

vRealize Orchestrator Essentials

Update for vRO 7

This document is intended as an update to the following book:
[vRealize Orchestrator Essentials by Daniel Langenhan, Packt Publishing Sep 2015.](#)

On 23.12.15 VMware released vRealize Orchestrator 7. Due to this some changes to chapter 1,2 and 3 are to be made. The rest of the Book is not impacted by any changes.

General

Please have a look at the vRO 7 Release Notes that can be found here:

http://pubs.vmware.com/Release_Notes/en/orchestrator/vrealize-orchestrator-70-release-notes.html

The main changes are that will impact this book are:

- Control Center now fully works as intended
- Orchestrator Configurator is now dead
- LDAP will be removed (it is still there)
- Authentication supports the vSphere Platform Services Controller architecture
- A lot of the old configuration workflow are not accessible anymore and the work should now be done using the Orchestrator Control Center

The Orchestrator configuration tools

The Orchestrator Configuration tool stopped existing with Version 7 and the Control Center should now be used.

For how to use it see chapter 2

Chapter 1

The following changes apply for vRO7 to chapter 1

More about Plug-ins

Orchestrator itself comes with quite a lot of plugins pre-installed. The following table shows all the plug-ins that vRealize Orchestrator 7.0 comes with.

Plugin Name	Version and name
Active Directory	AD 2.0.6.3209445
AMQP Plug-in	AMQP 1.0.4.3217705
Configuration plug-in for vRealize Orchestrator	Configurator 7.0.0.3310137
Dynamic Types plug-in for vCenter Orchestrator	DynamicTypes 1.1.0.3209451
Common enumerated types	Enums 7.0.0.3243390
vCO Library	Library 7.0.0.3243390
Mail Plug-in	Mail 7.0.0.3243390
Wrapper to Jakarta Apache Commons Net library	Net 7.0.0.3243390
Power Shell Plug-in	PowerShell 1.0.7.3209450
REST plug-in for vRealize Orchestrator	REST 2.0.0.3217836
Simple Network Management Protocol plug-in for vCenter Orchestrator	SNMP 1.0.3.3211556
SOAP plug-in for vCenter Orchestrator	SOAP 2.0.0.3217050
VMware vCenter Orchestrator SQL Plug-In	SQL 1.1.4.3211553
SSH plug-in for vRealize Orchestrator	SSH 7.0.1.3184855
vAPI plug-in for vRealize Orchestrator	VAPI 1.0.0.3200508
vCenter Server	VC 6.0.2.3211552
vRealize Orchestrator Multi-Node Plug-In	VCO 7.0.0.3310137
vCO Workflow Documentation Plug-In	Workflow documentation 7.0.0.3243390
XML Plug-in	XML 7.0.0.3243390

Chapter 2

The following changes apply for vRO7 to chapter 2

vRO 7 Compatibility

If at all possible you should use vRO7 instead of vRO6 with vSphere 6, as vRO7 recognises the new PSC structure.

vSphere	vCenter	Orchestrator
6.0 & 6.1	6.0 & 6.1	vRO 7
6.0	6.0	vRO 6.0.2
5.5	5.5 Update 2e	vCO 5.5.2.1
5.1	5.1 Update 3a	vCO 5.1.3.1

Appliance size requirements

The vRO 7 Appliance requires the following virtual resources, the major change is that we now need 4 GB instead of 3GB (6.0.2):

CPU	2 vCPU with at least 2.0 GHz
Memory	4GB
Disk Space	12 GB (1.5GB Thin)
Network	1x NIC 1x IP (DHCP possible)

Open Ports

The major changes are:

- change is that port http 8280 now forwards to https 8281.
- https 8283 now is used for the Orchestrator Control Centre.

Source	Target	TCP Port	Description
Web Browser	Orchestrator VM	80 8281 8280	Orchestrator Home page. HTTP 80 and 8280 are redirected to HTTPS 8281.
Web Browser	Orchestrator VM	8283	Orchestrator Control Center

Orchestrator Client	Orchestrator VM	8286 8287	Orchestrator Client's Java communication
Orchestrator VM	MS SQL	1433	Needed only for MS SQL DB access
Orchestrator VM	Oracle	1521	Needed only for Oracle DB access

After the deployment

If the deployment was successful, the VM's console should show a screen similar to the one below.

```

VMware vRealize Orchestrator Appliance - 7.0.0.16989 Build 3310032

To manage your appliance browse to http://192.168.220.12/

Welcome to VMware vRealize Orchestrator Appliance

Quickstart Guide: Use the following URLs to use the appliance:
 1 - http://192.168.220.12 - Orchestrator Appliance Home Page
 2 - https://192.168.220.12:8283/vco-controlcenter - Orchestrator Control Center
 3 - https://192.168.220.12:8281/vco - Orchestrator Server
 4 - https://192.168.220.12:5480 - Appliance Configuration

*Login
Set Timezone (Current:UTC)

Use Arrow Keys to navigate
and <ENTER> to select your choice.

```

Accessing the Orchestrator Home page

The main changes are that the Orchestrator Configuration is gone and replaced by Orchestrator Control Center. The other minor change is the quick link to the Orchestrator documentation.

VMware vRealize™ Orchestrator™

Getting Started with vRealize Orchestrator

To create and modify workflows, or to perform administrative tasks, start the Orchestrator client by using Java Web Start:

- 1 [Start Orchestrator Client](#)

To use the Orchestrator client on your local machine, install the Orchestrator client. After you complete the installation, start the Orchestrator client and connect to the Orchestrator server.

- 2 [Download Orchestrator Client Installable](#)

Configure the Orchestrator Server

To make additional configuration changes to the Orchestrator server, use the Orchestrator configuration interface:

- 3 [Orchestrator Control Center](#)

Develop with the Orchestrator Server

Contains the necessary materials for developing an Orchestrator plug-in and information about using the Orchestrator SOAP and REST APIs.

- [Develop with the Orchestrator Server](#)

More Information

For more information about Orchestrator, see the vRealize Orchestrator documentation landing page:

- 6 [vRealize Orchestrator Documentation](#)

vRealize Orchestrator Resources

- 4 [Product Information](#)
- [Orchestrator Blog](#)
- [Community](#)
- [Support](#)
- [Plug-ins](#)

VMware Quick Links

- 5 [VMware Communities](#)
- [VMware Forums](#)
- [VMware Site](#)

VMware vRealize Orchestrator 7.0.0

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The Home page contains some very useful links. As shown in the figure above here is an explanation of each number.

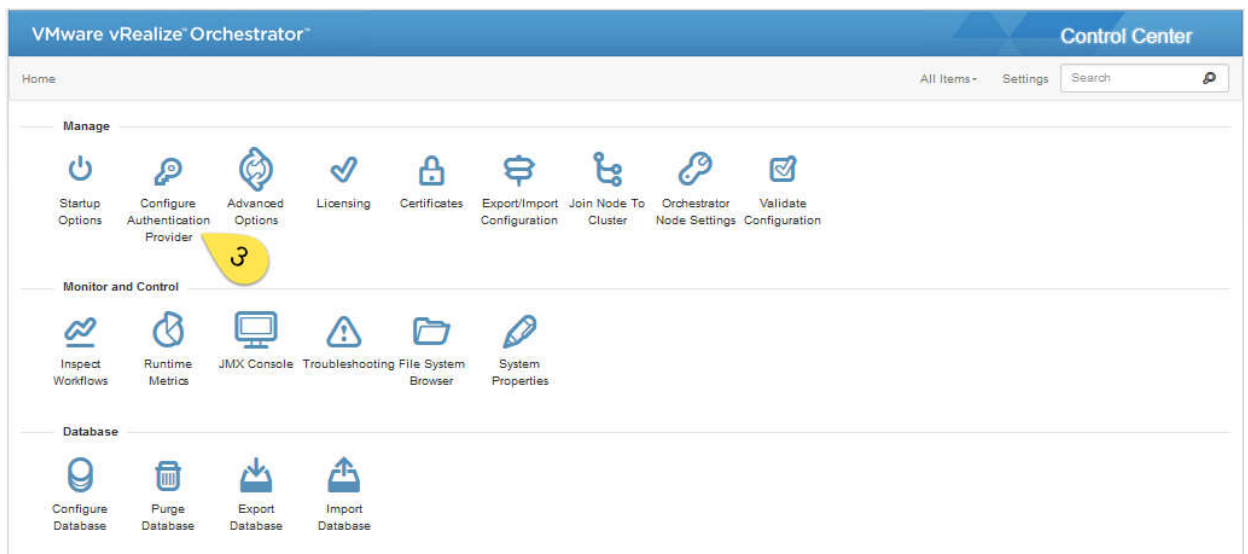
Number	Description
1	Click here to start the Orchestrator Java Client. You can also access the Client directly by browsing to: https://[IP or FQDN]:8281/vco/client/client.jnlp

2	Click here to download and install the Orchestrator Java Client locally
3	Click here to access the Orchestrator Control Center.
4	A selection of links to find help, information and to download plug-ins
5	Additional VMware links
6	A quick link to the VMware Orchestrator Documentation

Configure Orchestrator Authentication Provider (replaces SSO)

Before we start SSO configuration is still possible with vRO7, however if you are using vSphere 6 with its Platform Services Controller you don't want to use it anymore. To use vRO7 with vSphere 6 PSC follow these steps:

1. Open the Orchestrator Control Center via the Orchestrator Homepage
2. Login with root and the password (the second one) you assigned while deploying the Appliance
3. The Control Center opens up. Click now on [Configure Authentication Provider](#)



4. Select from the Dropdown menu [vSphere](#)
5. Enter the DNS (or IP) of your PSC, if you are using an integrated PSC it will be the name or IP of your vCenter.

6. Click on **Connect**

The screenshot shows the VMware vRealize Orchestrator Control Center interface. The main heading is "Configure Authentication Provider" with a sub-heading "Configure the authentication parameters." Below this, there are three fields: "Authentication mode" with a dropdown menu set to "vSphere", "Host address" with a text input field containing "vcenter.mylab.local", and "URL" with a text input field containing "https://vcenter.mylab.local/cm". A "Connect" button is located at the bottom left of the form. Three yellow callout bubbles with numbers 4, 5, and 6 are overlaid on the interface. Callout 4 points to the "Authentication mode" dropdown, callout 5 points to the "Host address" input field, and callout 6 points to the "Connect" button. The top of the page has a blue header with "VMware vRealize Orchestrator" on the left and "Control Center" on the right. The bottom of the page has a dark footer with "POWERED BY VMware vRealize Orchestrator" on the left and the "vmware" logo on the right.

7. You now have to **Accept the Certificate**
8. Enter now a vSphere Administrative user and the corresponding password
9. Click on **Configure Licensing**, to automatically configure Orchestrator with the vCenter license.
10. Click on **Register**

VMware vRealize Orchestrator Control Center

Home

Configure Authentication Provider

Configure the authentication parameters.

Warning: Required parameters are missing: username and/or password

Authentication mode: vSphere

Host address: vcenter.mylab.local

URL: https://vcenter.mylab.local/om

Identify service

User name: administrator@vsphere.local **8**

Password: **8**

Configure licences: **9**

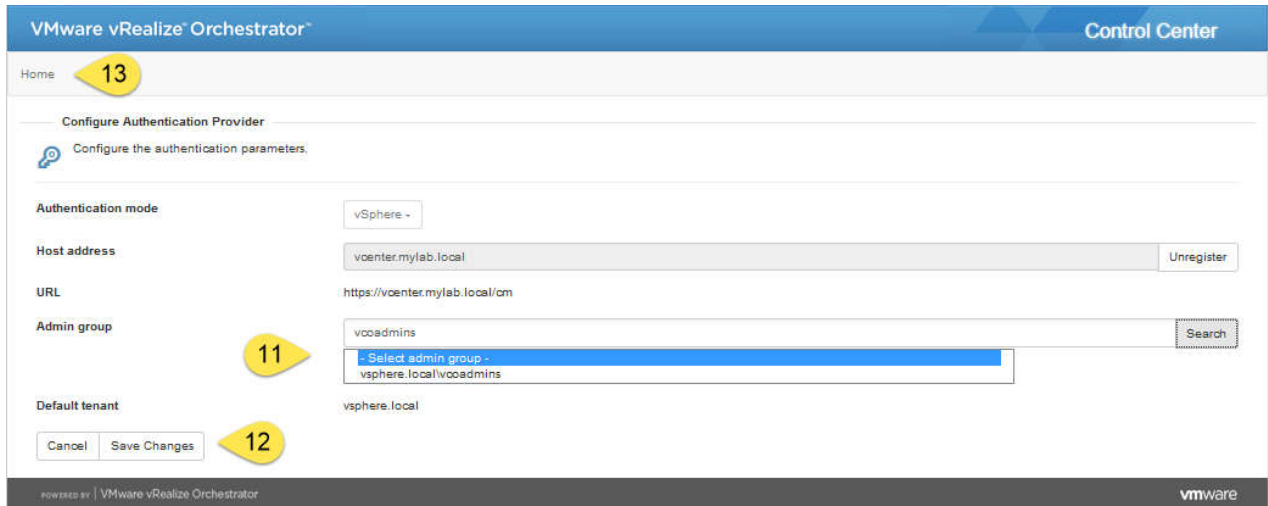
Default tenant: vsphere.local

Register **10**

Cancel Save Changes

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11. Select an Orchestrator Admin group. Enter the name and click on search then select the Group.
12. Click on Save Changes
13. Click on [Home](#) to return to the main page

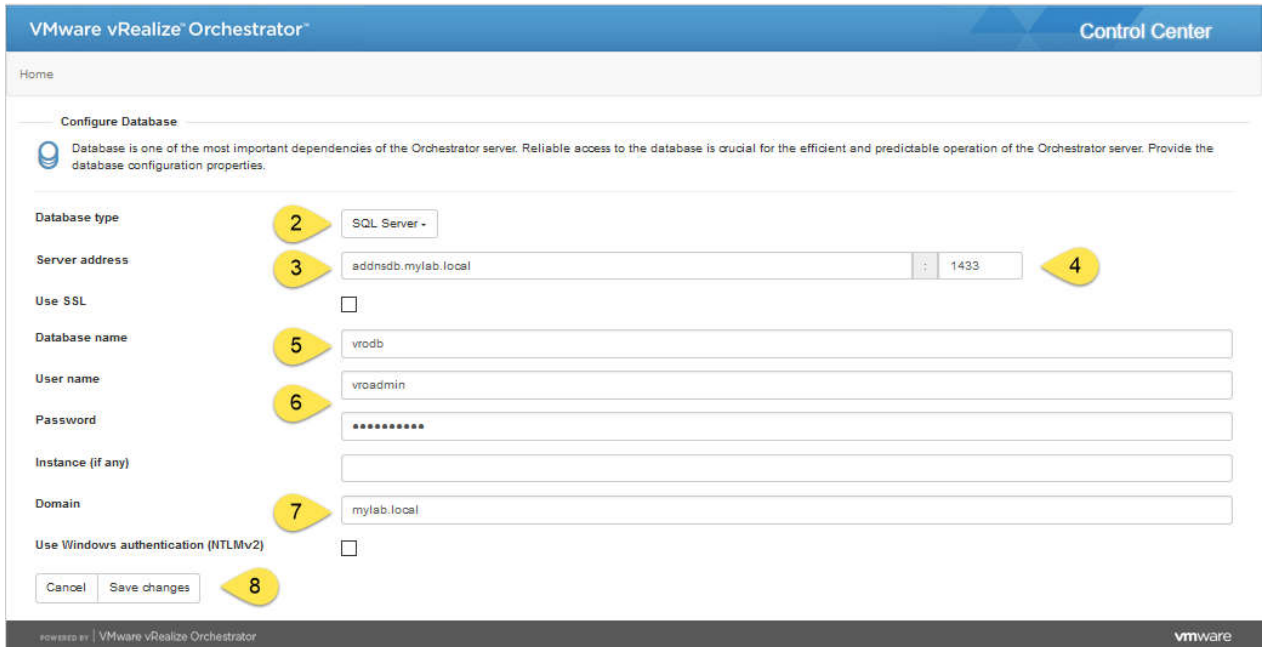


14. If you want to use an external Database go to the next section, if not continue with Restart Orchestrator section.

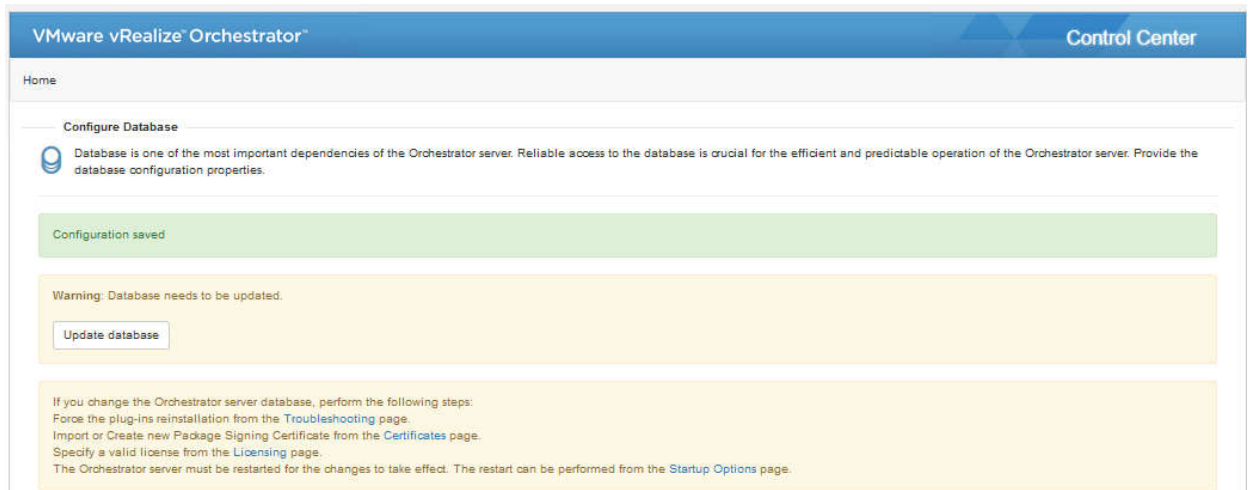
Configure Orchestrator with an external database

The main drive behind the external DB is as described however we are using now the Control Center instead of a Workflow.

1. In the Orchestrator Control Center click on **Configure Database**
2. Select SQL Server from the dropdown menu
3. Enter the IP or Name of your SQL Server
4. Make sure that the correct Port is show (1433 for SQL)
5. Enter the name of the Orchestrator DB
6. Enter the name of the DB user you defined in the SQL Server
7. Enter the Windows Domain you are using
8. Click on **Save Changes**



9. You will now get a warning that you need to update the DB. This is expected as the DB is empty and Orchestrator needs to fill it. Click on Update Database

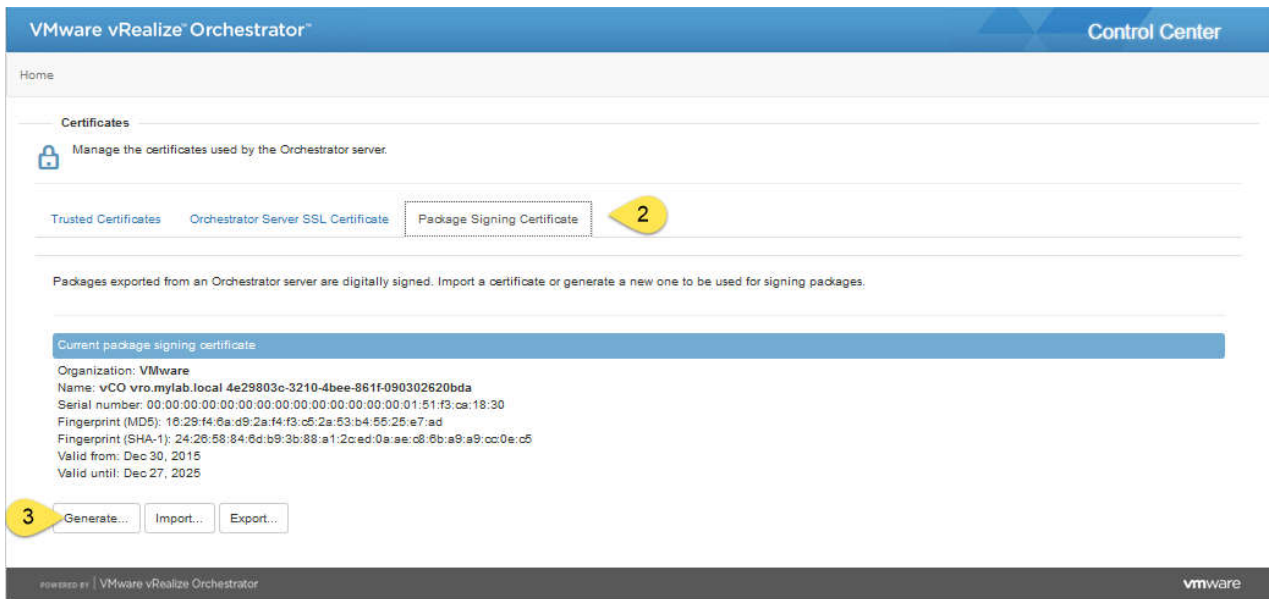


1. If you want to use a custom Package Signing Certificate go to the next section, if not continue with Restart Orchestrator section.

Create a Package Signing Certificate

To create a custom Package Signing Certificate follow these steps:

1. In the Orchestrator Control Center click on **Certificates**
2. Select **Package Signing Certificate** from the tabs
3. Click on **Generate**



VMware vRealize Orchestrator Control Center

Home

Certificates
Manage the certificates used by the Orchestrator server.

Trusted Certificates | Orchestrator Server SSL Certificate | **Package Signing Certificate** 2

Packages exported from an Orchestrator server are digitally signed. Import a certificate or generate a new one to be used for signing packages.

Current package signing certificate:

Organization: VMware
Name: vCO vro.mylab.local 4e29803c-3210-4bee-861f-090302620bda
Serial number: 00:00:00:00:00:00:00:00:00:00:00:00:00:00:01:51:f3:ca:18:30
Fingerprint (MD5): 16:29:f4:8a:d9:2a:f4:f3:c5:2a:53:b4:65:25:e7:ad
Fingerprint (SHA-1): 24:26:68:84:6d:b9:3b:88:a1:2c:ed:0a:ae:c8:6b:a9:a9:cc:0e:c5
Valid from: Dec 30, 2015
Valid until: Dec 27, 2025

3 Generate... Import... Export...

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4. In **Common name** enter your name. You can also use the FQDN of your Orchestrator or the name of your business. The purpose is to create a certificate that identifies the origin of the exported items.
5. In **Organization** type the name of the business you are working for
6. And in **Organization Unit** the Unit you are working with
7. Last but not least put in the two-letter code for your country.
8. Click on **Generate**

Current package signing certificate

Organization: VMware
Name: vCO vro.mylab.local 4e29803c-3210-4bee-861f-090302620bda
Serial number: 00:00:00:00:00:00:00:00:00:00:00:00:00:00:01:51:f3:ca:18:30
Fingerprint (MD5): 16:29:f4:6a:d9:2a:f4:f3:c5:2a:53:b4:55:25:e7:ad
Fingerprint (SHA-1): 24:26:58:84:6d:b9:3b:88:a1:2ced:0a:ae:c8:6b:a9:a9:cc:0e:c5
Valid from: Dec 30, 2015
Valid until: Dec 27, 2025

Generate a new Package Signing Certificate

Common Name	4	Daniel Langenhan
Organization	5	vLeet
Organizational Unit	6	Architecture
Country Code	7	DE

Cancel Generate 8

9. Click on Home and continue with Restart Orchestrator section.

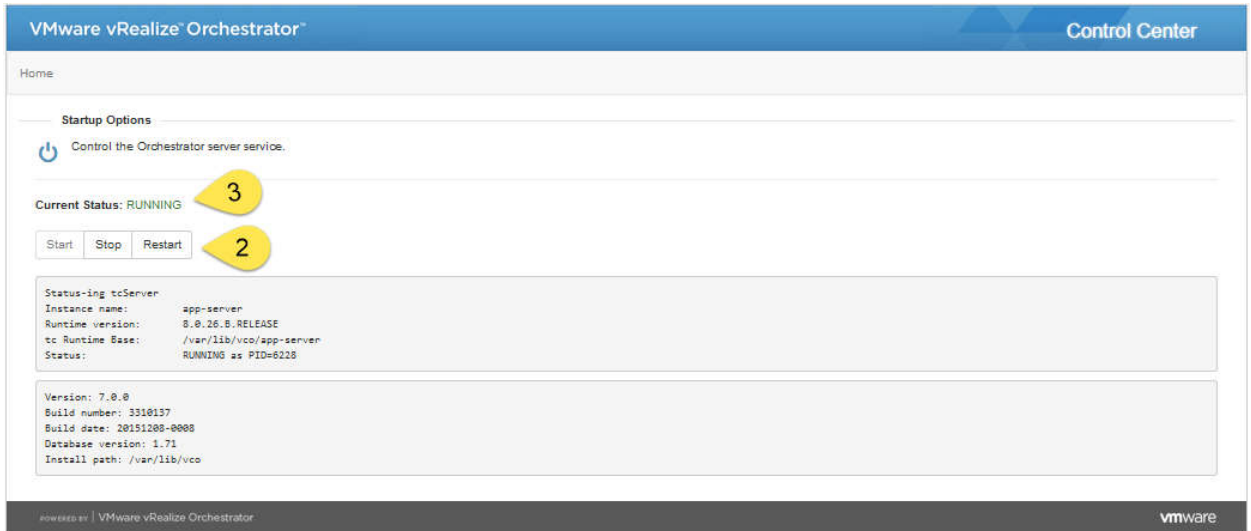
Enter a license

This has been already done while setting up Authentication.

Restart Orchestrator

The Orchestrator Service needs to be restarted every time a major change was made.

1. In the Orchestrator Control Center click on [Startup Options](#)
2. Click on Restart to restart the Orchestrator Service.
3. Wait until the service shows RUNNING again.



4. Click on [Home](#) to return to the main page

Last steps

This might be a bit weird but due to the easy and fast configuration we are doing what we need to make sure that these steps are done before we can go and enjoy Orchestrator.

This may still occur, especially if you configure an external Database. Follow these Steps:

1. In the Orchestrator Control Center click on [Startup Options](#)
2. [Stop](#) the Orchestrator Service.
3. Click on [Home](#) to return to the main page
4. In the Orchestrator Control Center click on [Troubleshooting](#)
5. Click on [Force Plug-ins Reinstall](#)
6. Click on [Home](#) to return to the main page
7. In the Orchestrator Control Center click on [Startup Options](#)
8. [Start](#) the Orchestrator Service

Chapter 3

The following changes apply for vRO7 to chapter 3

Installing a plug-in

Instead of the Orchestrator Configuration we now use the Orchestrator Control Center

Follow these steps:

1. In the Orchestrator Control Center click on **Manage Plug-Ins**
2. Click on Browse to browse to the plugin you downloaded.
3. Click Install to install the plugin




4. You now will be presented with a screen in which you need to accept the EULA of the given plugin.
5. Click on Install


VMware vRealize® Orchestrator™ Control Center

Home

Manage Plug-Ins

 Install a new plug-in or manage already installed plug-ins. The preferred plug-in installation file format is .VMOAPP, but plug-ins can also be installed as .DAR files.

Install plug-in

 **NSX 1.0.0.2032133**
NSX Plug-in for vCenter Orchestrator

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5

6. You now have to restart the Orchestrator Service. See the Restart Orchestrator section.