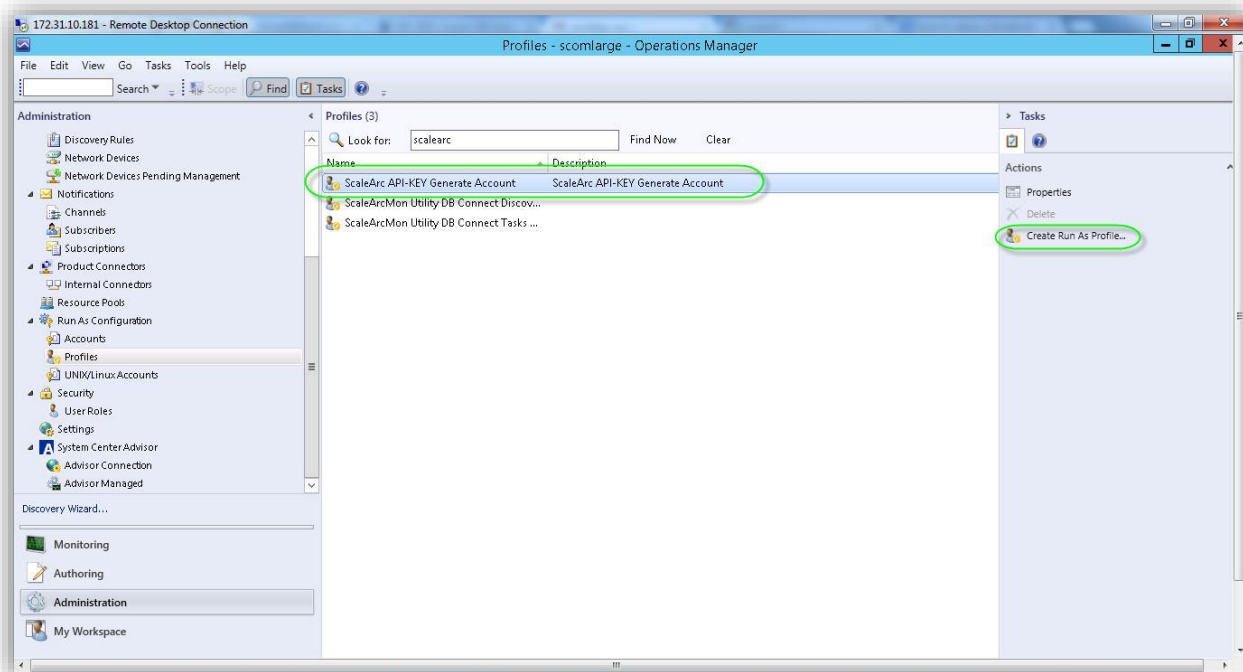
c. ScaleArcMon Utility DB Connect Tasks Account:

This profile should be associated with the ScaleArc APIKey ScaleArcMon_UTILITY DB Connect Account (2nd account) Run As account that will be intended to be used to connect to the SQL Database via SCOM Tasks. Note: Based on this account details 'ScaleArc Monitoring Prep Task' will create the SQL Login.

Steps to associate an account to a profile:

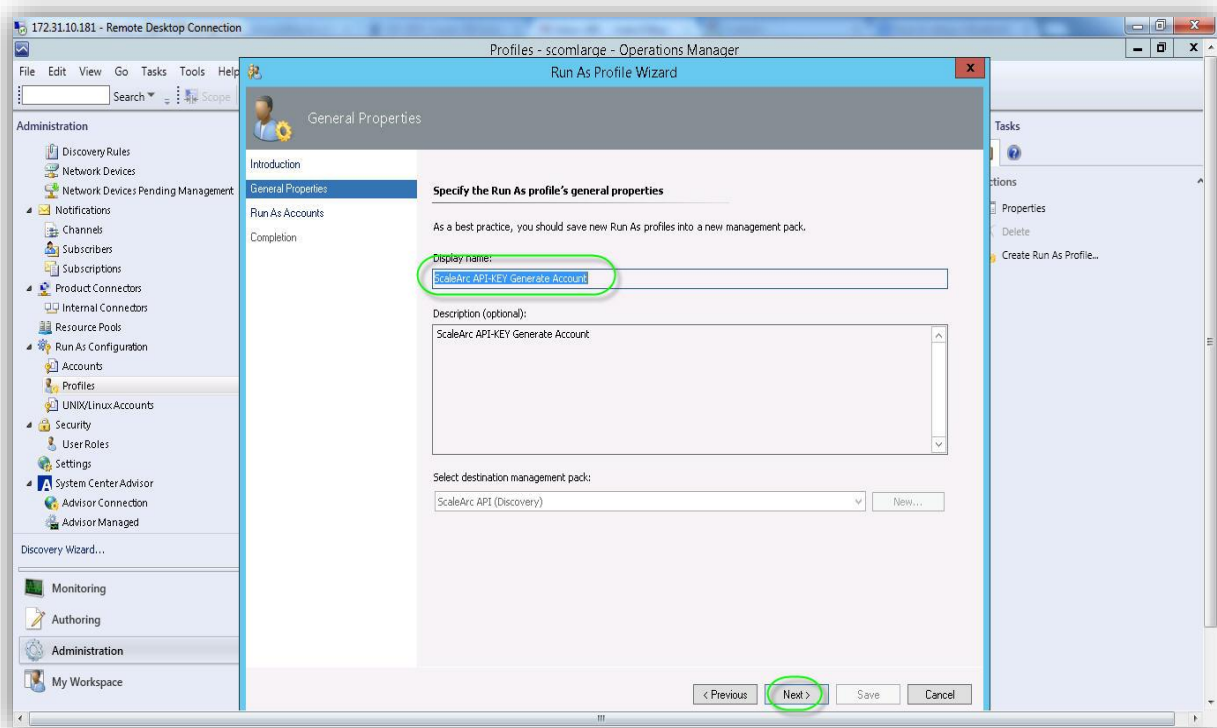
(i) Left click on the **Profiles** node at the left panel and search for the three built-in ScaleArc profiles using **Find** search bar:

- (a) ScaleArc API-KEY Generate Account
- (b) ScaleArcMon Utility DB Connect Discovery Account
- (c) ScaleArcMon Utility DB Connect Tasks Account

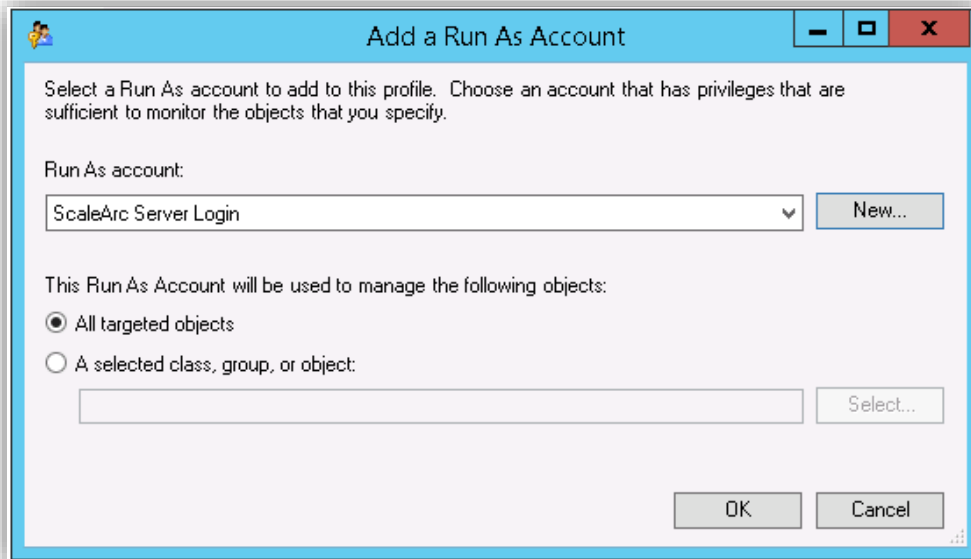


Profile 1- ScaleArc API generate Account

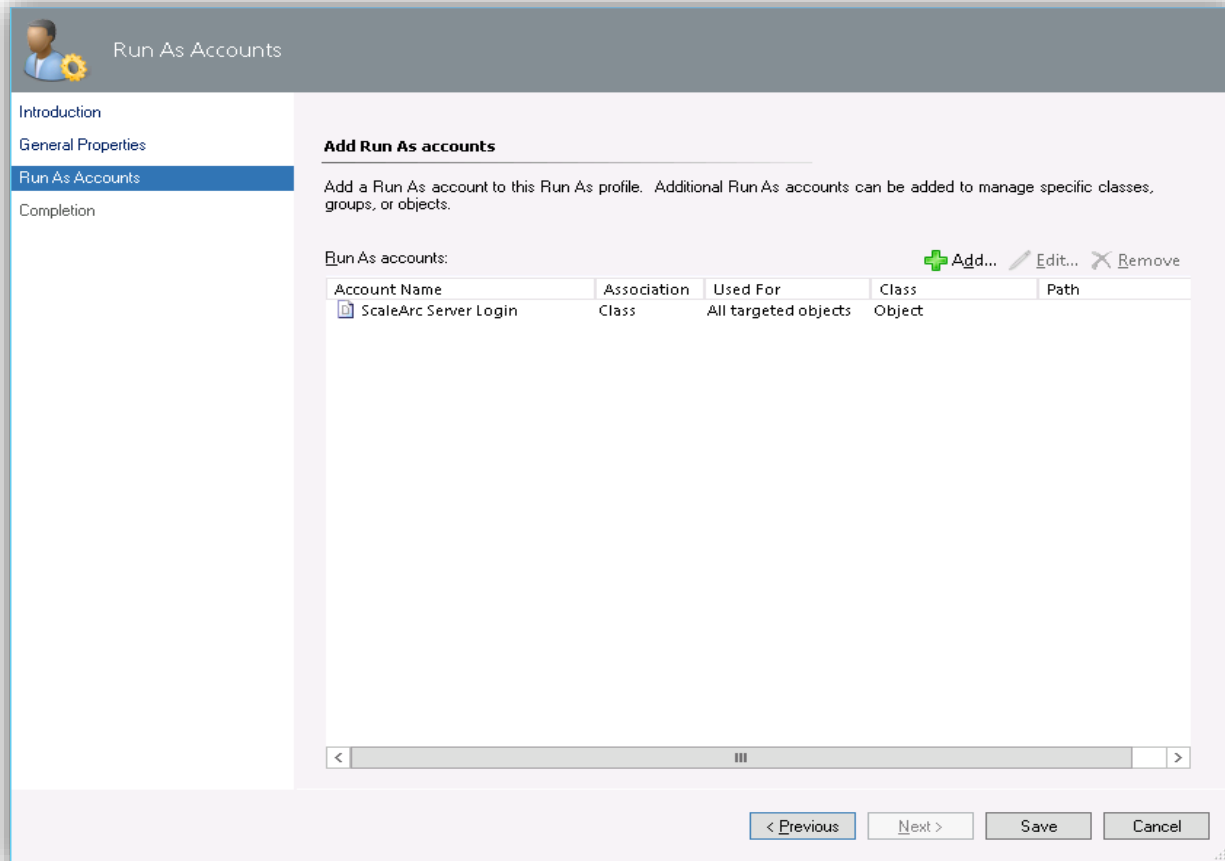
(ii) Run as the 1st profile: **ScaleArc API-KEY generate Account** and Click Next to Add Run As account.



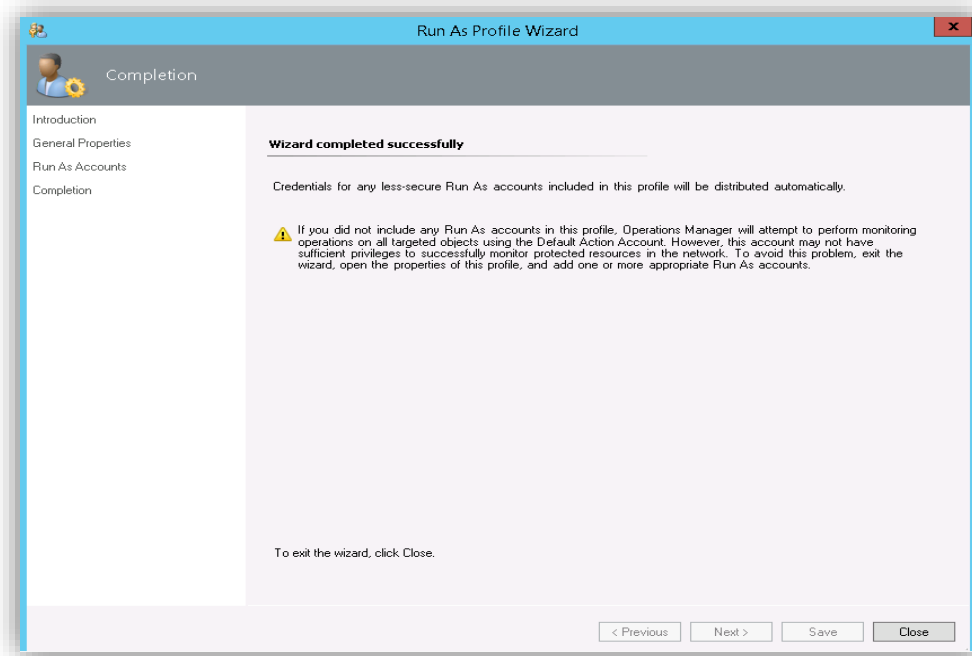
- (iii) Select the **ScaleArc server login** account. Keep the default selection for manage objects as **All targeted objects** and click **OK**.



- (iv) The account added is listed in the **Run As accounts** table. Click **Save**.

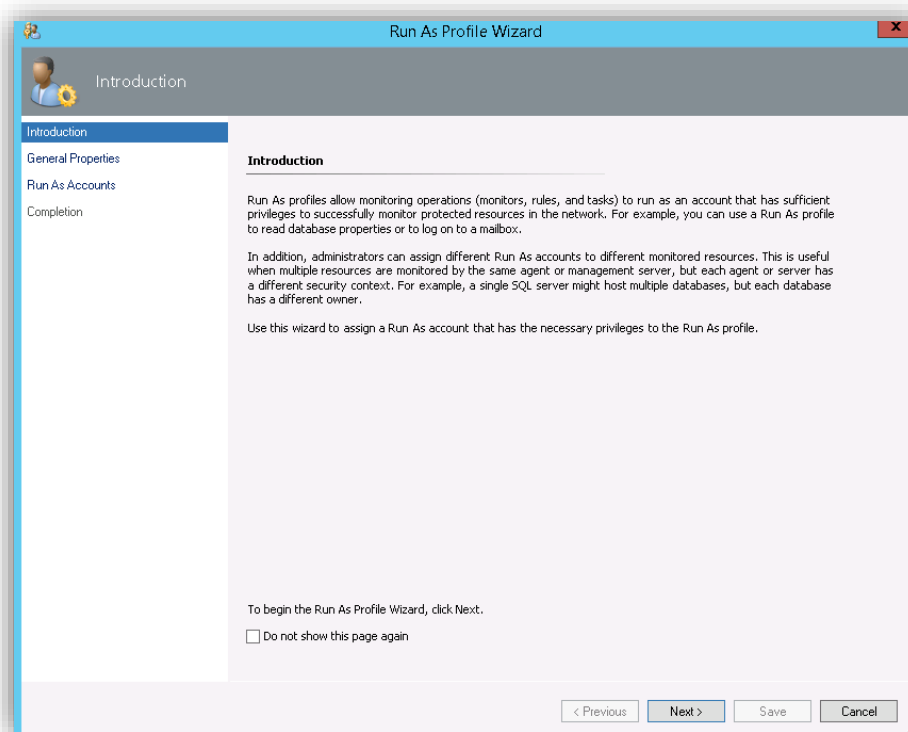


- (v) To exit the wizard click on **Close**.

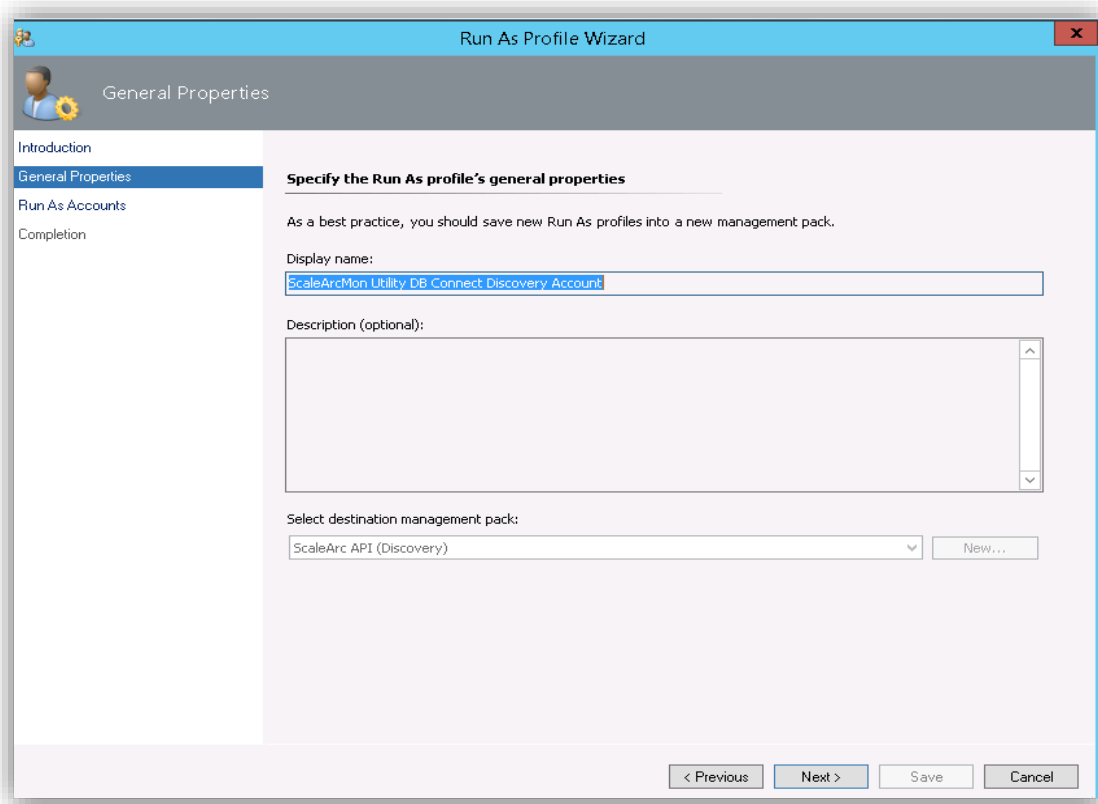


Profile 2- ScaleArcMon Utility DB Connect Discovery Account

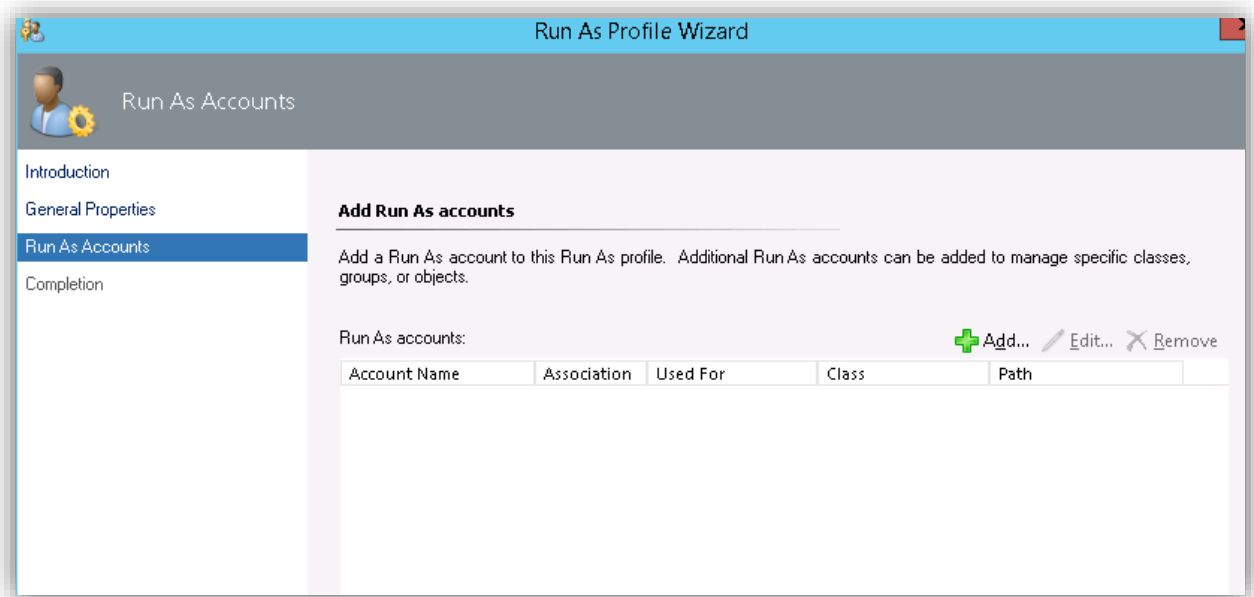
- (vi) Run As profile for the 2nd profile: ScaleArcMon Utility DB Connect Discovery Account. Click on **Next** on the above Introduction tab to reach the **General Properties** tab.



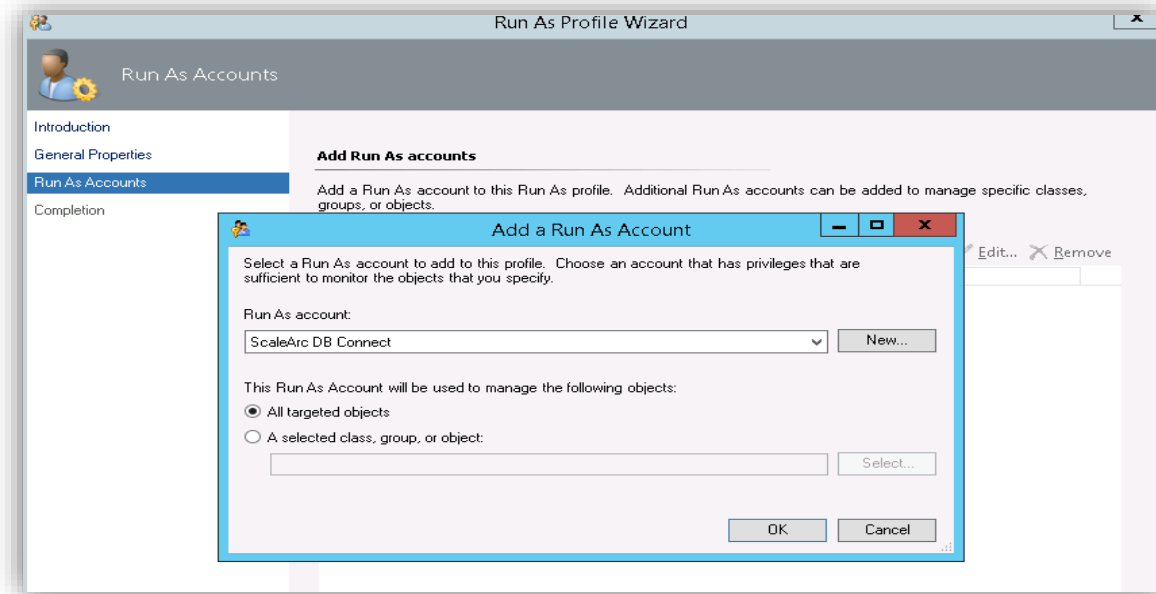
(vii). Select the **Property Display name** as **ScaleArcMon Utility DB Connect Discovery Account** and click on **Next**.



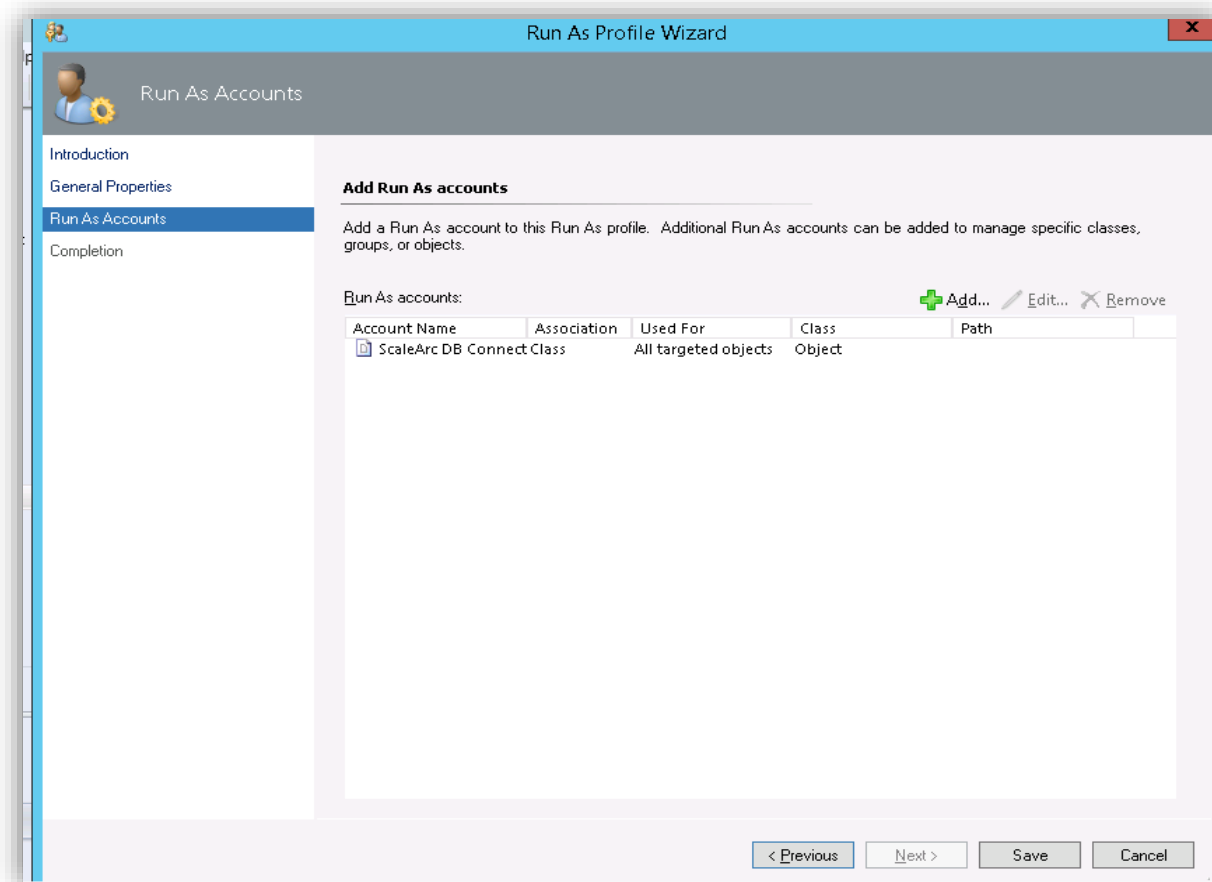
(viii) On **Add Run as Accounts** tab, Click on **+Add** to add the account.



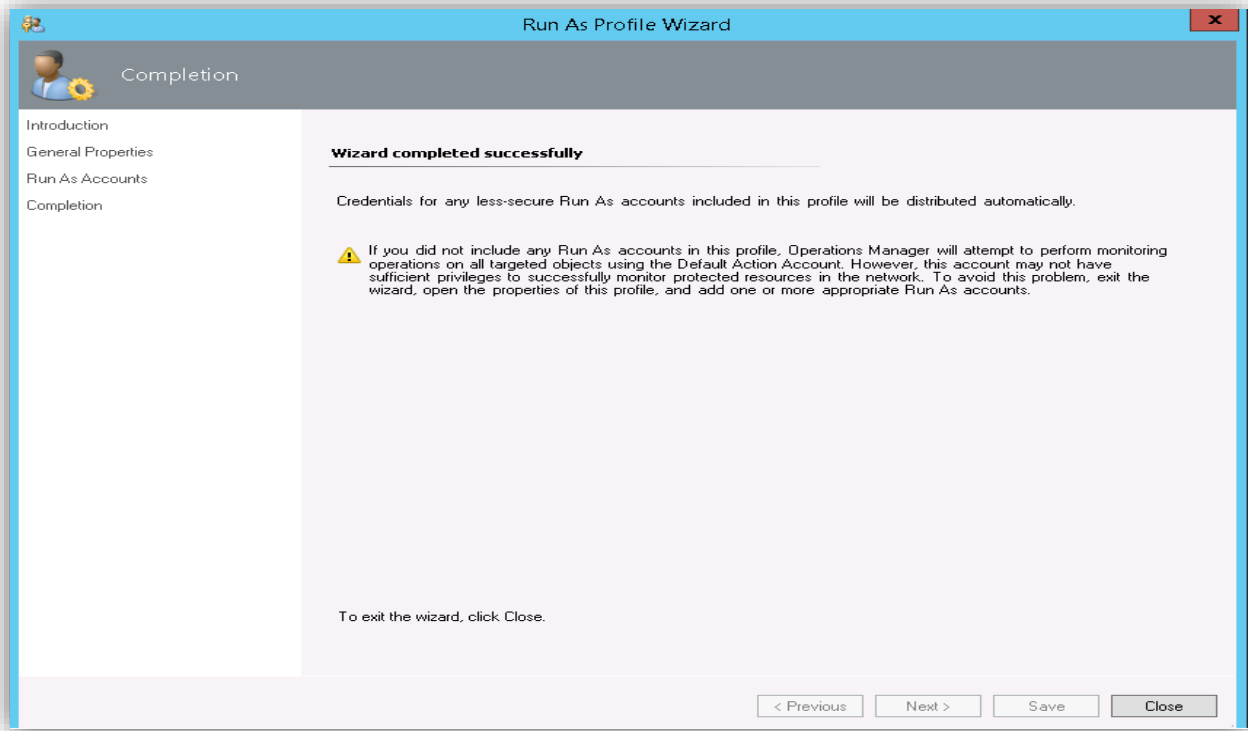
(ix). Select **ScaleArc DB Connect** account for **Run as Account** dropdown and click on **OK**.



(x). The added account should be listed in the **Run as Accounts** table and then click on **Save**.

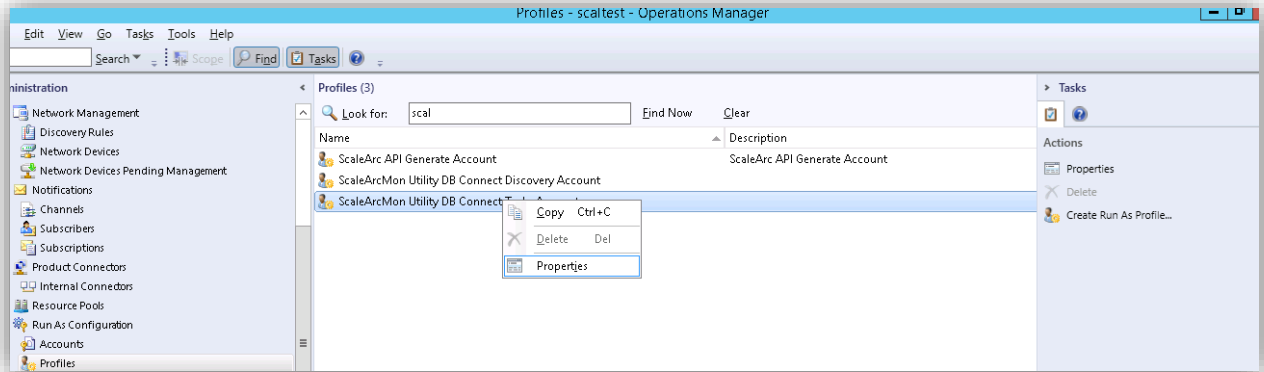


(xi). To exit the wizard click on **Close**.

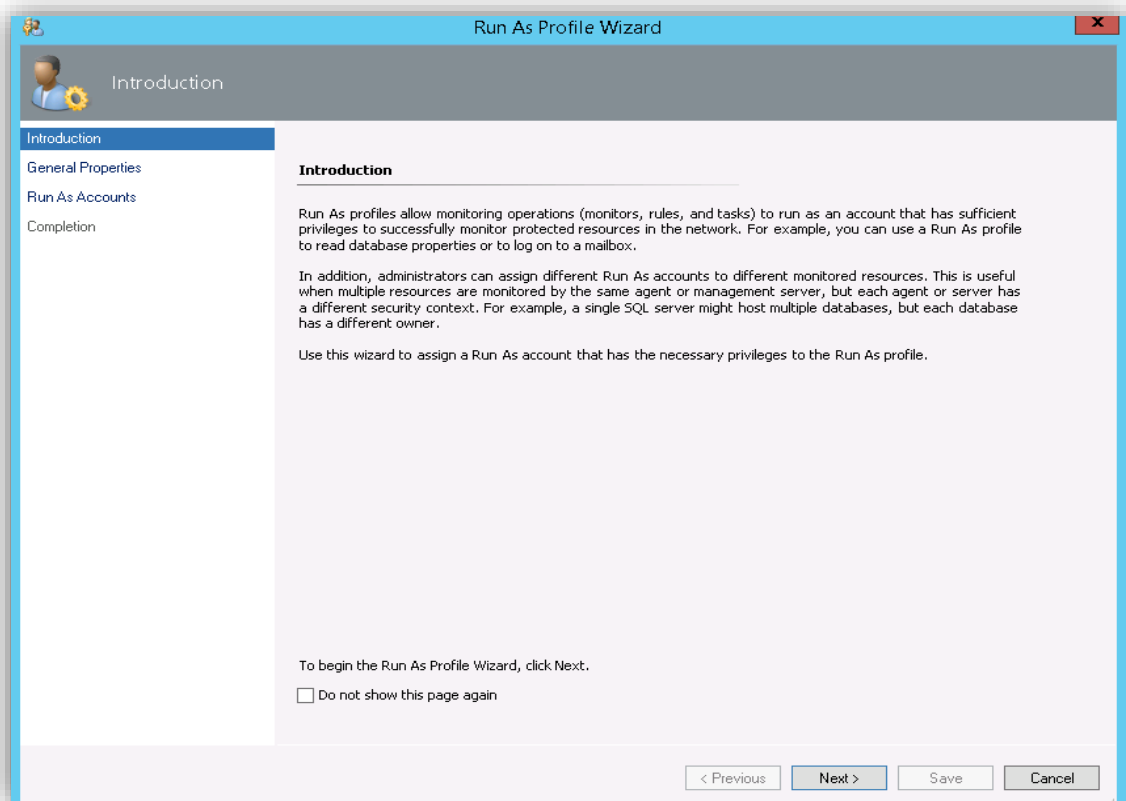


Profile 3- ScaleArcMon Utility DB Connect Tasks Account

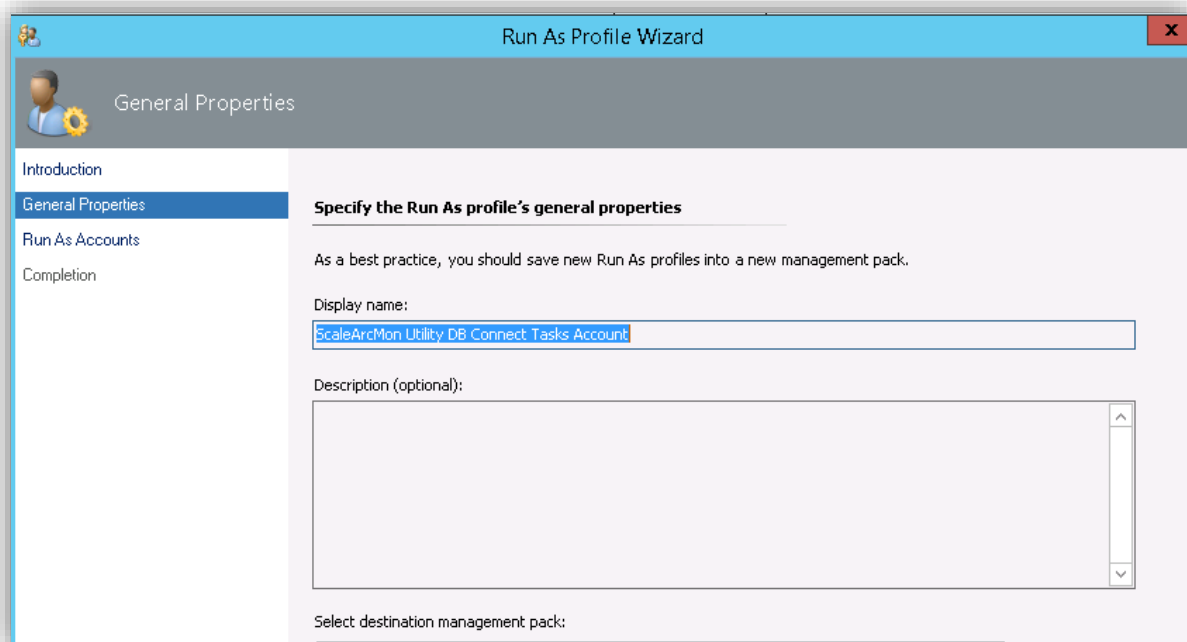
(Xii) Run as Profile for the 3rd profile: ScaleArcMon Utility DB Connect Tasks Account.



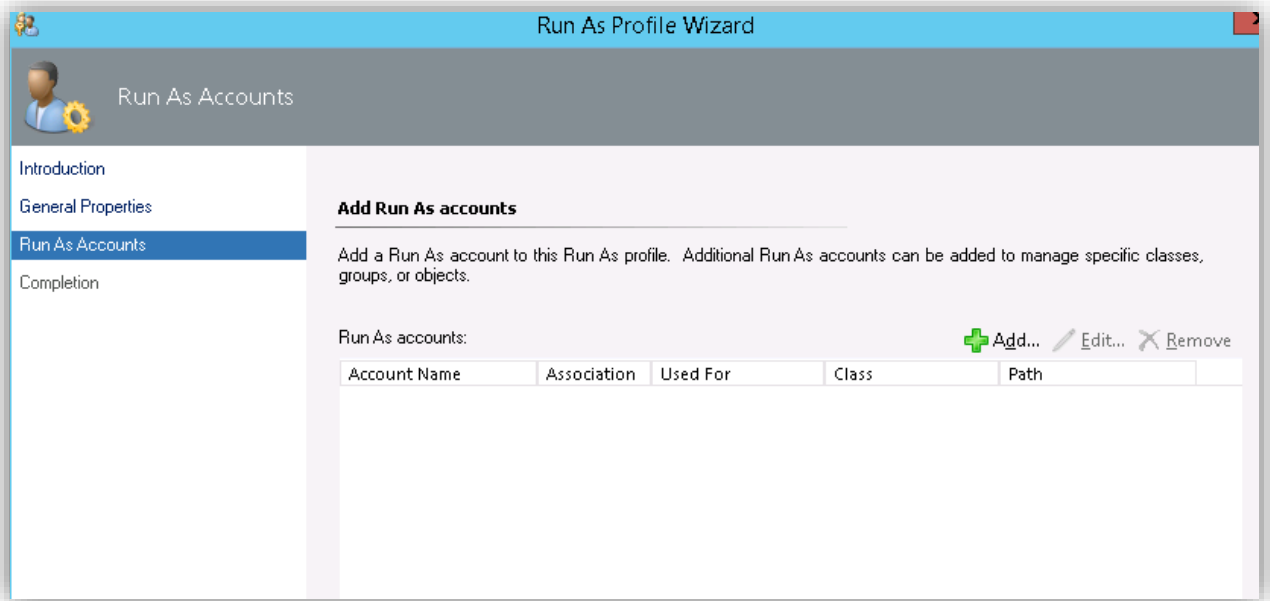
(Xiii). Click on **Next** on Introduction tab to reach the **General Properties** tab.



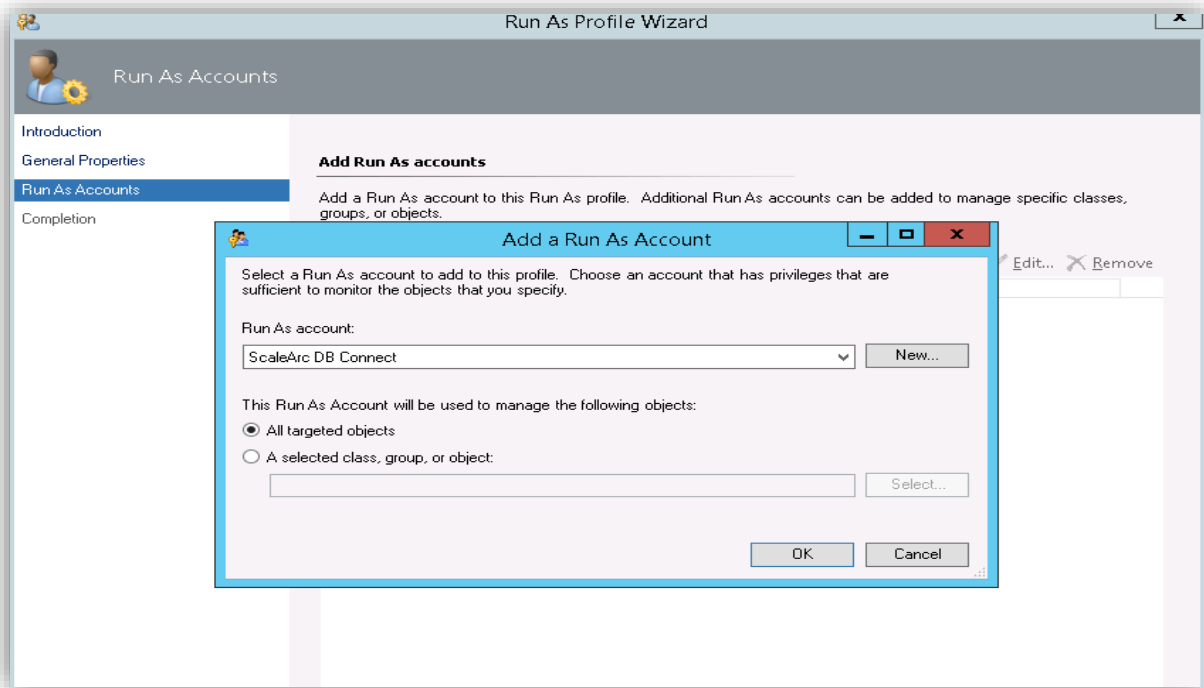
(Xiv). Select the Property Display name as **ScaleArcMon Utility DB Connect Tasks Account** and click on **Next**.



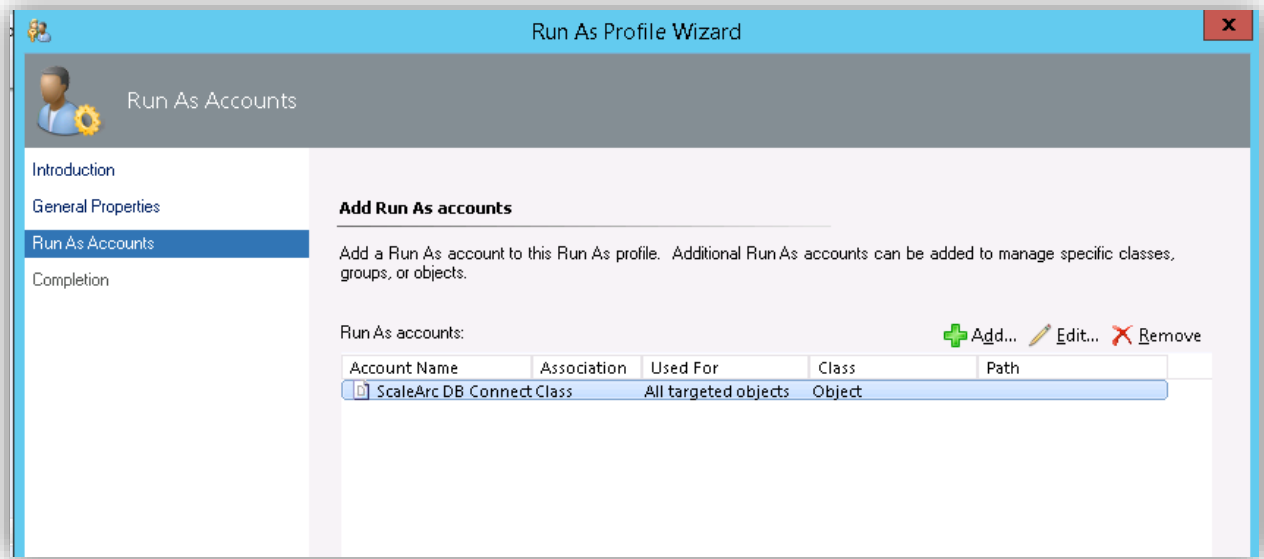
(XV). On **Add Run as Accounts** tab, click on **+Add** to add the account.



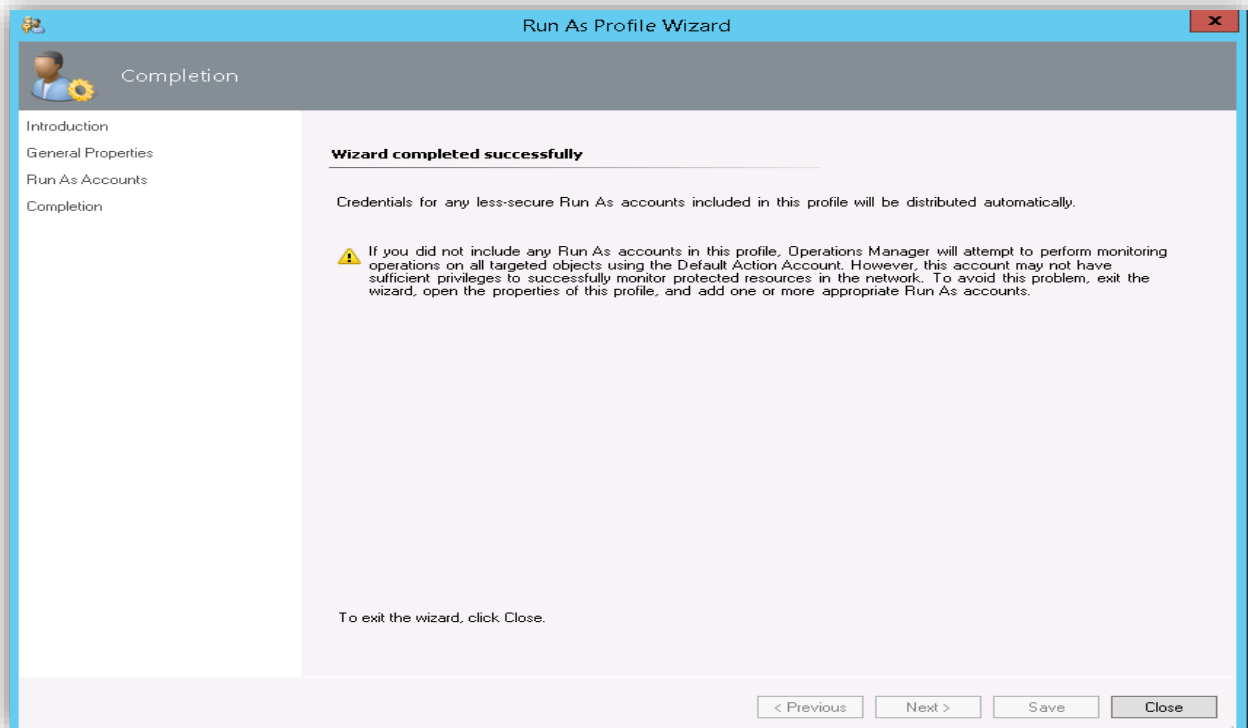
(xvi). Select **ScaleArc DB Connect** account for **Run as Account** dropdown and click on **OK**.



(Xvii). Check the added account is listed in the **Run as Accounts** table and then click on **Save**.



(Xviii) To exit the wizard, click **close**.



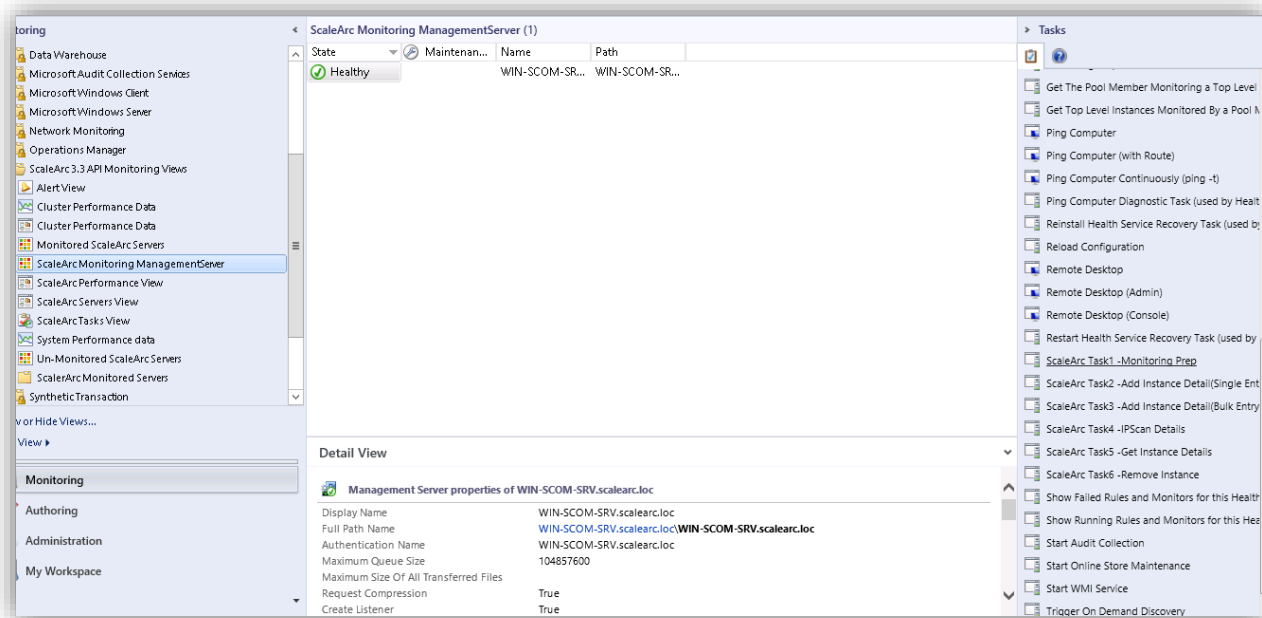
Creating ScaleArc Database Instance

Now the ScaleArc database instance needs to be created inside the SCOM DB, wherever the SCOM DB is located, either locally or remotely. For that we need to run the ScaleArc Monitoring prep task.

- 1) Select the **Monitoring** tab at the bottom to get the **Monitoring views** above in the left panel of SCOM.

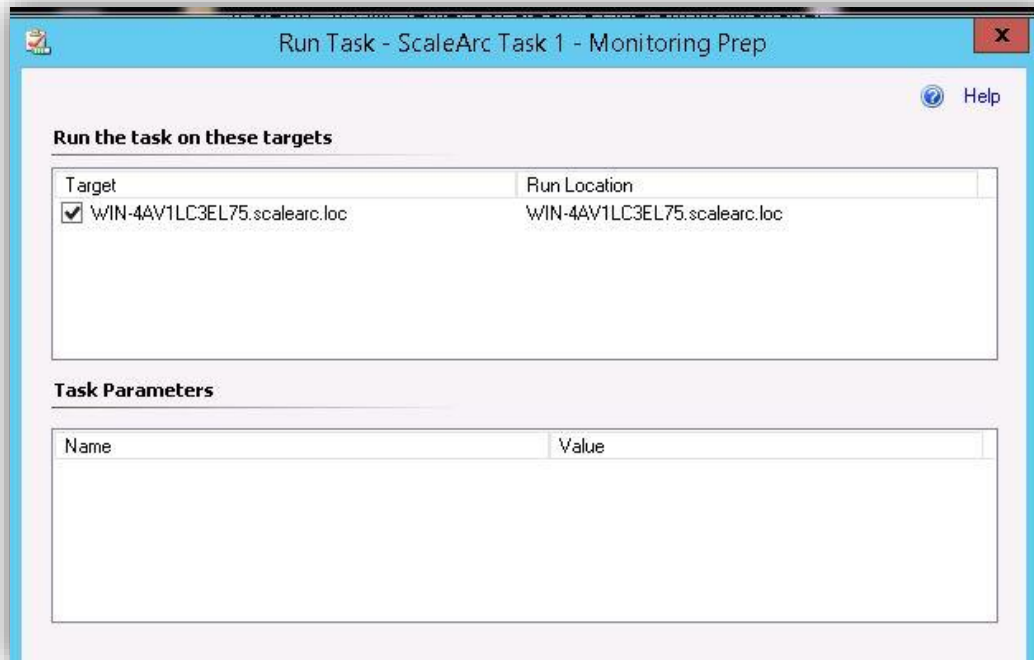


- 2) Select the **ScaleArc SCOM server view** at the left panel of the SCOM, and look at the tasks in the right side panel.

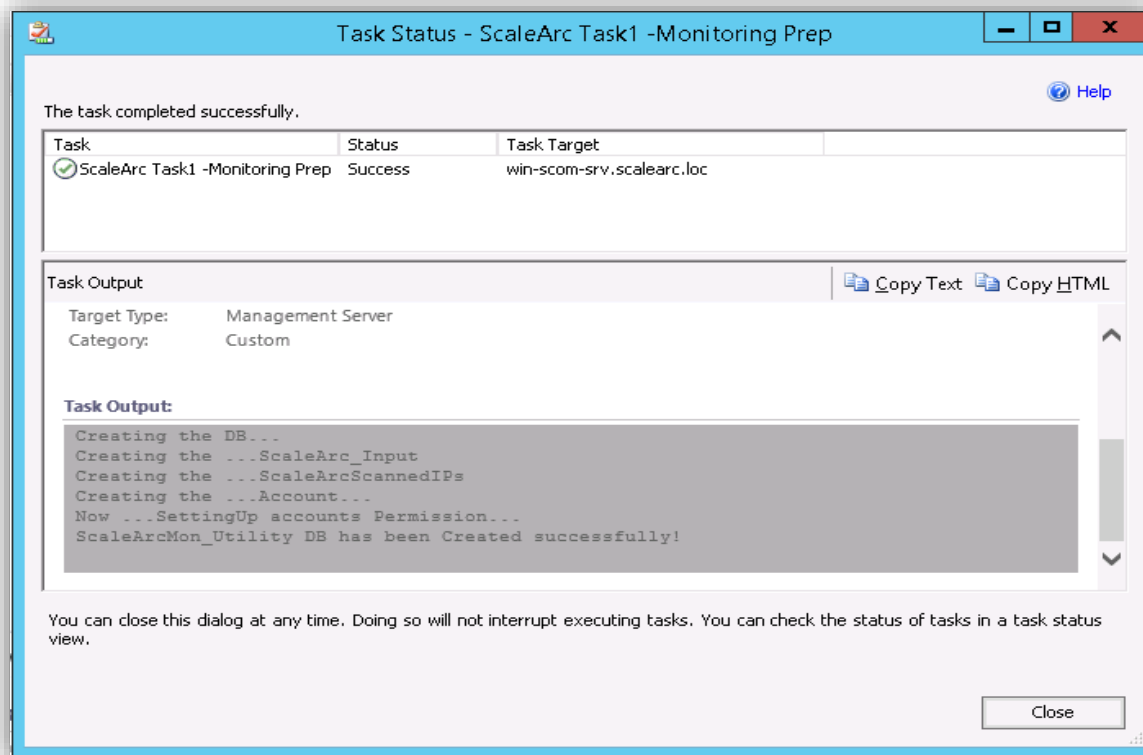


- 3) Select the **ScaleArc Task 1- Monitoring Prep** task and a Run task wizard opens.

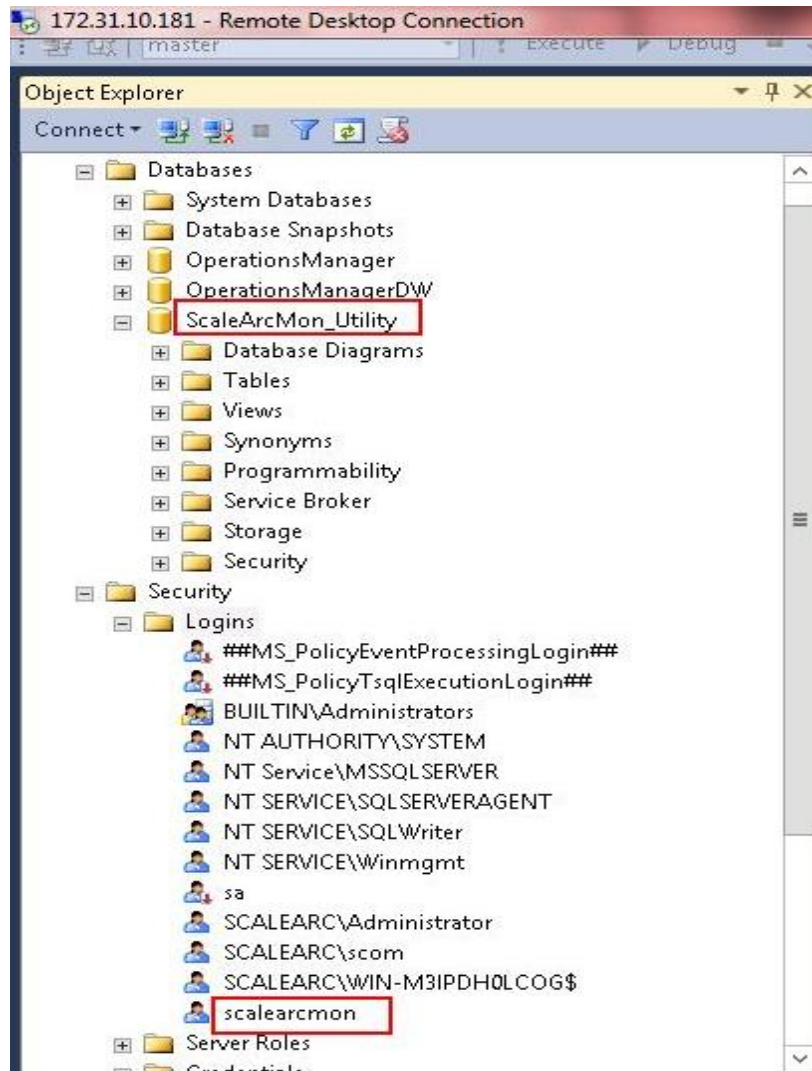
4) Click on **Run** button at the bottom on the Run Task Wizard .



5) The Task output displays the successful DB creation with the pre-defined DB name as 'ScaleArcMon_UTILITY DB'.



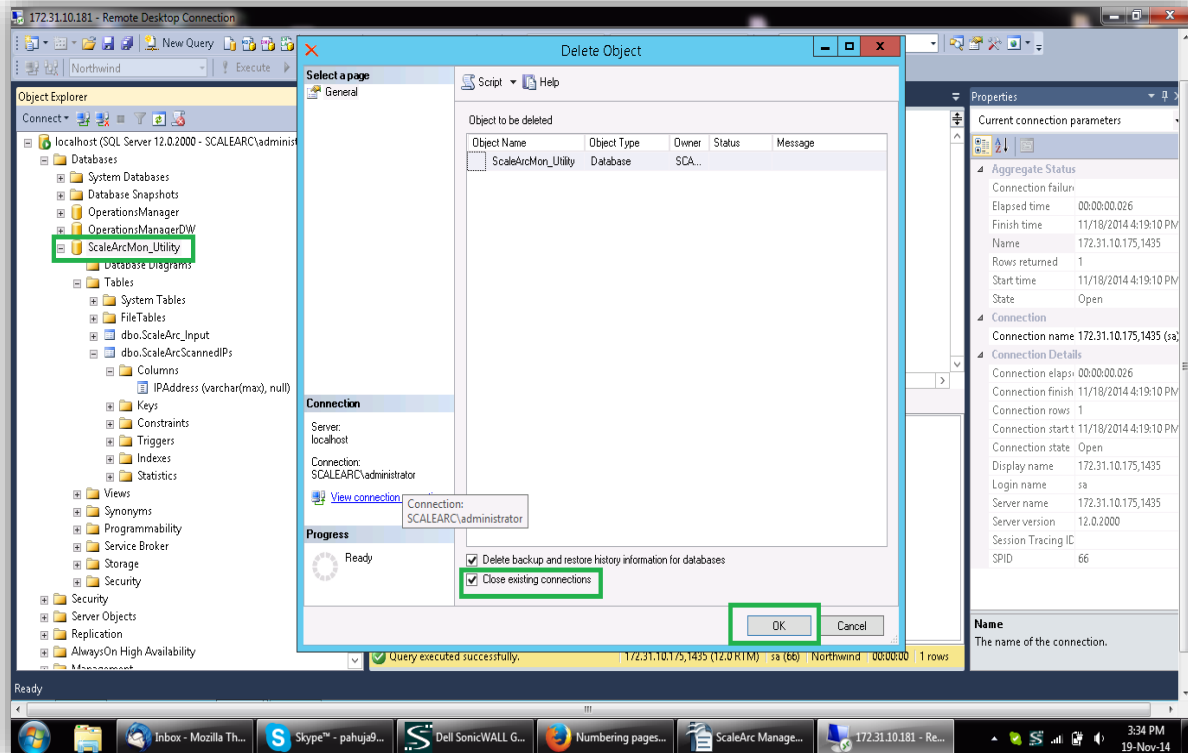
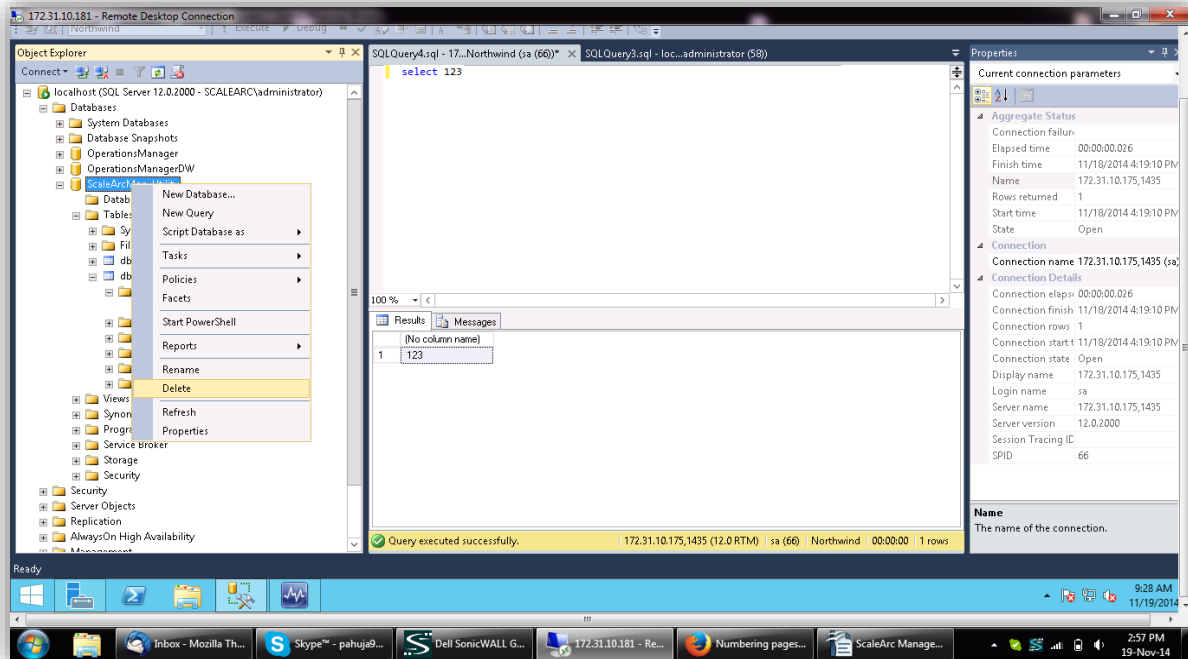
6). ScaleArcMon_UTILITY DB is created under the SCOM DB and looks as follows.



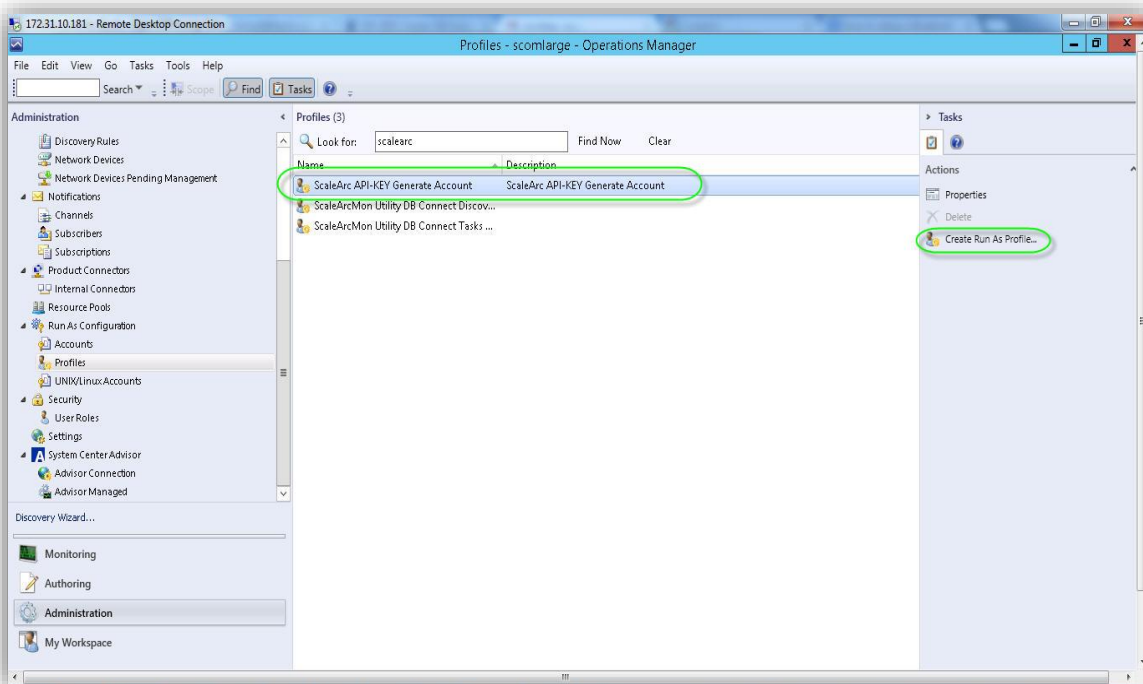
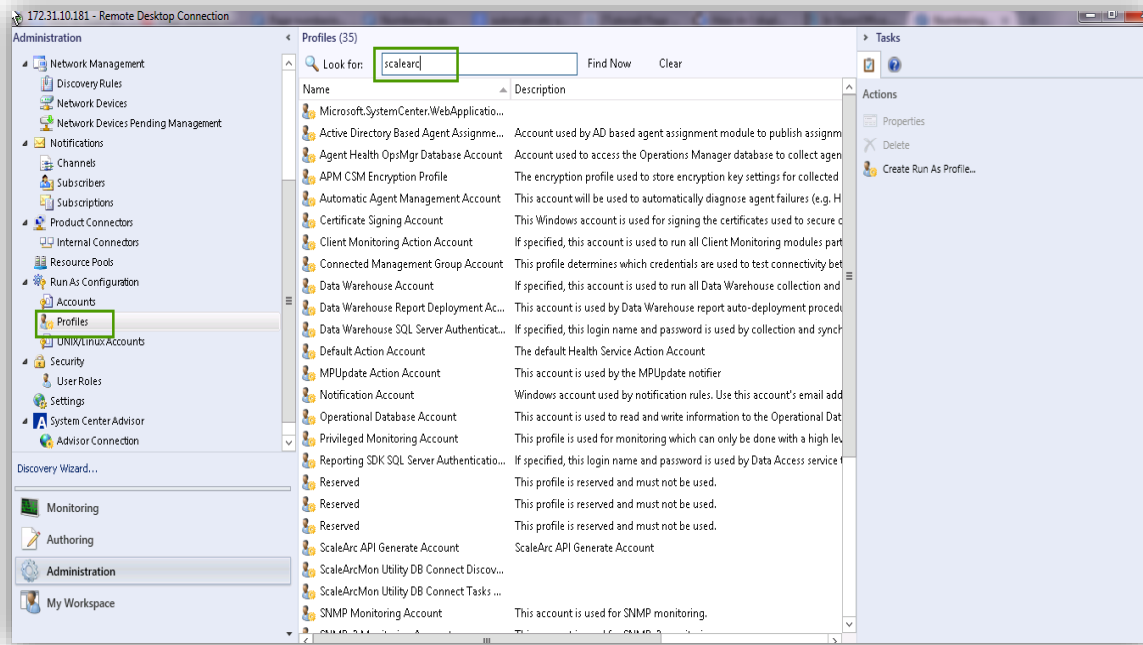
Here by we conclude with the installation of the management packs, account creation, associating the corresponding profiles to the respective accounts, and at last creating the ScaleArc DB instance inside the SCOM DB.

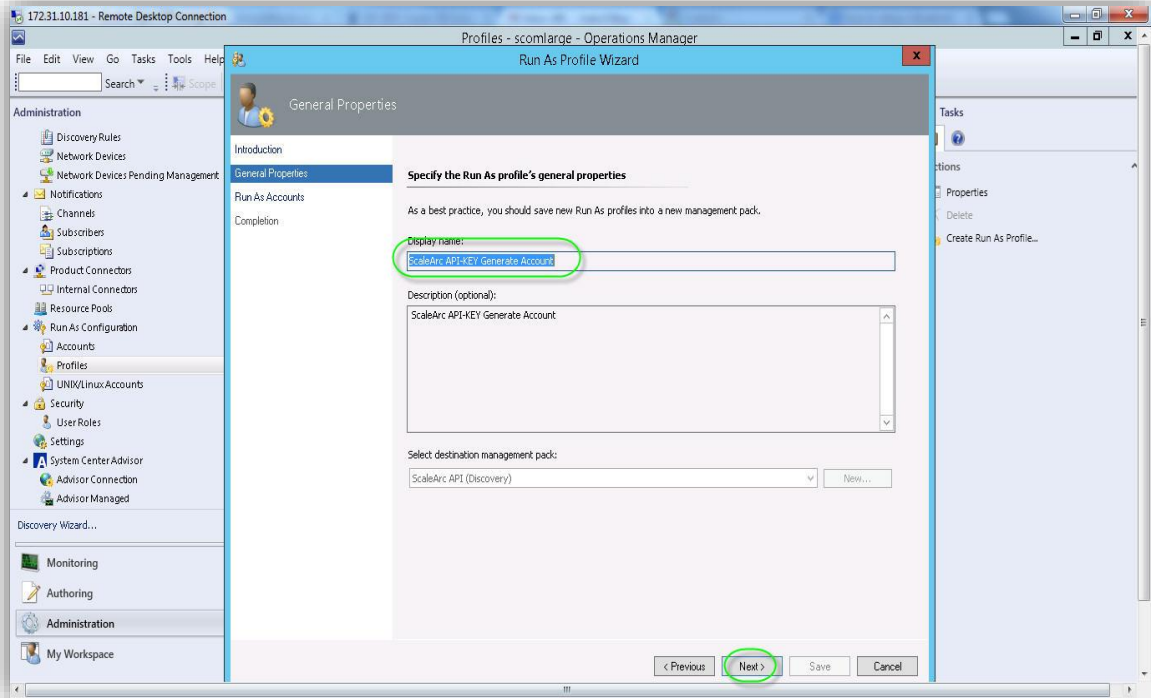
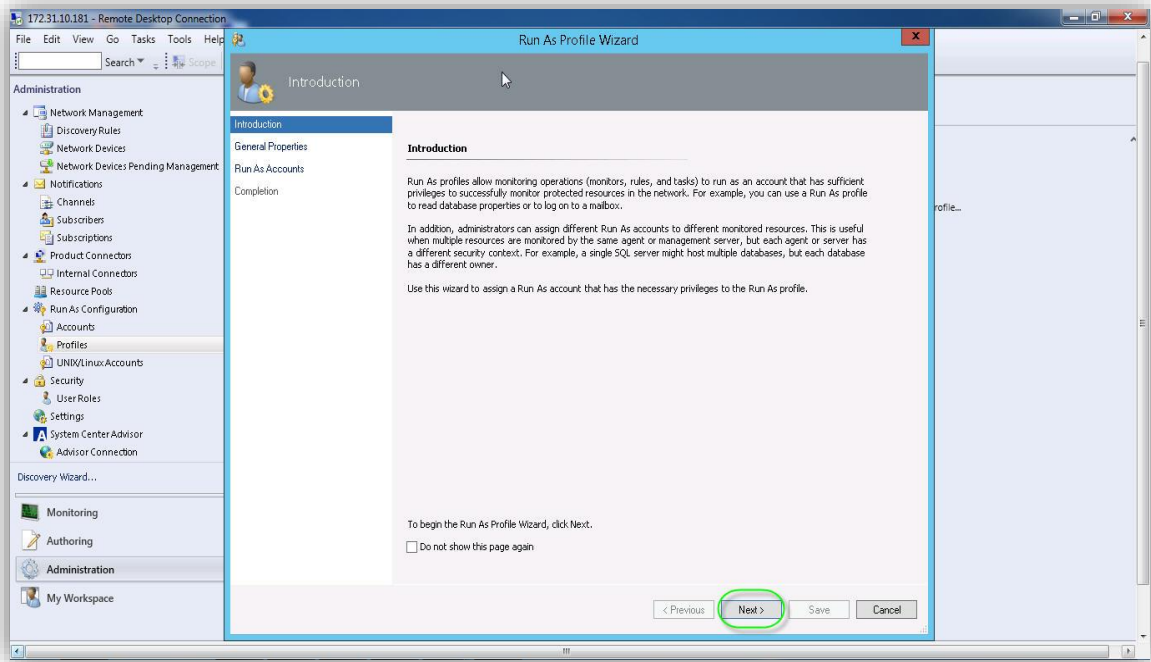
Deleting Management Packs and Importing Updated Ones

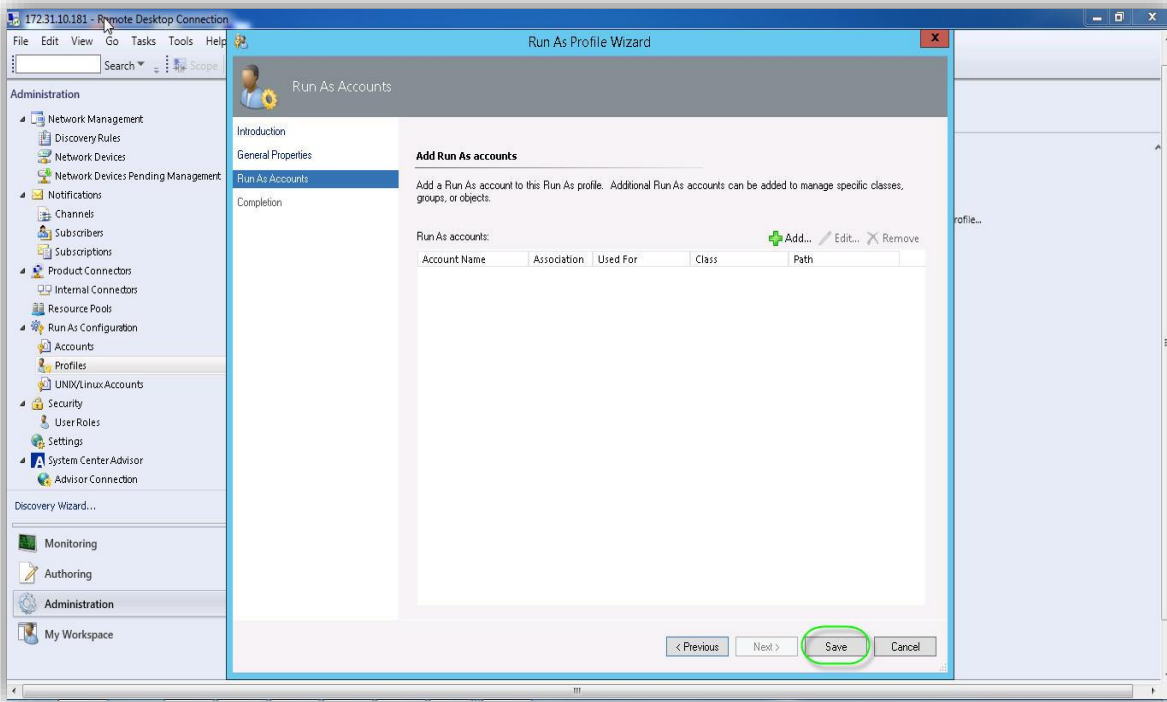
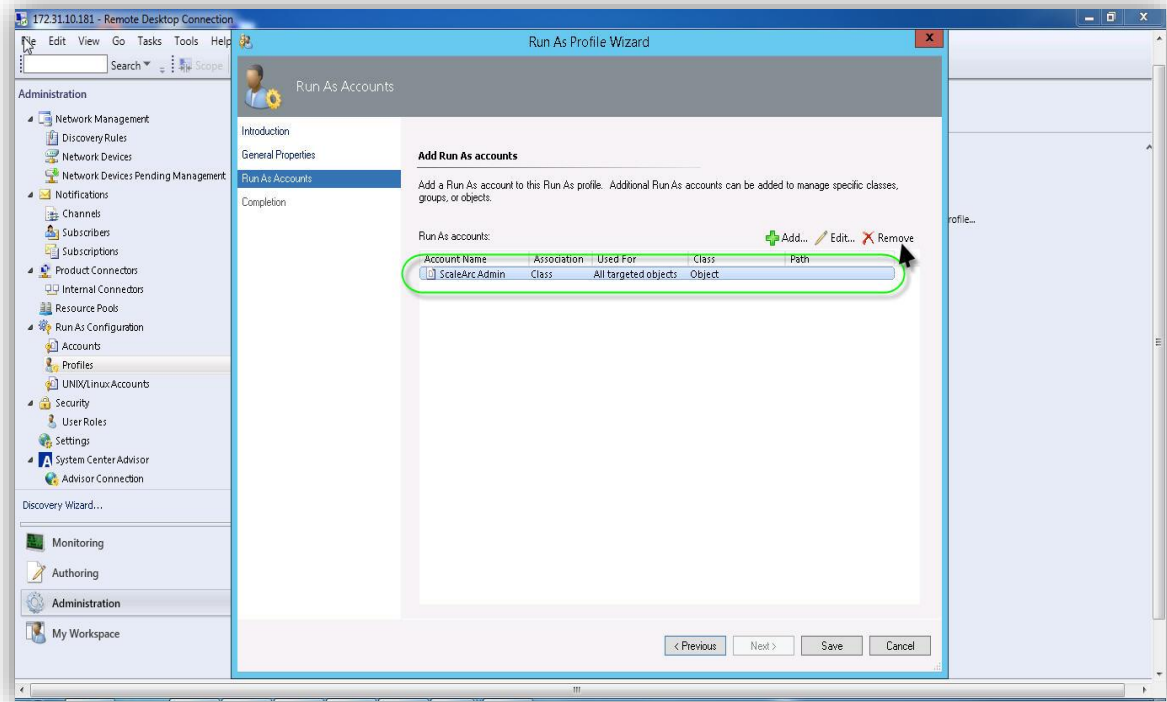
- 1) Delete the ScaleArc DB instance created under the SCOM DB, which was created while doing the ScaleArc task-1 Monitoring Prep. (Refer screen-shots)

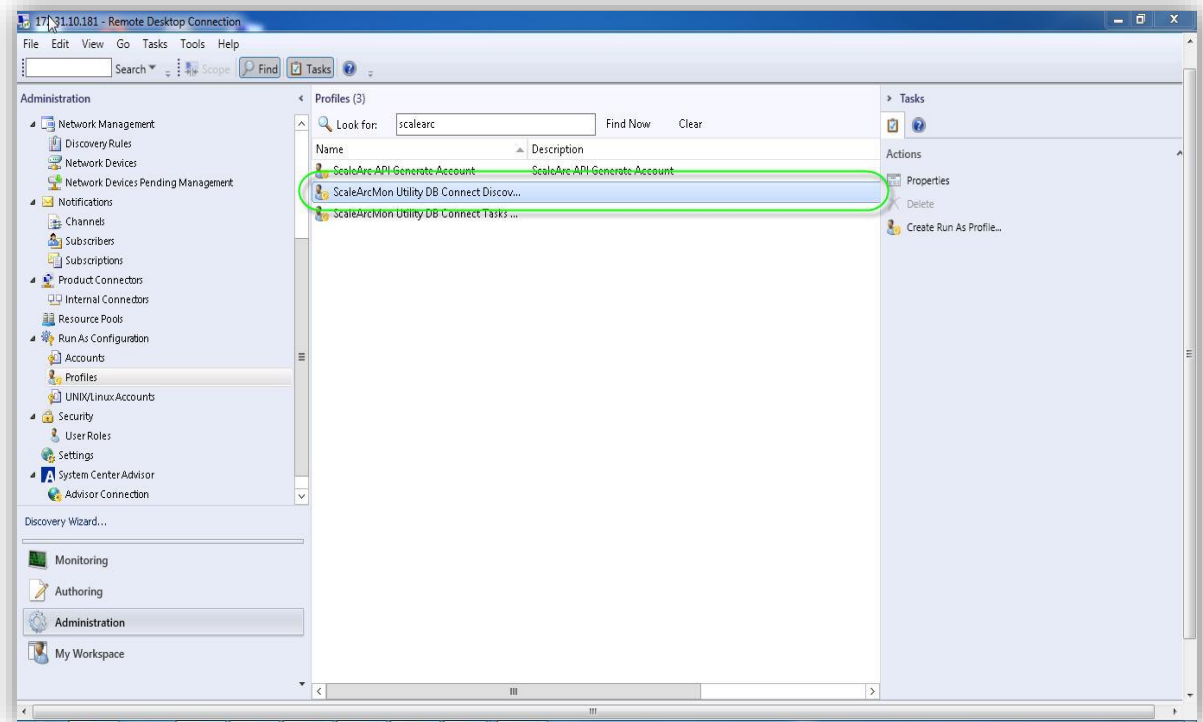
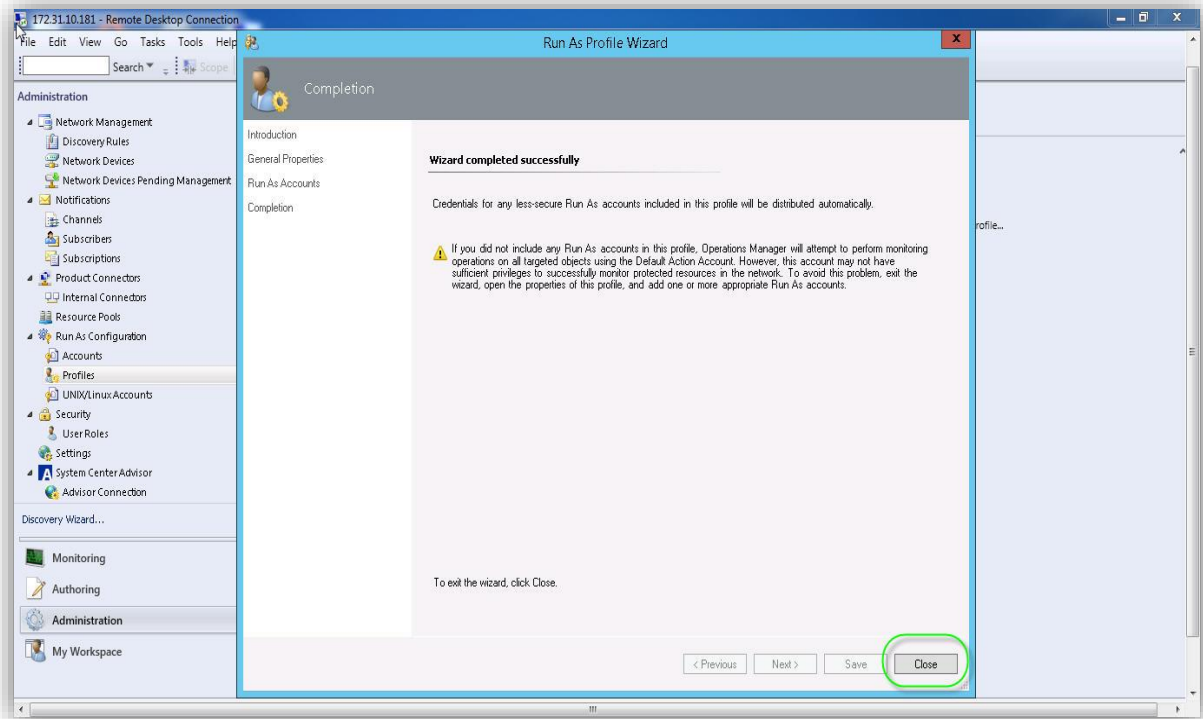


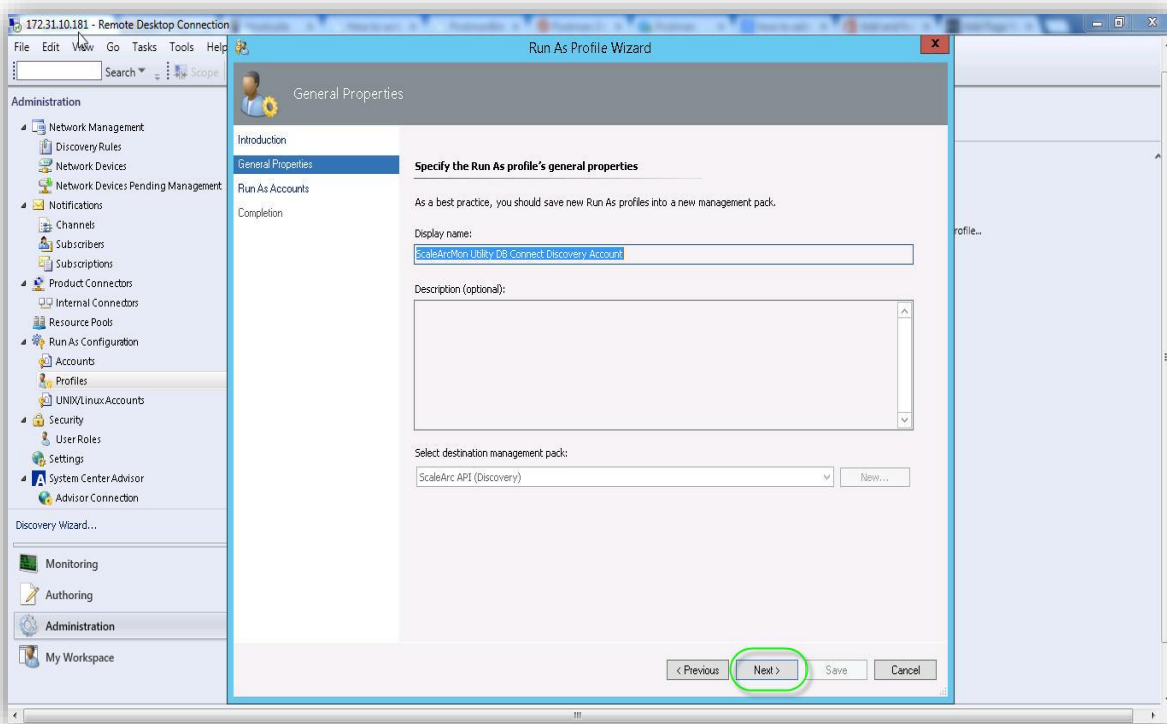
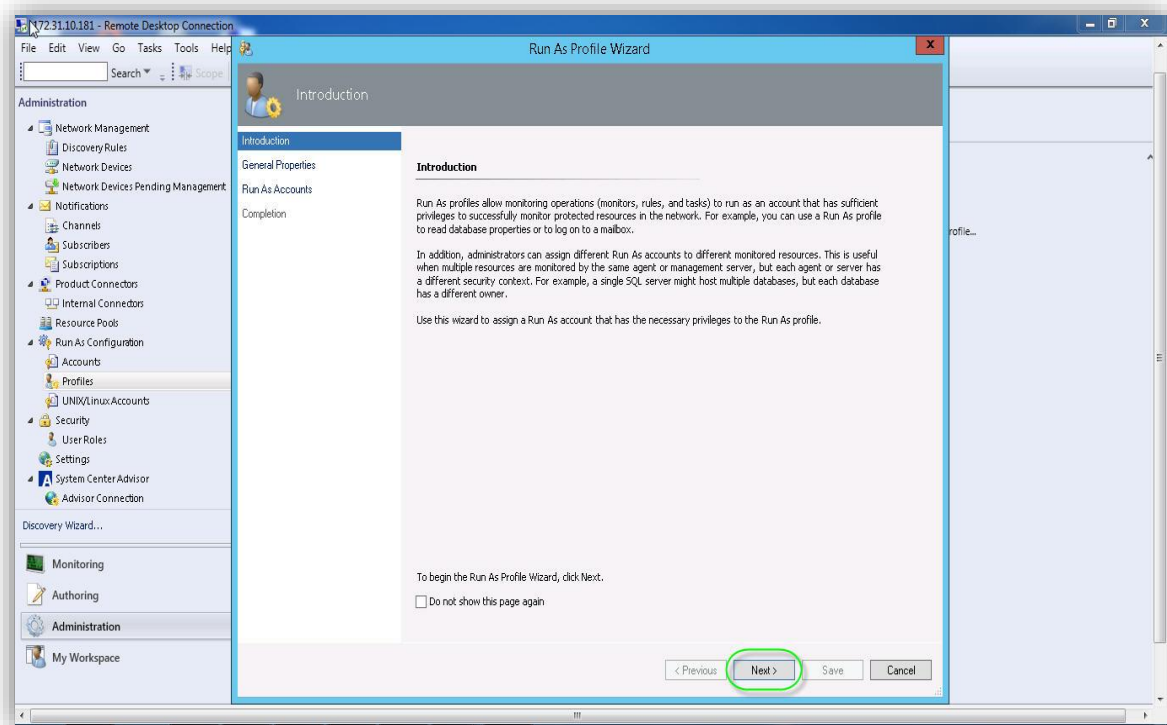
- Detach the two accounts (ScaleArc admin account, ScaleArc DB connect account) associated with the three profiles (ScaleArc API-KEY Key Generate account, ScaleArc APIKey ScaleArcMon_UTILITY DB Connect Account, which was performed while doing the step B- 'Create Accounts and associate profiles'.

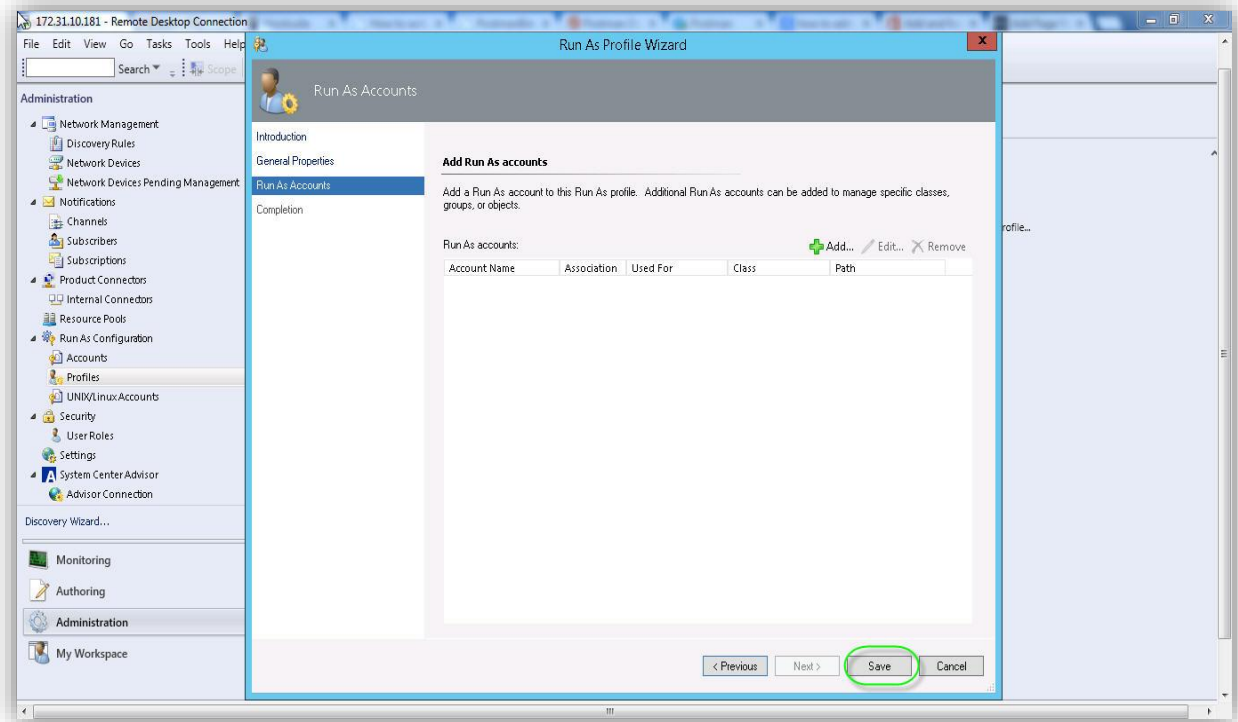
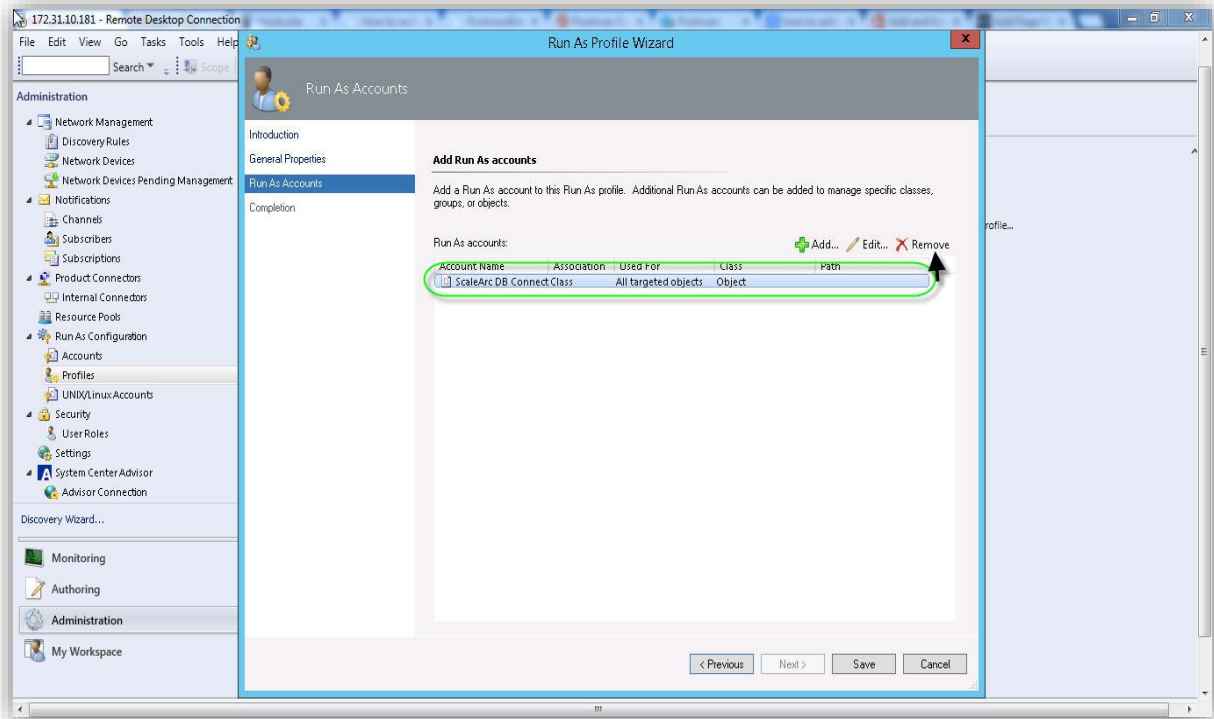


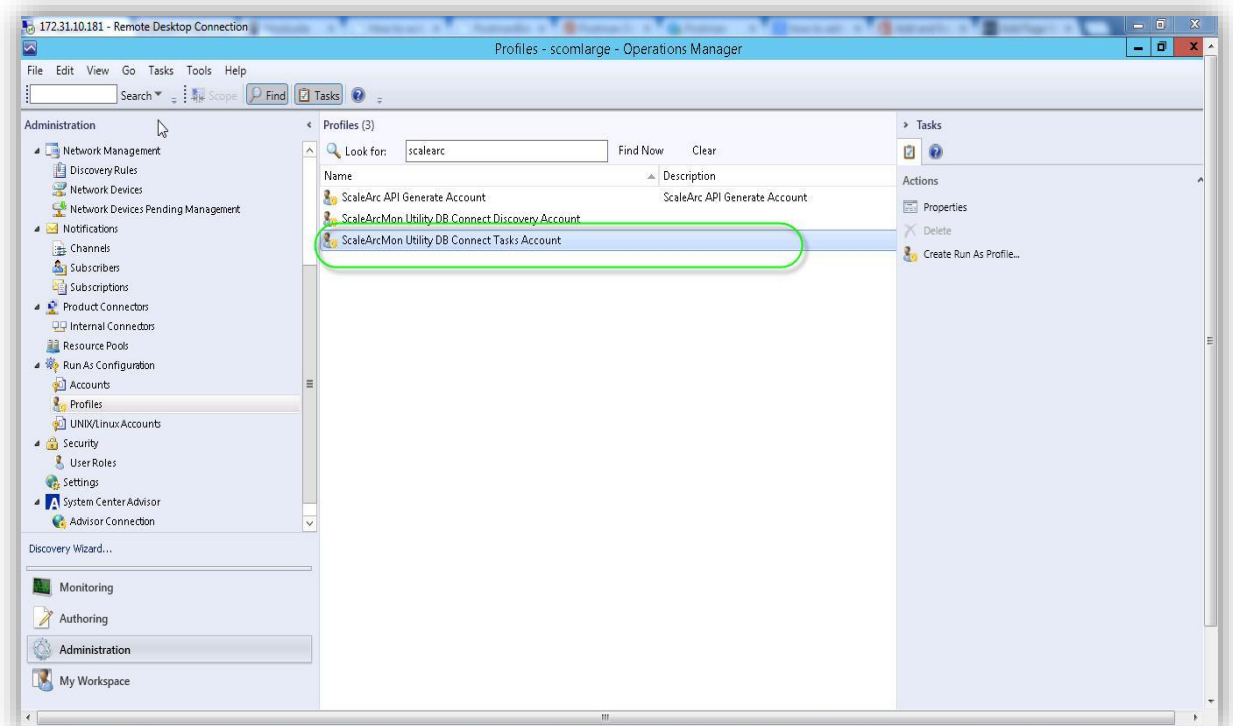
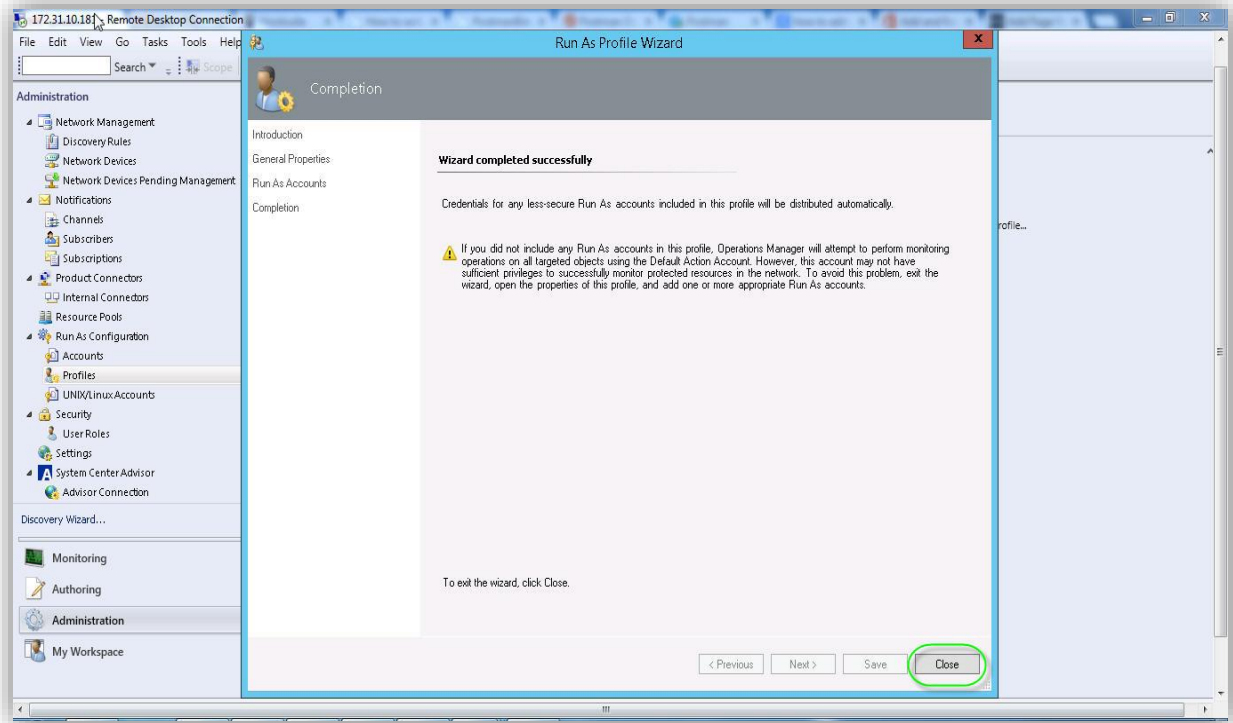


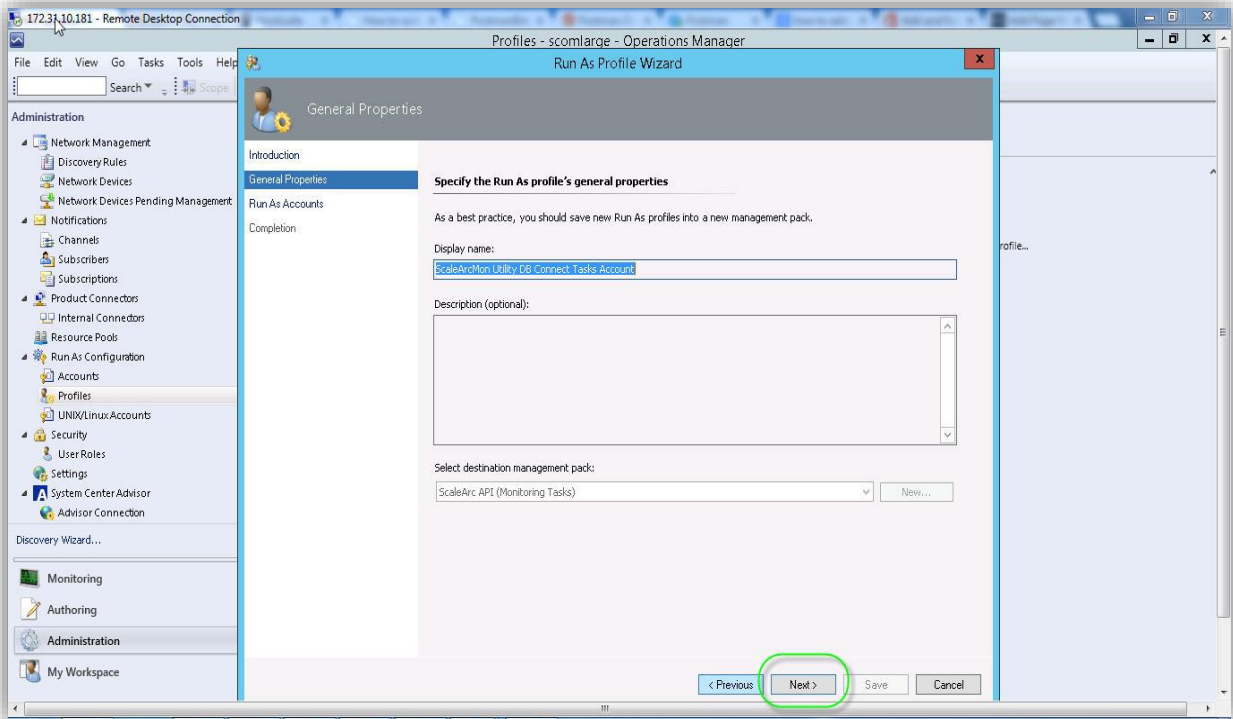
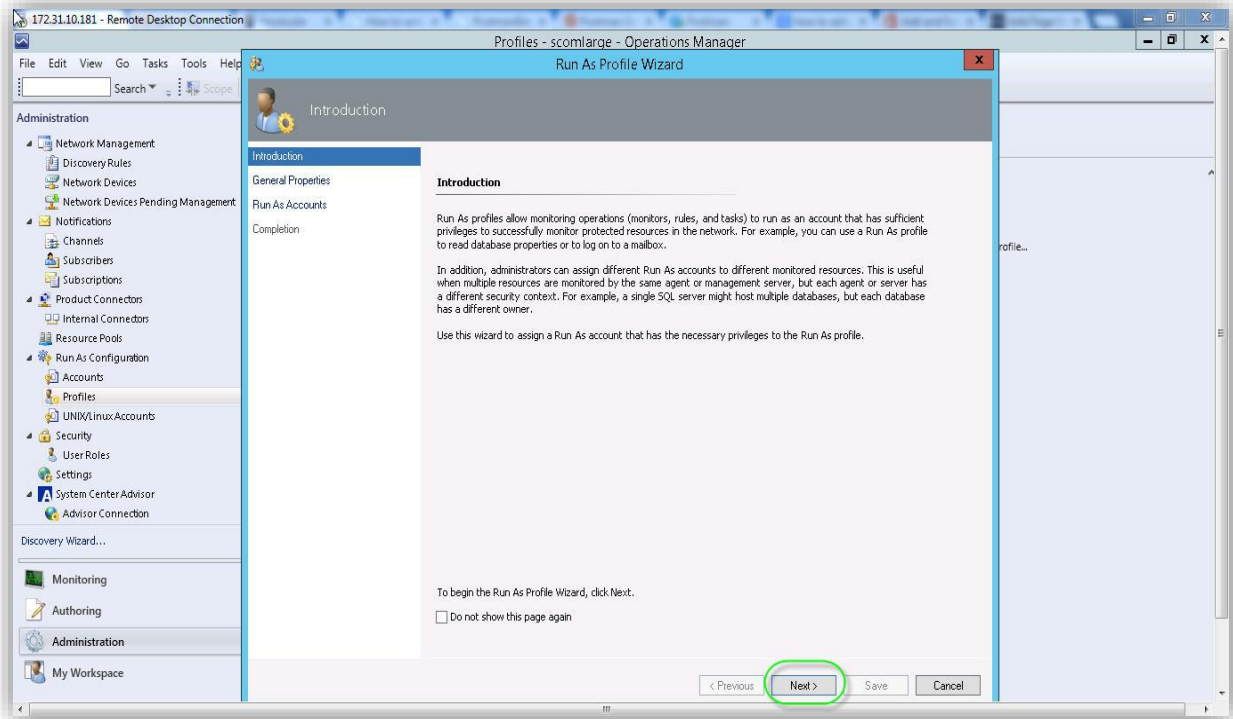


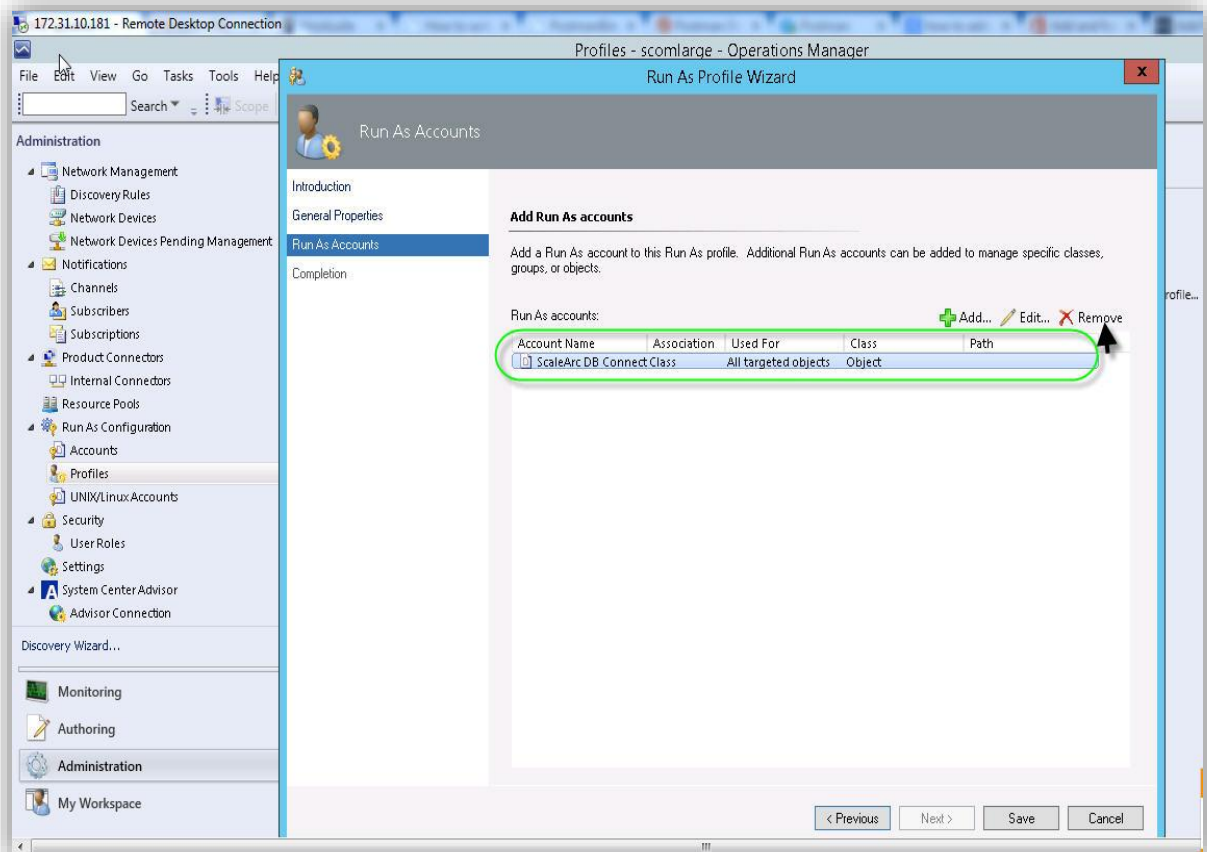
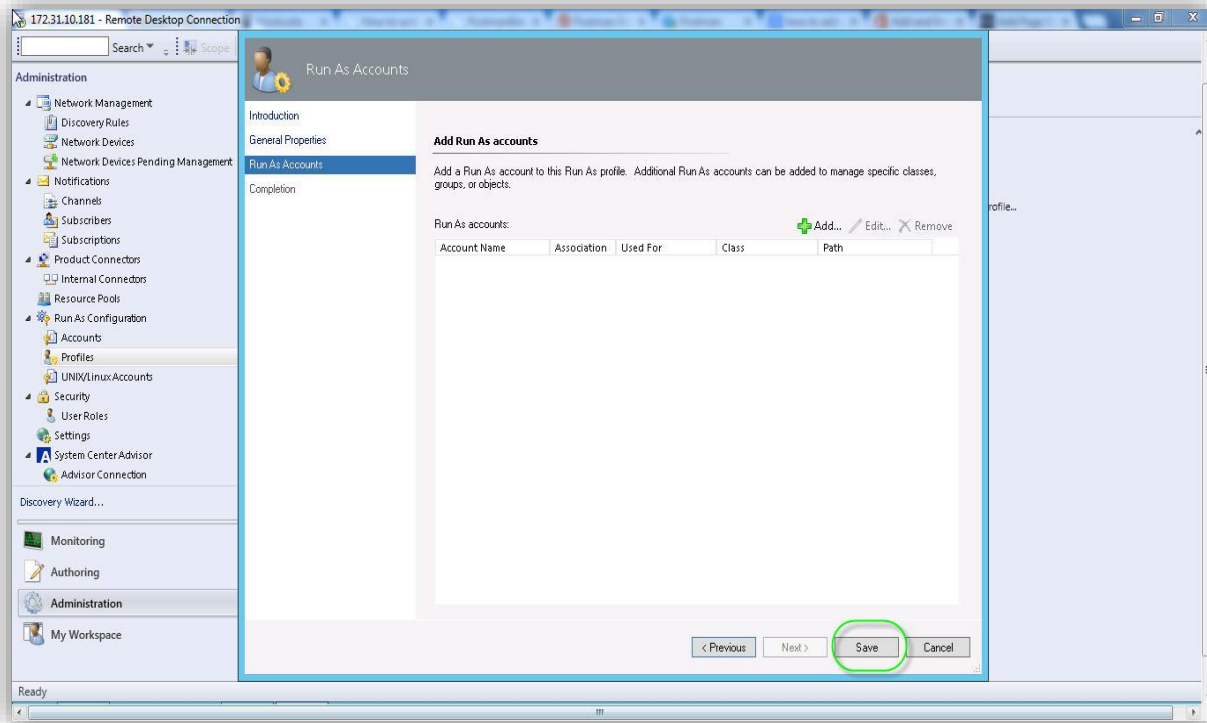


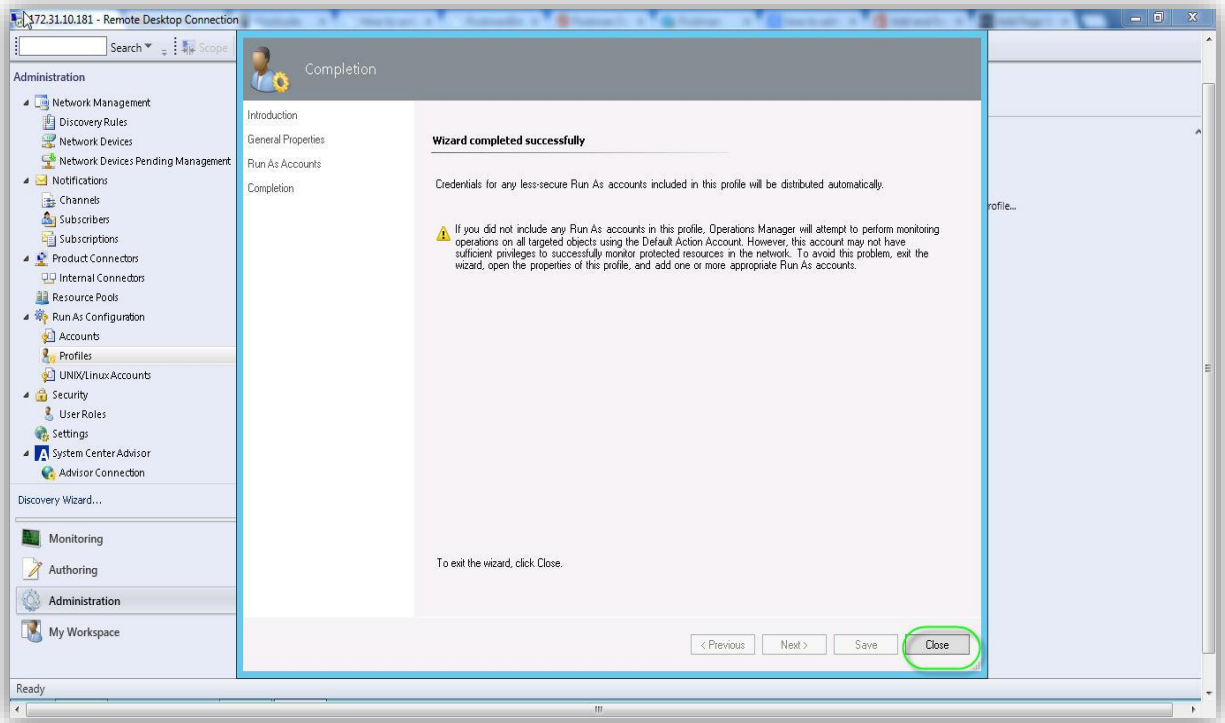




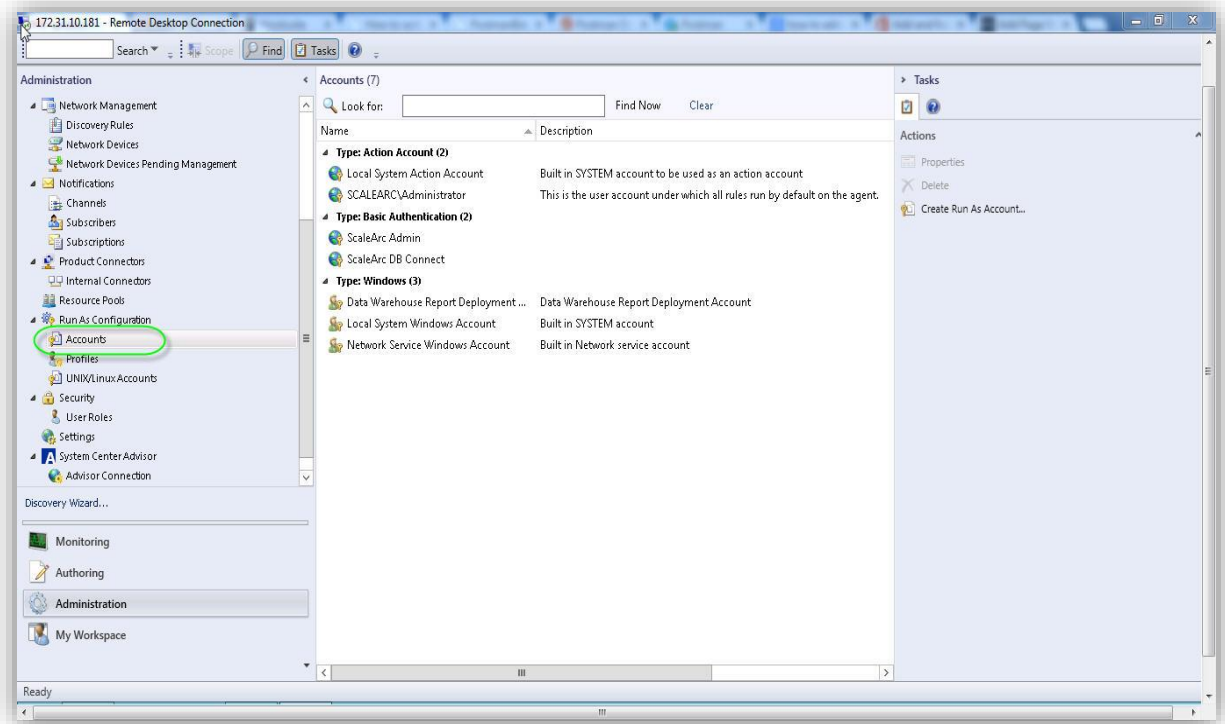


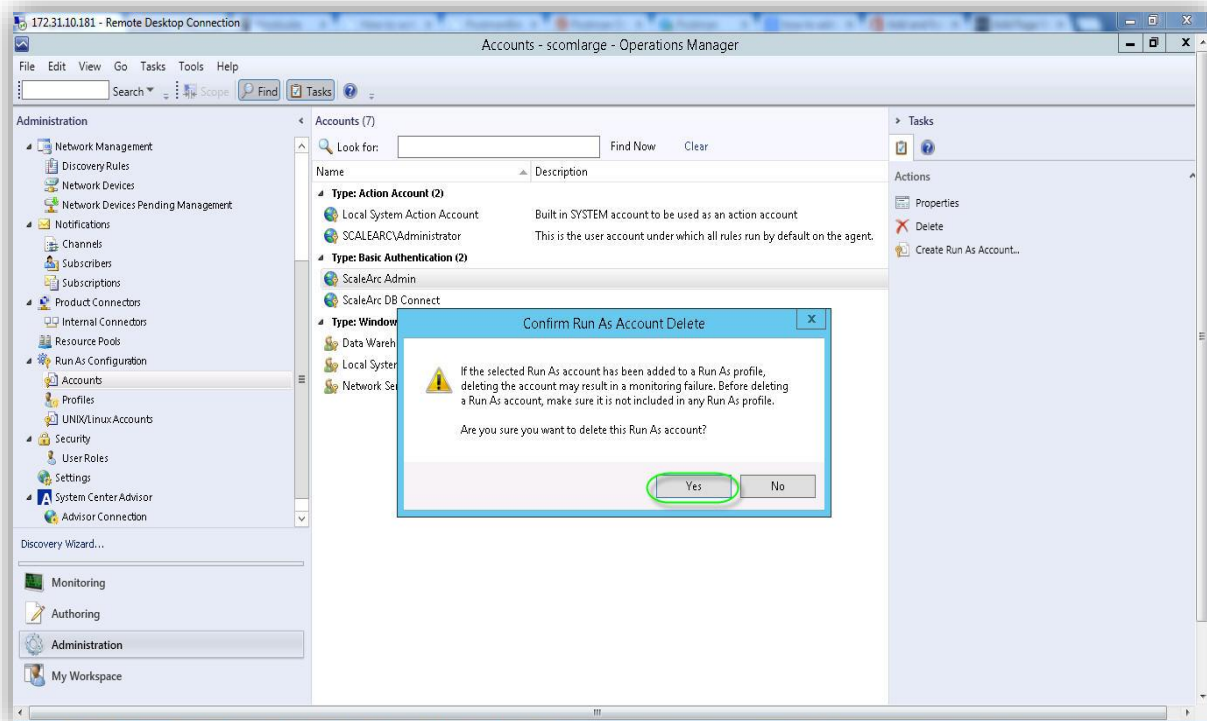
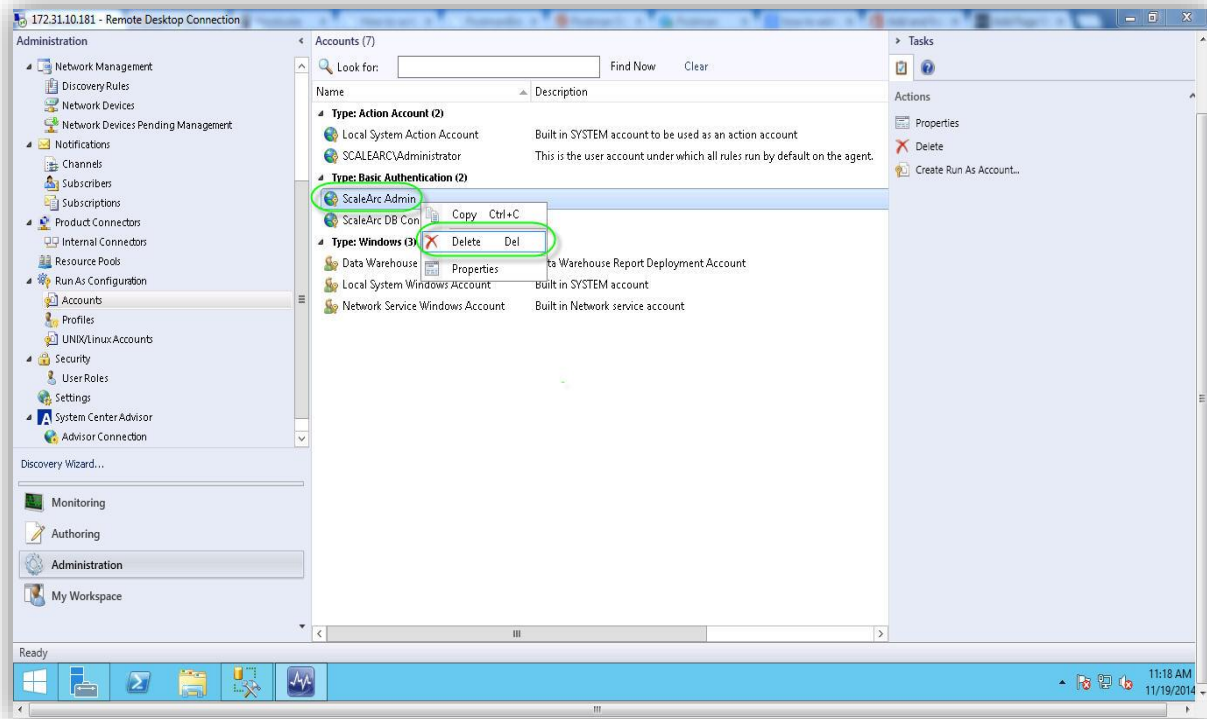


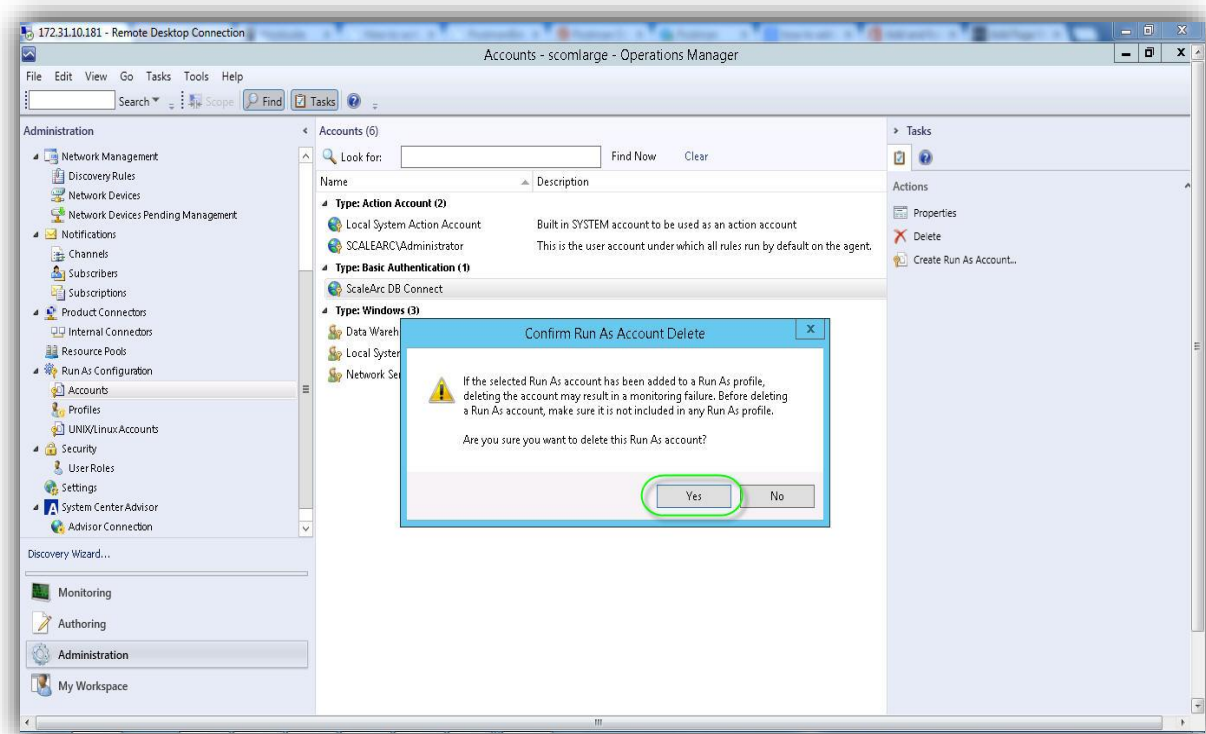




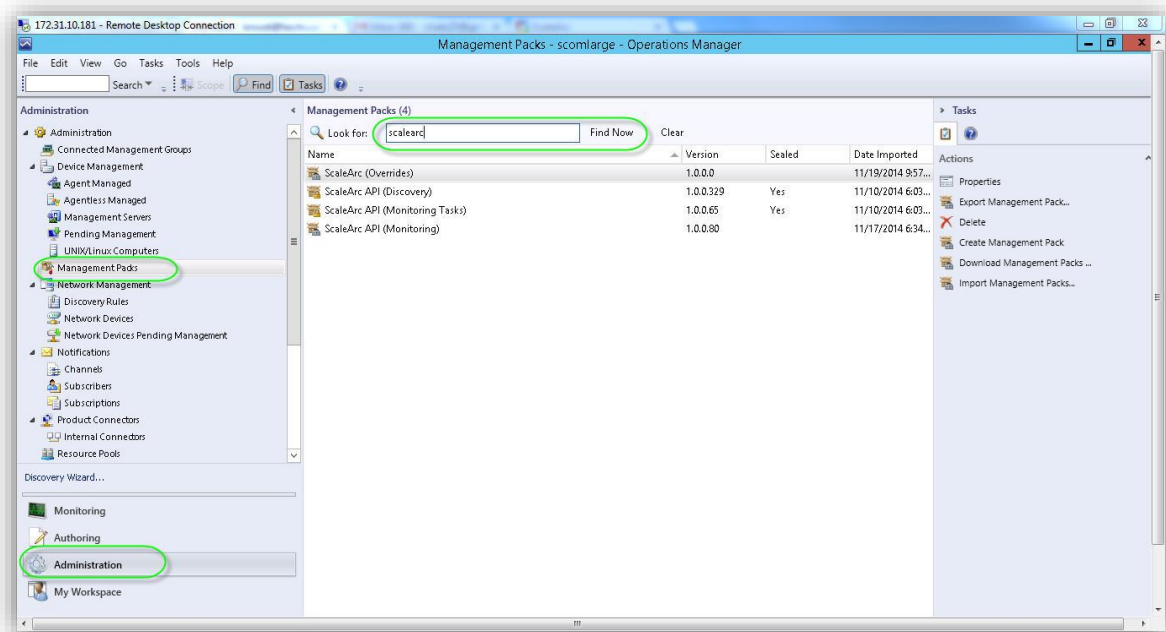
3) Now, delete the two accounts i.e. ScaleArc admin account & ScaleArc DB connect account.



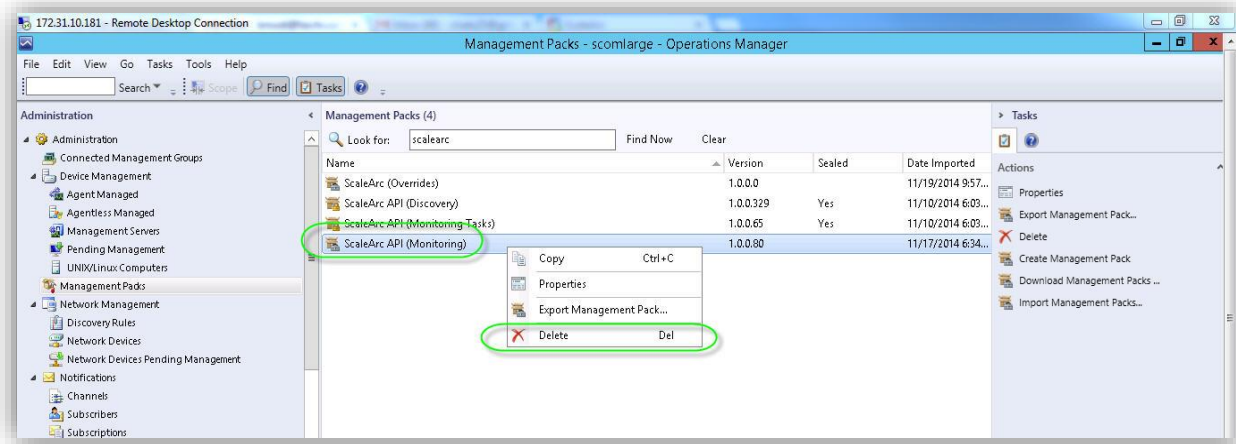
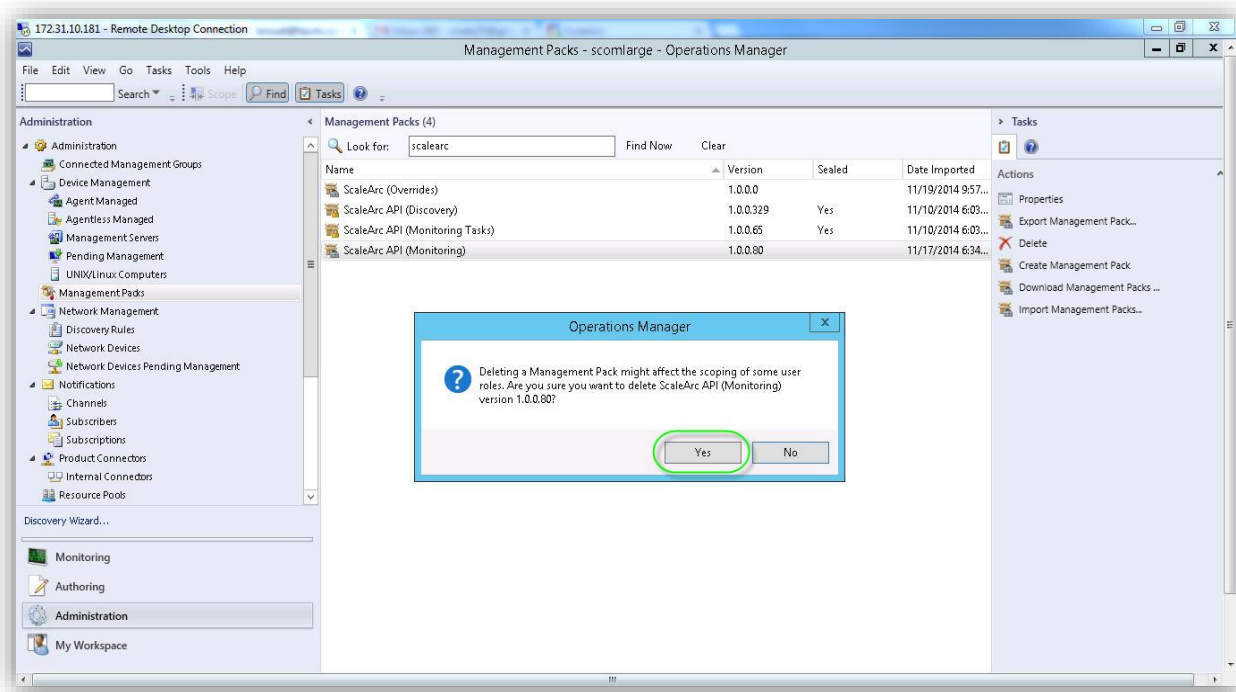


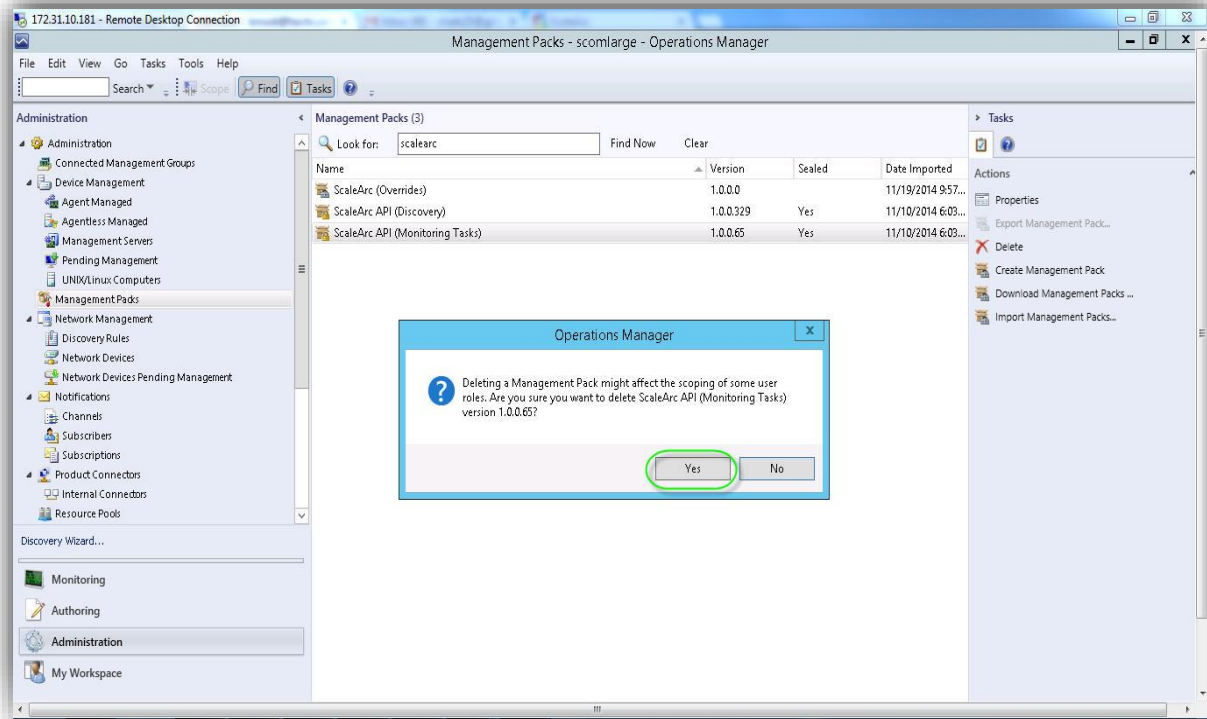


- 4) Now, delete the three management packs (Monitoring, Monitoring tasks & Discovery). Follow the steps below while deleting the packs:
 - 1) Select the **Administration** tab of SCOM at the bottom left panel.
 - 2) Now, select the **Management packs** view above in the same left panel.
 - 3) Now, search for the **ScaleArc management packs** by searching the term **ScaleArc** in the Find search bar.

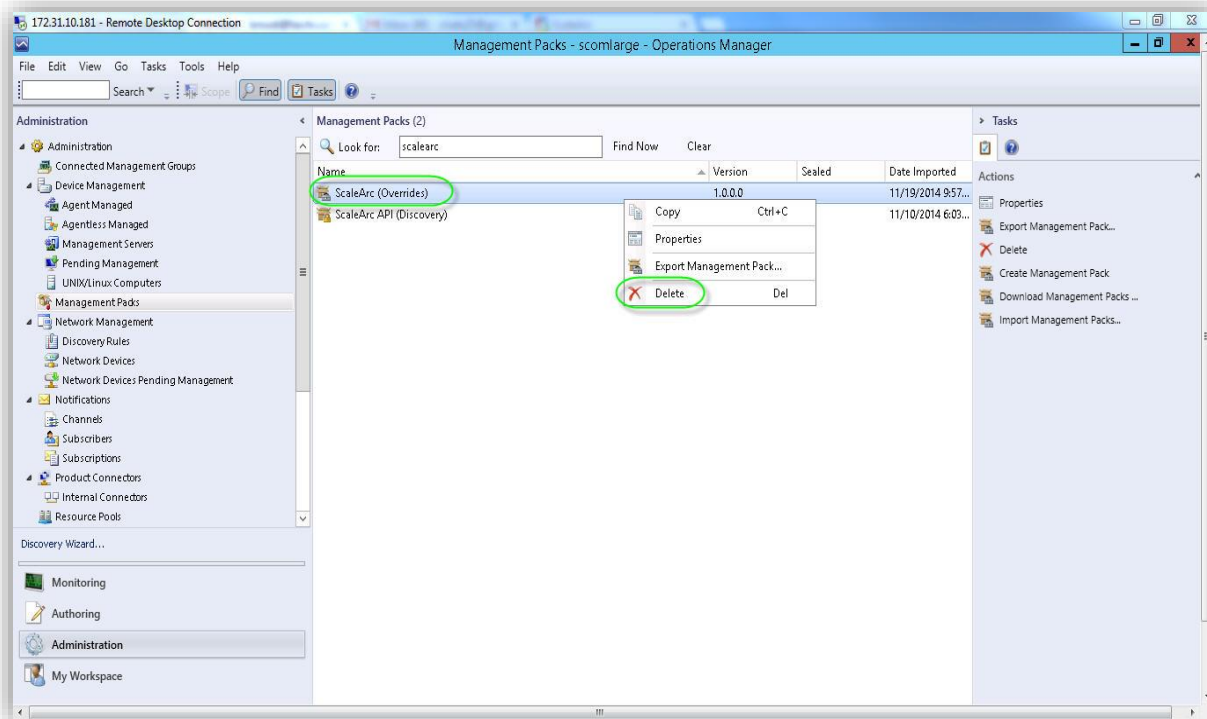


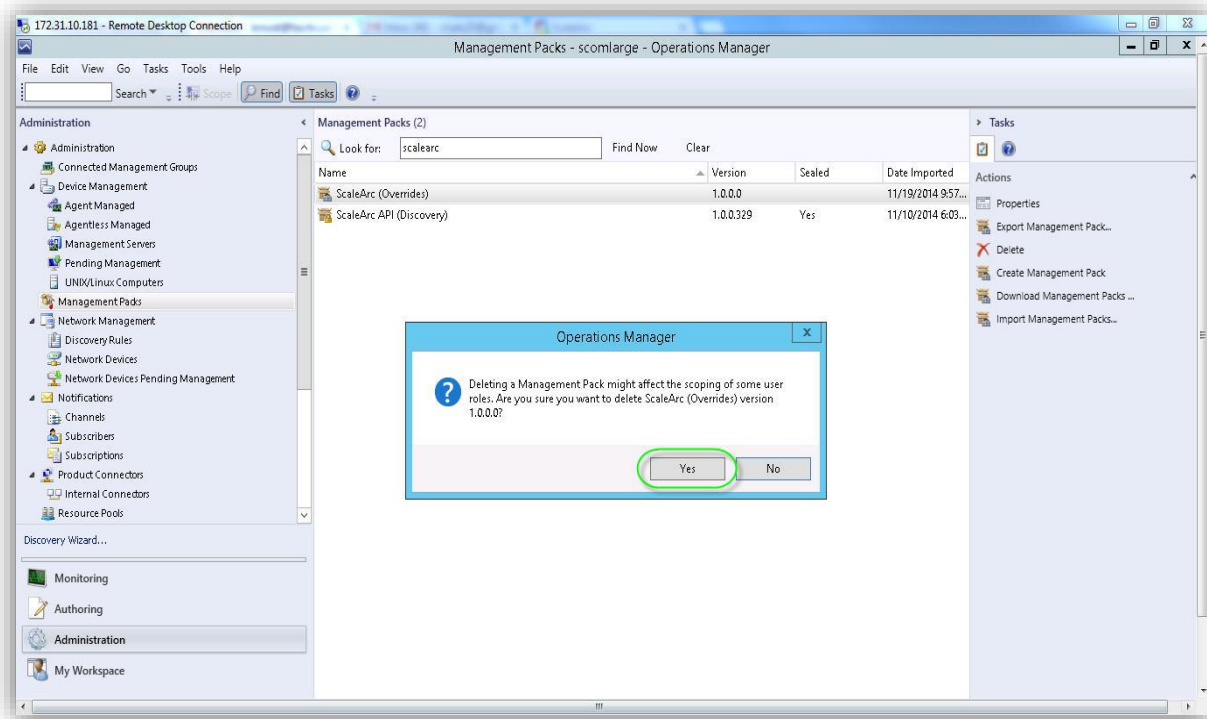
5) Now, select the **ScaleArc Monitoring** and **Monitoring** task pack first to remove the ScaleArc management packs and click on **Delete** at the right side panel tasks.



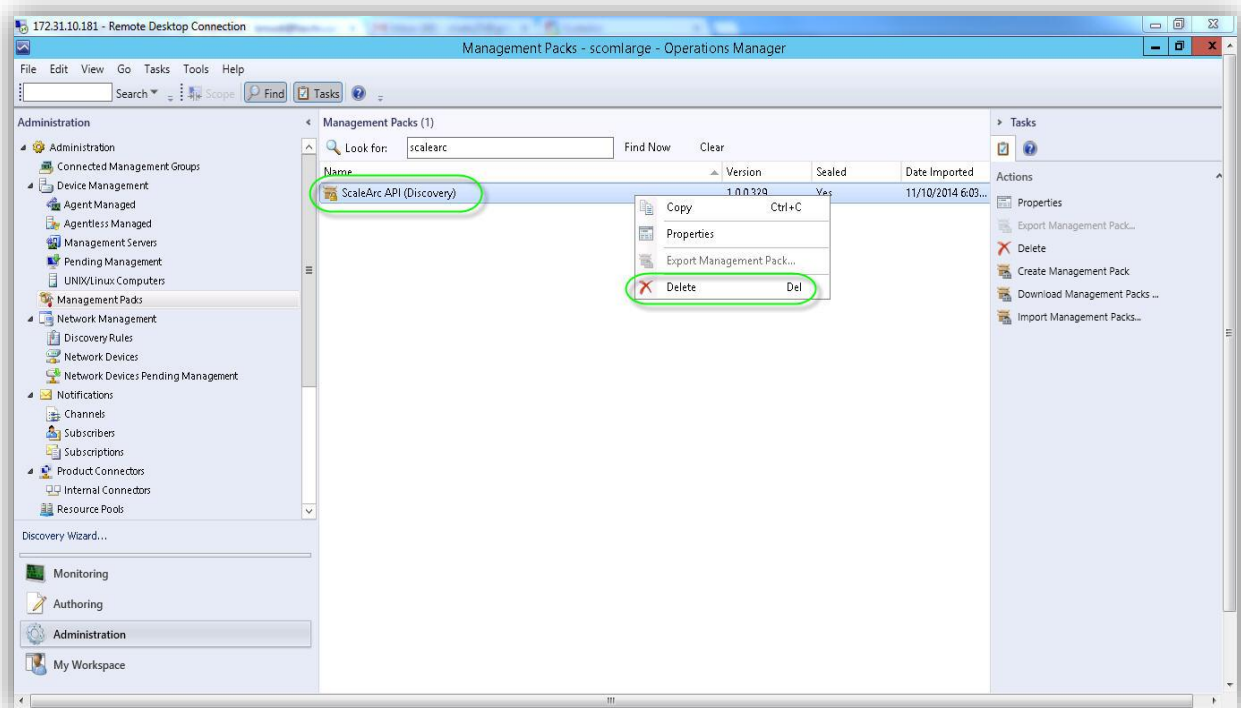


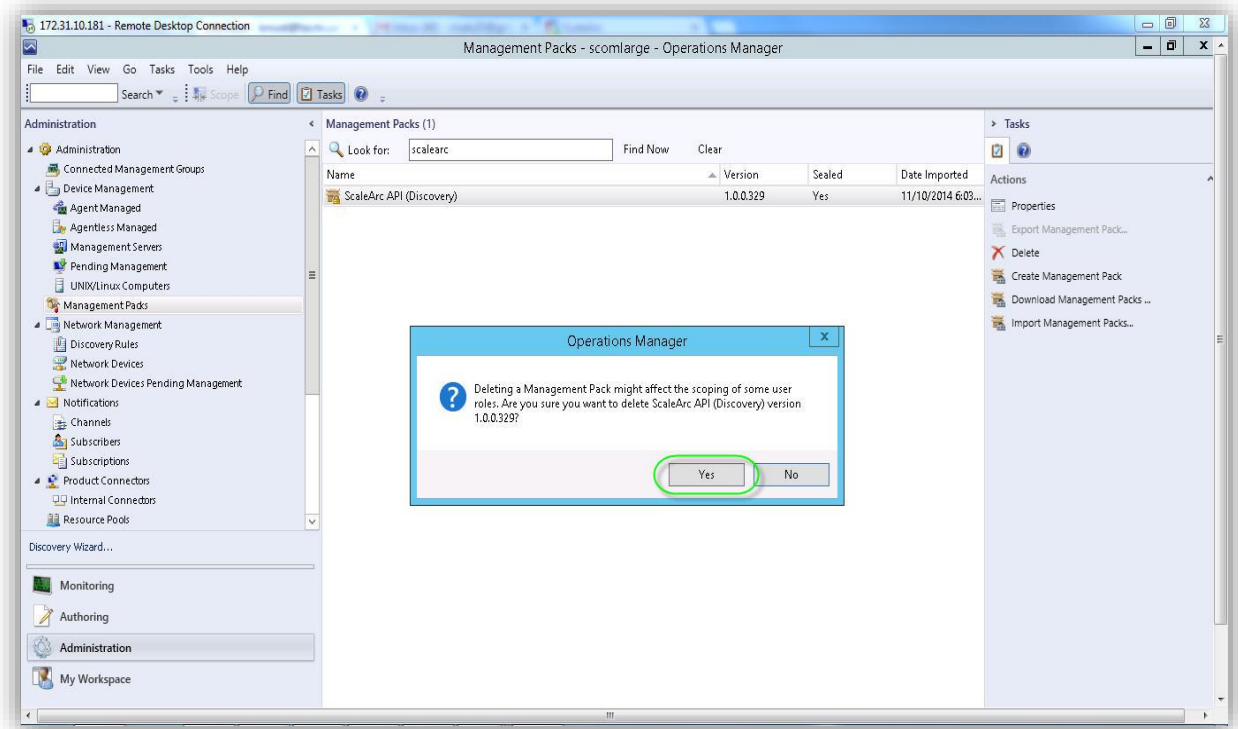
6) Then, select the **ScaleArc (Overrides)** pack, and click on the **Delete** at the right side panel tasks.





7) Then select the **ScaleArc API (Discovery)** pack and click on the **Delete** at the right side panel tasks.

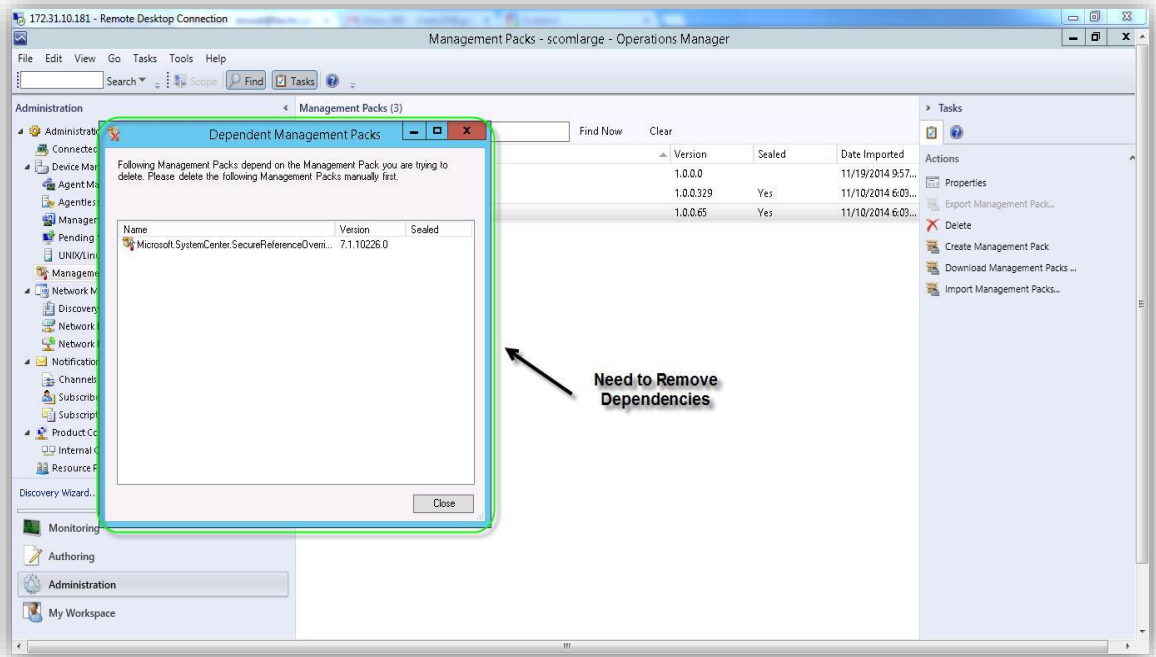




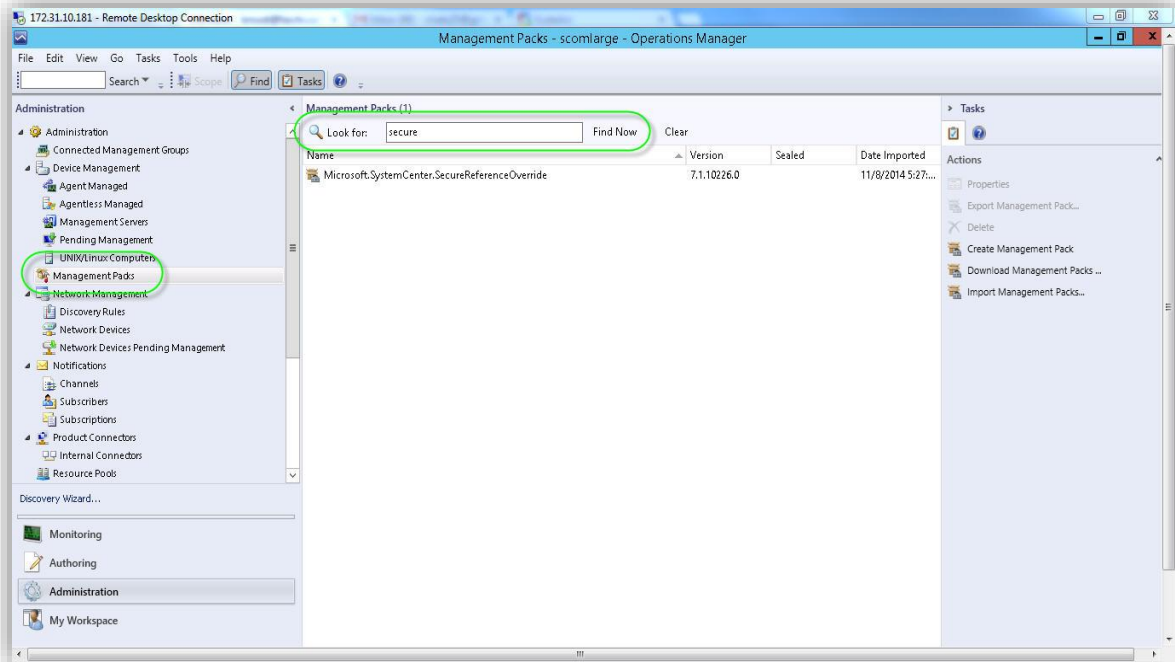
Note: All the four management packs have some dependency on each other. So, there is a proper sequence order to be followed to delete these packs:

→ ScaleArc Monitoring pack → ScaleArc Monitoring tasks pack → ScaleArc (Overrides) pack) → ScaleArc discovery pack.]

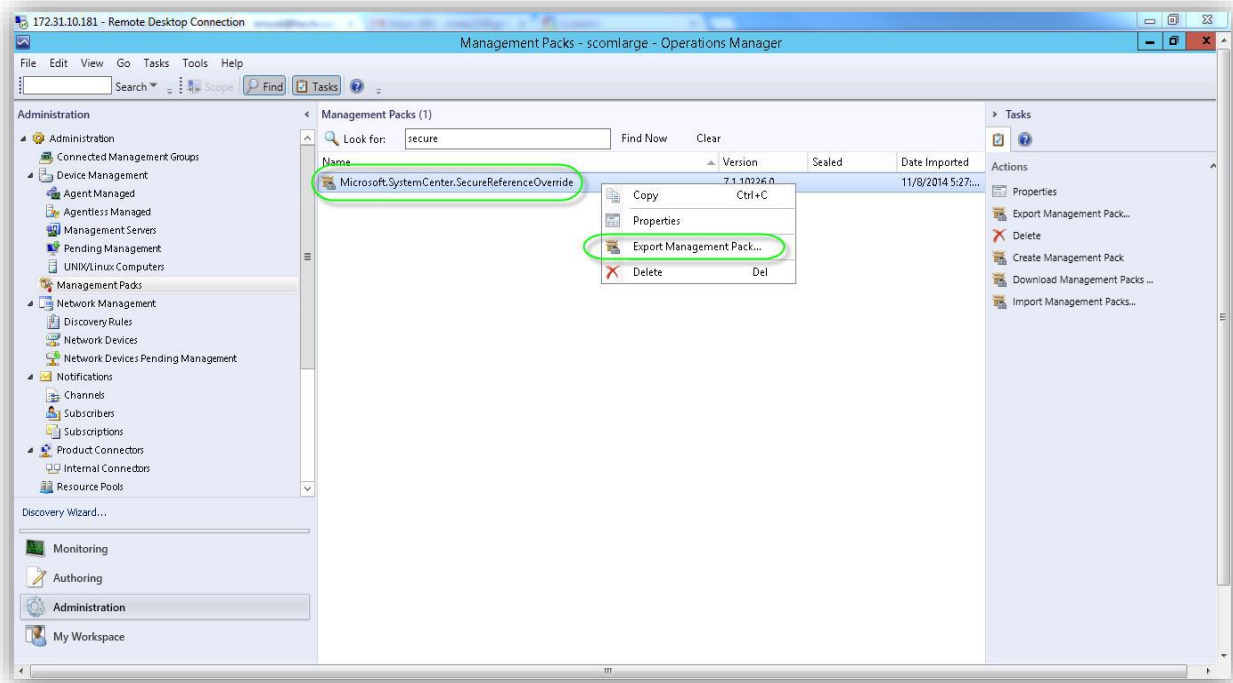
1. Notice that you might encounter the dependency error on the 'Microsoft system center secure reference Override management pack' while deleting any of the ScaleArc management packs. So, we need to troubleshoot that dependency error by following the below steps:
 - (i). Lets suppose the following dependency pack error is encountered while deleting the ScaleArc management packs.



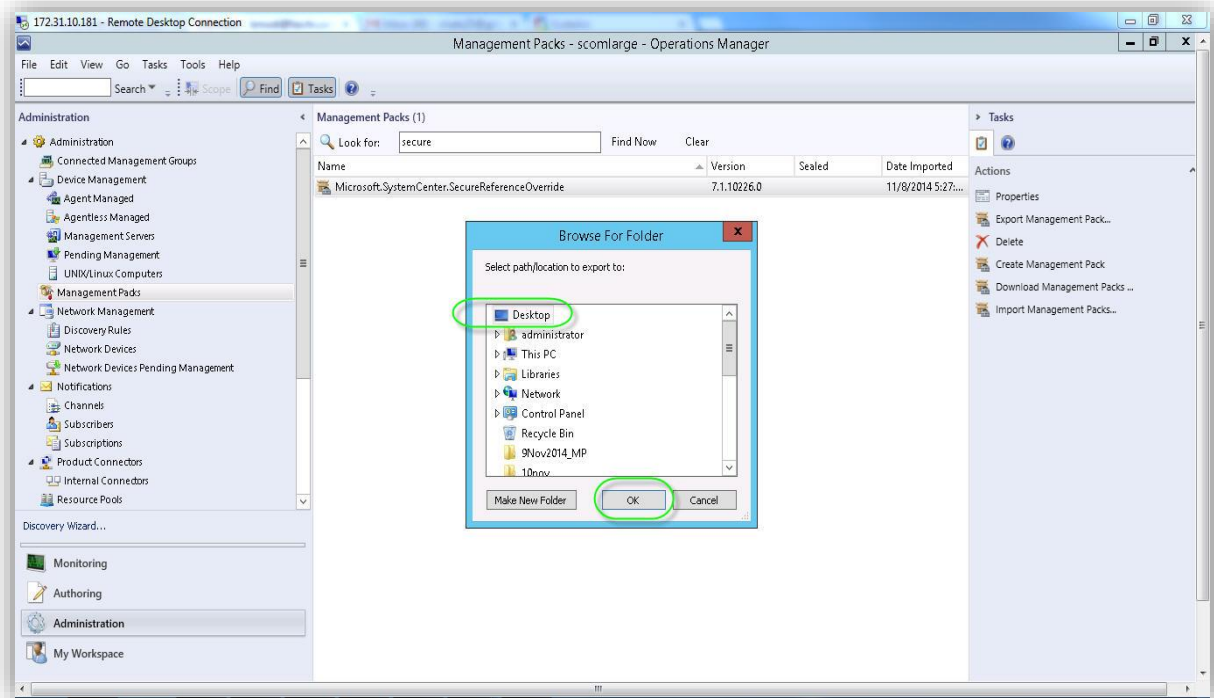
- (ii). Search for the **Microsoft system center secure reference override management pack** in the management packs view by searching for the term **secure** in the **Find** search bar.

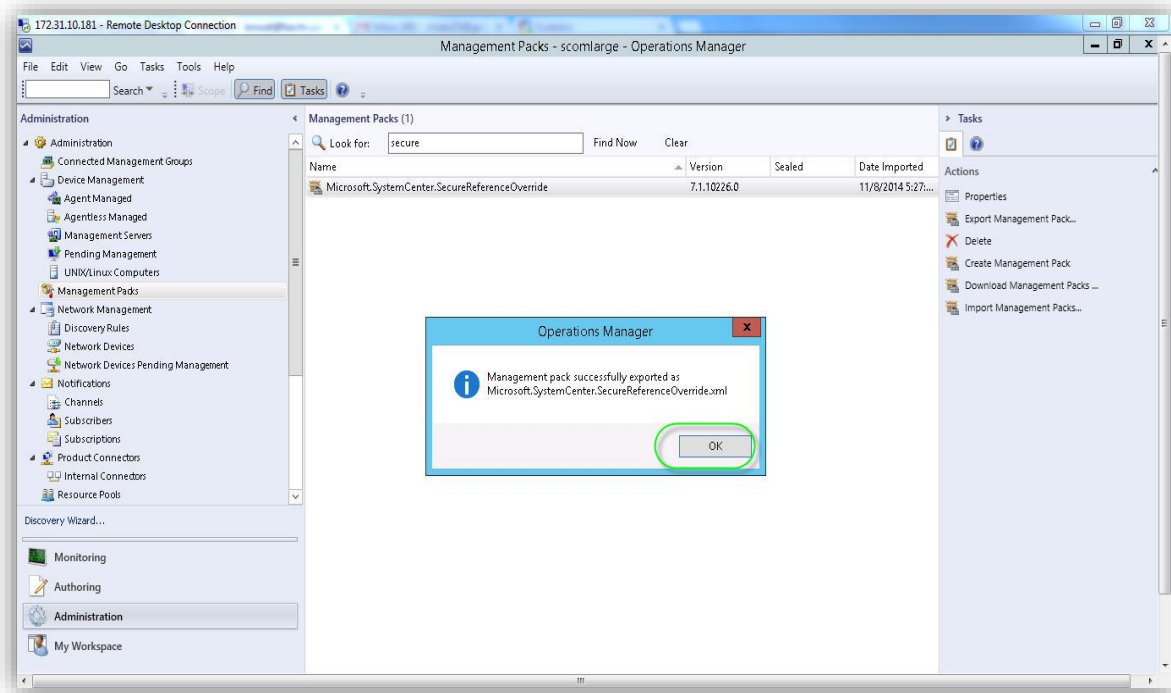


- (iii). Right click on the **Microsoft system center secure reference override management pack** and select the **Export management pack**.

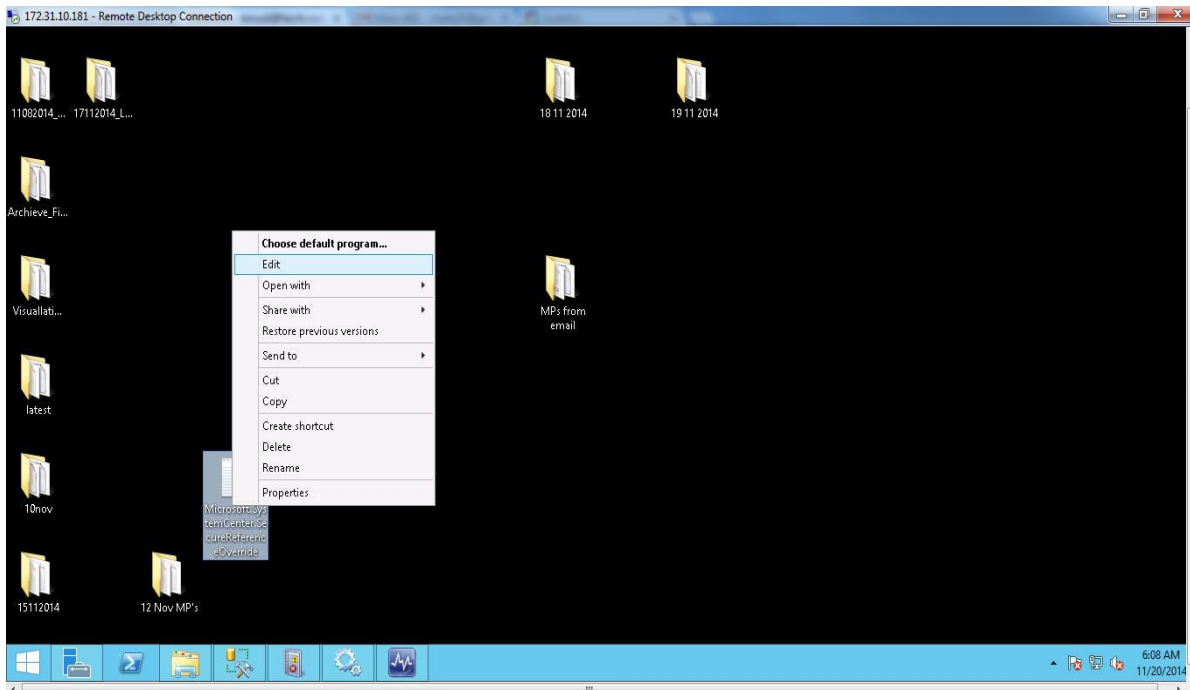


- (iv). Save it on some location say **Desktop**.

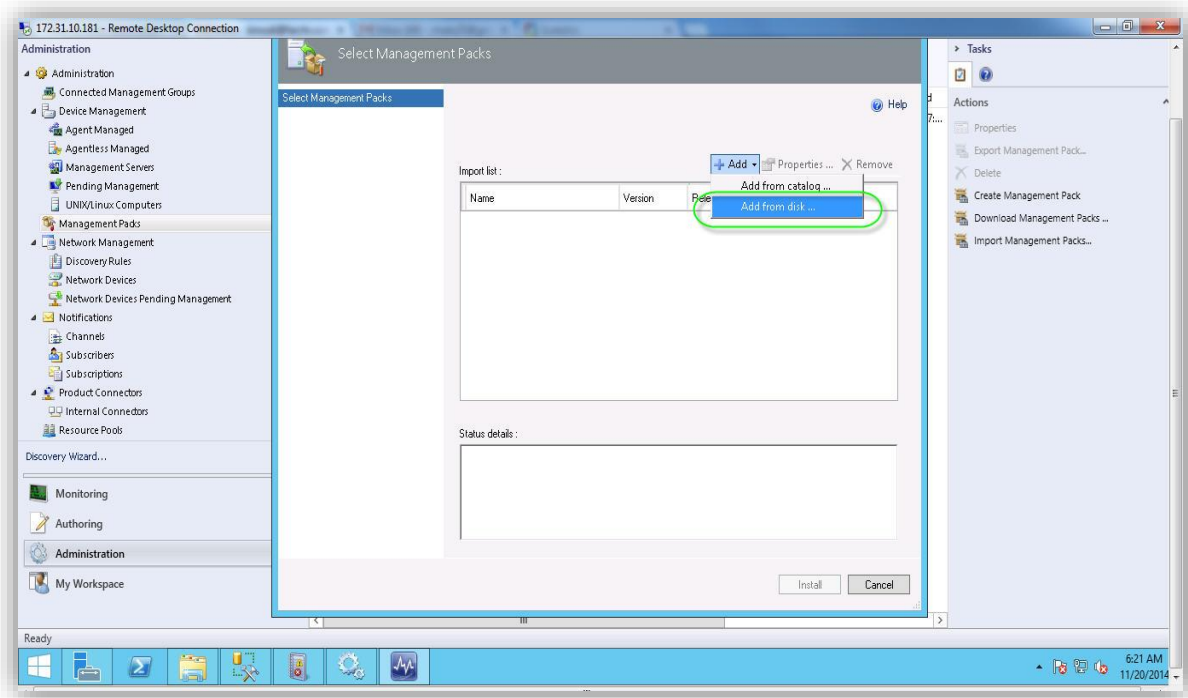
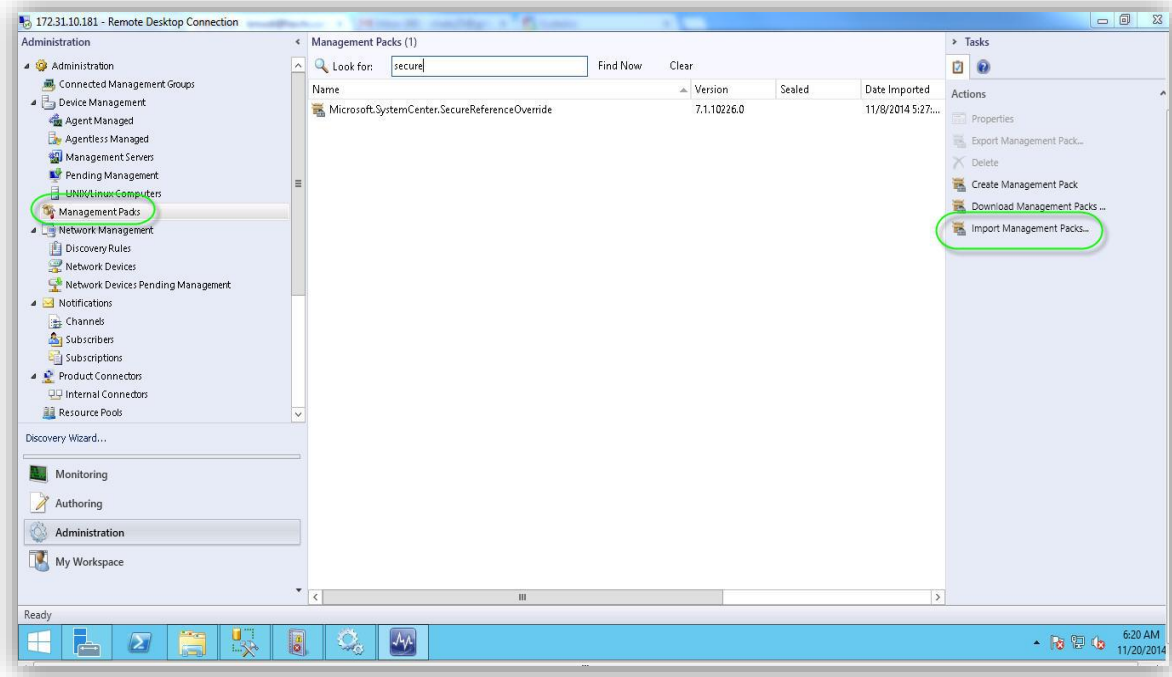


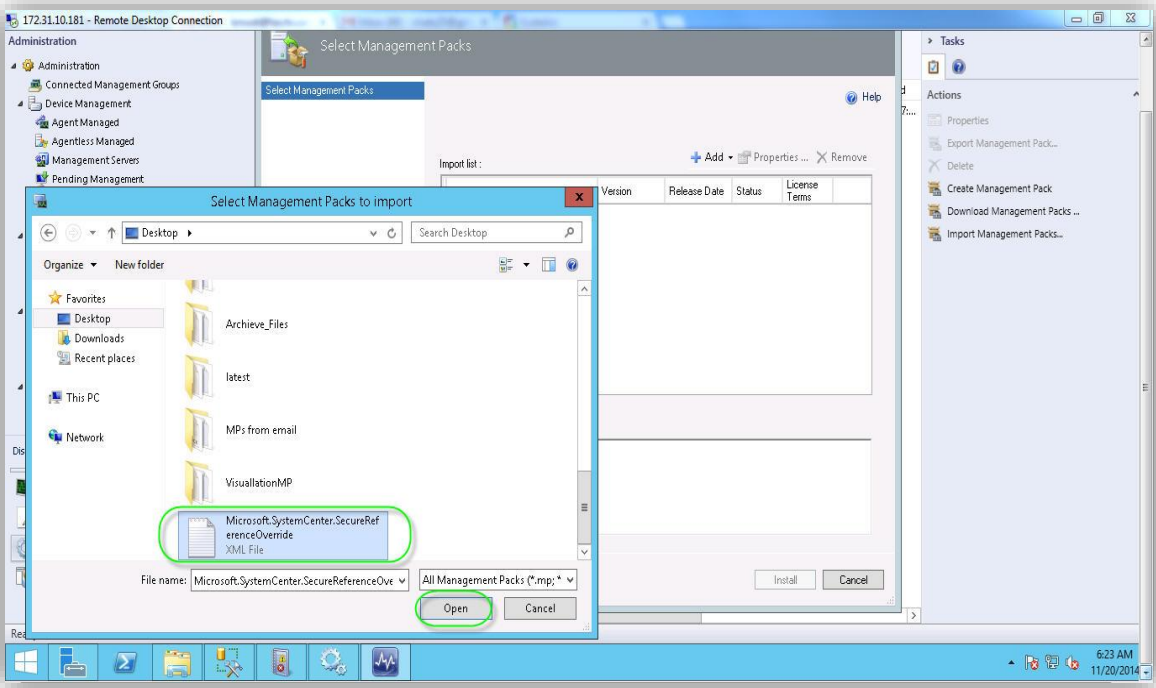
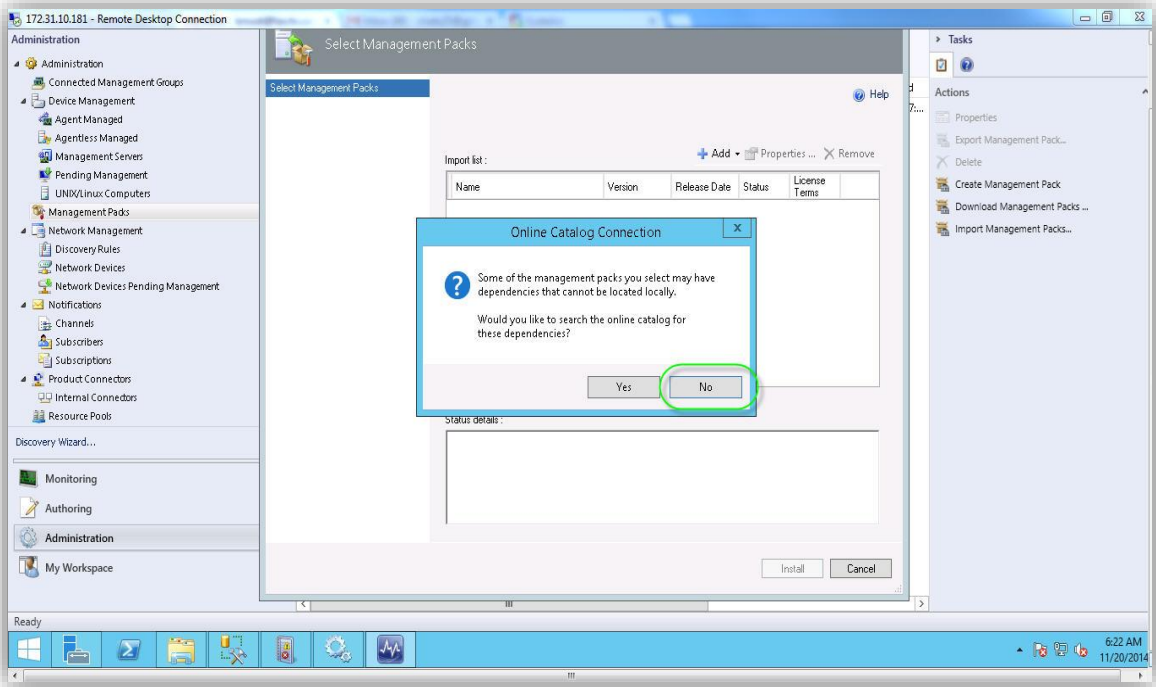


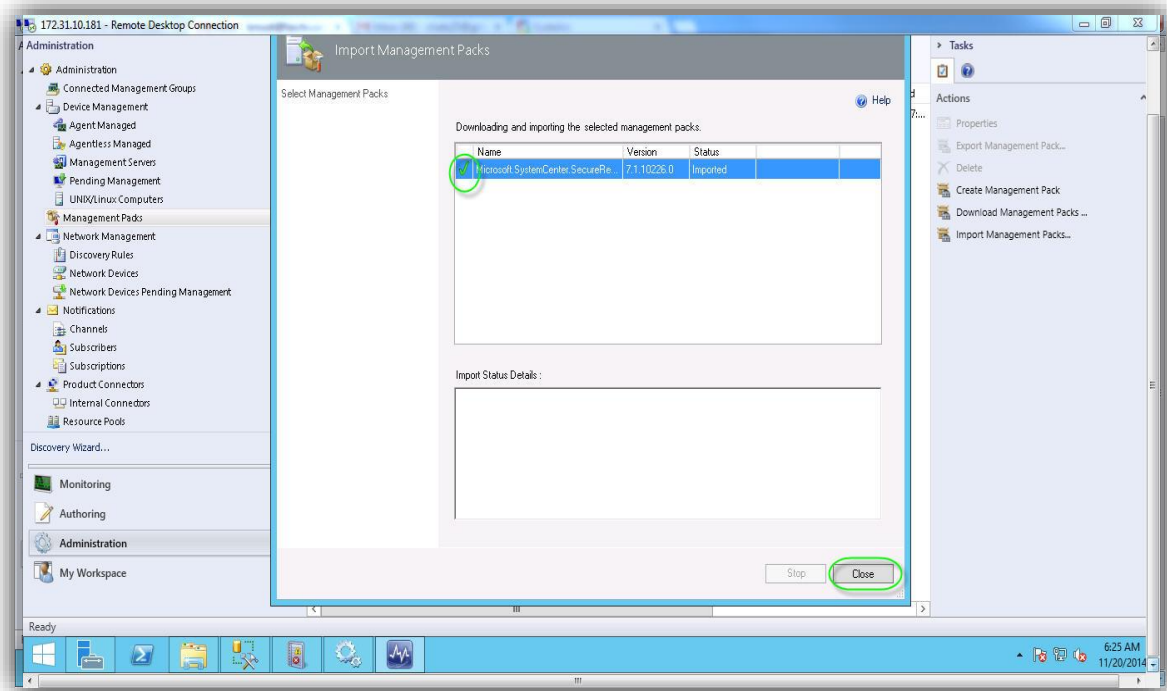
(v). Now, open the management pack in the notepad using **open with/edit notepad** option.



- (viii). Again import the pack back in to the management packs repository using the **Import management packs** option.



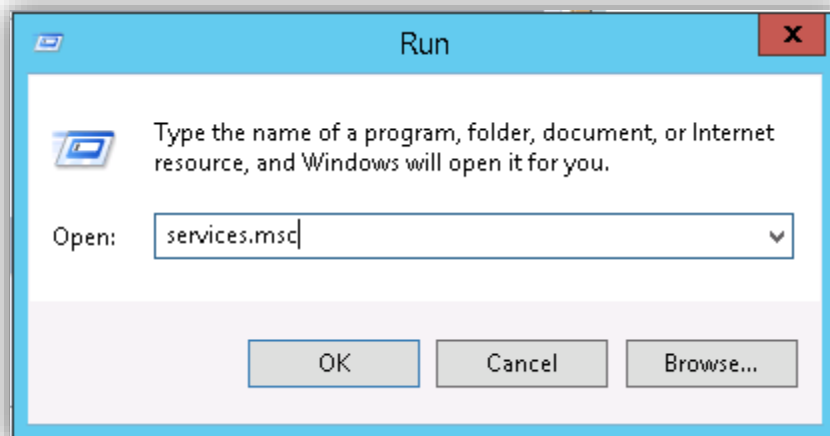




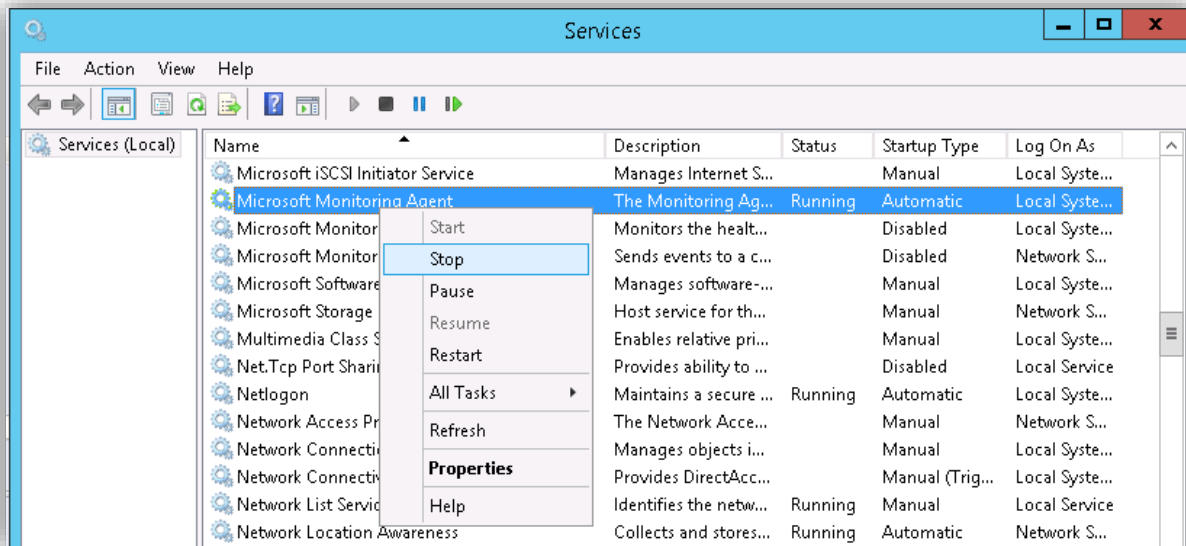
(ix). Now, continue to delete the respective other ScaleArc packs.

Clearing SCOM Cache

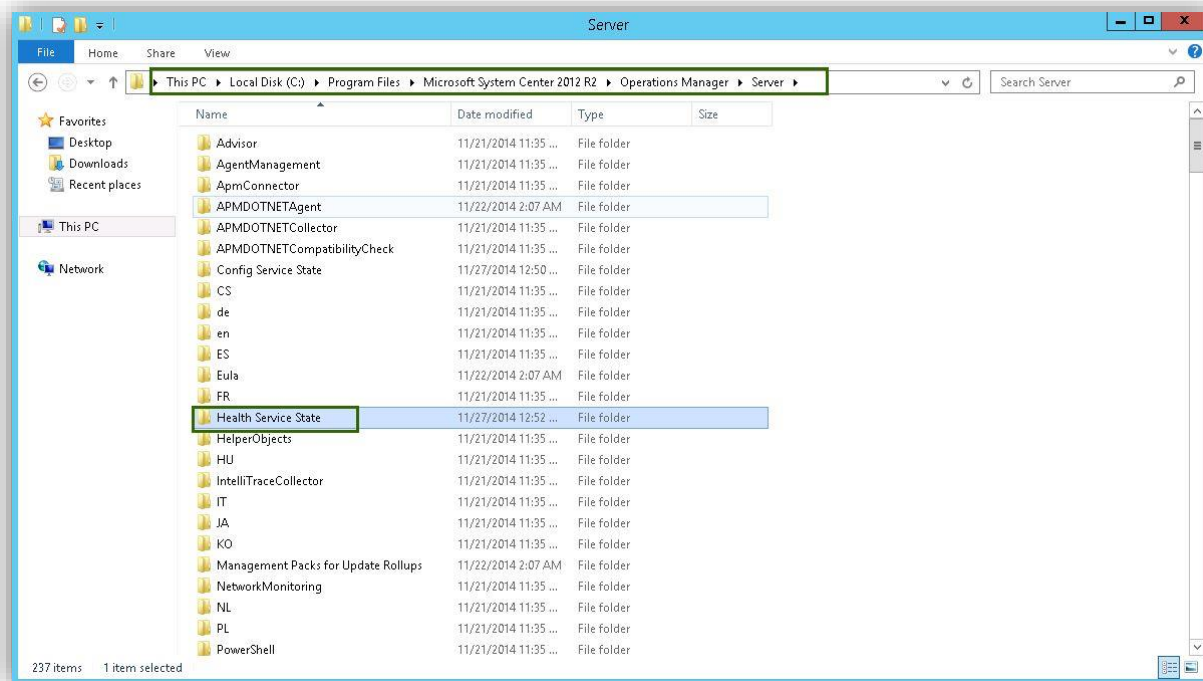
- 1) Close **SCOM Operations Console**.
- 2) Click on **Run >> Services.msc**



3) Right-click on **Microsoft Monitoring Agent** and **Stop** it.



4) Once it's stopped, remove the folder **Health Service State** completely from SCOM Installation Directory:
 =>Open SCOM Installation Directory >> C:\Program Files\Microsoft System Center 2012 R2\Operations Manager\Server\



- 5) Start **Microsoft Monitoring Agent Service** from **Services.msc**
- 6) Open **Run Command** again and run the following command to remove SCOM Operations Manager Console Cache: **C:\Program Files\Microsoft System Center 2012 R2\Operations Manager\Console\Microsoft.EnterpriseManagement.Monitoring.Console.exe/clearcache**