

Deployment Guide

Infoblox IPAM Plug-in 4.3.0 for VMware vRA 7.3

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1. Document Overview

This document explains the deployment steps for the Infoblox IPAM plugin for VMware vRealize Automation (vRA) 7.3. The Infoblox IPAM Plug-in for VMware integrates automatic IP address allocation and DNS registration capabilities into the VMware vCloud automation solutions.

2. Document Convention

User input Text is shown in **bold**.

Output is shown in *italics*.

3. NIOS Setup

This section provides the steps for configuring NIOS in preparation of installing the Infoblox IPAM plugin for VMware.

3.1 Create Networks in NIOS

Create the networks in NIOS which will be used for provisioning IP addresses. By default, the Infoblox Plugin does DNS registration in the Zone specified in DHCP option *Domain Name* set in the DHCP Options at the network and/or range level.

To create the networks which will be used for IP address assignment with the Infoblox plugin for VMware:

1. Navigate to **Data Management** -> **DHCP** in your Grid Manager GUI.
2. Click on **+**. Select **(IPv4) Network** if you expanded the **Add** menu.
3. Select **Add Network**. Click **Next**.
4. Set the **Netmask** to the CIDR to be used for your network (e.g. 24, or 255.255.255.0).
5. Click **+** and type the address for your network (e.g. 172.26.1.0).
6. Click **Next**.
7. Click **+**. Select **Add Infoblox Member** if expanding the Add menu.
8. If you have a single server in your Infoblox Grid, this should be automatically selected for you. Otherwise, follow the selector window to select the Grid member(s) to assign to the network.
9. Click **Next** and **Next** again until you are on the step to configure the options for the network (this is step 5 of 7 in NIOS version 8).
10. Set the options required for clients to operate properly the network, such as any **Routers** (which will be the clients default gateway), along with the **Domain Name** option. DNS records being created for VM instances will be placed into this zone by default.

Note: The plugin will not be able to read inherited options. The Domain Name option must be overridden and set at the network and/or range levels; otherwise, updates from the plugin will fail.

Add IPv4 Network Wizard > Step 5 of 7

Lease Time
 12 Hours
☐ Unlimited Lease Time
 Inadvertently selecting the Unlimited Lease Time check box or using this option incorrectly could cause a serious network outage in the future when all available leases are allocated
 Inherited from Grid Infoblox
 Override

Routers
 + -
 IP Address
 172.16.1.1
 Inherit

Domain Name
 qa.com
 Inherit

DNS Servers
 + -
 IP Address
 172.26.1.2
 Override
 Inherited from Grid Infoblox

Broadcast Address
 Inherited from Grid Infoblox
 Override

Cancel Previous Next Schedule for Later Save & Close

11. Click **Next** to configure Extensible Attributes (optional).
12. Click **Save & Close**.
13. Restart services.

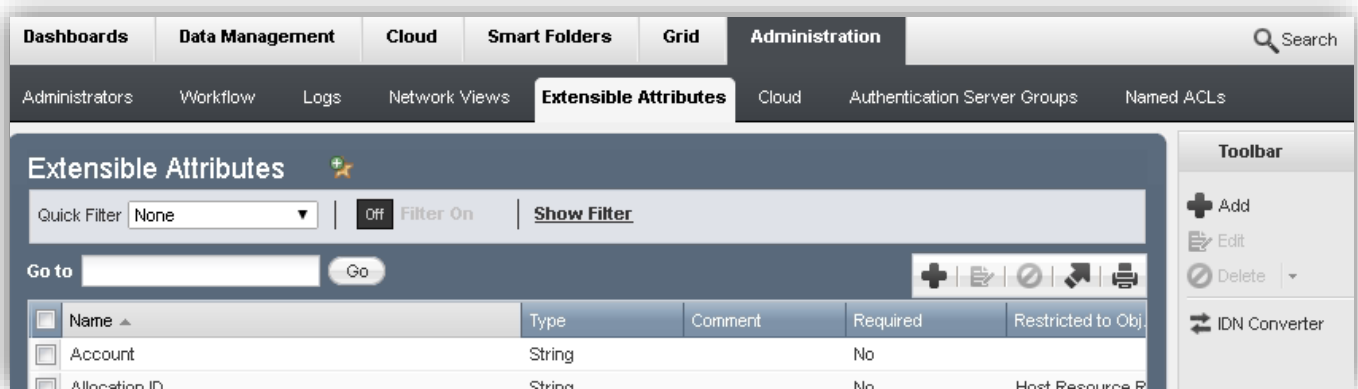
3.2 Extensible Attributes Required for the vRA Plugin

Additional Extensible Attributes (EA's) are required in NIOS. These include the following EA's, with the type that they should be created as noted in parentheses (note: Only the name to be used for the EA is in bold. The remaining information indicates the EA type, such as **integer** or **string**):

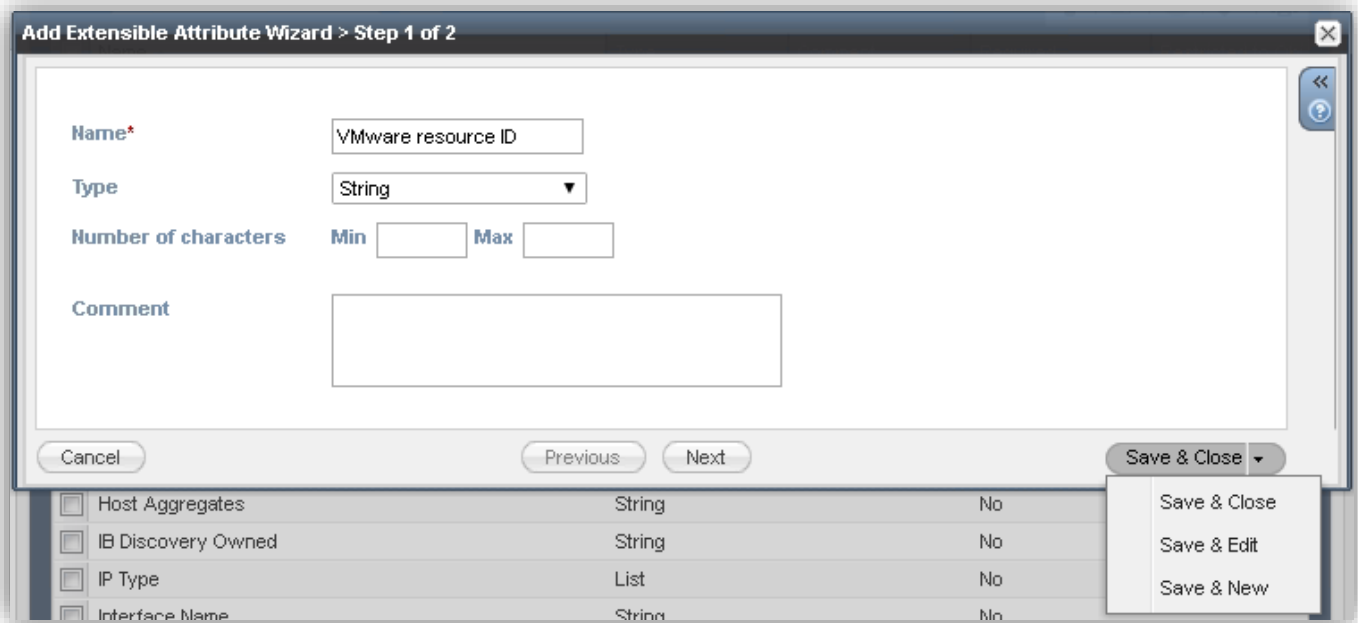
- **VMware NIC index** (integer)
- **VMware resource ID** (string)
- **VMware On-Demand Network** (string)
- **VMware Network Profile** (string)
- **VMware External Network Profile ID** (string)
- **VMware External Range ID** (string)
- **VMware Request ID** (string)
- **VMware Blueprint Request ID** (string)

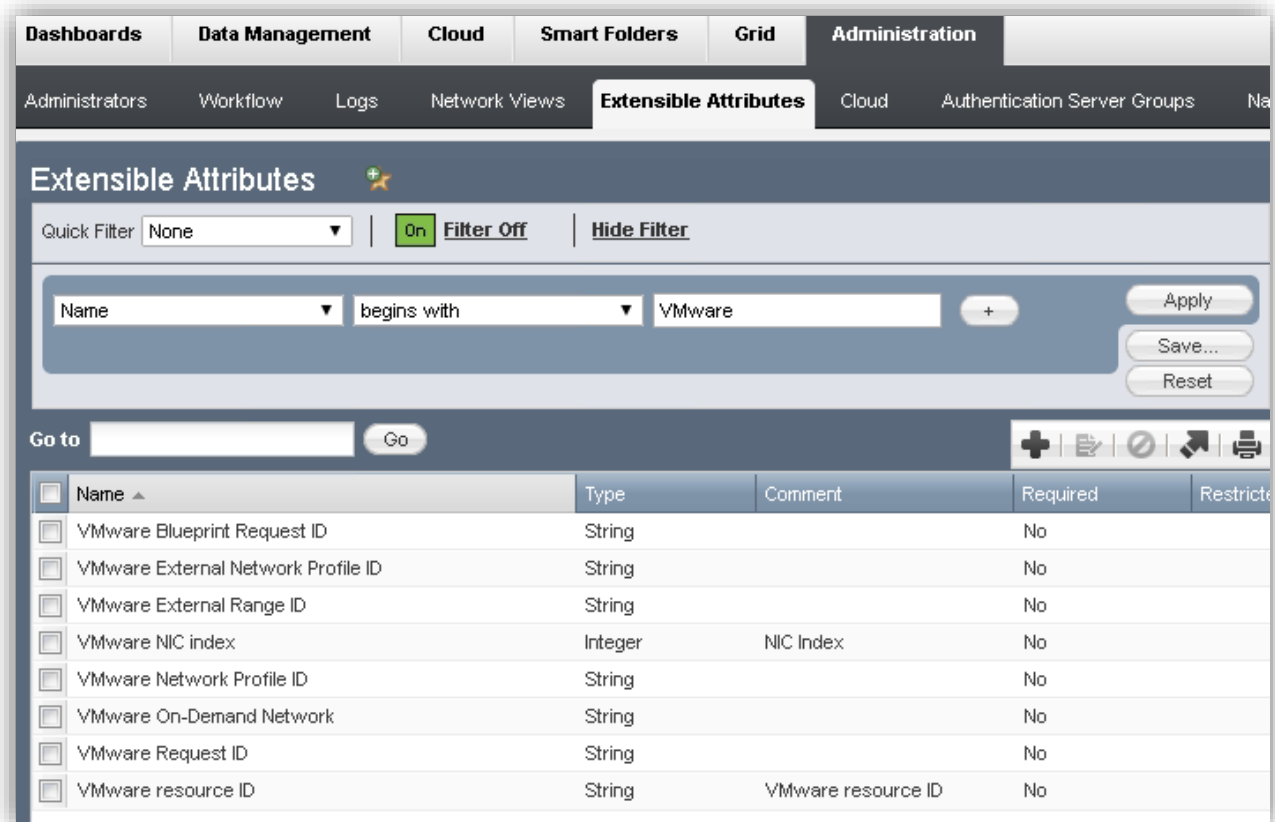
To create the required EA's:

1. Navigate to **Administration -> Extensible Attributes** in your Infoblox Grid Manager GUI.



2. Click on the + (Add) button.
3. Enter the name for the EA, as displayed in bold in the list above.
4. Set the **Type** dropdown menu to the required setting (refer to the list above).
5. Optional: Add a comment
6. Click on the small arrow next to **Save & Close** and select **Save & New** to add additional EA's, or click on **Save & Close** if done.

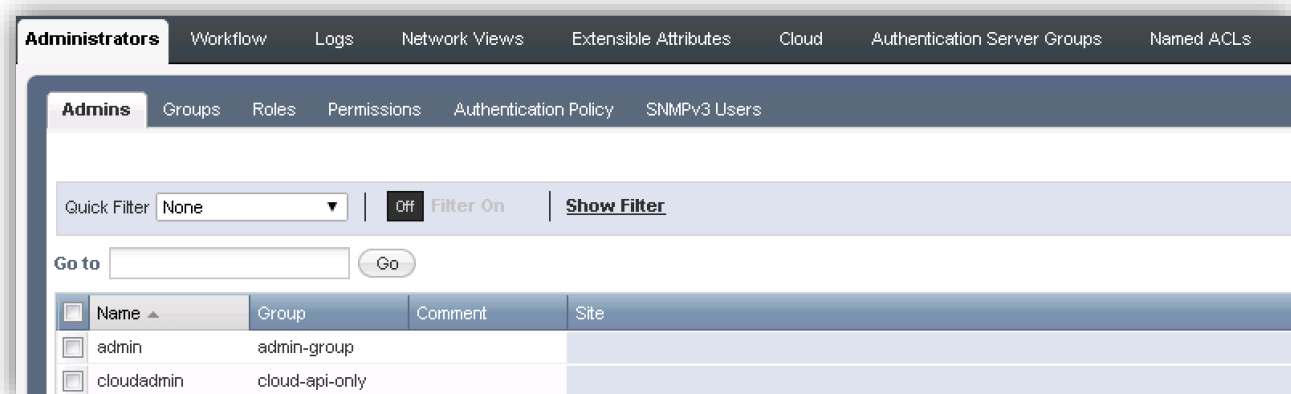




3.3 Create Cloud API account

Using an administrator account which is a member of the cloudapi-only group (or similar group where the **Allowed Interfaces** configuration is set to **API -> Cloud API -> Cloud API Only (No PAPI)**) is highly recommended as this allows the Infoblox IPAM plugin to send detailed Tenant information to NIOS.

Create the Cloud API account. Here, we have created an account named *cloudadmin* and assigned it to the default *cloud-api-only* group.



Add Permissions to the Cloud API account. Initially, it may be advisable to set everything to be allowed and then restrict these as required later on by removing permissions that are not needed. The permissions should allow the operations that the Infoblox IPAM plugin will be performing, such as r/w for networks and zones and if setting object level permissions, for the networks and zones that it will be updating.

Create New Permission

Admins [Show All](#) Groups [Show All](#)

cloudadmin cloud-api-only

cloud-api-only Permissions

Quick Filter [All Configured Permissions](#) [All Permission Types](#)

☐	Group/Role	Permission Type	Resource	Resource Type	Permission
☐	cloud-api-only	DNS Permissions	All A Records	A record	RW
☐	cloud-api-only	DNS Permissions	All AAAA Records	AAAA record	RW
☐	cloud-api-only	Administration Permissions	All CA Certificates	CA Certificate	RW

Example showing the Allowed Interfaces configuration:

cloud-api-only (Admin Group)

Basic

☐ Superusers

Roles

☐	Name	Comment
	No data	

Allowed Interfaces

☒ GUI

☒ API

- ☐ API (WAPI/PAPI only)
- ☒ Cloud API
 - ☒ Cloud API only (No PAPI)
 - ☐ Cloud API and PAPI (No WAPI)

Cancel Save & Close

4. Install Plugin in VMware vRealize Orchestrator

Log on to VMware vRealize Control Center.

4.1 Enabling Embedded VMware vRealize Orchestrator in VMware vRealize Appliance

Please note that in VMware vRealize Appliance, vRealize Orchestrator is not enabled by default. To enable this, log on to the VMware vRealize Appliance on Console as root and run the command:

```
service vco-configurator start
```

To make sure service is started when the appliance boots up, run the command:

```
chkconfig vco-configurator on
```

Note: This is a one-time step. This step is not required when using an external vRO server.

4.2 Verify vRO services are running

Log on the vRO appliance and verify that all services show a status of *REGISTERED*. Example URL to connect to your vRO appliance: <https://<vRO-name>:5480>



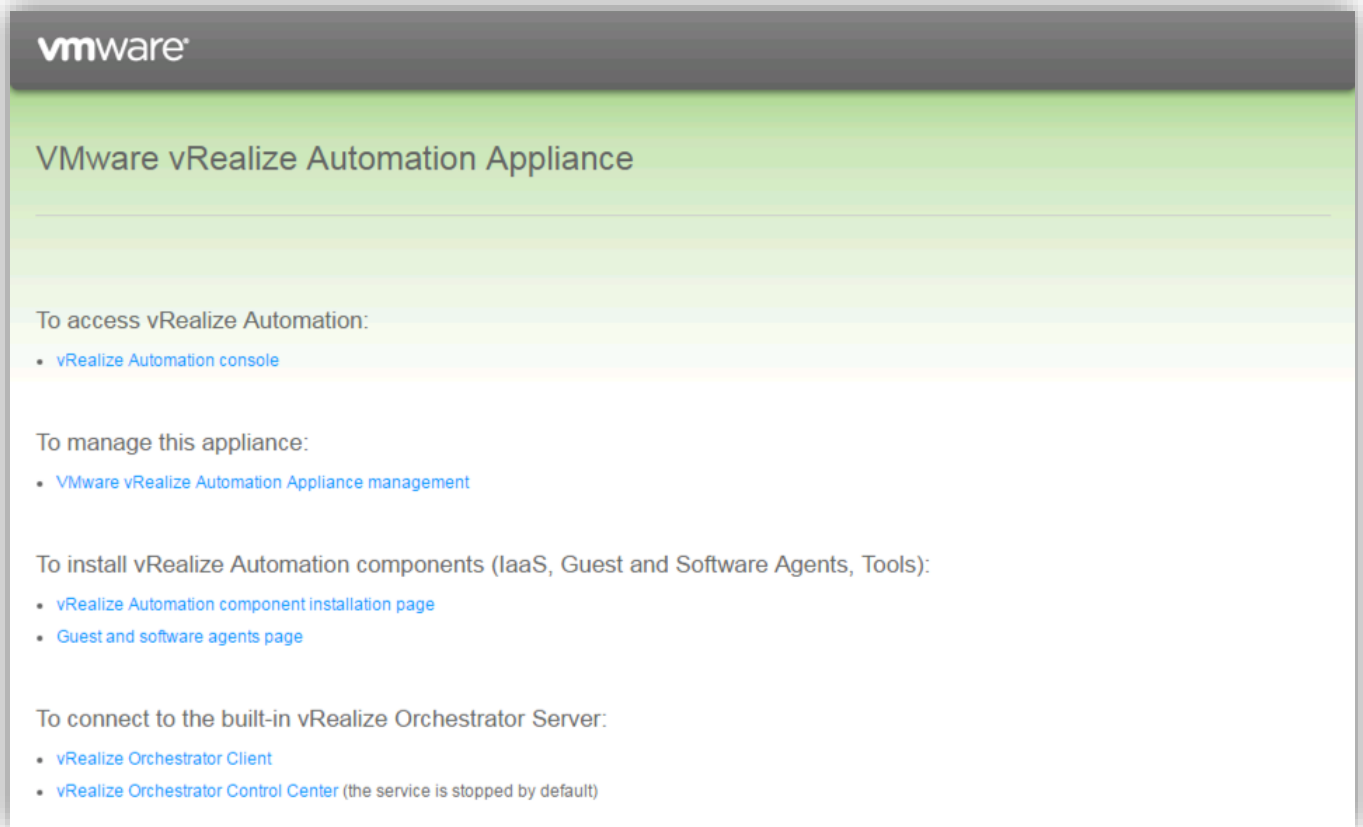
Registered Services

1-35 of 35 Refresh Unregister

▲ Service	Service Type	Last Updated	Status
advanced-designer-service	com.vmware.csp.core.designer.service	2017 Jan 3 11:49:48	REGISTERED
approval-service	com.vmware.csp.core.cafe.approvals	2017 Jan 3 11:51:17	REGISTERED
authentication	com.vmware.csp.cafe.authentication	2017 Jan 3 11:48:45	REGISTERED
authorization	com.vmware.csp.cafe.authorization	2017 Jan 3 11:48:45	REGISTERED
branding-service	com.vmware.csp.core.branding.service	2017 Jan 3 11:49:46	REGISTERED
catalog-service	com.vmware.csp.core.cafe.catalog	2017 Jan 3 11:50:29	REGISTERED
component-registry	com.vmware.csp.core.cafe.componentregistry	2017 Jan 3 11:48:03	REGISTERED
composition-service	com.vmware.csp.component.cafe.composition	2017 Jan 3 11:51:25	REGISTERED
console-proxy-service	com.vmware.csp.component.console.proxy.service	2017 Jan 3 11:49:45	REGISTERED
container-service	com.vmware.csp.component.cafe.container	2017 Jan 3 11:52:02	REGISTERED
content-management	com.vmware.csp.core.content.service	2017 Jan 3 11:51:43	REGISTERED
endpoint-configuration-service	com.vmware.csp.core.endpoint.configuration	2017 Jan 3 11:49:15	REGISTERED
event-broker-service	com.vmware.csp.cafe.event.broker	2017 Jan 3 11:48:11	REGISTERED
eventlog-service	com.vmware.csp.cafe.eventlog	2017 Jan 3 11:48:12	REGISTERED
fabric-service	com.vmware.csp.fabric.cafe.fabric	2017 Jan 3 11:51:30	REGISTERED
forms-service	com.vmware.csp.core.cafe.forms	2017 Jan 3 11:50:38	REGISTERED
iaas-proxy-provider	com.vmware.csp.component.iaas.proxy.provider	2017 Jan 3 11:51:27	REGISTERED
iaas-service	com.vmware.csp.iaas.blueprint.service	2017 Jan 3 12:20:01	REGISTERED
identity	com.vmware.csp.core.cafe.identity	2017 Jan 3 11:48:44	REGISTERED
ipam-service	com.vmware.csp.component.ipam.service	2017 Jan 3 11:50:53	REGISTERED
licensing-service	com.vmware.csp.core.cafe.licensing	2017 Jan 3 11:48:01	REGISTERED
management-service	com.vmware.csp.component.management.service	2017 Jan 3 11:50:54	REGISTERED
network-service	com.vmware.csp.component.network.service	2017 Jan 3 11:50:16	REGISTERED
notification-service	com.vmware.csp.cafe.notification	2017 Jan 3 11:48:25	REGISTERED
o11n-gateway-service	com.vmware.csp.core.o11n.gateway	2017 Jan 3 11:51:50	REGISTERED
placement-service	com.vmware.csp.component.cafe.placement	2017 Jan 3 11:50:28	REGISTERED
plugin-service	com.vmware.csp.core.plugin.service	2017 Jan 3 11:48:01	REGISTERED
portal-service	com.vmware.csp.core.portal.service	2017 Jan 3 11:50:58	REGISTERED
properties-service	com.vmware.csp.core.properties.service	2017 Jan 3 11:49:16	REGISTERED
reservation-service	com.vmware.vcac.core.cafe.reservation	2017 Jan 3 11:49:21	REGISTERED
shell-ui-app	com.vmware.csp.core.cafe.shell	2017 Jan 3 11:50:26	REGISTERED
software-service	com.vmware.csp.component.software.service	2017 Jan 3 11:50:01	REGISTERED
sts-service	com.vmware.cis.core.sso	2016 Nov 29 15:23:25	REGISTERED
vco	com.vmware.vco.o11n	2017 Jan 3 11:49:14	REGISTERED
workitem-service	com.vmware.csp.core.cafe.workitem	2017 Jan 3 11:48:25	REGISTERED

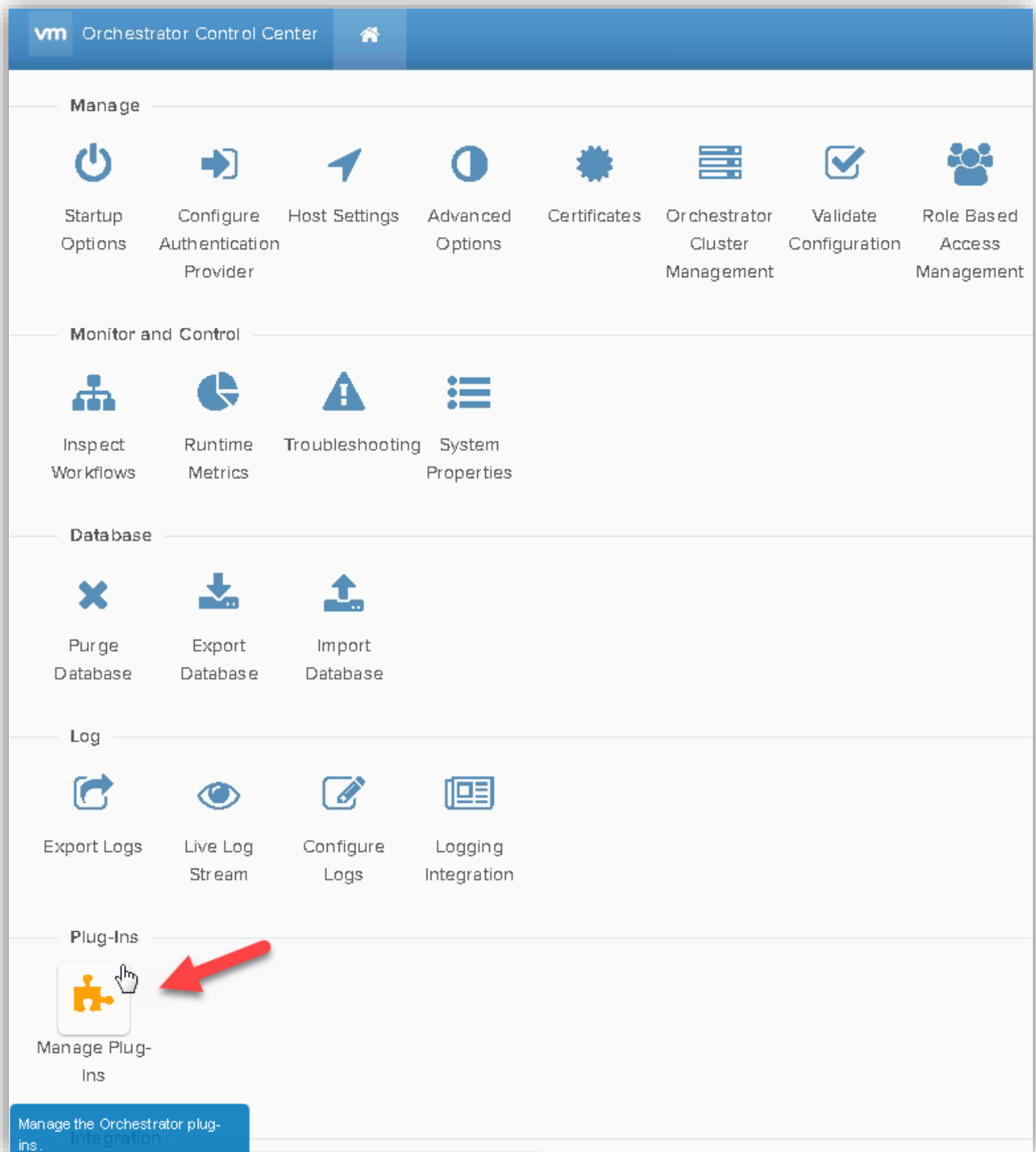
4.3 Install Infoblox Plugin in VMware vRO

1. Log on to the VMware vRealize Orchestrator Control center. Example: <https://<vra-appliance-name>>

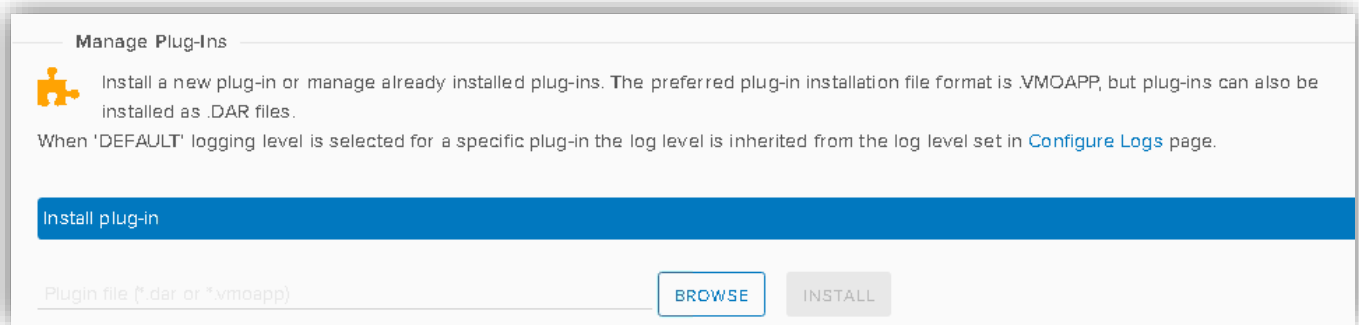


2. Click on **vRealize Orchestrator Control Center** and login with the username “root” and the password used during setup.

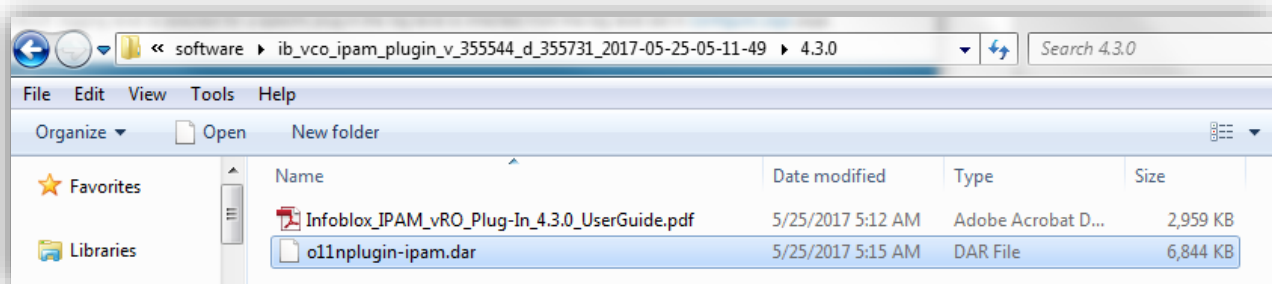
3. Click on the **Manage Plug-ins** button.



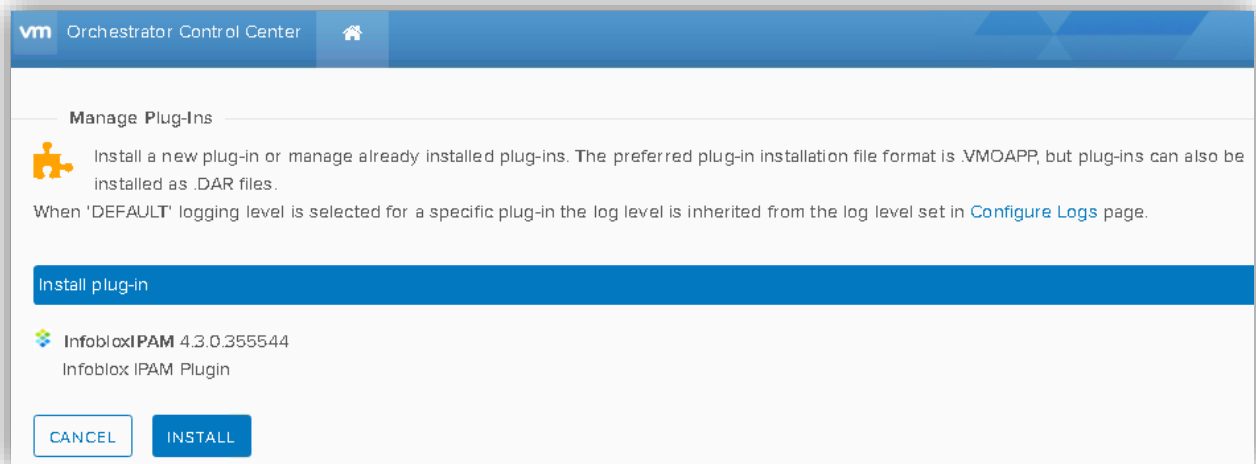
- Click **"BROWSE"**.



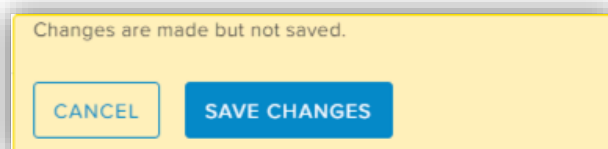
- Traverse to the location of the plugin. The plugin file will use a .dar extension.
- Select the plugin file and click **"Open"**.



- Click **"INSTALL"**.



- Click **"SAVE CHANGES"** to commit the plugin installation:



9. Verify that the Infoblox Plugin now shows in the Plug-in list:

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.

When 'DEFAULT' logging level is selected for a specific plug-in the log level is inherited from the log level set in [Configure Logs](#) page.

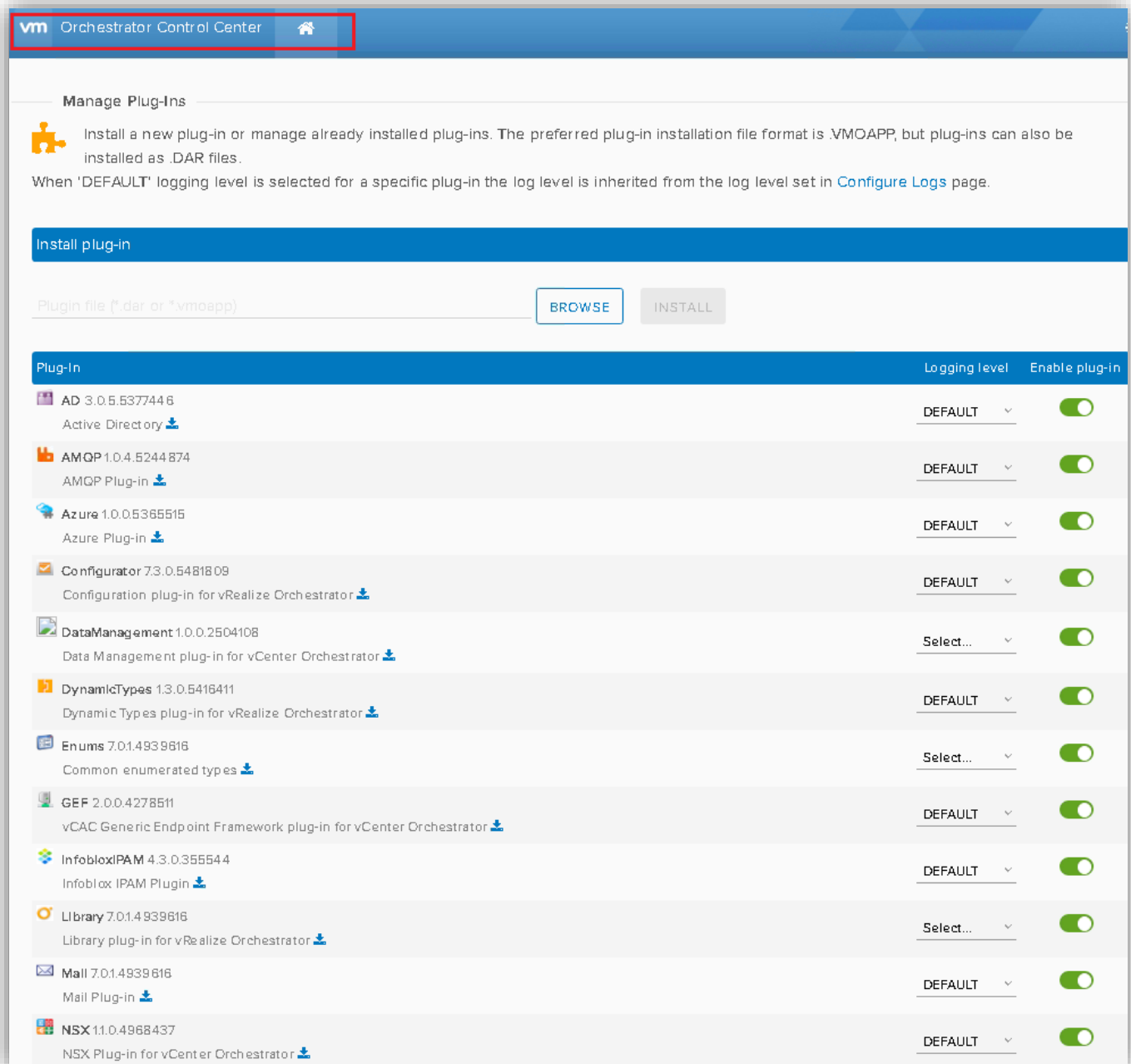
Install plug-in

Plugin file (*.dar or *.vmoapp)

Plug-In	Logging level	Enable plug-in
AD 3.0.5.537744 6 Active Directory	DEFAULT ▾	☒
AMQP 1.0.4.5244 874 AMQP Plug-in	DEFAULT ▾	☒
Azure 1.0.0.5385515 Azure Plug-in	DEFAULT ▾	☒
Configurator 7.3.0.54818 09 Configuration plug-in for vRealize Orchestrator	DEFAULT ▾	☒
DataManagement 1.0.0.2504108 Data Management plug-in for vCenter Orchestrator	Select... ▾	☒
DynamicTypes 1.3.0.5416411 Dynamic Types plug-in for vRealize Orchestrator	DEFAULT ▾	☒
Enums 7.0.1.4939616 Common enumerated types	Select... ▾	☒
GEF 2.0.0.4278511 vCAC Generic Endpoint Framework plug-in for vCenter Orchestrator	DEFAULT ▾	☒
InfobloxIPAM 4.3.0.355544 Infoblox IPAM Plug-in	DEFAULT ▾	☒
Library 7.0.1.4939616 Library plug-in for vRealize Orchestrator	Select... ▾	☒
Mail 7.0.1.4939616 Mail Plug-in	DEFAULT ▾	☒
NSX 11.0.4968437 NSX Plug-in for vCenter Orchestrator	DEFAULT ▾	☒

4.4 Install NIOS Certificate

1. Click on “VM” button to go back to home screen.



vm Orchestrator Control Center

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.

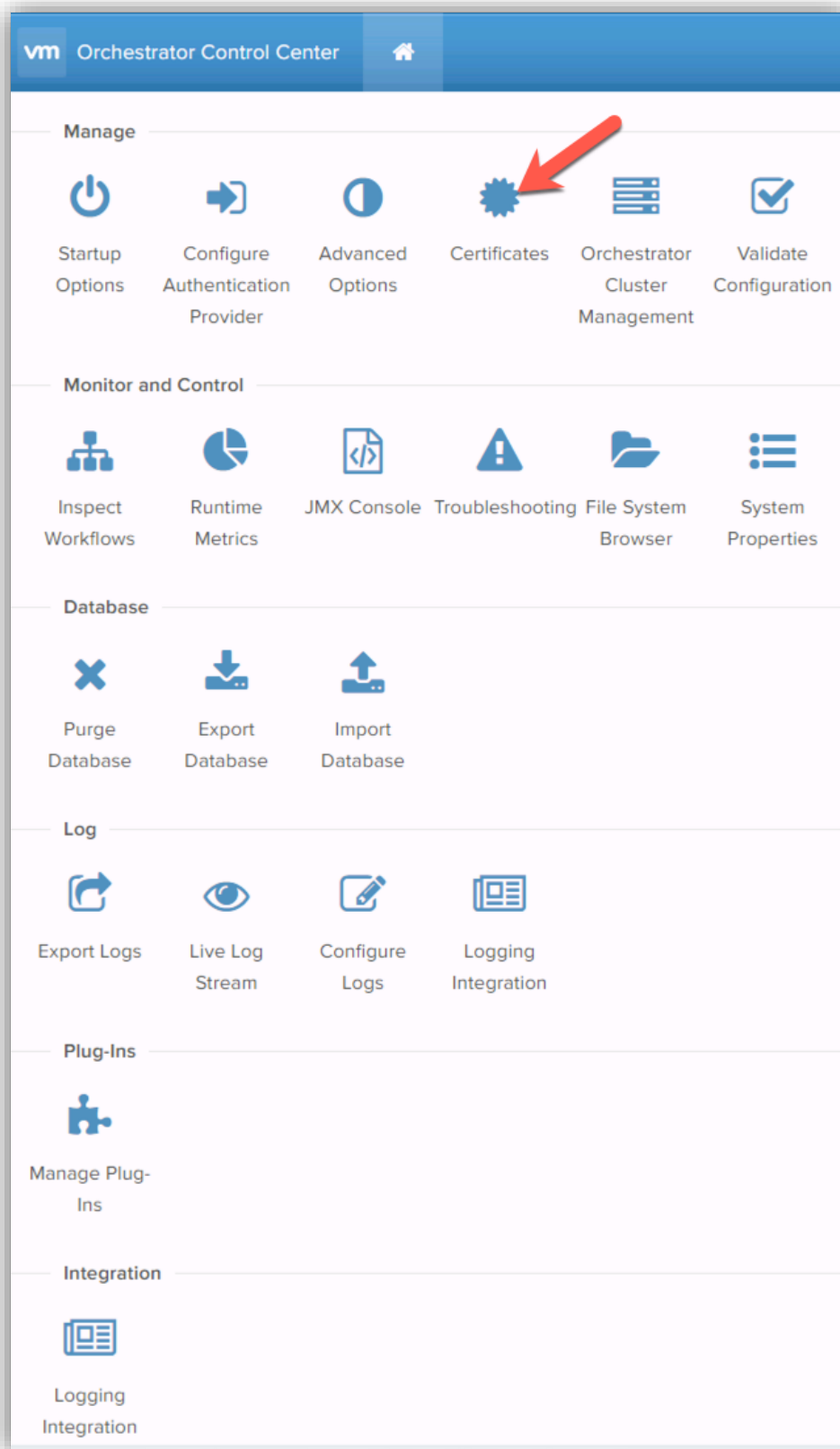
When 'DEFAULT' logging level is selected for a specific plug-in the log level is inherited from the log level set in [Configure Logs](#) page.

Install plug-in

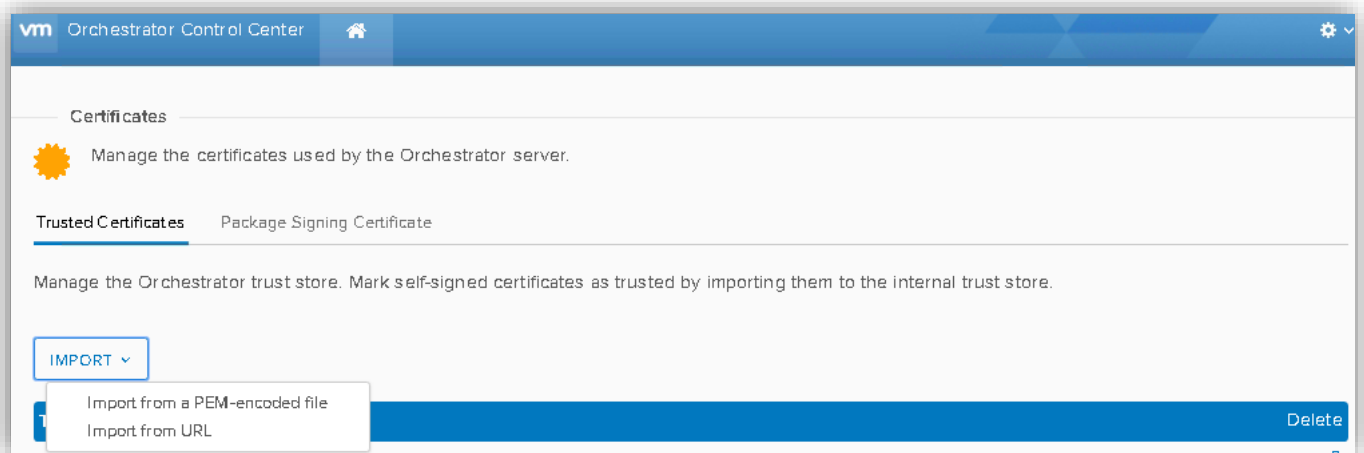
Plug-in file (*.dar or *.vmoapp)

Plug-In	Logging level	Enable plug-in
 AD 3.0.5.5377446 Active Directory 	DEFAULT ▾	☒
 AMQP 1.0.4.5244874 AMQP Plug-in 	DEFAULT ▾	☒
 Azure 1.0.0.5365515 Azure Plug-in 	DEFAULT ▾	☒
 Configurator 7.3.0.5481809 Configuration plug-in for vRealize Orchestrator 	DEFAULT ▾	☒
 DataManagement 1.0.0.2504108 Data Management plug-in for vCenter Orchestrator 	Select... ▾	☒
 DynamicTypes 1.3.0.5416411 Dynamic Types plug-in for vRealize Orchestrator 	DEFAULT ▾	☒
 Enums 7.0.1.4939616 Common enumerated types 	Select... ▾	☒
 GEF 2.0.0.4278511 vCAC Generic Endpoint Framework plug-in for vCenter Orchestrator 	DEFAULT ▾	☒
 InfobloxIPAM 4.3.0.355544 Infoblox IPAM Plugin 	DEFAULT ▾	☒
 Library 7.0.1.4939616 Library plug-in for vRealize Orchestrator 	Select... ▾	☒
 Mail 7.0.1.4939616 Mail Plug-in 	DEFAULT ▾	☒
 NSX 11.0.4968437 NSX Plug-in for vCenter Orchestrator 	DEFAULT ▾	☒

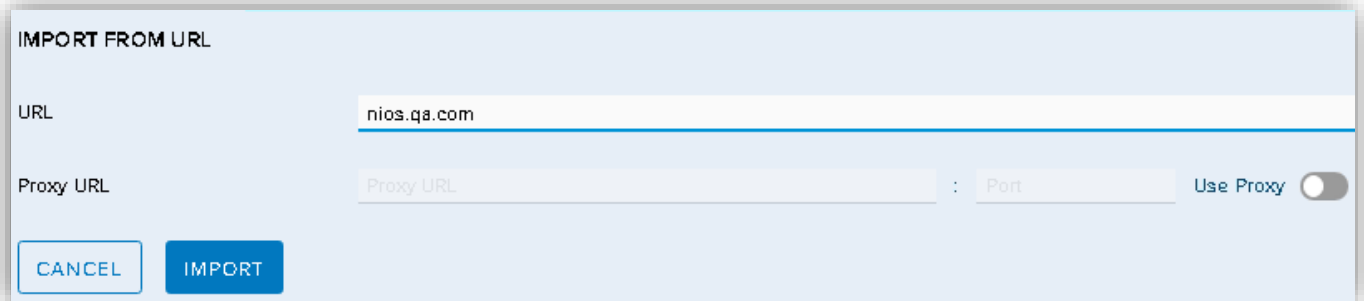
2. Click on “**Certificates**”.



- Click on the **“IMPORT”** menu and select **Import from URL**.



- Type the URL for your NIOS appliance and then click **IMPORT**.



- Click **“IMPORT”**.



- vm

Orchestrator Control Center

Certificates

Manage the certificates used by the Orchestrator server.

Trusted Certificates

Package Signing Certificate

Manage the Orchestrator trust store. Mark self-signed certificates as trusted by importing them to the internal trust store.

IMPORT ▾

Trusted SSL certificatesDelete

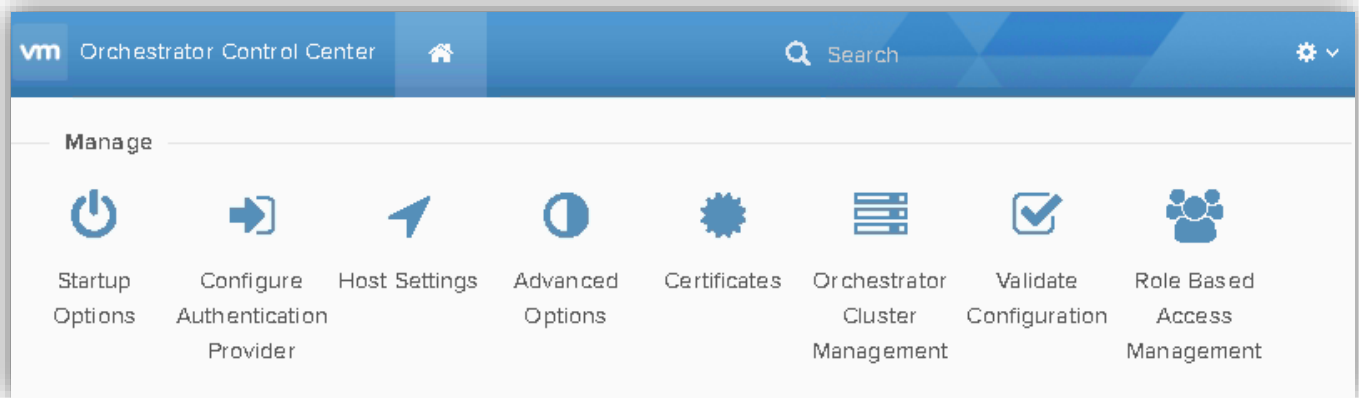
Common Name: nlos.qa.com
Organization:
Serial number: 00:00:00:00:71:44:9f:4e:d9:d8:cb:e9:80:b2:be:28:ee:fb:9c:6a
Signature algorithm: SHA256withRSA
Fingerprint (MD5): f3:90:dc:3b:04:b9:46:31:46:1f:06:0f:c8:77:45:e0
Fingerprint (SHA-1): 38:cf:22:6e:7c:45:de:d3:b0:bf:1e:e7:eb:61:f2:fe:7b:41:39:a8
Valid from: Jun 7, 2017
Valid until: Mar 27, 2020

Common Name: w2012vm.qa.com
Organization: IB
Serial number: 00:00:00:00:00:00:00:00:00:00:00:00:00:8e:b4:f9:0c:50:80:71:ea
Signature algorithm: SHA256withRSA
Fingerprint (MD5): 27:77:73:3d:5d:c3:6c:5e:b0:02:23:ec:c6:86:b3:9a
Fingerprint (SHA-1): 58:62:b7:af:85:31:67:6a:d3:df:e9:23:2e:ba:85:80:c4:d3:75:28
Valid from: Jun 1, 2017
Valid until: May 31, 2022

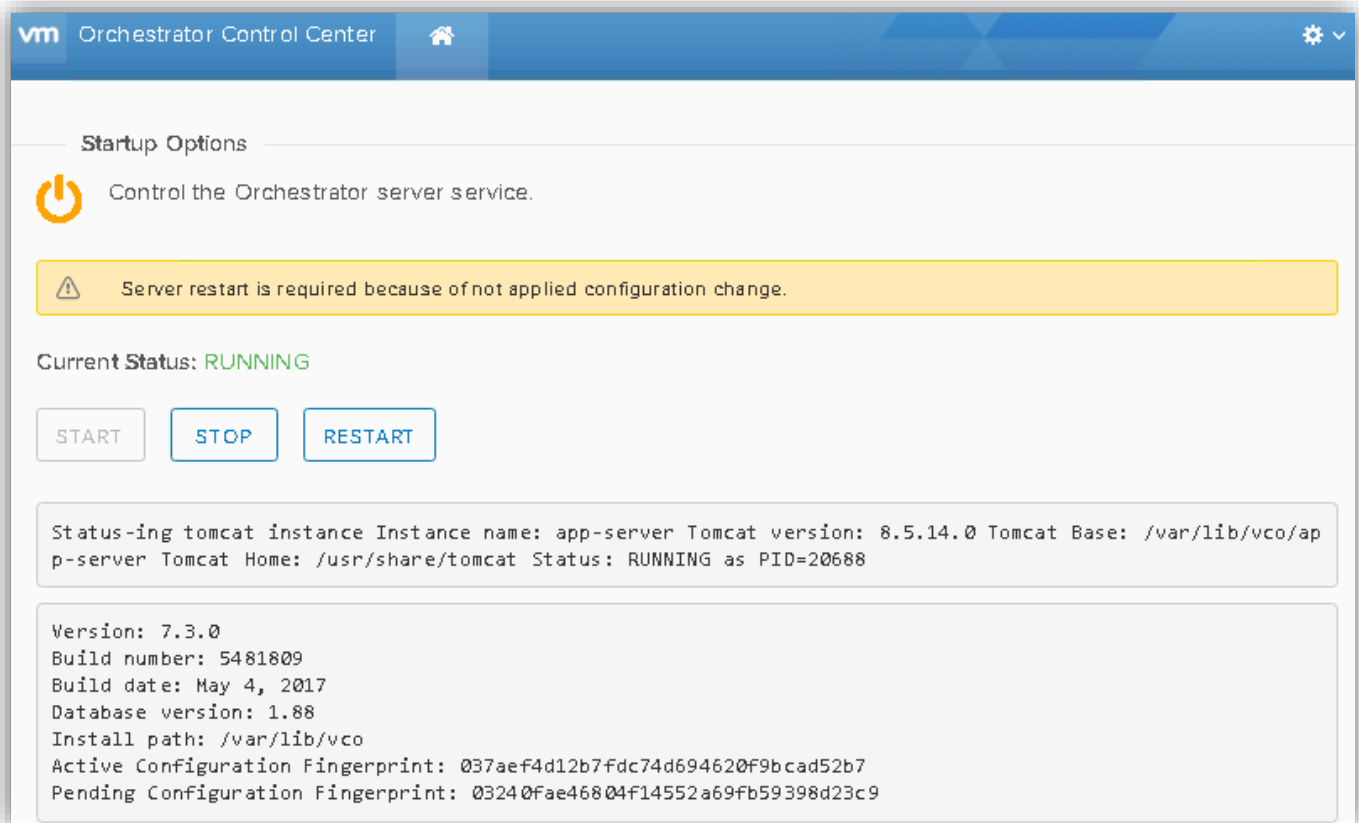
Common Name: nsxmgr.qa.com
Organization: VMware Inc.
Serial number: 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:02:31:53:61
Signature algorithm: SHA256withRSA
Fingerprint (MD5): 26:ff:ed:b7:70:ec:c0:30:b6:1c:9f:88:a1:5a:36:7b
Fingerprint (SHA-1): 4d:09:b4:d5:d6:44:9f:74:77:ea:6f:fb:1b:df:f0:fc:8f:e6:76:c9
Valid from: May 31, 2017
Valid until: May 29, 2027

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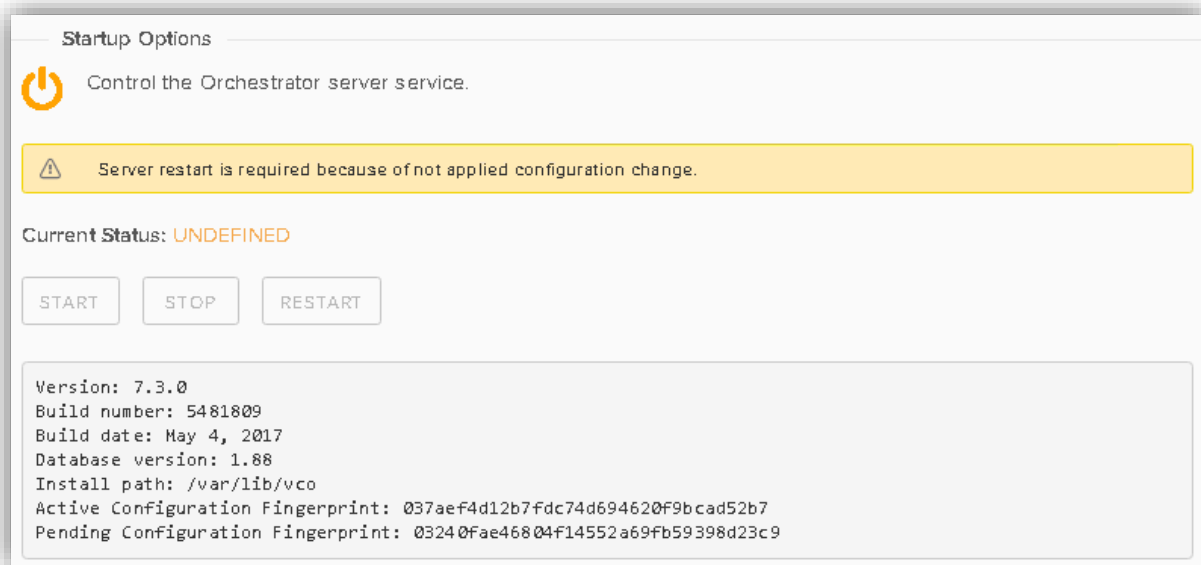
- Click on the **Startup Options** button.



- Click **“RESTART”** to restart the vRealize Orchestrator service. Note: this process may take couple of minutes to complete.



10. Monitor the status while the restart is taking place.



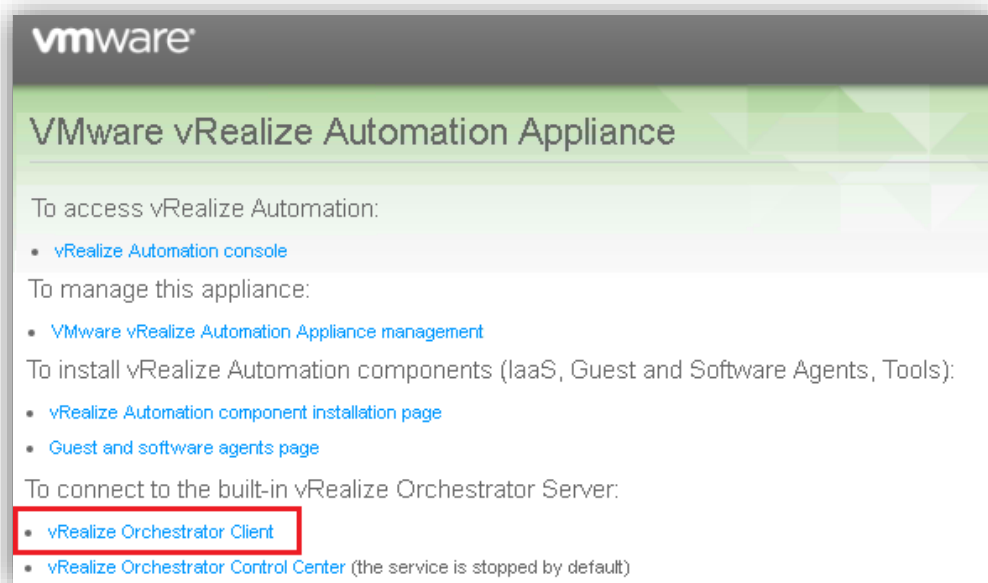
5. Setup Infoblox IPAM Endpoint Type

5.1 Accessing VMware vRealize Orchestration Server

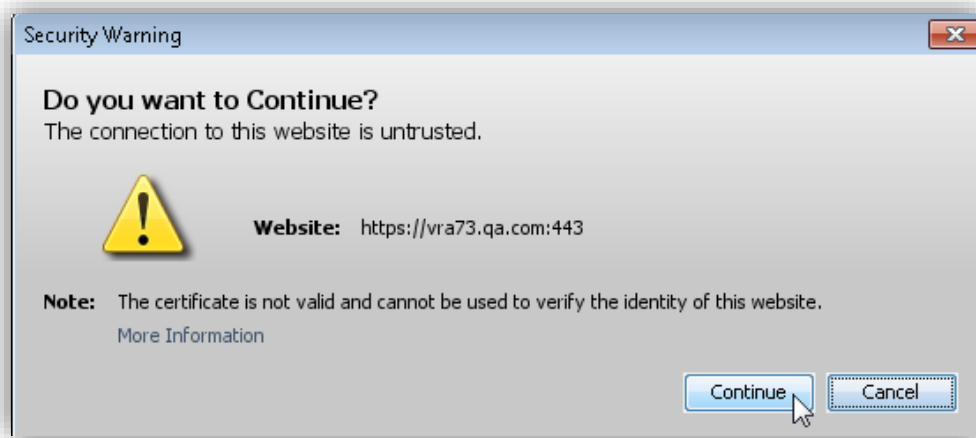
The Infoblox IPAM endpoint is configured through the VMware vRealize Orchestration Server (vRO). To access the vRO server:

1. Download the vRealize Orchestrator client from your vRA or vRO server.

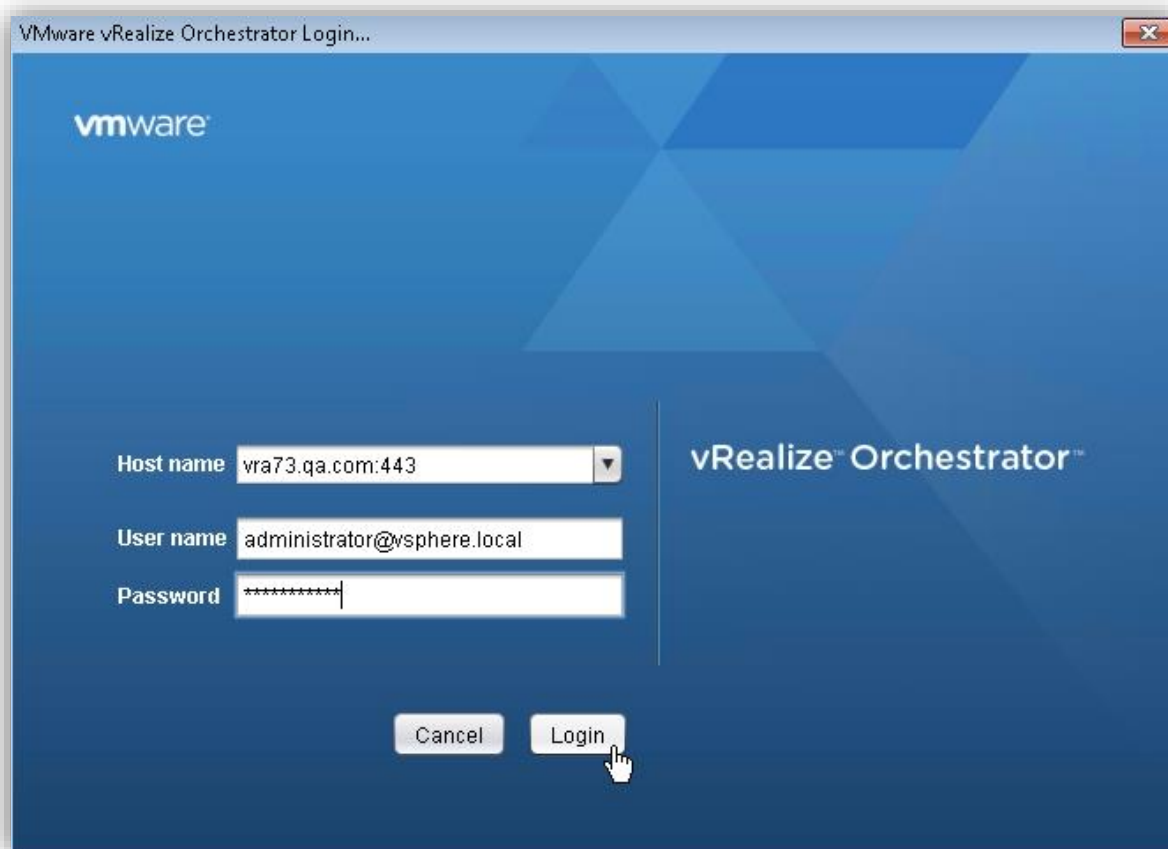
Note: If using Embedded vRO, use the URL <https://<vra-name>>. For an External vRO, use the URL <https://<vro-name>>.



2. Download and launch the Java Client. Continue through any warnings that may be displayed.



3. Type your user name and password. Click **Login**.

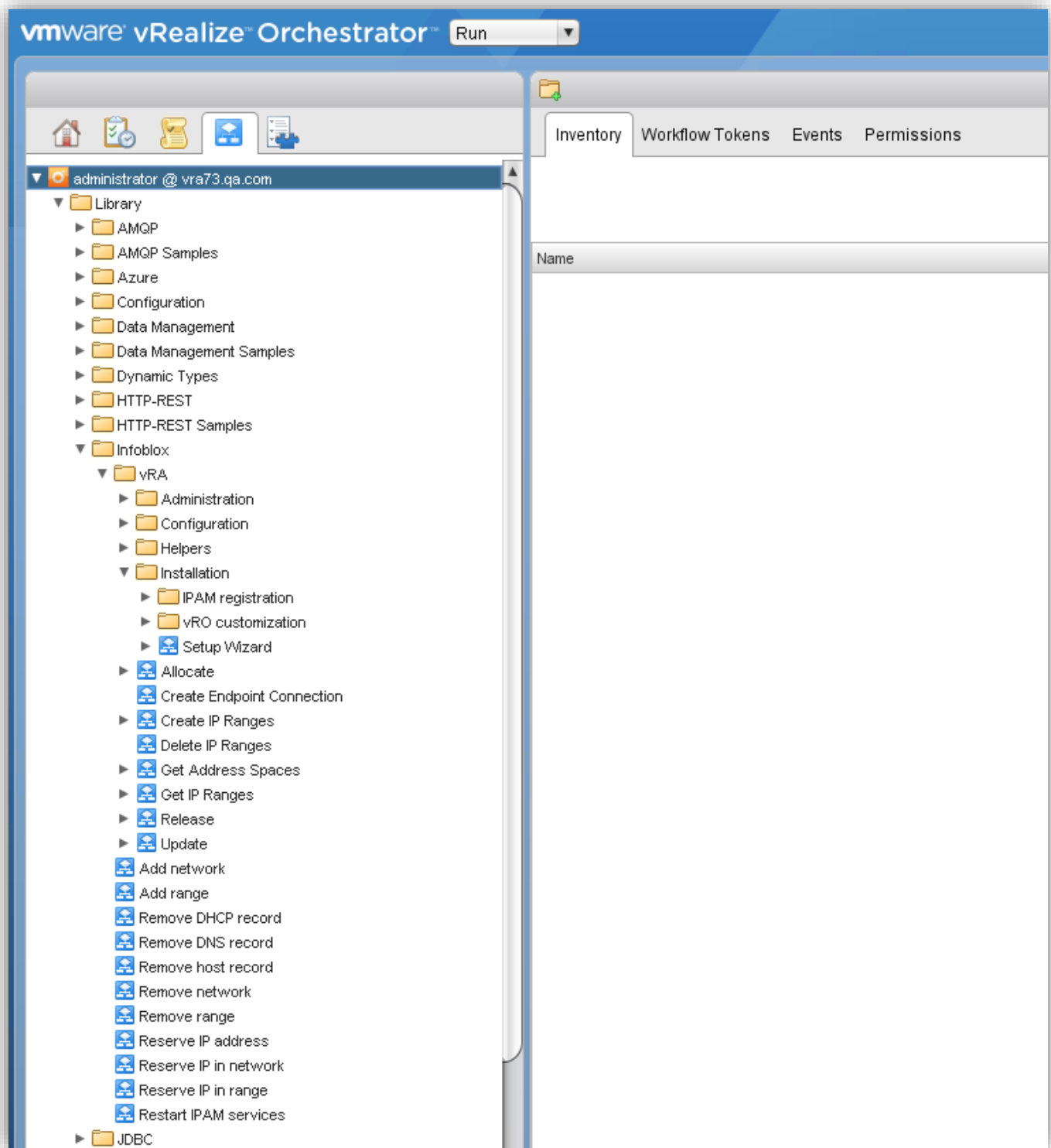


5.2 Run the Infoblox Setup Workflow

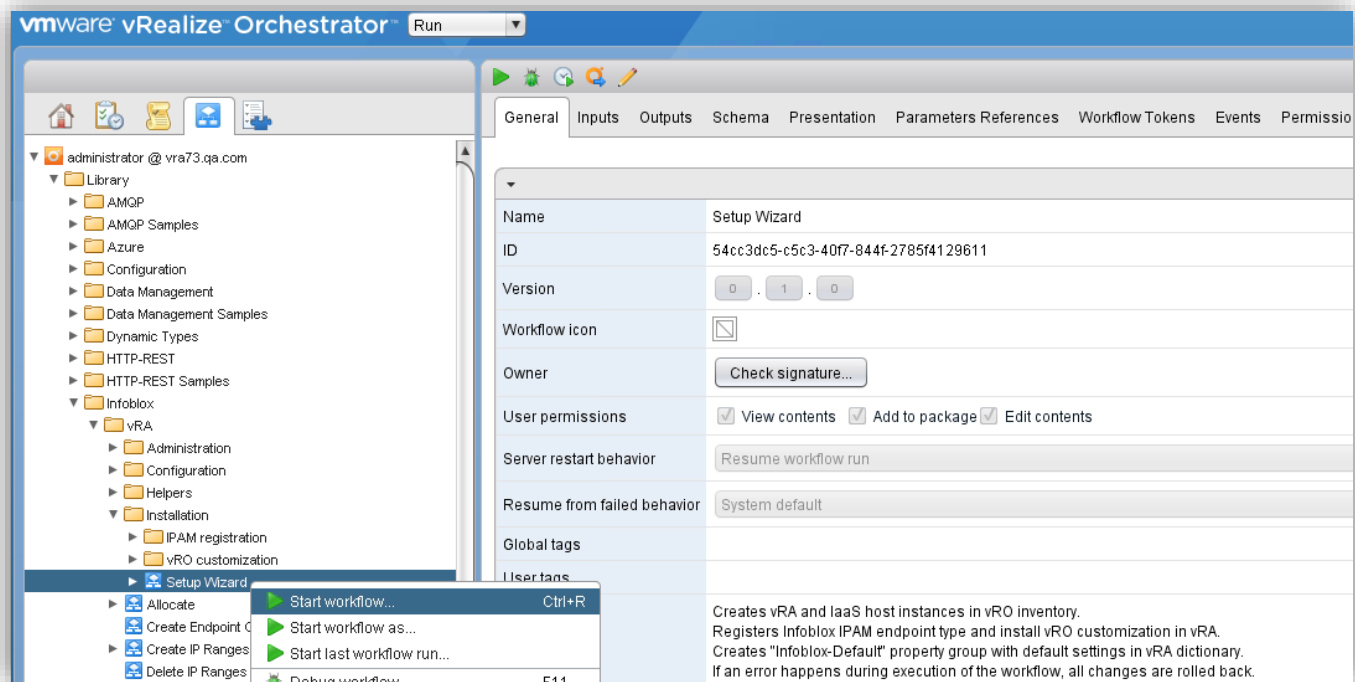
Now that the Infoblox Plugin has been installed, run “Setup Wizard” workflow to integrate the plugin with vRO.

1. In the **Run** mode, toggle to the **Workflows** panel.

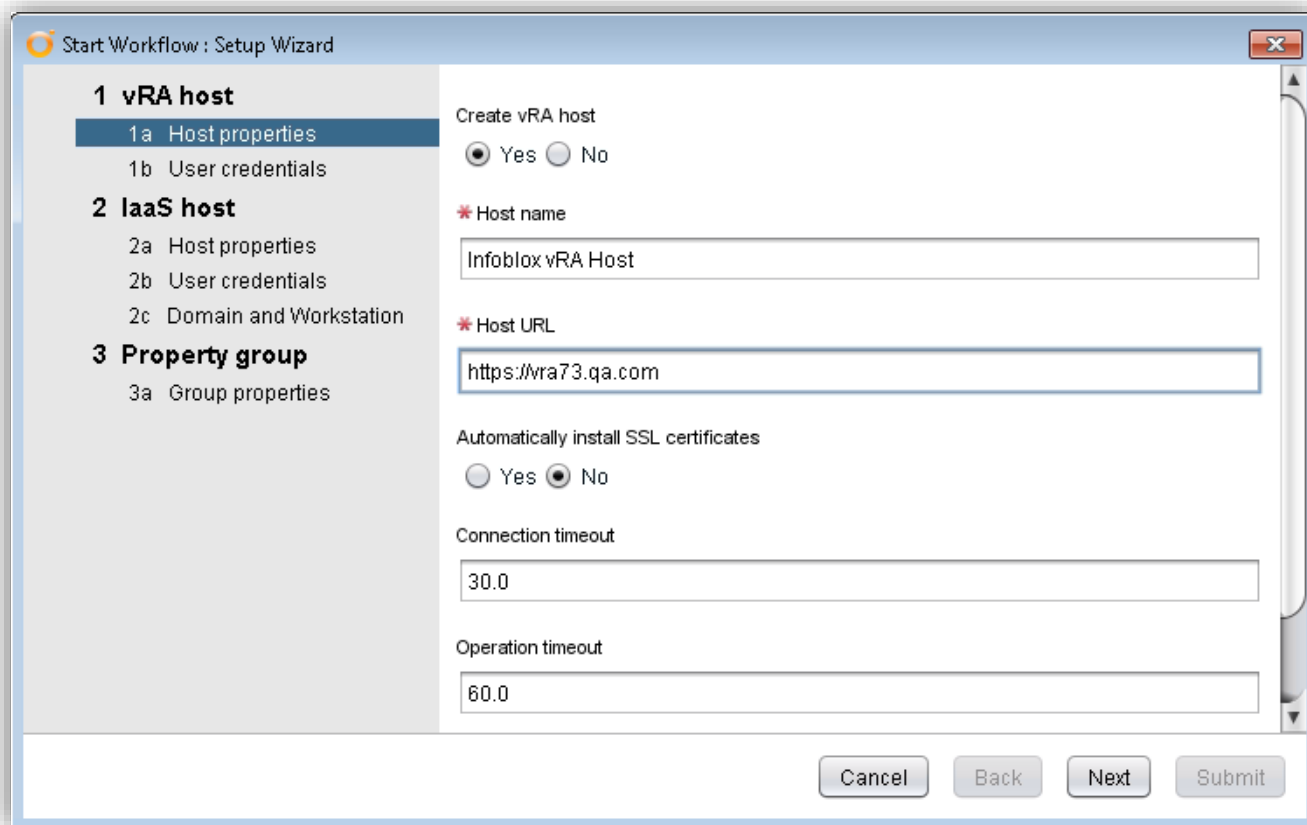
2. Drill down into **Library -> Infoblox -> vRA -> Installation**.



3. Right-click on **Setup Wizard** and select **Start Workflow**.



4. For environments using external vRO or you are creating a new vRA host, set the **Create vRA host** option to **Yes** and provide the information for vRA. Click **Next** and skip to step 6 in this guide.



5. Enter the User Credential information to be used for your vRA host and click **Next**.
 - a. Note: Skip ahead to step # 11 after completing this step.

The screenshot shows the 'Start Workflow : Setup Wizard' window. On the left, a tree view shows the following steps:

- 1 vRA host
 - 1a Host properties
 - 1b User credentials (selected)
- 2 IaaS host
 - 2a Host properties
 - 2b User credentials
 - 2c Domain and Workstation
- 3 Property group
 - 3a Group properties

The main area contains the following fields:

- Session mode: Shared Session (dropdown)
- * Tenant: vsphere.local
- * Authentication username: administrator@vsphere.local
- * Authentication password: (masked with asterisks)

At the bottom right, there are four buttons: Cancel, Back, Next, and Submit.

6. For environments using embedded vRO and you will use the existing vRA host, set the create the **Create vRA host** option to **No**.
7. Click on the magnifying glass (Not set) search bar.

The screenshot shows the 'Start Workflow : Setup Wizard' window. On the left, a tree view shows the following steps:

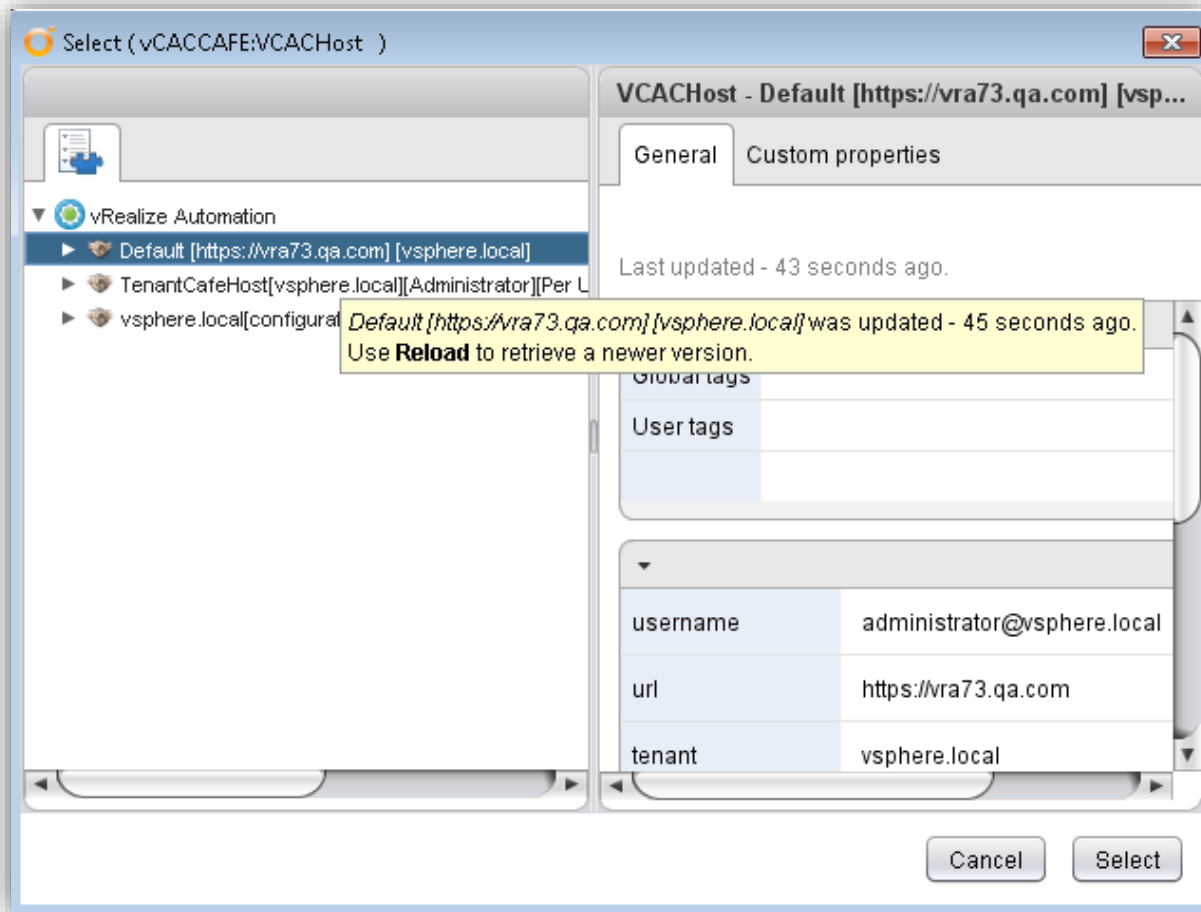
- 1 vRA host
 - 1a Host properties (selected)
 - 1b User credentials
- 2 IaaS host
 - 2a Host properties
 - 2b User credentials
 - 2c Domain and Workstation
- 3 Property group
 - 3a Group properties

The main area contains the following fields:

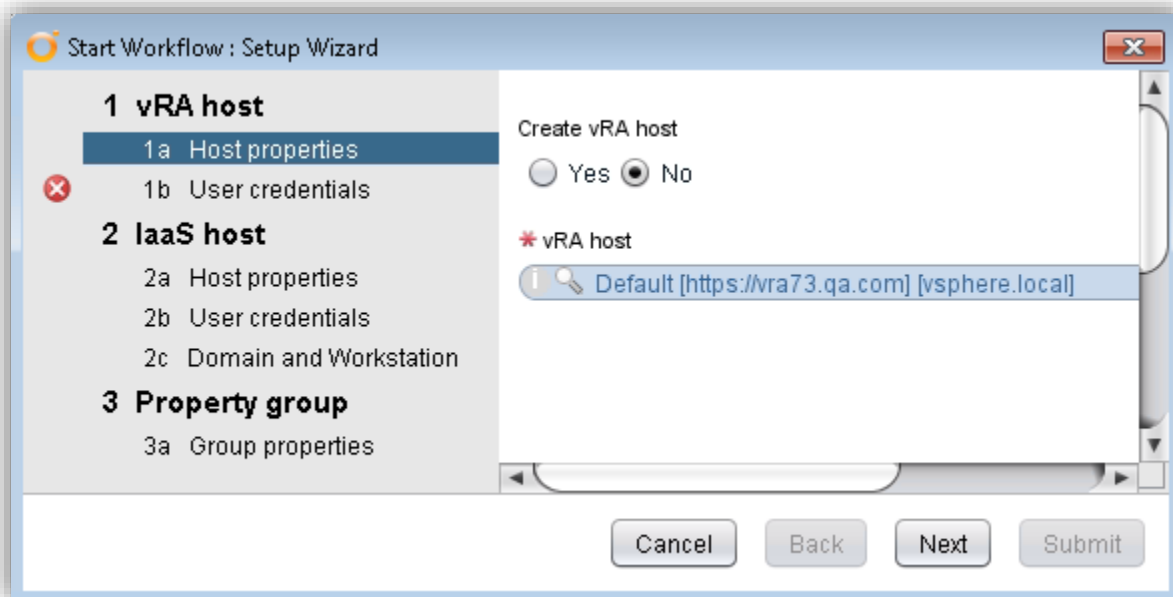
- 1 error - [vRA host], Mandatory field not set (yellow error message)
- Create vRA host: Yes (radio button), No (radio button, selected)
- * vRA host: Not set (search bar with magnifying glass icon)

At the bottom right, there are four buttons: Cancel, Back, Next, and Submit.

8. Drill down to and click on the vRA server that you will be using. Click **Select**.



9. Click **Next**.



10. Enter the *User credentials* for your vRA host and click **Next**.

The screenshot shows the 'Start Workflow : Setup Wizard' window. On the left, a tree view shows the following steps:

- 1 vRA host**
 - ✓ 1a Host properties
 - 1b User credentials**
- 2 IaaS host**
 - 2a Host properties
 - 2b User credentials
 - 2c Domain and Workstation
- 3 Property group**
 - 3a Group properties

The main area contains two required fields:

- * Authentication username**: A text box containing 'administrator@vsphere.local'.
- * Authentication password**: A password box with masked characters '*****'.

At the bottom right, there are four buttons: 'Cancel', 'Back', 'Next', and 'Submit'.

11. Provide your *IaaS host* information and click **Next**.

The screenshot shows the 'Start Workflow : Setup Wizard' window. On the left, a tree view shows the following steps:

- 1 vRA host**
 - ✓ 1a Host properties
 - ✓ 1b User credentials
- 2 IaaS host**
 - 2a Host properties**
 - 2b User credentials
 - 2c Domain and Workstation
- 3 Property group**
 - 3a Group properties

The main area contains the following configuration options:

- Create IaaS host**: Radio buttons for 'Yes' (selected) and 'No'.
- * Host name**: A text box containing 'Infoblox IaaS'.
- * Host URL**: A text box containing 'https://w2012vm.qa.com'.
- Automatically install SSL certificates**: Radio buttons for 'Yes' (selected) and 'No'.
- Connection timeout**: A text box containing '30.0'.
- Operation timeout**: A text box containing '60.0'.
- Use proxy**: Radio buttons for 'Yes' and 'No' (selected).

At the bottom right, there are four buttons: 'Cancel', 'Back', 'Next', and 'Submit'.

12. Provide your *IaaS User credentials* information and click **Next**.

The screenshot shows the 'Start Workflow : Setup Wizard' window. The left sidebar lists the steps: 1 vRA host (1a Host properties, 1b User credentials), 2 IaaS host (2a Host properties, 2b User credentials, 2c Domain and Workstation), and 3 Property group (3a Group properties). Step 2b is selected. The main area shows 'Host's authentication type' set to 'NTLM'. Below it, 'Authentication user name' is 'administrator' and 'Authentication password' is masked with asterisks. At the bottom are 'Cancel', 'Back', 'Next', and 'Submit' buttons.

Start Workflow : Setup Wizard

1 vRA host

- ✓ 1a Host properties
- ✓ 1b User credentials

2 IaaS host

- ✓ 2a Host properties
- 2b User credentials**
- 2c Domain and Workstation

3 Property group

- 3a Group properties

Host's authentication type

NTLM

* Authentication user name

administrator

* Authentication password

Cancel Back Next Submit

13. Provide your *IaaS host Domain and Workstation* information and click **Next**.

The screenshot shows the 'Start Workflow : Setup Wizard' window. The left sidebar is the same as in the previous step, but now step 2c 'Domain and Workstation' is selected. The main area shows 'Workstation for NTLM authentication' as an empty text box. Below it, 'Domain for NTLM authentication' is 'qa.com'. At the bottom are 'Cancel', 'Back', 'Next', and 'Submit' buttons.

Start Workflow : Setup Wizard

1 vRA host

- ✓ 1a Host properties
- ✓ 1b User credentials

2 IaaS host

- ✓ 2a Host properties
- ✓ 2b User credentials
- 2c Domain and Workstation**

3 Property group

- 3a Group properties

Workstation for NTLM authentication

Domain for NTLM authentication

qa.com

Cancel Back Next Submit

14. Update the *Group properties* as required and click **Submit**.

Start Workflow : Setup Wizard

1 vRA host

- ✓ 1a Host properties
- ✓ 1b User credentials

2 IaaS host

- ✓ 2a Host properties
- ✓ 2b User credentials
- ✓ 2c Domain and Workstation

3 Property group

- 3a Group properties**

Name
Infoblox-Default

Description
Infoblox Default Property Group

Visibility
All tenants

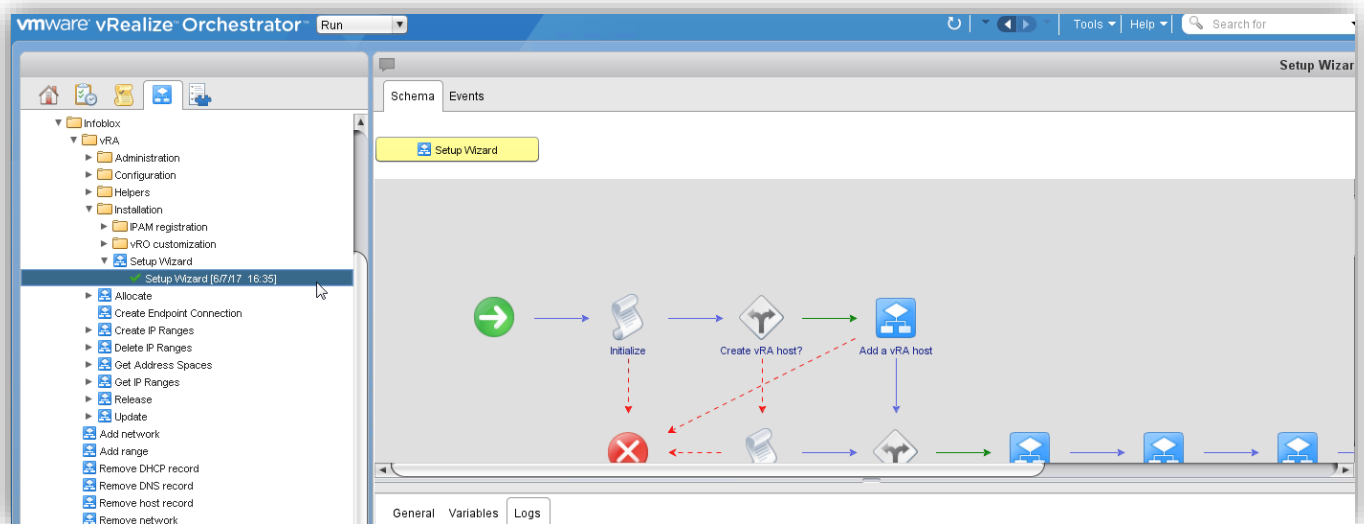
Number of virtual network interfaces
1

Update existing property definitions
☐ Yes ☒ No

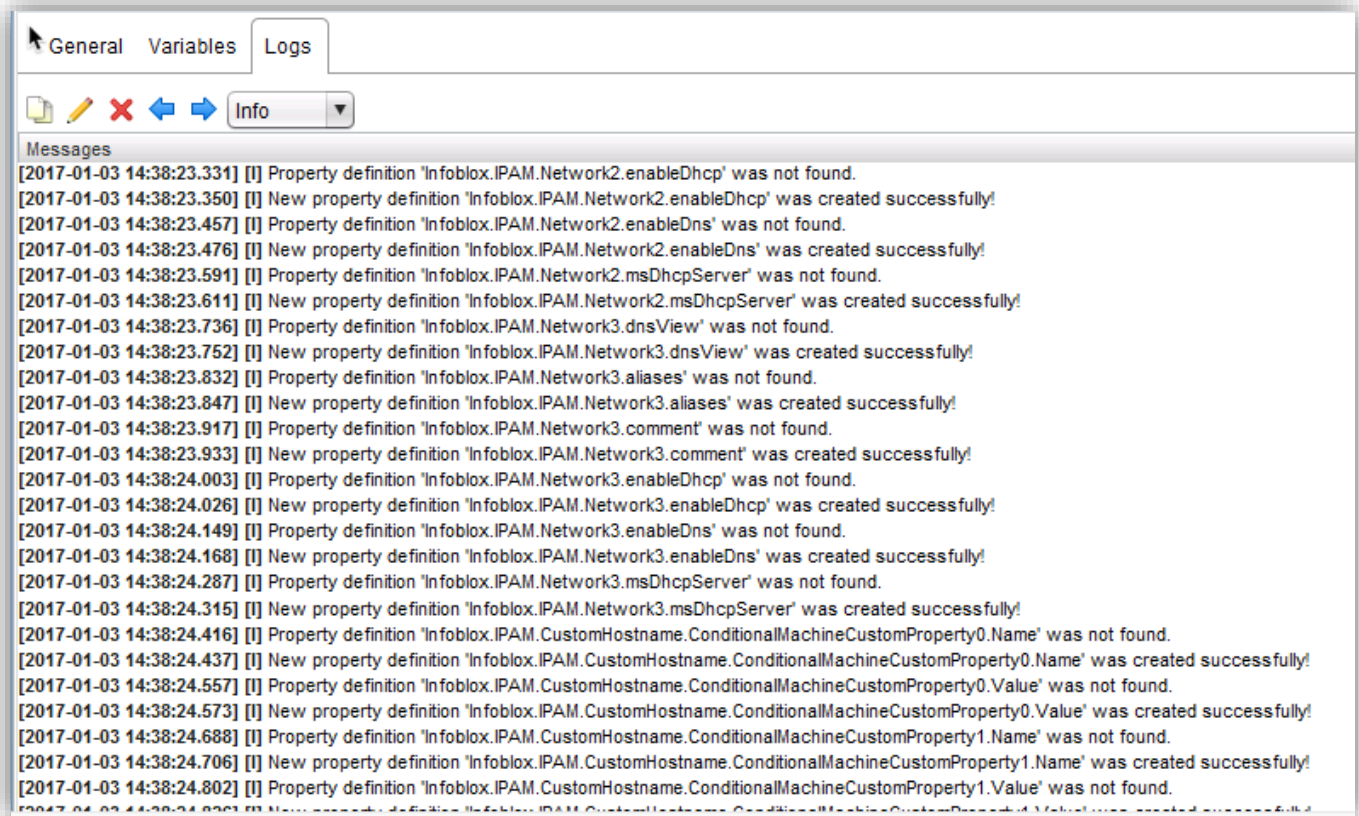
Enable support of Custom Hostnaming Extension for vRA
☒ Yes ☐ No

Cancel Back Next Submit

15. The workflow will start executing and may take around a minute to complete.



16. Review the logs for the workflow to see the updates that were applied. This is also helpful to review if any errors are encountered.

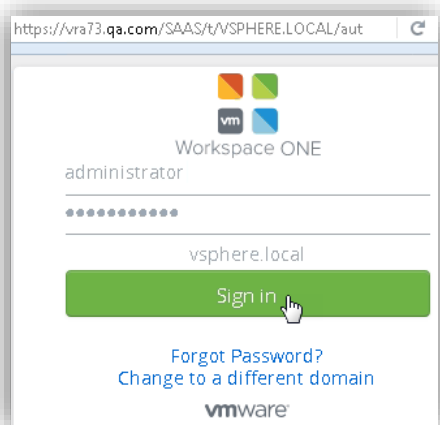


6. Creating Tenants in vRA

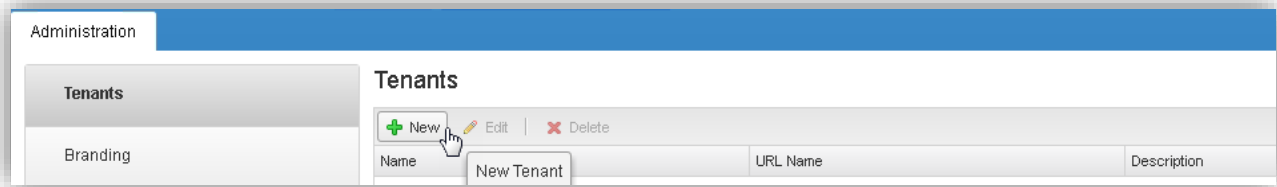
6.1 Create Production Tenant

Tenants are used to provide multiple environments within VMware. To complete the steps in this guide, an existing tenant can be used if one (or more) already exist. To create a new tenant:

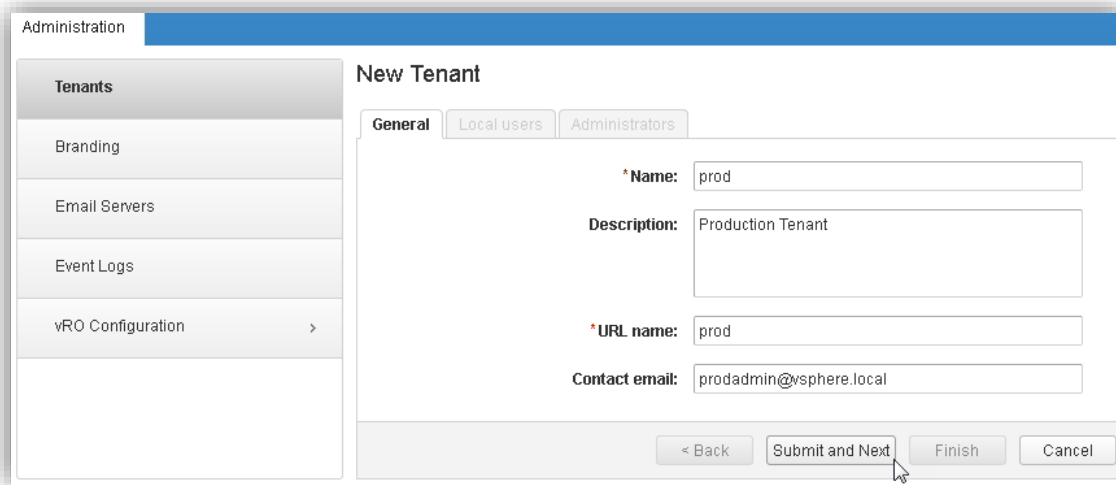
1. Login to vRA using your administrator credentials. Example URL: <https://vra73.qa.com/vcac>



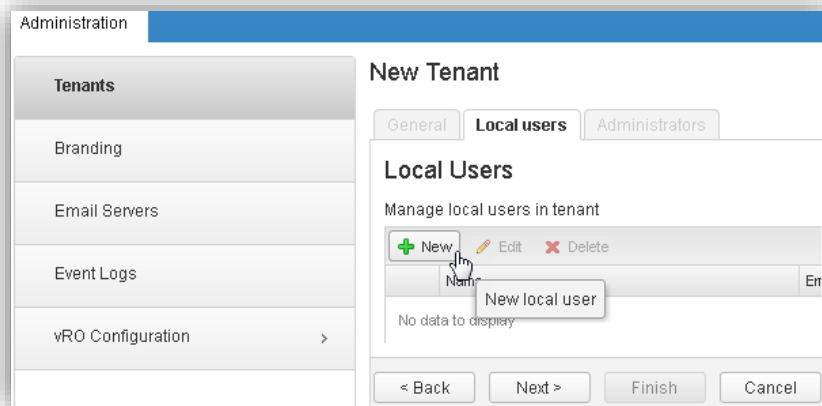
2. In the **Tenants** panel, click **+ New**.



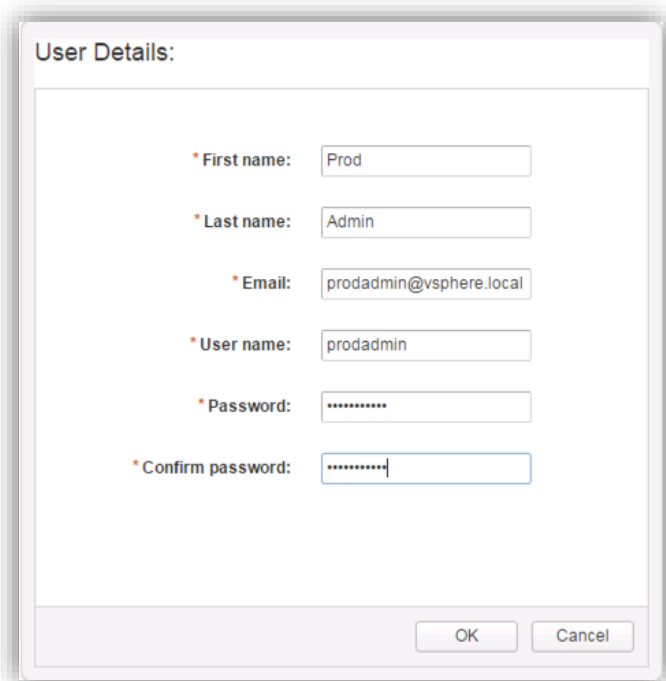
3. Enter the General parameters for the tenant and click **Submit and Next**.



4. Click **+ New** to create a new local user account.

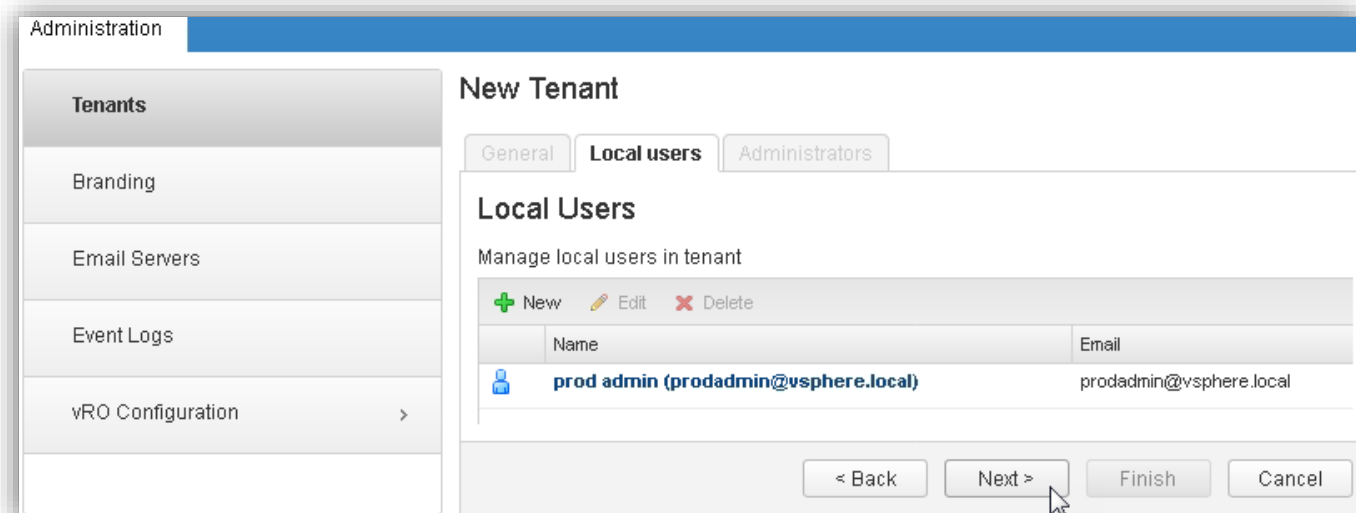


5. Enter the *User Details* and click **OK**.



A dialog box titled "User Details:" with a light purple border. It contains six input fields, each with a red asterisk label: "First name:" (value: Prod), "Last name:" (value: Admin), "Email:" (value: prodadmin@vsphere.local), "User name:" (value: prodadmin), "Password:" (value: masked with dots), and "Confirm password:" (value: masked with dots). At the bottom right are "OK" and "Cancel" buttons.

6. Click **Next**.



A screenshot of the "Administration" console showing the "New Tenant" configuration page. The left sidebar has a "Tenants" section with options: Branding, Email Servers, Event Logs, and vRO Configuration. The main area is titled "New Tenant" and has three tabs: "General", "Local users" (selected), and "Administrators". Under "Local Users", there is a sub-header "Manage local users in tenant" and a toolbar with "New" (green plus), "Edit" (pencil), and "Delete" (red X) icons. Below is a table with two columns: "Name" and "Email". The table contains one entry: "prod admin (prodadmin@vsphere.local)" with email "prodadmin@vsphere.local". At the bottom right are four buttons: "< Back", "Next >" (with a mouse cursor pointing to it), "Finish", and "Cancel".

7. Give tenant and IaaS administrator permissions to the tenant administrator. In the search boxes, type the administrators name, click on the search button and click on the search result to add the administrator. Click on the Finish button once done.

Administration

New Tenant

General Local users **Administrators**

Tenant administrators

Select users or groups to grant the Tenant administrator role.

Search

Name (1)
prod admin (prodadmin@...)

IaaS administrators

Select users or groups to grant the IaaS administrator role.

prodadmin

prod admin (prodadmin@vsphere.local)

No data selected

< Back Next > Finish Cancel

6.2 Create dev tenant

Follow the steps outlined in section 4.1 to create a tenant named *dev*. Create a user named *devadmin* in this tenant.

6.3 Create qa tenant

Follow steps outlined in section 4.1 to create a tenant named *qa*. Create a user named *qaadmin* in this tenant.

Tenants

+ New Edit Delete

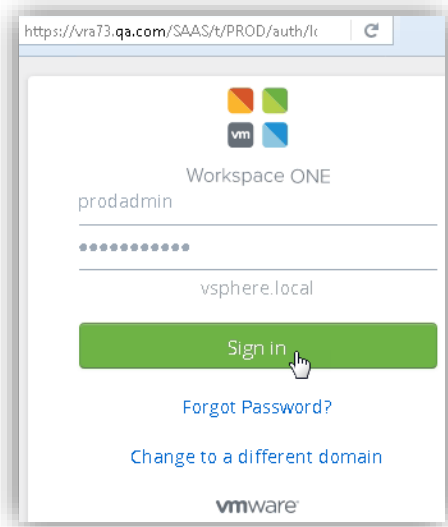
Name	URL Name	Description
vsphere.local	vsphere.local	
prod	prod	Production tenant
dev	dev	Development Tenant
qa	qa	QA tenant

7. Tenant Configuration

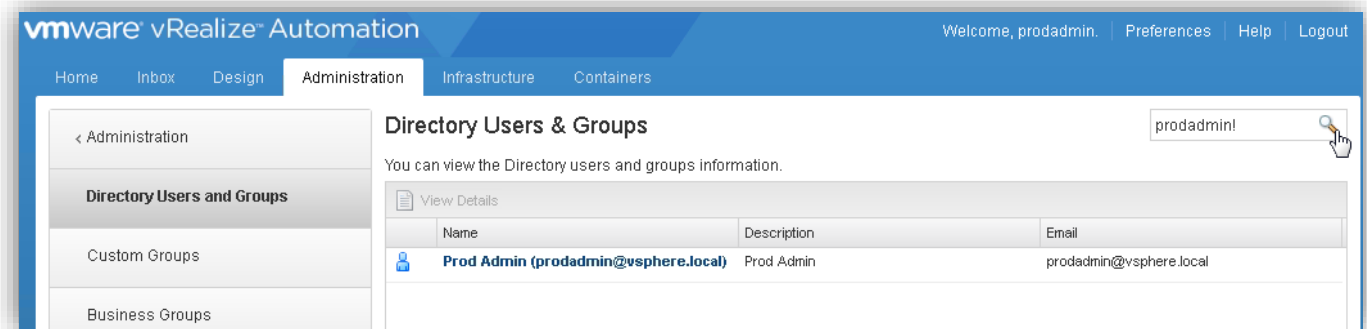
7.1 Before the tenant can be used, additional configuration must be completed.

Log in to the production tenant. Example:

<https://vra73.qa.com/vcac/org/prod>



8. Navigate to **Administration -> Users & Groups -> Directory Users & Groups**.
9. Type the admin name (*prodadmin*) in the search box and click on the search button.
10. Click on the hyperlink for the admin account.



11. Enable the check boxes for the roles to be allowed in the Add roles to this User panel. If in doubt, enable all roles and restrict these as needed at a later time. Example:

Add roles to this User.

- ☒ Application Architect
- ☒ Approval Administrator
- ☒ Catalog Administrator
- ☒ Container Administrator
- ☒ Container Architect

Authorities Granted by Selected Roles.

- Access UI
- Access my tenant administration GUI.
- Access my tenant directories, groups and users administration GUIs.
- Access the blueprint and blueprint component design GUI.
- Admin Requires System Admin
- Administer the Metrics Provider configurations.
- Administer the XaaS configurations.
- Assemble, edit and publish composite blueprints for the tenant.
- Assign the tenant administrator role to other users.
- Configure blueprint service settings.
- Configure software service settings.

12. Log out and log back in. This is required to reset your login session and make new configuration items available.
13. Navigate to **Infrastructure -> Endpoints -> Fabric Groups**.
14. Click **New**.

Home | Inbox | Design | Administration | **Infrastructure** | Containers

< Infrastructure

Agents

Fabric Groups

Endpoints

Fabric Groups

Place compute resources in fabric groups and assign fabric administrators to manage them.

[+ New](#)

Name	Fabric Administrators	Description	Compute Resources

15. Set the parameters for the fabric group and click **OK**.

The screenshot shows the 'New Fabric Group' dialog box in the vSphere interface. The left sidebar has 'Infrastructure' selected, with 'Fabric Groups' highlighted. The main area contains the following fields:

- Name:** prod-fabric-group
- Description:** Production Fabric Group
- Fabric administrators:** prodadmin@vsphere.local
- Compute resources:** A table with two rows: 'Compute' and 'Mgmt', both checked and associated with 'vCenter' and 'vSphere (vCenter)'.

At the bottom right, there are 'OK' and 'Cancel' buttons. A mouse cursor is clicking the 'OK' button.

16. Log out and log back in again. This is required to reset your login session and make new configuration items available.

7.2 Create Production Business Group

Business groups are used to associate services and resources to a group of users. This enables the users to be able to provision a VM. To create a business group:

1. Navigate to **Administration -> Users & Groups -> Business Groups**. Click **+ New**.

The screenshot shows the 'Business Groups' page in the vSphere interface. The left sidebar has 'Administration' selected, with 'Business Groups' highlighted. The main area contains the following elements:

- Business Groups** header
- Advanced Search** section with a search bar and a dropdown arrow.
- Buttons:** '+ New', 'Edit', 'Copy', 'Delete', and 'Group Info'.
- Table:** A table with columns: Name, Group Managers, Description, Virtual Machines ..., Quota Allocated (...), Memory Allocate..., and Storage Allocate....

A mouse cursor is clicking the '+ New' button, which has a 'New' tooltip.

2. Enter the required values under the **General** tab and click **Next**.

The screenshot shows the 'New Business Group' form in the 'General' tab. The form includes the following fields and options:

- Name:** prod-business-group
- Description:** Production Business Group
- Send manager emails to:** prodadmin@vsphere.local
- Active Directory Policy:** No policy selected
- Custom properties:** A table with columns: Name, Value, Encrypted, Show in Request. It includes buttons for New, Edit, and Delete.

At the bottom right, there are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'. A mouse cursor is pointing at the 'Next >' button.

3. Search for your tenant administrator account and assign it to all available roles. Click **Next**.

The screenshot shows the 'New Business Group' form in the 'Members' tab. The form includes the following sections:

- Group manager role:** Search field with a dropdown showing 'Prod Admin (prodadmin@vsphere.local)'.
- Support role:** Search field with a dropdown showing 'Prod Admin (prodadmin@vsphere.local)'.
- Shared access role:** Search field with a dropdown showing 'Prod Admin (prodadmin@vsphere.local)'.
- User role:** Search field with a dropdown showing 'Prod Admin (prodadmin@vsphere.local)'.

At the bottom right, there are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'. A mouse cursor is pointing at the 'Next >' button.

4. Select the Default machine prefix and click **Finish**.

The screenshot shows the 'New Business Group' configuration window. The left sidebar has 'Business Groups' selected. The main area has three tabs: 'General', 'Members', and 'Infrastructure'. The 'Infrastructure' tab is active, showing a 'Default machine prefix' dropdown set to 'prod-' and an 'Active Directory container' text box. At the bottom right, there are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'. The 'Finish' button is being clicked by a mouse cursor.

5. Verify that the Business group now appears in the Business Groups list:

The screenshot shows the 'Business Groups' management page. It includes a table with columns for Name, Group Managers, and Description. The 'prod-business-group' is listed with group managers 'prodadmin@vsphere.local' and description 'Production Business group'.

Name	Group Managers	Description
prod-business-group	prodadmin@vsphere.local	Production Business group

7.3 Create Reservation

Reservations are used to assign resources that will be available to a business group when provisioning services. In this example, we will create a vSphere (vCenter) reservation:

1. Navigate to **Infrastructure -> Reservations -> Reservations**.
2. Click **+ New** and select **vSphere (vCenter)**.

The screenshot shows the 'Reservations' management page. The left sidebar has 'Reservations' selected. The main area has a 'New' button and a dropdown menu. The 'vSphere (vCenter)' option is selected from the dropdown menu.

Type	Tenant	Business Group	Pri...	Reservation Policy	Machines Total	Machines Allocated (%) (Alloc/Total)	Quota Allocated (%) (Alloc/Res)	Memory Allocated (%) (Alloc/Res)	Storage Allocated (%) (Alloc/Res)
------	--------	----------------	--------	--------------------	----------------	--------------------------------------	---------------------------------	----------------------------------	-----------------------------------

3. Set the parameters under the **General** tab and switch to the Resources tab.

The screenshot shows the 'New Reservation - vSphere (vCenter)' form in the 'General' tab. The left sidebar contains a navigation menu with 'Infrastructure' selected, and sub-items: 'Key Pairs', 'Reservations' (highlighted), 'Reservation Policies', and 'Network Profiles'. The main form area has tabs for 'General', 'Resources', 'Network', 'Properties', and 'Alerts'. The 'General' tab contains the following fields:

- * Name: prod-reservation
- * Tenant: prod
- * Business group: prod-business-group
- Reservation policy: (empty dropdown)
- * Priority: 1
- ☒ Enable this reservation

4. Assign the resources for the reservation and switch to the **Network** tab.

The screenshot shows the 'New Reservation - vSphere (vCenter)' form in the 'Resources' tab. The left sidebar is the same as in the previous screenshot. The main form area has tabs for 'General', 'Resources', 'Network', 'Properties', and 'Alerts'. The 'Resources' tab contains the following fields and tables:

- * Compute resource: Compute (vCenter)
- Machine quota: Unlimited
- * Memory (GB):

Physical	Total Reserved	Total Allocated	This Reservation
10	0	0	3

- * Storage (GB):

	Storage Path	Physical	Free	Total Reserved	This Reservation Reserved
☒	datastore1 (1)	92	88	0	30

- Resource pool: (empty dropdown)

5. Assign the Network Adapter and Network Profile to be used.

New Reservation - vSphere (vCenter)

Create a reservation to allocate provisioning resources to a business group in a tenant. You also can copy an existing reservation to use as a starting point.

General Resources **Network** Properties Alerts

Network:

Network Adapter	Network Profile
☐ dvPortGroup	
☐ dvSwitch-DVUplinks-43	
☒ VM Network	
☐ vxw-dvs-43-virtualwire-11-sid-5000-Web-Switch	
☐ vxw-dvs-43-virtualwire-3-sid-5001-Transient-Switch	
☐ vxw-vmknic Pg-dvs-43-0-03dbfd73-14ac-4cd0-8850-60e18f4cf0ca	

6. NSX settings are configured in the Advanced Settings section found below. In this example, we are using the following:

Advanced Settings

Transport zone: Global-Transport-Zone

Security groups: ☐ Activity Monitoring Data Collection

Distributed logical router:

Name	Network Profile
☒ Logical-Router-01	Infoblox-External

- Click **OK** to save the reservation.

- The reservation will now be displayed in the Reservations list:

Name	Type	Tenant	Business Group	Priority
prod-reservation	vSphere (vCenter)	prod	prod-business-group	1

7.4 Create Production Service

To configure the production service:

- Navigate to **Administration -> Catalog Management -> Services**.
- Click **+ New**.

3. Set the parameters for the service and click **OK**.

The screenshot shows the 'New Service' form in the Administration tab. The form includes fields for Name, Description, Icon, Status, Hours, Owner, Support Team, and Change Window. The Name field is set to 'prod-service' and the Description field is set to 'Production Service'. The Status is set to 'Active'. The Hours field is set to 'UTC-07:00 to UTC-07:00'. The Owner and Support Team fields are set to 'Prod Admin (prodadmin@vsphere.local)'. The Change Window field is set to 'UTC-07:00 to UTC-07:00'. The OK button is highlighted.

4. Verify that the Production Service is now shown in the Services list:

The screenshot shows the 'Services' list in the Administration tab. The list contains one entry: 'prod-service' with status 'Active' and description 'Production Service'.

Name	Status	Description
prod-service	Active	Production Service

7.5 Create Entitlement

Create a new Entitlement

1. Navigate to **Administration -> Catalog Management -> Entitlements**.
2. Click **+ New**.

The screenshot shows the 'Entitlements' page in the Administration tab. The page includes a description of entitlements and a table with columns: Name, Order, Description, Status, Expires, Last Updated, and Last Updated. The 'New Entitlement' button is highlighted.

- Set the parameters for the entitlement, making sure to set the **Status** menu to **Active**. Click **Next**.

The screenshot shows the 'New Entitlement' form in the Administration console. The form is divided into two tabs: 'General' and 'Items & Approvals'. The 'General' tab is active. The form contains the following fields:

- Name:** prod-entitlement
- Description:** Production Entitlement
- Expiration Date:** A date picker set to 8 days.
- Status:** Active
- Business Group:** prod-business-group
- Users & Groups:** A section with a checkbox for 'All Users and Groups' (checked) and a search bar. Below the search bar is a table with columns 'Name' and 'Approval', and a message 'No data selected'.

At the bottom of the form are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'. A mouse cursor is pointing at the 'Next >' button.

- Click the + symbol for Entitled Services and select the service to be used. Click **OK**.

The screenshot shows the 'Add Services' dialog box. The dialog has a search bar at the top with the text 'Name: Search'. Below the search bar is a table with columns 'Name' and 'Approval'. The table contains one row with the name 'prod-service' and a checked checkbox. Below the table is a dropdown menu labeled 'Apply this policy to selected items:' with the value '(none)'. At the bottom of the dialog are two buttons: 'OK' and 'Cancel'. A mouse cursor is pointing at the 'OK' button.

- Click on the + symbol for Entitled Actions.

New Entitlement

General | **Items & Approvals**

Select the services, items, and actions to include in this entitlement. With the exception of actions and blueprint components, entitled items appear in the service catalog. Actions are available only after items are provisioned. To apply different levels of governance, you can configure individual services, items, and actions with different approval policies. You can change the approval policies associated with entitled items at any time.

Entitled Services +

Name	Approval Policy
prod-service	(none)

Entitled Items +

Name	Approval Policy
No data selected	

Entitled Actions +

☒ Actions only apply to items defined in this entitlement

Add Actions

Name	Approval Policy
Associate Floating IP	(none)

- Enable the appropriate Entitled Actions and click OK.

New Entitlement

General | **Items & Approvals**

Select the service, items, and actions to include in this entitlement.

Entitled Service

Name
prod-service

Add Actions

Type: All

Name: Search

☒	Name	Type
☒	Associate Floating IP	Machine
☒	Cancel Reconfigure	Machine
☒	Change Lease	Deployment
☒	Change Lease	Machine
☒	Change NAT Rules	Network
☒	Change Owner	Deployment
☒	Change Security	Deployment
☒	Connect to Remote Console	Machine
☒	Connect using Console Ticket	Machine

Apply this policy to selected items: (none)

OK Cancel

< Back Next > Finish Cancel

- Click **Finish**.
- The Entitlement will now show in the list:

Entitlements

Create and manage access to your catalog items in the service catalog, and the actions you can run on provisioned items. When you entitle services, catalog the services, items, and actions, and then prioritize multiple entitlements for the same business group to set the order in which approvals are applied.

+ New | Edit | Delete | Deactivate | Prioritize

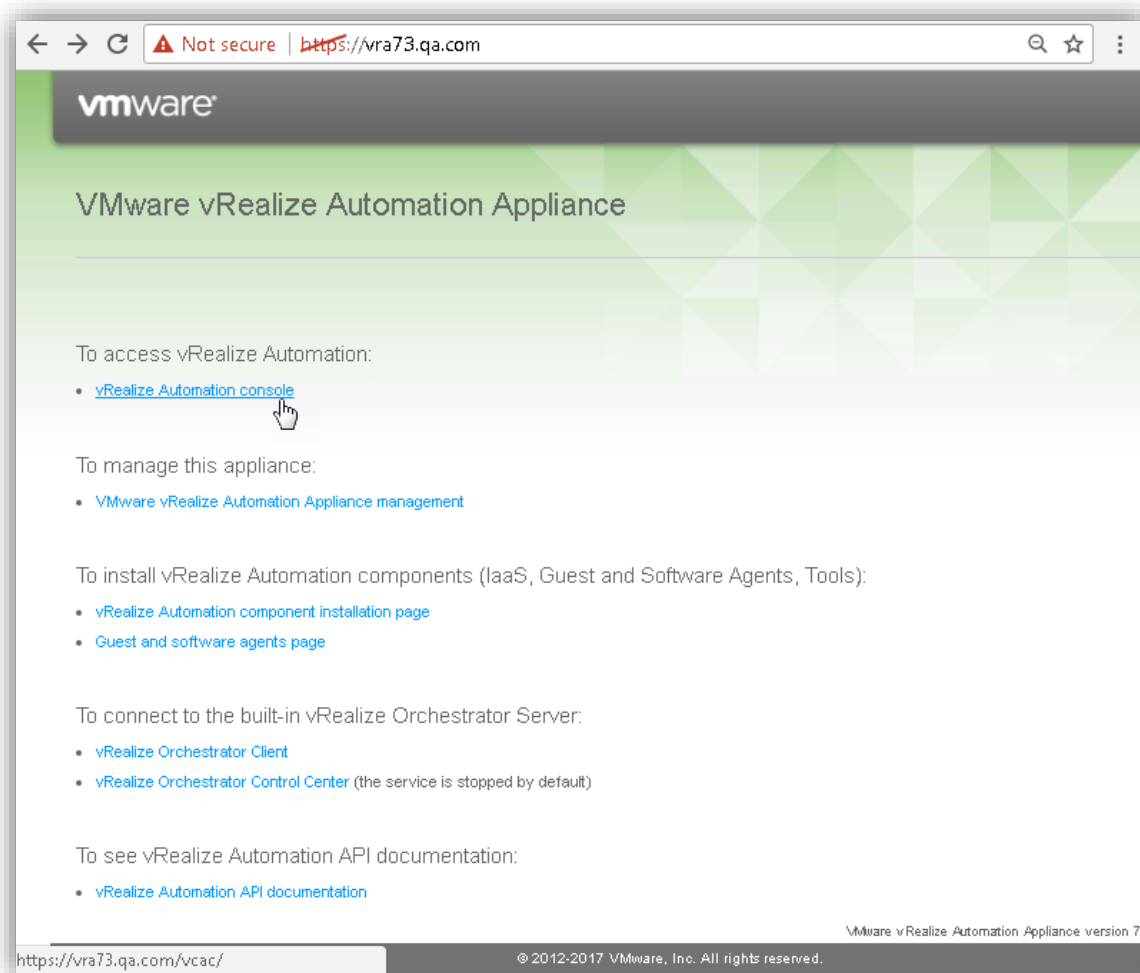
Name	Business Group	Order	Description	Status
prod-entitlement	prod-business-group	1	Production Entitlement	Active

8. Create Endpoints in vRA

8.1 Create Infoblox NIOS Endpoint

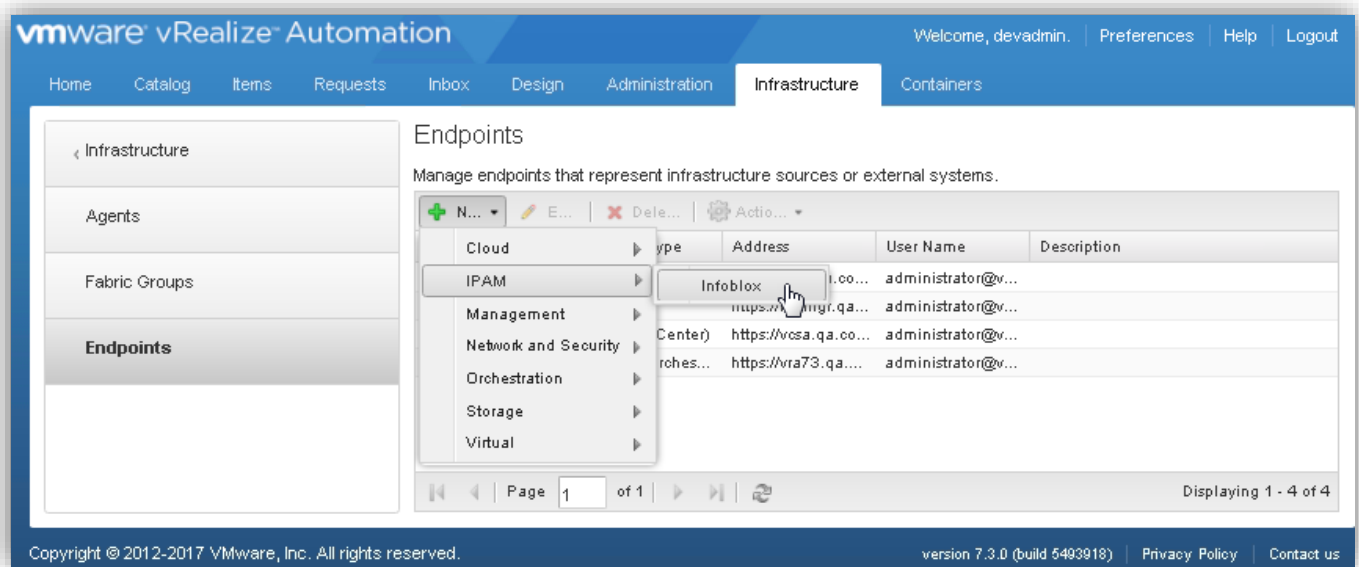
Create the Infoblox NIOS Endpoint in vRA

1. Connect to your vRA appliance and launch the **vRealize Automation console**.



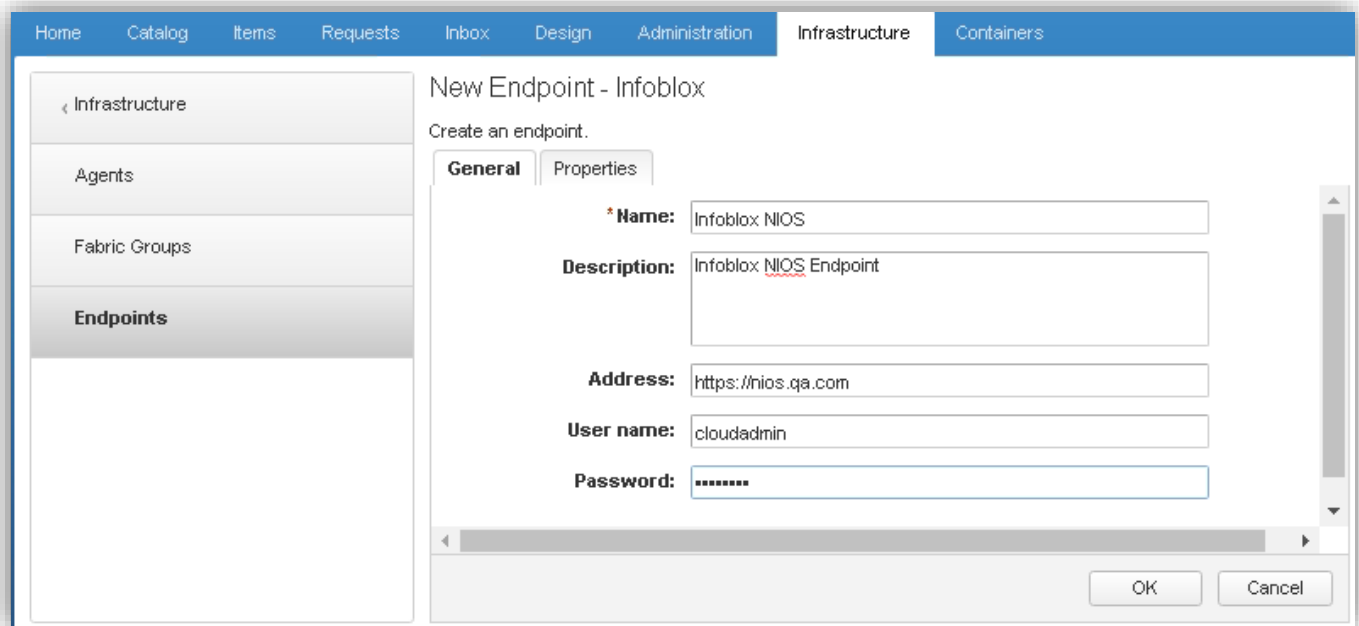
2. Log in using the account that has been created in vRA. In the example here, we have created the account “*vraadmin*” in the domain *vsphere.local*.
3. Navigate to **Infrastructure -> Endpoints**.

4. Drill down through the **+ New** menu and select **IPAM -> Infoblox**.

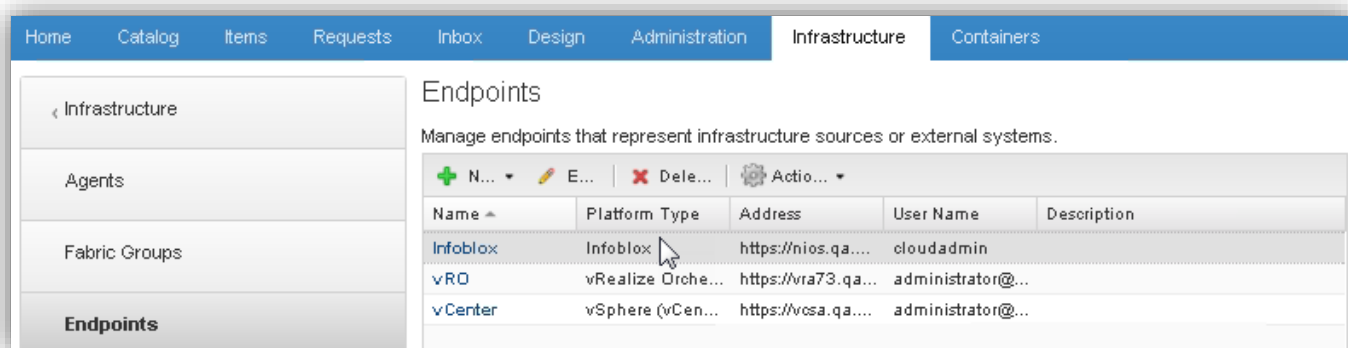


5. Provide the connection details for the connection to your Infoblox appliance. Click **OK**.

Note: It is recommended to use a Cloud API account in NIOS. This enables the Infoblox IPAM plugin to send cloud specific data in its updates.



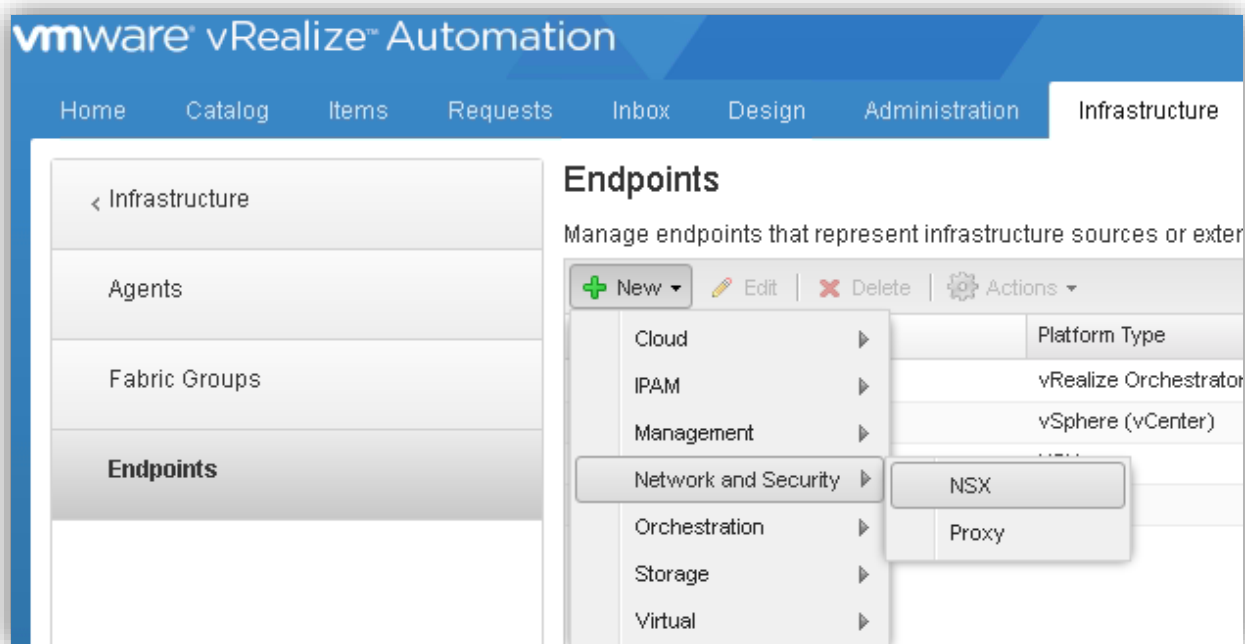
6. The Infoblox NIOS endpoint for IPAM will now show in the endpoint list:



8.2 Create NSX endpoint

When employing Network Virtualization using VMware NSX (Network Virtualization and Security Platform), you will also require an endpoint for your NSX server. To create this endpoint:

1. Navigate to **Infrastructure -> Endpoints -> Endpoints** while logged into your tenant for vRA
Note: In this example, we use a tenant named 'dev': <https://vra73.qa.com/shell-ui-app/org/dev>.
2. Click **+ New**, drill down into **Network and Security** and select **NSX**.



3. Enter a descriptive name for your NSX endpoint, along with the address, user name and password used for the connection to your NSX server.

The screenshot shows the 'New Endpoint - NSX' form with the 'General' tab selected. The form includes fields for Name, Description, Address, User name, and Password. The 'Name' field contains 'NSX'. The 'Address' field contains 'https://nsxmgr.qa.com'. The 'User name' field contains 'administrator@vsphere.local'. The 'Password' field is masked with dots. At the bottom right, there are buttons for 'Test Connection', 'OK', and 'Cancel'.

Field	Value
Name	NSX
Description	
Address	https://nsxmgr.qa.com
User name	administrator@vsphere.local
Password	

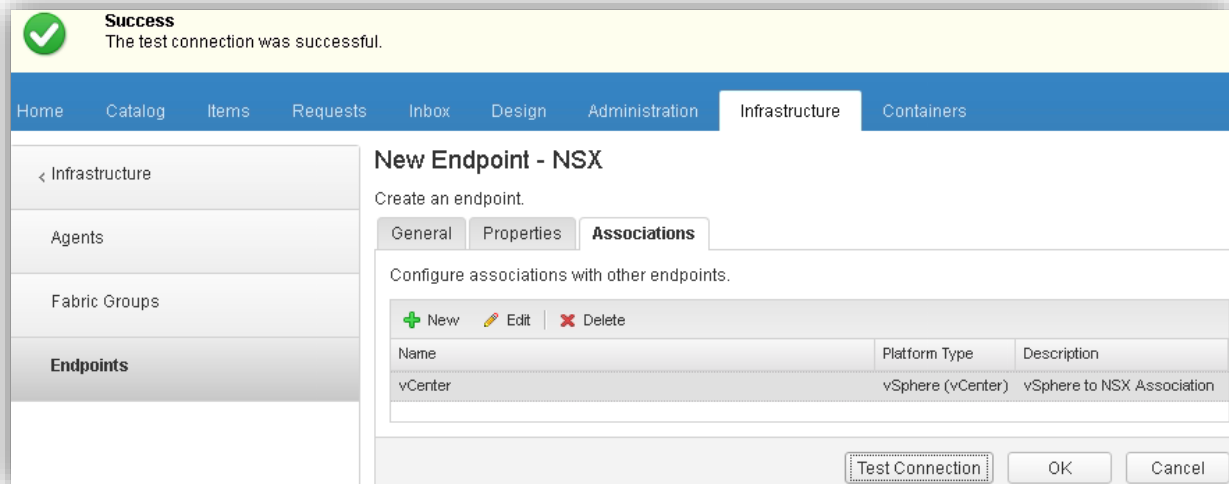
4. Click on the **Associations** tab.
5. Click **+ New**.
6. Click on the dropdown menu under the Name column and select the menu item for the vCenter server that you want to associate with your NSX endpoint.
7. Click on the **OK** button located just below the row for the association that you are adding.

The screenshot shows the 'New Endpoint - NSX' form with the 'Associations' tab selected. The form includes a table for configuring associations with other endpoints. The table has columns for Name, Platform Type, and Description. A new association is being added with the Name 'vCenter', Platform Type 'vSphere (vCenter)', and Description 'vSphere to NSX Association'. At the bottom right, there are buttons for 'Test Connection', 'OK', and 'Cancel'.

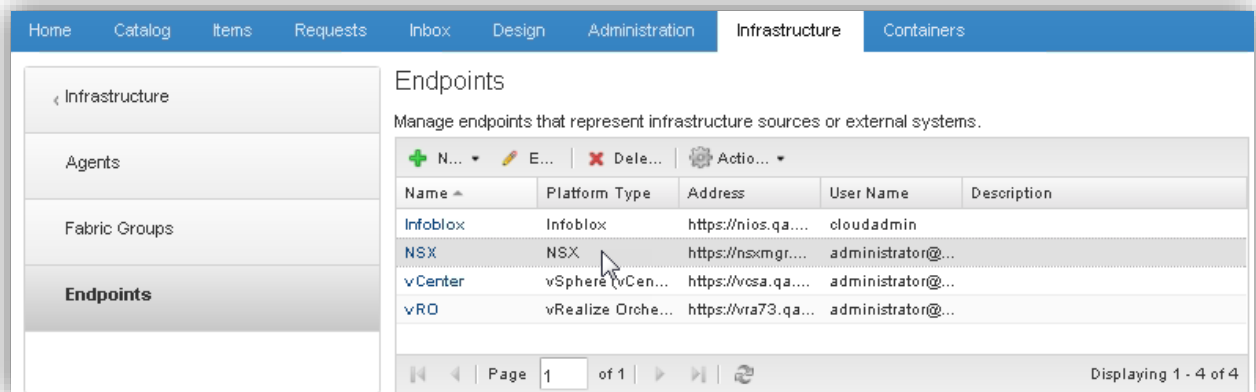
Name	Platform Type	Description
vCenter	vSphere (vCenter)	vSphere to NSX Association

8. Click on the **Test Connection** found at the bottom right of the window. Accept any prompts or Security Alerts that may be displayed, allowing you to confirm that the connection between your vCenter server and NSX endpoint is working.

9. Verify that the connection test completed successfully.



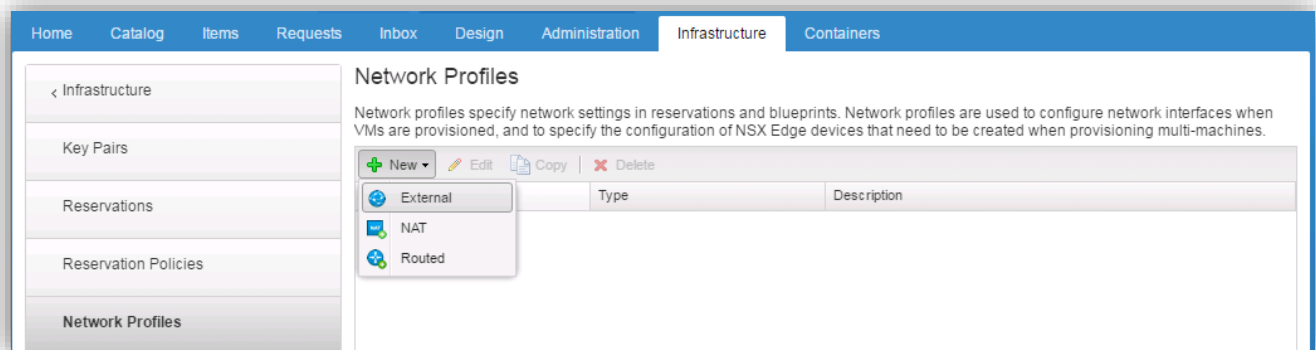
10. Click **OK**.



8.3 Create External Profile

Create the *External* network profile which will be used to set the network parameters for a machine blueprint.

1. Under **Infrastructure** -> **Reservations** -> **Network Profiles**, expand the **+ New** menu and select *External*.



2. Set the parameters for the profile and select the *Infoblox NIOS* endpoint for IPAM:

Home Catalog Items Requests Inbox Design Administration Infrastructure Containers

Infrastructure

Key Pairs

Reservations

Reservation Policies

Network Profiles

Placement Policy

New Network Profile - External

Create a network profile to manage one or more named ranges of static IPv4 network addresses.

General Network Ranges

Name: Infoblox-External-Profile

Description: Infoblox External Profile

IPAM endpoint: Infoblox ⓘ

OK Apply Cancel

3. Switch to the Network Ranges tab.
4. Click on the Address space menu and select the Network View in NIOS that you want to use for this profile.

Note: If no network view is selected, the “default” network view is used automatically.

Home Catalog Items Requests Inbox Design Administration Infrastructure Containers

Infrastructure

Key Pairs

Reservations

Reservation Policies

Network Profiles

Placement Policy

New Network Profile - External

Create a network profile to manage one or more named ranges of static IPv4 network addresses.

General **Network Ranges**

Address space: Any ⓘ

Name	Description
default	

Start IP

No items exist.

OK Apply Cancel

5. Click on **+ Add** button.

Home Catalog Items Requests Inbox Design Administration Infrastructure Containers

Infrastructure

Key Pairs

Reservations

Reservation Policies

Network Profiles

Placement Policy

New Network Profile - External

Create a network profile to manage one or more named ranges of static IPv4 network addresses.

General **Network Ranges**

Address space: default ⓘ

Start IP	End IP	Name	Description
		default	

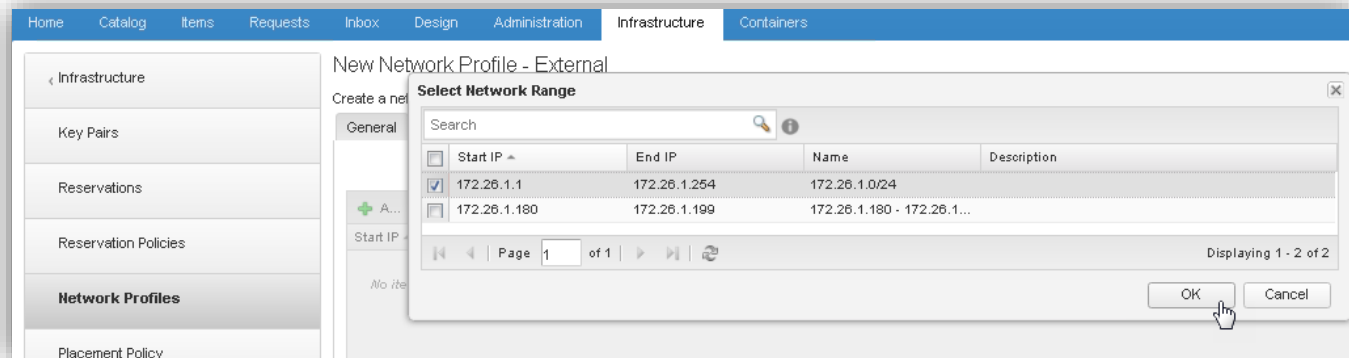
No items exist.

OK Apply Cancel

6. Click on the Search button

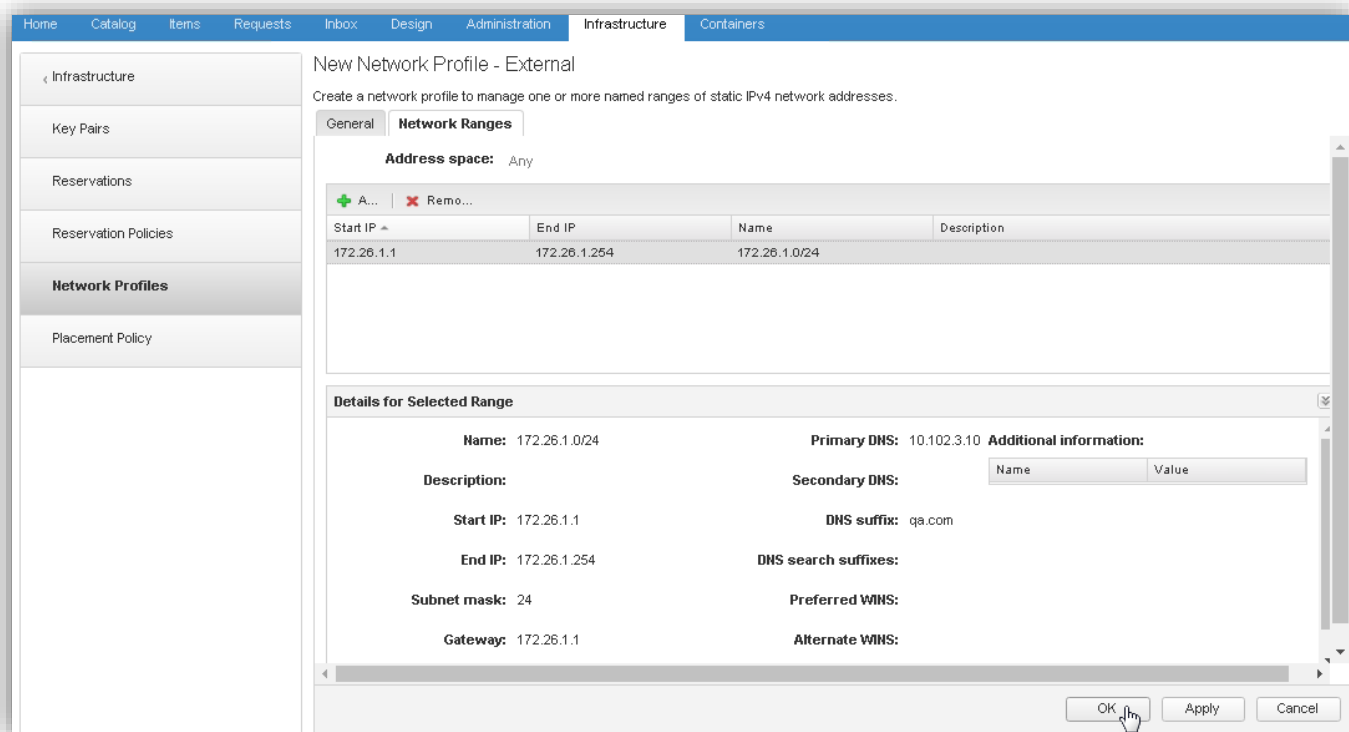
Note: See the Appendix for information limiting search results

7. Select the network or range in NIOS that you want to be used for IP provisioning. Click **OK** to close the Network Range selector.



8. Select the range to verify its DHCP options.

Note: The DNS suffix must be configured in the properties for the network and/or range in NIOS. If this is not completed, provisioning done by the Infoblox IPAM plugin will fail.



9. Click **OK** to save the network profile.

New Network Profile - External

Create a network profile to manage one or more named ranges of static IPv4 network addresses.

General **Network Ranges**

Address space: Any

Start IP	End IP	Name	Description
172.26.1.180	172.26.1.199	172.26.1.180 - 172.26.1.199	

OK Apply Cancel

8.4 Add a Reservation

Add the configured External Profile to the reservation

Edit Reservation - vSphere (vCenter)

Change settings in a listed reservation.

General Resources **Network** Properties Alerts

Network:

Network Adapter	Network Profile
☐ dvPortGroup	
☐ dvSwitch-DVUplinks-43	
☒ VM Network	Infoblox-External
☐ vxw-dvs-43-virtualwire-11-sid-5000-Web-Switch	
☐ vxw-dvs-43-virtualwire-3-sid-5001-Transient-Switch	
☐ vxw-vmknic Pg-dvs-43-0-03dbfd73-14ac-4cd0-8850-60e18f4cf0ca	

9. Single Machine with External Network Profile

9.1 Single Machine Blueprint

Create a Single Machine blueprint. If using NSX, make sure to set the Transport zone.

Note: This is not required for non-NSX environments.

New Blueprint

General NSX Settings Properties

*Name: Infoblox-Single-Web

*ID: InfobloxSingleWeb *i*
Assign a permanent, unique ID to this blueprint.

Description: Infoblox Single Web VM

*Archive (days): 0 *i*

Deployment limit: *i*

Lease (days): Minimum Maximum

OK Cancel

Here we have name the machine as “Web” and selected machine prefix “prod-“

Design Canvas

Web

vSphere Machine

vSphere_Machine_1

General Build Information Machine Resources Storage Network Security Properties

*ID: Web

Description: Web VM

☐ Display location on request *i*

Reservation policy: *i*

Machine prefix: prod- *i*

Minimum Maximum

*Instances: 1 1 *i*

Save Finish Cancel

Fill Build Information -

The screenshot shows the 'vSphere_Machine_1' configuration window with the 'Build Information' tab selected. The 'Blueprint type' is set to 'Server'. The 'Action' is set to 'Clone'. The 'Provisioning workflow' is set to 'CloneWorkflow'. The 'Clone from' field is set to 'Linux'. The 'Customization spec' is set to 'Linux'.

vSphere_Machine_1

General | **Build Information** | Machine Resources | Storage | Network | Security | Properties

Blueprint type: Server

Action: Clone

* Provisioning workflow: CloneWorkflow

* Clone from: Linux

Customization spec: Linux

Select Network and Security and drop Existing Network on the canvas.

The screenshot shows the 'New Blueprint: Infoblox-Single-Web' configuration window. The 'Design Canvas' on the right shows a 'Web' component connected to an 'Existing_Network_1' component. The 'Existing_Network_1' component is expanded, showing the 'General' tab with a 'Network profile' field and a 'Description' field.

New Blueprint: Infoblox-Single-Web

Categories

- Machine Types (11)
- Software Components (0)
- Blueprints (2)
- Network & Security (8)**
- XaaS (1)
- Containers (1)
- Other Components (0)

Search

Design Canvas

Web

vSphere Machine

Existing_Network_1

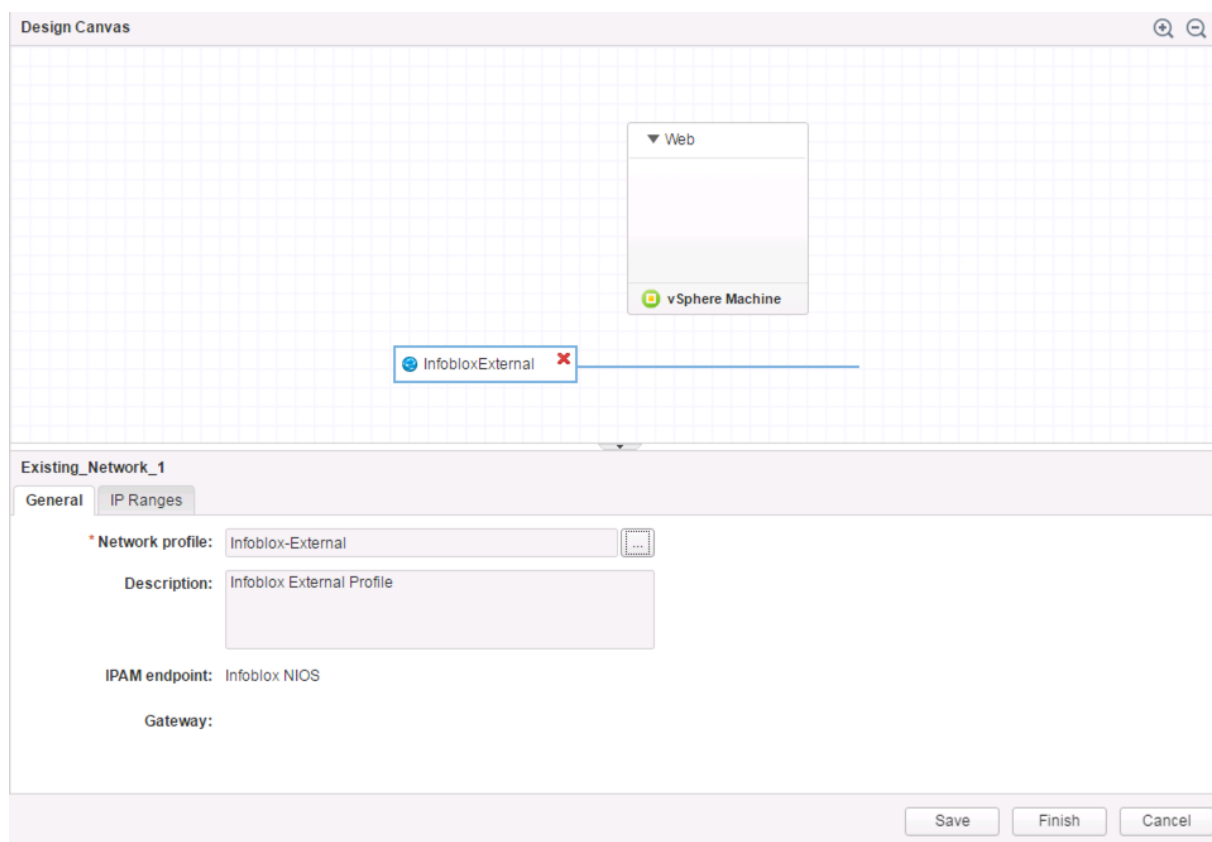
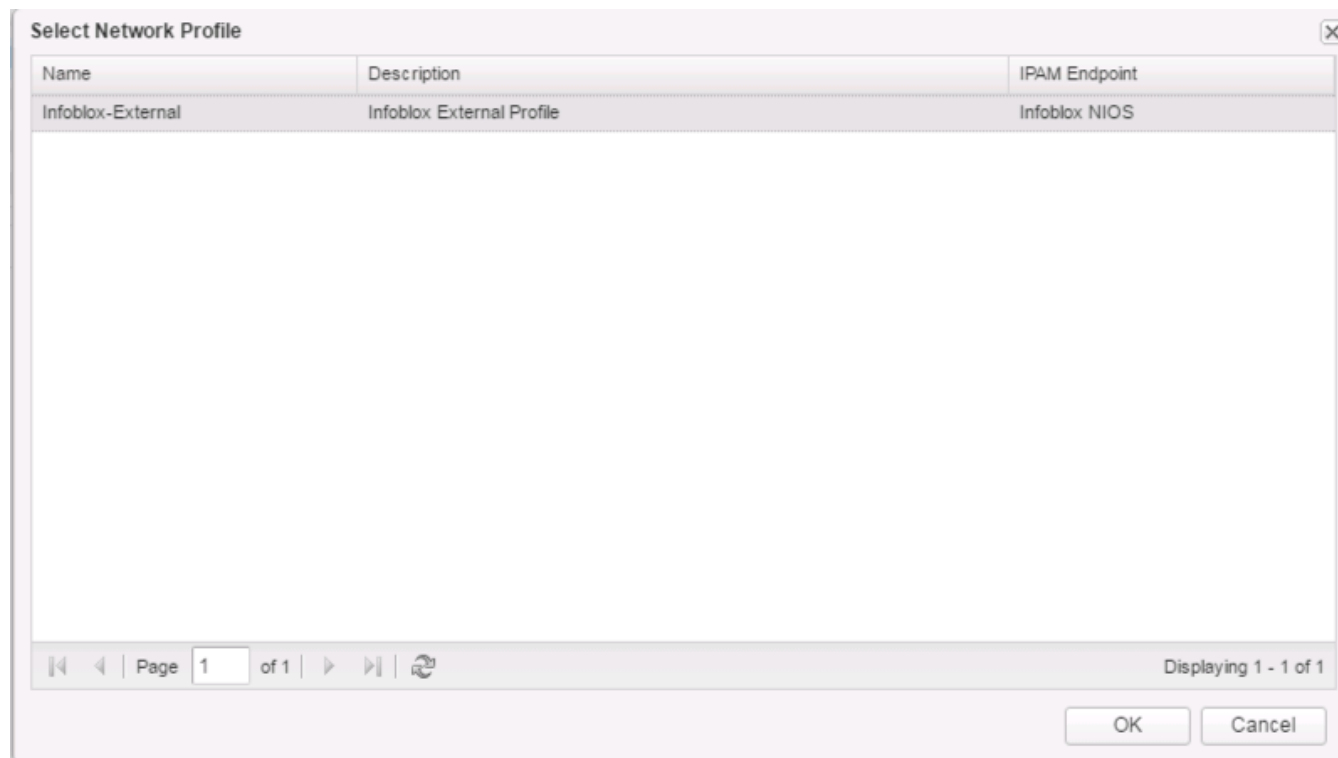
General | DNS/WINS | IP Ranges

* Network profile:

Description:

Save Finish Cancel

Select “**network Profile**” and use **Infoblox-External** network profile.



Select Web VM and add Network -

The screenshot shows the VMware vSphere Web Client interface. At the top is the 'Design Canvas' with a grid background. A 'Web' VM is shown with a 'vSphere Machine' icon. A line connects the VM to a network icon labeled 'InfobloxExternal'. Below the canvas is the 'Web' configuration pane with tabs: General, Build Information, Machine Resources, Storage, **Network**, Security, and Properties. The 'Network' tab is active, showing a table with columns: ID, Network, Assignment Type, Address, Load Balancing, and Custom Properties. The table has one row with ID '0', Network 'InfobloxExternal', Assignment Type 'Static IP', and an empty 'Address' field. Below the table are 'OK' and 'Cancel' buttons. At the bottom of the pane, 'Maximum network adapters' is set to 'Unlimited'. At the very bottom of the window are 'Save', 'Finish', and 'Cancel' buttons.

ID	Network	Assignment Type	Address	Load Balancing	Custom Properties
0	InfobloxExternal	Static IP			

Maximum network adapters: Unlimited

Design Canvas

The Design Canvas shows a network diagram. A 'Web' component (represented by a box with a red 'X' icon) is connected to a 'vSphere Machine' component (represented by a box with a green 'v' icon). The 'vSphere Machine' component is connected to an 'InfobloxExternal' component (represented by a box with a blue 'i' icon).

Web

General Build Information Machine Resources Storage **Network** Security Properties

+ New Edit Delete

ID	Network	Assignment Type	Address	Load Balancing	Custom Properties
0	InfobloxExternal	Static IP			

Maximum network adapters: Unlimited ⓘ

Save Finish Cancel

9.2 Add Property Group to VM

Web

General Build Information Machine Resources Storage Network Security **Properties**

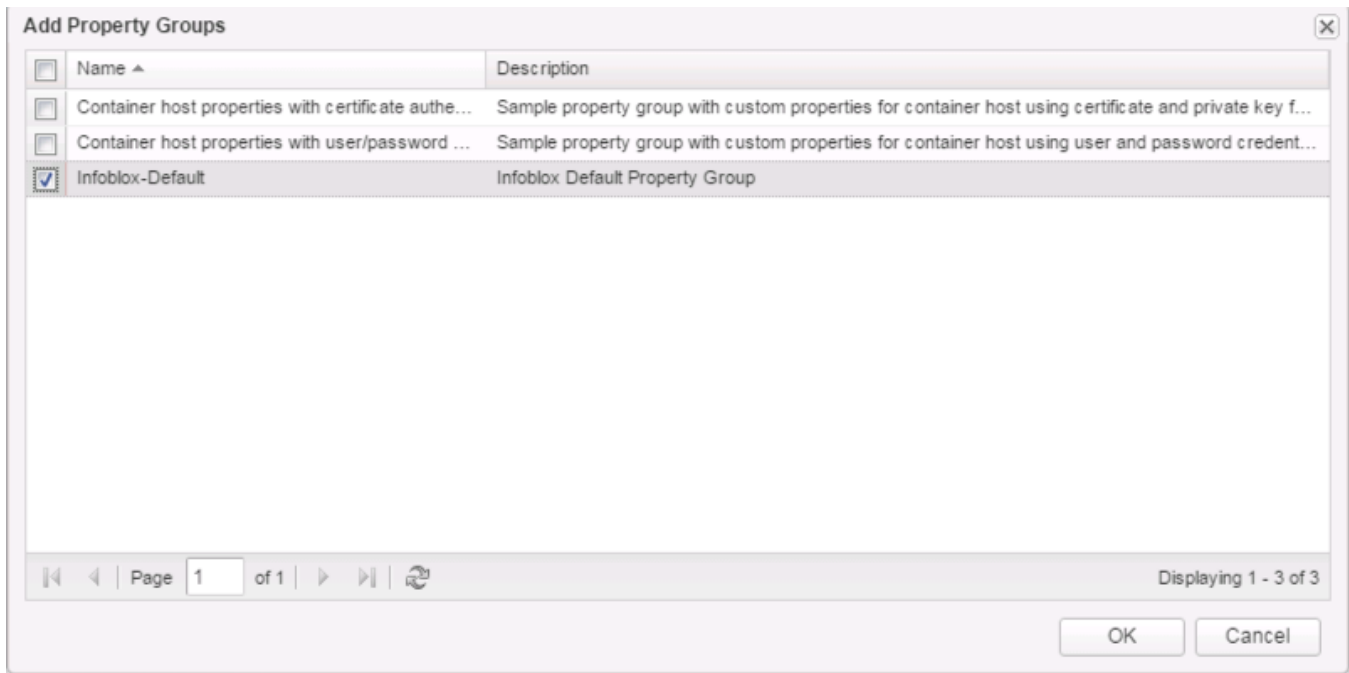
Property Groups Custom Properties

+ Add Move Up Move Down View Properties Remove

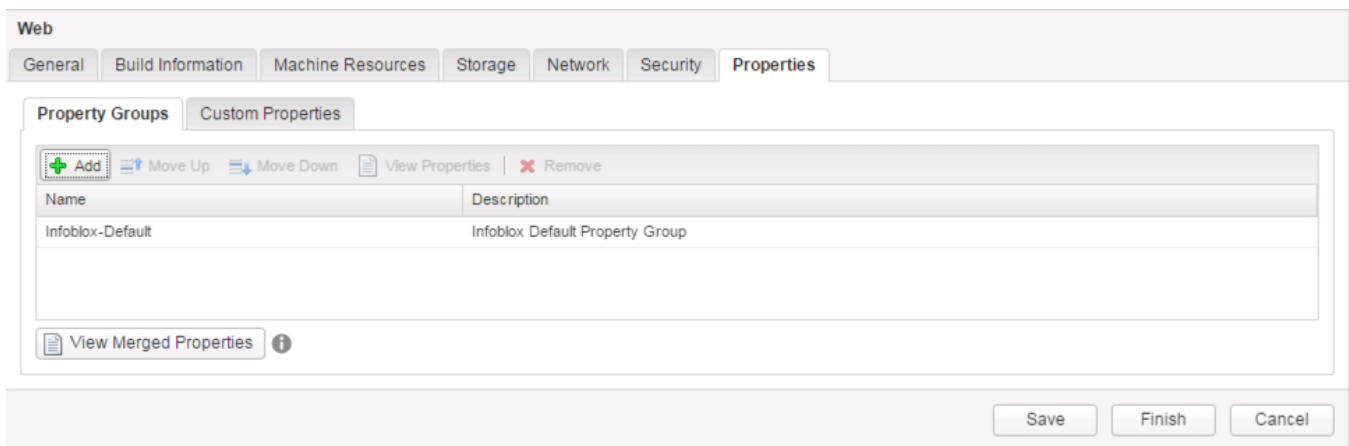
Name	Description
No data to display	

View Merged Properties ⓘ

Save Finish Cancel



Infoblox Default Property



Blueprints

Create and manage blueprints. Publish a blueprint to allow architects to reuse your blueprint, and to allow catalog administrators to entitle users to request your blueprint from the catalog.

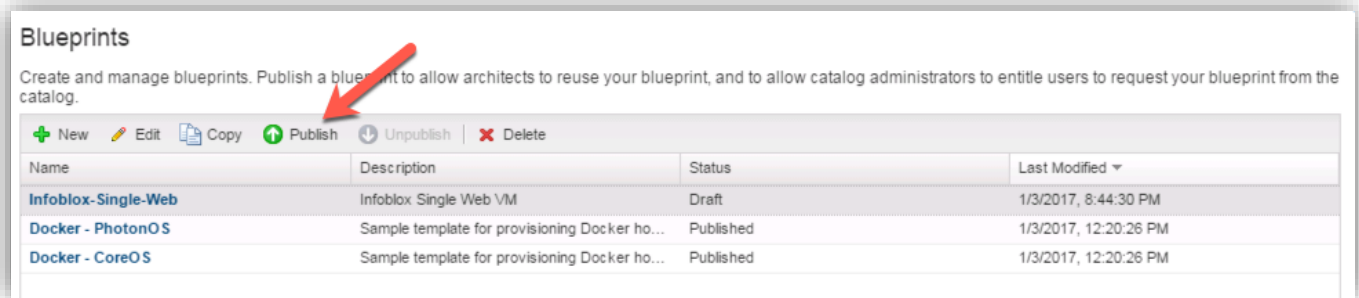
New Edit Copy Publish Unpublish Delete			
Name	Description	Status	Last Modified
Infoblox - Single-Web	Infoblox Single Web VM	Draft	1/3/2017, 8:44:30 PM
Docker - PhotonOS	Sample template for provisioning Docker ho...	Published	1/3/2017, 12:20:26 PM
Docker - CoreOS	Sample template for provisioning Docker ho...	Published	1/3/2017, 12:20:26 PM

9.3 Publish Blueprint

Blueprints must be published before they can be used. To publish a blueprint:

10. Select the row for your blueprint.

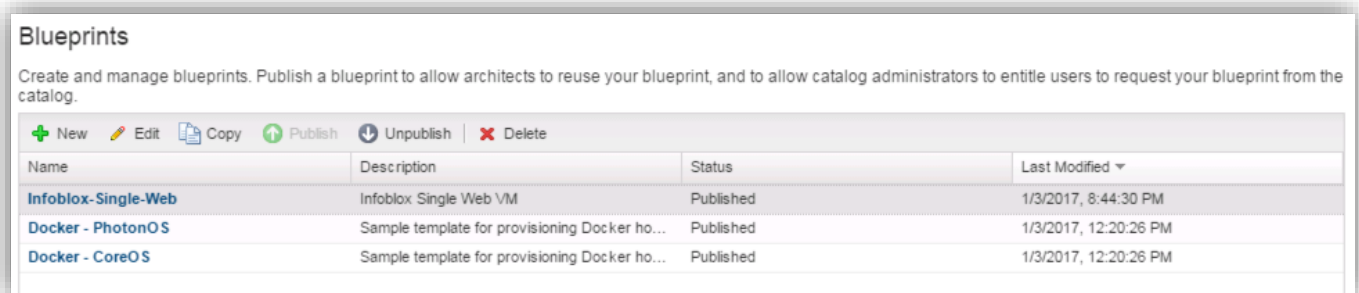
11. Click on the **Publish** button.



The screenshot shows the 'Blueprints' management interface. At the top, there's a header 'Blueprints' and a sub-header 'Create and manage blueprints. Publish a blueprint to allow architects to reuse your blueprint, and to allow catalog administrators to entitle users to request your blueprint from the catalog.' Below this is a toolbar with buttons: '+ New', 'Edit', 'Copy', 'Publish' (highlighted with a red arrow), 'Unpublish', and 'Delete'. A table below lists three blueprints:

Name	Description	Status	Last Modified
Infoblox-Single-Web	Infoblox Single Web VM	Draft	1/3/2017, 8:44:30 PM
Docker - PhotonOS	Sample template for provisioning Docker ho...	Published	1/3/2017, 12:20:26 PM
Docker - CoreOS	Sample template for provisioning Docker ho...	Published	1/3/2017, 12:20:26 PM

12. Verify that the status for the blueprint changes to **Published**.



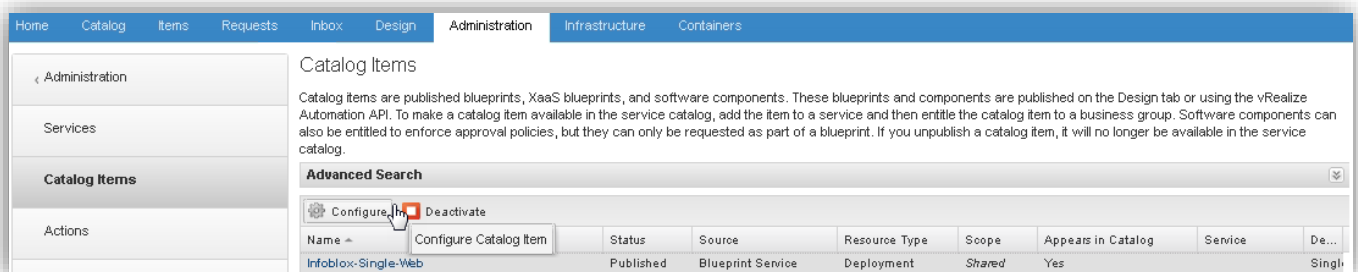
This screenshot shows the same 'Blueprints' interface as before, but the status of the 'Infoblox-Single-Web' blueprint has changed from 'Draft' to 'Published'. The table now shows:

Name	Description	Status	Last Modified
Infoblox-Single-Web	Infoblox Single Web VM	Published	1/3/2017, 8:44:30 PM
Docker - PhotonOS	Sample template for provisioning Docker ho...	Published	1/3/2017, 12:20:26 PM
Docker - CoreOS	Sample template for provisioning Docker ho...	Published	1/3/2017, 12:20:26 PM

9.4 Add Catalog item

To use catalog items, you must specify the Service they will use.

1. In your vRA tenant, navigate to **Administration -> Catalog Management -> Catalog Items**.
2. Click on the row for the Catalog Item that you want to configure (taking care not to click on the hyperlink for the Catalog Item's name).
3. Click **Configure**.



The screenshot shows the 'Administration' console with the 'Catalog Items' page selected. The left sidebar has 'Administration', 'Services', 'Catalog Items' (selected), and 'Actions'. The main content area shows 'Catalog Items' with a description and an 'Advanced Search' bar. Below the search bar, there are two buttons: 'Configure' (highlighted with a red square) and 'Deactivate'. A table below lists catalog items:

Name	Status	Source	Resource Type	Scope	Appears in Catalog	Service	De...
Infoblox-Single-Web	Published	Blueprint Service	Deployment	Shared	Yes		Singl

4. Expand the **Service** dropdown menu and select the service to be used. Click **OK**.

Home Catalog Items Requests Inbox Design Administration Infrastructure Containers

Administration

Services

Catalog Items

Actions

Entitlements

Configure Catalog Item

General Entitlements

Name: Infoblox-Single-Web

Source: Blueprint Service

Resource type: Deployment

Description: Single Web VM

Icon: Browse...

Recommended size: 100 x 100 pixels

Preview List view Catalog view Detail view

Status: Active

Quota: Unlimited

Service: dev-service

<None>

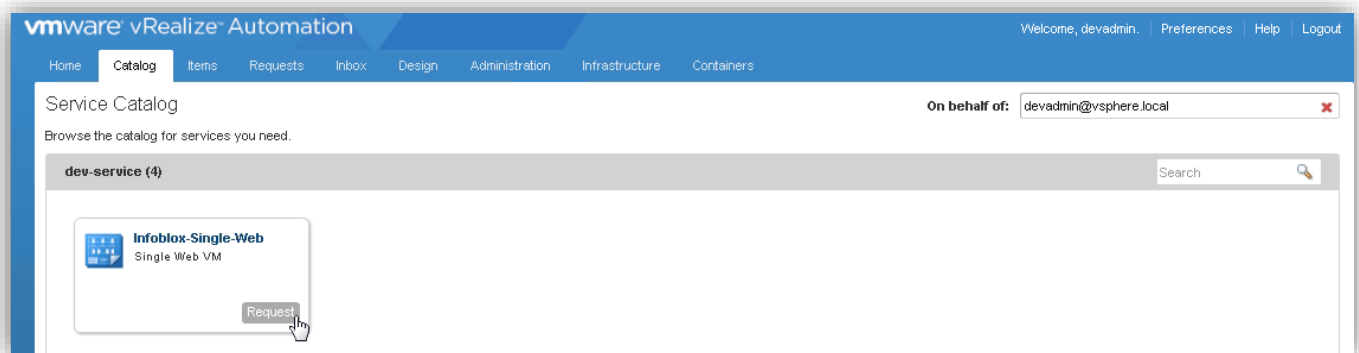
dev-service

OK Cancel

9.5 Provision VM

Provision the VM from Catalog item

1. Switch to the **Catalog** tab.
2. Click on the **Request** button for the Catalog Item to be provisioned.



3. Set deployment parameters as required and click **Submit**.

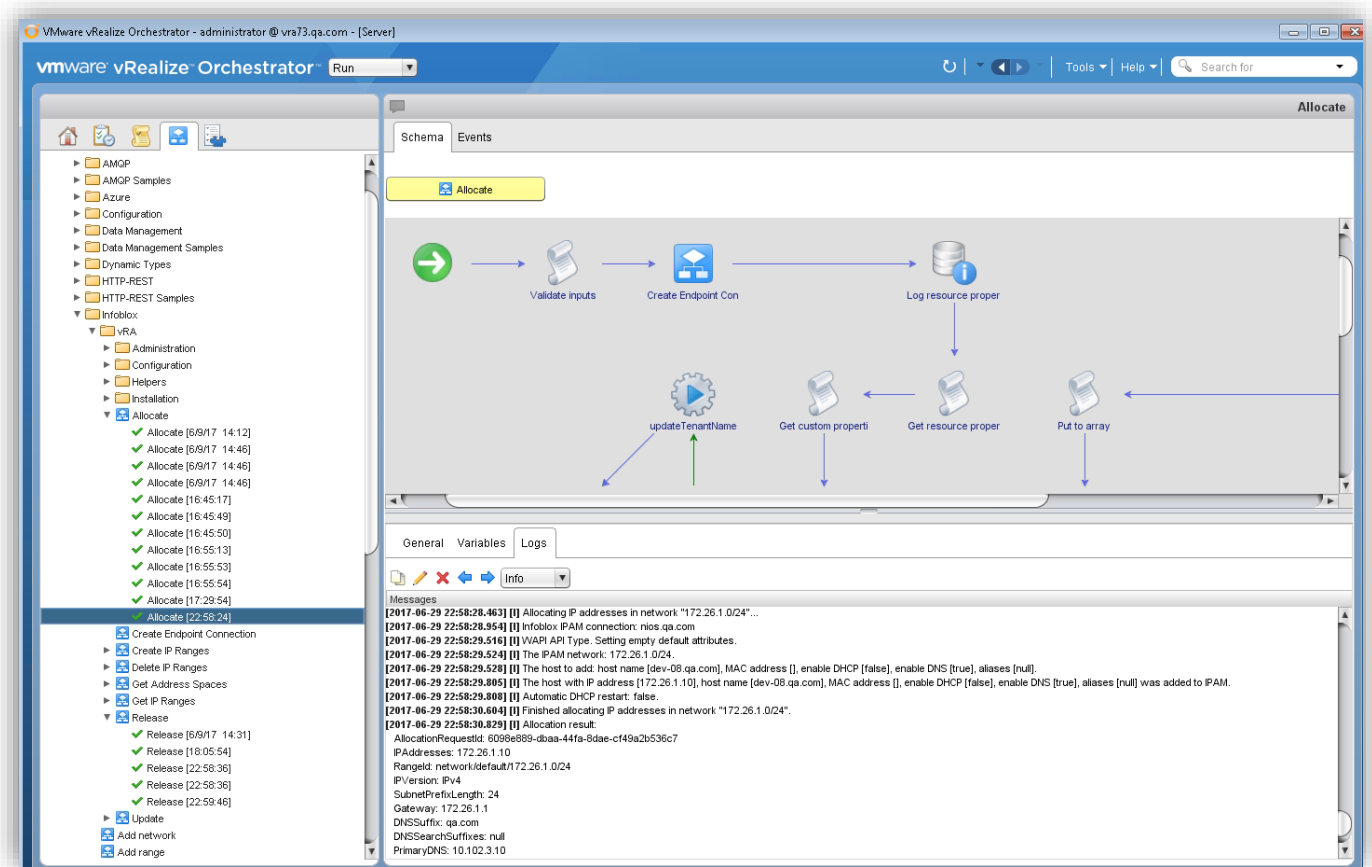
The screenshot shows the 'New Request' form in the VMware vRealize Automation interface. The form is titled 'Deployment: Infoblox-Single-Web'. It has two tabs: 'General' and 'Properties'. The 'General' tab is active, showing fields for 'Description' (containing 'Single web VM'), 'Reason for request' (empty), and 'Deployments' (set to 1). The 'Properties' tab is also visible. At the bottom right, there are 'Save', 'Submit', and 'Cancel' buttons. A mouse cursor is pointing at the 'Submit' button.

4. Verify that the request has been submitted successfully. Click **OK**.

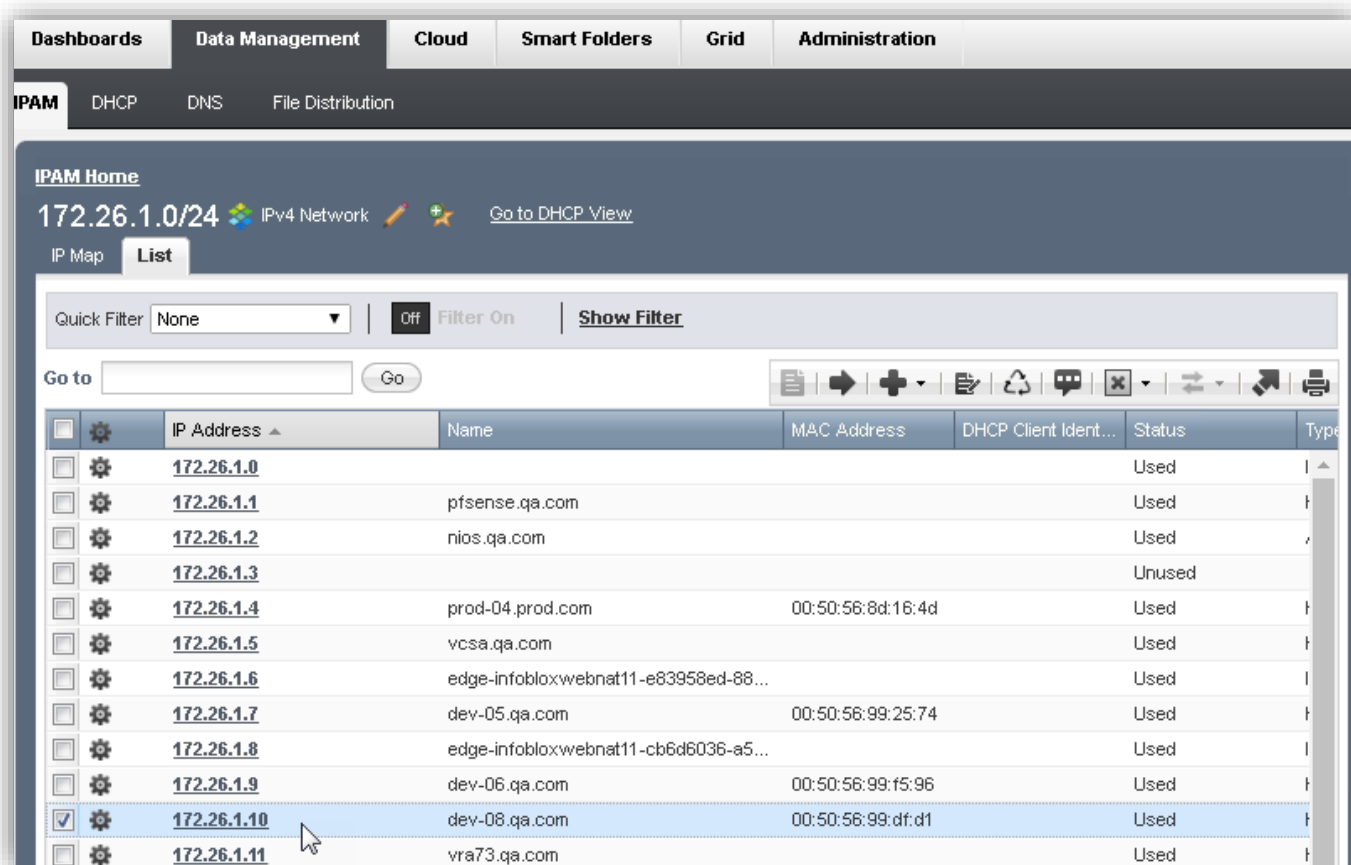
The screenshot shows a 'Request' confirmation dialog box. It features a green checkmark icon and the text 'The request has been submitted successfully.' Below the message is an 'OK' button.

9.6 IP Address Provisioning and DNS Registration

IP address assignment and DNS name registration in NIOS is done by the Infoblox IPAM. The following example demonstrates the Allocate workflow process:



IPAM details in NIOS also allow you to easily verify the IP address allocated to a provisioned VM:



The screenshot displays the NIOS IPAM (IP Address Management) interface. The top navigation bar includes tabs for Dashboards, Data Management, Cloud, Smart Folders, Grid, and Administration. Under Data Management, there are sub-tabs for IPAM, DHCP, DNS, and File Distribution. The IPAM section is active, showing the 'IPAM Home' for the 172.26.1.0/24 IPv4 Network. Below this, there's a 'List' view of IP addresses. A 'Quick Filter' dropdown is set to 'None', and a 'Filter On' button is visible. A 'Go to' search bar is also present. The main table lists IP addresses, their names, MAC addresses, DHCP client IDs, and status. The IP address 172.26.1.10 is highlighted, and a mouse cursor is pointing at it.

IP Address	Name	MAC Address	DHCP Client Ident...	Status	Type
172.26.1.0				Used	
172.26.1.1	pfsense.qa.com			Used	
172.26.1.2	nios.qa.com			Used	
172.26.1.3				Unused	
172.26.1.4	prod-04.prod.com	00:50:56:8d:16:4d		Used	
172.26.1.5	vcsa.qa.com			Used	
172.26.1.6	edge-infobloxwebnat11-e83958ed-88...			Used	
172.26.1.7	dev-05.qa.com	00:50:56:99:25:74		Used	
172.26.1.8	edge-infobloxwebnat11-cb6d6036-a5...			Used	
172.26.1.9	dev-06.qa.com	00:50:56:99:f5:96		Used	
172.26.1.10	dev-08.qa.com	00:50:56:99:df:d1		Used	
172.26.1.11	vra73.qa.com			Used	

You will also find the DNS record registered in NIOS for the VM:

The screenshot shows the NIOS DNS management interface. The top navigation bar includes 'Dashboards', 'Data Management', 'Cloud', 'Smart Folders', 'Grid', and 'Administration'. Under 'Data Management', there are sub-tabs for 'IPAM', 'DHCP', 'DNS', and 'File Distribution'. The 'DNS' tab is active, showing a list of zones. The 'default' zone is selected, and the 'Records' sub-tab is active. The zone name is 'qa.com', and it is an 'Authoritative Zone'. Below the zone name, there are icons for adding, editing, and deleting records. A 'Quick Filter' dropdown is set to 'None', and there are buttons for 'Filter On', 'Show Filter', and 'Toggle flat view'. A 'Go to' search bar is also present. The main table displays a list of DNS records. The first record is an 'SOA Record' for 'qa.com' with details like Serial 17, MNAME nios.qa.com, RNAME please_set_email, Refresh 10800, Retry 3600, Expire 2419200, and Negative Caching TTL 900. The second record is an 'NS Record' for 'qa.com' with Data nios.qa.com. The third record is an 'Host' record for 'w2012vm' with IP 172.26.1.12. The fourth record is an 'Host' record for 'vra73' with IP 172.26.1.11. The fifth record is an 'Host' record for 'vcsa' with IP 172.26.1.5. The sixth record is an 'Host' record for 'pfsense' with IP 172.26.1.1. The seventh record is an 'Host' record for 'nsxmgr' with IP 172.26.1.20. The eighth record is an 'Host' record for 'mgmt-1' with IP 172.26.1.100. The ninth record is an 'Host' record for 'dev-08' with IP 172.26.1.10, which is highlighted in blue. The 'Record Source' for all records is 'System'. The 'Comment' for all records is 'Auto-created by ...'. The 'Protected' column shows 'Yes' for all records except 'dev-08', which is 'No'.

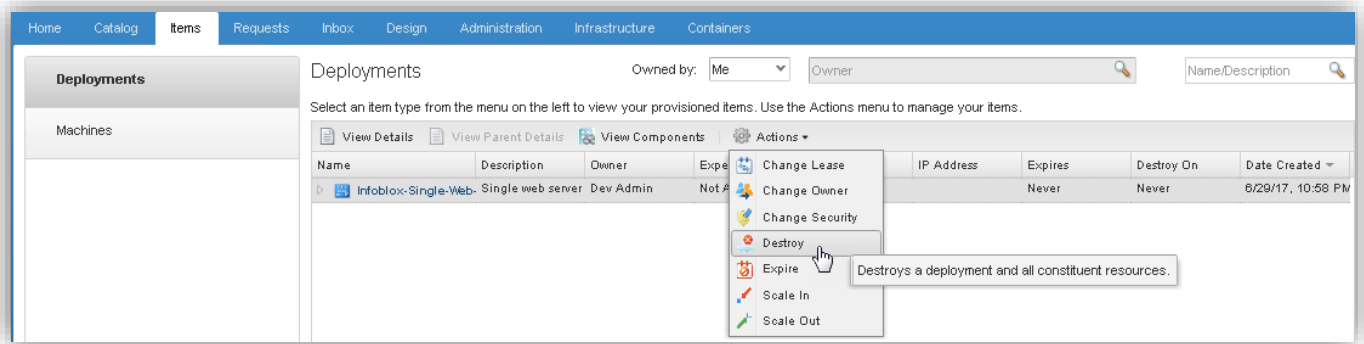
Name	Type	Data	Record Source	Comment	Protected
SOA Record	Serial	17	System	Auto-created by ...	
	MNAME	nios.qa.com			
	RNAME	please_set_email			
	Refresh	10800			
	Retry	3600			
	Expire	2419200			
	Negative Caching TTL	900			
NS Record		nios.qa.com	System	Auto-created by ...	
w2012vm	Host	172.26.1.12	Static		Yes
vra73	Host	172.26.1.11	Static		Yes
vcsa	Host	172.26.1.5	Static		Yes
pfsense	Host	172.26.1.1	Static		Yes
nsxmgr	Host	172.26.1.20	Static		Yes
mgmt-1	Host	172.26.1.100	Static		Yes
dev-08	Host	172.26.1.10	Static		No

9.7 De-provisioning

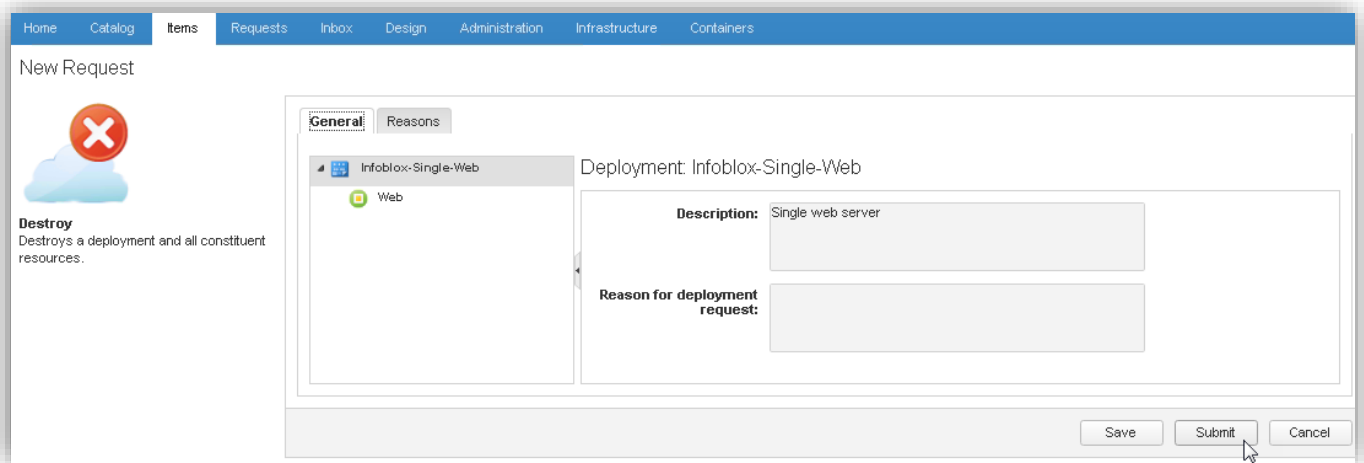
De-provisioning the machine will release the IP address, and also delete the IPAM data and DNS record in NIOS.

1. Under **Items** -> **Deployments**, select the row for the provisioned object that you want to terminate.

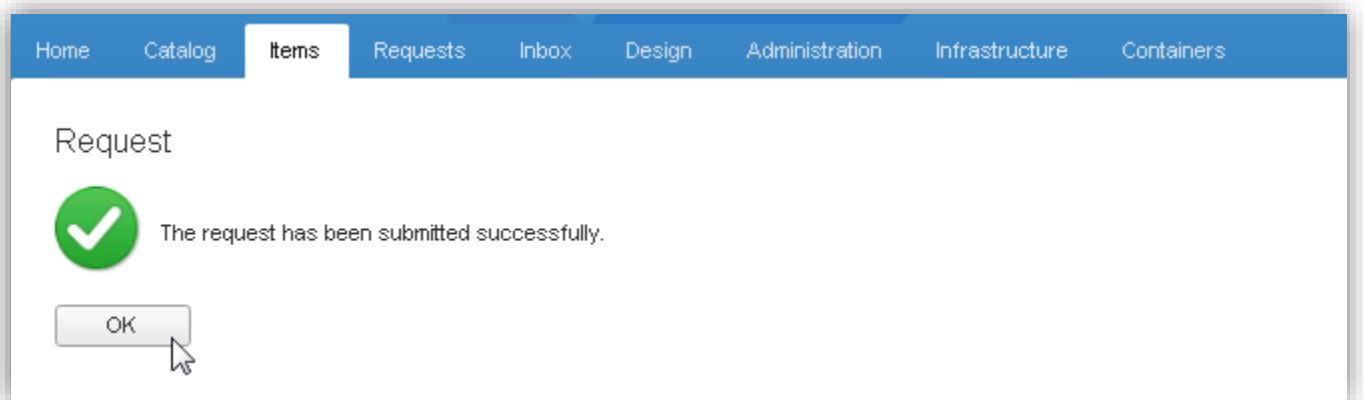
2. Expand the **Actions** menu and select **Destroy**.



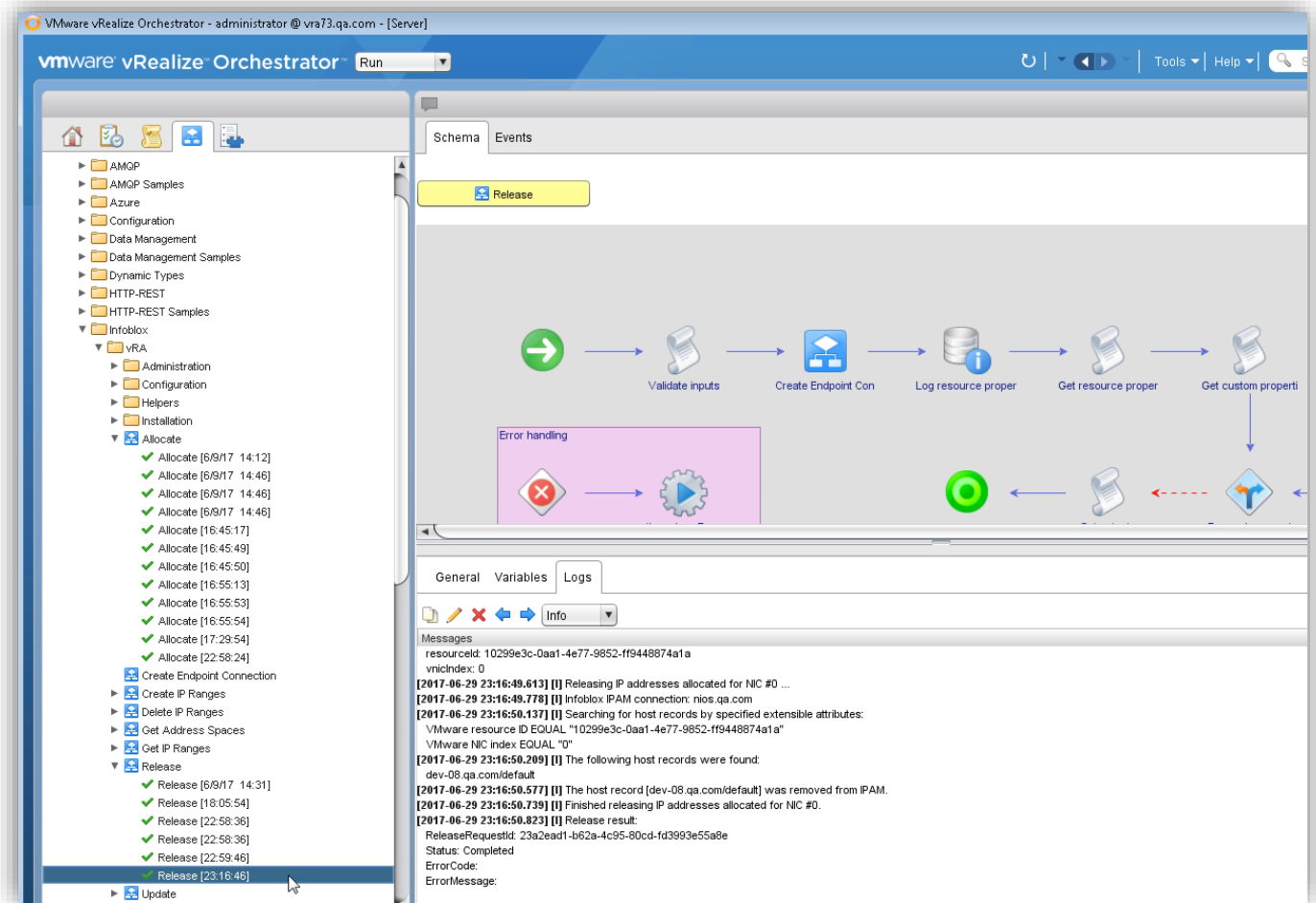
3. Click **Submit**.



4. Click **Ok**.



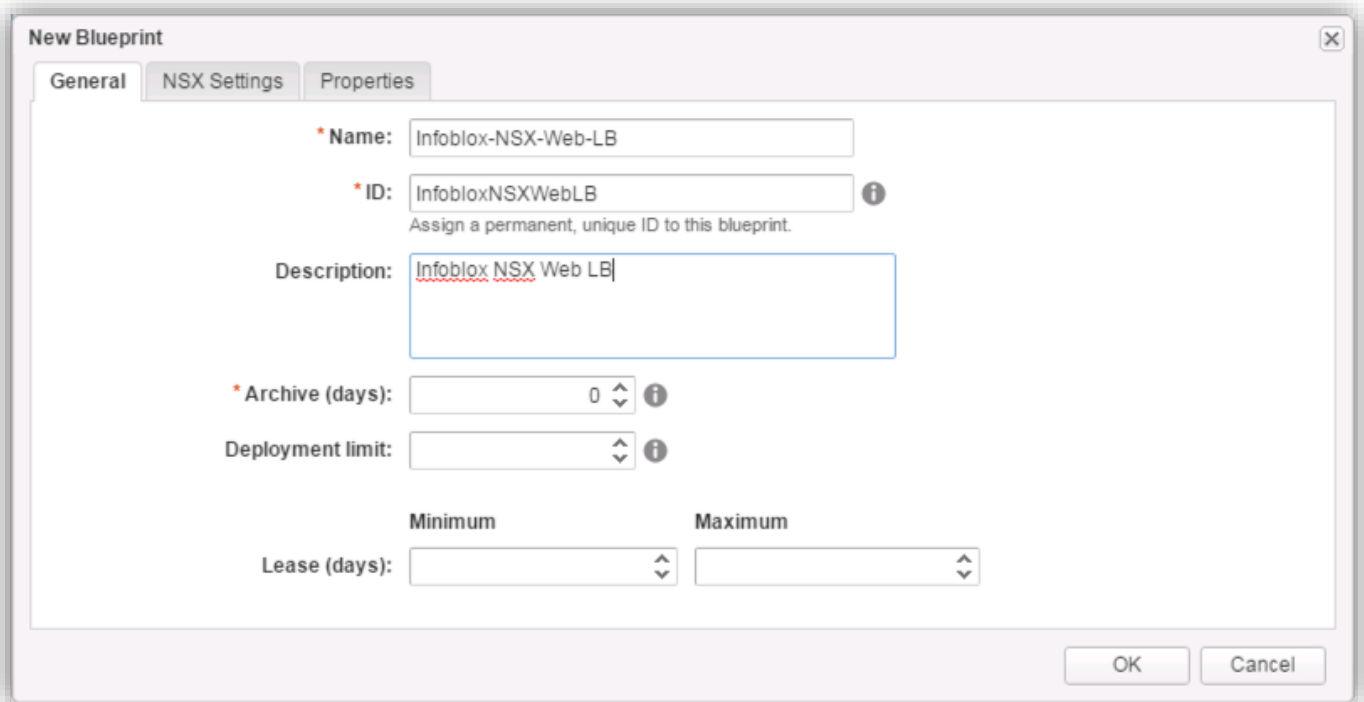
During this process, the **Release** workflow for Infoblox Plugin is called. This workflow triggers the deletion of the IP address and DNS record in NIOS.



10. NSX Load Balancer with VM Provisioning

10.1 Create Blueprint

Create Blueprint with NSX Load Balancer

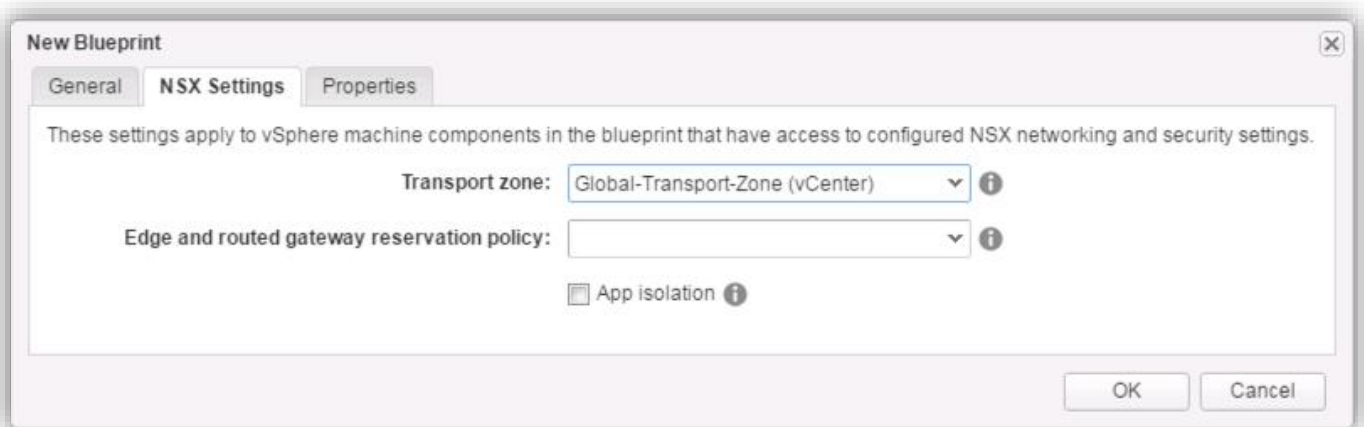


The 'New Blueprint' dialog box is shown with the 'General' tab selected. It contains the following fields and controls:

- Name:** Infoblox-NSX-Web-LB
- ID:** InfobloxNSXWebLB (with an information icon and the text 'Assign a permanent, unique ID to this blueprint.'
- Description:** Infoblox NSX Web LB
- Archive (days):** 0 (with an information icon)
- Deployment limit:** (empty dropdown with an information icon)
- Lease (days):** Two dropdown menus for 'Minimum' and 'Maximum' values.

At the bottom right are 'OK' and 'Cancel' buttons.

Select NSX Transport Zone



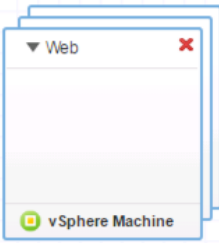
The 'New Blueprint' dialog box is shown with the 'NSX Settings' tab selected. It contains the following fields and controls:

- Transport zone:** Global-Transport-Zone (vCenter) (with an information icon)
- Edge and routed gateway reservation policy:** (empty dropdown with an information icon)
- App isolation:** A checkbox that is currently unchecked (with an information icon).

At the bottom right are 'OK' and 'Cancel' buttons.

Create a VM, set the Maximum Limit to 4 for the Instances -

Design Canvas



vSphere_Machine_1

General Build Information Machine Resources Storage Network Security Properties

* ID: Web

Description: Web Machine

☐ Display location on request

Reservation policy:

Machine prefix: prod-

Minimum Maximum

* Instances: 1 4

Save Finish Cancel

Set Build Information

vSphere_Machine_1

General Build Information Machine Resources Storage Network Security Properties

Blueprint type: Server

Action: Clone

* Provisioning workflow: CloneWorkflow

* Clone from: Linux

Customization spec: Linux

Add External Network

Web

General Build Information Machine Resources Storage **Network** Security Properties

+ New Edit Delete

ID	Network	Assignment Type	Address	Load Balancing	Custom Properties
0	InfobloxExternal	Static IP			

Maximum network adapters: ⓘ

Add Network to the VM

vSphere_Machine_1

General Build Information Machine Resources Storage **Network** Security Properties

+ New Edit Delete

ID	Network	Assignment Type	Address
0	InfobloxIPAMExternal	Static IP	

10.2 Add Load Balancer

Drag and drop **ON Demand NSX Load Balancer** to the canvas

Design Canvas

On-Demand_Load_Balancer_1

General ⓘ

* ID: * VIP network:
* Machine: IP address:
* Network adapter:

Virtual servers:

Edit

Enable Load Balancing for the desired protocols:

On-Demand_Load_Balancer_1

General

*ID: On-Demand_Load_Balancer_1 *VIP network: InfobloxExternal ⓘ

*Machine: Web IP address: ⓘ

*Network adapter: 0:InfobloxExternal ⓘ

Virtual servers:

Edit

☒ Name ^	Port	Algorithm	Health Check Interval (sec)
☒ HTTP	80	ROUND_ROBIN	5
☒ HTTPS	443	ROUND_ROBIN	5
☒ TCP	8080	ROUND_ROBIN	5

Web

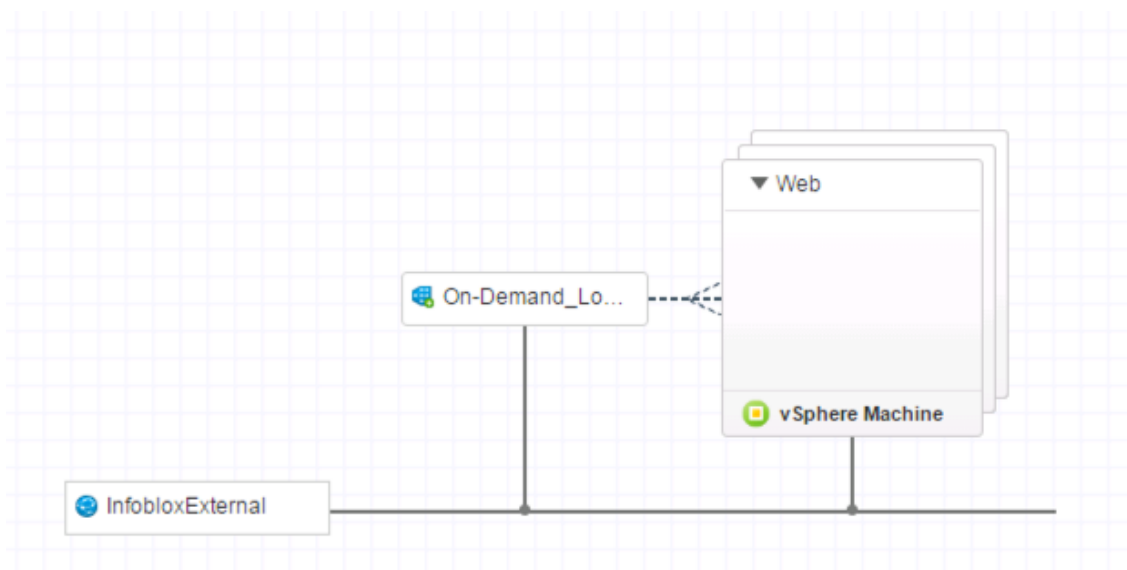
General Build Information Machine Resources Storage Network Security Properties

Property Groups Custom Properties

+ Add ⇅ Move Up ⇅ Move Down 📄 View Properties ✖ Remove

Name	Description
Infoblox-Default	Infoblox Default Property Group

The following example demonstrates how the completed blueprint will appear:

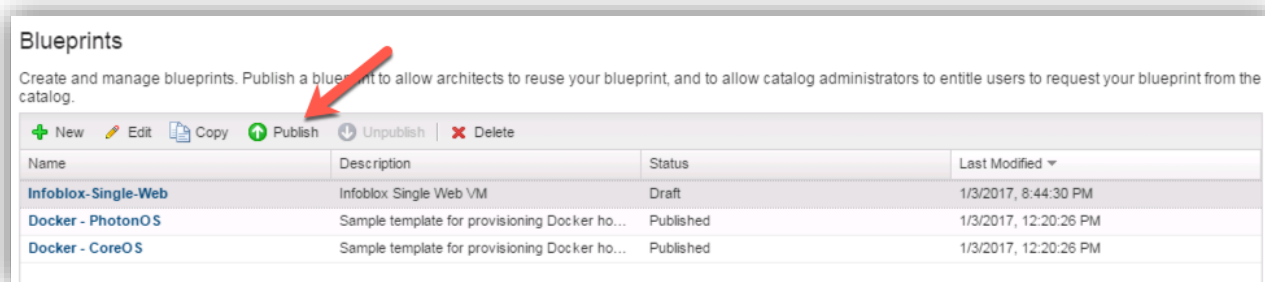


10.3 Publishing the Blueprint

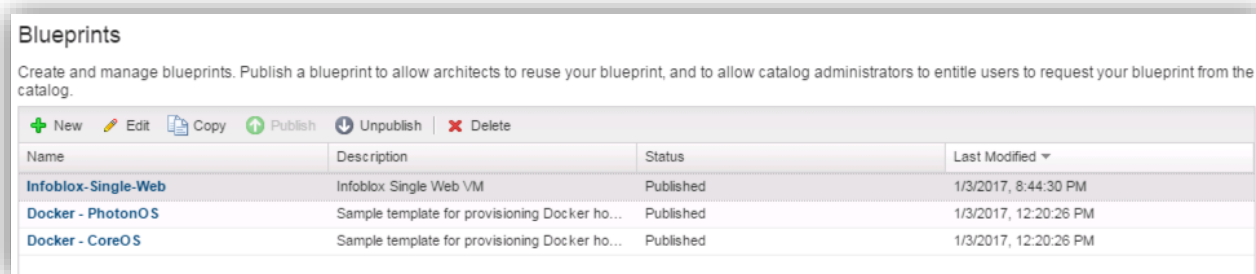
Blueprints must be published before they can be assigned to a catalog item. To publish the blueprint:

1. Navigate to Design -> Blueprints.
2. Click on the row for your blueprint (taking care not to click on the hyperlink).

- Click on the **Publish** button.



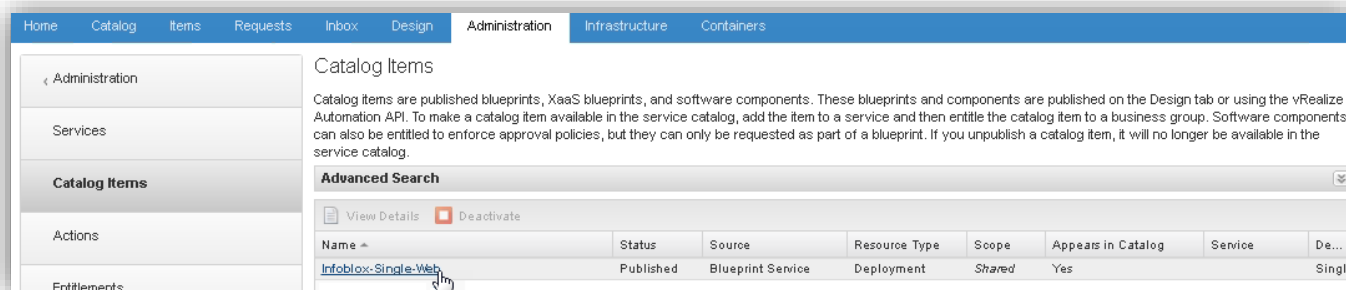
- Verify that the status for the blueprint has changed to **"Published"**.



10.4 Assign the Catalog item to a service

Published blueprints become available as catalog items. These must be assigned to a service and entitled to a business group before they will be available in the *Service Catalog*. To assign your catalog item to a service:

- Navigate to **Administration -> Catalog Management -> Catalog Items**.
- Click on the hyperlink for your catalog item, or select its row and click **Configure**.



- Expand the Service dropdown menu and select the service that you want to assign to the catalog item.

4. Click **OK**.

The screenshot shows the 'Configure Catalog Item' dialog box in the vRA interface. The 'Administration' tab is selected in the top navigation bar. The left sidebar shows a tree view with 'Administration' expanded, containing 'Services', 'Catalog Items', 'Actions', and 'Entitlements'. The 'Catalog Items' item is highlighted. The main area is titled 'Configure Catalog Item' and has two tabs: 'General' and 'Entitlements'. The 'General' tab is active, showing the following fields:

- Name:** Infoblox-Single-Web
- Source:** Blueprint Service
- Resource type:** Deployment
- Description:** Single Web VM
- Icon:** A text input field with a 'Browse...' button next to it. Below it, it says 'Recommended size: 100 x 100 pixels'.
- Preview:** Three viewports labeled 'List view', 'Catalog view', and 'Detail view'. The 'Detail view' is currently selected and shows a grid of icons.
- Status:** A dropdown menu set to 'Active'.
- Quota:** A dropdown menu set to 'Unlimited'.
- Service:** A dropdown menu with '<None>' and 'dev-service' (highlighted by a mouse cursor).

At the bottom right of the dialog are 'OK' and 'Cancel' buttons.

Configure Catalog Item

General Entitlements

Name: Infoblox-NSX-Web-LB

Source: Blueprint Service

Resource type: Deployment

Description:

Icon:

Recommended size: 100 x 100 pixels

Preview

List view	Catalog view	Detail view
		

Status:

Quota:

Service:

☐ **New and noteworthy**

Catalog item will appear in the Service Catalog

Home
Catalog
Items
Requests
Inbox
Design
Administration
Infrastructure
Containers

Service Catalog

Browse the catalog for services you need.

Production-Service (2)



Infoblox-NSX-Web-LB
 Infoblox NSX Web LB

Request



Infoblox-Single-Web
 Infoblox Single Web VM

Request

10.5 Deploy from NSX Web Blue catalog item.

Deploy the item –


Infoblox-NSX-Web-LB


Web

Deployment: Infoblox-NSX-Web-LB

General
Properties

Description:

Infoblox Prod Web Demo

Reason for request:

Deployments:

1

(Select 1-100)

Home
Catalog
Items
Requests
Inbox
Design
Administration
Infrastructure
Containers

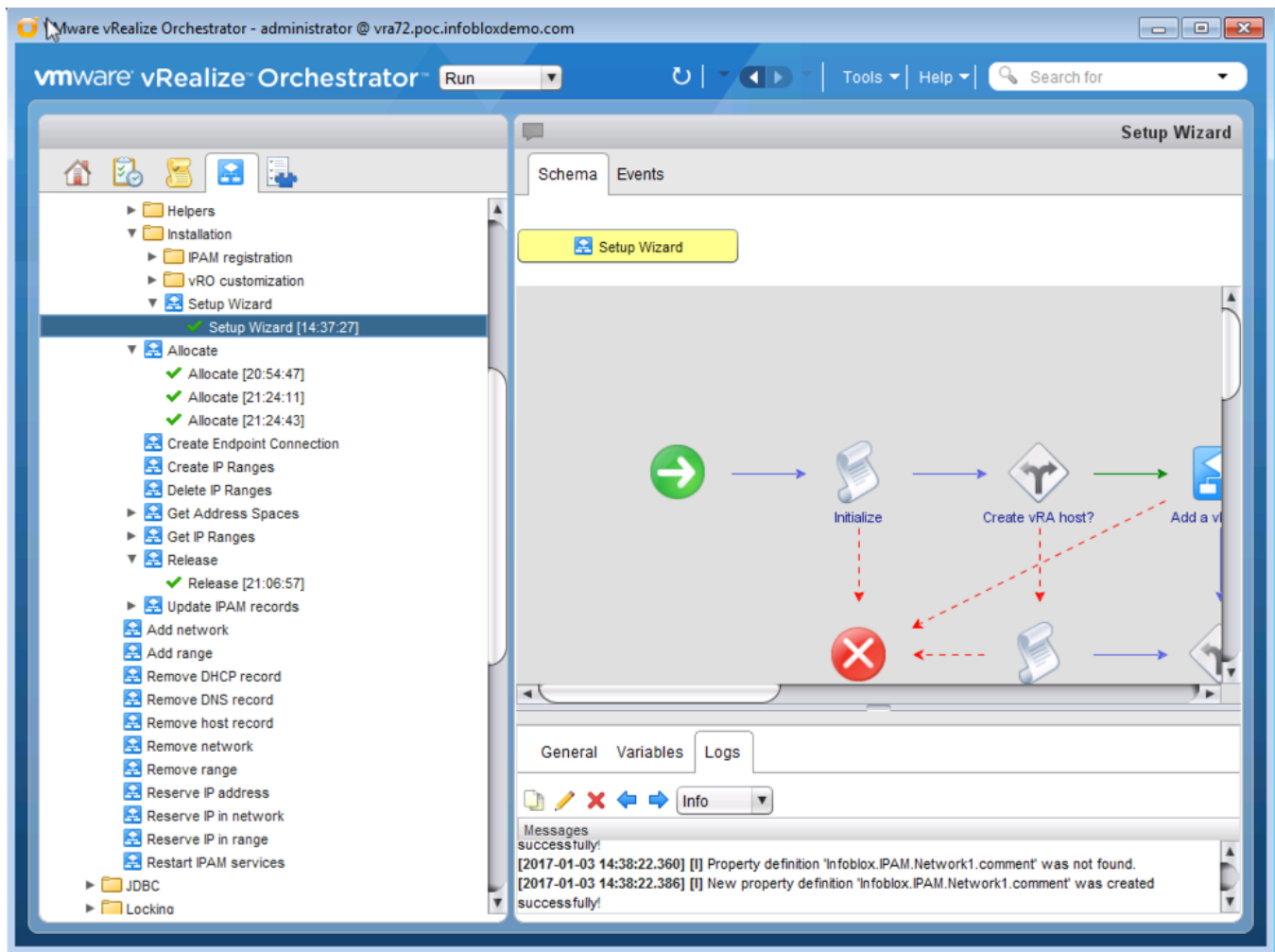
Requests

Monitor the status of your requests and view request details.

 View Details
  Delete

Request	Item	Description	Cost	Lease
8	 Infoblox-NSX-Web-LB	Infoblox Prod Web Demo	Not Applicable	Not A
7	 Infoblox-Single-Web	Prod demo #1	Not Applicable	Not A

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10.6 IP Address Provisioning and DNS Registration

Edge and VM gets IP address assigned

IPAM DHCP DNS File Distribution								
IPAM Home								
172.26.1.0/24 IPv4 Network Go to DHCP View								
IP Map List								
Quick Filter: None Off Filter On Show Filter								
Go to Go								
	IP Address	Name	MAC Address	DHCP Client Ide...	Status	Type	Discover Now	Usage
☐	172.26.1.0				Used	IPv4 Network		
☐	172.26.1.1	Router Reservat...			Used	IPv4 Reservation		DHCP
☐	172.26.1.2	nios.poc.infoblox...			Used	A Record		DNS
☐	172.26.1.3	pfsense.poc.info...			Used	Host		DNS
☐	172.26.1.4	prod-04.prod.com	00:50:56:8d:16:4d		Used	Host		DNS
☐	172.26.1.5	vcse.infoblo...			Used	Host		DNS
☐	172.26.1.6	edge-infobloxs...			Used	IPv4 Reservation		DHCP
☐	172.26.1.7	prod-05.prod.com	00:50:56:8d:8e:fe		Used	Host		DNS

IPAM DHCP **DNS** File Distribution

Zones Members Name Server Groups Shared Record Groups Blacklist Rulesets DNS64 Groups Query Monitoring

default

prod.com Authoritative Zone

Records Subzones

Quick Filter **None** | Off Filter On | Show Filter | Toggle flat view

Go to Go

	Name	Type	Data	Record Source	Principal	Protected
		SOA Record	Serial 28 MNAME nios.poc.infoblox.com RNAME please_set_email Refresh 10800 Retry 3600 Expire 2419200 Negative Caching TTL 900	System		
		NS Record	nios.poc.infobloxdemo.com	System		
	prod-05	Host	172.26.1.7	Static		No

Check the provisioned machine in vSphere client, it will have the IP address provided by NIOS

vmware vSphere Web Client

Navigator

- Home
- vcasa.poc.infobloxdemo.com
 - Infoblox
 - Compute
 - compute-1.poc.infobloxdemo.com
 - Edge-InfobloxNSXWebLB-81395fee-aa94-4410... (Selected)
 - prod-05
 - Web-01
 - Mgmt

Edge-InfobloxNSXWebLB-81395fee-aa94-4410-8327-5d88d8bd83ec-0

Getting Started Summary Monitor Manage Related Objects

Powered On

Launch Remote Console

Download Remote Console

Guest OS: Other Linux (64-bit)
Compatibility: ESXi 5.5 and later (VM version 10)
VMware Tools: Running, version:2147483647 (Guest Managed)
DNS Name: NSX-edge-8-0
IP Addresses: 172.26.1.6
View all 4 IP addresses
Host: compute-1.poc.infobloxdemo.com

Production Linux VM has also received IP address from NIOS

vmware vSphere Web Client

Navigator

- Home
- vcasa.poc.infobloxdemo.com
 - Infoblox
 - Compute
 - compute-1.poc.infobloxdemo.com
 - Edge-InfobloxNSXWebLB-81395fee-aa94-4410...
 - prod-05 (Selected)
 - Web-01
 - Mgmt

prod-05

Getting Started Summary Monitor Manage Related Objects

Powered On

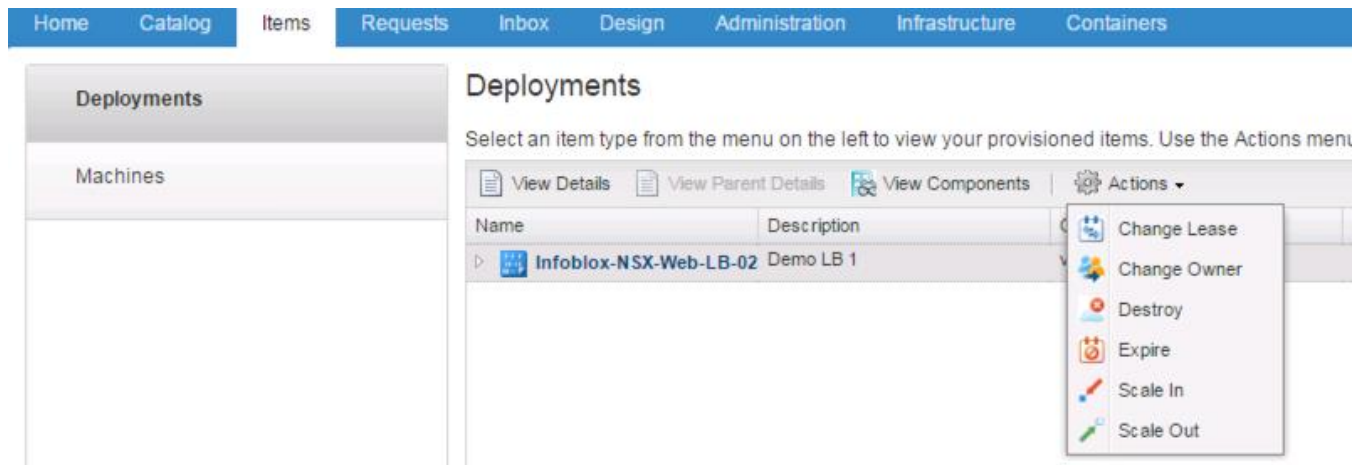
Launch Remote Console

Download Remote Console

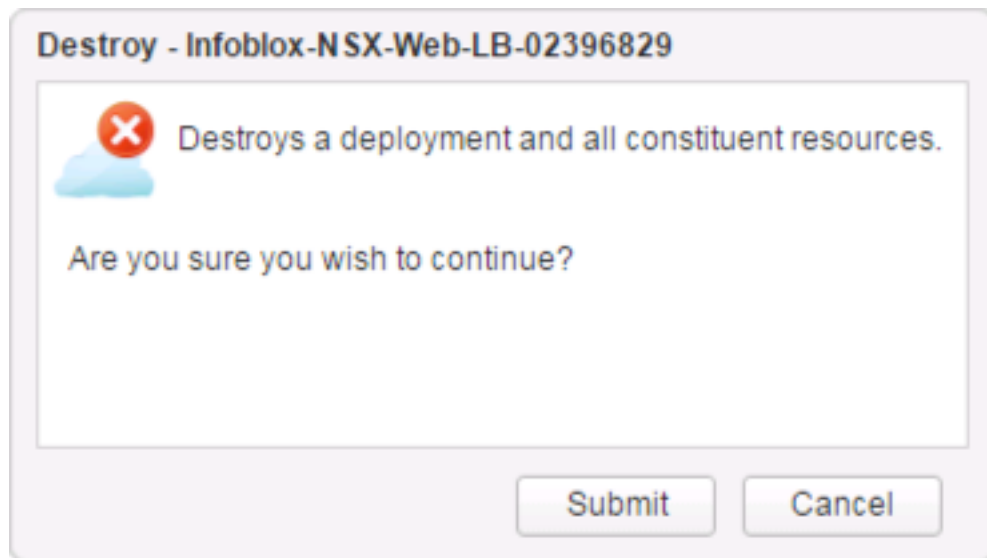
Guest OS: Red Hat Enterprise Linux 6 (32-bit)
Compatibility: ESXi 5.0 and later (VM version 8)
VMware Tools: Running, version:9226 (Upgrade available)
DNS Name: prod-05
IP Addresses: 172.26.1.7
View all 2 IP addresses
Host: compute-1.poc.infobloxdemo.com

10.7 De-Provisioning

Destroy the machine from items



Destroy the item



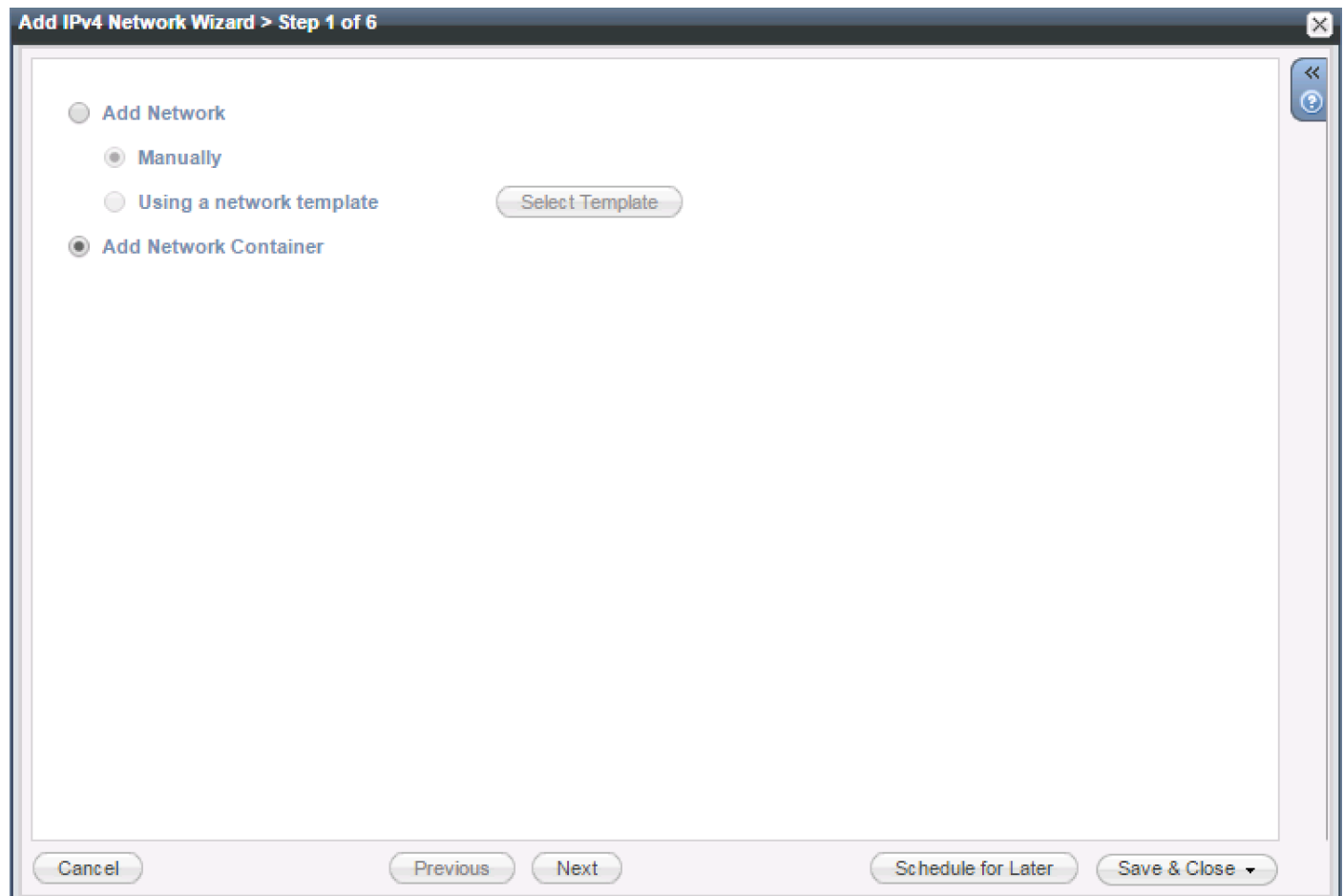
This will release the IP addresses assigned to Edge and VM's and will delete the DNS registration for the VM's.

11. Routed Network Profile

VMware vRA 7.3 provides integration with Infoblox NIOS to created Routed Networks. This section describes how to create Routed Networks using Infoblox VMware vRA 7.3 integration.

11.1 Add Network Container in NIOS

Add Network Container in NIOS that will be used for Routed Network Creation. Below, we are creating network container 10.10.0.0/16.



The image shows a screenshot of the 'Add IPv4 Network Wizard' window, specifically 'Step 1 of 6'. The window has a title bar with a close button (X) and a help button (?). The main content area contains three radio button options: 'Add Network', 'Manually', and 'Add Network Container'. The 'Add Network Container' option is selected. Below the 'Manually' option is a 'Select Template' button. At the bottom of the window, there are five buttons: 'Cancel', 'Previous', 'Next', 'Schedule for Later', and 'Save & Close' with a dropdown arrow.

Add IPv4 Network Wizard > Step 1 of 6

☐ Add Network

☒ Manually

☐ Using a network template Select Template

☒ Add Network Container

Cancel Previous Next Schedule for Later Save & Close ▾

Add IPv4 Network Wizard > Step 2 of 4

Netmask*

/ 16 /24 (255.255.255.0)

148

1620242832

Network Containers *

Network

☒

10.10.0.0

Comment

Cloud

Delegate authority from the Grid Master

Delegated To

Select

Clear

Cancel

Previous

Next

Schedule for Later

Save & Close

Add IPv4 Network Wizard > Step 3 of 4

Extensible Attributes

	Attribute Name	Value	Inheritance State	Required
No data				

Cancel

Previous

Next

Schedule for Later

Save & Close

Add IPv4 Network Wizard > Step 4 of 4

Create IPv4 Network

☒ Now
☐ Later

Selected time:

Start Date: 2016-12-16 Start Time: 09:41:10 PM Time Zone: (UTC - 8:00) Pacific Time (US and Canada), Tijuana

Your time: 2016-12-16 09:42:53 PM (UTC - 8:00) Pacific Time (US and Canada), Tijuana

Cancel Previous Next Save & Close

This will create the Network container

Dashboards **Data Management** Cloud Smart Folders Grid Administration

IPAM DHCP DNS File Distribution

default Network View

Quick Filter: None ☐ Filter On [Show Filter](#) [Toggle flat view](#)

Go to:

	Network	Cloud Usage	Owned By	Delegated To	Comment	IPAM Utilization
	10.10.0.0/16	Non-cloud	Grid			0.0%
	11.11.11.0/24	Non-cloud	Grid			0.0%
	172.26.1.0/24	Non-cloud	Grid			3.5%

11.2 Create External Network Profile in vRA.

Routed Network Profile requires the External Network profile. Create the External Network Profile.

vmware® vRealize™ Automation

Home Catalog Items Requests Inbox Design Administration **Infrastructure** Containers

Infrastructure

Key Pairs

Reservations

Reservation Policies

Network Profiles

Network Profiles

Network profiles specify network settings in reservations and blueprints. N

+ New Edit Copy Delete

External

NAT

Routed

vmware® vRealize™ Automation

Home Catalog Items Requests Inbox Design Administration **Infrastructure** Containers

Infrastructure

Key Pairs

Reservations

Reservation Policies

Network Profiles

New Network Profile - External

Create a network profile to manage one or more named ranges of static IPv4 network addresses.

General Network Ranges

* Name: Infoblox-External-1

Description: INFOBLOX External

IPAM endpoint: NIOS ⓘ

New Network Profile - External

Create a network profile to manage one or more named ranges of static IPv4 network addresses.

General

Network Ranges

Address space: default

+ Add

- Remove

Start IP	End IP	Name															
Select Network Range Search <table><thead><tr><th></th><th>Start IP</th><th>End IP</th><th>Name</th><th>Description</th></tr></thead><tbody><tr><td>☐</td><td>11.11.11.1</td><td>11.11.11.254</td><td>11.11.11.0/24</td><td></td></tr><tr><td>☒</td><td>172.26.1.1</td><td>172.26.1.254</td><td>172.26.1.0/24</td><td></td></tr></tbody></table> Page 1 of 1 Displaying 1 - 2 of 2 OK Cancel				Start IP	End IP	Name	Description	☐	11.11.11.1	11.11.11.254	11.11.11.0/24		☒	172.26.1.1	172.26.1.254	172.26.1.0/24	
	Start IP	End IP	Name	Description													
☐	11.11.11.1	11.11.11.254	11.11.11.0/24														
☒	172.26.1.1	172.26.1.254	172.26.1.0/24														

Above we use 172.26.1.1 as the network to be used in External Network Profile.

New Network Profile - External

Create a network profile to manage one or more named ranges of static IPv4 network addresses.

General

Network Ranges

Address space: default

+ Add

- Remove

Start IP	End IP	Name
172.26.1.1	172.26.1.254	172.26.1.0/24

Network Profiles

Network profiles specify network settings in reservations and blueprints. Network profiles are used to configure network interfaces when VMs are provisioned, and to specify the

+ New

✎ Edit

📄 Copy

- Delete

Name	Type	Description
Infoblox-External-1	External	Infoblox External

11.3 Create Routed Network Profile

Create a new routed profile

Network Profiles

Network profiles specify network settings in reservations and blueprints. Network profiles are used to configure network interfaces when VMs are provisioned, and to spe

+ New Edit Copy Delete		
External	Type	Description
NAT	External	Infoblox External
Routed		

New Network Profile - Routed

Create a network profile to manage one or more named ranges of static IPv4 network addresses.

General

IP Blocks

* Name:

Infoblox-Routed-1

Description:

Infoblox Routed 1

IPAM endpoint:

NIOS

* External network profile:

Infoblox-External-1

* Range subnet mask:

255.255.255.0

Select the 10.10.0.0/16 Network block.

New Network Profile - Routed

Create a network profile to manage one or more named ranges of static IPv4 network addresses.

General

IP Blocks

Address space: default

Select IP Block

Search

☒	Start IP ^	End IP	Name	Description
☒	10.10.0.1	10.10.255.254	10.10.0.0/16	

Page 1 of 1

Displaying 1 - 1 of 1

OKCancel

Network Profiles

Network profiles specify network settings in reservations and blueprints. Network profiles are used to configure network interfaces when VMs are provisioned, and to spe

New Edit Copy Delete		
Name ^	Type	Description
Infoblox-External-1	External	Infoblox External
Infoblox-Routed-1	Routed	Infoblox Routed 1

11.4 Add Network Profiles to the Reservation

Create a new reservation or add Network profile to existing reservation. Here we are creating a new reservation.

New Reservation - vSphere (vCenter)

Create a reservation to allocate provisioning resources to a business group in a tenant. You also can co

General Resources Network Properties Alerts

* Name:

Production-Reservation

* Tenant:

vsphere.local

▼

* Business group:

production-business-group

▼

Reservation policy:

▼

* Priority:

1

▲▼

☒ Enable this reservation

New Reservation - vSphere (vCenter)

Create a reservation to allocate provisioning resources to a business group in a tenant. You also can copy an existing reservation to use as a starting point.

General Resources **Network** Properties Alerts

Network:

Network Adapter	Network Profile
☐ dvPortGroup	
☐ dvSwitch-DVUplinks-43	
☒ VM Network	Infoblox-External-1
☐ vxxw-dvs-43-virtualwire-3-sid-5001-Transient-Switch	
☐ vxxw-dvs-43-virtualwire-9-sid-5000-Web-Switch	
☐ vxxw-vmknicPg-dvs-43-0-03dbfd73-14ac-4cd0-8850-60e18f4cf0ca	

Advanced Settings

Transport zone:

Global-Transport-Zone

▼

Security groups:

☐ Activity Monitoring Data Collection

Distributed logical router:

Name	Network Profile
☒ Logical-Router-01	Infoblox-External-1

New Reservation - vSphere (vCenter)

Create a reservation to allocate provisioning resources to a business group in a tenant. You also can copy an existing reservation to use as a starting point.

General Resources Network Properties Alerts

* Compute resource: Compute (vCenter) ▼

Machine quota: Unlimited ⓘ

* Memory (GB):

Physical	Total Reserved	Total Allocated	This Reservation
10	0	0	3

* Storage (GB):

Storage Path	Physical	Free	Total Reserved	This Reservation Reserved	This Reservation Allocated	Priority	Disabled
datastore1 (1)	92	89	0	20		1	☐

OK Cancel

Resource pool: ▼

11.5 Create Blue Print

Create Blue Print that uses the Network Profile

New Blueprint

General NSX Settings Properties

* Name: Infoblox-Web-Routed-1

* ID: InfobloxWebRouted1 ⓘ
Assign a permanent, unique ID to this blueprint.

Description: Infoblox Web Routed Design

* Archive (days): 0 ⓘ

Deployment limit: ⓘ

Lease (days):

Minimum	Maximum

OK Cancel

New Blueprint

General

NSX Settings

Properties

These settings apply to vSphere machine components in the blueprint that have access to configured NSX networking and security settings.

Transport zone: Global-Transport-Zone (vCenter) ⓘ

Edge and routed gateway reservation policy: ⓘ

☐ App isolation ⓘ

OK

Cancel

Design Canvas

▼ Web

ⓘ

vSphere Machine

vSphere_Machine_1

General

Build Information

Machine Resources ⓘ

Storage

Network

Security

Properties

* ID: Web

Description: Web Blue Print

☐ Display location on request ⓘ

Reservation policy: ⓘ

Machine prefix: prod- ⓘ

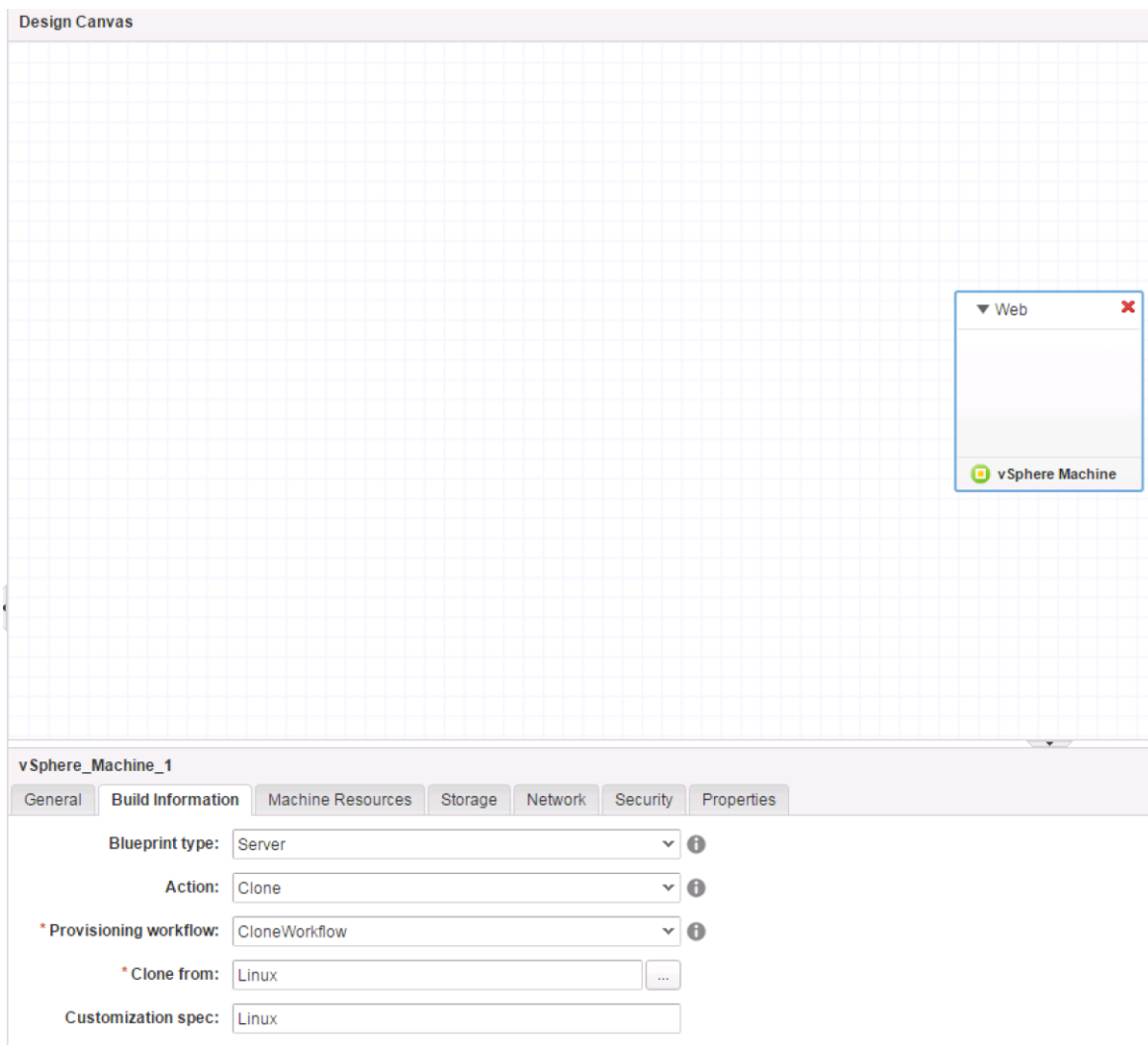
Minimum

Maximum

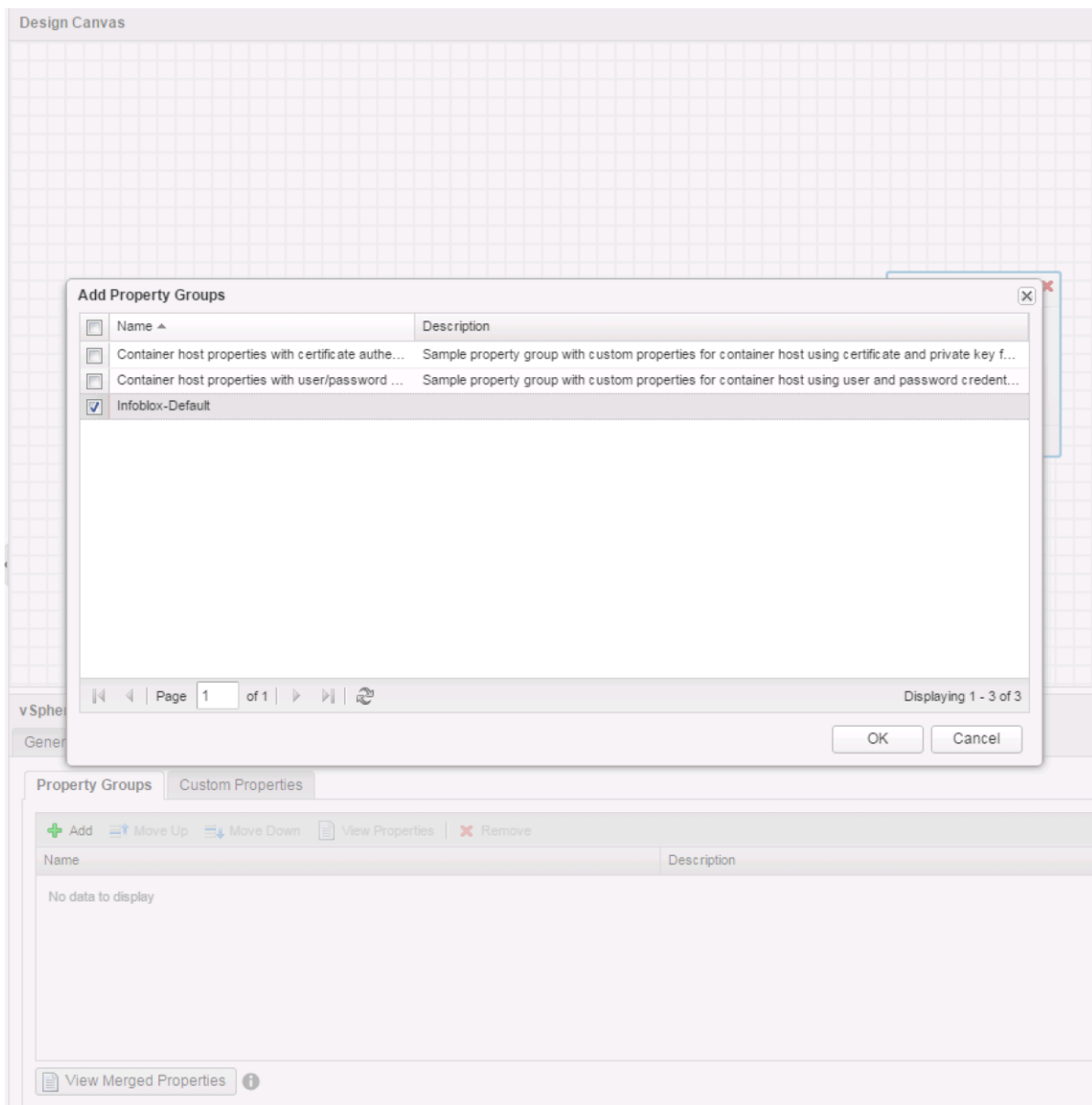
* Instances:

1

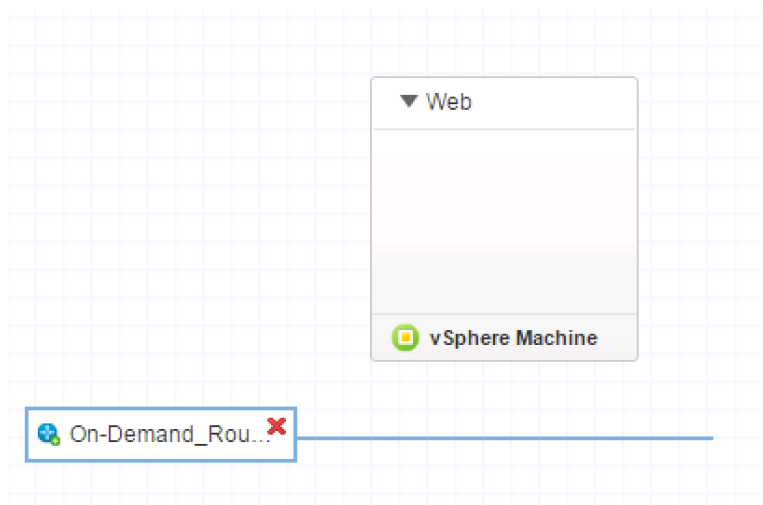
1



Add Property Group to the VM



Add Routed Profile to the Canvas



Select Network Profile

Name	Description	IPAM Endpoint
Infoblox-Routed-1	Infoblox Routed 1	NIOS

Page 1 of 1

Displaying 1 - 1 of 1

OKCancel

On-Demand_Routed_Network_1

General

DNS/WINS

IP Ranges

* ID: On-Demand_Routed_Network_1

* Parent network profile:

Description:

Design Canvas

▼ Web

vSphere Machine

InfobloxRouted1

Web

GeneralBuild InformationMachine ResourcesStorageNetworkSecurityProperties

+ New✎ Edit✖ Delete

ID ▲	Network	Assignment Type	Address
0	InfobloxRouted1	Static IP	

OKCancel

Maximum network adapters: Unlimited ⓘ

Design Canvas

The Design Canvas shows a network topology. A box labeled 'vSphere Machine' is connected to a box labeled 'InfobloxRouted1'. The 'vSphere Machine' box has a dropdown menu labeled 'Web' and a red 'X' icon. The 'InfobloxRouted1' box has a blue icon and the text 'InfobloxRouted1'.

Web

GeneralBuild InformationMachine ResourcesStorageNetworkSecurityProperties

+ New Edit Delete

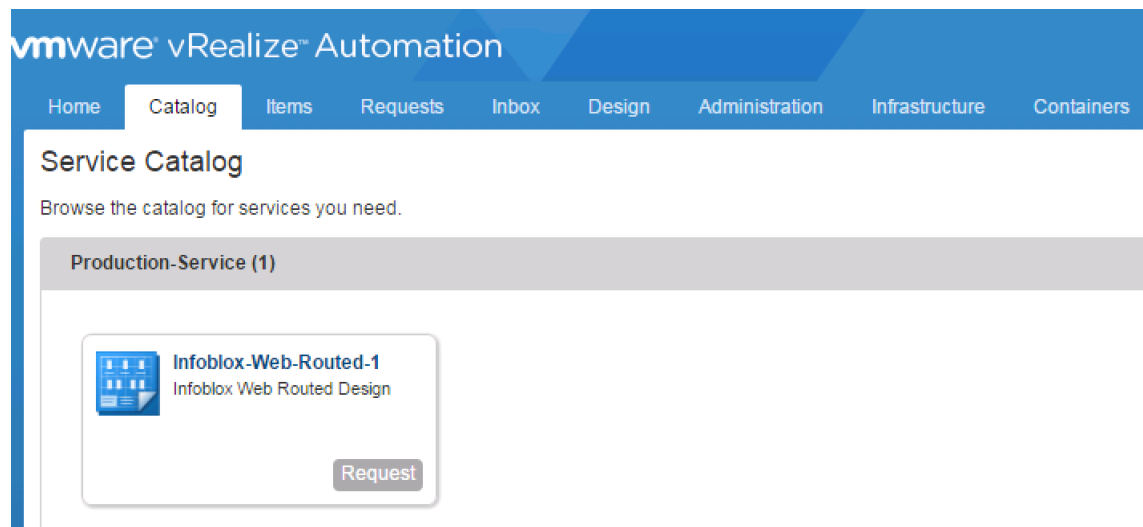
ID	Network	Assignment Type	Address	Lo
0	InfobloxRouted1	Static IP		

Maximum network adapters:

Unlimited

 ⓘ

Publish the Blueprint to a service

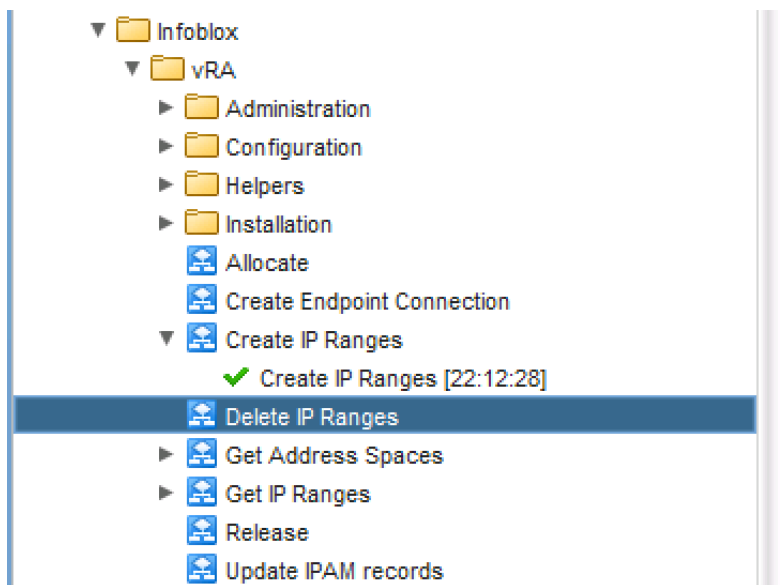


11.6 Provision a Routed VM

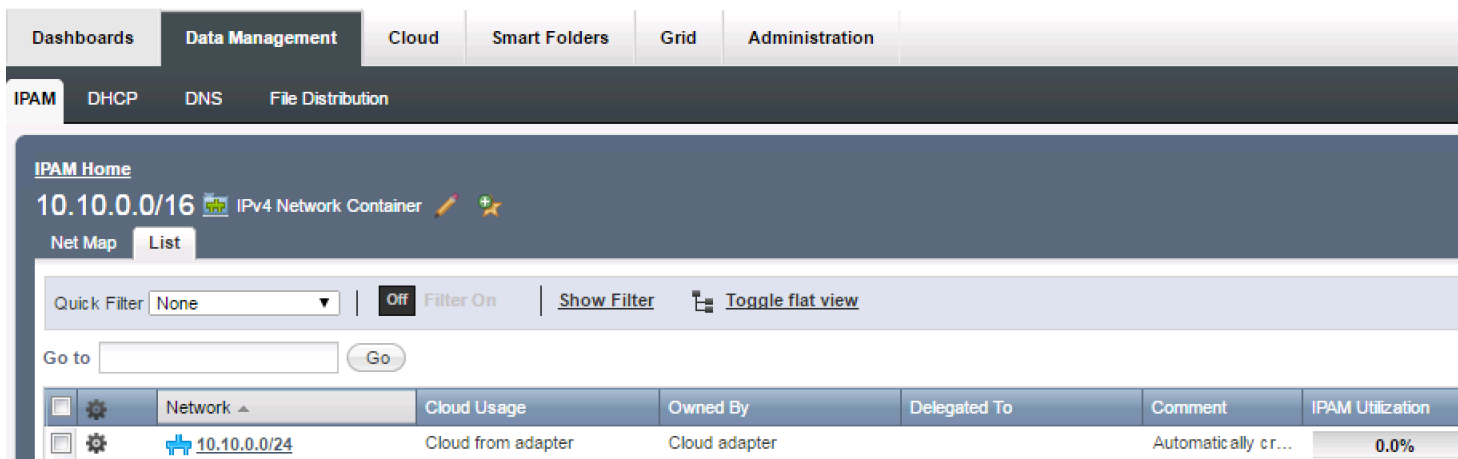
Provision the catalog item

The screenshot shows the 'Deployment: Infoblox-Web-Routed-1' form. On the left, a sidebar displays the service icon and name 'Infoblox-Web-Routed-1' and a 'Web' category icon. The main form has two tabs: 'General' and 'Properties'. The 'General' tab is active, showing three fields: 'Description' with the value 'Demo 1', 'Reason for request' with the value 'Demo Request 1', and 'Deployments' with a value of '1' and a '(Select 1-100)' dropdown menu.

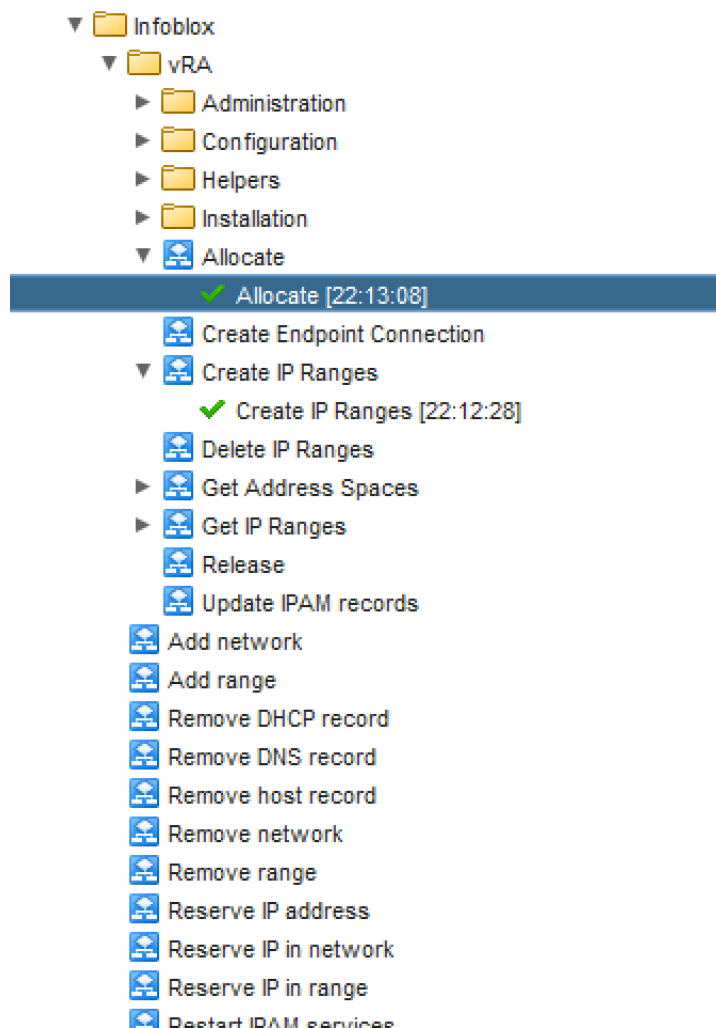
This will trigger Infoblox Create IP Ranges workflow in vRO.



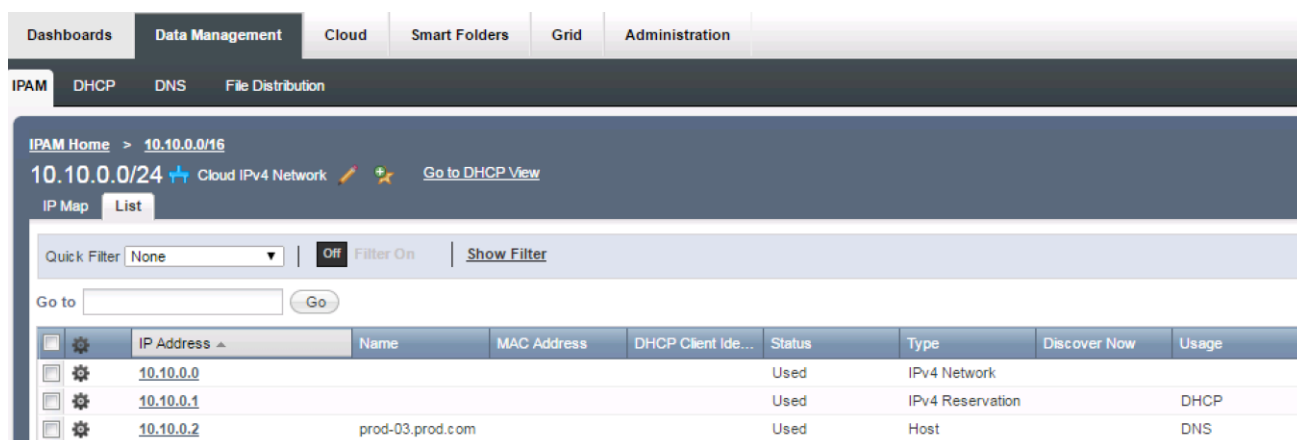
New Network will automatically get created in NIOS container



This will also trigger Infoblox Workflow in vRO to get IP address from this network



The provisioned VM will have IP address assigned from the routed network



Routed interface is automatically added in DLR

Logical-Router-01-0

Getting StartedSummaryResource AllocationPerformanceTasks & EventsAlarmsConsolePermissionsMaps

General

Product:vShield Edge
Version:6.2.3-3949215
Vendor:VMware, Inc.
Guest OS:Other 3.x or later Linux (64-bit)
VM Version:10
CPU:1 vCPU
Memory:512 MB
Memory Overhead:
VMware Tools:Running (Guest managed)
IP Addresses:10.10.0.1

Resources

Consumed Host CPU:71 MHz
Consumed Host Memory:293.00 MB
Active Guest Memory:128.00 MB
Provisioned Storage:715.38 MB
Not-shared Storage:552.00 MB
Used Storage:715.38 MB

Commands

Shut Down Guest
Suspend
Restart Guest
Open Console
Migrate
Clone to New Virtual Machine

Annotations

VRM Owner:
vrmManagedMa...
Notes:

Virtual Machine IP Addresses

IP Addresses:
10.10.0.1
12.12.12.253
IPv6 Addresses:
fe80::848b:d9ff:fec2:bb07
fe80::4b8:53ff:fe11:238a
fe80::250:56ff:fe8d:8083
fe80::250:56ff:fe8d:c1b4

Provisioned machine has IP address from the Network

```

vcsa.poc.infobloxdemo.com
├── Infoblox
│   ├── Compute
│   │   ├── compute-1.poc.infobloxdemo.com
│   │   └── prod-03
│   └── Mgmt
│       ├── mgmt-1.poc.infobloxdemo.com
│       ├── Edge-Gateway-01-0
│       ├── Logical-Router-01-0
│       ├── NSX_Controller_f73e170a-5d85-4090-8a62-4e994fb40d0a
│       └── Nsxmgr-623
        
```

prod-03

[Getting Started](#) | [Summary](#) | [Resource Allocation](#) | [Performance](#)

General

Guest OS:

VM Version: 8

CPU: 1 vCPU

Memory: 128 MB

Memory Overhead:

VMware Tools: ⚠ Running (Out-of-date)

IP Addresses: 10.10.0.2

DNS Name:

EVC Mode: N/A

State: Powered On

Host: [compute-1.poc.infobloxdemo.com](#)

Active Tasks:

vSphere HA Protection: ? N/A 💬

DNS registration is also done by the Infoblox workflow

[IPAM](#) | [DHCP](#) | [DNS](#) | [File Distribution](#)

[Zones](#) | [Members](#) | [Name Server Groups](#) | [Shared Record Groups](#) | [Blacklist Rulesets](#) | [DNS64 Groups](#) | [Query Monitoring](#)

default

prod.com Authoritative Zone 🔑 ✎ ★

[Records](#) | [Subzones](#)

Quick Filter: None | Off [Filter On](#) | [Show Filter](#) | [Toggle flat view](#)

Go to: Go

☐	⚙	Name ▲	Type	Data	Record Source	Principal	Protected
☐	⚙		SOA Record	Serial 20 MNAME nios.poc.infoblox.com RNAME please_set_email Refresh 10800 Retry 3600 Expire 2419200 Negative Caching TTL 900	System		
☐	⚙		NS Record	nios.poc.infobloxdemo.com	System		
☐	⚙	prod-03	Host	10.10.0.2	Static		No

vmware vRealize Automation

[Home](#) | [Catalog](#) | [Items](#) | [Requests](#) | [Inbox](#) | [Design](#) | [Administration](#) | [Infrastructure](#) | [Containers](#)

Deployments

Machines

Deployments

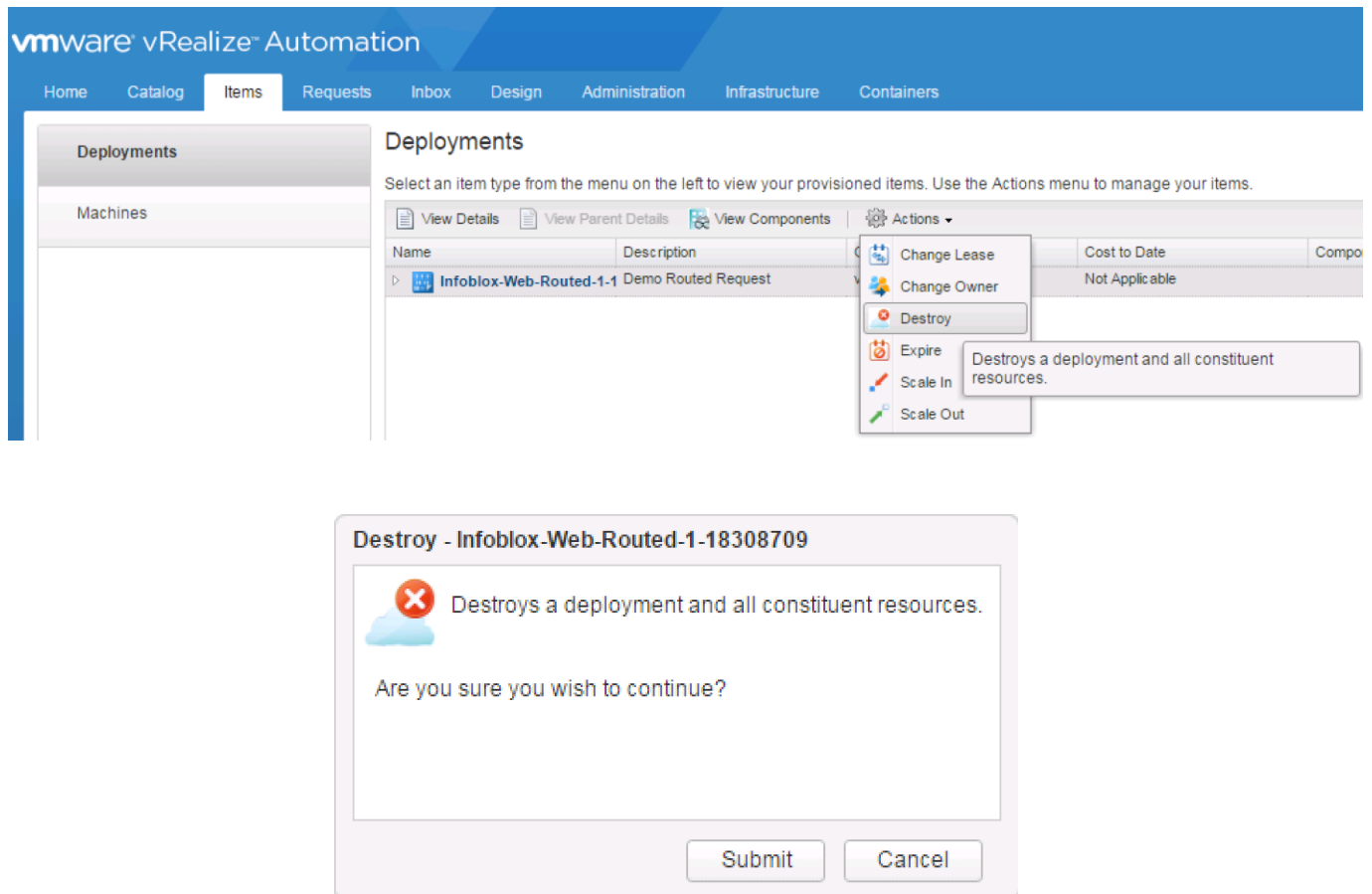
Select an item type from the menu on the left to view your provisioned items. Use the Actions menu

📄 View Details | 📄 View Parent Details | 🔍 View Components | ⚙ Actions ▼

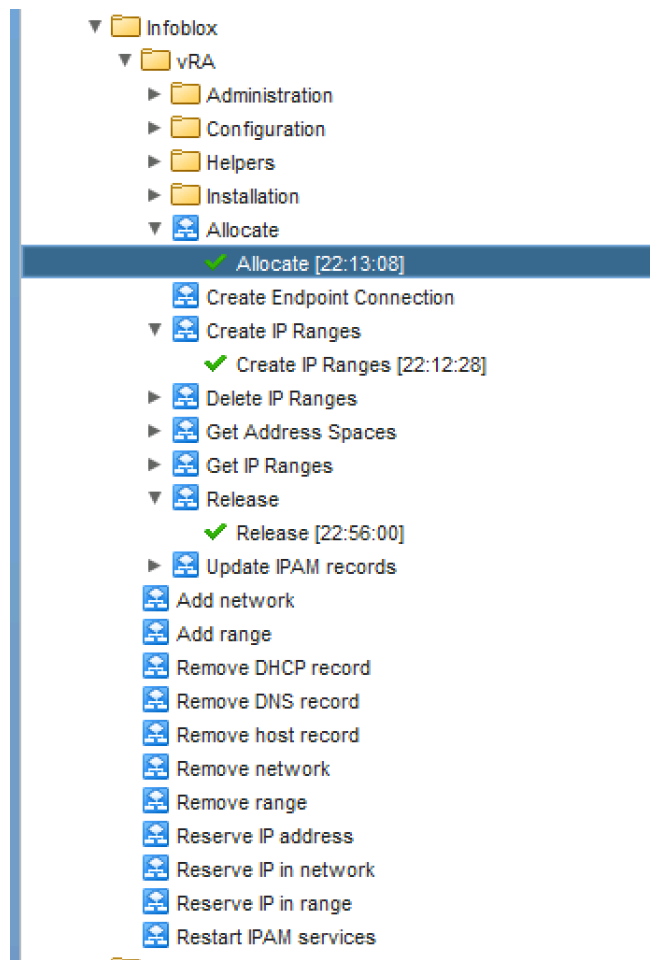
Name	Description	Owner
▶ 🔗 Infoblox-Web-Routed-1-1	Demo Routed Request	vra admin

11.7 De-provisioning

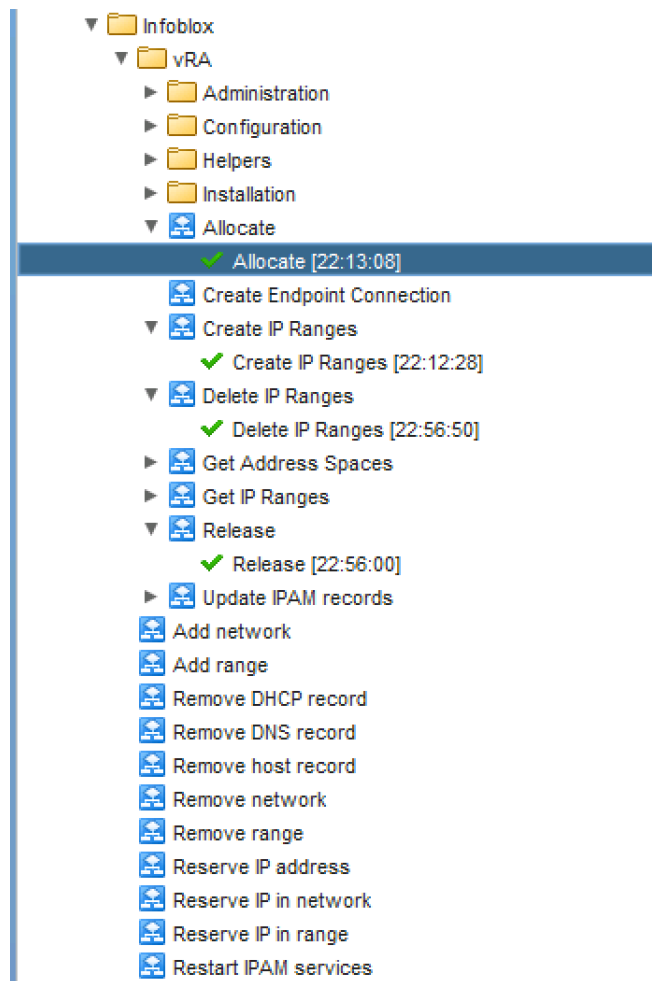
When the provisioned item is deleted, it will trigger the workflow to release the IP address back to the pool and delete the range that was created.



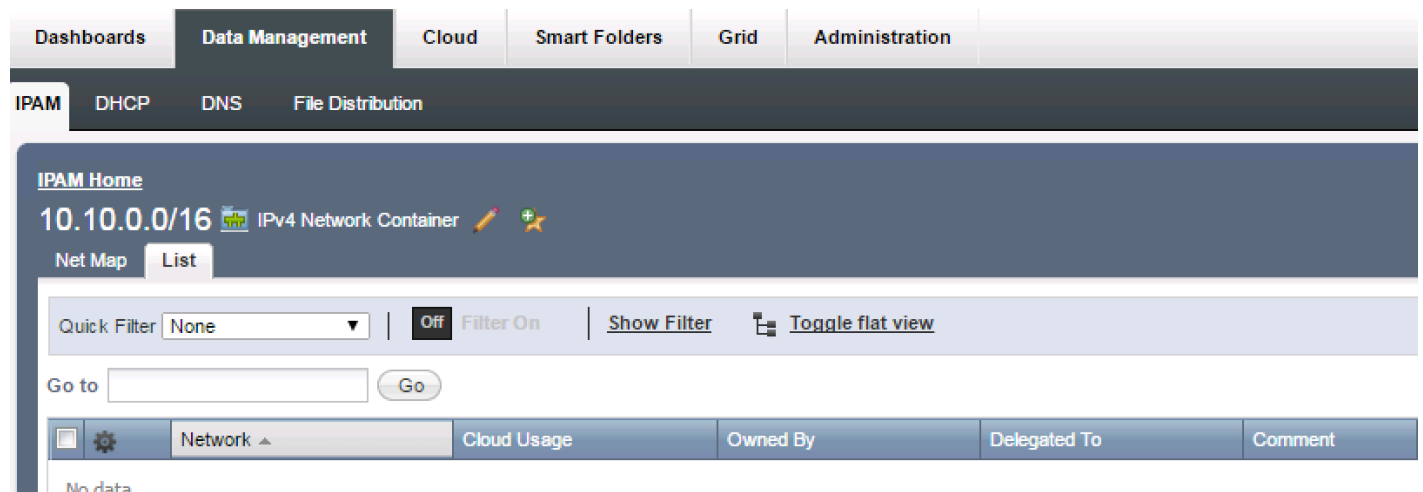
This will call Infoblox Workflow to release the IP address for the VM



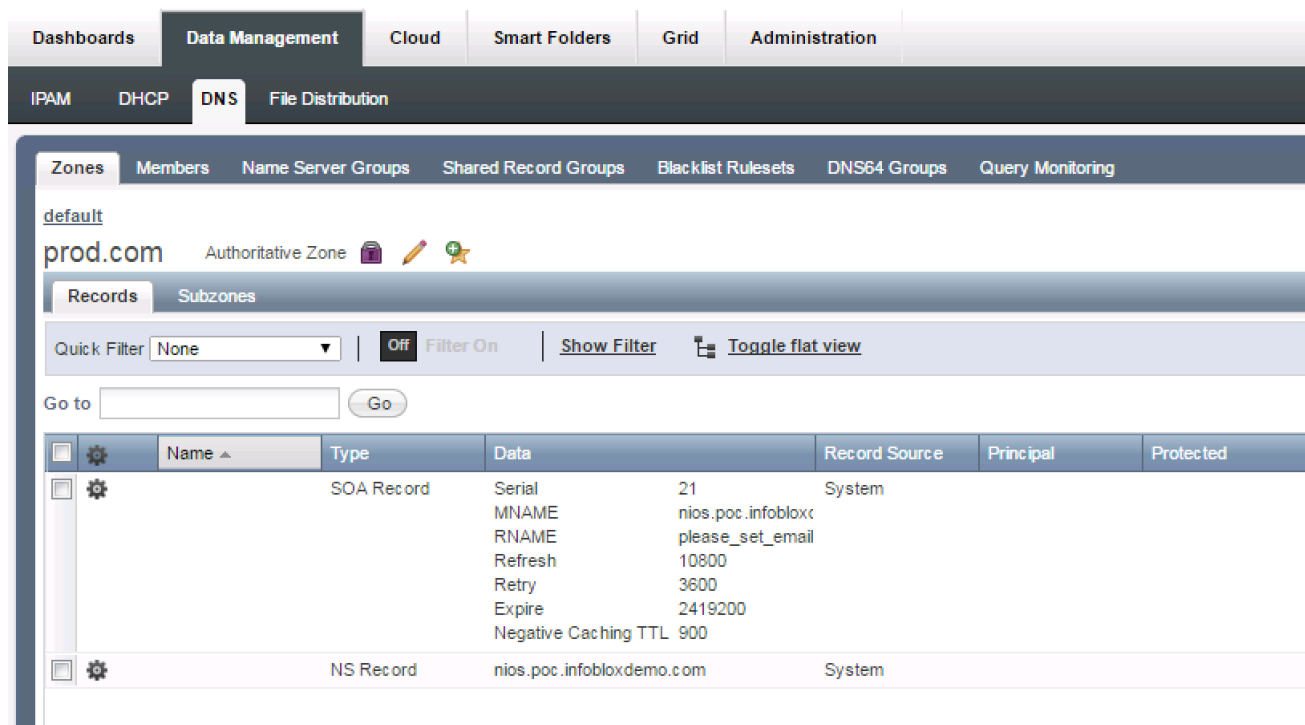
This will then trigger the workflow to delete the provisioned range



Range gets deleted in NIOS



Workflow also deletes the Host record in DNS.

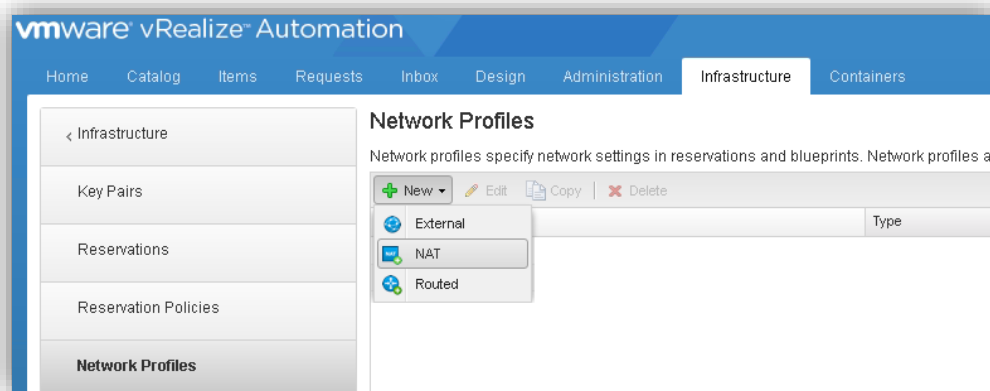


12. NAT Network Profiles

12.1 Create One to One NAT Profile

The network profile sets the network parameters that will be used when deploying an instance in a One to One NAT configuration.

1. In your vRA tenant, navigate to **Infrastructure -> Reservations -> Network Profiles**.
2. Click **New** and select **NAT**.



3. Complete the fields in the "New Network Profile - NAT" configuration, being sure to set the **IPAM endpoint** menu to your Infoblox NIOS IPAM endpoint and **NAT type** to **One-to-One**.
 - a. Note: The External network profile selected here must contain only one network or network range and have at least two available IP addresses.

New Network Profile - NAT

Create a network profile to manage one or more named ranges of static IPv4 network addresses.

General | DNS | Network Ranges

*Name: Infoblox-1-1-NAT-Profile

Description: Infoblox One to One NAT Profile

IPAM endpoint: Infoblox

*External network profile: Infoblox-External-172.26.1.0/24

*NAT type: One-to-One

*Subnet mask: 255.255.255.0

*Gateway: 10.10.10.1

DHCP

☐ Enabled

IP range start:

IP range end:

Lease time (seconds): Unlimited

OK Apply Cancel

4. Switch to the **DNS** tab. Optional: Enter DNS settings here to override the DNS settings from NIOS.
5. Switch to the **Network Ranges** tab.
6. Click **New** and provide a name, description (optional), Start IP address and End IP.
7. Click **OK** to save the network range.
8. Click **OK** to save the network profile.

New Network Profile - NAT

Create a network profile to manage one or more named ranges of static IPv4 network addresses.

General | DNS | **Network Ranges**

+ New | Edit | Delete | Import from CSV

Name	Description	Start IP	End IP
range1		10.10.10.150	10.10.10.180

OK Cancel

OK Apply Cancel

12.1.1 Machine Blueprint for One to One NAT

The Machine Blueprint sets the design for instances that are being deployed. This section describes the steps for creating a blueprint used to create instances in a One to One NAT configuration.

1. Navigate to **Design -> Blueprints**.
2. Click **New** to create a Single Machine blueprint.

New Blueprint

General NSX Settings Properties

*Name: Infoblox Web 1-1 NAT

*ID: InfobloxWeb11NAT *i*
Assign a permanent, unique ID to this blueprint.

Description:

Deployment limit: *i*

Minimum Maximum

Lease (days): *i*

*Archive (days): 0 *i*

OK Cancel

- Under the NSX tab, set the Transport zone to be used for the NSX connection.

New Blueprint

General NSX Settings Properties

These settings apply to vSphere machine components in the blueprint that have access to configured NSX networking and security settings.

Transport zone: *i*

Edge and routed gateway reservation policy: *i*

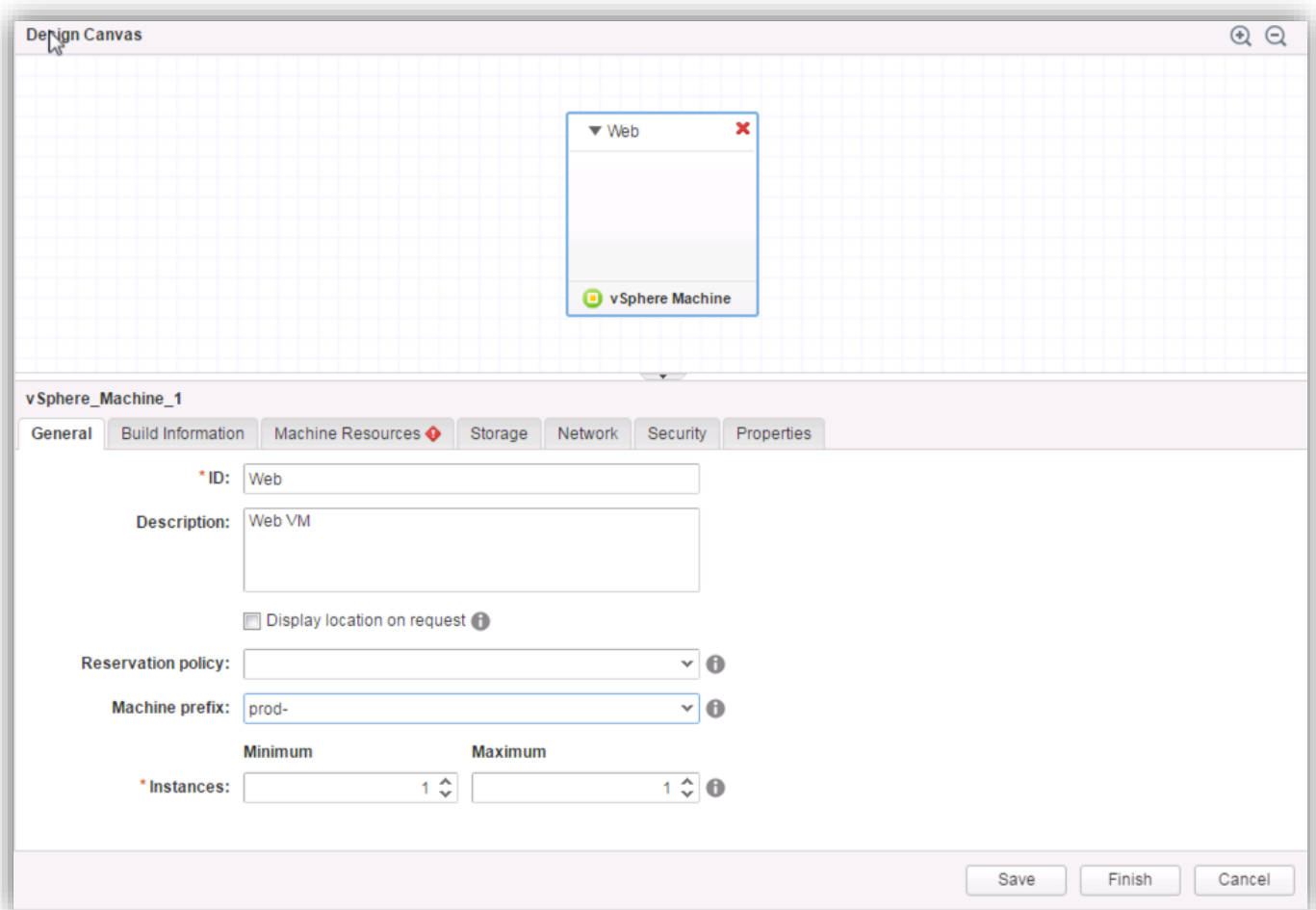
global-transport-zone (vCenter)

☐ App isolation *i*

OK Cancel

- Click **OK**.

- Here we have the machine blueprint named “Web” and selected machine prefix “prod-“

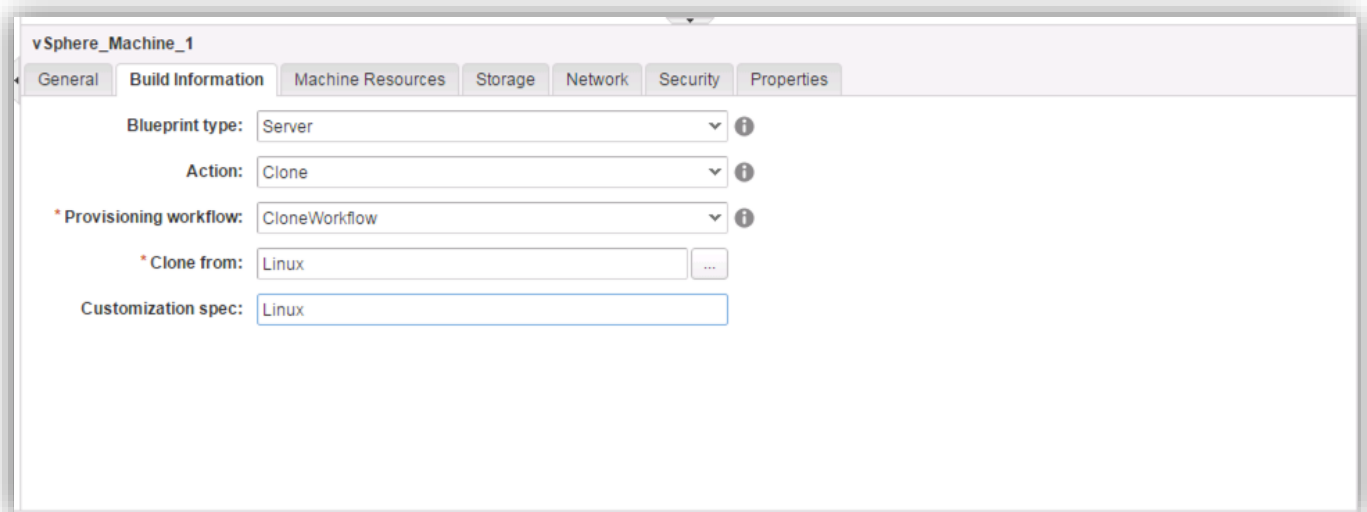


The screenshot shows the 'Design Canvas' interface. At the top, a blueprint named 'Web' is displayed with a 'vSphere Machine' icon. Below the canvas, the 'vSphere_Machine_1' configuration panel is visible. The 'General' tab is selected, showing the following fields:

- * ID: Web
- Description: Web VM
- ☐ Display location on request ⓘ
- Reservation policy: [Dropdown]
- Machine prefix: prod- [Dropdown]
- * Instances: Minimum 1, Maximum 1 [Spinners]

Buttons at the bottom right: Save, Finish, Cancel.

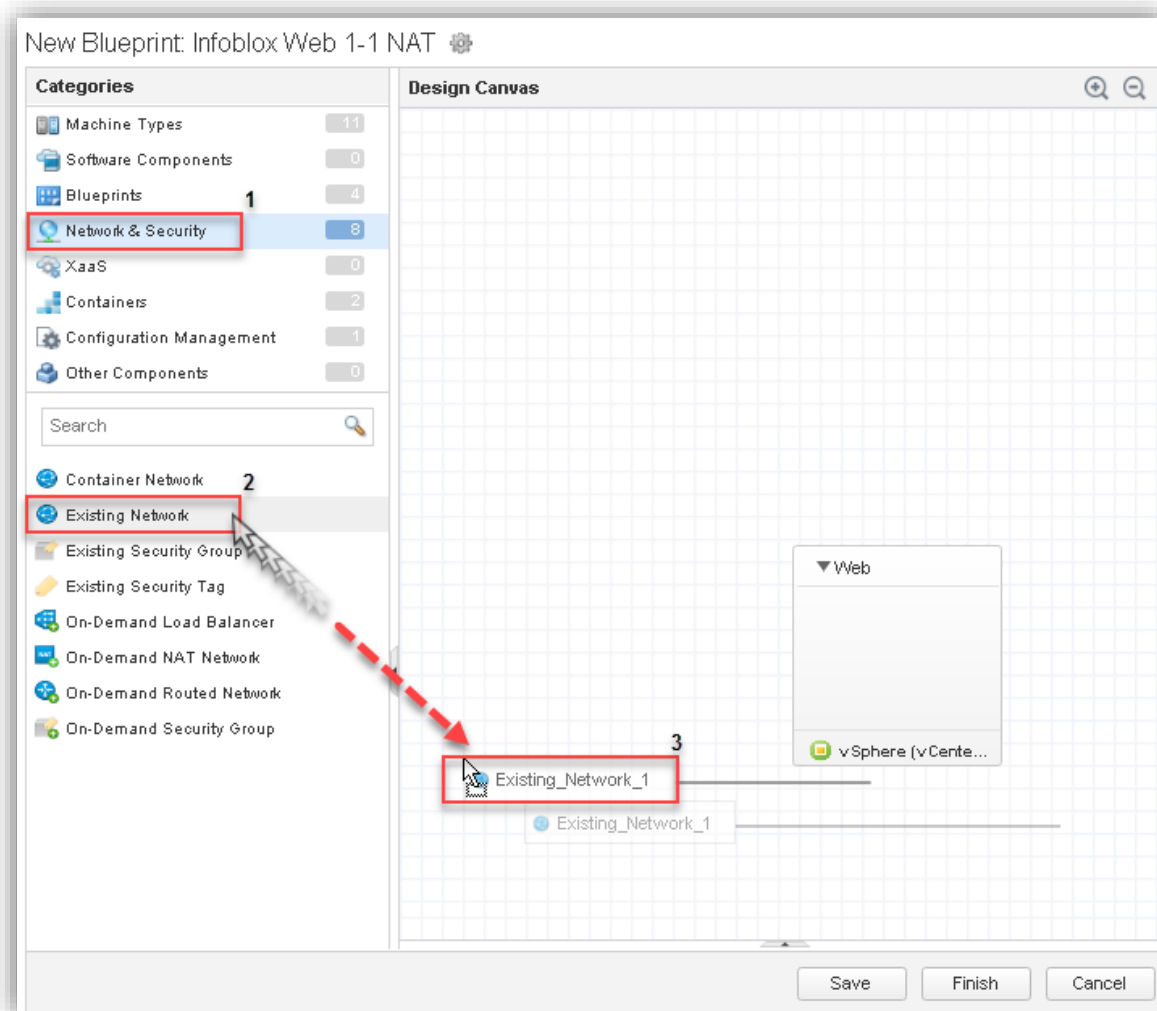
- Set the **Build** Information:



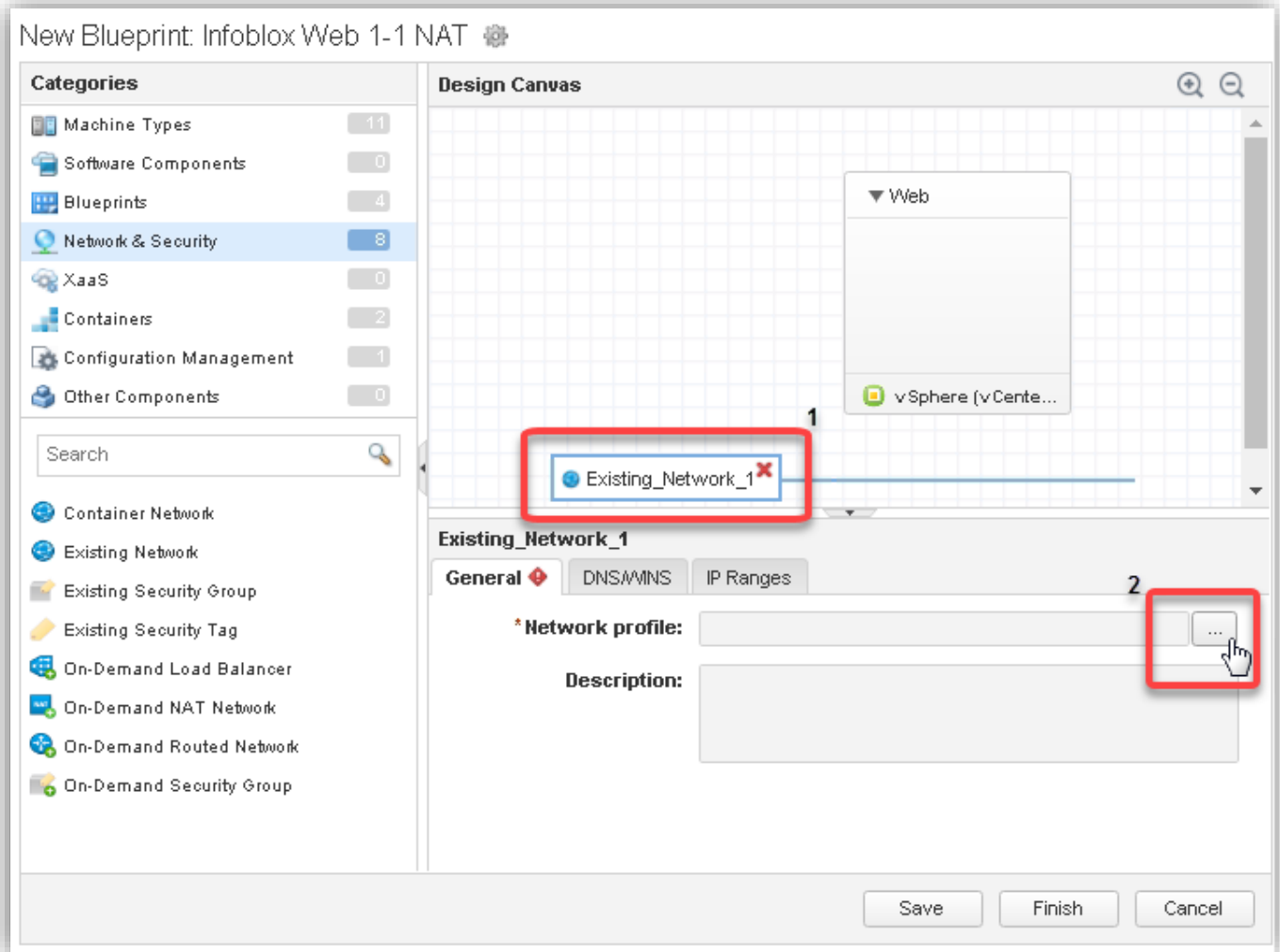
The screenshot shows the 'vSphere_Machine_1' configuration panel with the 'Build Information' tab selected. The following fields are visible:

- Blueprint type: Server [Dropdown]
- Action: Clone [Dropdown]
- * Provisioning workflow: CloneWorkflow [Dropdown]
- * Clone from: Linux [Text]
- Customization spec: Linux [Text]

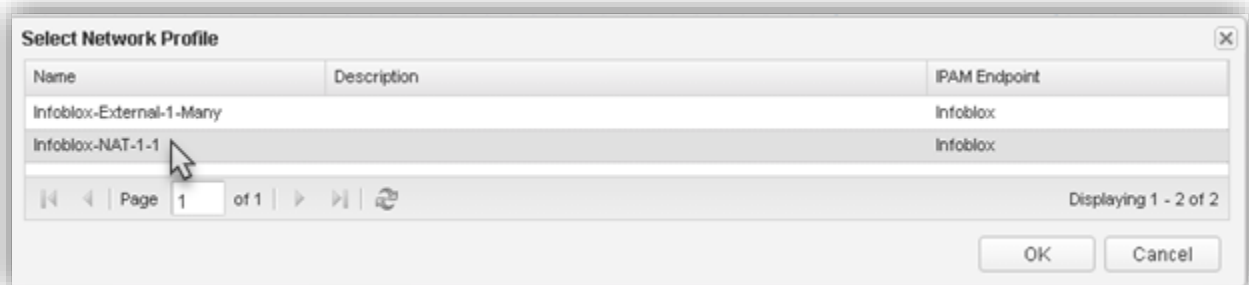
- In the Categories panel, select **Network and Security** (1).
- In the bottom left panel, drag the **Existing Network** button (2) to the Design Canvas (3).

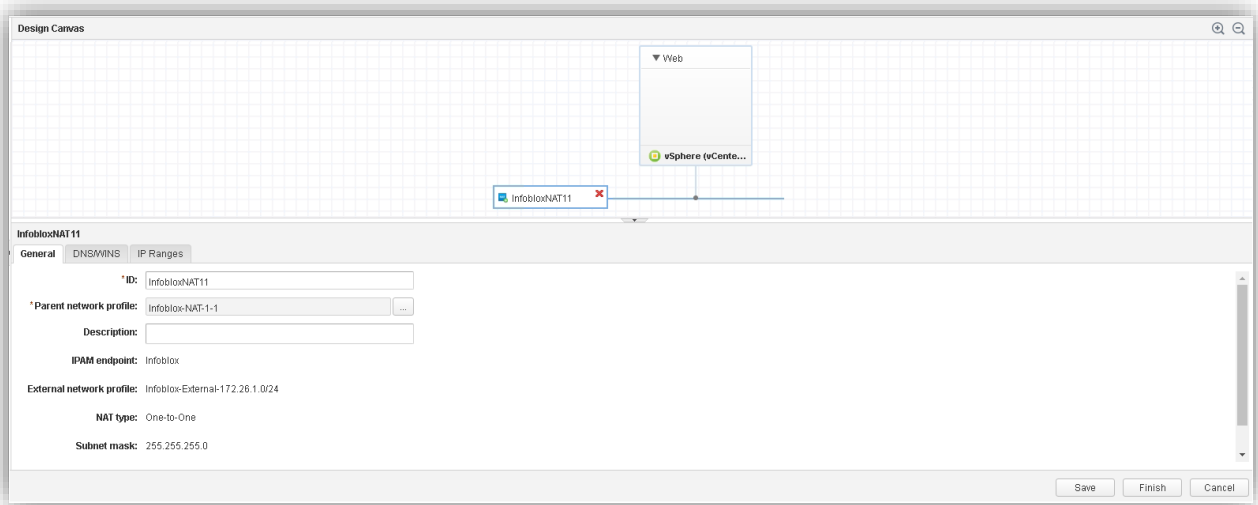


9. Click on the **Existing_Network** icon in the Design Canvas (1) and then the selector button for “Parent network profile” (2).

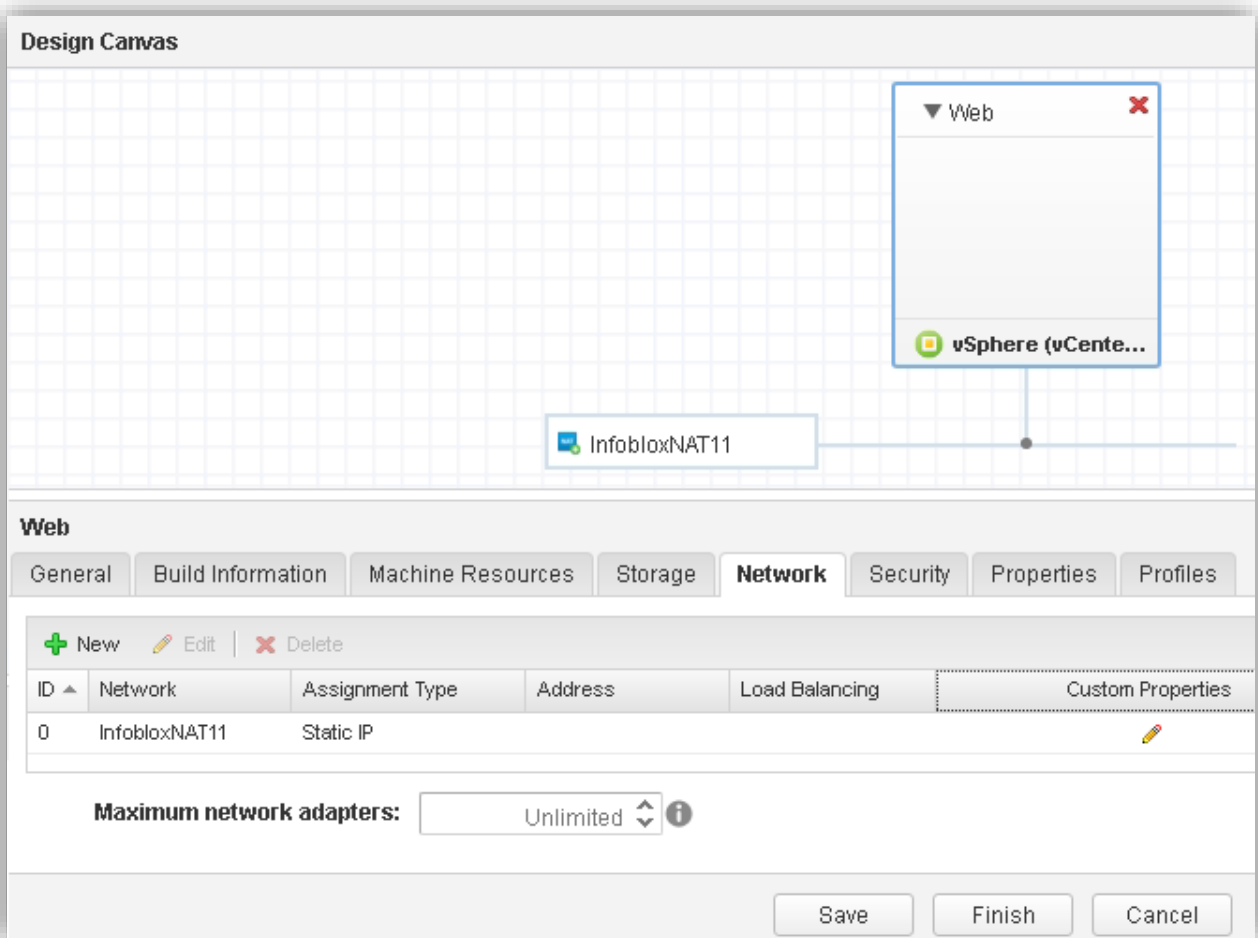


10. Select the one to one NAT network profile created previously and click **OK**.

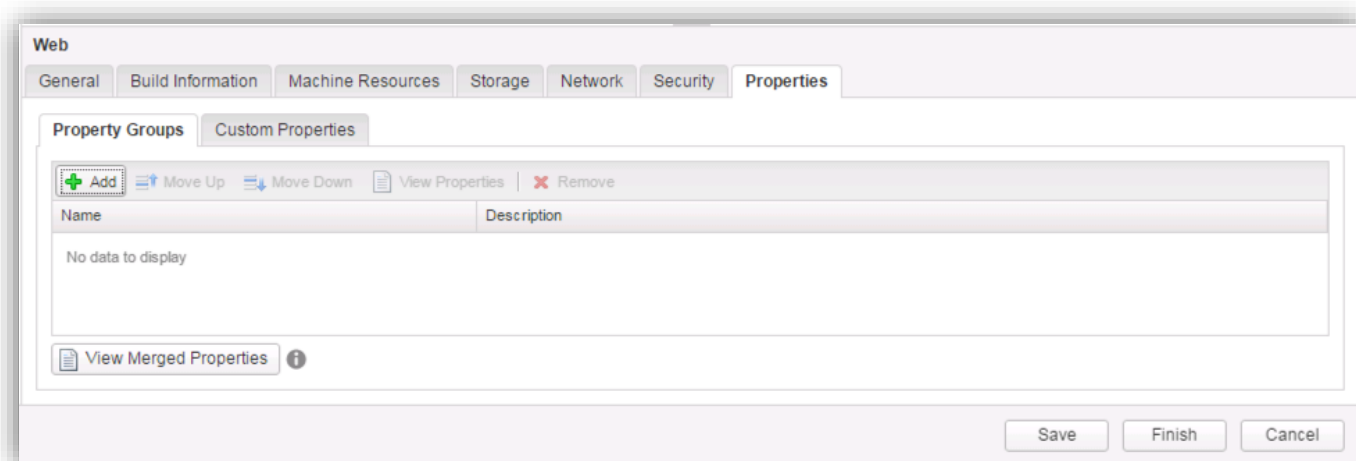




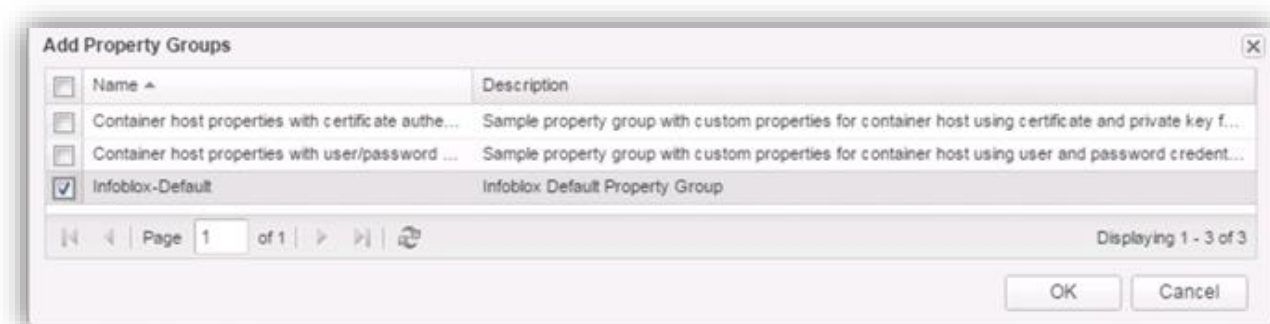
11. Click on the icon for your machine in the Design Canvas and switch to the **Network** tab.
12. Click + **New**.
13. Expand the dropdown menu under the Network column and select your One to One Nat network profile.



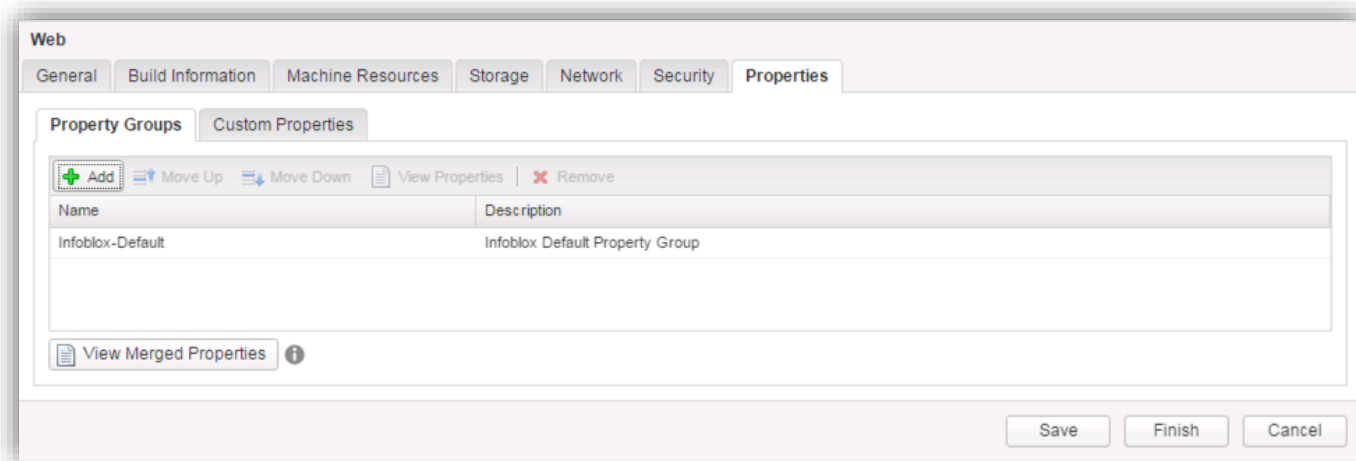
14. Switch to the **Properties** -> **Property Groups** tab and click **Add**.



15. Select your Infoblox property group and click **OK**.



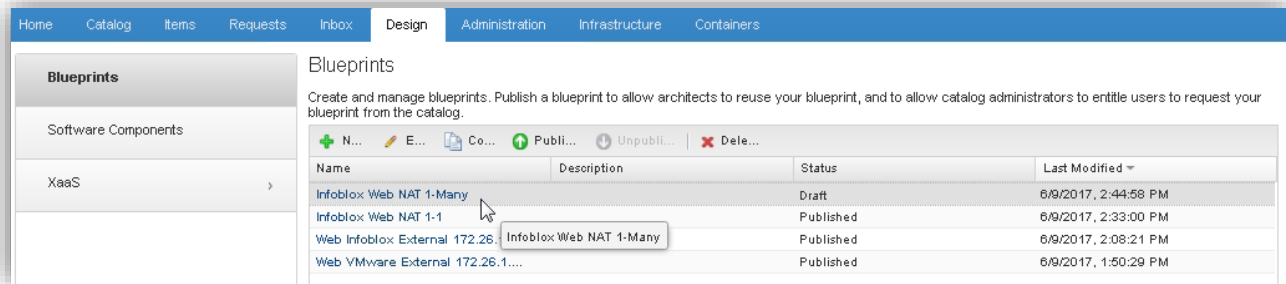
16. Click **Finish**.



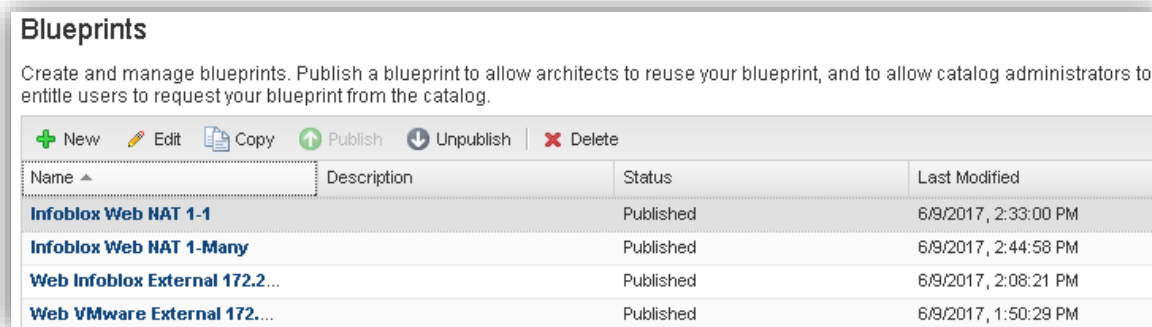
12.1.2 Publishing Machine Blueprints

Machine Blueprints must be published before they can be used. The steps in this section apply for all Machine Blueprint types, including for Machine Blueprints documented in later sections in this guide.

1. Navigate to **Design -> Blueprints**.
2. Click on the row for the blueprint that you want to publish (taking care not to click on the hyperlinked name for the blueprint).
3. Click **Publish**.



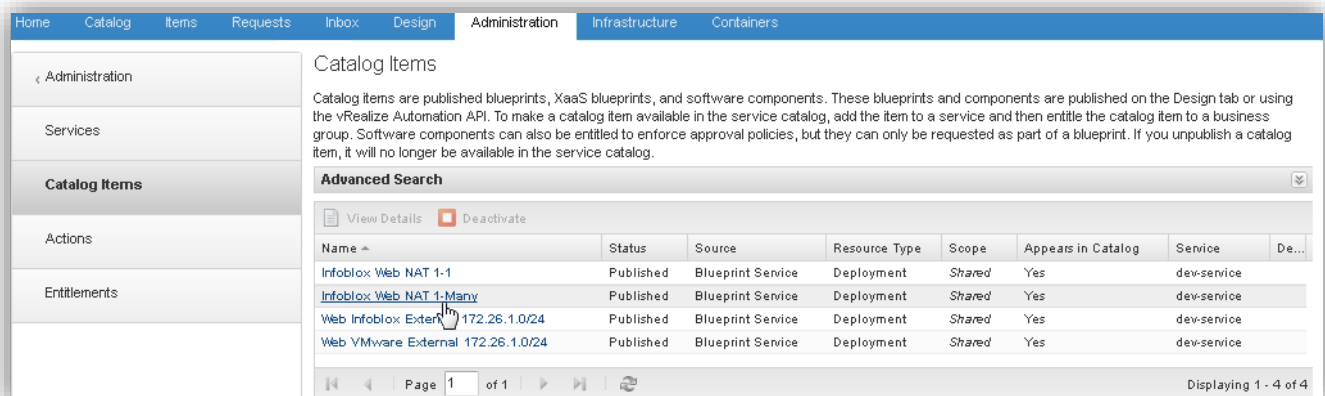
4. Verify that the status for the blueprint shows as **Published**.



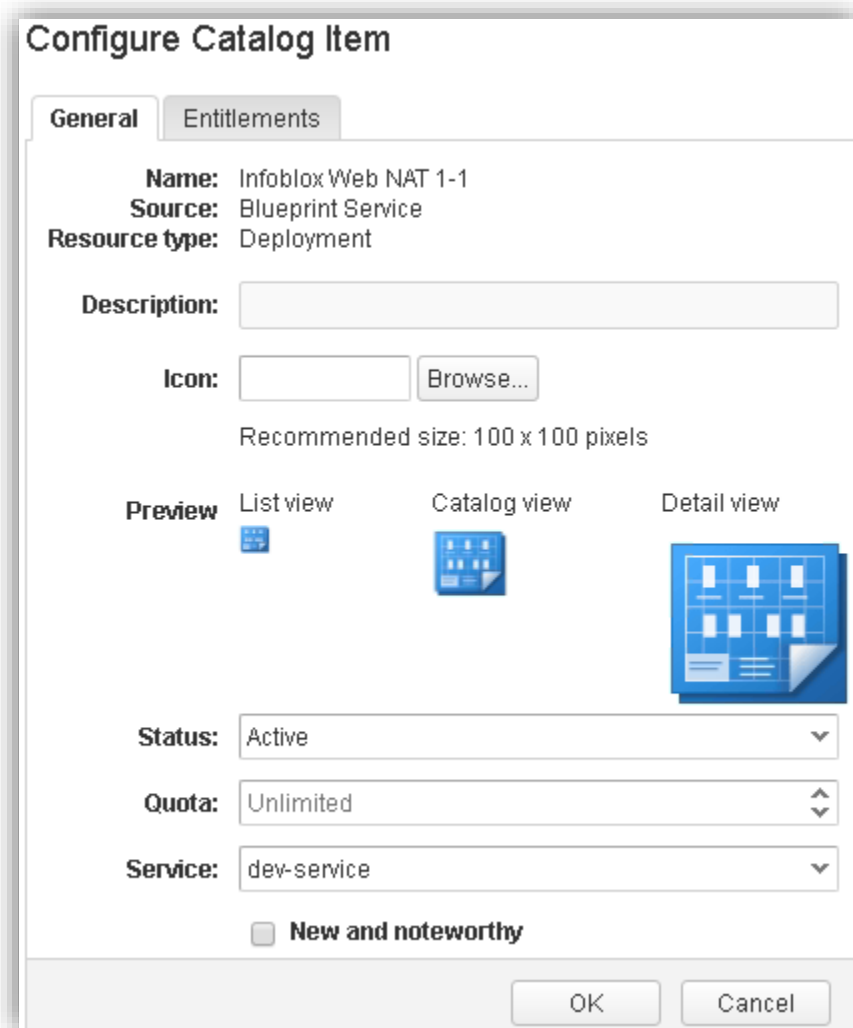
12.1.3 Add Catalog item

Add Catalog item to the Service.

1. Navigate to **Administration -> Catalog Management -> Catalog Items**.
2. Click on the name for your catalog item that you are updating.



3. Set the **Status** dropdown menu to **Active** and in the **Service** menu, the service to be used.
4. Click **OK**.



Configure Catalog Item

General Entitlements

Name: Infoblox Web NAT 1-1
Source: Blueprint Service
Resource type: Deployment

Description:

Icon:
 Recommended size: 100 x 100 pixels

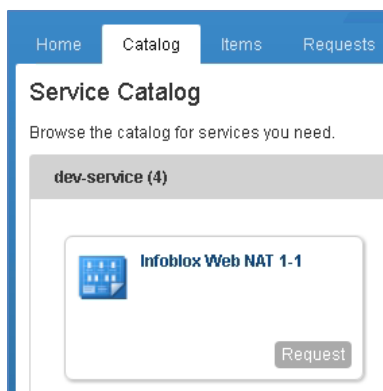
Preview List view Catalog view Detail view

Status: Active
Quota: Unlimited
Service: dev-service

☐ **New and noteworthy**

12.1.4 Provision the VM from the Catalog Item

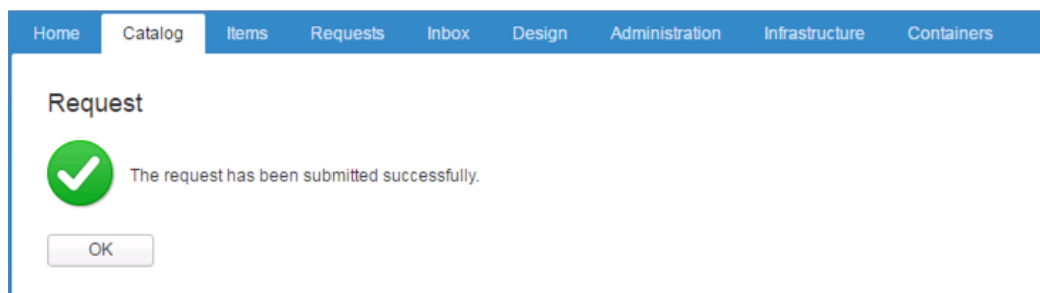
1. Navigate to **Catalog**.
2. Click on the **Request** button for your One to One NAT catalog item.



3. Set the parameters under the **General** and **Properties** tabs as required.
4. Click **Submit**.

The screenshot shows the 'New Request' form in the VMware vRealize Automation interface. The form is titled 'Deployment: Infoblox Web NAT 1-1'. It has two tabs: 'General' and 'Properties'. The 'General' tab is active, showing fields for 'Description', 'Reason for request', and 'Deployments' (set to 1). There are 'Save', 'Submit', and 'Cancel' buttons at the bottom right.

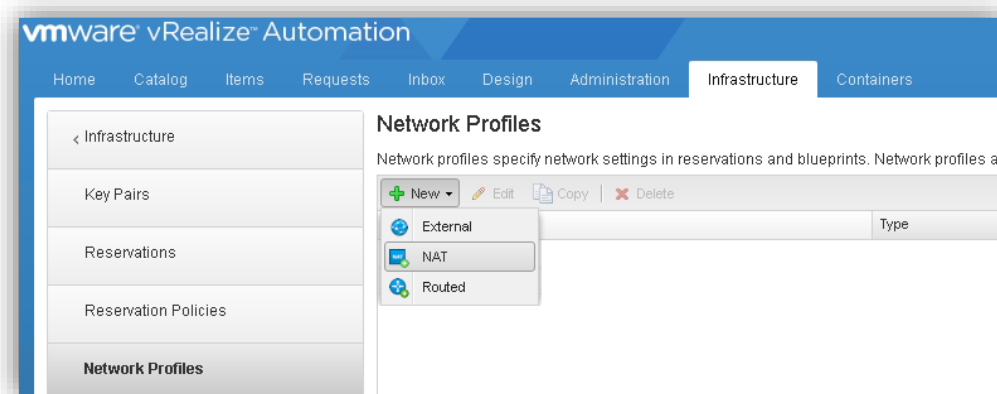
5. Verify that the request has completed successfully.



12.2 Create One to Many NAT Profile

The network profile sets the network parameters that will be used when deploying an instance in a One to Many NAT configuration.

9. In your vRA tenant, navigate to **Infrastructure -> Reservations -> Network Profiles**.
10. Click **New** and select **NAT**.



11. Complete the fields in the “New Network Profile - NAT” configuration, being sure to set the **IPAM endpoint** menu to your Infoblox NIOS IPAM endpoint and **NAT type** to **One-to-Many**.

The screenshot shows the 'New Network Profile - NAT' configuration window with the 'General' tab selected. The window title is 'New Network Profile - NAT'. Below the title is a subtitle: 'Create a network profile to manage one or more named ranges of static IPv4 network addresses.' The 'General' tab is active, with 'DNS' and 'Network Ranges' tabs also visible. The configuration fields are as follows:

- *Name:** Infoblox-External-1-Many
- Description:** (empty text box)
- IPAM endpoint:** Infoblox (dropdown menu)
- *External network profile:** Infoblox-External-172.26.1.0/24 (dropdown menu)
- *NAT type:** One-to-Many (dropdown menu)
- *Subnet mask:** 255.255.255.0 (dropdown menu)
- *Gateway:** 10.10.20.1 (text box)

Below these fields is a section for **DHCP** with the following options:

- ☐ Enabled
- IP range start:** (empty text box)
- IP range end:** (empty text box)
- Lease time (seconds):** Unlimited (text box)

At the bottom of the window are three buttons: OK, Apply, and Cancel.

12. Switch to the **DNS** tab and enter in your DNS configuration.
13. Switch to the **Network Ranges** tab.
14. Click **New** and provide a name, description (optional), Start IP address and End IP.
15. Click **OK** to save the network range.
16. Click **OK** to save the network profile.

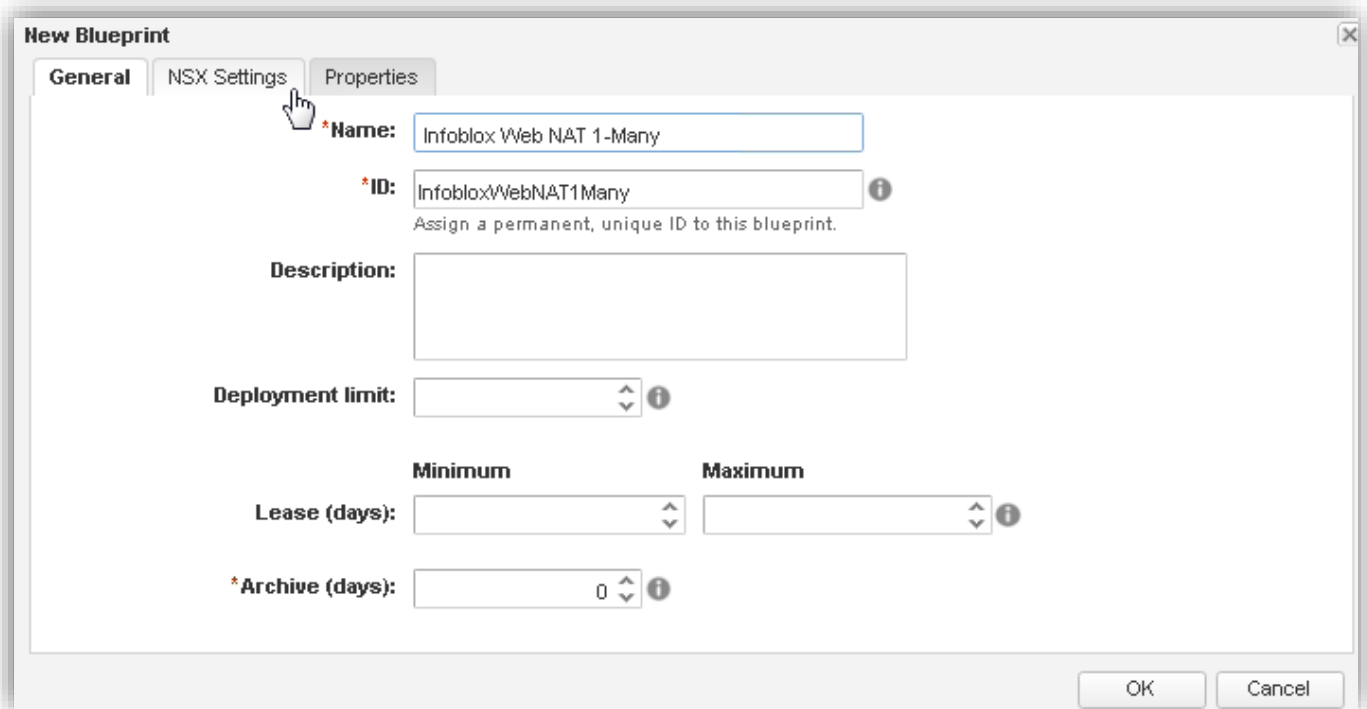
The screenshot shows the 'New Network Profile - NAT' configuration window with the 'Network Ranges' tab selected. The window title is 'New Network Profile - NAT'. Below the title is a subtitle: 'Create a network profile to manage one or more named ranges of static IPv4 network addresses.' The 'Network Ranges' tab is active, with 'General', 'DNS', and 'IP Addresses' tabs also visible. The configuration area shows a table with the following columns: Name, Description, Start IP, and End IP. The table contains one entry: 'range2' with an empty description, '10.10.20.2' as the start IP, and '10.10.20.20' as the end IP. Below the table are two buttons: OK and Cancel. At the bottom of the window are three buttons: OK, Apply, and Cancel.

Name	Description	Start IP	End IP
range2		10.10.20.2	10.10.20.20

12.2.1 Machine Blueprint for One to Many NAT

The Machine Blueprint sets the design for instances that are being deployed. This section describes the steps for creating a blueprint used to create instances in a One to Many NAT configuration.

17. Navigate to **Design -> Blueprints**.
18. Click **+ New**.
19. Set the General properties for your Single Machine blueprint.



The screenshot shows the 'New Blueprint' dialog box with the 'General' tab selected. The 'Name' field is 'Infoblox Web NAT 1-Many'. The 'ID' field is 'InfobloxWebNAT1Many' with a tooltip that says 'Assign a permanent, unique ID to this blueprint.' The 'Description' field is empty. The 'Deployment limit' is set to 1. The 'Lease (days)' field has a 'Minimum' of 1 and a 'Maximum' of 30. The '*Archive (days)' field is set to 0. The 'OK' and 'Cancel' buttons are at the bottom right.

New Blueprint

General | NSX Settings | Properties

*Name: Infoblox Web NAT 1-Many

*ID: InfobloxWebNAT1Many *i*
Assign a permanent, unique ID to this blueprint.

Description:

Deployment limit: 1 *i*

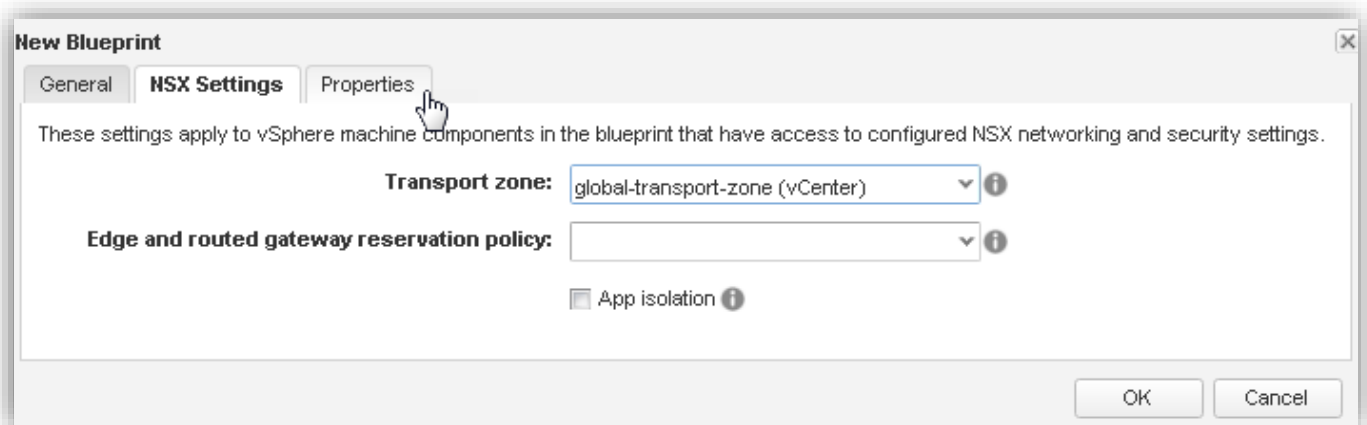
Minimum Maximum

Lease (days): 1 30 *i*

*Archive (days): 0 *i*

OK Cancel

20. Switch to the NSX Settings tab and select the Transport zone to be used. Click **OK**.



The screenshot shows the 'New Blueprint' dialog box with the 'NSX Settings' tab selected. The 'Transport zone' is set to 'global-transport-zone (vCenter)'. The 'Edge and routed gateway reservation policy' is set to 'Default'. The 'App isolation' checkbox is unchecked. The 'OK' and 'Cancel' buttons are at the bottom right.

New Blueprint

General | **NSX Settings** | Properties

These settings apply to vSphere machine components in the blueprint that have access to configured NSX networking and security settings.

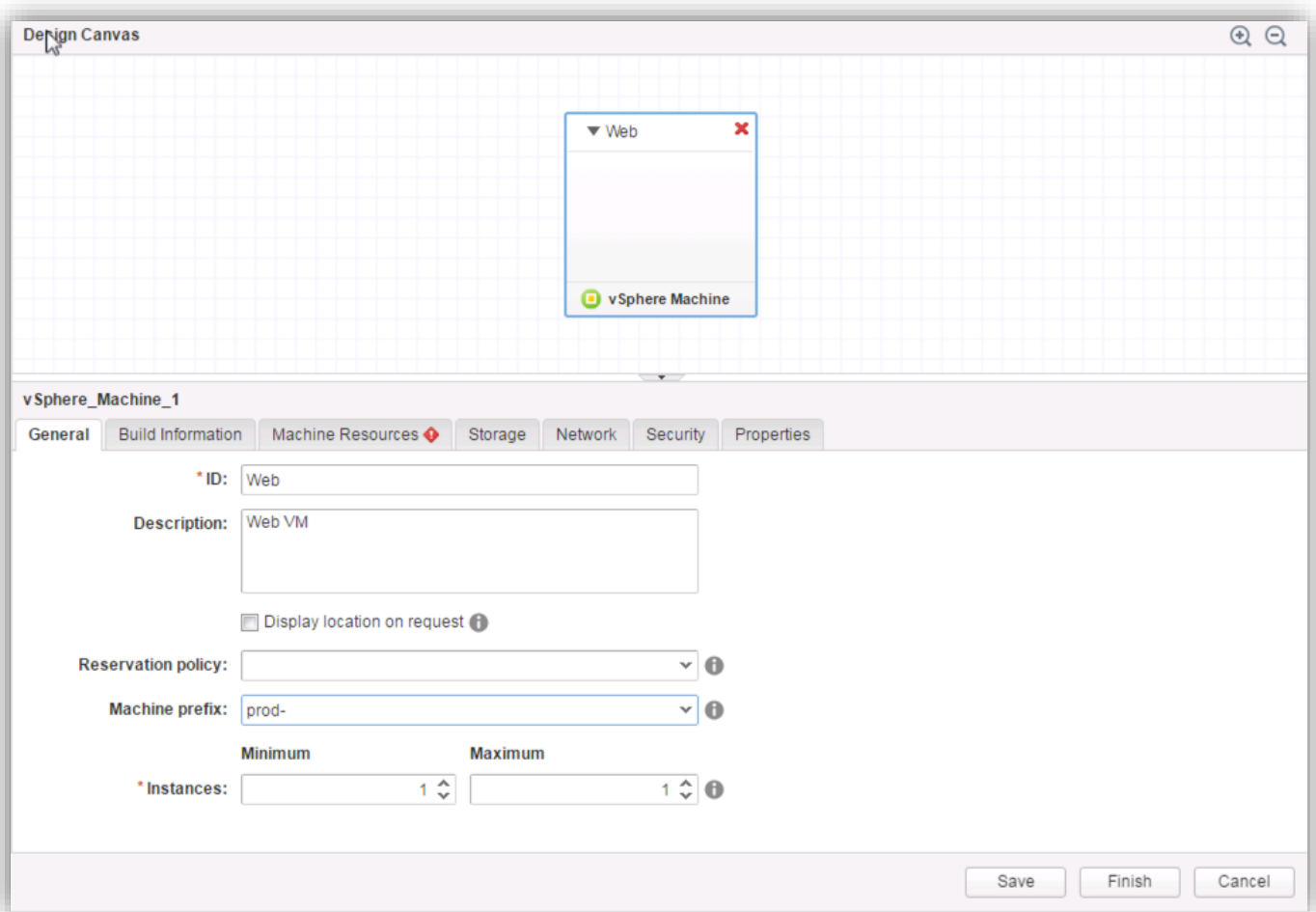
Transport zone: global-transport-zone (vCenter) *i*

Edge and routed gateway reservation policy: Default *i*

☐ App isolation *i*

OK Cancel

21. Here we have the machine blueprint named “Web” and selected machine prefix “prod-“

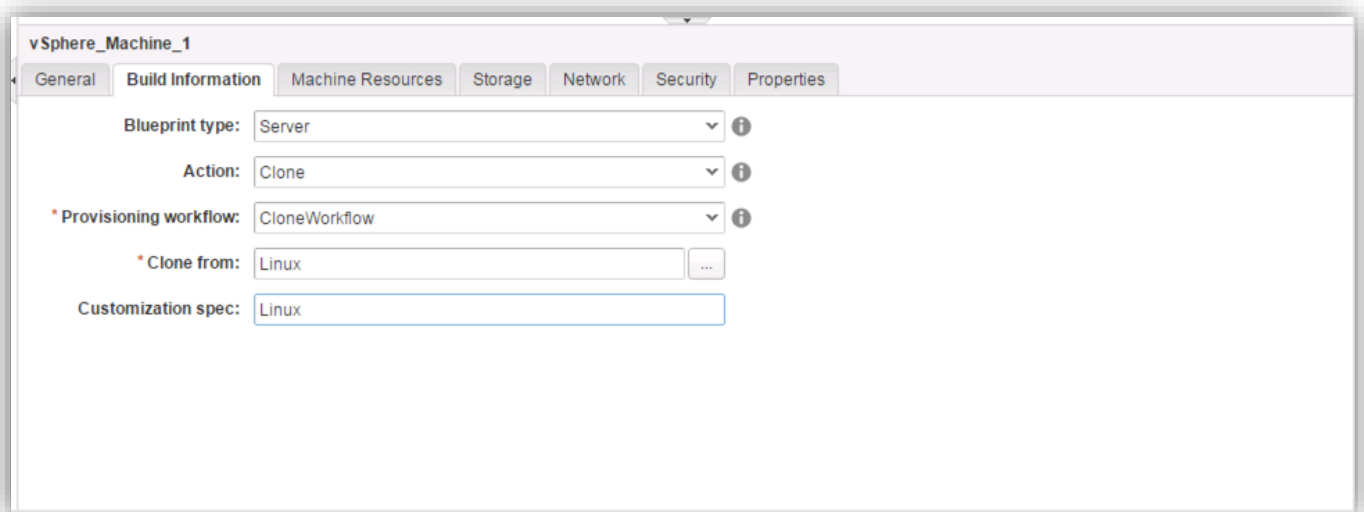


The screenshot shows the 'Design Canvas' interface. At the top, a blueprint named 'Web' is displayed with a 'vSphere Machine' icon. Below the canvas, the 'vSphere_Machine_1' configuration panel is open, showing the 'General' tab. The configuration includes:

- ID:** Web
- Description:** Web VM
- ☐ Display location on request
- Reservation policy:** (dropdown menu)
- Machine prefix:** prod- (dropdown menu)
- Instances:** Minimum 1, Maximum 1 (spinners)

Buttons at the bottom right: Save, Finish, Cancel.

22. Set the **Build** Information:

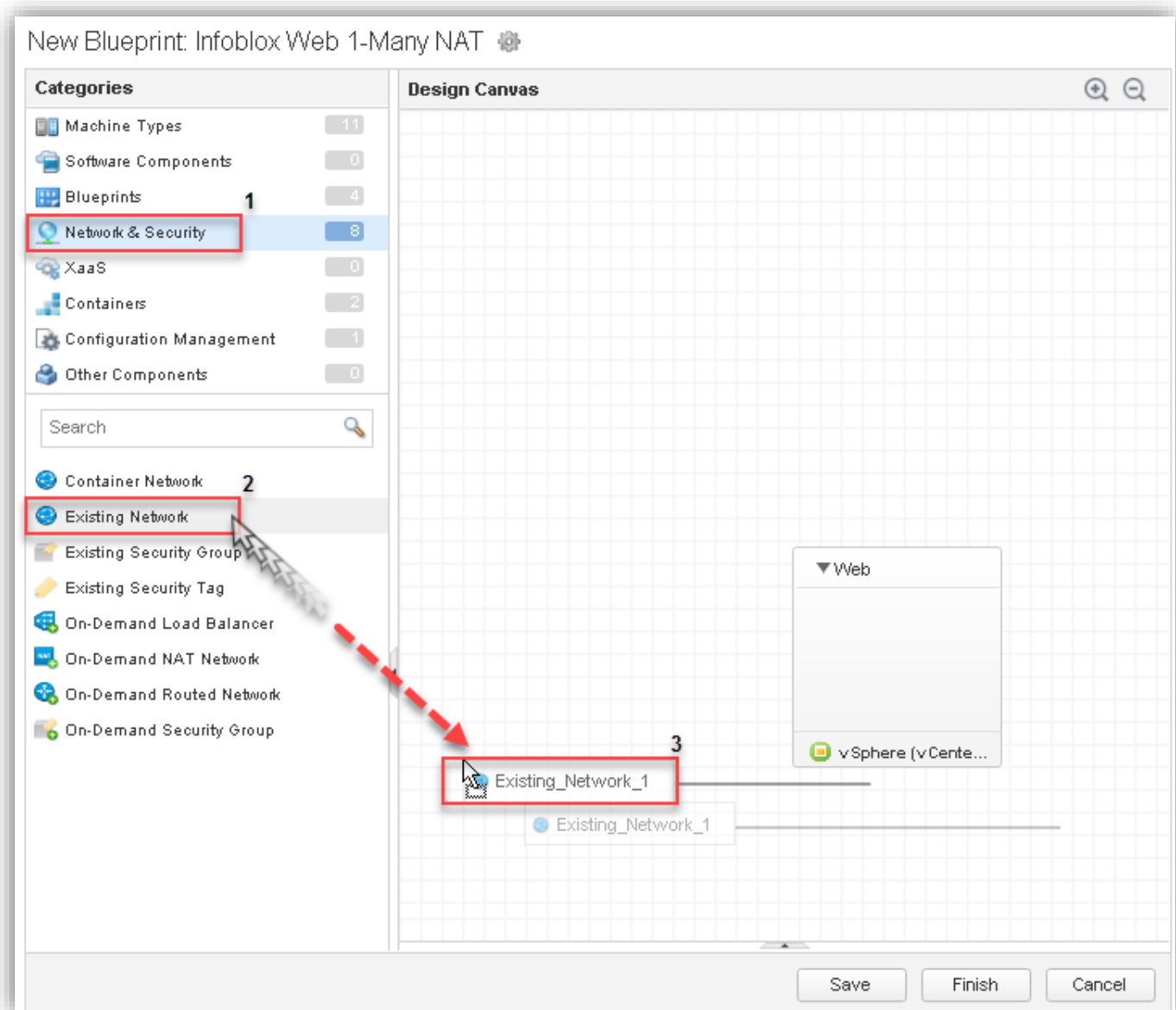


The screenshot shows the 'vSphere_Machine_1' configuration panel with the 'Build Information' tab selected. The configuration includes:

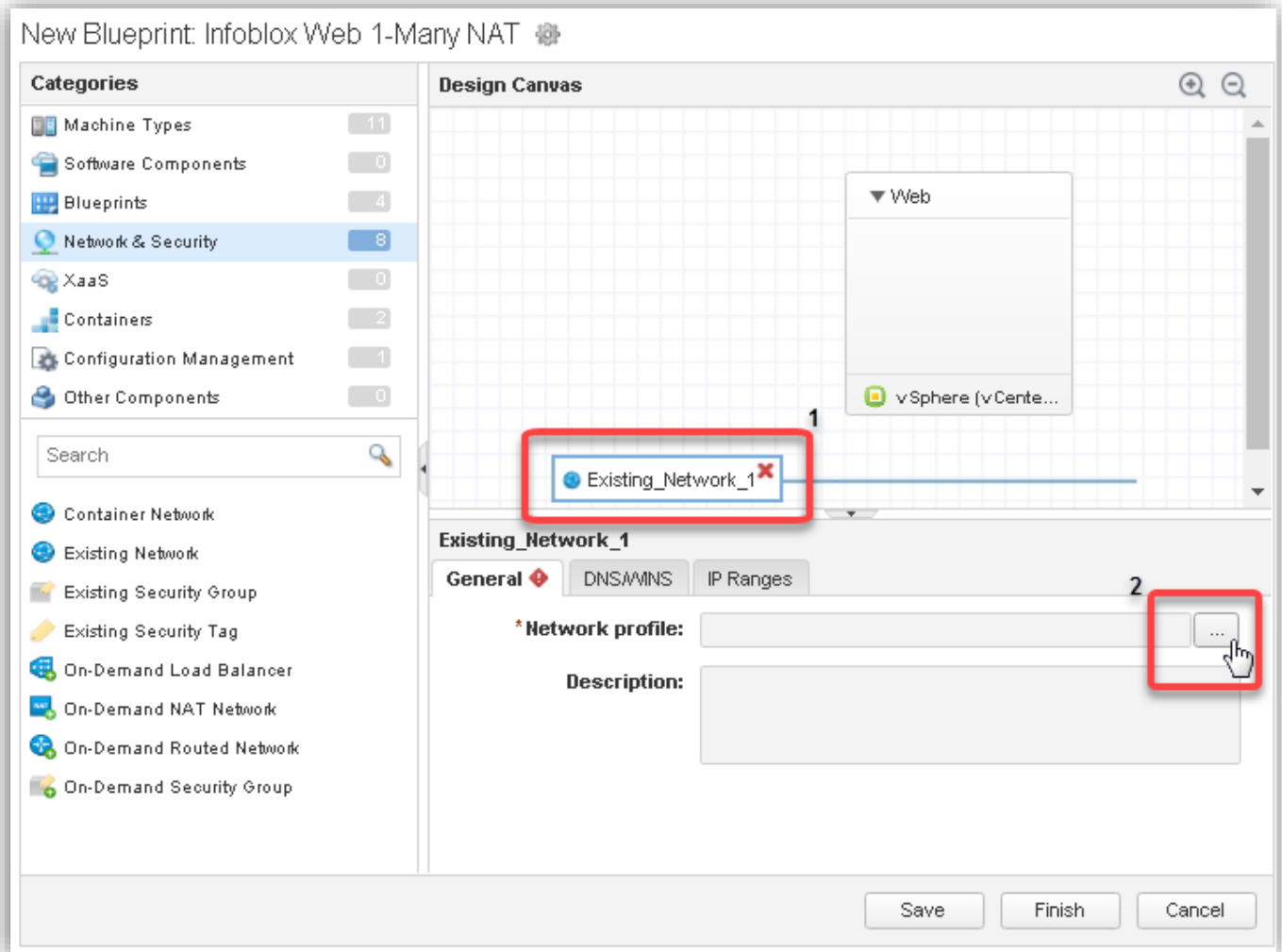
- Blueprint type:** Server (dropdown menu)
- Action:** Clone (dropdown menu)
- * Provisioning workflow:** CloneWorkflow (dropdown menu)
- * Clone from:** Linux (text field with a browse button)
- Customization spec:** Linux (text field)

23. In the Categories panel, select **Network and Security** (1).

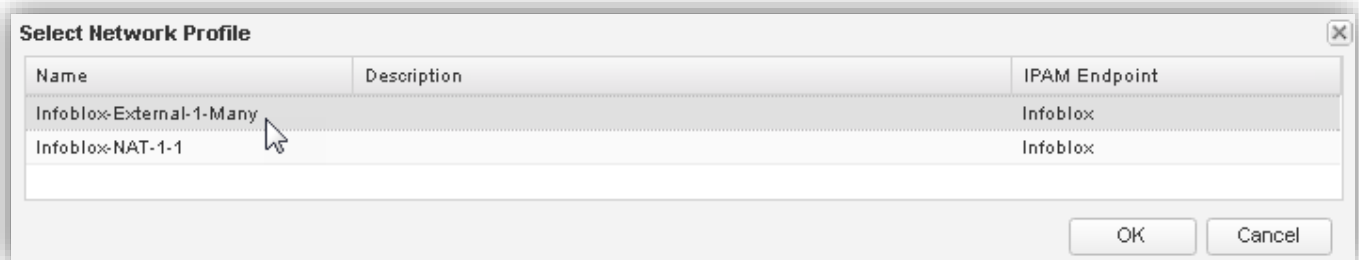
24. In the bottom left panel, drag the **Existing Network** button (2) to the Design Canvas (3).

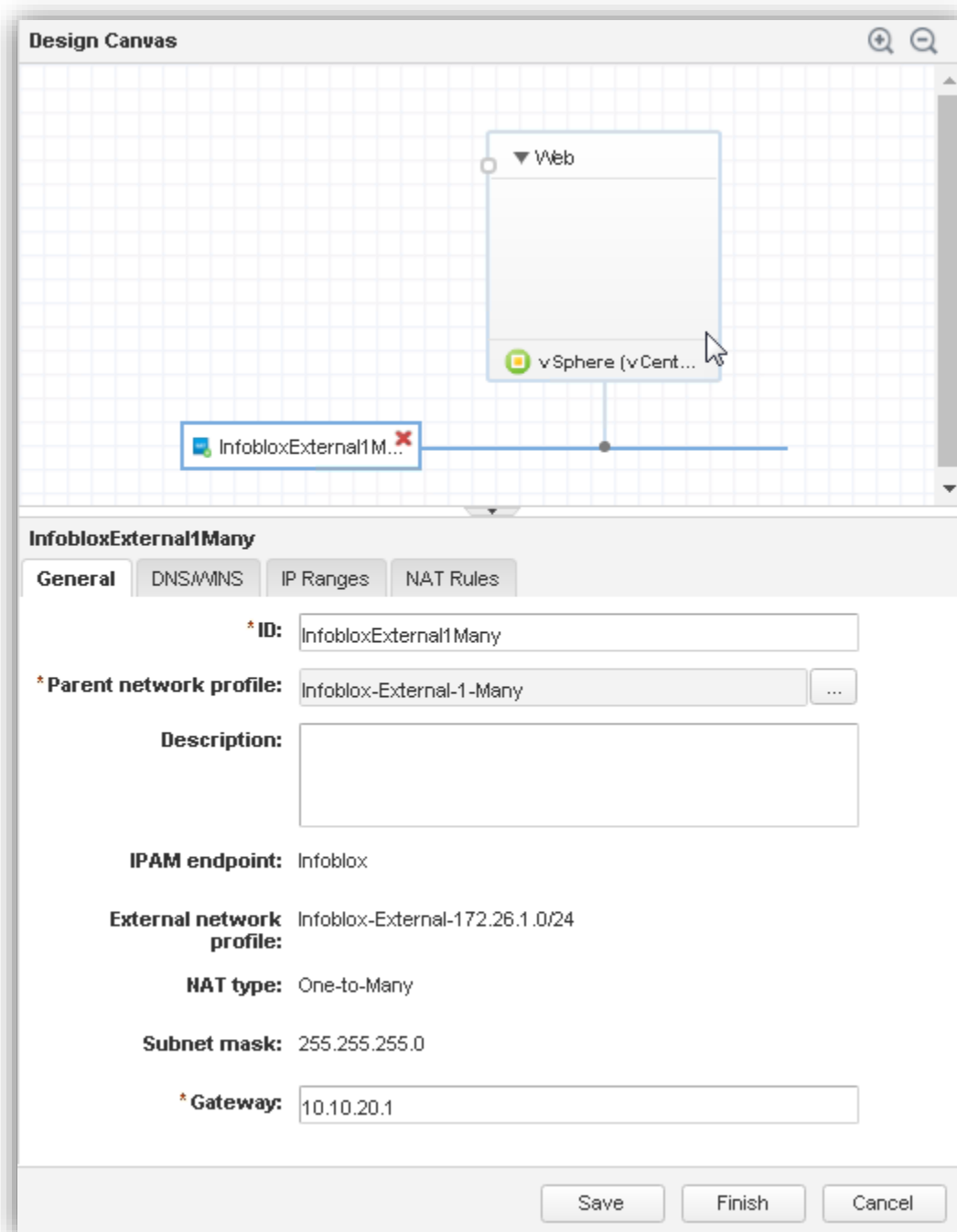


25. Click on the **Existing_Network** icon in the Design Canvas (1) and then the selector button for “Parent network profile” (2).

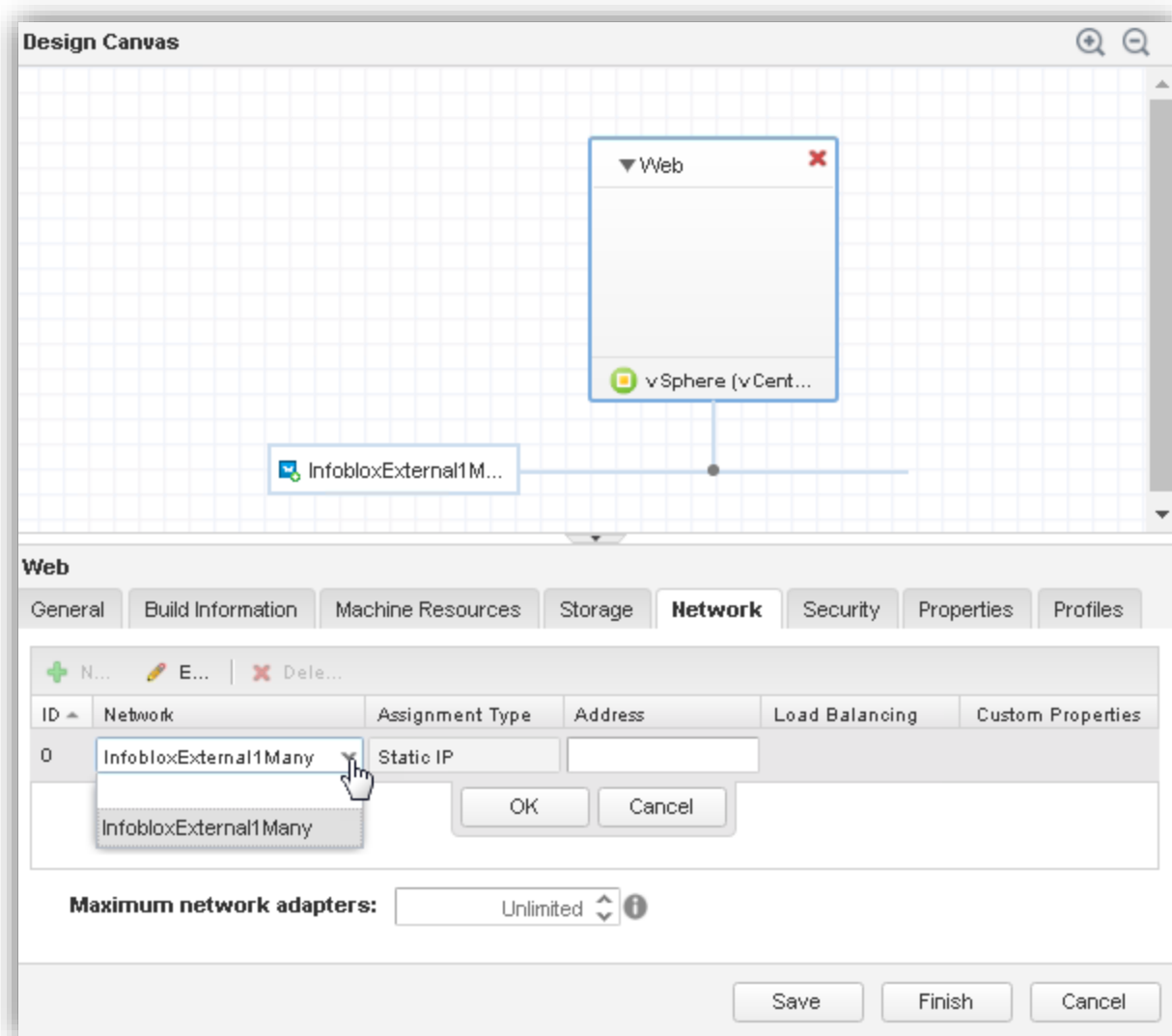


26. Select the One to Many NAT network profile created previously and click **OK**.

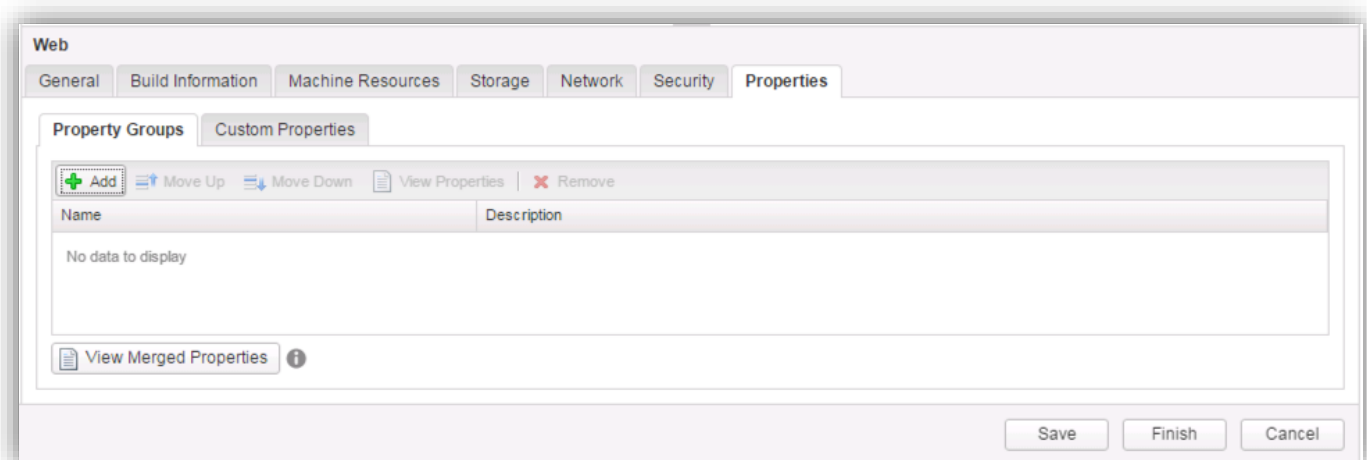




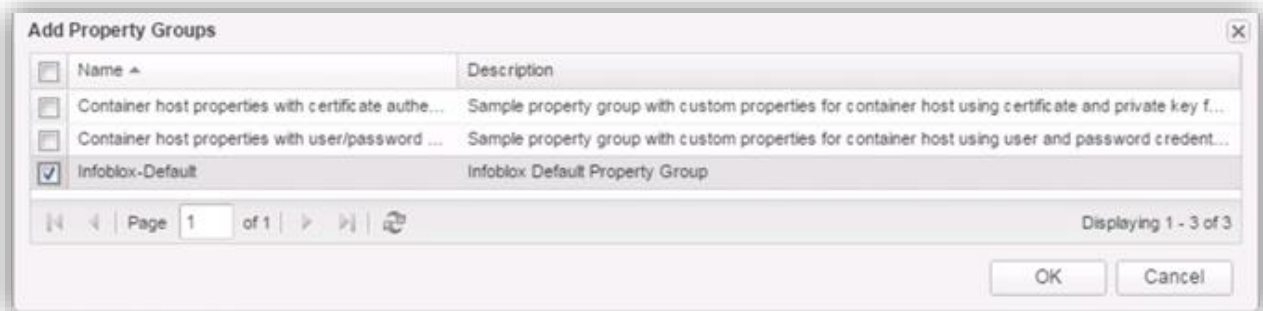
27. Click on the icon for your machine in the Design Canvas and switch to the **Network** tab.
28. Click + **New**.
29. Expand the dropdown menu under the Network column and select your One to Many Nat network profile.
30. Click **OK**.



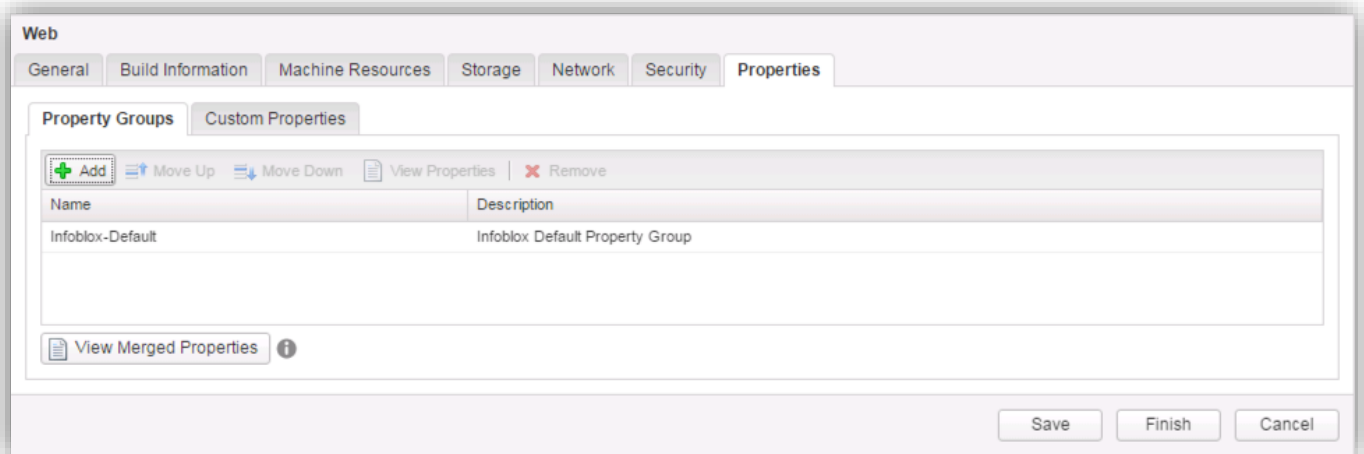
31. Switch to the **Properties** -> **Property Groups** tab and click **Add**.



32. Select your Infoblox property group and click **OK**.

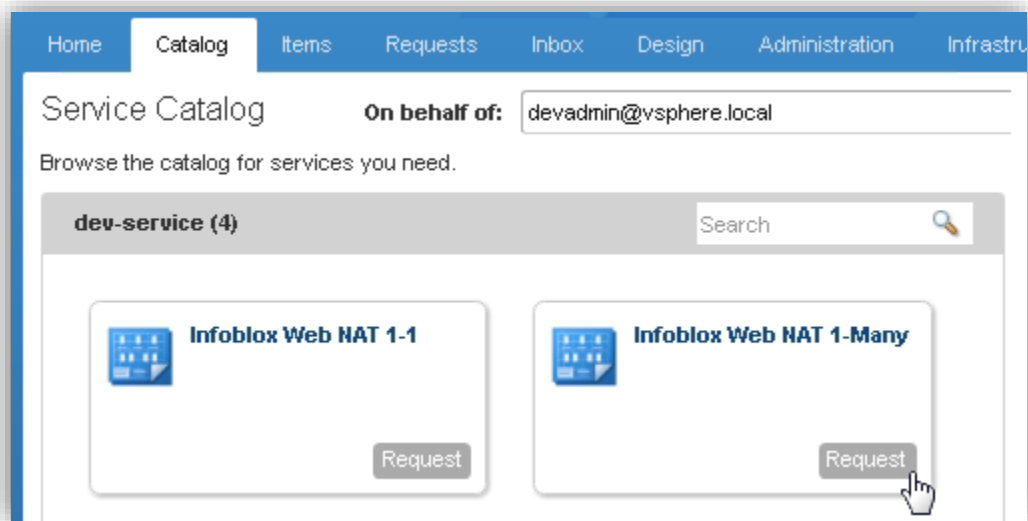


33. Click **Finish**.



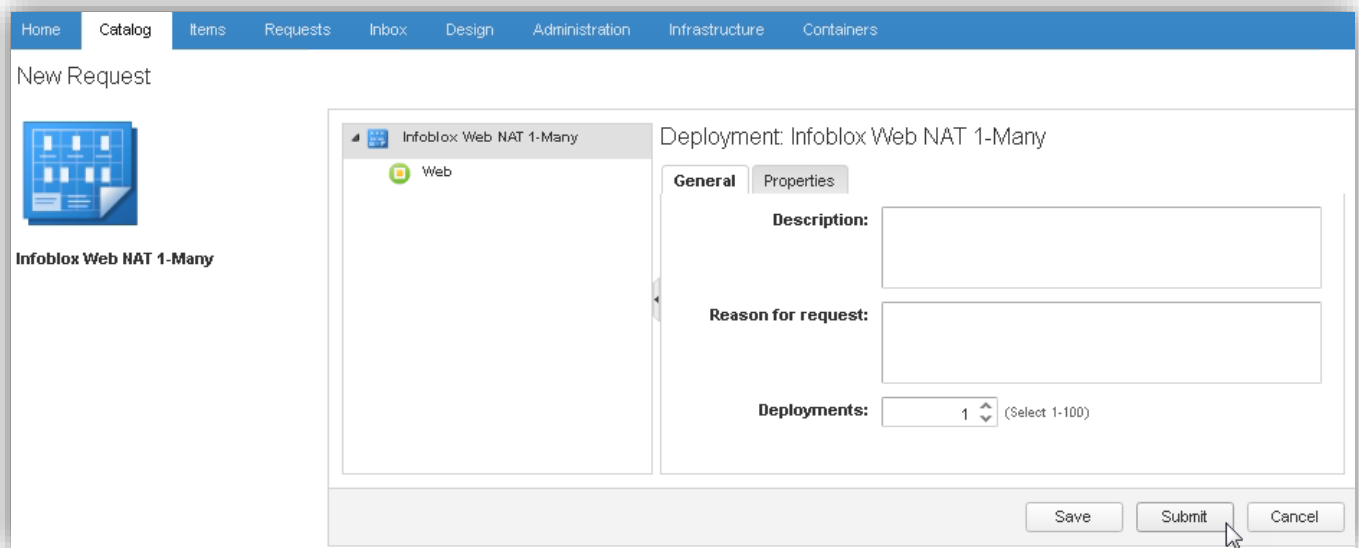
12.2.2 Provision the VM from the Catalog Item

6. Navigate to **Catalog**.
7. Click on the **Request** button for your One to Many NAT catalog item.



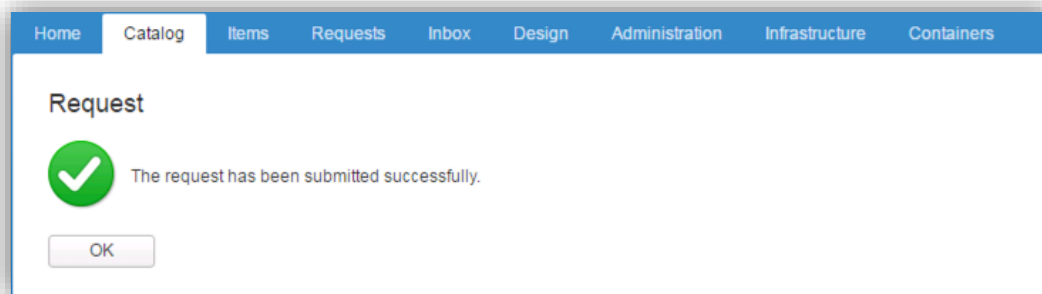
8. Set the parameters under the **General** and **Properties** tabs as required.

9. Click **Submit**.



The screenshot shows the 'New Request' form in the Grid Manager GUI. The form is titled 'New Request' and shows a deployment for 'Infoblox Web NAT 1-Many'. The 'General' tab is active, showing fields for 'Description', 'Reason for request', and 'Deployments' (set to 1). The 'Submit' button is highlighted with a mouse cursor.

10. Verify that the request has completed successfully.

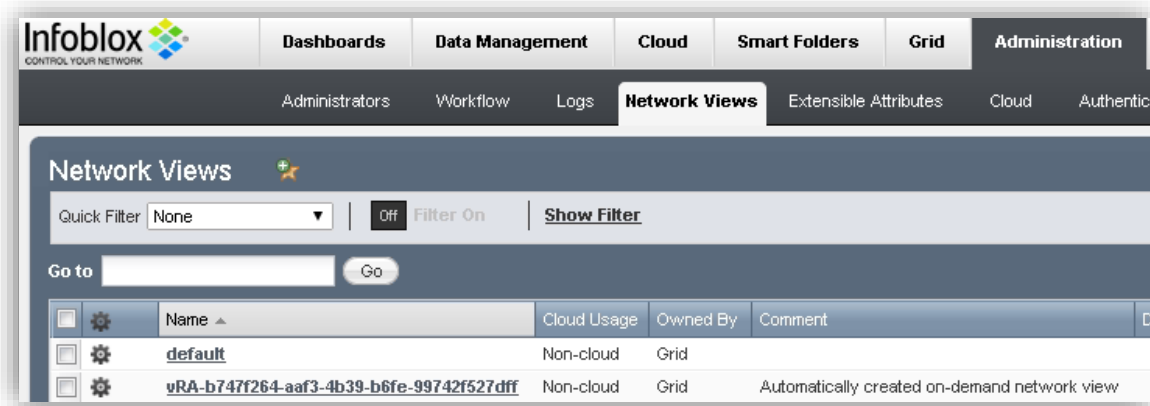


12.3 IP Address Provisioning and DNS Registration

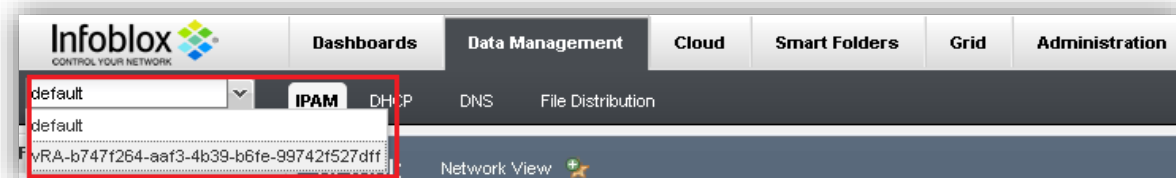
The Infoblox Plugin for VMware performs IP address assignment with NIOS. This process includes the creation of a new Network View (if one does not already exist) to support the network for the NAT, along with any Fixed Addresses and the corresponding DNS record for the VM instance.

To review the new Network View created for the external NAT network and IPAM details for your VM:

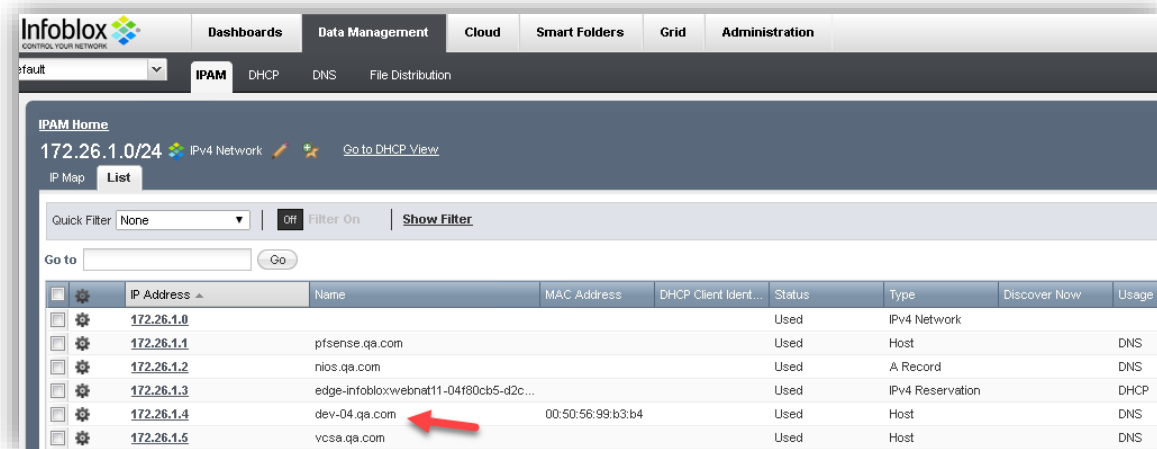
1. In your Grid Manager GUI, navigate to **Administration** -> **Network Views** and review the Network Views which are present.



- To toggle between Network Views, switch to the **Data Management** tab and click on the dropdown menu near the top-left of your Grid Manager GUI window.



- Under the **Data Management** -> **IPAM** or **DHCP** tabs, open the network used for your VM instance and verify the IP address which was allocated to that VM.



- The Infoblox plugin for VMware also registers the VM in DNS. To review this, navigate to **Data Management** -> **DNS**, open the zone used for the network the VM was created in and locate the DNS record that was created.

The screenshot shows the Infoblox GUI with the 'DNS' tab selected. Under 'Zones', the 'default' zone for 'qa.com' is shown. The 'Records' subtab is active, displaying a table of DNS records. A red arrow points to the 'compute-1' record, which is a Host record with IP 172.26.1.200.

Name	Type	Data	Record Source	Principal
NS Record	nios.qa.com	System		
SOA Record	Serial: 11, MNAME: nios.qa.com, RNAME: please_set_email, Refresh: 10800, Retry: 3600, Expire: 2419200, Negative Caching TTL: 900	System		
compute-1	Host	172.26.1.200	Static	
dev-04	Host	172.26.1.4	Static	

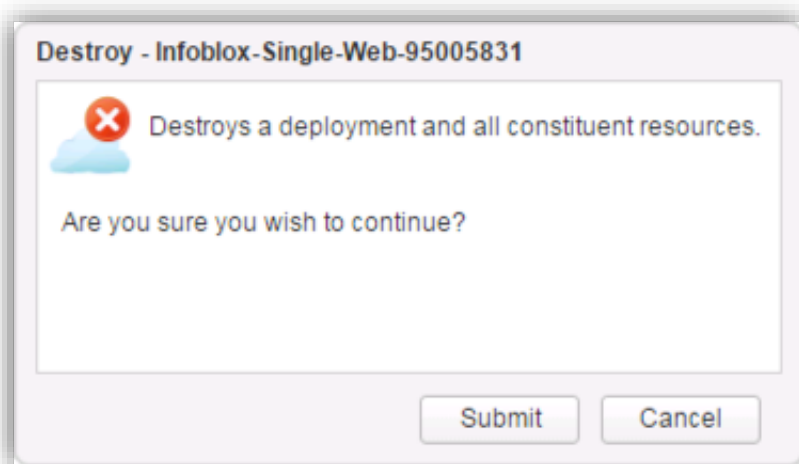
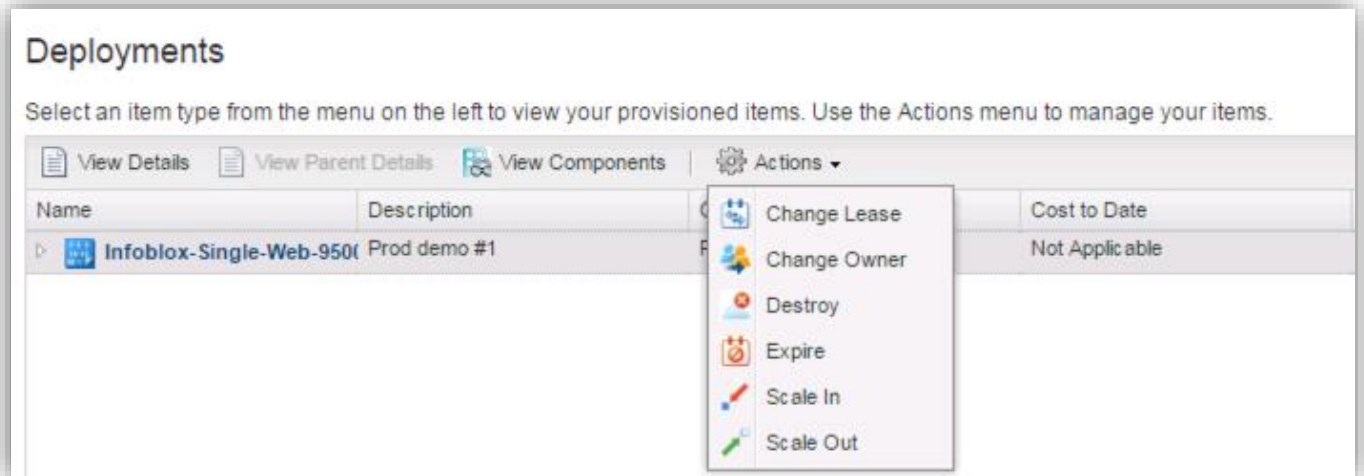
- Events executed by the plugin are also captured in the NIOS audit logs. To view these, navigate to **Administration -> Logs -> Audit Log**. Filters can be used to simplify the view here.

The screenshot shows the Infoblox GUI with the 'Administration' tab selected. Under 'Logs', the 'Audit Log' subtab is active. The log shows several events, including 'CREATED' and 'MODIFIED' actions on Network View and IPv4 Reserved Range objects.

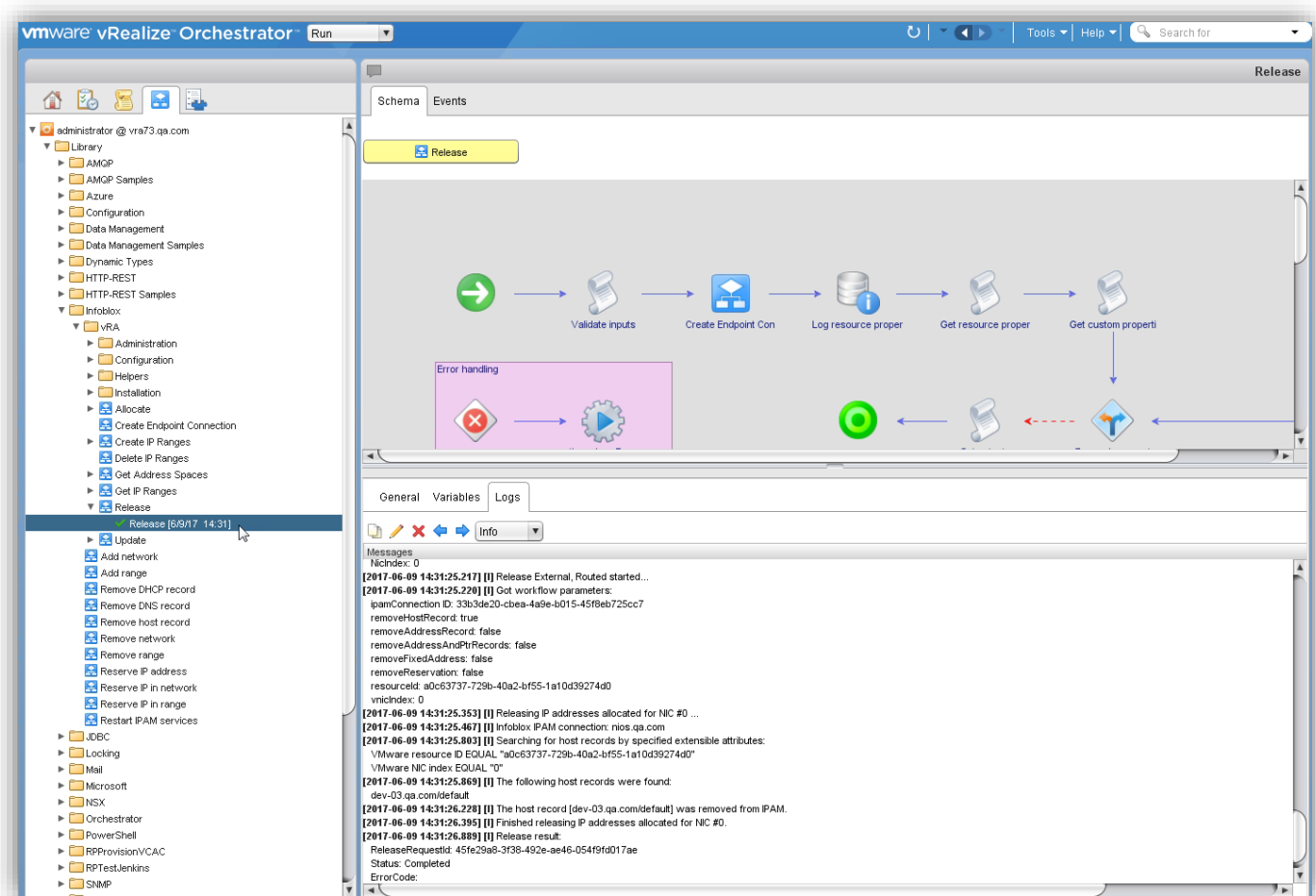
Timestamp	Admin	Action	Object Type	Object Name	Execution Status	Message
2017-06-09 14:44:34 PDT	vmware	CREATED	Network View	vRA-b7471264-aa3-4b39-b6fe-997421527dff	Normal	extensible_attributes: to=[name VMware Blueprint Request ID value 04190cb5-d2c8-40d3-89be-5605329822d5 name VMware On-Demand Network Value True name VMware Request ID value b7471264-aa3-4b39-b6fe-997421527dff] comment: to=Automatically created on-demand network view name: to=vRA-b7471264-aa3-4b39-b6fe-997421527dff
2017-06-09 14:44:34 PDT	vmware	CREATED	IPv4 Network	10.10.10.0/24	Normal	network_view=vRA-b7471264-aa3-4b39-b6fe-997421527dff; extensible_attributes: to=[name VMware Blueprint Request ID value 04190cb5-d2c8-40d3-89be-5605329822d5 name VMware Network Profile ID value b73c8679-e9ef-4375-ab63-d7ceba59143 name VMware On-Demand Network Value True name VMware Request ID value b7471264-aa3-4b39-b6fe-997421527dff] address: to=10.10.10.0 cidr: to=24 comment: to=Automatically created on-demand network common_properties: domain_name=qa.com domain_name_servers=to=[address 10.10.2.3.10] options to=[name domain-search space DHCP code 119 value "qa.com"] routers to=[address 10.10.10.1] use_broadcast_address=to=false use_domain_name=to=true use_domain_name_servers=to=true use_lease_time=to=false use_options=to=true use_routers=to=true network_view: NetworkView vRA-b7471264-aa3-4b39-b6fe-997421527dff restart_if_needed: to=false
2017-06-09 14:44:34 PDT	vmware	CREATED	IPv4 Reserved Range	10.10.10.2-10.10.10.20	Normal	network_view=vRA-b7471264-aa3-4b39-b6fe-997421527dff; extensible_attributes: to=[name VMware Blueprint Request ID value 04190cb5-d2c8-40d3-89be-5605329822d5 name VMware External Network Profile ID value 3ab84524-9db4-4c56-b6e9-326370501f5 name VMware Network Profile ID value b73c8679-e9ef-4375-ab63-d7ceba59143 name VMware On-Demand Network Value True name VMware Request ID value b7471264-aa3-4b39-b6fe-997421527dff] comment: to=Automatically created on-demand range common_properties: domain_name=qa.com domain_name_servers=to=[address 10.10.2.3.10] options to=[name domain-search space DHCP code 119 value "qa.com"] routers to=[address 10.10.10.1] use_broadcast_address=to=false use_domain_name=to=true use_domain_name_servers=to=true use_lease_time=to=false use_options=to=true use_routers=to=true network_view: NetworkView vRA-b7471264-aa3-4b39-b6fe-997421527dff restart_if_needed: to=false start_address: to=10.10.10.2 network/default/72.26.1.0/24 restart_if_needed: to=false
2017-06-09 14:46:22 PDT	vmware	MODIFIED	IPv4 Reserved Range	10.10.10.2-10.10.10.20	Normal	network_view=vRA-b7471264-aa3-4b39-b6fe-997421527dff; extensible_attributes: from=[to=[name VMware External Range ID value network/default/72.26.1.0/24] restart_if_needed: to=false
2017-06-09 14:47:03 PDT	vmware	CREATED	IPv4 Reservation	10.10.10.2	Normal	network_view=vRA-b7471264-aa3-4b39-b6fe-997421527dff; extensible_attributes: to=[name VMware NIC Index: value 0 name VMware On-Demand Network Value True name VMware resource ID value 138ac7b0-61e5-437e-a159-c811c626c137] comment: ip_address: to=10.10.10.2 mac_address: to=00:00:00:00:00:00 switch_option: to=MAC_ADDRESS name: to=dev-04.qa.com network_view: NetworkView vRA-b7471264-aa3-4b39-b6fe-997421527dff restart_if_needed: to=false

12.4 De-provisioning

De-provisioning the machine will release the IP address and DNS record



Release workflow of Infoblox Plugin gets called which releases the IP address and removes the DNS record



13. Custom Hostnaming Extension

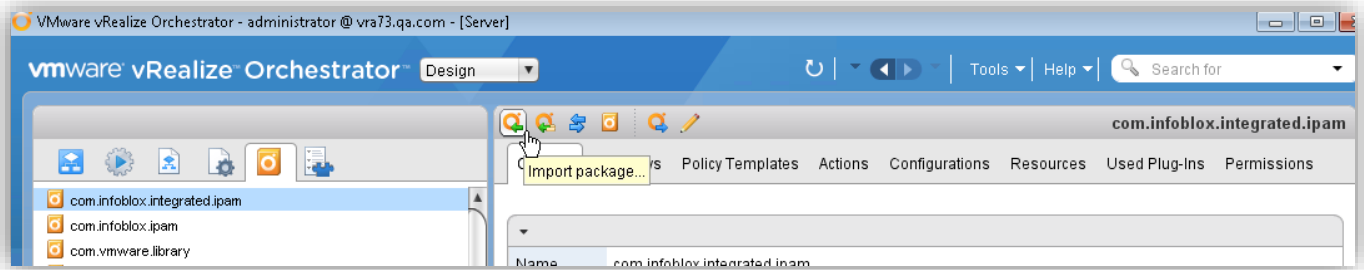
The Custom Hostnaming Extension can be used to change the VM hostname during provisioning. The Custom Hostnaming Extension works with other third party custom hostnaming extensions and can be downloaded using the following URL:

<https://github.com/dailyhypervisor/custom-hostname>

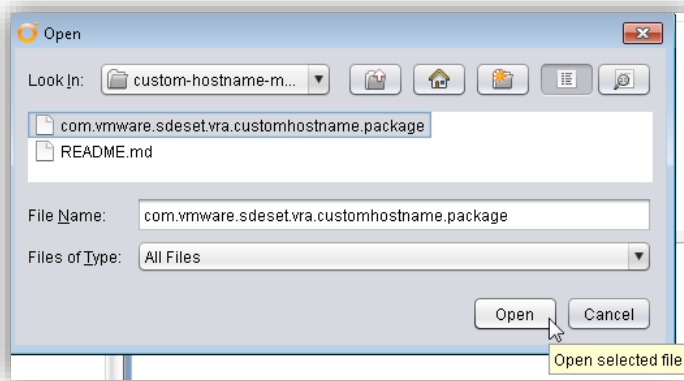
13.1 Import the Package

Before the extension can be installed in vRA, it must be imported in vRO as a package. To import the package:

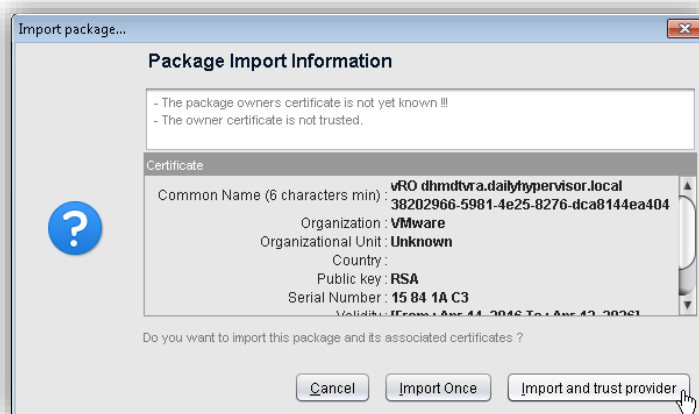
1. In *Design* mode, switch to the **Packages** panel and click on the **Import Packages** button.



2. Browse to and select the *.package* file for the Custom Hostnaming Extension. Click **Open**.

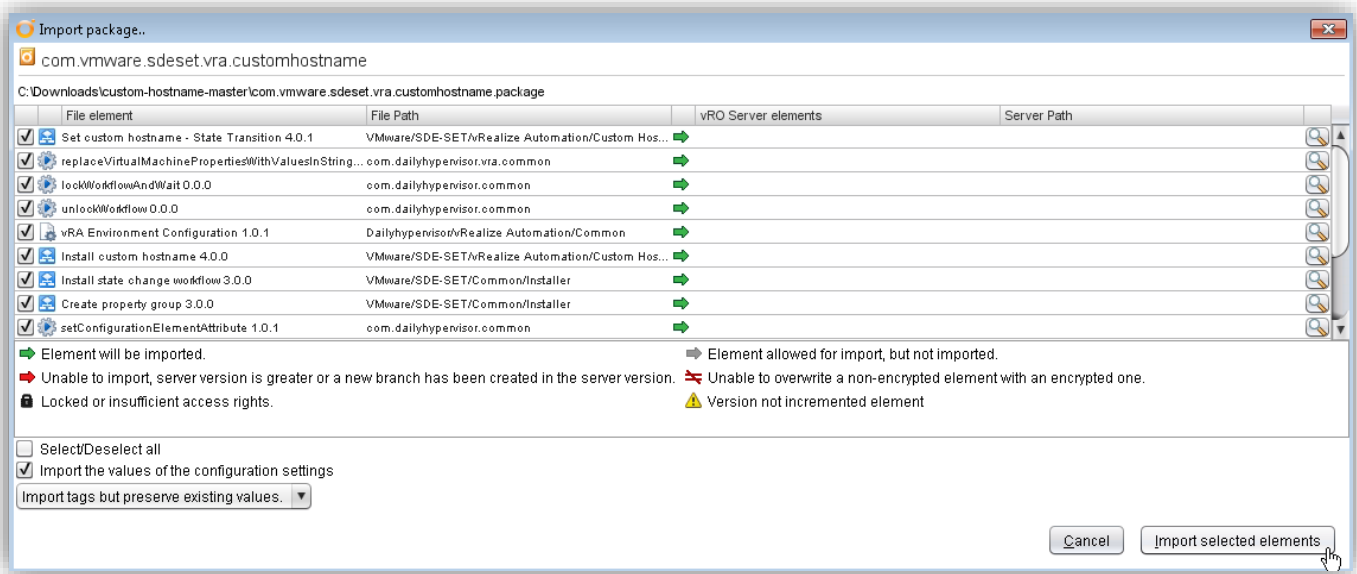


3. Click **Import and trust provider** (or **Import Once**).

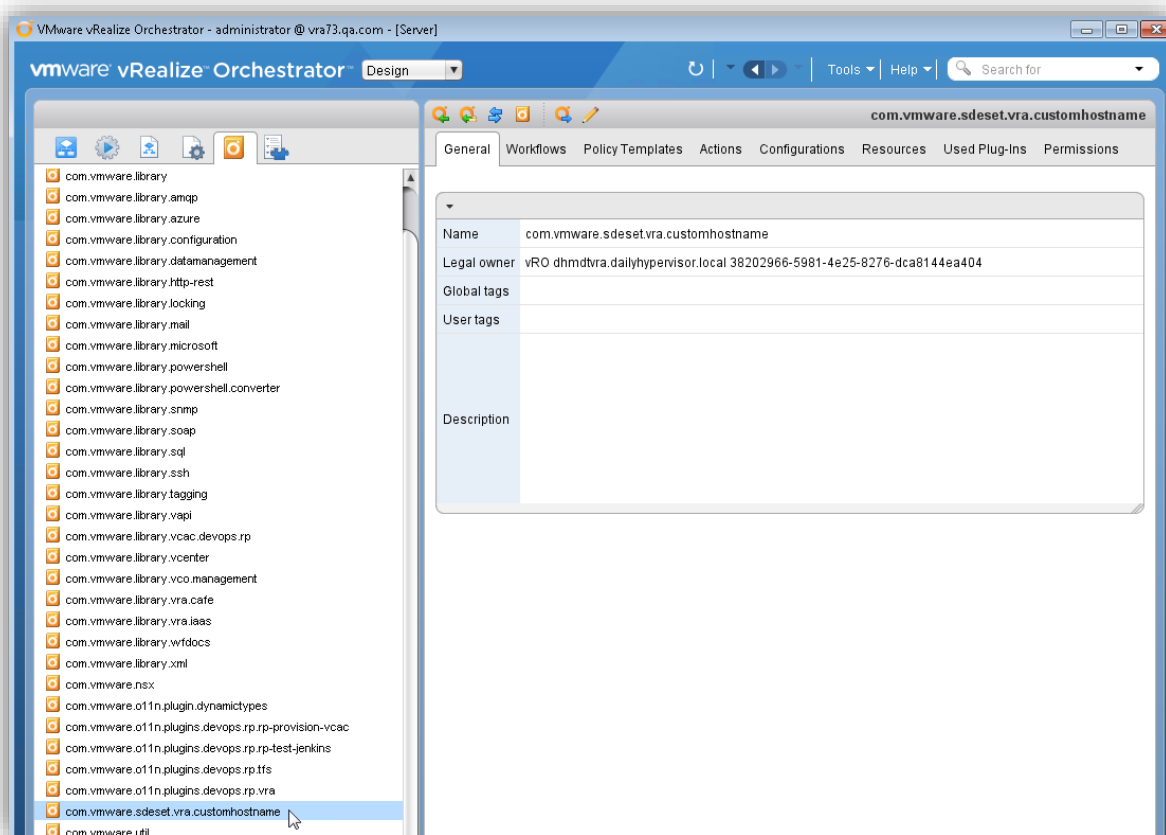


4. Click **Import selected elements**.

Note: Not all items may be selected due to version compatibility or other issues.



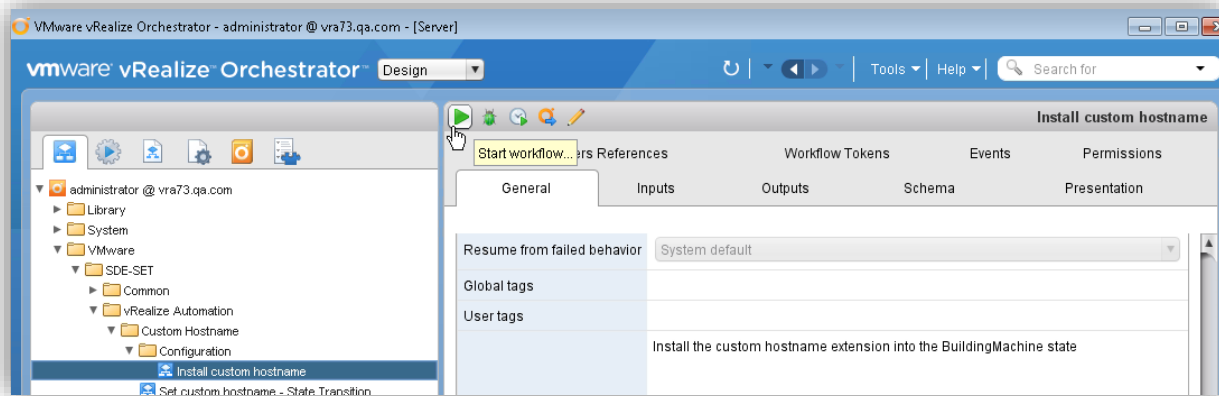
5. Verify that the package for the Custom Hostnaming Extension imported successfully.



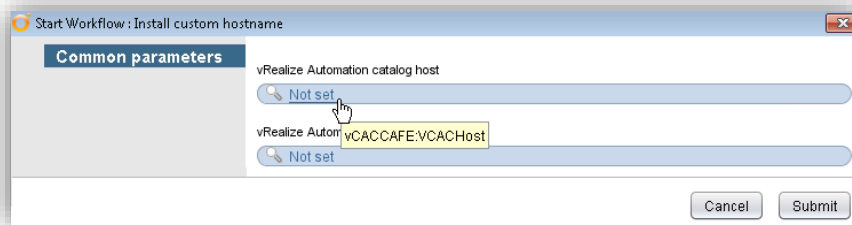
13.2 Install the Custom Hostnaming Extension in vRA

To complete the installation for the Custom Hostnaming Extension in vRA:

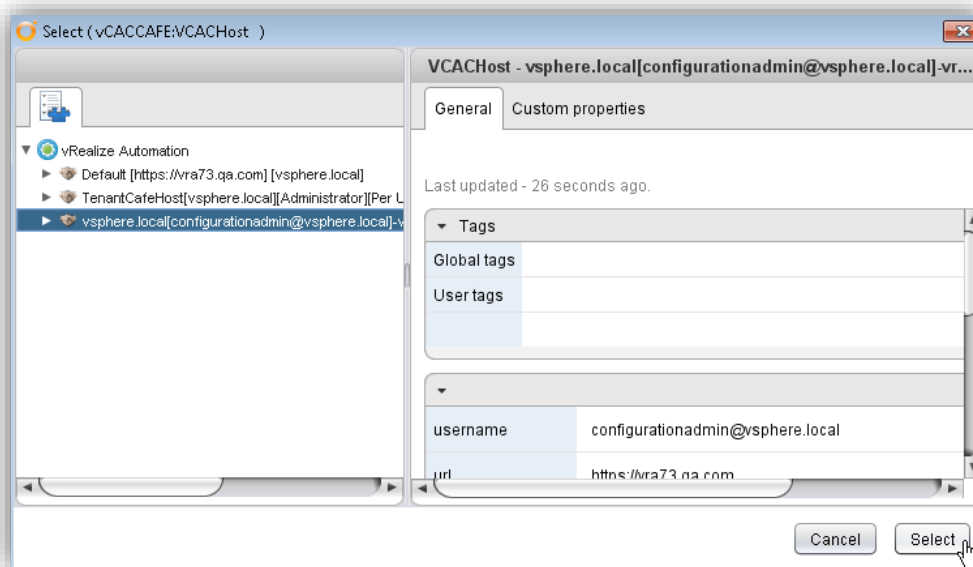
1. In Design mode, switch to the Workflows panel and drill down to VMware -> SDE-SET -> vRealize Automation -> Custom Hostname -> Configuration.
2. Select "Install custom hostname" and click on the **Start workflow** button.



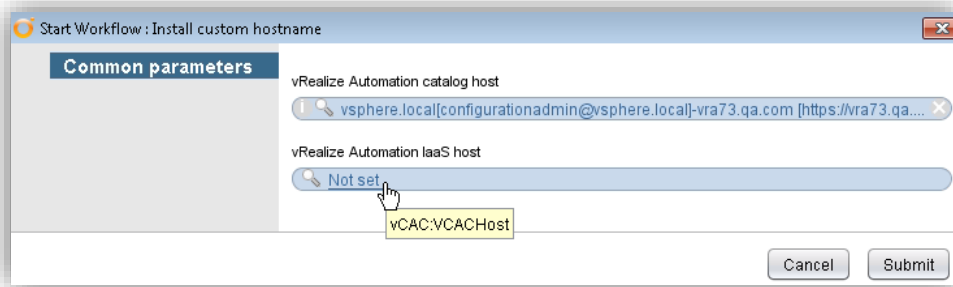
3. Click on the **Not set** link under **vRealize Automation catalog host**.



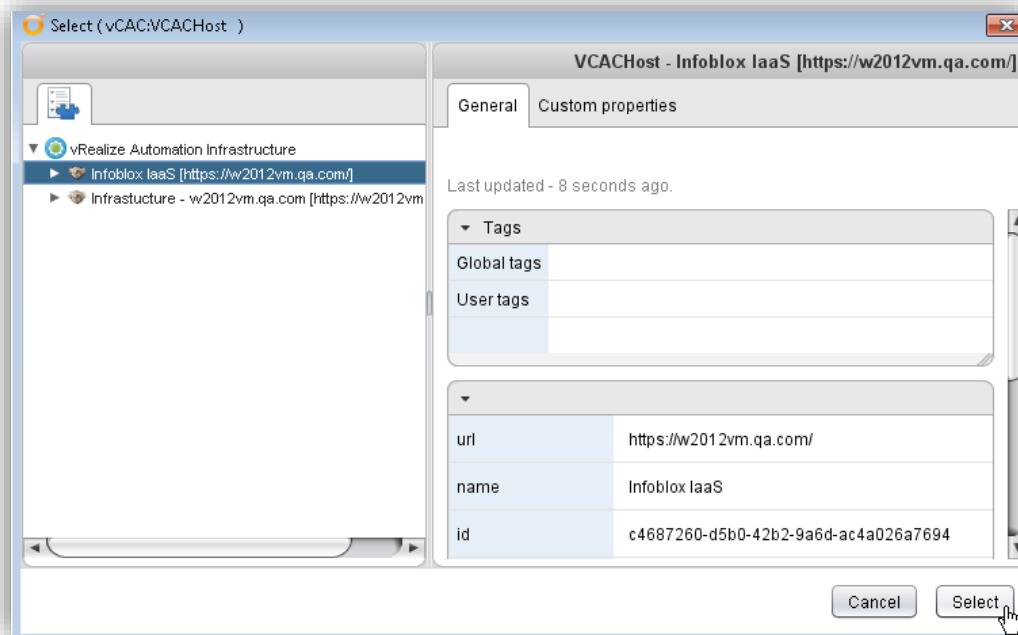
4. Select your vRA catalog host. Click on the **Select** button.



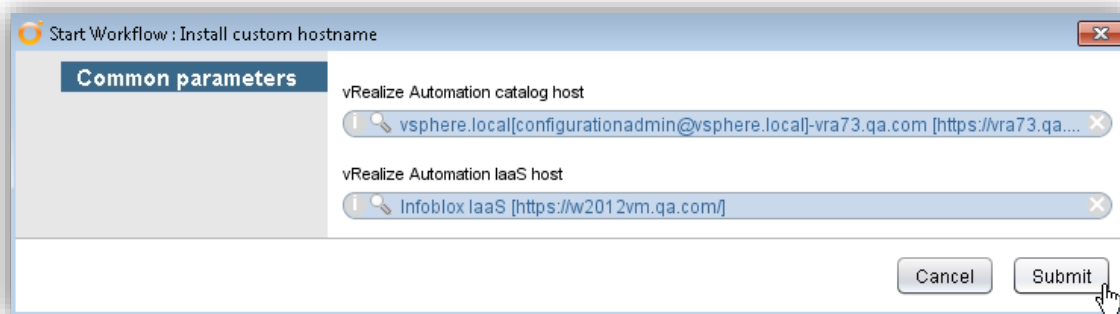
5. Click on the **Not set** link under **vRealize Automation IaaS host**.



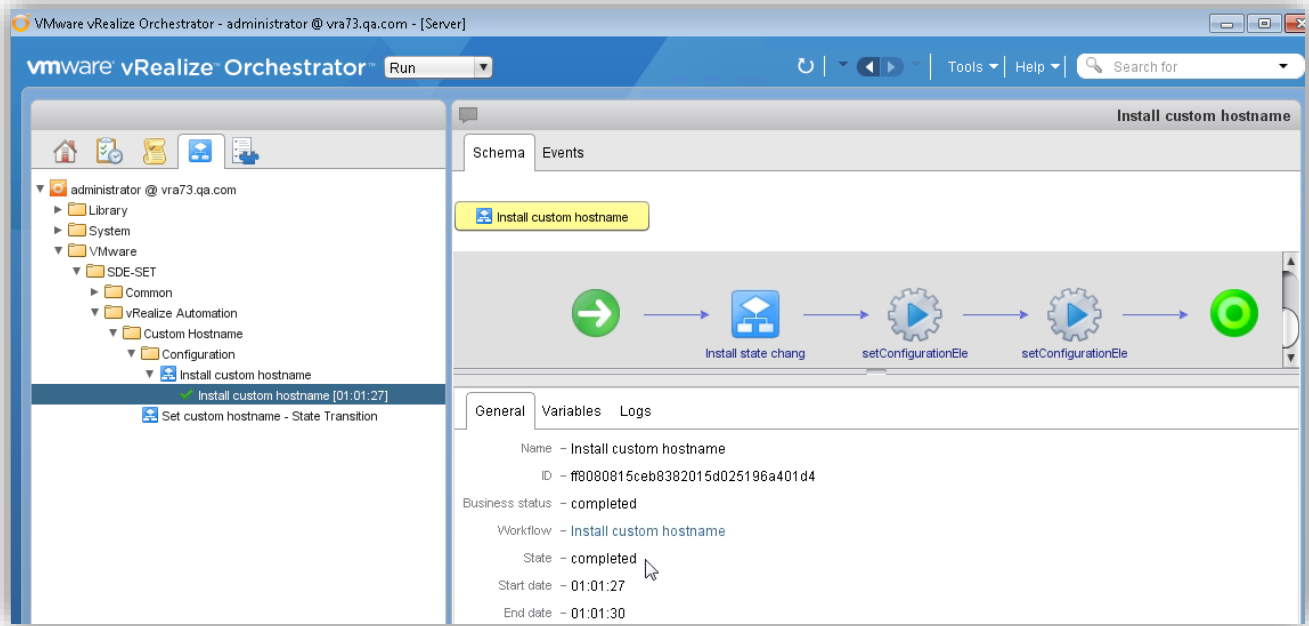
6. Select your Infoblox IaaS server. Click on the **Select** button.



7. Click **Submit**.

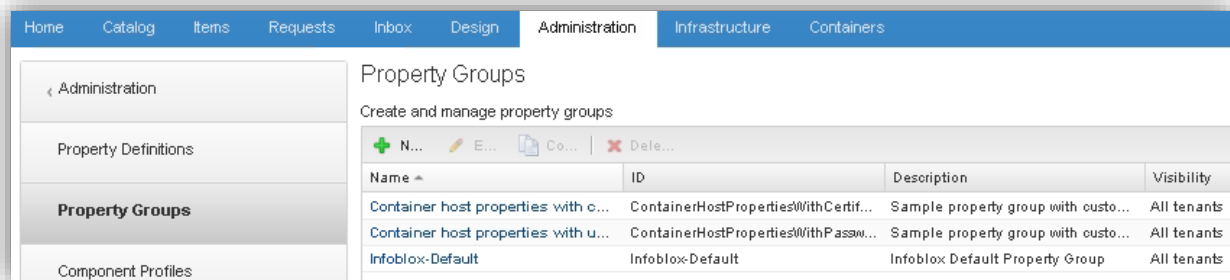


8. Verify that the extension installed successfully.



9. In vRA, navigate to **Administration -> Property Dictionary -> Property Groups**.

10. Verify that the Custom host name property groups are now available.

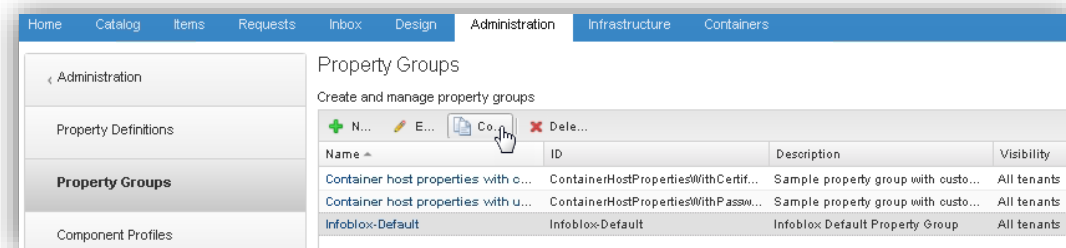


13.3 Duplicate the Property Group

As a best practice, create a copy of the Property group and make any modifications to the copy, leaving the original intact so that future copies can be made and used without being impacted by unexpected changes. To make the copy:

1. In vRA, navigate to **Administration -> Property Dictionary -> Property Groups**.

2. Select the row for the property group (do not click on the link) and click **Copy**.



- 3.

Property Groups

Create and manage property groups

+ New Edit Copy Delete	
Name ▲	ID
20170109222233 Custom Hostname Properties Template	20170109222233CustomHostnamePropertiesTemplate
Container host properties with certificate authentication	ContainerHostPropertiesWithCertificate
Container host properties with user/password authentication	ContainerHostPropertiesWithPassword
Infoblox-Default	Infoblox-Default

+ New Edit Delete				
Name ▲	Value	Encrypted	Show in Request	
Infoblox.IPAM.createHostRecord	TRUE	No	No	▲
Infoblox.IPAM.createReservation	FALSE	No	No	
Infoblox.IPAM.CustomHostname.ConditionalMachineCustomProperty0.Name	Custom.SetCustomHostna...	No	No	
Infoblox.IPAM.CustomHostname.ConditionalMachineCustomProperty0.Value	true	No	No	
Infoblox.IPAM.enableCustomHostname	TRUE	No	No	
Infoblox.IPAM.Network0.aliases		No	No	▼

To avoid conflict with vRealize Automation properties, use a prefix such as a company or feature name followed by a dot for all custom property names.

Create Property Group

*** Name:**

*** ID:**

Visibility: This tenant

Description:

Properties: + New Edit Delete

Name	Value	Encrypted	Show in Request
Custom.SetCustomHostname.Execute	true	No	No
Custom.Deployment.HostnameScheme		No	No
Extensibility.Lifecycle.Properties.VMPSMasterWorkflow...	*	No	No
Custom.ComponentMachine.HostnameScheme		No	No
Custom.Hostname.OwnerShortNameIdentifier	USR	No	No
Custom.ComponentMachine.NoIndexOnFirst	true	No	No

To avoid conflict with vRealize Automation properties, use a prefix such as a company or feature name followed by a dot for all custom property names.

Property group has been created.

Property Groups

Create and manage property groups

+ New Edit Copy Delete	
Name ▲	ID
2017010922233 Custom Hostname Properties Template	2017010922233CustomHostnamePropertiesTemplate
Container host properties with certificate authentication	ContainerHostPropertiesWithCertificate
Container host properties with user/password authentication	ContainerHostPropertiesWithPassword
Custom Hostname Properties Demo	Custom-Hostnaming-Properties-Demo
Infoblox-Default	Infoblox-Default

13.4 Set the Host name scheme

Set the Host naming scheme in the Property Group

Edit Property Group: Custom Hostname Properties Demo

* Name: Custom Hostname Properties Demo

ID: Custom-Hostnaming-Properties-Demo

Visibility: This tenant

Description: Properties for Custom Hostnaming Extension v4

Properties:

+ New Edit Delete			
Name	Value	Encrypted	Show in Request
Custom.Deployment.HostnameScheme		No	No
Extensibility.Lifecycle.Properties.VMPSMasterWorkflow...	*	No	No
Custom.ComponentMachine.HostnameScheme	{LOC}{GRP}{APP}{###}	☐	☐
Custom.Hostname.OwnerShortNameIdentifier		No	No
Custom.ComponentMachine.NoIndexOnFirst		No	No
Custom.Deployment.NoIndexOnFirst	true	No	No

To avoid conflict with vRealize Automation properties, use a prefix such as a company or feature name followed by a dot for all custom property names.

Edit Property Group: Custom Hostname Properties Demo

* Name: Custom Hostname Properties Demo

ID: Custom-Hostnaming-Properties-Demo

Visibility: This tenant

Description: Properties for Custom Hostnaming Extension v4

Properties:

+ New Edit Delete			
Name	Value	Encrypted	Show in Request
Custom.Deployment.HostnameScheme		No	No
Extensibility.Lifecycle.Properties.VMPSMasterWorkflow...	*	No	No
Custom.ComponentMachine.HostnameScheme	{LOC}{GRP}{APP}{###}	No	No
Custom.Hostname.OwnerShortNameIdentifier	USR	No	No
Custom.ComponentMachine.NoIndexOnFirst	true	No	No
Custom.Deployment.NoIndexOnFirst	true	No	No

To avoid conflict with vRealize Automation properties, use a prefix such as a company or feature name followed by a dot for all custom property names.

13.5 Create the LOC custom property

Create the LOC custom property in vSphere Endpoint. Make sure there is no space in the value as DNS records can't have a space in them.

Edit Endpoint - vSphere (vCenter)

Manage a specific endpoint.

General

*** Name:**

Description:

Address:

*** Credentials:**

☒ Specify manager for network and security platform

*** Address:**

*** Credentials:**

Custom properties:

New Edit Delete

Name	Value	Encrypted
LOC	SantaClara	No

To avoid conflict with vRealize Automation properties, use a prefix such as a company or feature name followed by a dot for all custom property names.

13.6 Create a GRP custom property in Business Group

Create GRP custom property in the business group

Edit Business Group: local-business-group

General Members Infrastructure

*** Name:** local-business-group

Description:

*** Send manager emails to:** vraadmin@vsphere.local ⓘ

Active Directory Policy No policy selected ⓘ

Custom properties:

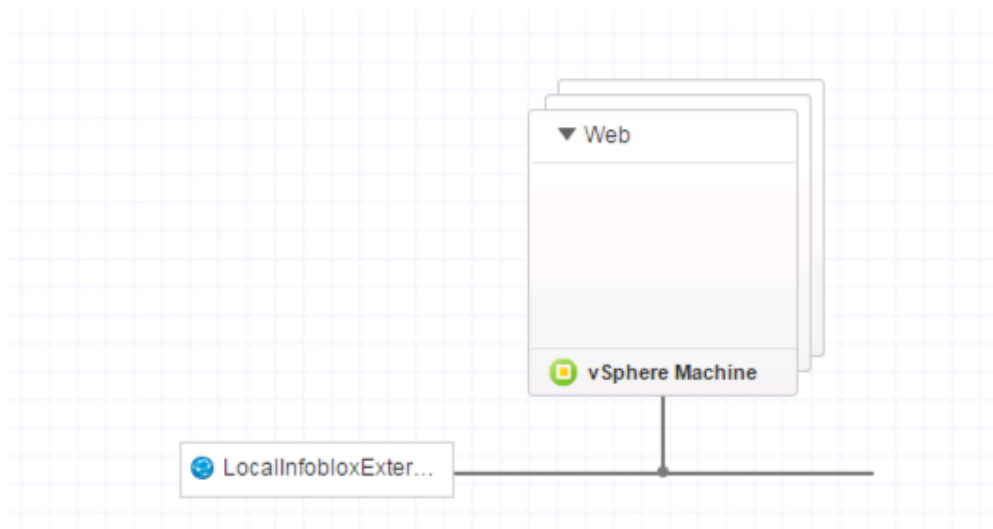
+ New Edit Delete

Name	Value
GRP	Local

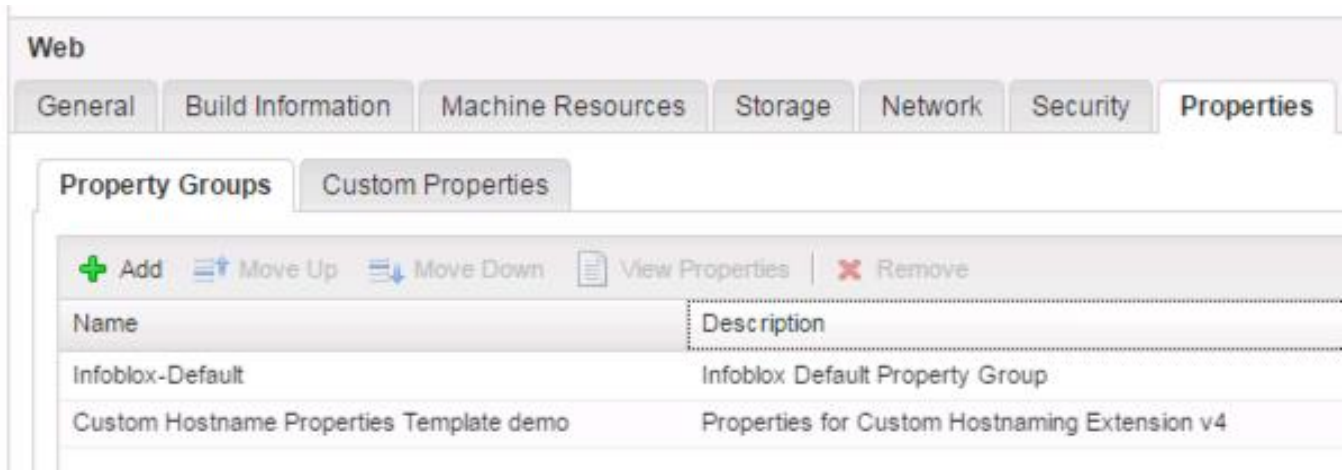
Save Cancel

13.7 Create APP Property in the VM Blue print

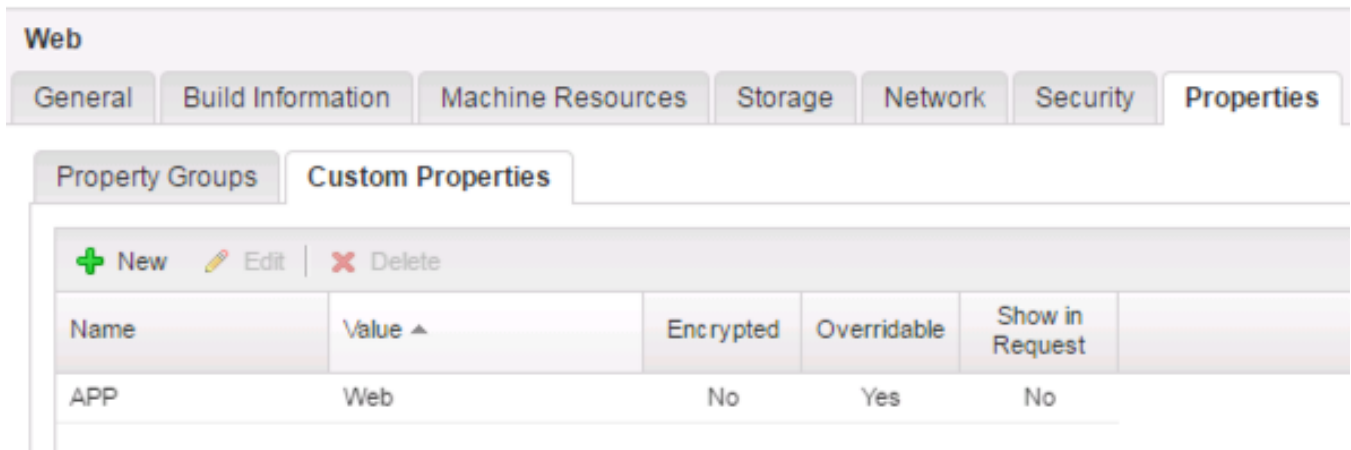
Create a Blue print in vRA



Add Infoblox and Custom Host name property groups

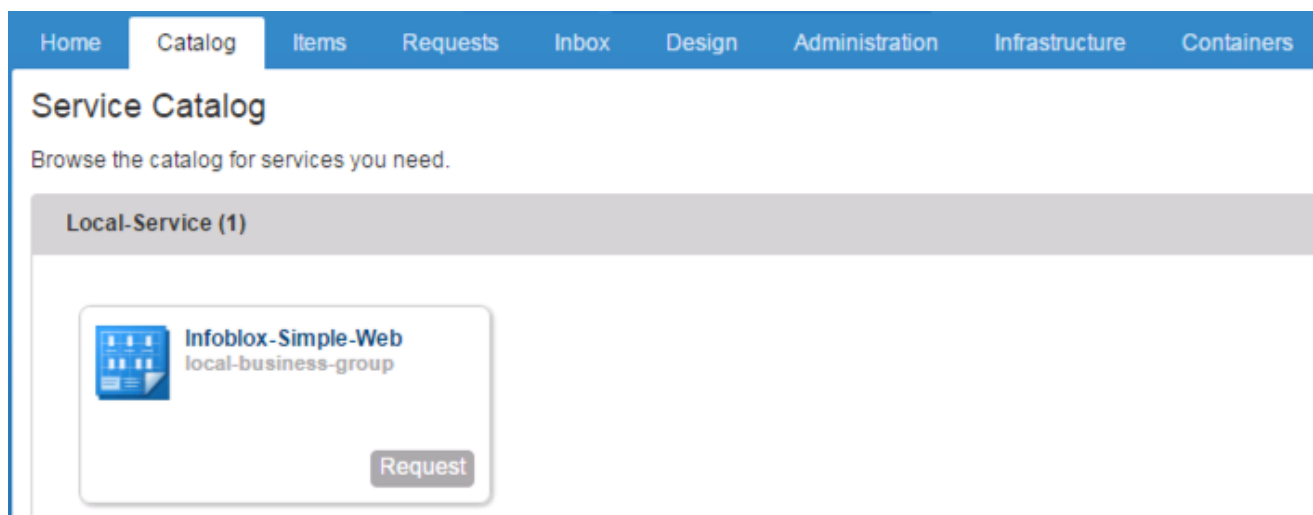


Add APP custom property



13.8 Deploy VM

Deploy VM



VM has the custom host name properties

vSphere Machine: Web

General

Storage

Properties

+ New | Edit | Delete

Name	Value
Infoblox.IPAM.CustomHostname.ConditionalMachineCustomProperty0.Name	Custom.SetCustomHostname.Execute
Infoblox.IPAM.Network0.dnsView	
Custom.Deployment.HostnameScheme	
Infoblox.IPAM.createAddressRecord	FALSE
Infoblox.IPAM.Network0.comment	
Infoblox.IPAM.Network0.msDhcpServer	
Infoblox.IPAM.createReservation	FALSE
Infoblox.IPAM.Network0.aliases	
Custom.SetCustomHostname.Execute	true
Infoblox.IPAM.Network0.enableDhcp	FALSE
Infoblox.IPAM.createFixedAddress	FALSE
Infoblox.IPAM.createHostRecord	TRUE
ExternalWFStubs.MachineProvisioned	712f2f72-701d-459a-84f5-4bbec0c0bd5cc
GRP	local
Infoblox.IPAM.createAddressAndPtrRecords	FALSE
Custom.Deployment.NoIndexOnFirst	true
Infoblox.IPAM.restartIfNeeded	FALSE
Infoblox.IPAM.enableCustomHostname	TRUE
Infoblox.IPAM.CustomHostname.ConditionalMachineCustomProperty0.Value	true
Custom.Hostname.OwnerShortNameIdentifier	USR
Custom.ComponentMachine.HostnameScheme	{LOC}{GRP}{APP}{###}
Extensibility.Lifecycle.Properties.VMPSMasterWorkflow32.Requested	*
Custom.ComponentMachine.NoIndexOnFirst	true
Infoblox.IPAM.Network0.enableDns	TRUE
APP	Web

vRA issues request to Infoblox Plugin to allocate IP address and to do DNS registration. vRA passes the machine name based on prefix, Infoblox Plugin allocates the address and registers the name in DNS.

Below we can see that VRA has obtained the IP address 172.26.1.4 for local-03.prod.com VM from Infoblox NIOS

The screenshot displays the Infoblox IPAM web interface. At the top, there are tabs for IPAM, DHCP, DNS, and File Distribution. The main header shows 'IPAM Home' and the network '172.26.1.0/24' with an 'IPv4 Network' icon. Below this, there are buttons for 'IP Map' and 'List'. A 'Quick Filter' section shows 'None' selected, with 'Off' and 'Filter On' buttons, and a 'Show Filter' link. A 'Go to' search bar is also present. The main content area is a table with columns: 'IP Address', 'Name', 'MAC Address', and 'DHCP Client Id...'. The table lists five IP addresses: 172.26.1.0, 172.26.1.1, 172.26.1.2, 172.26.1.3, and 172.26.1.4. The IP address 172.26.1.4 is highlighted, and its corresponding name is 'local-03.prod.com'.

IP Address	Name	MAC Address	DHCP Client Id...
172.26.1.0			
172.26.1.1	Router Reservation		
172.26.1.2	nios.poc.infobloxdemo.com		
172.26.1.3	pfsense.poc.infobloxdemo.com		
172.26.1.4	local-03.prod.com		

Infoblox Plugin has created DNS record in Prod.com for the VM

IPAM DHCP **DNS** File Distribution

Zones Members Name Server Groups Shared Record Groups Blacklist Rulesets DNS64 Groups Query Monitoring

[default](#)
prod.com Authoritative Zone

Records Subzones

Quick Filter | **Off** Filter On | [Show Filter](#) | [Toggle flat view](#)

Go to

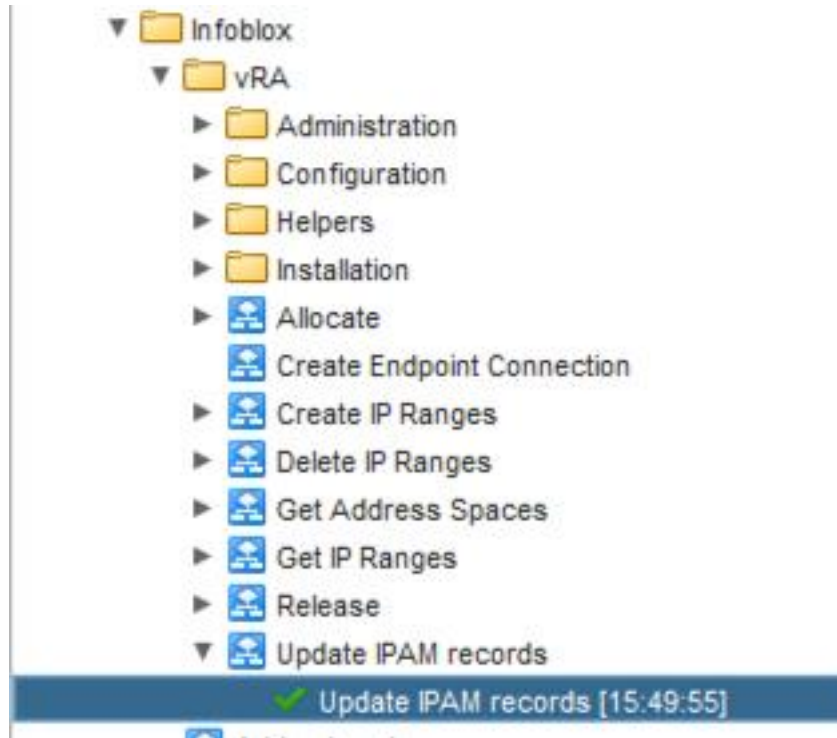
		Name ▲	Type	Data	Record Source	Principal
			SOA Record	Serial 55 MNAME nios.poc.infoblox.com RNAME please_set_email Refresh 10800 Retry 3600 Expire 2419200 Negative Caching TTL 900	System	
			NS Record	nios.poc.infobloxdemo.com	System	
		local-03	Host	172.26.1.4	Static	

VM has been created in vSphere



13.9 Name Update

When Machine Provisioned event happens, Infoblox Plugin workflow “Update IPAM Record” gets called, it updates the Machine name and IP address.



Below we can see that name has been changed to `santaclaraweb002.prod.com`

Dashboards **Data Management** Cloud Smart Folders Grid Administration

IPAM DHCP **DNS** File Distribution

Zones Members Name Server Groups Shared Record Groups Blacklist Rulesets DNS64 Groups Query Monitoring

[default](#)

prod.com Authoritative Zone   

Records Subzones

Quick Filter None Off Filter On [Show Filter](#)  [Toggle flat view](#)

Go to

☐		Name ▲	Type	Data	Record Source	Principal
☐			SOA Record	Serial 56 MNAME nios.poc.infoblox.com RNAME please_set_email Refresh 10800 Retry 3600 Expire 2419200 Negative Caching TTL 900	System	
☐			NS Record	nios.poc.infobloxdemo.com	System	
☐		santalalarocalweb002	Host	172.26.1.4	Static	

Host Record in IPAM has also been updated

Dashboards **Data Management** Cloud Smart Folders Grid Administration

IPAM DHCP DNS File Distribution

IPAM Home

172.26.1.0/24  IPv4 Network   [Go to DHCP View](#)

IP Map **List**

Quick Filter None Off Filter On [Show Filter](#)

Go to

☐		IP Address ▲	Name	MAC Address	DHCP Client Ide...	Status
☐		172.26.1.0				Used
☐		172.26.1.1	Router Reservation			Used
☐		172.26.1.2	nios.poc.infobloxdemo.com			Used
☐		172.26.1.3	pfsense.poc.infobloxdemo.com			Used
☐		172.26.1.4	santalalarocalweb002.prod.com	00:50:56:8d:67:46		Used

14. Appendix

14.1 Adding Failover Endpoints

End points can be added for high availability. NIOS will try the endpoints in the configured priority order. This section describes how to add the endpoints.

Edit Endpoint - Infoblox

Manage an endpoint for a third-party IPAM solution provider plug-in that you have registered in vRealize Orchestrator.

General

* Name:

Description:

Infoblox Endpoint

* Address:

* User name:

* Password:

Custom properties:

+ New

✎ Edit

✖ Delete

Name	Value	Encrypted
Infoblox.IPAM.APIType	Cloud API	No
Infoblox.IPAM.Endpoint1.Hostname	172.26.1.3	No
Infoblox.IPAM.Endpoint1.Password	*****	Yes
Infoblox.IPAM.Endpoint1.Priority	1	No
Infoblox.IPAM.Endpoint1.Username	cloudapi	No
Infoblox.IPAM.Endpoint2.Hostname	https://nios.demo.com	No
Infoblox.IPAM.Endpoint2.Password	*****	Yes
Infoblox.IPAM.Endpoint2.Priority	2	No
Infoblox.IPAM.Endpoint2.Username	cloudapi	No
Infoblox.IPAM.Endpoint3.Hostname	https://nios.poc.infobloxdemo.com	No
Infoblox.IPAM.Endpoint3.Password	*****	Yes
Infoblox.IPAM.Endpoint3.Priority	3	No
Infoblox.IPAM.Endpoint3.Username	cloudadmin	No

To avoid conflict with vRealize Automation properties, use a prefix such as a company or feature name followed by a dot for all custom property names.

14.2 Limiting the Search Results

Search results can be limited by specifying the search result count in Custom properties or at the time of search

14.2.1 Search Limit Custom Property

Search Result count can be specified in the custom property

Edit Endpoint - Infoblox

Manage an endpoint for a third-party IPAM solution provider plug-in that you have registered in vRealize Orchestrator.

General

* Name:

NIOS

Description:

Infoblox Endpoint

* Address:

https://nios.poc.infobloxdemo.com

* User name:

cloudadmin

* Password:

Custom properties:

+ New

✎ Edit

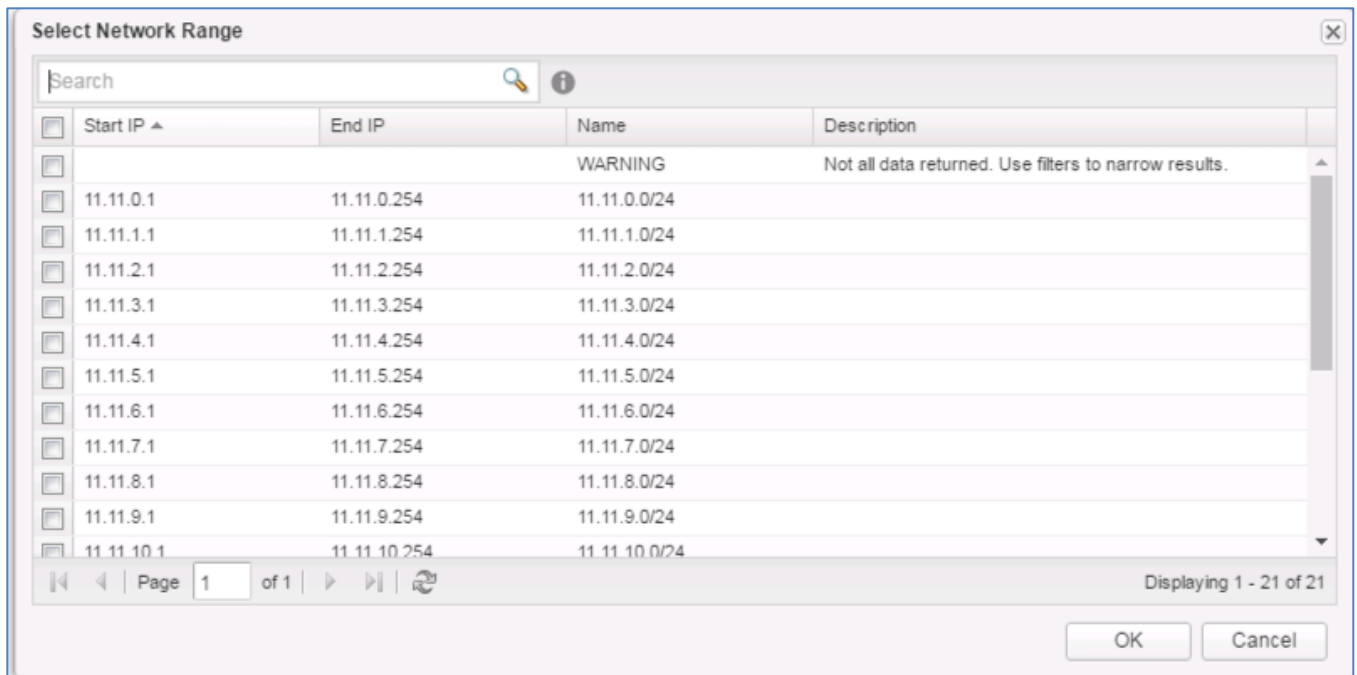
✖ Delete

	* Name	Value	Encrypted
✓ -	Infoblox.IPAM.GetIPRanges.maxResults	20	☐
	Infoblox.IPAM.APIType	Cloud API	No

To avoid conflict with vRealize Automation properties, use a prefix such as a company or feature name followed by a dot for all custom property names.

When a Network Profile is created, it will give the total results as specified in the custom property.

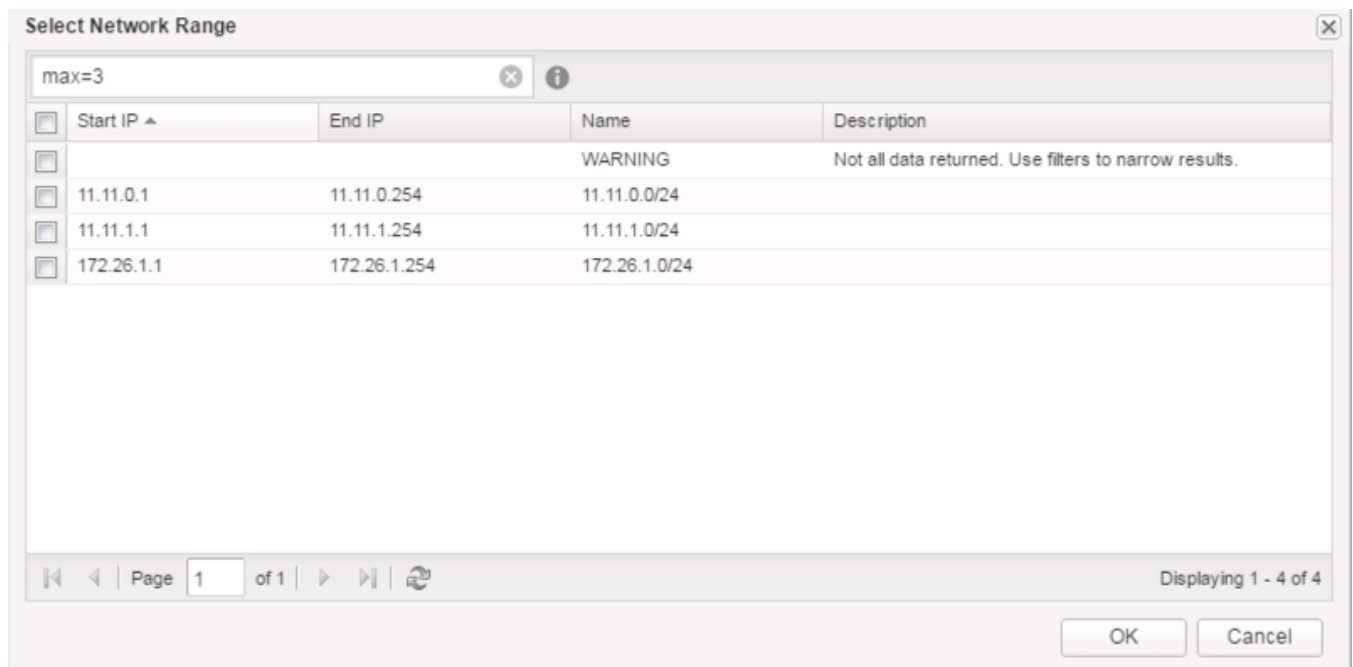
© 2017 Infoblox Inc. All rights reserved. Infoblox IPAM Plug-in 4.3.0 for VMware vRA 7.3 Deployment Guide June 2017 Page 142 of 147



14.3 Specifying Search Result Count during Network Profile Creation

14.3.1 Max Results

Parameter max can be used to narrow down the list



14.3.2 Specifying Max Results and Network

To get the maximum number of results for a particular network:

The screenshot shows a dialog box titled "Select Network Range". At the top, there is a search bar containing the text "max=3 and network=11.*". Below the search bar is a table with four columns: "Start IP", "End IP", "Name", and "Description". The table contains four rows of data, each with a checkbox in the first column. The first row is a warning message. The subsequent three rows show IP ranges for the network 11.11.0/24.

	Start IP	End IP	Name	Description
☐			WARNING	Not all data returned. Use filters to narrow results.
☐	11.11.0.1	11.11.0.254	11.11.0.0/24	
☐	11.11.1.1	11.11.1.254	11.11.1.0/24	
☐	11.11.2.1	11.11.2.254	11.11.2.0/24	

At the bottom of the dialog, there is a pagination bar showing "Page 1 of 1" and "Displaying 1 - 4 of 4". There are also "OK" and "Cancel" buttons.

14.3.3 Specifying Max Results and Network wildcard

Wildcard can be used in the address to find a particular network:

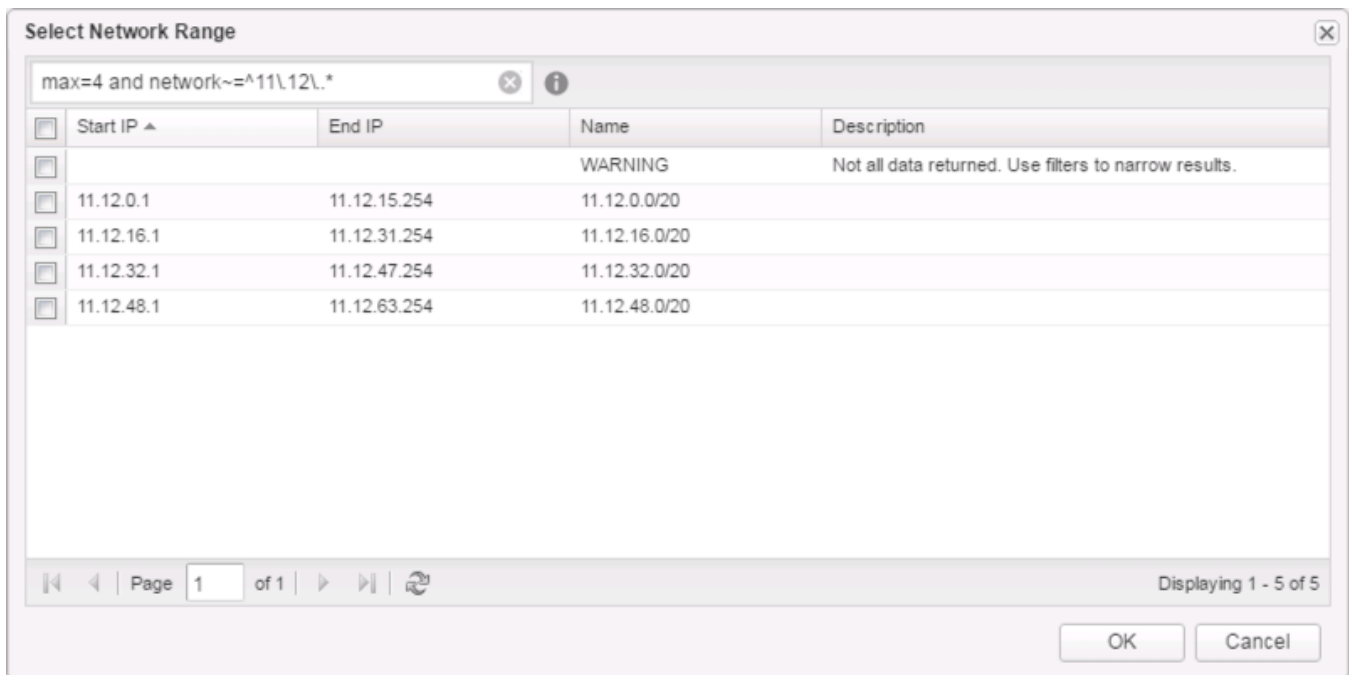
The screenshot shows a dialog box titled "Select Network Range". At the top, there is a search bar containing the text "max=4 and network=*.11.*". Below the search bar is a table with four columns: "Start IP", "End IP", "Name", and "Description". The table contains five rows of data, each with a checkbox in the first column. The first row is a warning message. The subsequent four rows show IP ranges for the network 11.11.0/24, 11.11.1/24, 11.11.2/24, and 11.11.3/24.

	Start IP	End IP	Name	Description
☐			WARNING	Not all data returned. Use filters to narrow results.
☐	11.11.0.1	11.11.0.254	11.11.0.0/24	
☐	11.11.1.1	11.11.1.254	11.11.1.0/24	
☐	11.11.2.1	11.11.2.254	11.11.2.0/24	
☐	11.11.3.1	11.11.3.254	11.11.3.0/24	

At the bottom of the dialog, there is a pagination bar showing "Page 1 of 1" and "Displaying 1 - 5 of 5". There are also "OK" and "Cancel" buttons.

14.3.4 Search Using Regular Expression

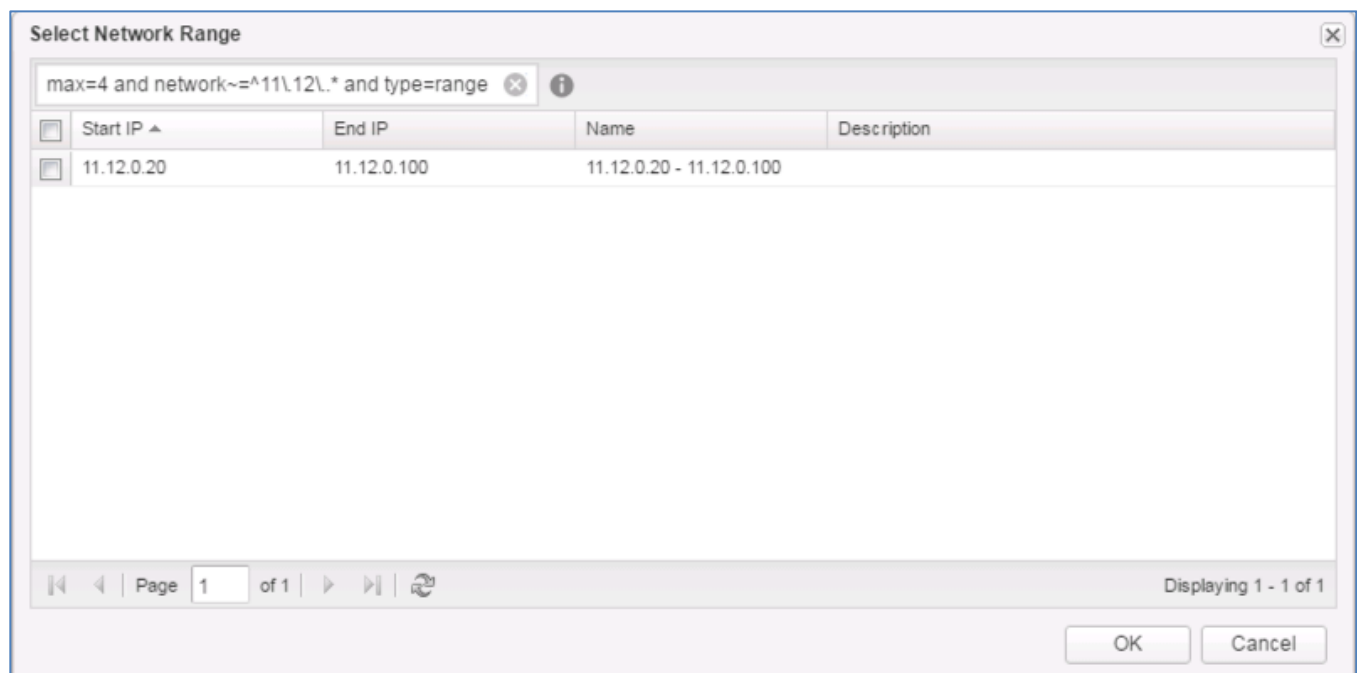
Regular Expression can be used for searching



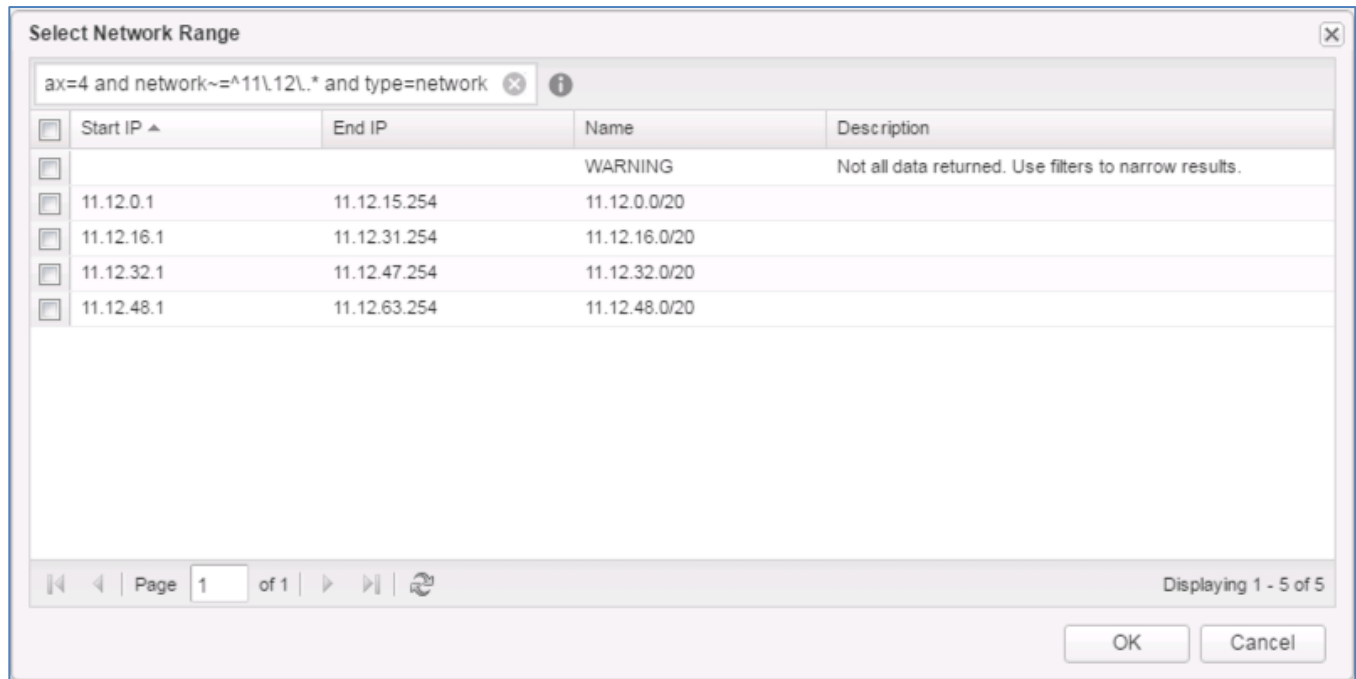
14.3.5 Searching Using Type

Type can be specified as “range” or “network” to get the range or network results respectively.

To search for a range, specify type = range

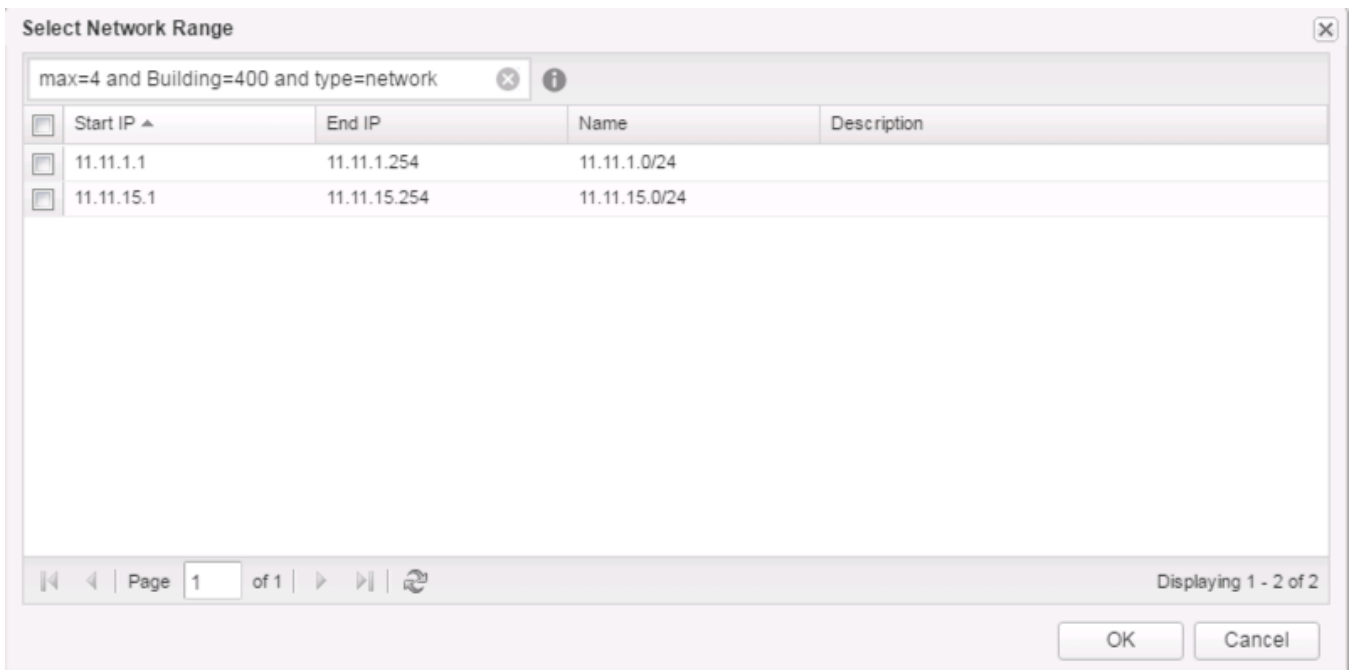


To search for network, specify type = network

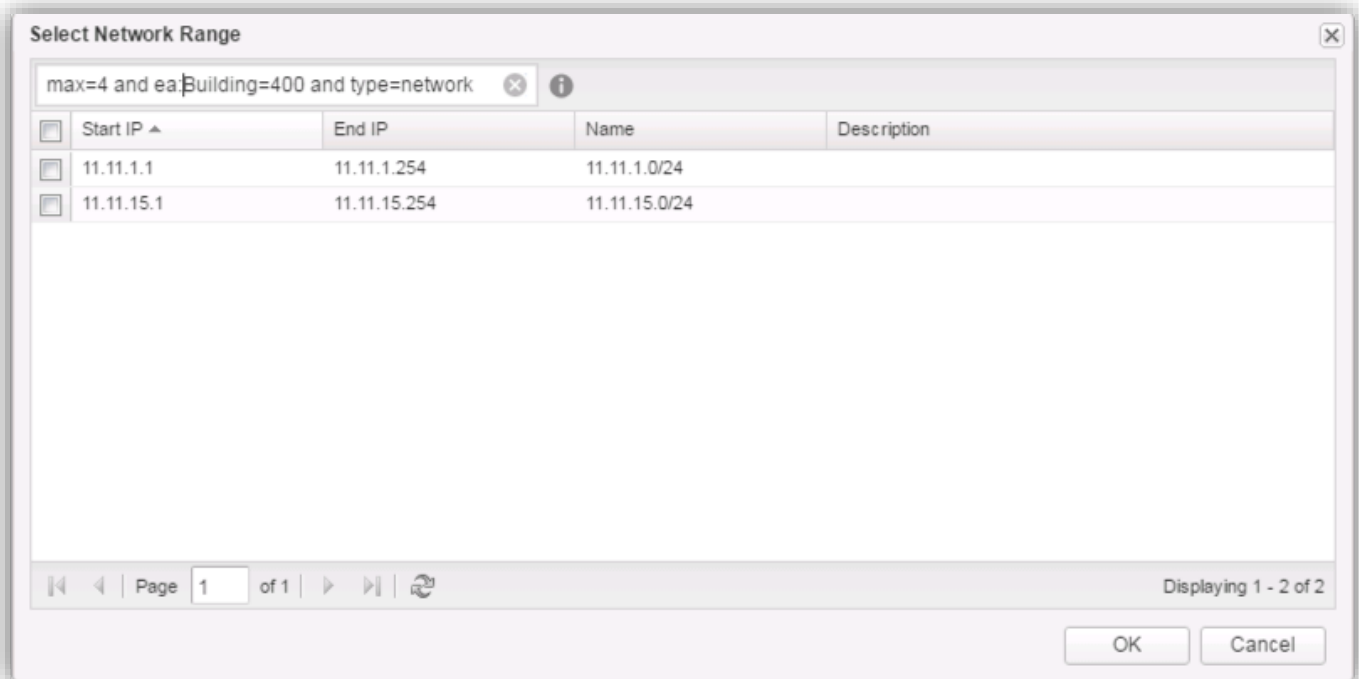


14.4 Filtering by Max results, Extensible attributes and Type

EA can be specified in search



EA can be tagged with “ea:” as well



If a wrong EA is specified, an error will be displayed.

