

AUTOMATE YOUR PATH TO THE CLOUD WITH VCO

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Purpose

This white paper provides a description of the vCO solution that maximizes the utilization of your infrastructure and provides on-demand cloud environments for customers.

Scope

To provide the solution architecture, configuration, and some design considerations for deploying this vCO solution. The paper also describes how the technologies work together to provide the Cloud solution.

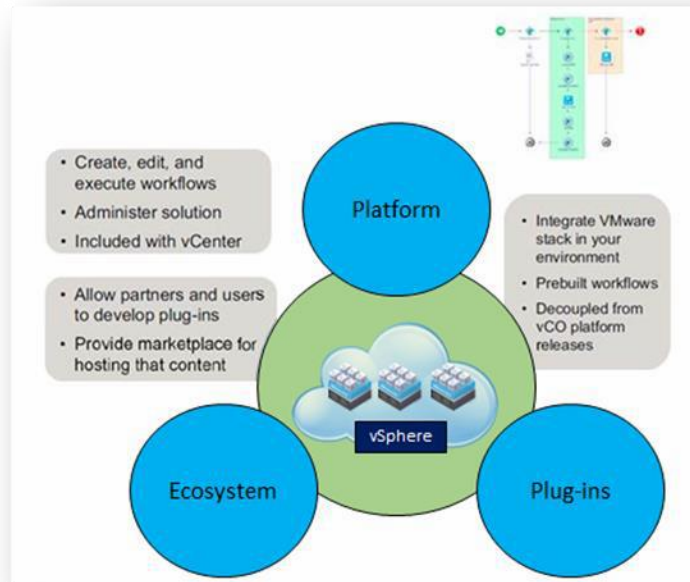
Audience

Intended for Cloud aspirants including VMware Admins, Cloud admins, Support Engineers, and Dell EMC Employees and Partners.

Introduction

VMware vCenter Orchestrator introduced from VMware by acquiring technology product of the European startup Dunes Technology in September 2007. Orchestrator 4.1 introduced in July 2010, the latest being 6.0.3 released in Sep 2015. VMware vCenter Orchestrator is a workflow solution designed to meet the needs of system administrators by automating and orchestrating activities and tasks. Administrators can automate tasks through pre-designed or customized workflows, eliminating manual or repetitive tasks using automation and orchestration to reduce Operational cost. Activities such as snapshots, deployments, changes and updates to virtual machines can be automated by Orchestrator Workflows.

What Is VMware vCenter Orchestrator?



VMware vCenter Orchestrator (vCO) is a workflow engine that allows users and external systems to execute and monitor workflows. These workflows contain multiple elements, simple actions, custom scripts, or even other nested workflows. Because of open architecture and documented API of vCO, many plug-ins are available that enable vCO to integrate with other systems. Customers can also create their own plug-ins.

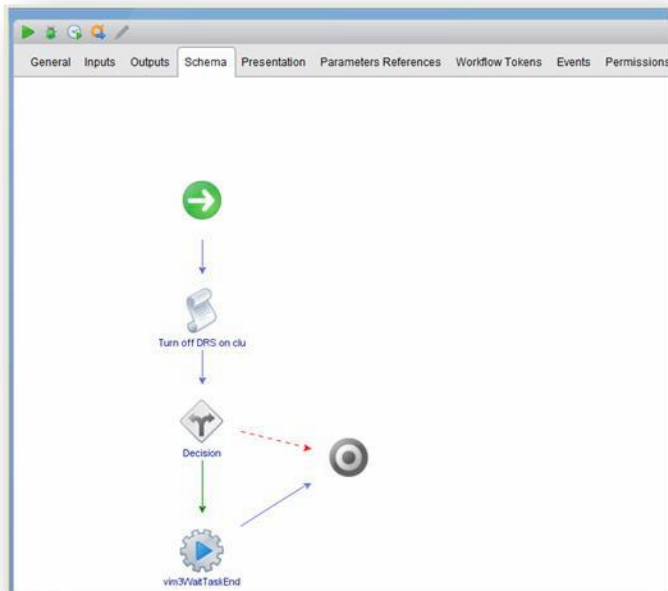
vCO is packaged with VMware vSphere and is available to all VMware vCenter Server customers at no extra charge.

With vCO you can simplify IT management by providing a single point of automation for your entire infrastructure. Instead of using several tools for the different Infrastructure components, you create workflows that integrate these components and provide a single user interface to start and monitor the execution of the workflows. The automation capabilities of vCO reduce delivery time and human error. Plus, having a single point of automation homogenizes your IT services. Automating IT processes using vCO workflows makes them reproducible, so it is assured that the process provides the same result each time it runs.

Workflow Engine

The JBoss-based workflow engine stores the state of each running workflow consistently and persistently in the vCO database, so workflows continue without data loss at the state that they were in when the service stopped. For each workflow, you can specify its behavior after a server restart. For some workflows, you might deactivate this functionality, depending on their semantic.

Graphical IDE



Creating workflows in vCO is like drawing a flowchart in Visio:

1. Drag elements to the schema.
2. Bind and/or promote the parameters in a wizard.
3. Use a connector tool to link the new element to further elements if needed.
4. Use drag-and-drop to bind variables in the **Visual Binding** tab.

The flowchart view of the workflow makes it easy to communicate the intention of the work flow even to nontechnical people.

Workflow Development



vCO enables workflow developers to concentrate on the steps to implement the workflows' functionality instead of implementing the details themselves.

Developing vCO workflows is done mainly by reusing existing components. How to find and reuse these components is the main thing a workflow developer must know. More than 200 -800 ready-to-use workflows are included with vCO. The available plug-ins adds hundreds more.

Suppliers of workflows and other building blocks include:

- VMware
- VMware Professional Services and consultants
- Third-party independent software vendors
- Customer-created libraries

Plug-ins usually also include workflows.

Ways to Use vCO Workflows

Four ways to use workflows are provided:

1. vCO Client
2. Integration with vSphere Web Client
3. Web views
4. Orchestrator Web service API

The vCO client is a standalone Java application, usually installed on the desktops of the Administrator and the workflow developer. The vCO client allows executing and monitoring workflows, browsing through the library and the inventory, importing and exporting packages, and gaining access to resources and configuration elements.

The vCO client provides the only means to develop and edit workflows and actions. As of vSphere 5.1, vCenter Orchestrator is integrated into the vSphere Web Client. This gives vSphere administrators a single pane of glass for their daily tasks.

Web views provide Web-based access to workflows, mainly to execute and monitor workflows. One Web view, called web operator, is bundled with vCO. Plug-ins, applications, or packages from third-party vendors might include other Web views. You can also create custom Web views.

The Orchestrator Web service API allows SOAP- and REST-based programmatic execution and monitoring of workflows. The API is mainly used to start workflows from external systems.

vCO Plug-In Framework



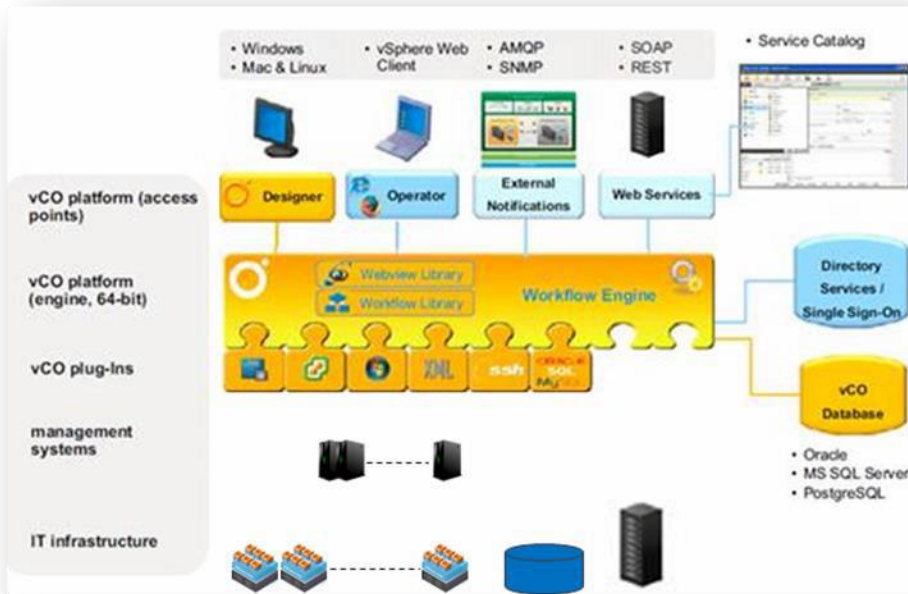
Plug-ins for the vCO platform can come from:

- VMware R&D
- VMware PSO Consultation
- Independent consultants
- Third-party vendors (hardware and software)
- Customers

VMware provides a free vCO plug-in SDK that allows customers to develop their own plug-ins. Some plug-ins included with vCO:

- Database
- Network
- SSH
- Mail

High-Level Product Architecture



vCO is a typical three-tier application:

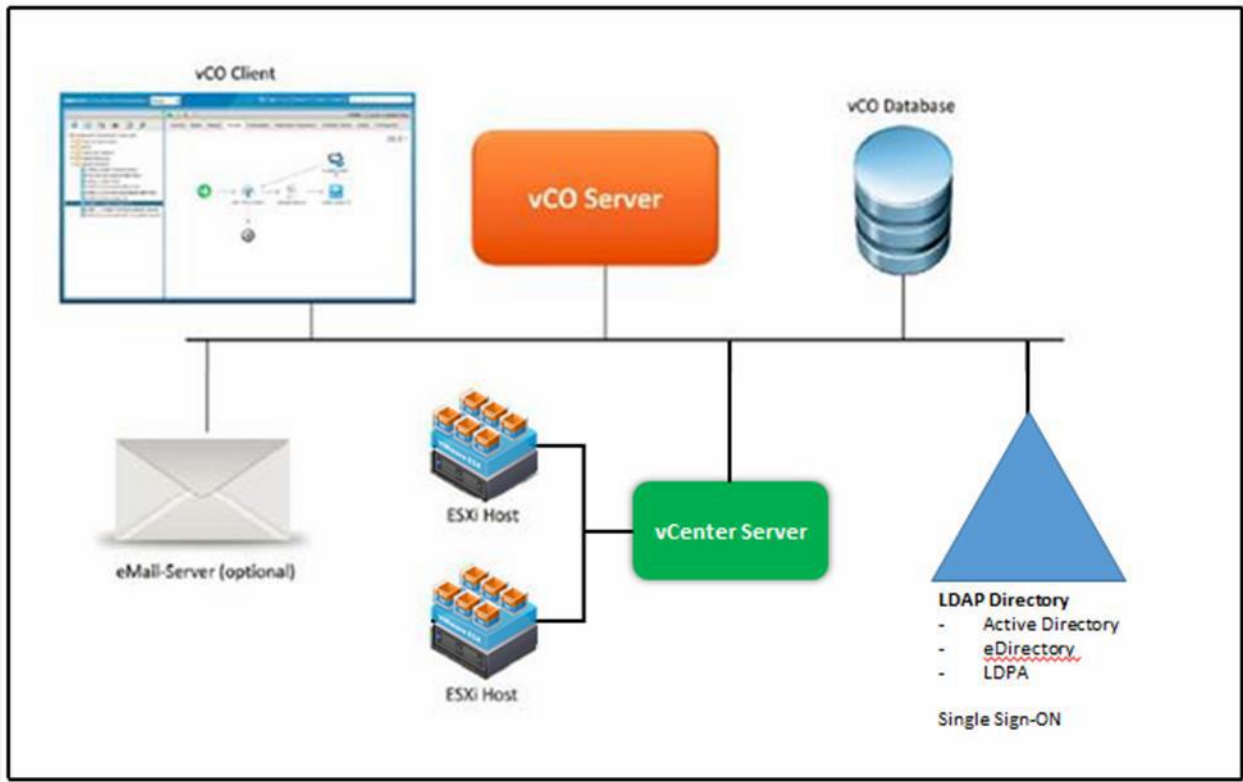
- Client access includes the vCO client, browser-based access (Web views), and the SOAP-based Web service API.
- The middle tier includes the workflow engine, the scheduling engine, the workflow library, the action library, and configuration and resource elements.
- The bottom tier consists of the plug-ins that connects vCO to the external systems. These plug-ins also provide the vCO inventory objects that the workflows work with and work on.

vCO requires as infrastructure:

- A database server where all the content is stored.
- vSphere SSO or an LDAP directory for user authentication (AD, eDirectory, OpenLDAP, Sun LDAP)

Installing and Configuring vCO

Infrastructure Components



Before using VMware vCenter Orchestrator, you need some external infrastructure components. At a minimum, you need:

- A database server to hold the vCO database
- An LDAP directory that vCO can authenticate its users against

You can also use additional infrastructure components, including:

- VMware vCenter Server to automate the VMware vSphere platform (virtual machines, VMware ESXi hosts)
- An SMTP server to send emails from workflows
- vCO plug-ins for other databases, VMware vCloud Director, and third-party hardware and software systems

Installation Requirements: Hardware and Software

2.1 GHz or faster Intel or AMD x86 processor is required. At least two CPUs are recommended. Processor requirements might differ if your database runs on the same hardware.

4GB of RAM. You might need more RAM if your database runs on the same hardware.

2GB disk space. You might need more storage if your database runs on the same hardware.

64-bit Windows Server (2008 or 2008R2)

Installation Requirements: Single Sign-On or LDAP Directory

vCO can use vSphere Single Sign-On or LDAP for:

- User and group information to authenticate users (the vCO client, Web views, and the Orchestrator Web service API)
- Group information for the permissions to workflows
- (Optional) Other Directory information, such as email addresses in workflows

Using vSphere Single Sign-On is recommended (mandatory for vSphere Web Client Integration) Supported LDAP services are:

- Microsoft Active Directory (AD)
- Novell eDirectory
- Sun Java Directory Server

Experimental support:

- OpenLDAP

Installation Requirements: Database

The vCO database holds the workflow library and all the other content, as well as the state of running workflows.

Supported:

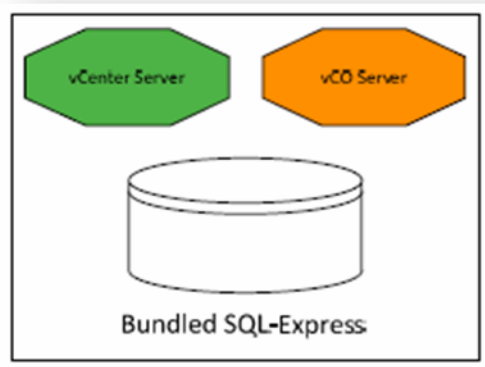
- Microsoft SQL Server
- Oracle
- PostgreSQL

Experimental support:

- MySQL

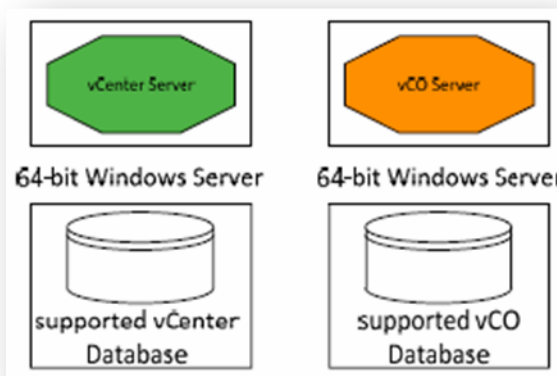
Types of vCO Installations

1) All in one



- Preinstalled and configured with vCenter Server
- Fewer operating system licenses necessary
- All in one: easier to back up
- Fewer dependencies on external systems
- Restart of server means downtime for everything
- Big hardware resources for server are required

2). Separate servers

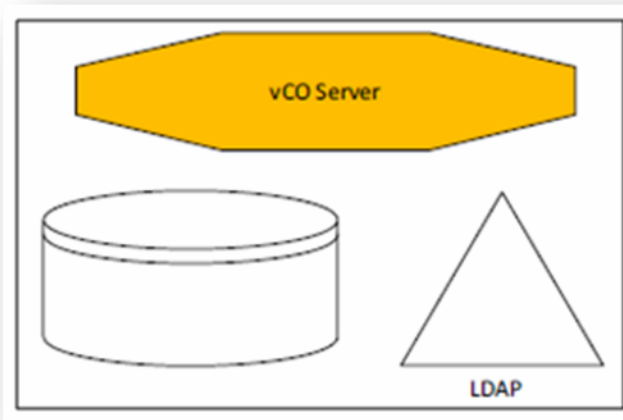


- Detailed components (restart of single service possible, detailed resource allocation possible)
- Better scalability
- Easy to use for more than one vCenter Server instance
- More operating system licenses necessary

VCenter Orchestrator Appliance Installation

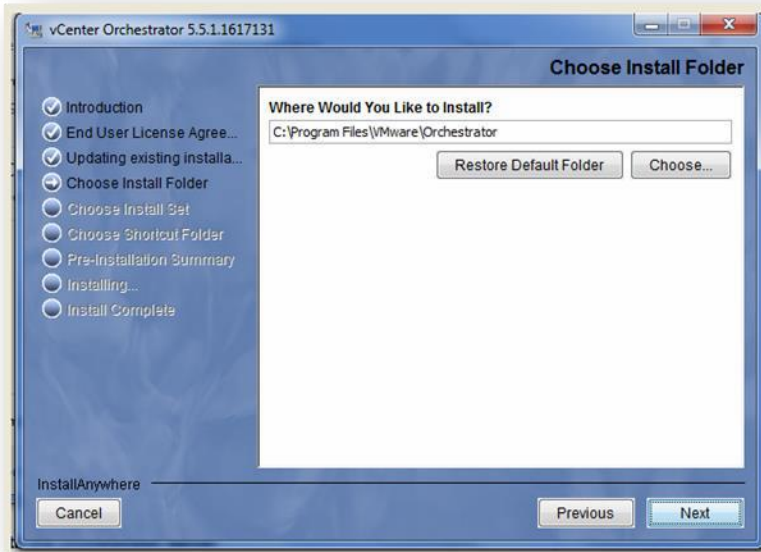
If you only plan to manage a single vCenter Server instance and the virtual infrastructure that it manages, consider the all-in-one architecture.

If you plan to use vCO to automate IT processes throughout the infrastructure, consider separating the vCO installation from vCenter Server.



- Preinstalled and configured as Virtual Appliance
- Based on Suse Linux
- Easy to deploy, operate and update
- No operating system license necessary
- Fully supported for production environments
- No direct execution of local windows commands
- No support for VIX Plugin (no longer needed for vSphere 5.x)

Standalone Installation



The installation file for vCO is on the vCenter Server installation media. To install vCO:

- 1. Accept the license.
- 2. Select the installation directory.
- 3. Select components (vCO client, vCO server, or both).
- 4. Select the location for icons.

Default Installation Locations

Default preinstalled vCO on vCenter Server:

C:\Program Files\VMware\Infrastructure\Orchestrator

Standalone installation:

C:\Program Files\VMware\Orchestrator

On vCO Appliance:

/opt/vmo

Important Paths

Configuration files:

Installation Directory\app-server\server\vmo\conf

Log files (server and workflow logs):

Installation Directory\app-server\server\vmo\logs

Plug-ins:

Installation Directory\app-server\server\vmo\plugins

Web-based vCO configuration utility:

Installation Directory\configuration

Web-based vCO configuration utility logs:

Installation Directory\configuration\jetty\logs

Windows Service Management

After a simple vCenter Installation Orchestrator is preconfigured, you must start the services. After a standalone installation, the VMware vCenter Orchestrator Configuration service appears in Windows Services. This service provides the Web-based vCO configuration utility. Before you can use vCO, you must configure the server and install the VMware vCenter Orchestrator service.

Note: - Start "VMware vCenter Orchestrator Configuration" service.

Logging In to the Configuration Utility:-

Open Web browser with below URL

http://<vCO Host Name >, <IP address of vCO>:8282 https://<vCO Host Name >, <IP address of vCO>:8283

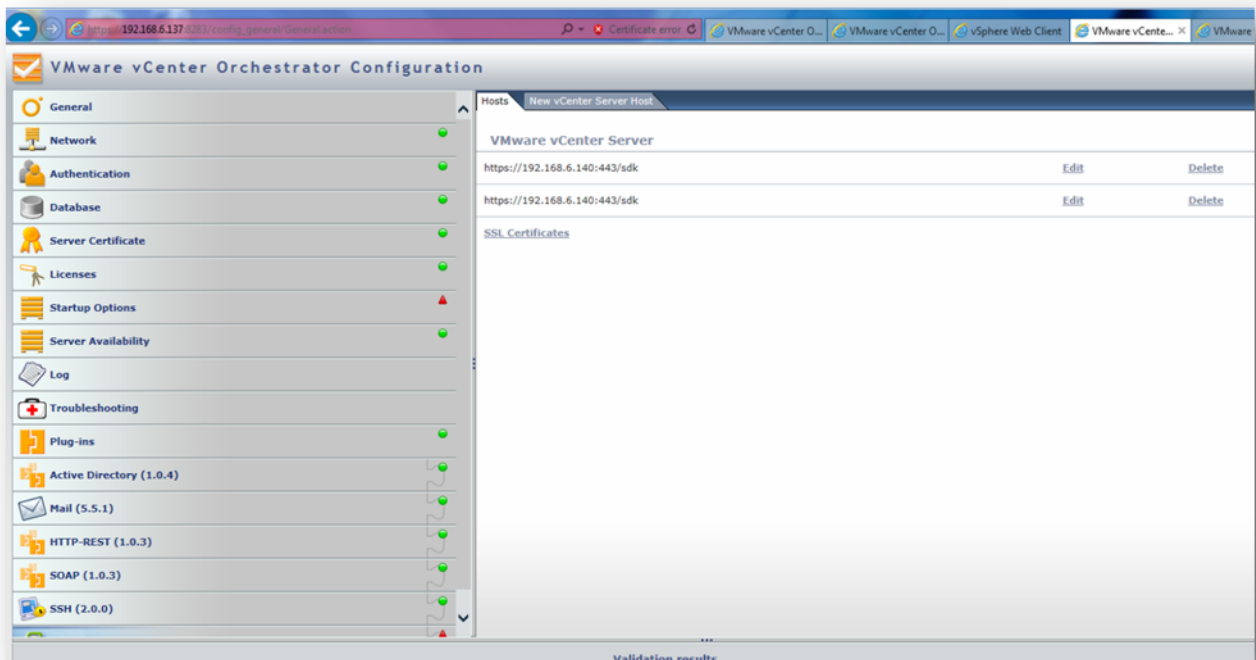
Default login Credentials.

User ID: vmware

Password: vmware



Web-Based Orchestrator Configuration Tool



Navigation Bar

Provides areas for each configuration step. Indicator in each step for validation results are:

- Green: Successful validation
- Red: Validation errors
- Blue: Validation in progress

The vCO service can be started only when all indicators are green.

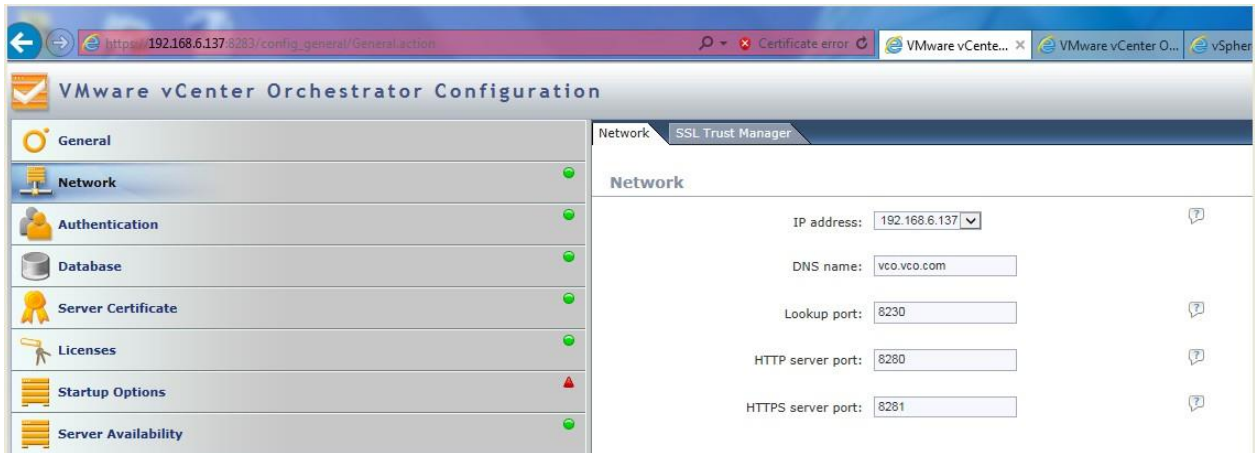
Main Window

Shows the configuration settings on right pane.

Validation Results

The Validation results pane provides informational, warning, and error messages.

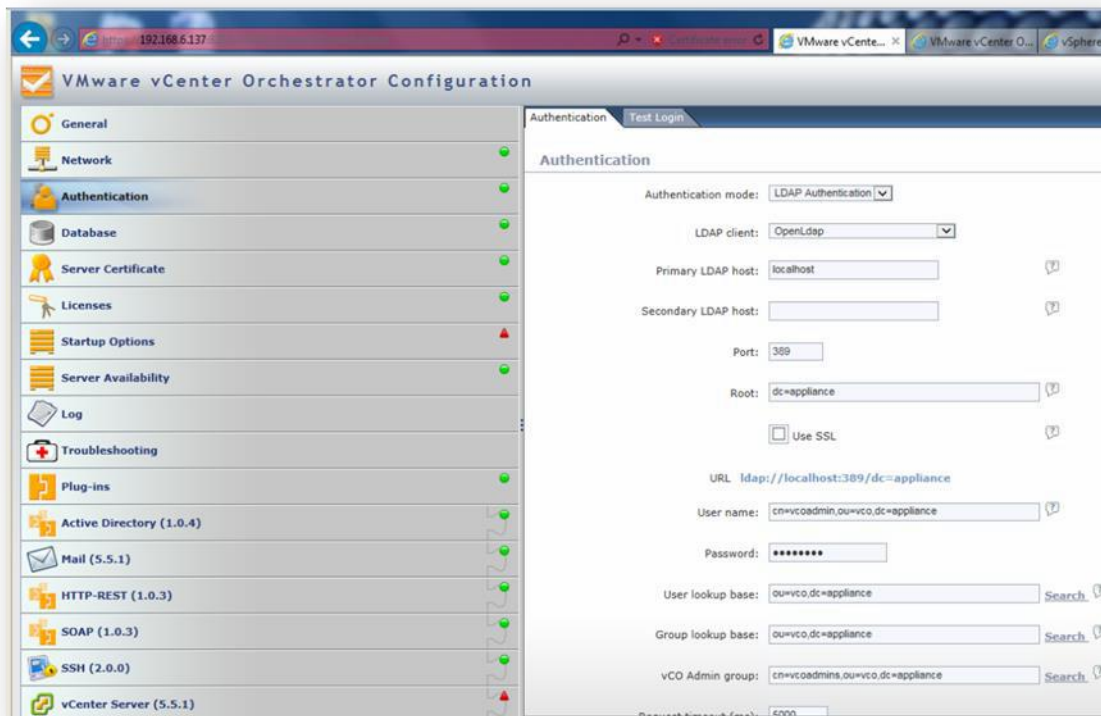
Configuring the Network



Select the network interface that the vCO services. DNS name should be populated automatically. In the SSL Certificate tab you can import SSL certificates from external servers through a URL or from a file you must import the SSL certificate of a vCenter Server system before using.

- vCenter Server systems
- vSphere Single Sign-On (SSO)
- Other vCO servers

Configuring the Authentication Connection



Configure the connection to the Active directory server:

- LDAP client
- Primary LDAP host
- Root
- User name
- User and group lookup base
- vCO administrators group

Configuring the Database Connection



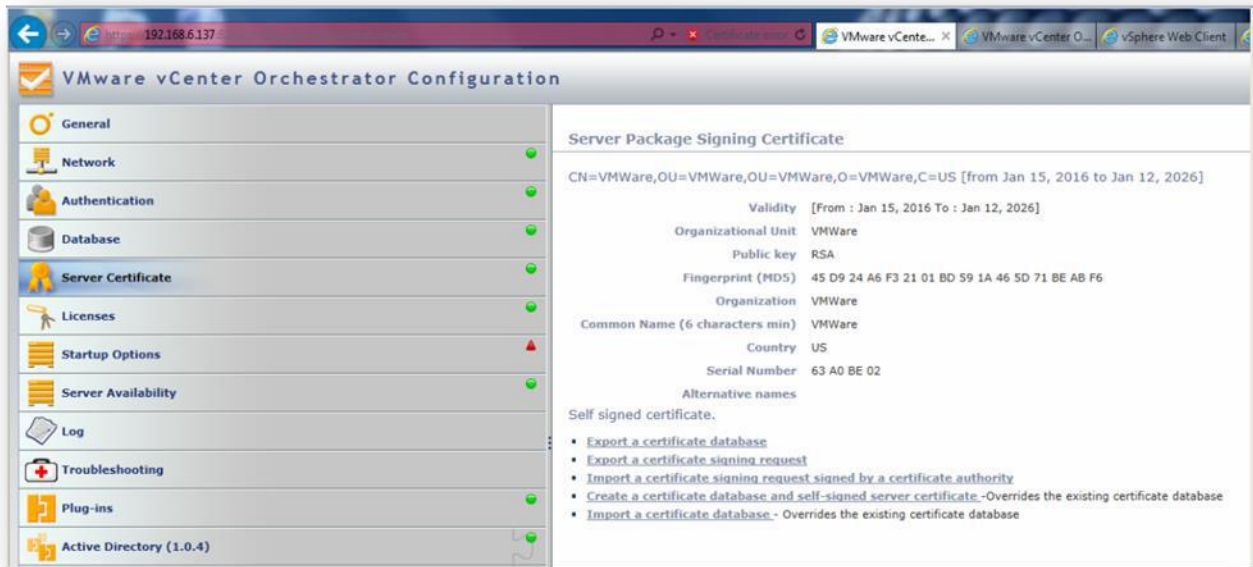
Configure the database connection:

- Select the database type
- User name
- Password
- Database name
- (An empty database must exist)
- Domain

Select the database type: Select SQLServer. User name: dbuser.

Password: dbpasswd

Configuring the Server Certificate and Licenses



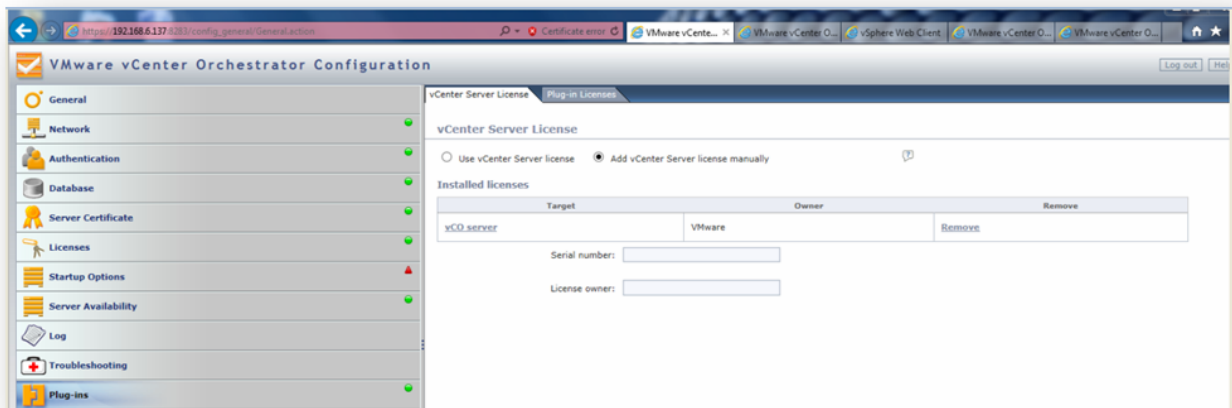
You can either create a new (self-signed) certificate or import a signed certificate. The server certificate is used:

- When you export workflows and packages
- When you want to synchronize content with other vCO servers

For licensing, you can either input a license key or map to a vCenter server instance. There are two kinds of vCO licenses:

- VCenter Standard; Full vCO license
- VCenter Foundation and Essentials; vCO in player mode

Plug-Ins



Enter a user name and password in the vCO of administrators group. Built-in plug-ins are installed during the first startup of vCO.

Examples of additional plug-ins:

- Microsoft Active Directory (by VMware)
- vCloud Director (by VMware)
- Cisco UCS
- VMware Update Manager (by VMware)
- REST and SOAP plug-ins (by VMware)
- VMware VIX (experimental)

Plug-In Configuration: vCenter Server

You can add multiple vCenter Server systems to a single vCO instance.

From every vCenter Server system you must import the SSL certificate (network/SSL certificates). Specify an administrator credential.

Select the authentication strategy:

- Session per user
- Shared session

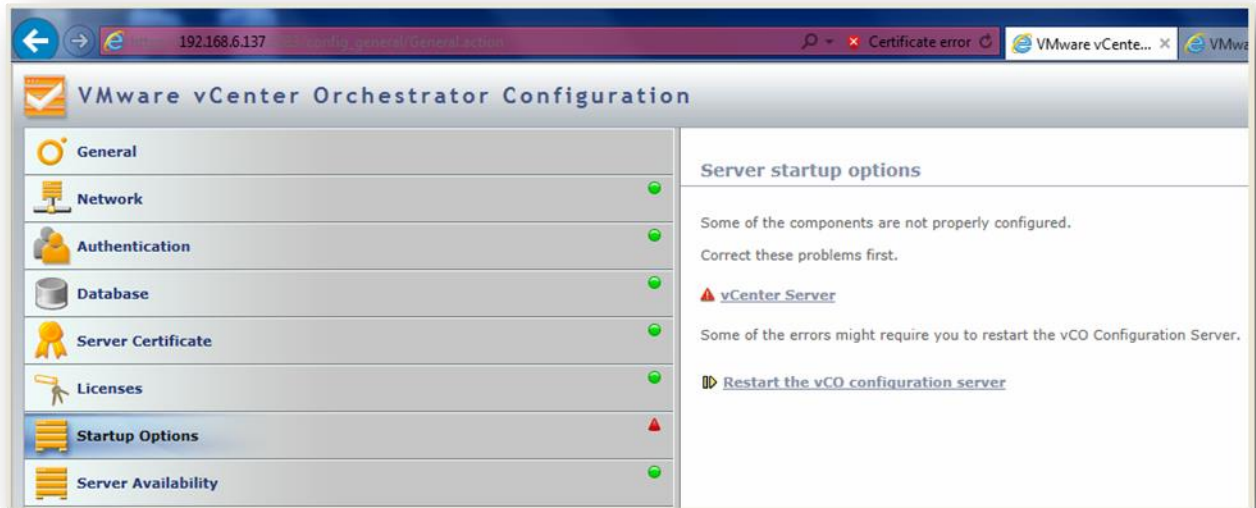
If using SSO, configuring a vCenter Server will also register vCO to its vSphere Web Client.

The administrator user must be a valid user with administrative privileges on your vCenter Server system, preferably at the top of the vCenter Server tree structure. vCO uses these credentials to monitor the vCenter Web service (typically to operate vCO system workflows).

For the user workflows, you can choose either to use a session per user or to use a shared session. When you select session per user, vCO uses the vCO login of the user who runs a workflow to connect to vCenter Server. So vCO and vCenter Server must be in the same domain, and the user needs appropriate permissions in vCenter Server. In vCenter Server logs and Tasks & Events (in the vSphere Client), you will see the user name of the user who starts the workflow.

When using a shared session, you can provide any user name and password of a valid vCenter Server user with appropriate permissions. vCO uses these credentials to connect to vCenter Server, regardless of who starts the workflow. vCO and vCenter Server do not have to be in the same domain. But you might have a worse audit trail, because tasks in vCenter Server are executed by the same user.

Managing the vCO Service



When all lights are green, click Startup Options to do the following:

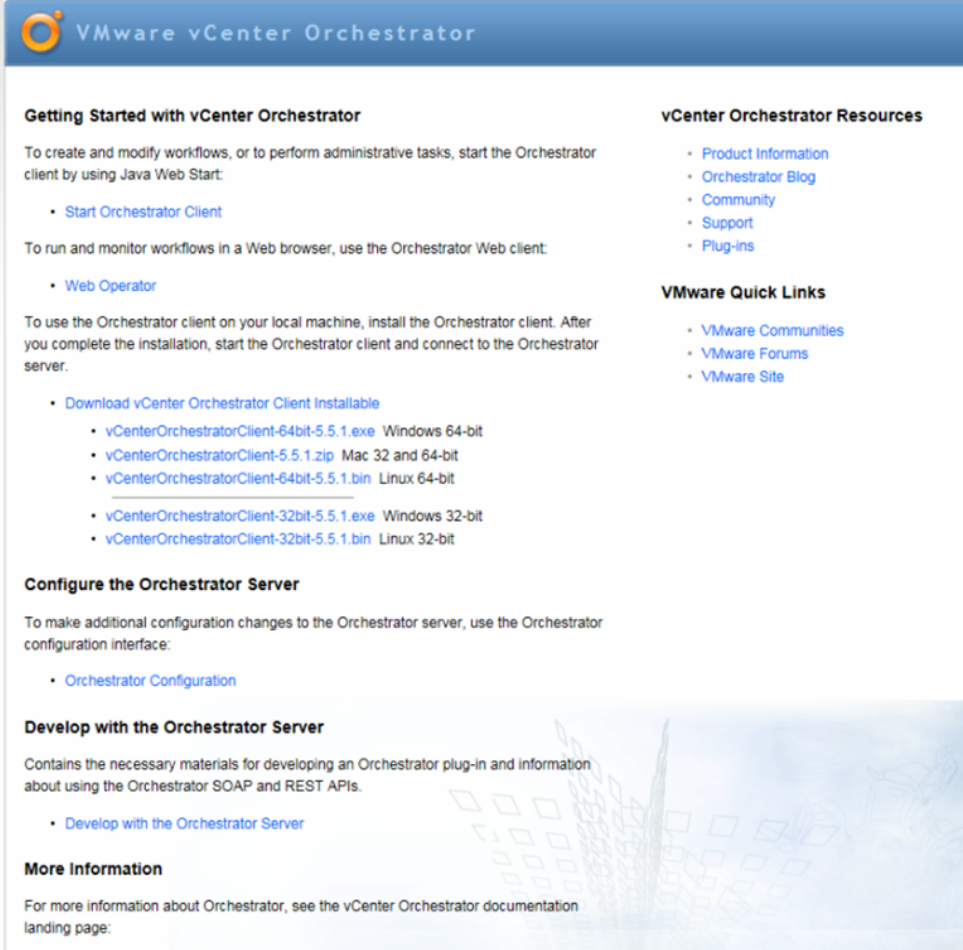
- Install the VMware vCenter Orchestrator service.
- Monitor, start, and restart the service.
- Restart the vCO configuration service.

vCO Client Overview

The vCO client is a standalone Java application used to log in to vCO. Installation files for Windows, Linux and Mac OS can be downloaded from the vCO Server.

<https://<vCO Host Name >, <IP address of vCO>:8281>

- Execute and monitor workflows.
- Create and edit vCO elements.
- Develop custom workflows.

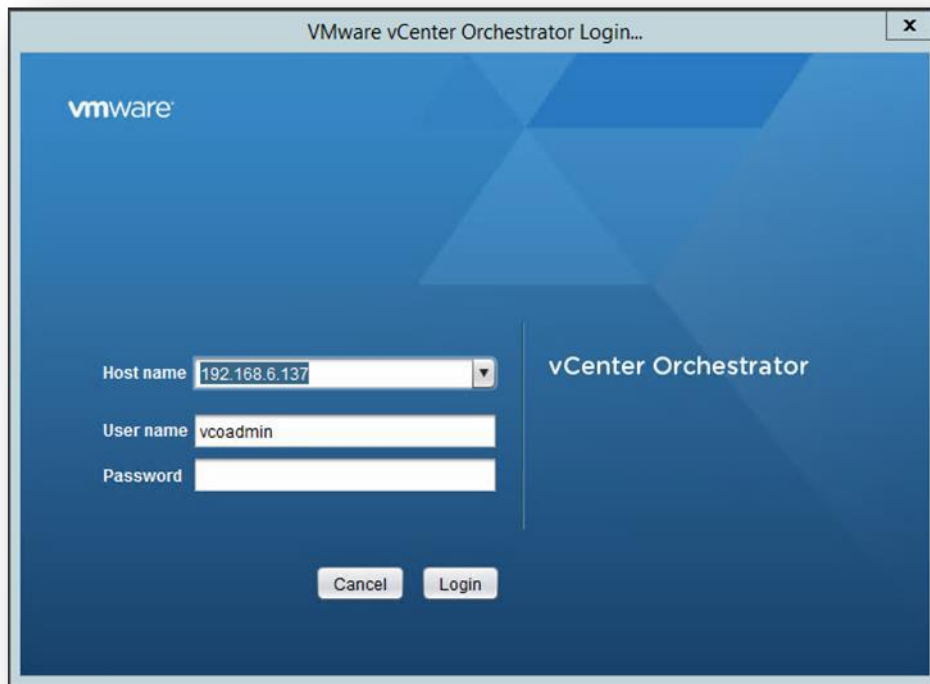


The screenshot shows the VMware vCenter Orchestrator Getting Started page. The page has a blue header with the VMware logo and the text "VMware vCenter Orchestrator". The main content is organized into several sections:

- Getting Started with vCenter Orchestrator**
 - To create and modify workflows, or to perform administrative tasks, start the Orchestrator client by using Java Web Start:
 - [Start Orchestrator Client](#)
 - To run and monitor workflows in a Web browser, use the Orchestrator Web client:
 - [Web Operator](#)
 - 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.
 - [Download vCenter Orchestrator Client Installable](#)
 - [vCenterOrchestratorClient-64bit-5.5.1.exe](#) Windows 64-bit
 - [vCenterOrchestratorClient-5.5.1.zip](#) Mac 32 and 64-bit
 - [vCenterOrchestratorClient-64bit-5.5.1.bin](#) Linux 64-bit
 - [vCenterOrchestratorClient-32bit-5.5.1.exe](#) Windows 32-bit
 - [vCenterOrchestratorClient-32bit-5.5.1.bin](#) Linux 32-bit
- Configure the Orchestrator Server**
 - To make additional configuration changes to the Orchestrator server, use the Orchestrator configuration interface:
 - [Orchestrator Configuration](#)
- 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 vCenter Orchestrator documentation landing page.

On the right side of the page, there are two additional sections:

- vCenter Orchestrator Resources**
 - [Product Information](#)
 - [Orchestrator Blog](#)
 - [Community](#)
 - [Support](#)
 - [Plug-ins](#)
- VMware Quick Links**
 - [VMware Communities](#)
 - [VMware Forums](#)
 - [VMware Site](#)

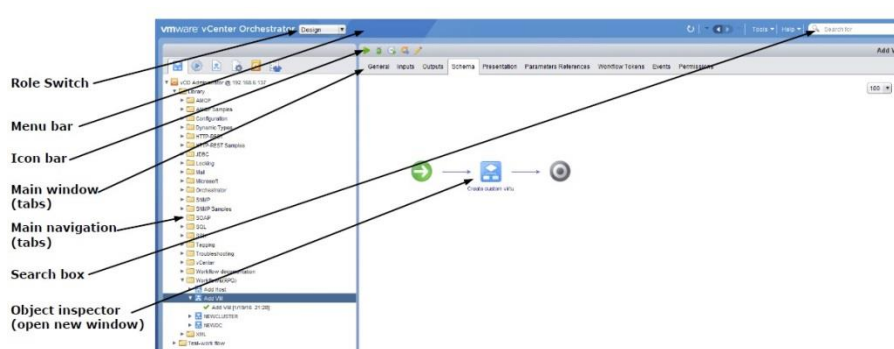


To log in by using the vCO client, you must have:

- Host name or IP address of the server
- User name
- Password

Only users in the vcoadmins LDAP group defined in the vCO configuration can log in. The vCO client connects to the vCO server over network ports 8230, 8240, 8244, 8250.

vCO Client Overview



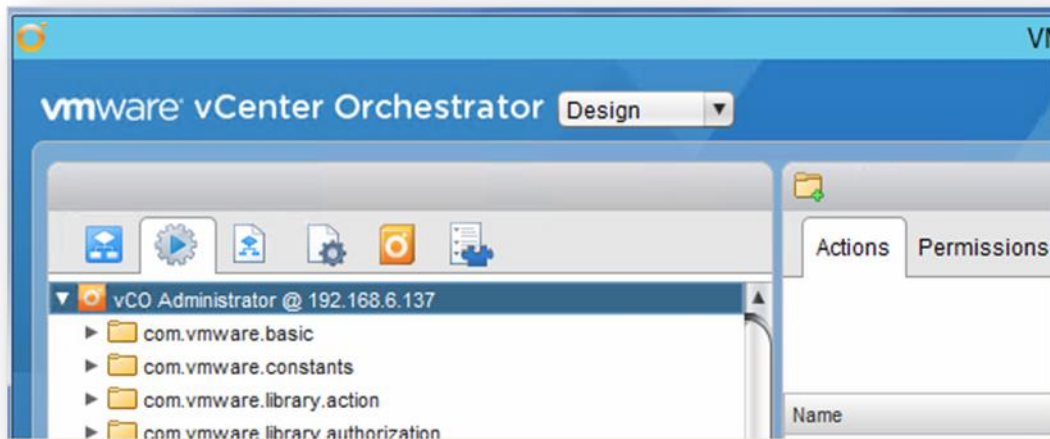
The menu bar has forward and back navigation buttons.

The Role switch allows adjusting the screen layout and shown tabs for different user roles of vCO:

- Run: Focused on starting, scheduling and monitoring workflow executions.
- Develop: Focused on developing new workflows and actions.
- Administer: Operate the vCO installation: Manage packages, vCO Inventory.

The navigation for configurations, workflows, resource elements, and the inventory is tree-based.

vCO Content Elements Overview



vCO has several types of content elements:

- Workflows (with corresponding workflow token)
- Actions
- Packages
- Inventory
- Resources
- Configurations
- Workflows

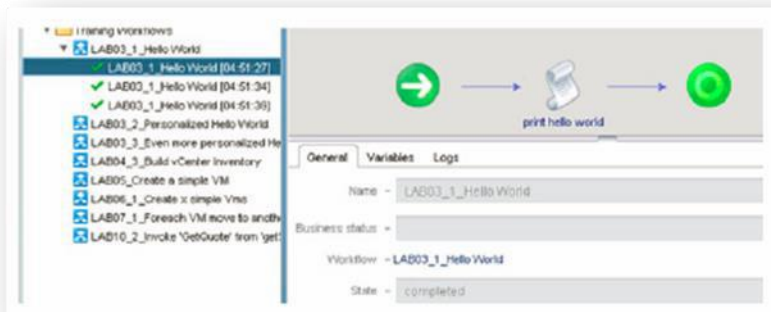
Elements can be exported and imported individually.

Workflows



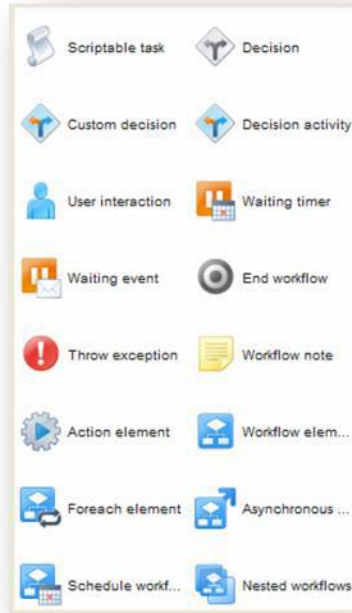
Workflows define how to perform an automated task. Workflows are organized in a hierarchical tree structure. The included library provides more than 200 ready-to-run workflows. Third-party plugins can include additional workflows; you can build your own workflows (from the beginning or by reusing existing workflows).

Workflow Tokens



Every workflow that is run is saved in a workflow token, which includes:

- Variables (input and output parameters, attributes)
- Events and logs (from `Server.log()`)
- The state of the workflow
- The current element for running workflows (allows check pointing)

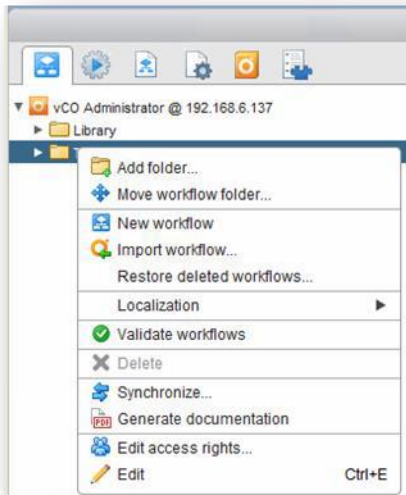


A workflow token has one of following states:

- Running – The workflow is running. The current element is marked with a yellow background in the **Schema** tab.
- Waiting for User Interaction – The workflow is waiting for user input (in a user interaction Element)
- Waiting for Event or Timer – The workflow token is suspended while it waits for a signal from an external trigger or a timer before resuming. Long-running workflows enter this state while they wait for the signal to resume running. During the waiting period, the workflow threads become passive.
- Canceled – The workflow was canceled by a user.
- Completed – The workflow has finished.
- Failed – An error (an uncaught exception) occurred, breaking the workflow execution. The Workflow element that caused the error is marked with a red background in the **Schema** tab.

Creating a Workflow

Start from the beginning (right-click a folder and select New Workflow)



Actions



Script parts that implement a task

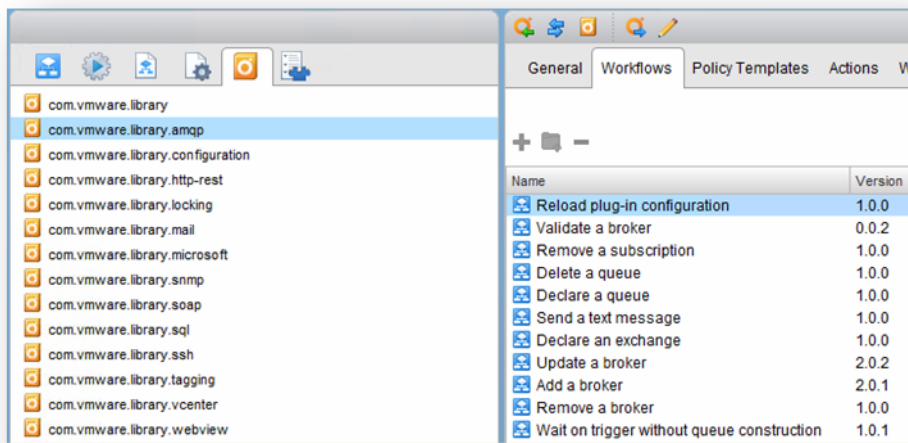
- Are comparable to functions in common programming languages
- Can have multiple input parameters but only one return value
- Are used as elements in workflows
- Are organized into modules

Actions are comparable to functions or methods in programming languages. You cannot execute actions directly. You have to create a wrapper workflow to test actions during development. The naming convention (not required, but recommended) for action modules is like the naming convention for package names in Java, for example, `com.vmware.vcenter.vm`. The name of the action itself cannot have spaces or special characters, so camel Caps notation is usually employed.

Calling Actions in a Workflow

Calling an action through a method call in a scripting element is potentially problematic because doing so hard-codes the names of the module and the action. If you later change the name of the action, the name used in the scripting element will no longer be correct.

Packages



A package is an easy-to-transfer collection of vCO content elements:

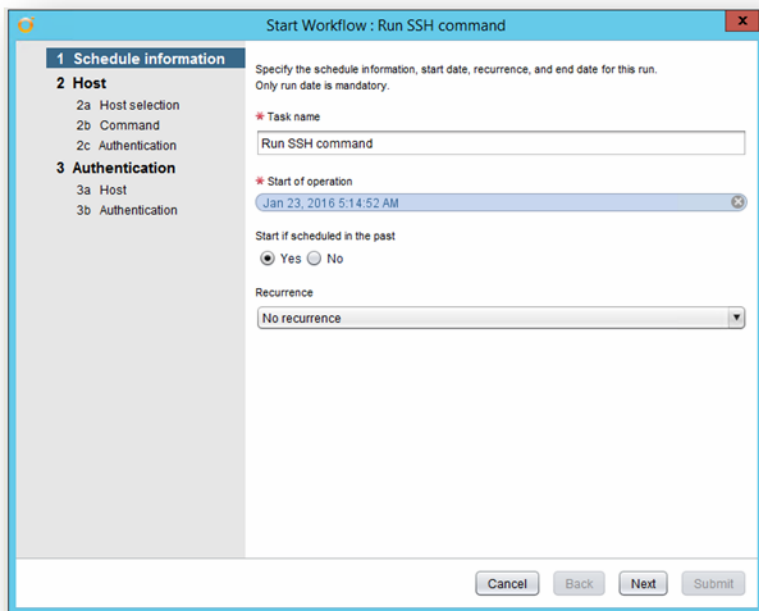
- Workflows
- Actions
- Configurations
- Web views
- Plug-ins

Workflow Scheduler

The workflow scheduler allows the automatic start of workflows, Scheduled workflows are also called tasks.

Use cases:

- Reporting
- Maintenance
- Health checks
- Nightly deployments



When creating a scheduled task to call a workflow, you can select:

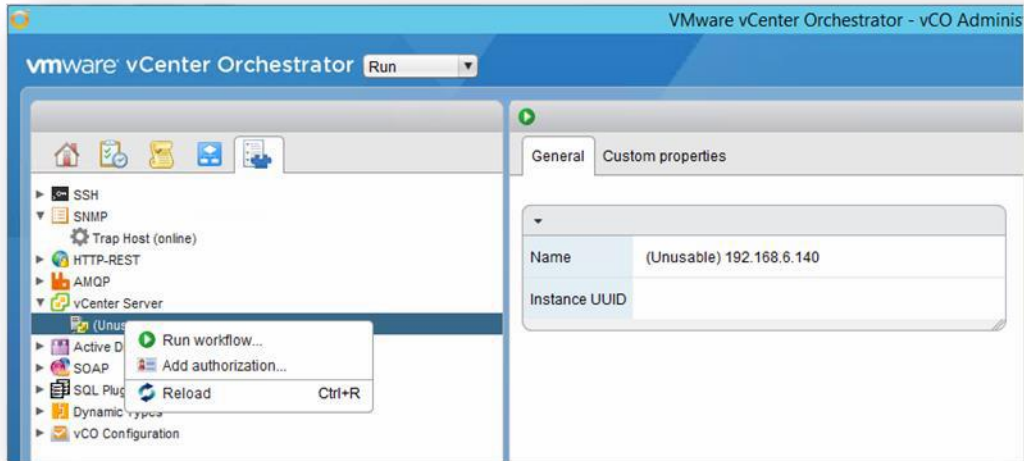
- Recurrence (once, every minute, hourly, daily, weekly, monthly)
- Start and (optional) end time

You must enter every input parameter of the workflow. Workflows developed to be used as a scheduled task often have special characteristics:

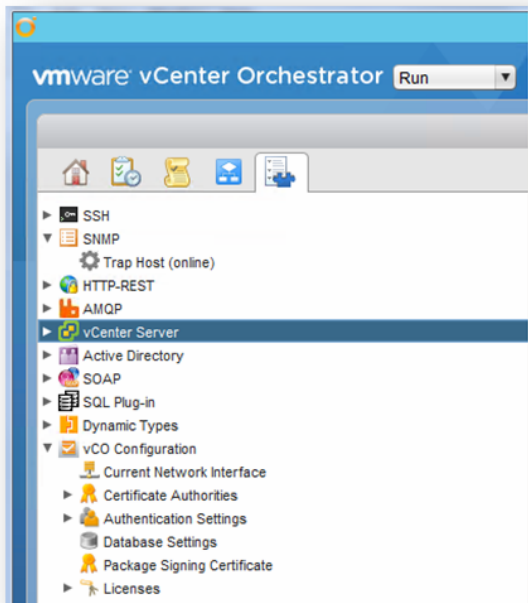
- Fewer predefined input parameters
- No user interaction elements
- Generic methodology

vCO Inventory

The inventory connects vCO to external systems. Workflows that are associated with objects can be called by right clicking the object.



Plug-ins defines the inventory, the objects in the inventory, and the workflows associated with the objects. Any plug-in can expose its objects through the vCO inventory. The vCenter Server plug-in is the plug-in most often used this way. You can connect up to 10 vCenter Server instances to a single vCO server. Some of the objects in the inventory allow a direct start of work-flows on them (as defined by the developer of the plug-in). Right-click the object and select Start Workflow. The structure of inventory objects is defined in vso.xml, the main descriptor file of every vCO plug-in.



SSH plug-in:

PreregisteredSSH servers

- Microsoft Active Directory:

Users, groups, organizational units

- SOAP / REST:

Registered web-service endpoints

- SQL Plugin:

Database tables

- VMware vCloud Director:

Provider virtual datacenter, catalog, deployed vApps

- Cisco UCS:

Blades, enclosures, profiles

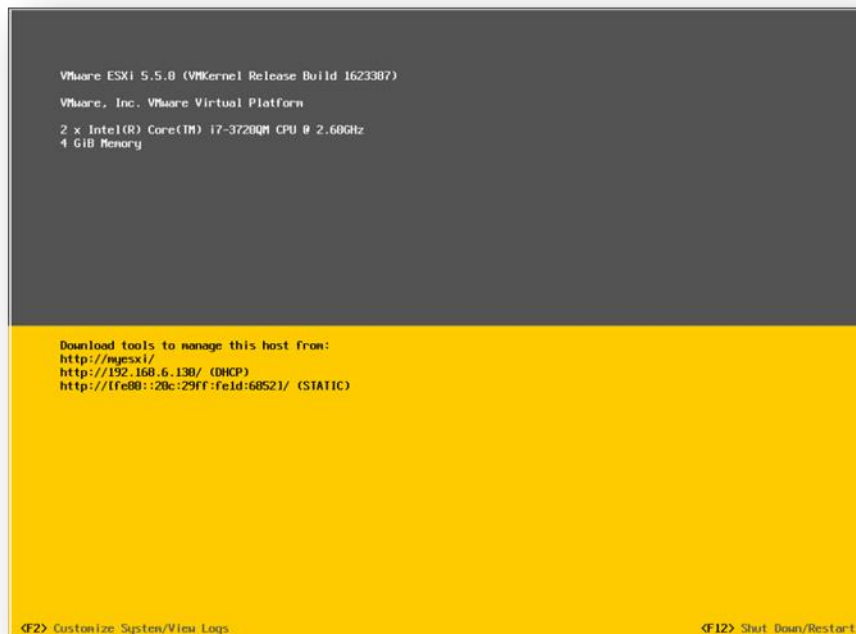
- Custom plug-ins (for example, for a ticketing system)

White Paper Environment

Deployment

We deployed the below environment for this technical article by installing Active Directory, vCenter, vCenter Orchestrator.

- 1) Installed ESXi 5.5 hypervisor on baremetal, and assigned IP 192.168.6.130.

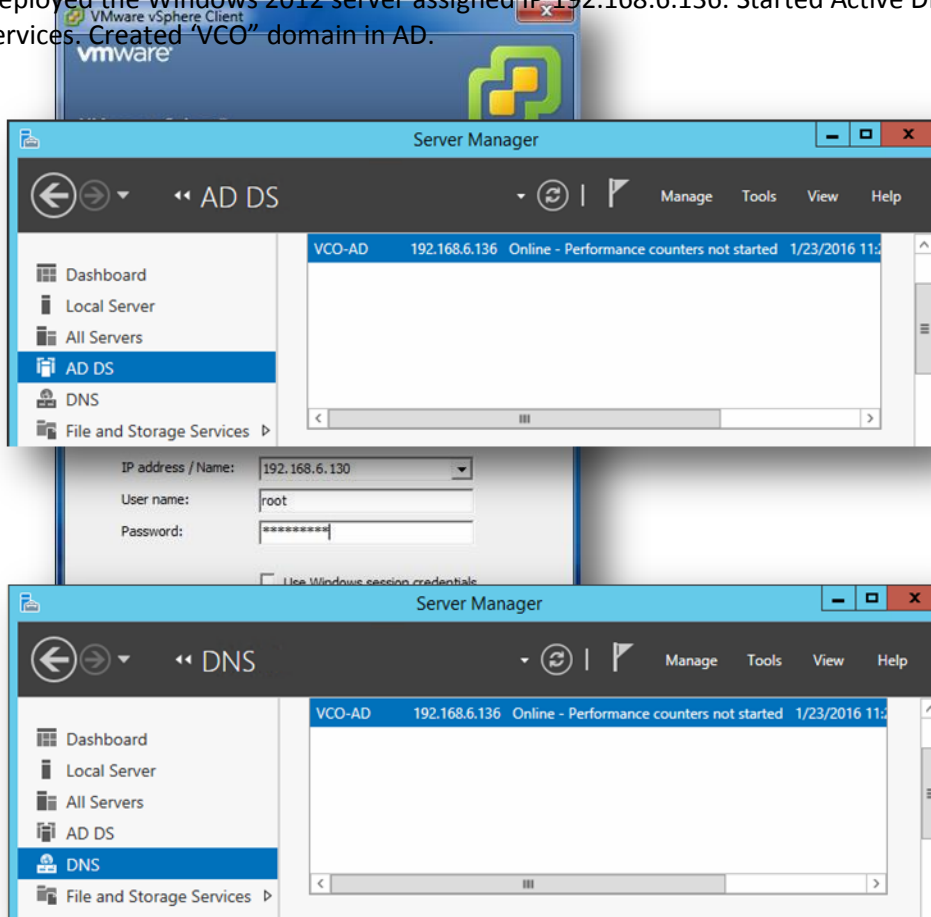


- 2) Accessed the IP of ESXi through web browser like below, and download vSphere Client (Thin Client).

<https://192.168.6.130>



- 2) Logged in to ESXi through vSphere client.
- 3) Deployed the Windows 2012 server assigned IP 192.168.6.136. Started Active Directory, DNS services. Created "VCO" domain in AD.



- 4) Deployed vCenter server (SUSE Linux) ova on top of ESXi.
Assigned IP address 192.168.6.140

```
VMware vCenter Server Appliance 5.5.0.10300 Build 1945271
To manage your appliance please browse to https://192.168.6.140:5480/
Welcome to VMware vCenter Server Appliance
Quickstart Guide: (How to get vCenter Server running quickly)
 1 - Open a browser to: https://192.168.6.140:5480/
 2 - Accept the EULA
 3 - Select the desired configuration mode or upgrade
 4 - Follow the wizard

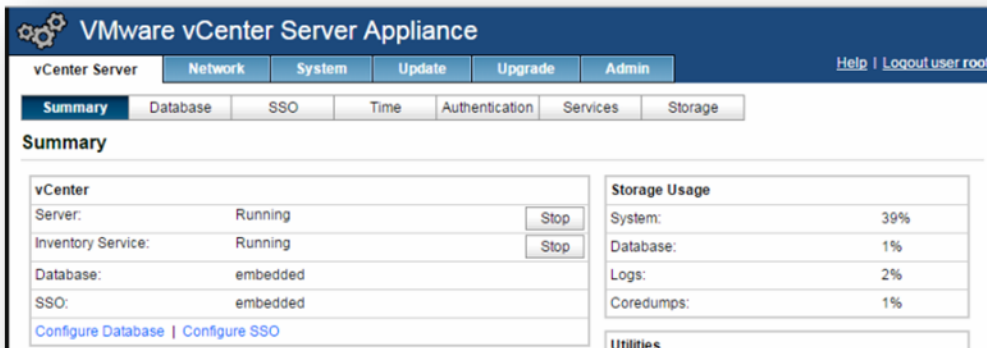
The configured appliance will be ready to use.
In case of upgrade the appliance will reboot and may change
its network address.

SSL thumbprints
vCenter Server: E7:10:B7:9D:9B:42:A4:7E:A9:EE:CC:C4:9F:A0:6E:97:42:5C:21:CF
Lookup service: 7B:4A:91:C4:E4:86:BF:D6:C5:52:FE:43:03:D6:C3:08:DC:14:4F:D9

=Login                                     Use Arrow Keys to navigate
Timezone (Current:UTC)                     and <ENTER> to select your choice.
```

Browsed the VMware vCenter Server Appliance Configuration window through IP with 5480 port as below.

<https://192.168.6.140:5480>.



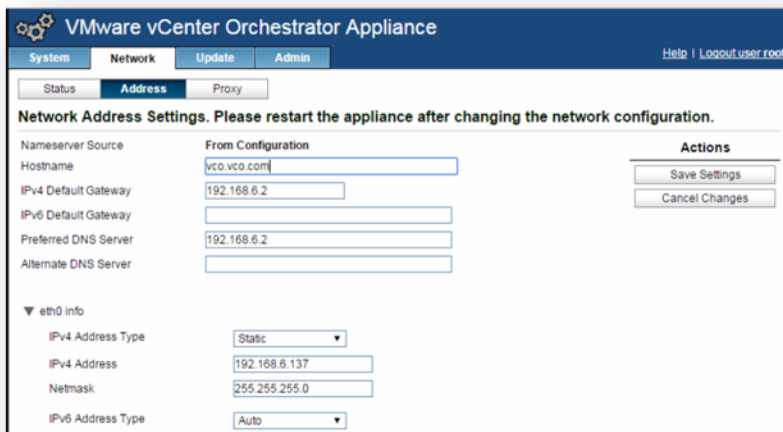
- 5) Deployed vCenter Orchestrator server (SUSE Linux) ova on top of ESXi.
Assigned IP address 192.168.6.137.

```
VMware vCenter Orchestrator Appliance - 5.5.1.0 Build 1617225
To manage your appliance browse to http://192.168.6.137/
Welcome to VMware vCenter Orchestrator Appliance
Quickstart Guide: Use the following URLs to use the appliance:
1 - http://192.168.6.137 - vCenter Orchestrator Appliance Home Page
2 - https://192.168.6.137:8283 - Orchestrator Configuration
3 - https://192.168.6.137:8281 - Web Operator
4 - https://192.168.6.137:5480 - Appliance Configuration

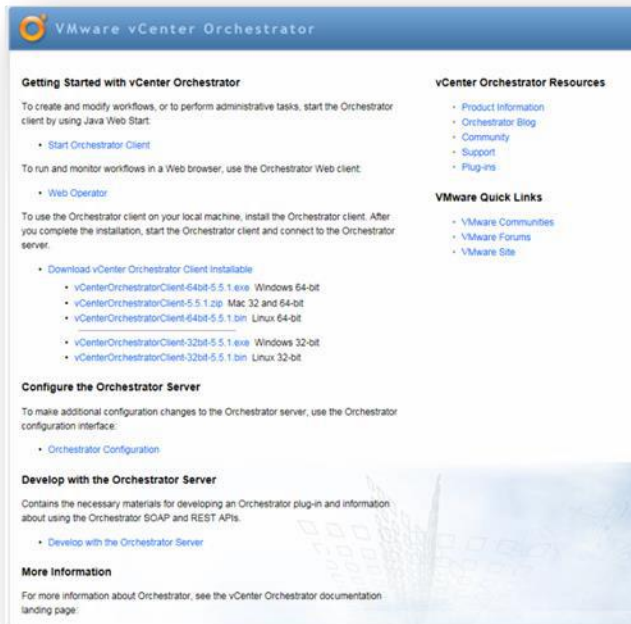
*Login
Set Timezone (Current:UTC)

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

Browsed the VMware vCenter Orchestrator Appliance Configuration window through IP with 5480 port as below, gave the required parameters.
<https://192.168.6.137:5480>.

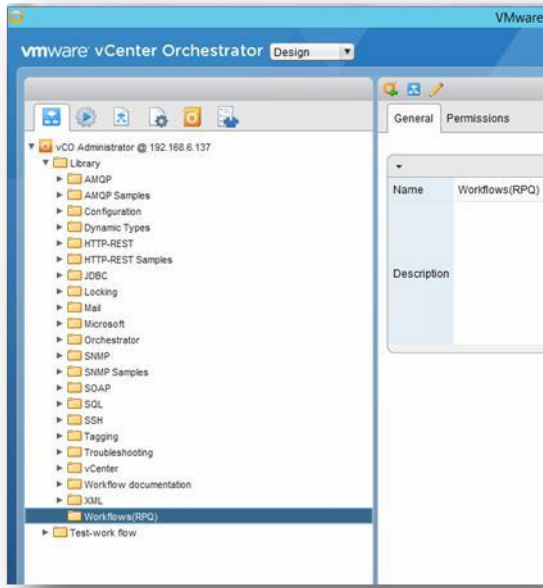


6) Downloaded the Orchestrator Client as below and gave the required authentication to log-in to vCenter Orchestrator server.

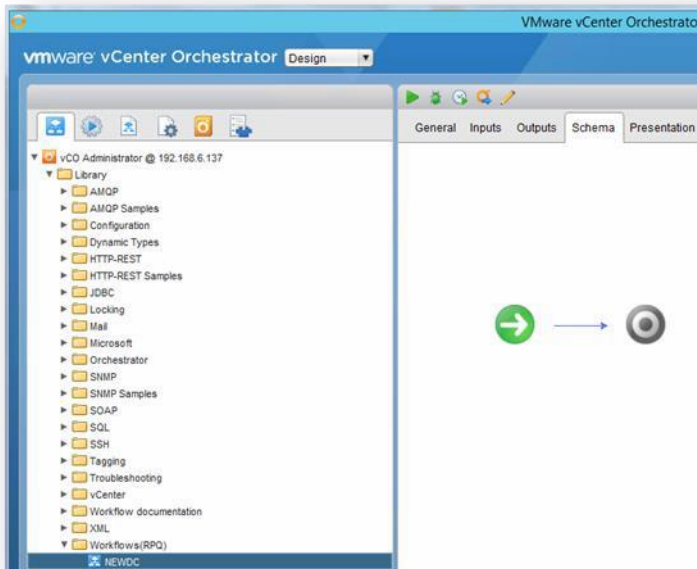


After login to VCO client, our first task is to create Data Center using workflows

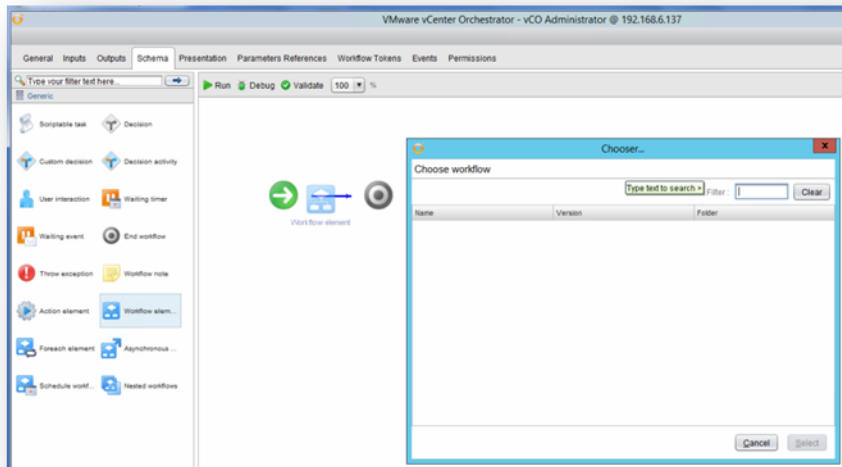
1. First select Design Mode in Orchestrator client, go to workflows Tab, then Create New folder under Library folder.



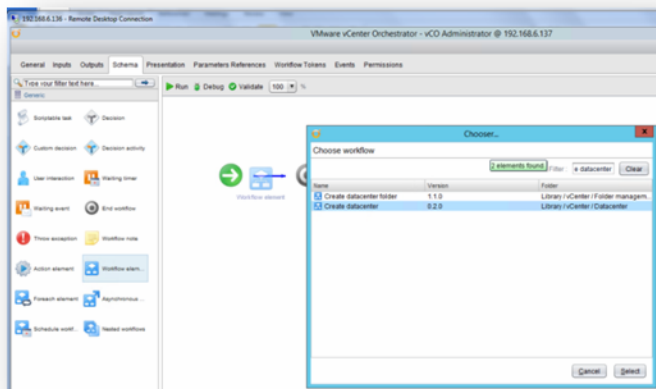
2. Under new created folder, create new workflow by right clicking on the folder.



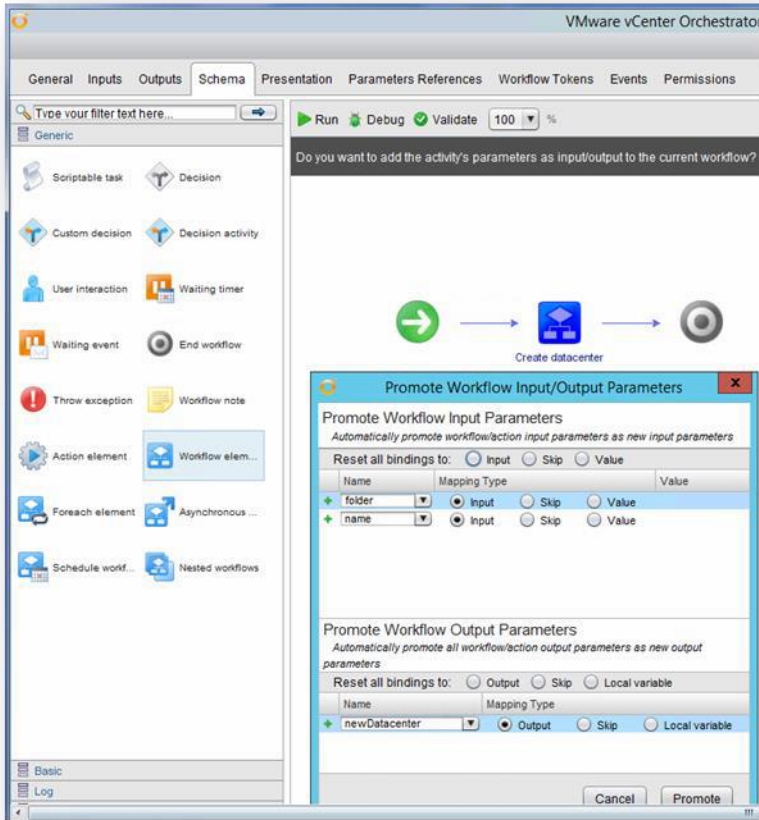
3. In that new workflow, choose Edit option by clicking on pencil symbol. Now your schema tab went to edit mode as per our task drag and drop the work flow element in between start and stop elements. The workflow element immediately prompts you to **Chose workflow window**, as shown below.



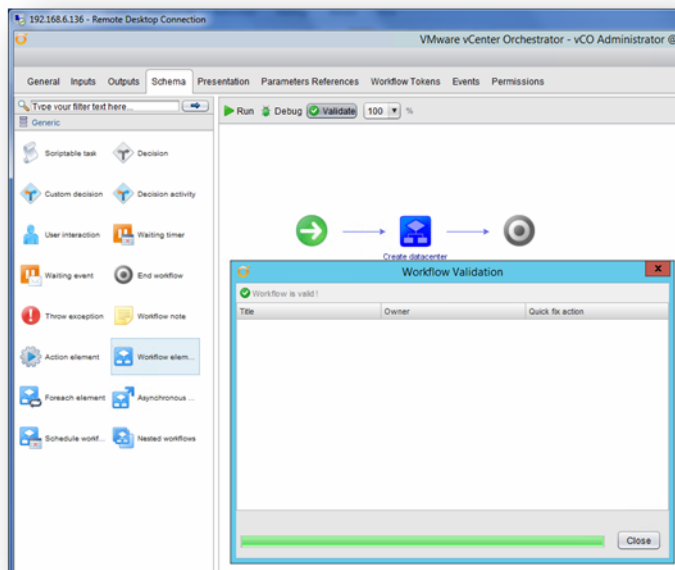
- Now choose workflow window. you can search for “create Datacenter” workflow using the filter option and select it.




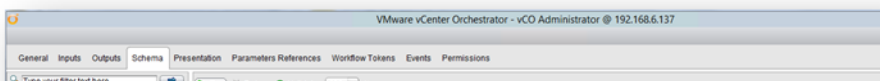
- Immediately you will get the message, “Do you want to add the activity’s parameters as input/output to the workflow?” Select “setup” option. Now you can get the “**promote window**”. If you want to give input and output parameters you can assign or you just select promote. While running workflow you can give input/output parameters.



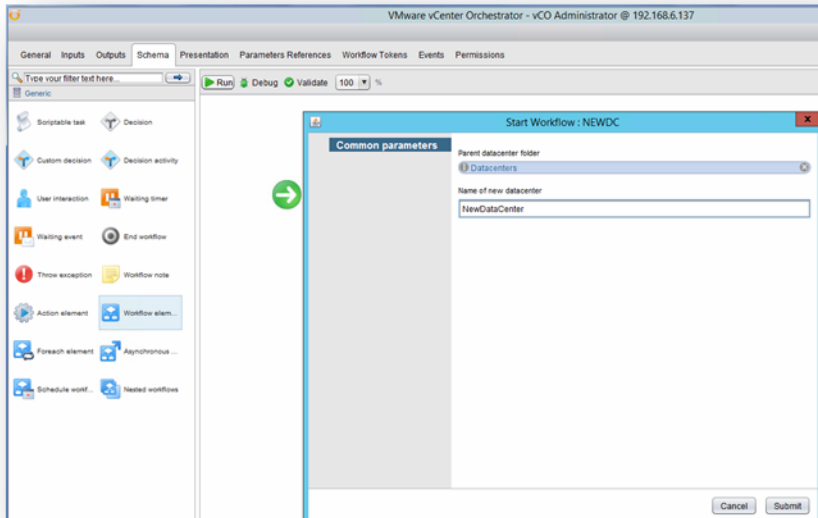
6. Select the Promote option, then click on the " Validate" tab on top of the schema window to date the schema.



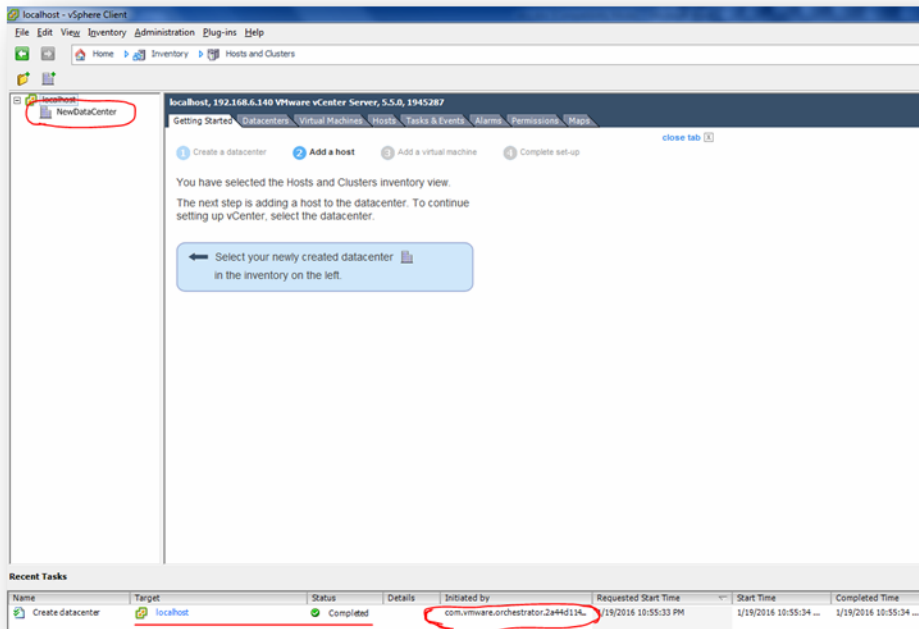
7. Close the "workflow Validation" Run  the Workflows. It will prompt you to "start work flow 2016 EMC Proven Professional Knowledge Sharing



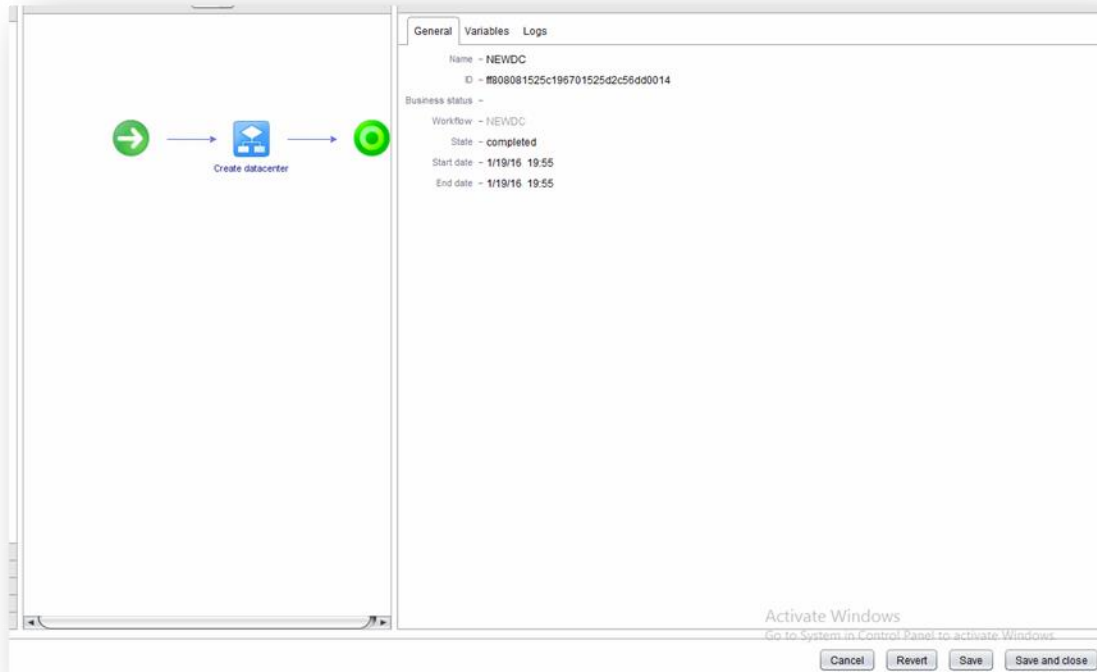
window". Set the "parent Datacenter folder" and "Name of New Datacenter" and then "submit". Now you can observe the data center creation in vCenter



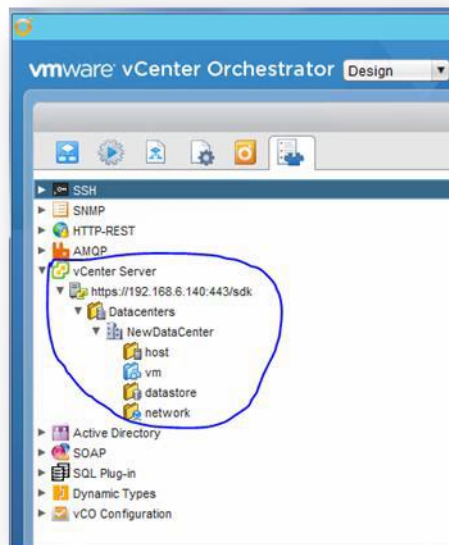
Now "Submit" the workflow and observe the vCenter through vSphere as shown in the screen shot.



8. Final output of the Workflow through "Orchestrator". Save and close the window.

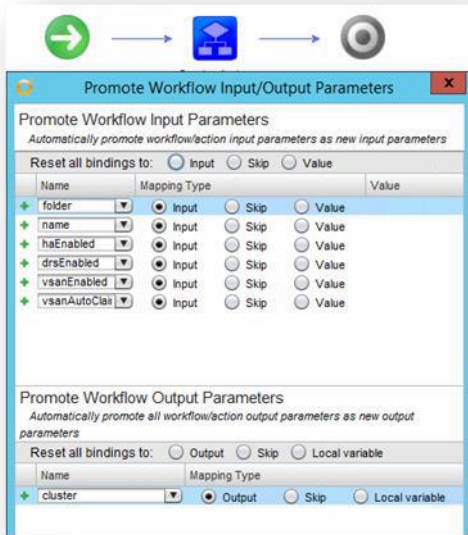


9. You can observe the newly created data center in the Inventory Tab of the Orchestrator.



Our second task is Create cluster, Host and VM under newly created data center.

1. Same as above. Under newly created folder create new workflow for cluster "NEWCLUSTER" and then give the input parameters to promote it.



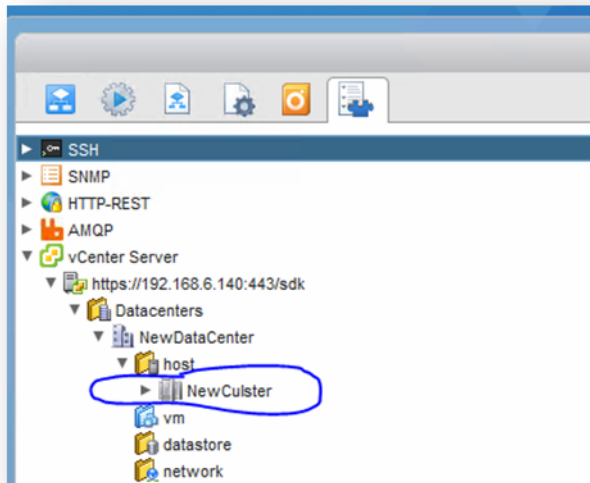
2. Validate and run the workflow. You will get the output as shown below.



3. You can observe the “NewCluster” in vCenter also as shown below.

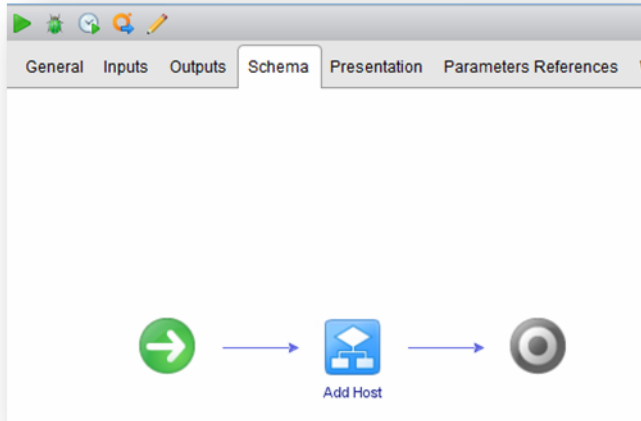


4. You can observe the newly created data center in the Inventory Tab of Orchestrator.

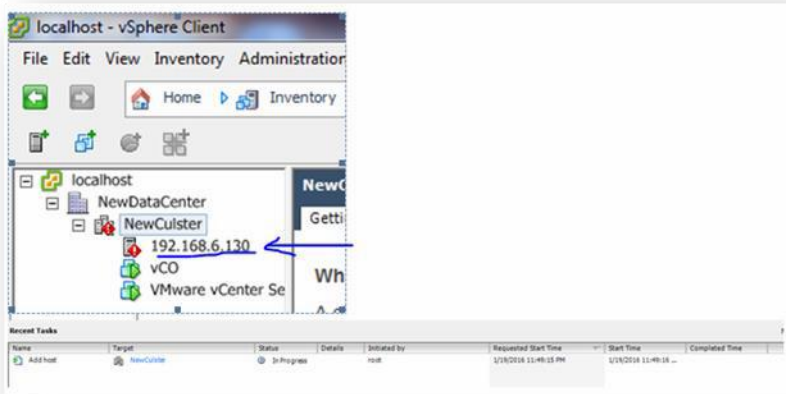


Adding the Host to newly created cluster through Workflow.

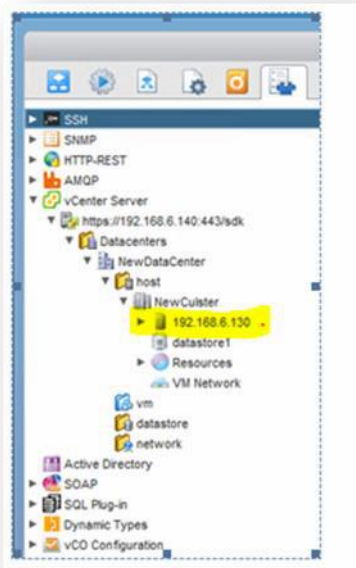
1. Follow the above steps to create Host by giving appropriate input.



2. Ran the above workflow "add new Host" as shown below. Host is added to vCenter.

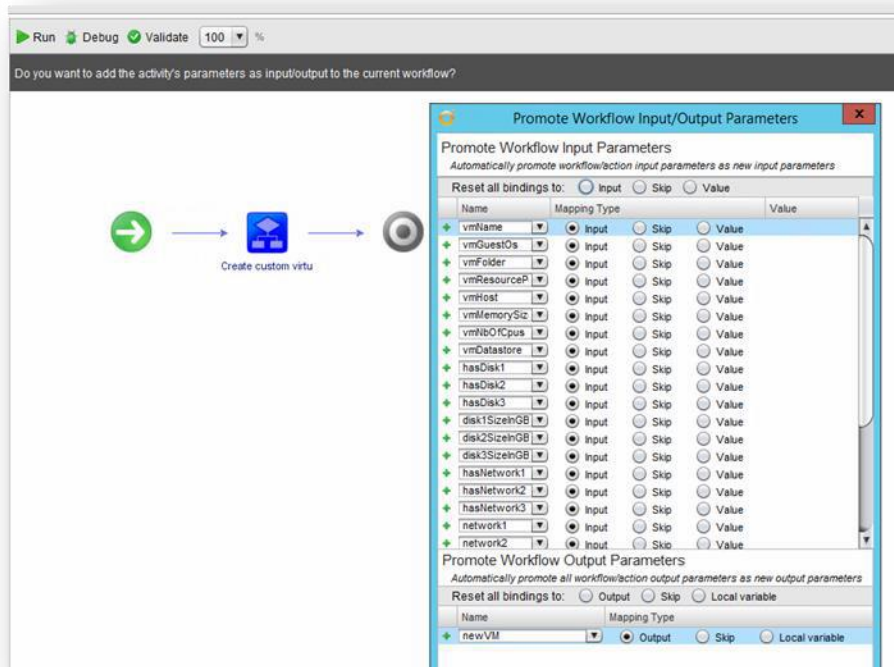


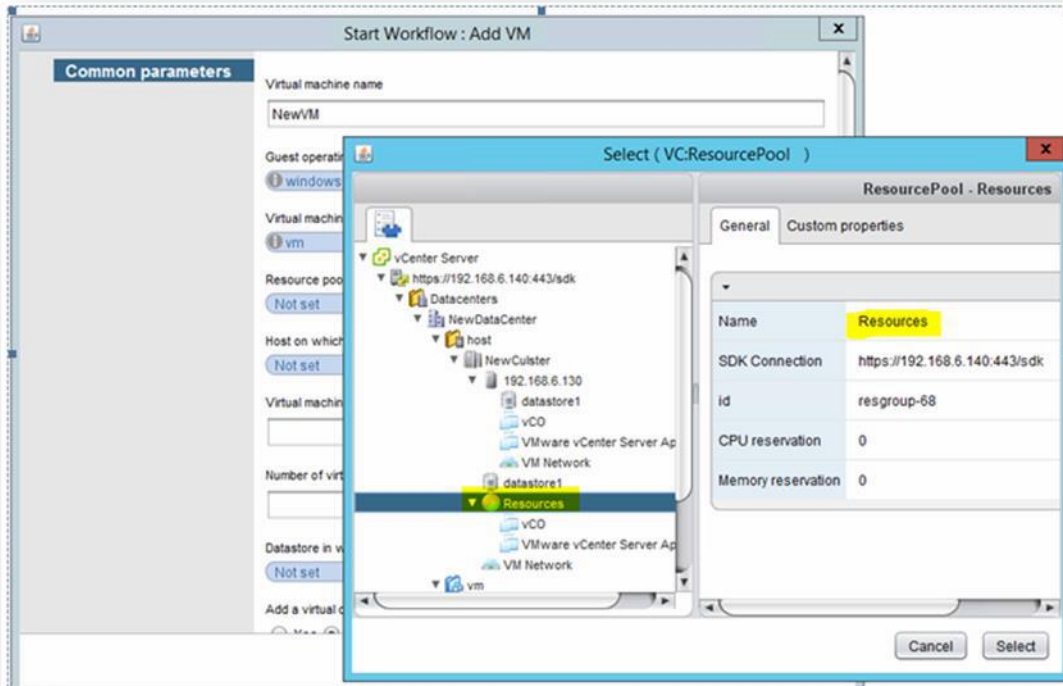
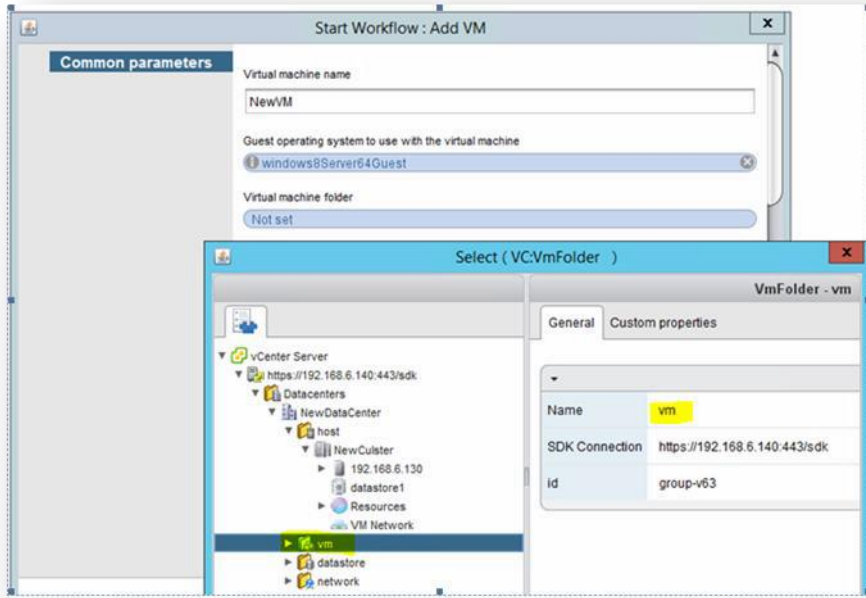
3. You can cross verify in Orchestrator inventory, as shown below.



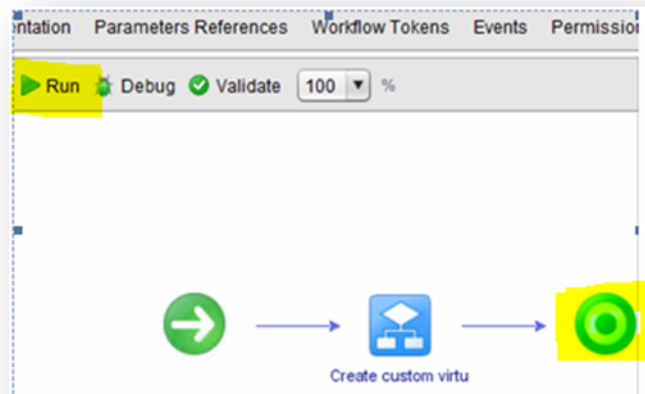
Creating VM to Host through work flow

- 1) Same as above. Create new workflow for creating VM “NEW VM” and then give the input parameters and promote it.

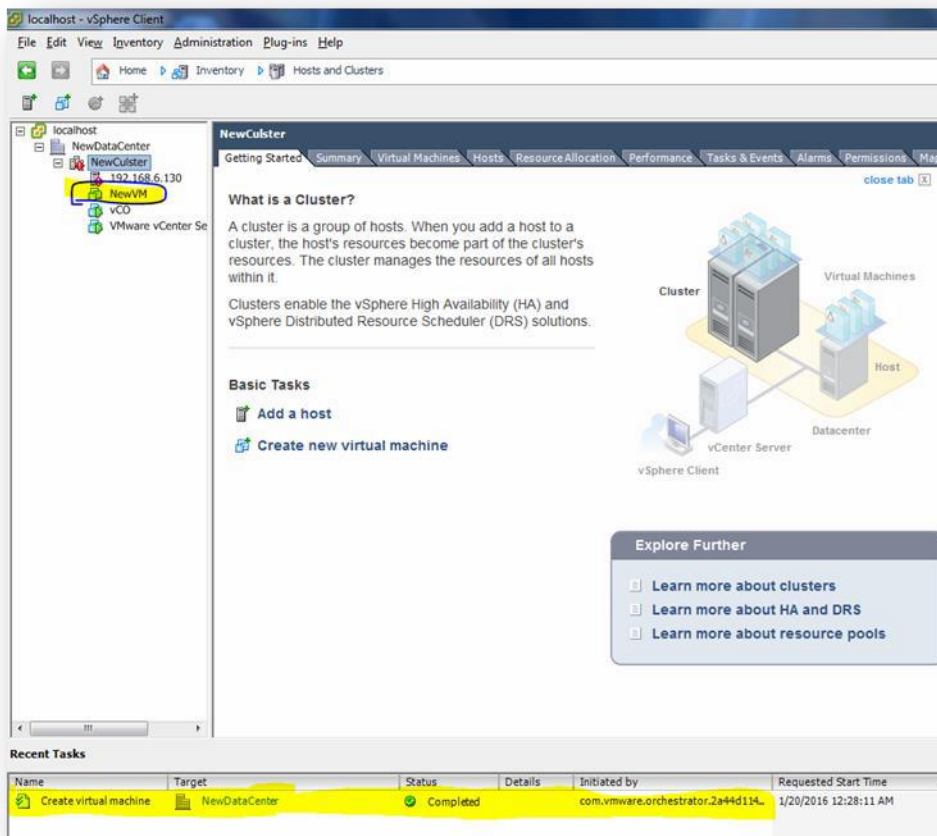




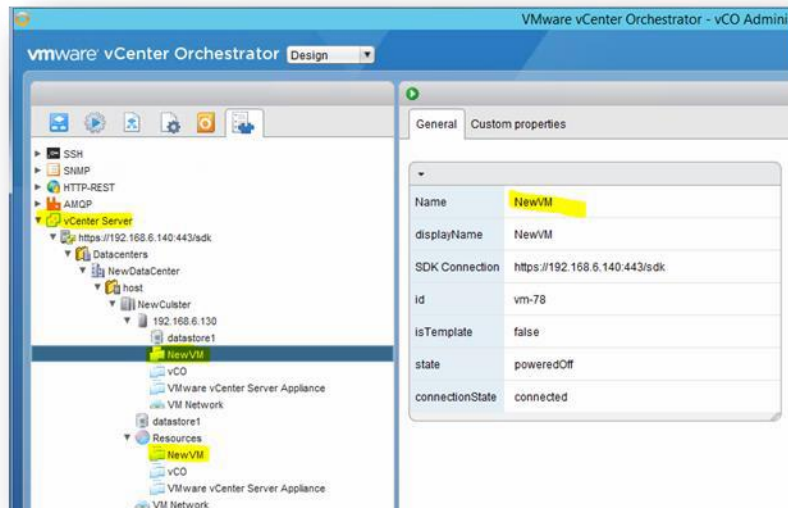
2. After giving the inputs, ran the workflow successfully as shown below.



3. We can identify the "NewVM" in vCenter, as shown below.



4. You can cross-verify in Orchestrator inventory, as shown below.



Conclusion

This “Automate your path to the cloud with vCO” document provides configuration and usage recommendations for vCO in converged and cloud environments. For detailed discussion of the reasoning or methodology behind these recommendations, or for additional guidance around more specific use cases, see the References section for additional information.

References

- http://www.vmware.com/search.html?client=VMware_Site_1&proxystylesheet=VMware_gsa_Site&site=VMware_Site_1&cc=www&cn=vmware&entqr=0&ud=1&num=20&output=xml_no_dtd&ie=UTF-8&oe=UTF-8&q=Orchestrator#client=VMware_Site_1&numgm=4&getfields=*&filter=0&site=VMware_Site_1&cc=en&ie=UTF-8&oe=UTF-8&start=0&num=20&cid=&tid=&cn=vmware&entqr=0&ud=1&output=xml_no_dtd&q=Orchestrator
- <http://www.vcoportal.de/resources/>
- https://pubs.vmware.com/vsphere-50/index.jsp?topic=%2Fcom.vmware.vsphere.vco_appliance.doc_42%2FGUID-D0C69C5A-5CA1-4B4B-A5E1-5888ACBDF64C.html
- <http://www.vcoteam.info/>
- http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=2035011

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