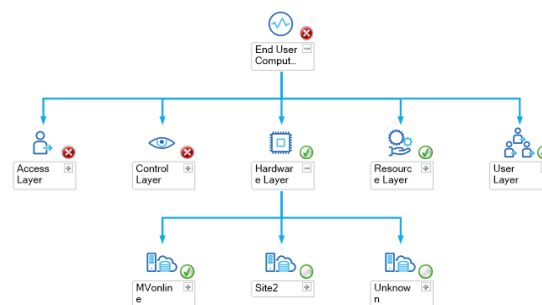


Admin Guide

MetrixInsight for CVAD



Copyright

The information in this document, including URL and other Internet Web site references, can be changed without notice and is supplied for informational purposes only. The full risk of using this document or results based on it lie with the user.

GripMatix does not give any direct or implied warranty. Unless stated otherwise, the examples referring to companies, organizations, products, persons and events are fictitious and not intended to be associated with actual companies, organizations, products, persons and events.

The user is responsible for compliance with all applicable copyrights. In addition to applicable copyright laws, nothing in this publication may be reproduced, stored or made available via an information system, or transmitted in any form or by any means (electronically, mechanically, by photocopy, storage, or otherwise), for any purpose, without prior written permission from GripMatix.

GripMatix retains all rights to all patents, patent applications, trade marks, copyrights, and other rights regarding the intellectual ownership of the product discussed in this document. Without the express written permission by GripMatix, the supplying of this document does not give or imply any rights regarding these patents, applications, trade marks, copyrights or other rights regarding the intellectual ownership.

© 2019 GripMatix. All rights reserved.

GripMatix and MetrixInsight are registered trademarks of GripMatix. All other trademarks are the property of their respective owners.

Contents

Introduction	4
About	4
Intended Audience	4
Terminology	4
Architecture overview	5
Prerequisites	6
Supported software	6
PowerShell and WinRM	6
SCOM agent	6
Citrix Licenses	7
Firewall	7
Run as account	7
(Optional) external instances	8
Windows policy	9
Installation	10
Create AD Domain user account	10
Create Run As account	10
Extract and import the management pack in SCOM	13
Assign Run As Account	17
Validate discovery	22
Configuration	23
Multi-tenant	23
Good to know	26
External instance – SQL database's	26
Troubleshooting	27

Introduction

This document provides guidance for administrators installing and configuring the MetrixInsight for CVAD Management Pack in a Microsoft System Center Operations Manager 2012 R2/ 2016/ CB environment.

This guide covers some explanation about how the Management Pack works but also how to install and configure it. For those who want to start quickly with the installation please consult the Quick Installation Guide that is available in a separate document.

About

MetrixInsight for CVAD is a Management Pack for Microsoft System Center Operation Manager (SCOM) designed to monitor your on-premise Server Based Computing (SBC) and/or Virtual Desktop Infrastructure (VDI) platform based on Citrix® Virtual Apps and Desktops 7.x (formally known as XenDesktop and/or XenApp).

Intended Audience

This document is written for people with a certain level of technical knowledge of Microsoft System Center Operations Manager (SCOM).

For a smooth implementation, we recommend to discuss and plan the implementation of this management pack with the Subject Matter Experts in the following technical area's:

- ▶ Microsoft System Center Operations Manager administrator/specialist;
- ▶ Citrix Virtual Apps and Desktops administrator/specialist;
- ▶ Active Directory/Group Policy administrator/specialist;
- ▶ Networking/firewall specialist.

Terminology

Within this guide we use terminology, in this section we try to make clear what we mean by this terminology.

Terminology	Explanation
SCOM	The product Microsoft System Center Operations Manager
CVAD	The product Citrix Virtual Apps and Desktops (formally known as Citrix XenApp and XenDesktop)
MetrixInsight for CVAD	The product name of this management pack
Server OS Machine	<p>The term used for a machine (based on a Server OS) hosting the actual user sessions in a Server Based Computing (SBC) environment. Most of the time terms like "XenApp Server", "Terminal Server" or "Remote Desktop Server" are equivalents.</p> <p>A Server OS machine is one of the components we monitor within our management pack.</p> <p>In a Virtual Desktop Infrastructure (VDI) scenario typically only Desktop OS Machines are used.</p>
CCU	Concurrent use (used as a license model)

Architecture overview

MetrixInsight for CVAD makes use of Resource Pools within SCOM.

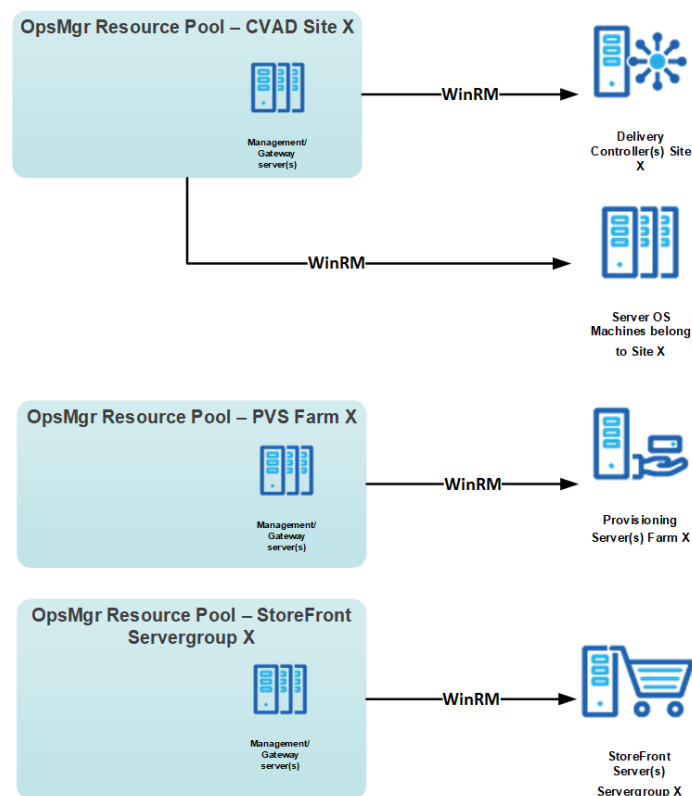
In this way you can delegate monitoring workflows to specific SCOM agents, SCOM management and/or gateway server(s).

When implementing MetrixInsight for CVAD, our pack will automatically create resource pools for the following components:

- ▶ A resource pool for each discovered StoreFront server group;
- ▶ A resource pool for each discovered Provisioning Services farm;
- ▶ A resource pool for each discovered Virtual Apps and Desktops (XenApp/XenDesktop) site.

By default, the agents installed on the respective Citrix StoreFront/Provisioning/Delivery Controller server will be member of their associated resource pool.

The membership of the resource pools can be adjusted as desired, as long as the member can reach the component by means of WinRM.



In case high availability is required, make sure to put at least three members in each resource pool.

Prerequisites

This chapter contains the prerequisites for installation of the management pack as described in this guide.

Supported software

The following **Microsoft System Center Operations Manager** releases are supported:

- ▶ System Center Operations Manager 2012 R2 (SCOM 2012 R2)
- ▶ System Center Operations Manager 2016 (SCOM 2016)
- ▶ System Center Operations Manager Current Branch
- ▶ System Center Operations Manager 2019 (SCOM 2019)

The following **Operating Systems** are supported:

- ▶ Windows Server 2008 R2
- ▶ Windows Server 2012
- ▶ Windows Server 2012 R2
- ▶ Windows Server 2016

The following **Citrix components** are supported:

- ▶ Citrix StoreFront 2.6 or higher
- ▶ Citrix Provisioning Services 7.x*
- ▶ Citrix Virtual Apps & Desktops (formerly known as XenApp/XenDesktop) 7.x**

* Needs at least PVS console **7.7** or higher installed on the PVS servers

** The Citrix Studio console needs to be installed on each delivery controller

PowerShell and WinRM

All SCOM Management Servers, Delivery Controllers, StoreFront Servers, License Servers, Provisioning Servers and Server OS Machines should at least have PowerShell 4.0 or higher installed. By default, Windows Server 2012 R2 and up already have this prerequisite in-place.

Also Windows Remote Management (WinRM) needs to be enabled and available on the Delivery Controllers, StoreFront Servers, License Servers, Provisioning Servers and Server OS Machines. By default, Windows Server 2012 R2 and up already have this prerequisite in-place.

If you are using Windows Server 2008 R2 machines, the following command is an easy way to implement this prerequisite:

Winrm quickconfig

SCOM agent

SCOM agents need to be installed and working properly on all Delivery Controllers, StoreFront Servers, License Servers and Provisioning Servers.

For these SCOM agents the following agent property needs to be enabled: **“Allow this agent to act as a proxy and discover managed objects on other computers”**.

Citrix Licenses

To be able to discover your CVAD environment by our management pack, make sure your Citrix CVAD licenses are loaded and functioning within your Citrix License server.

Firewall

For the management pack to operate properly, the following firewall rules should be in place in addition to the standard firewall ports the SCOM platform requires:

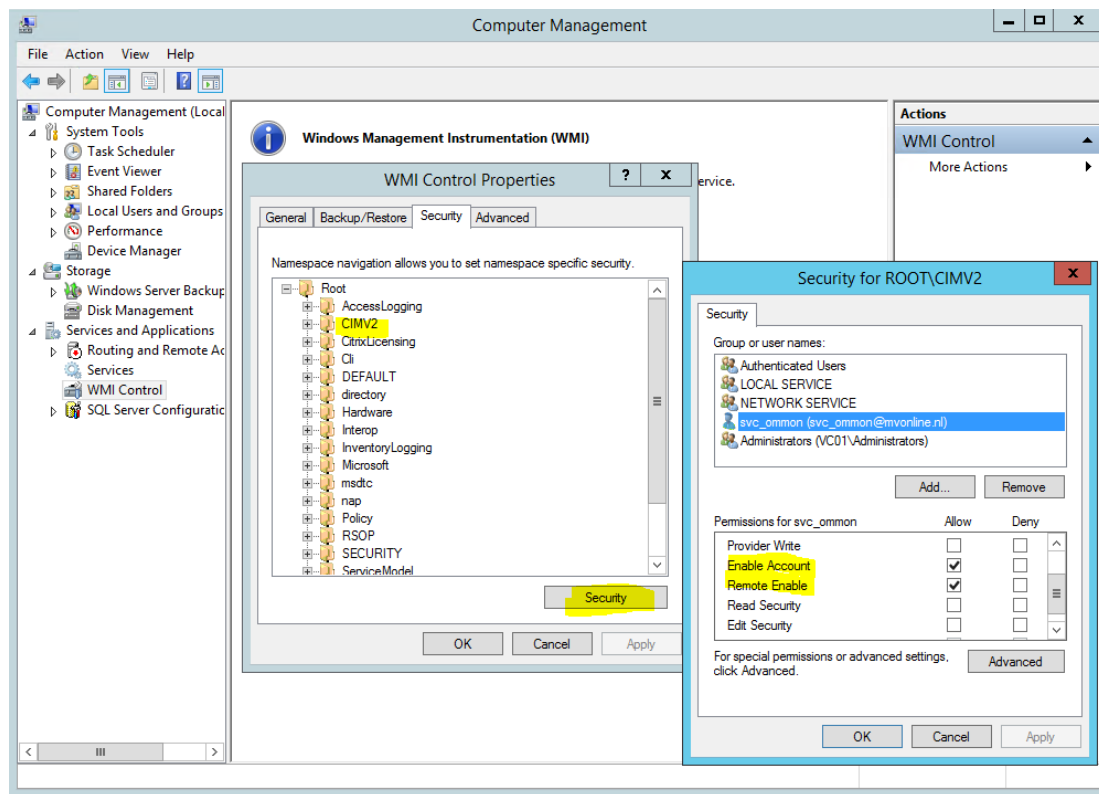
Source	Protocol & port	Destination	Notes
MetrixInsight Resource Pool members. By default, these are the SCOM agents from the respective: Delivery Controller(s) StoreFront Server(s) Provisioning Server(s)	WinRM (TCP 5985)	Citrix CVAD Delivery Controller(s) Citrix StoreFront Server(s) Citrix Provisioning Server(s) Server OS Machines	
Citrix CVAD Delivery Controller(s)	DCOM-WMI (TCP 135 & TCP 49152 – 65535 (dynamic port range)) This is useful if you want to assign a static port for WMI instead: https://docs.microsoft.com/en-us/windows/desktop/wmisdk/setting-up-a-fixed-port-for-wmi	Citrix License server	This is only required when the license server name configured within your CVAD site configuration is a DNS alias or cluster name .

Run as account

A domain user account with the **at least** the following minimal permissions need to be configured, as this account will be used as the Run As account within SCOM:

- ▶ Member of the Active Directory **Domain Users** Global Security Group.
- ▶ **Read Only Administrator** Role permissions within the Virtual Apps and Desktops site(s) (configure via Citrix Studio).
- ▶ Member of the local **Administrators** group on all Provisioning Servers.
- ▶ **Farm Admin Role** permissions for Provisioning Services (configure via Provisioning Services Console).
- ▶ Member of **Remote Management Users** Local Security Group on Delivery Controllers, StoreFront Servers, License Servers, Provisioning Servers and Server OS Machines*
- ▶ Allow **Enable Account** and **Remote Enable** permissions at the namespace ROOT\CIMV2 within WMI Control on License Servers and Server OS Machines.

The security properties for WMI control can be found in the following console:



* = When using Windows Server 2008 R2 as Operating System for these components, make the Run As account member of the local administrator group instead.

(Optional) external instances

MetrixInsight for CVAD uses a few external management packs to embed a complete stack in the topology view, like SQL databases and Active Directory. These external instances are optional and not required for our management pack to function.

If you would like to make use of this feature in our management pack, the following external management packs should be imported in your environment. These packs are available and can be downloaded for free at Microsoft.com

- ▶ Microsoft System Center Management Pack for SQL Server 2008-2012
<https://www.microsoft.com/en-us/download/details.aspx?id=10631>
- ▶ Microsoft System Center Management Pack for SQL Server 2014
<https://www.microsoft.com/en-us/download/details.aspx?id=42573>
- ▶ Microsoft System Center Management Pack for ADDS
<https://www.microsoft.com/en-us/download/details.aspx?id=54525>

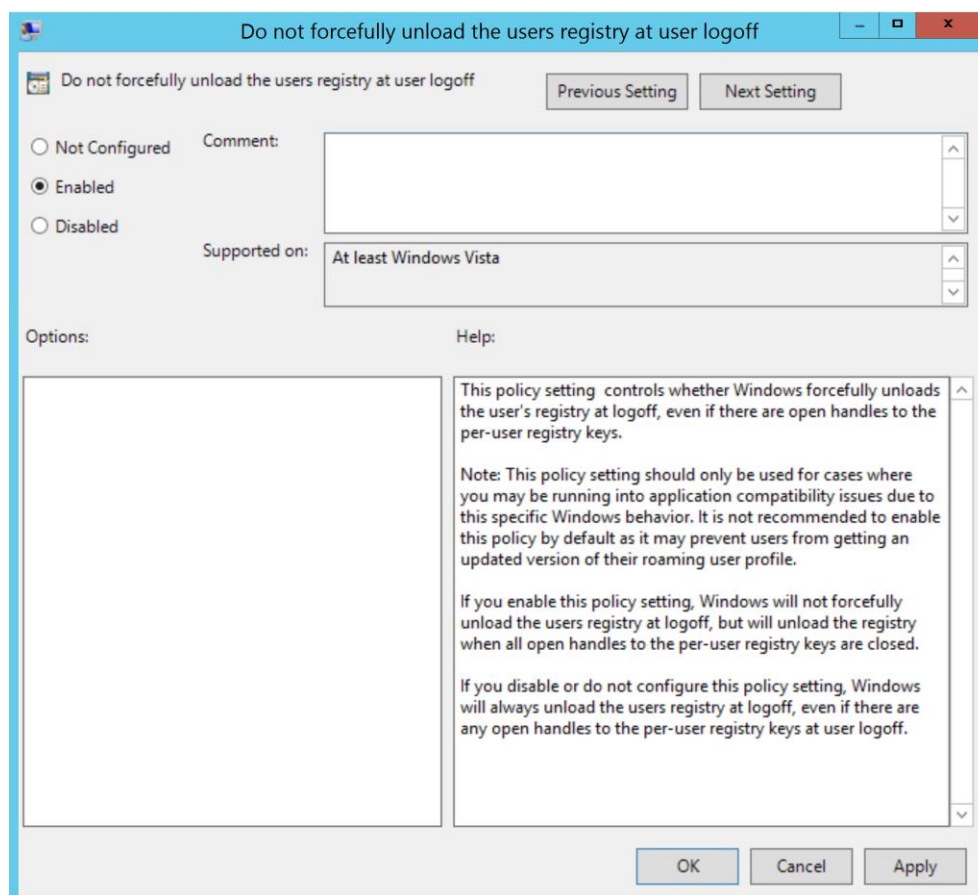
Windows policy

As the workflow runs under a domain user account, the Windows User Profile service needs to be configured to not forcefully unload user profile on logoff. This is enabled by default since Windows Vista/ Server 2008. More information about this behavior can be found here: <https://support.microsoft.com/en-us/help/2287297/a-com-application-may-stop-working-on-windows-server-2008-when-a-user>

By default the workflows run on the StoreFront Servers, Delivery Controllers and Provisioning Servers.

The following **policy needs to be configured** on the machines running the workflow by using a local or domain policy:

1. Computer Configuration > Administrative Templates > System > User Profiles
2. In the right pane, double-click on Do not forcefully unload the user registry at user logoff.
3. In the resulting window, click in the radio button Enabled.



Installation

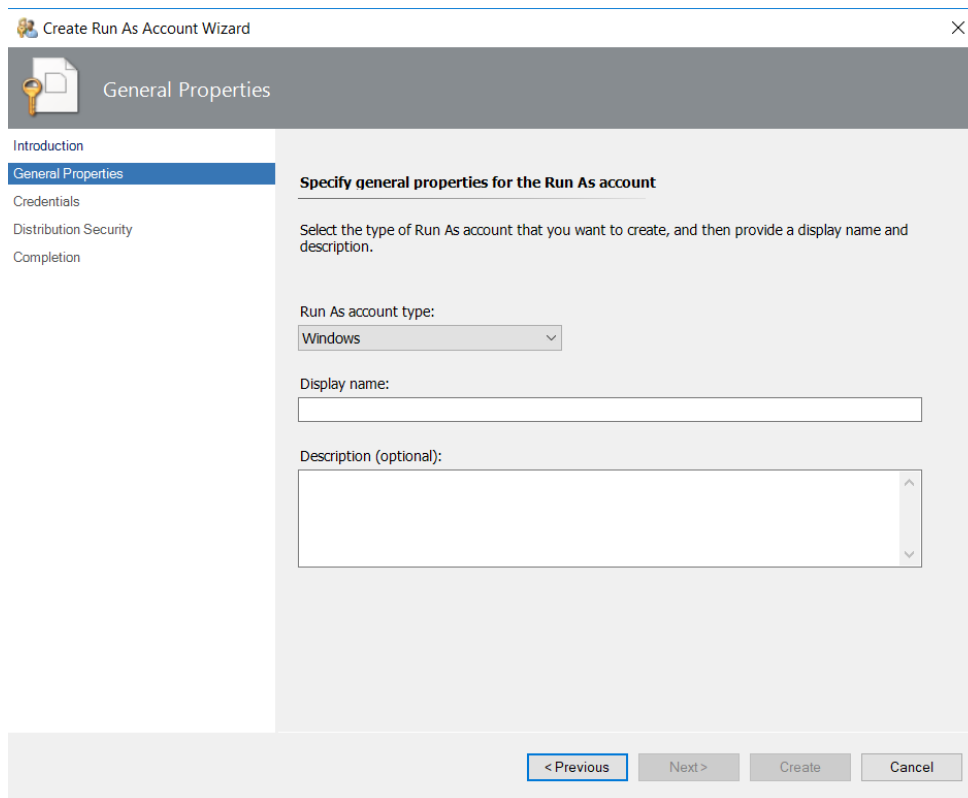
The following steps need to be done to perform the installation of the management pack.

Create AD Domain user account

- ▶ Create an AD Domain User Account with the permissions described in the prerequisites section of this guide.

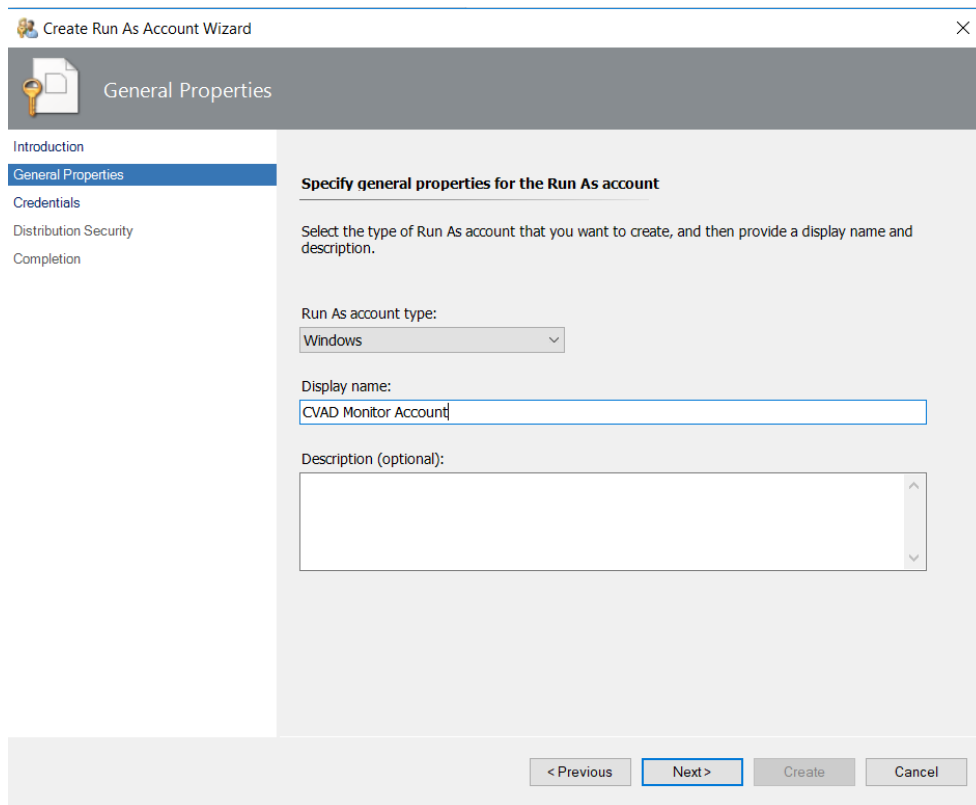
Create Run As account

- ▶ Navigate to **SCOM Console | Administration | Run As Configuration**, right-click **Accounts** and click **Create Run As Accounts**.
- ▶ Click **Next**.



The screenshot shows the 'Create Run As Account Wizard' dialog box, specifically the 'General Properties' step. The window title is 'Create Run As Account Wizard'. The left sidebar contains a navigation pane with the following items: Introduction, General Properties (selected), Credentials, Distribution Security, and Completion. The main area is titled 'Specify general properties for the Run As account' and contains the following text: 'Select the type of Run As account that you want to create, and then provide a display name and description.' Below this text are three input fields: 'Run As account type:' with a dropdown menu showing 'Windows', 'Display name:' with a text box, and 'Description (optional):' with a text area. At the bottom of the dialog, there are four buttons: '< Previous', 'Next >', 'Create', and 'Cancel'.

- ▶ In the **Display name** field, write down the name of the **Run As Account**. Leave the default selection **Windows** selected in the **Run As account type** list.



Create Run As Account Wizard

General Properties

Introduction
General Properties
Credentials
Distribution Security
Completion

Specify general properties for the Run As account

Select the type of Run As account that you want to create, and then provide a display name and description.

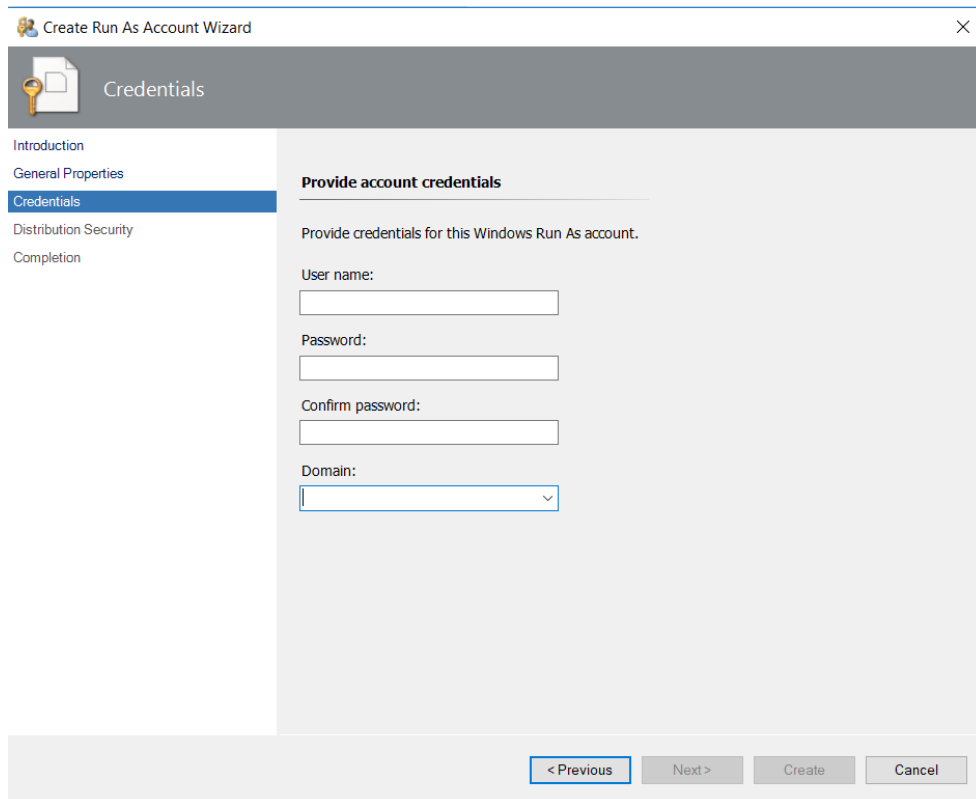
Run As account type:
Windows

Display name:
CVAD Monitor Account

Description (optional):

< Previous **Next >** Create Cancel

► Click **Next**.



Create Run As Account Wizard

Credentials

Introduction
General Properties
Credentials
Distribution Security
Completion

Provide account credentials

Provide credentials for this Windows Run As account.

User name:

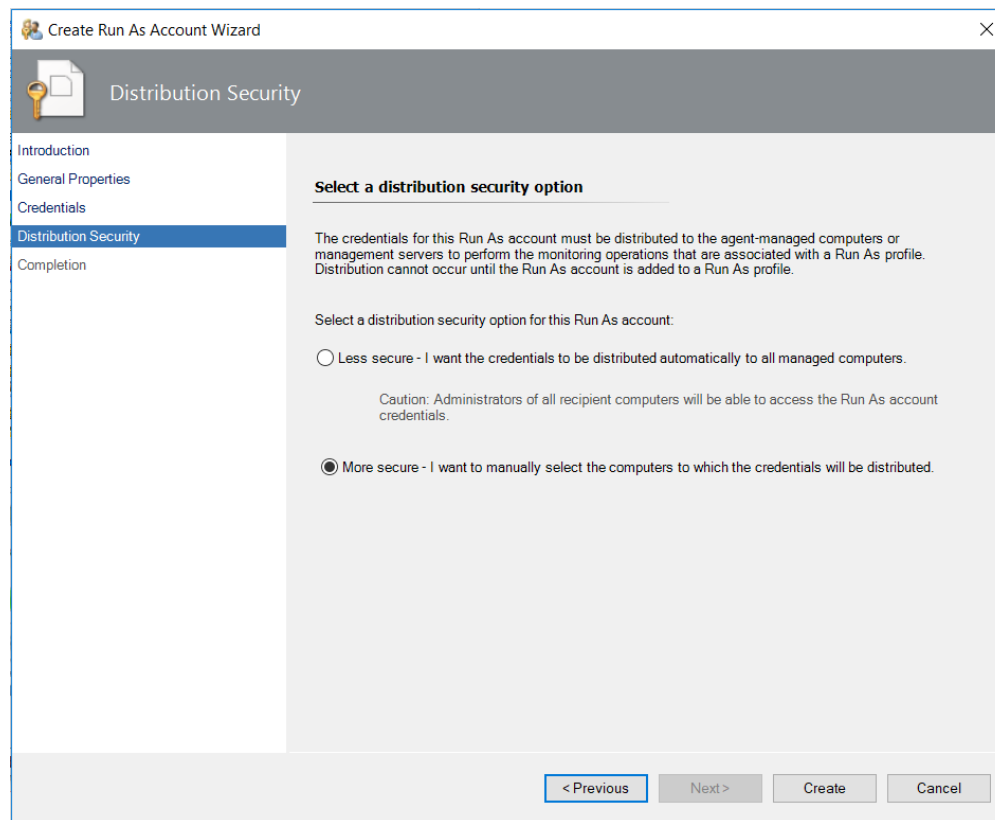
Password:

Confirm password:

Domain:

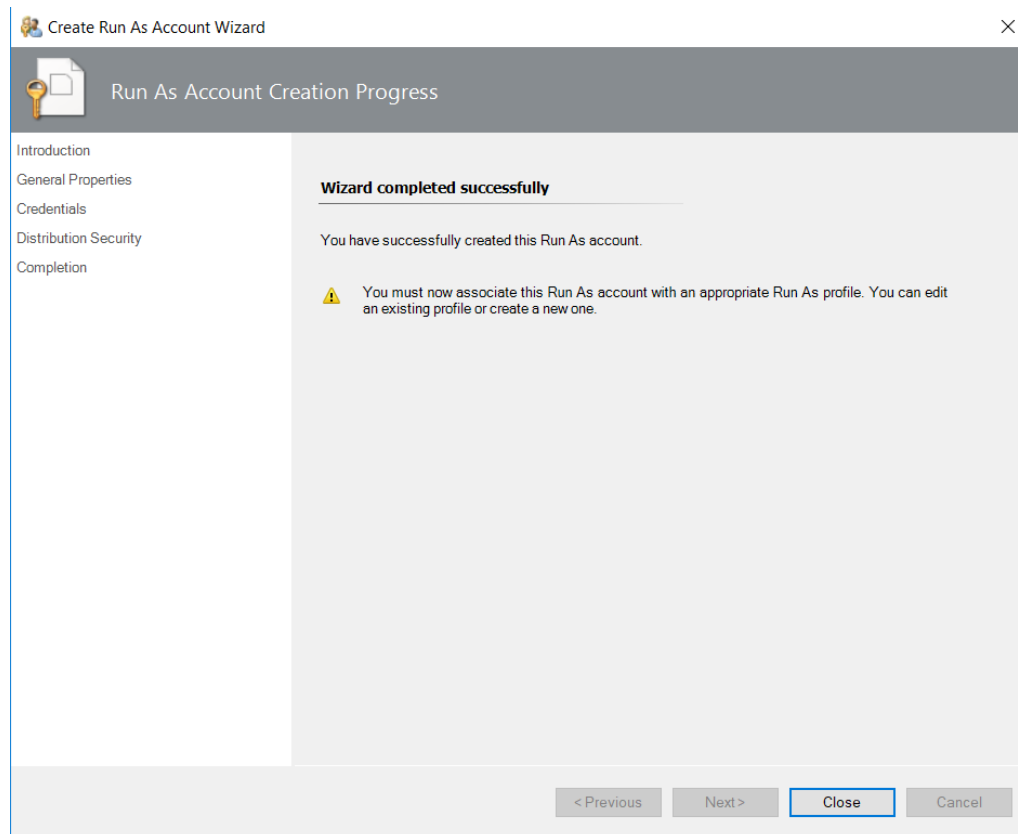
< Previous Next > Create **Cancel**

- ▶ Provide the domain user account credential details you created in the previous paragraph and click **Next**.



- ▶ Select **Less Secure** to have the credential distributed to all agents or **More Secure** to select the specific agents you want the credential distributed to. Click **Create**.

By default, these are the agents on the Delivery Controllers, License Servers, StoreFront Servers and Provisioning Servers.



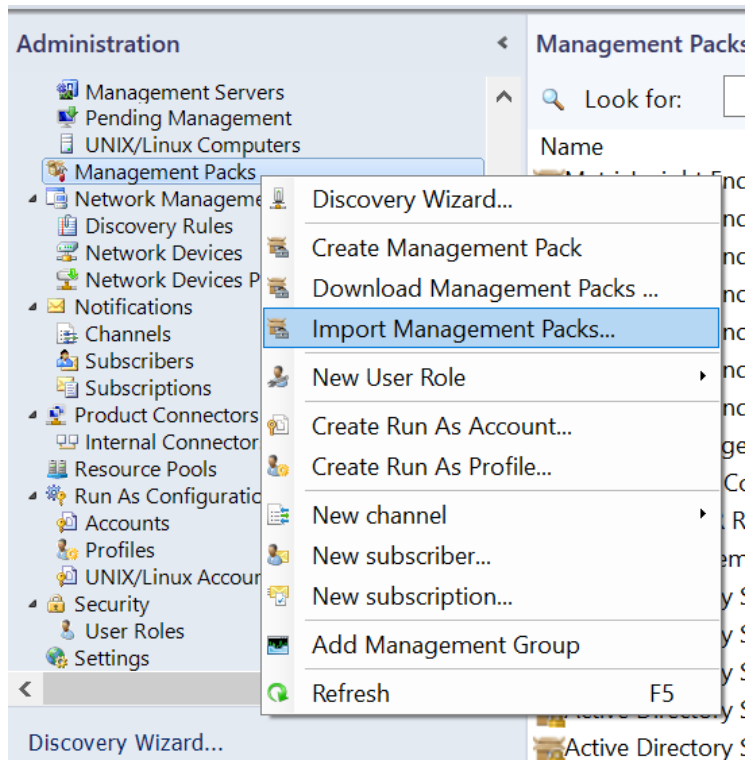
- ▶ Click **Close**.

Extract and import the management pack in SCOM

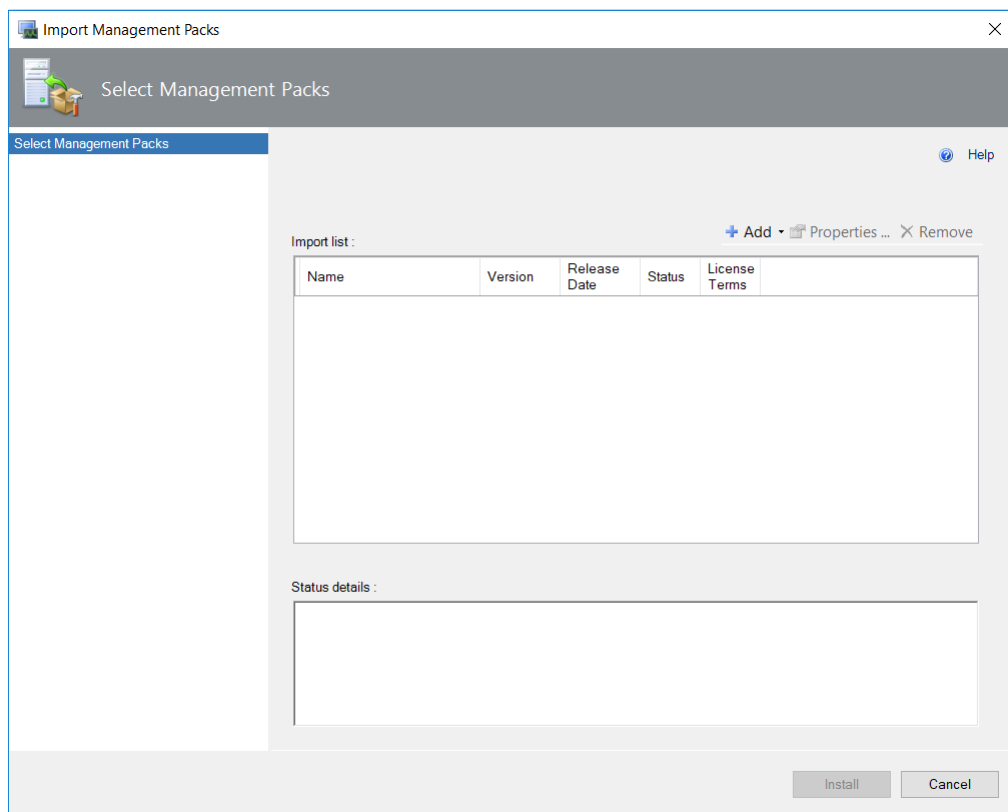
- ▶ Extract the management pack zip file you received by email from GripMatix. It should contain the following files:

- ▶ `MetrixInsight.EndUserComputing.Citrix.CVAD.ExtInst.mpb`
- ▶ `MetrixInsight.EndUserComputing.Citrix.CVAD.mpb`
- ▶ `MetrixInsight.EndUserComputing.Citrix.Dashboards.mpb`
- ▶ `MetrixInsight.EndUserComputing.Citrix.LS.mpb`
- ▶ `MetrixInsight.EndUserComputing.Citrix.PS.mpb`
- ▶ `MetrixInsight.EndUserComputing.Citrix.SF.ExtInst.mpb`
- ▶ `MetrixInsight.EndUserComputing.Citrix.SF.mpb`
- ▶ `MetrixInsight.EndUserComputing.mpb`

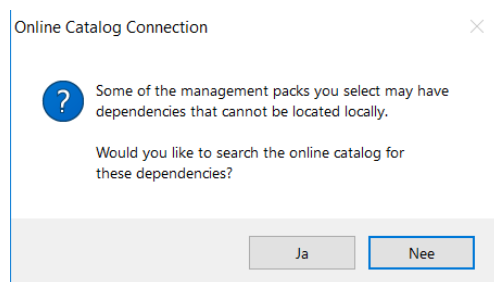
- ▶ Import these management pack files by navigating to **SCOM Console | Administration** and right-click **Management Packs**.



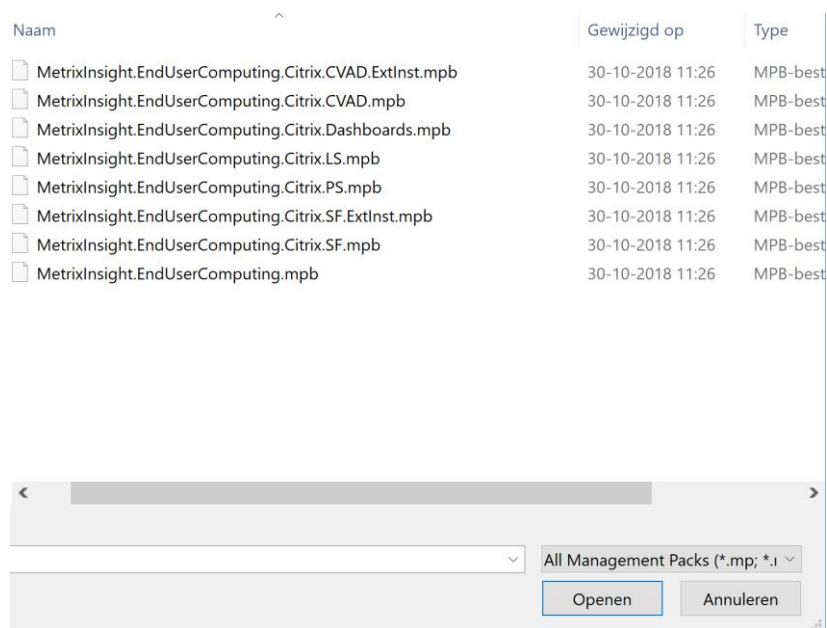
- ▶ Click **Import Management Packs**



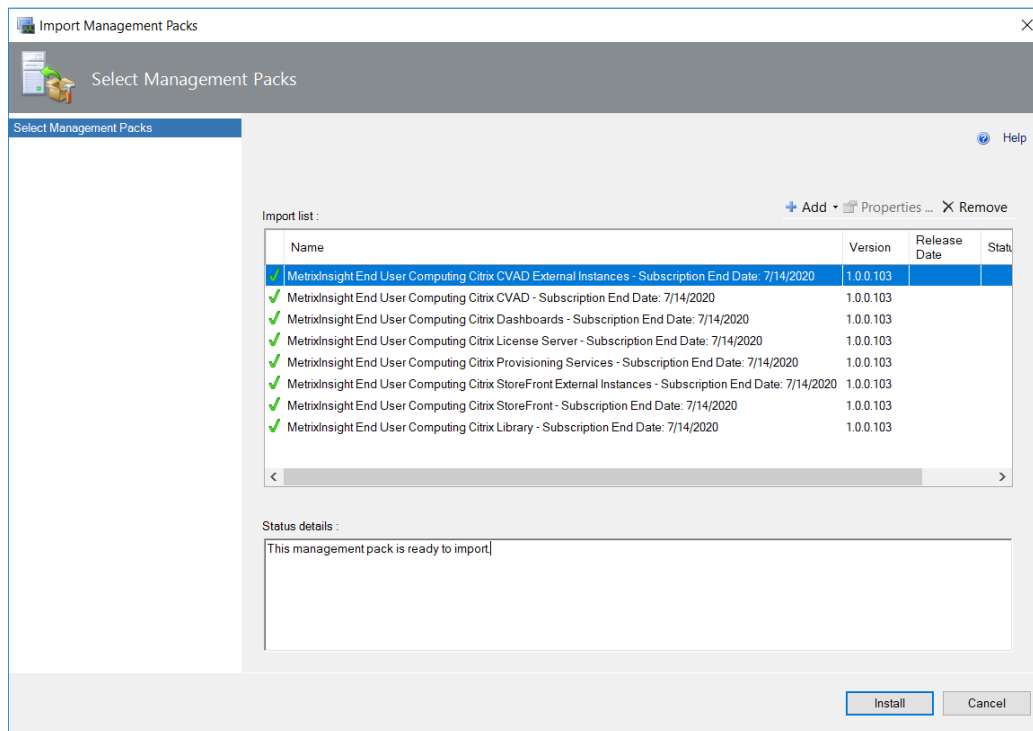
- ▶ Click **Add** and then **Add from Disk ...**



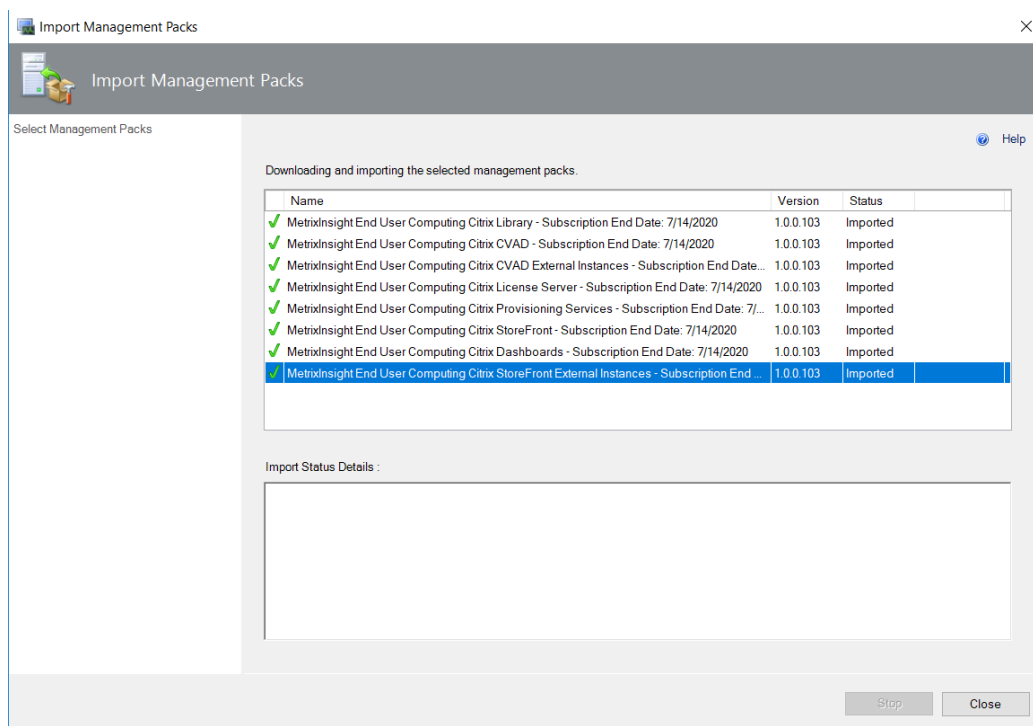
- ▶ In the **Online Catalog Connection** popup click **No**.



- ▶ Select all management pack files and click **Open** in the **Select Management Packs to import** windows box.



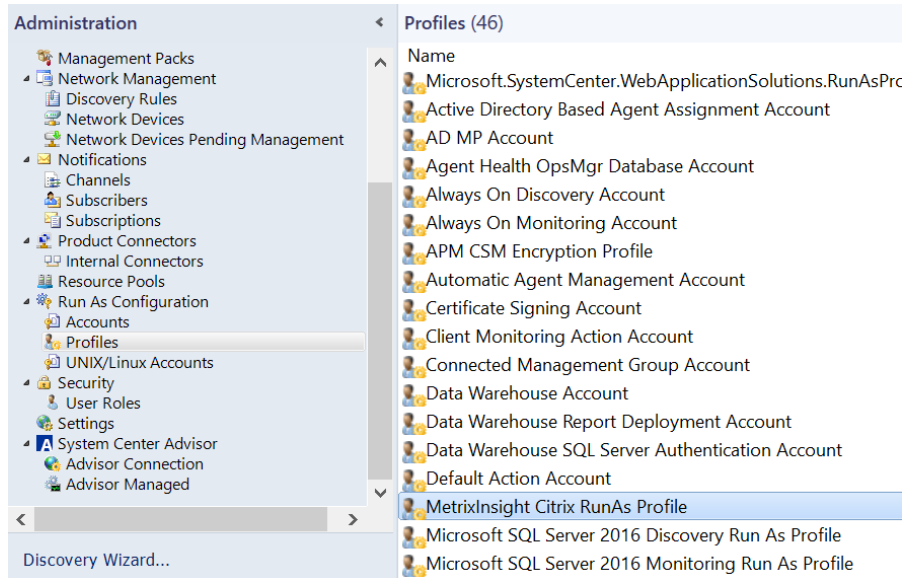
► Click **Install**.



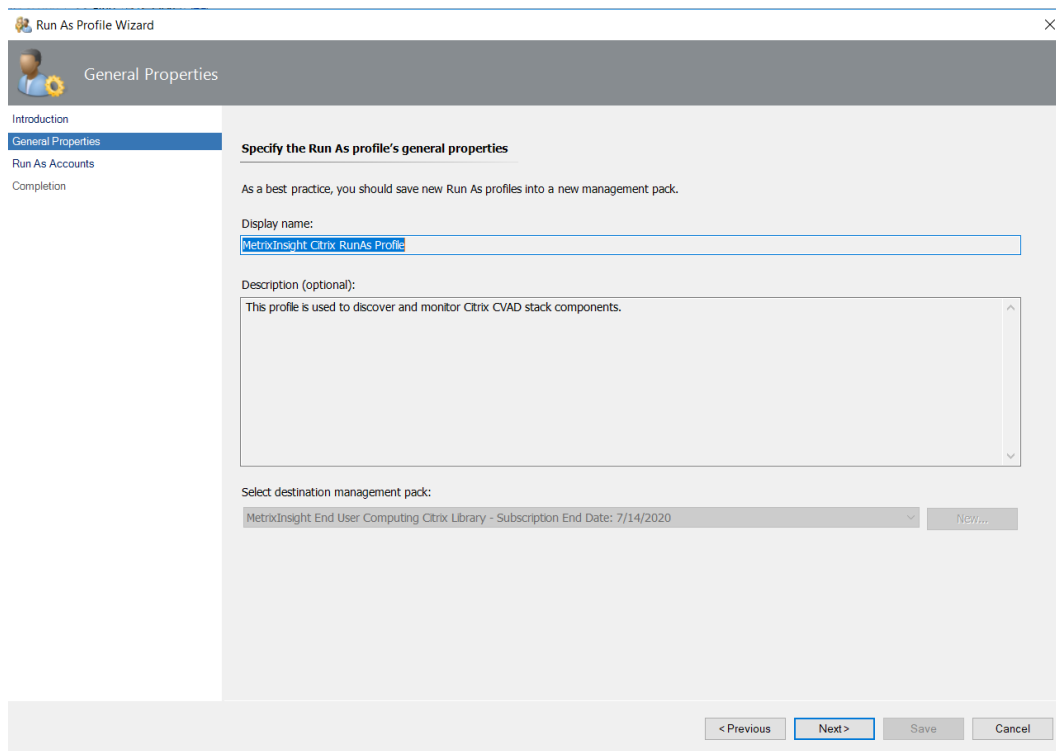
► Click **Close** when the importing process has been finished.

Assign Run As Account

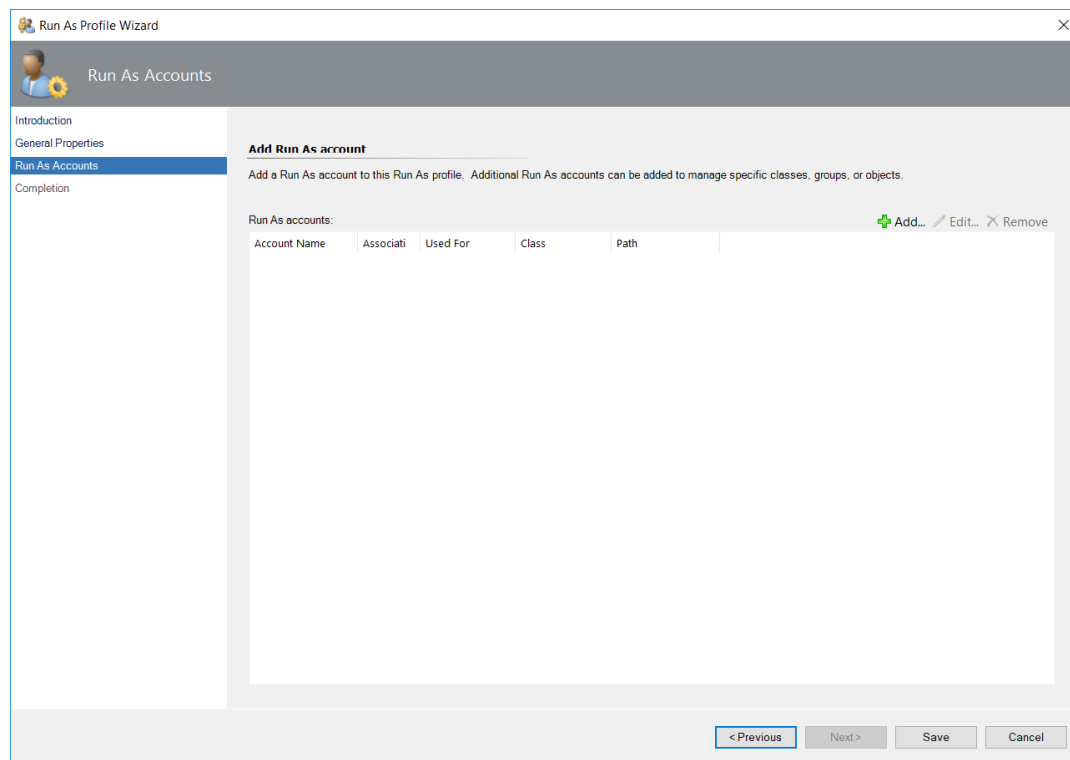
- ▶ Navigate to **SCOM Console | Administration | Profiles**.



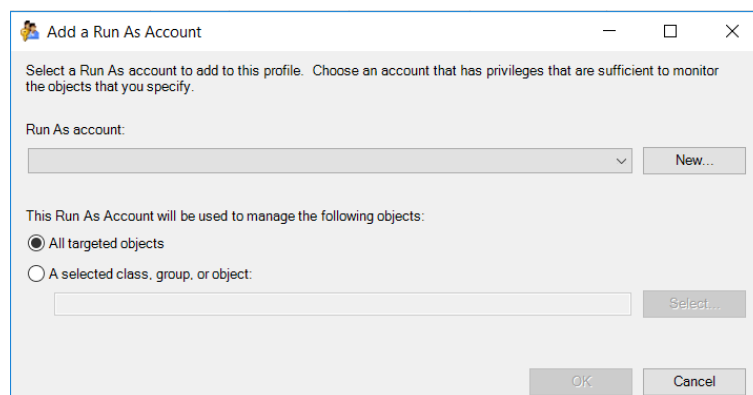
- ▶ Double-click the **MetrixInsight Citrix RunAs Profile** and click **Next**.



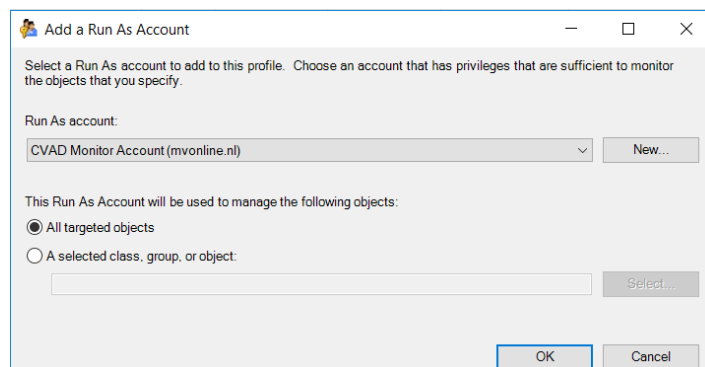
- ▶ Click **Next** again.



- ▶ Click **Add...**

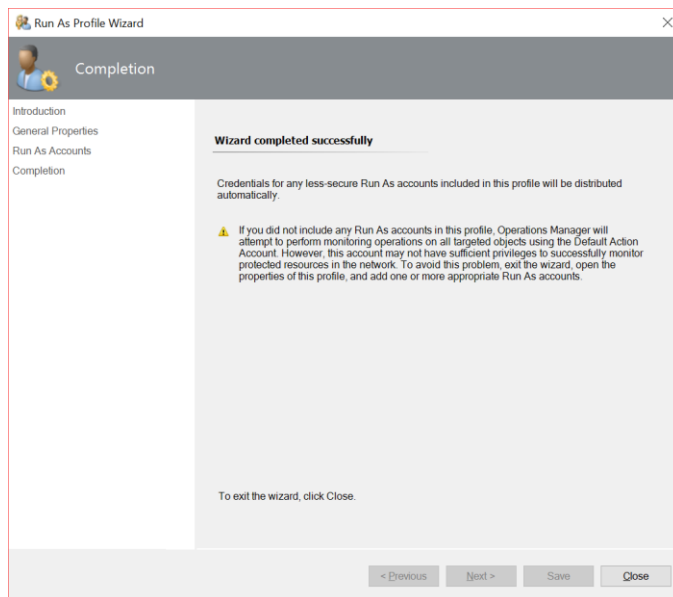


- ▶ In the **Run As account** list select the Run As account you have just created.

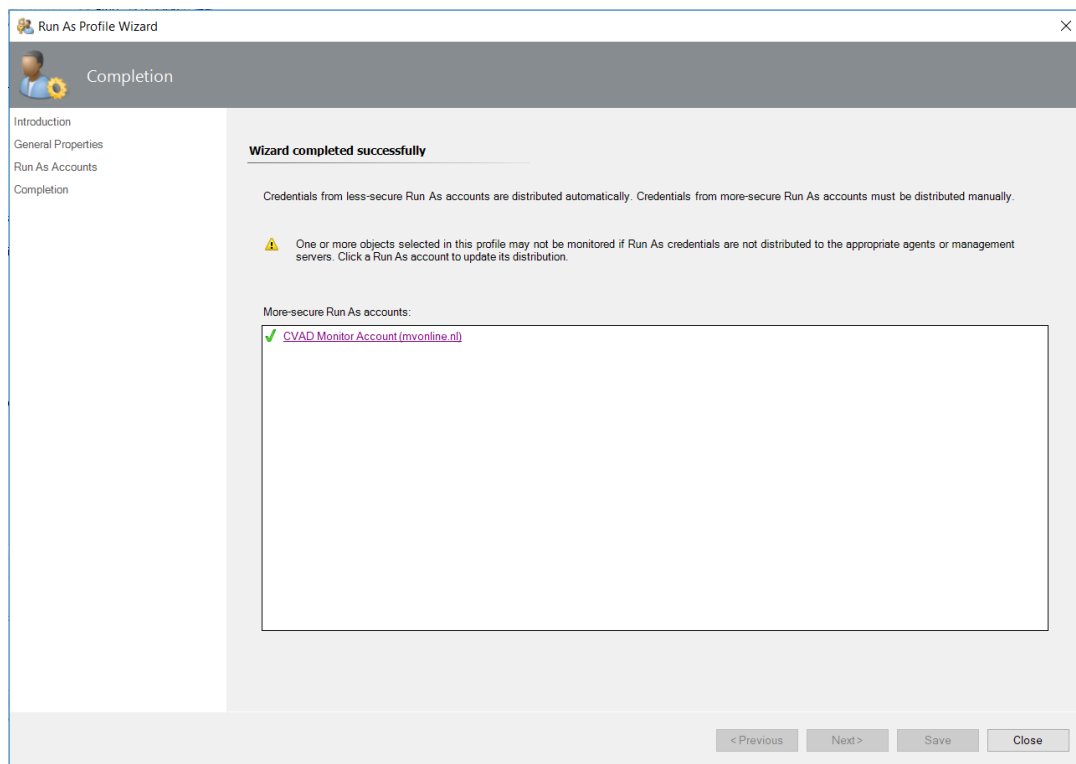


- ▶ In the **This Run As Account will be used to manage the following objects:** option list, leave the default setting **All targeted objects** selected.
- ▶ Click **OK**.
- ▶ Click **Save**.

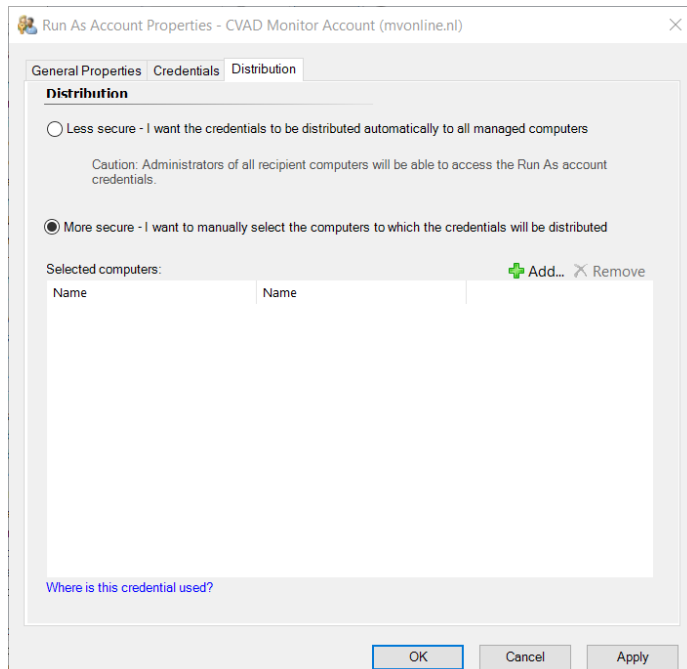
If you had selected the **Less secure** option in the previous paragraph, when creating the **Run As account**, click **Close**. Check screenshot below.



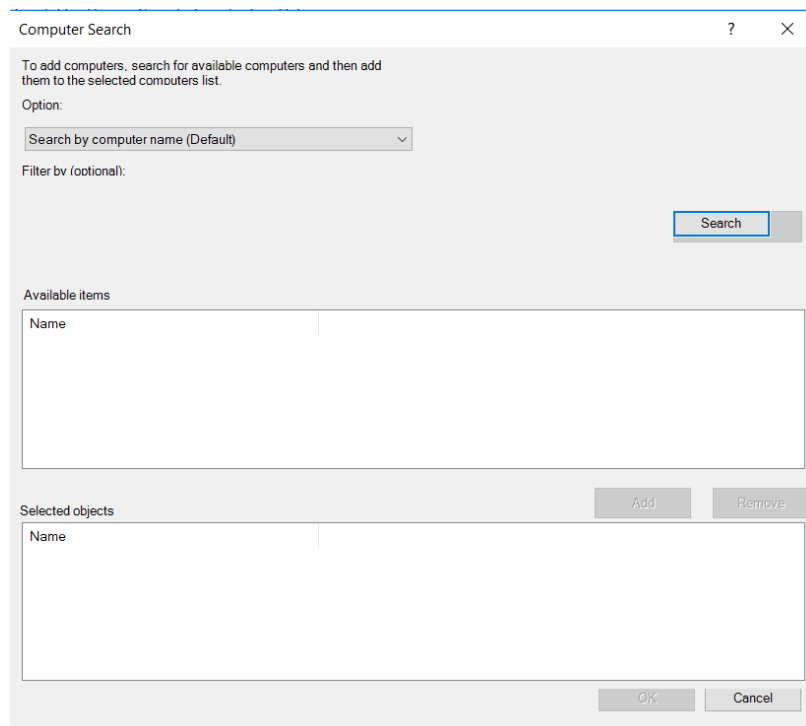
If you had selected the **More secure** option, click the link in the **More-secure Run As accounts** field which redirect you to the assigned **Run As Account** settings. Check screenshot below.



- ▶ Click the link to your **Run As Account** settings.



- ▶ Click **Add ...**

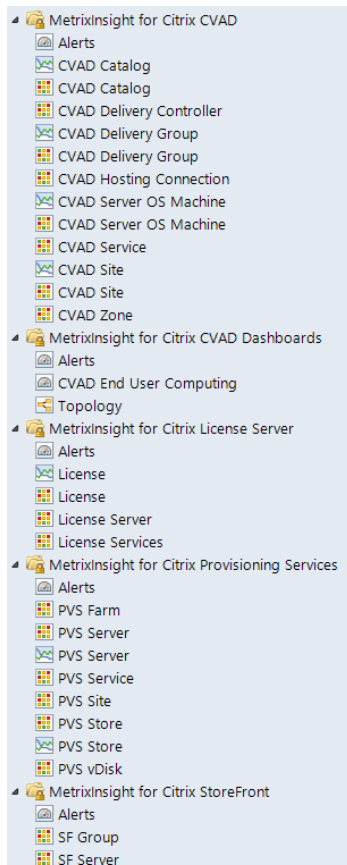


- ▶ Use the filter field and **Click Search** to find all computers you want the **Run As account** distributed to.

You need to distribute the **Run As Account** to all Delivery Controller, StoreFront and Provisioning Server computers from respectively the CVAD Sites, StoreFront Computer Groups and Provisioning Services Farms that you want to have monitored by the MetrixInsight for CVAD management pack.

Validate discovery

When the management pack files have been imported the discovery of objects starts and can take up to 4 hours. When done you should see your Citrix Virtual Apps and Desktops stack components using the following state and topology views:



Configuration

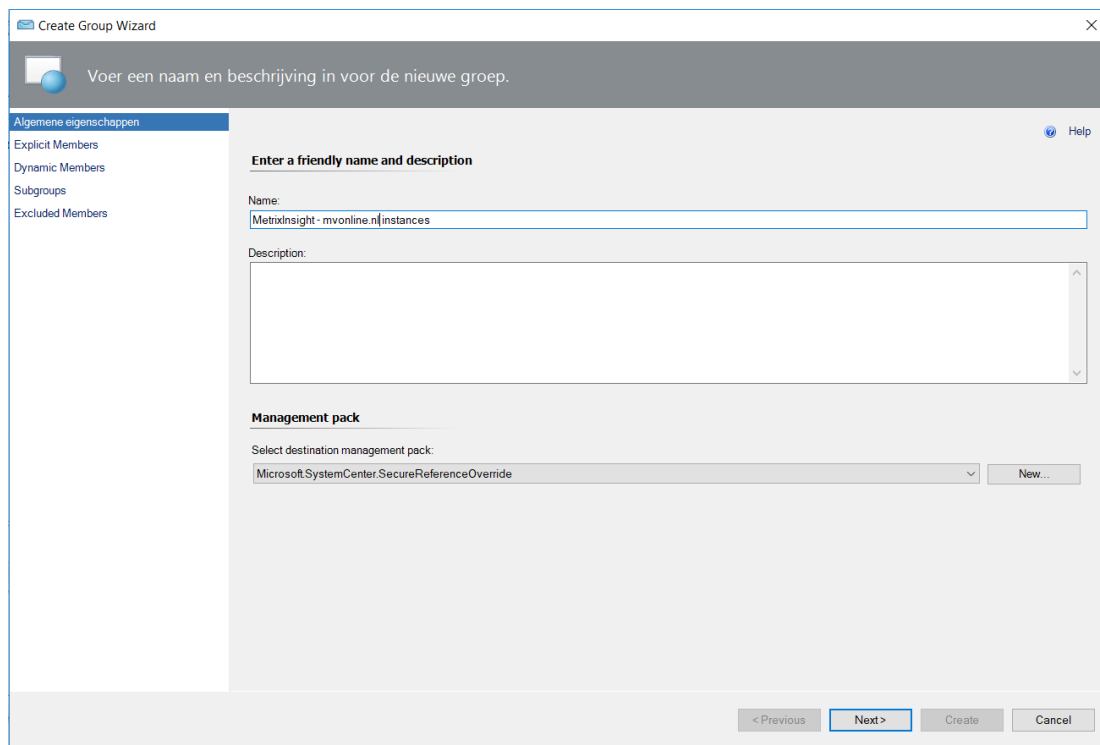
Multi-tenant

Our management pack is able to monitor multiple Citrix Virtual Apps and Desktops environments in different domains. This multi-tenant scenario is typically seen at Managed Service Provider's (MSP) that monitor different customer environments by using SCOM in a gateway server setup.

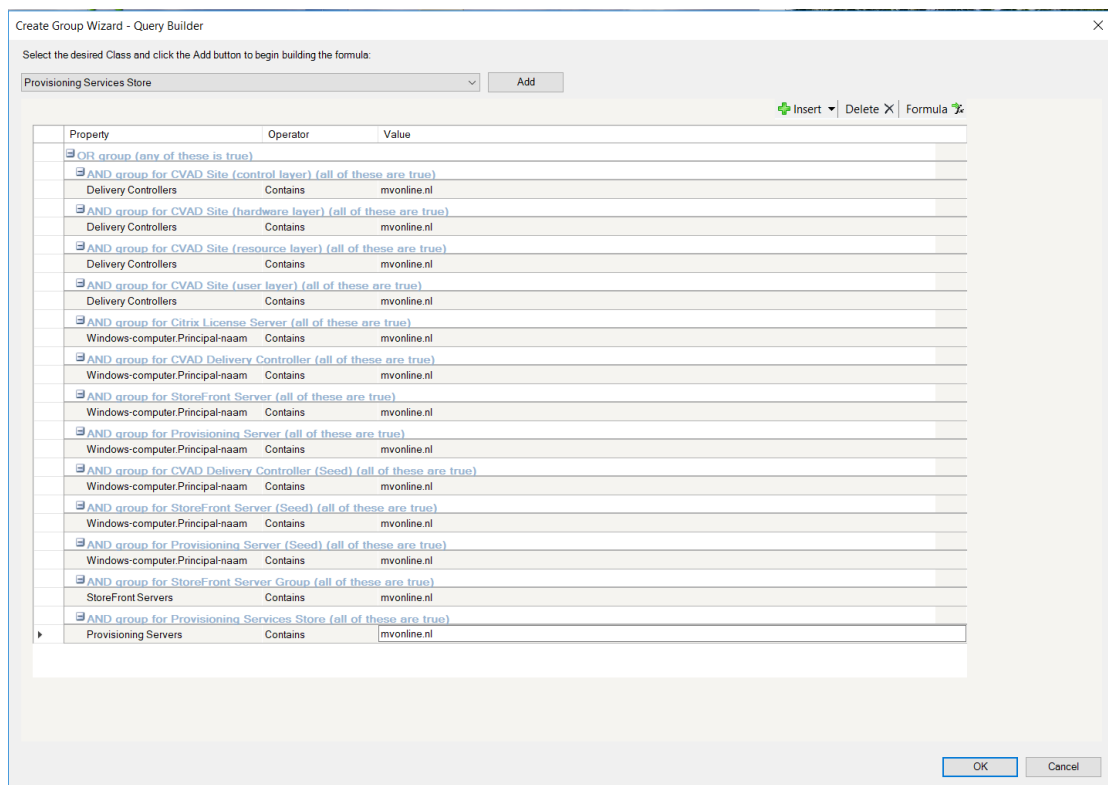
In order to be able to monitor multiple Citrix Virtual Apps and Desktops environments in different domains, the following configuration in SCOM needs to be configured.

For each domain environment where one or more CVAD environment need to be monitored, a SCOM group with a corresponding Run-As account needs to be defined as follows:

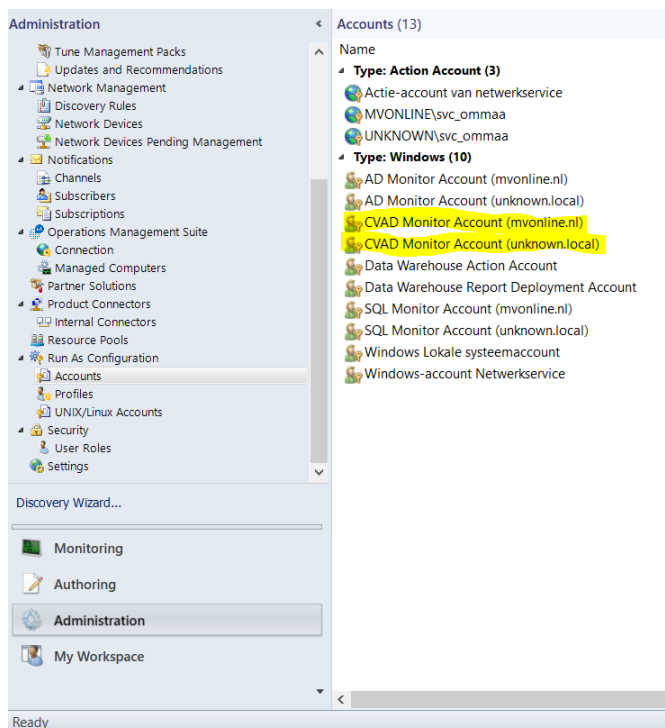
- ▶ Create a new Group for each domain using the "Create Group Wizard" and make sure to store it in the **Microsoft.SystemCenter.SecureReferenceOverride** management pack.



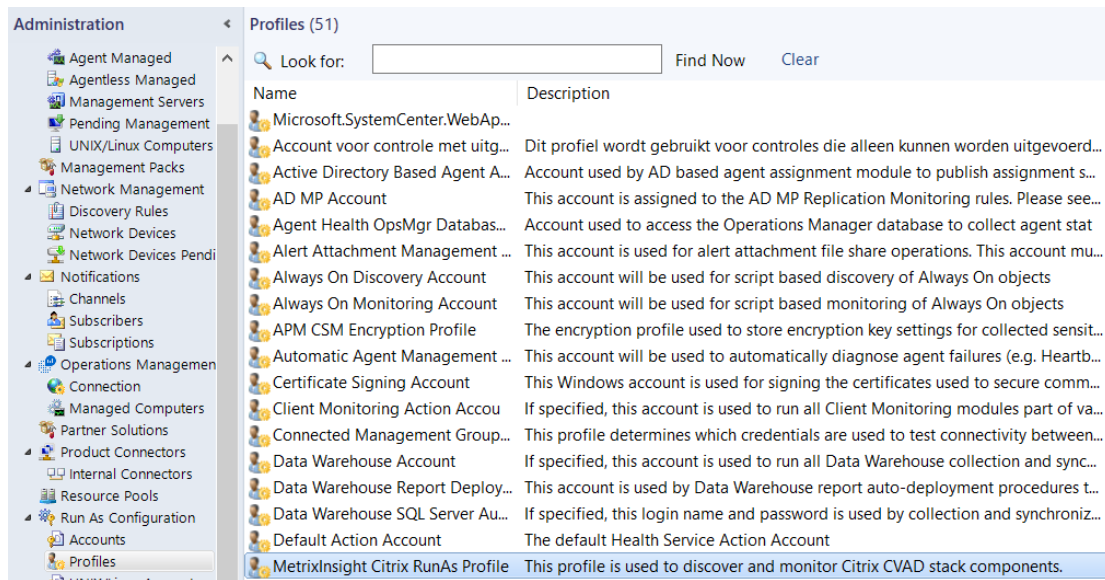
- ▶ Configure **dynamic members** for this group based on the following formula, where the value field contains the targeted domain for this group.



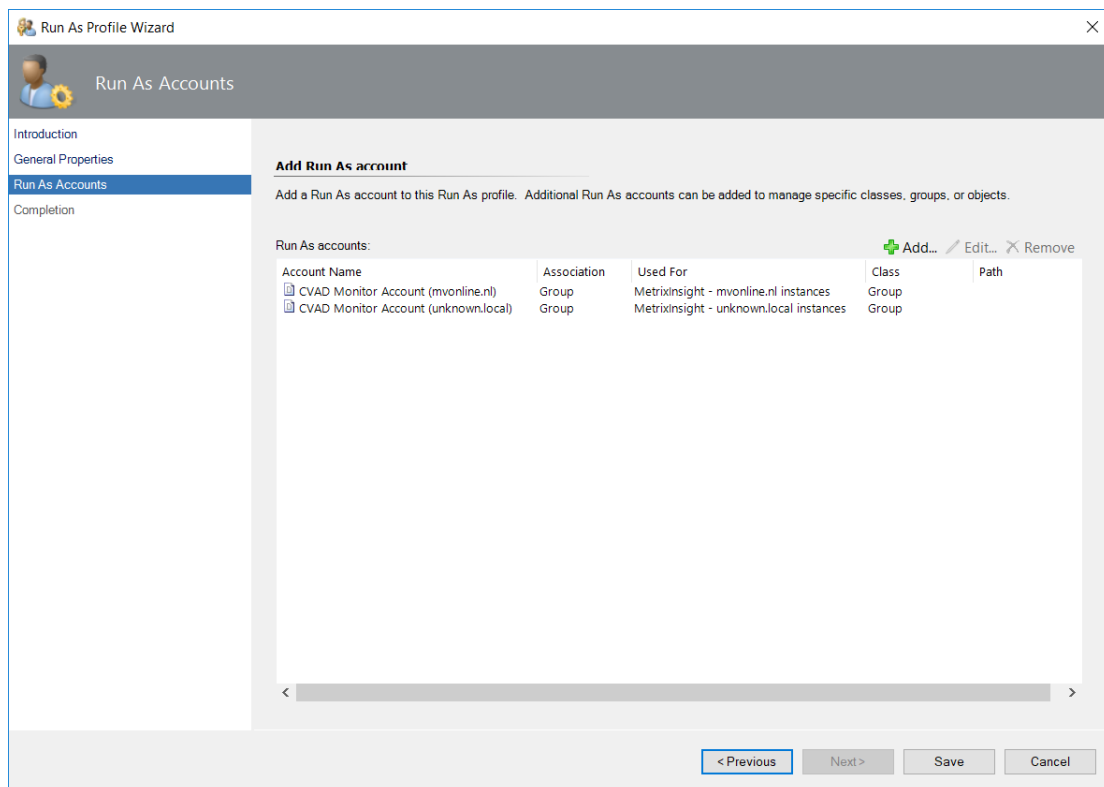
- For each domain, create a corresponding Run-As account as described in the installation section.



- ▶ Open the properties of the MetrixInsight Citrix RunAs Profile.



- ▶ Assign the Run-As accounts to the corresponding Group we made earlier.

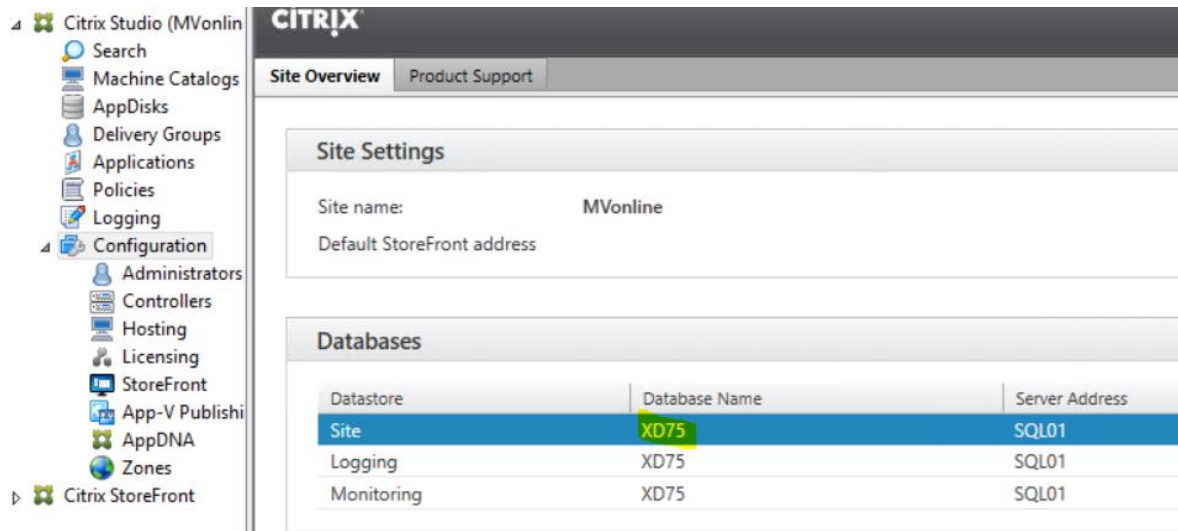


Now each Run-As account will be used for the domain resources it belongs too.

Good to know

External instance – SQL database's

To discover the external database instances belonging to the CVAD site configuration, we will include all discovered databases that matches the database name defined within your CVAD site configuration:



The screenshot shows the Citrix Studio configuration interface for a site named 'MVonline'. The 'Databases' section contains the following table:

Datastore	Database Name	Server Address
Site	XD75	SQL01
Logging	XD75	SQL01
Monitoring	XD75	SQL01

This also means that if you are using a Clustered/Always-On configuration for your CVAD site database, each database hosted on a node will be visible in our topology.

Troubleshooting

If you experience issues regarding objects not discovering during the implementation of our product, please review the prerequisites section in this document carefully first.

In case you need support and have a valid subscription, you may submit a support call on our website by using the following URL: <https://www.gripmatix.com/support/support-tickets>

Notice statement

Citrix®, Citrix Provisioning™, Citrix Virtual Apps and Desktops™, StoreFront™, XenApp® and XenDesktop® are trademarks of Citrix Systems, Inc. and/or one or more of its subsidiaries, and may be registered in the United States Patent and Trademark Office and in other countries.

The statements made and opinions expressed herein belong exclusively to GripMatix and are not shared by or represent the viewpoint of Citrix Systems, Inc. This presentation does not constitute an endorsement of any product, service or point of view. Citrix makes no representations, warranties or assurances of any kind, express or implied, as to the completeness, accuracy, reliability, suitability, availability or currency of the content contained in this presentation or any material related to this presentation. In no event shall Citrix, its agents, officers, employees, licensees or affiliates be liable for any damages whatsoever (including, without limitation, damages for loss of profits, business information, loss of information) arising out of the information or statements contained in the presentation. Any reliance you place on such content is strictly at your own risk.