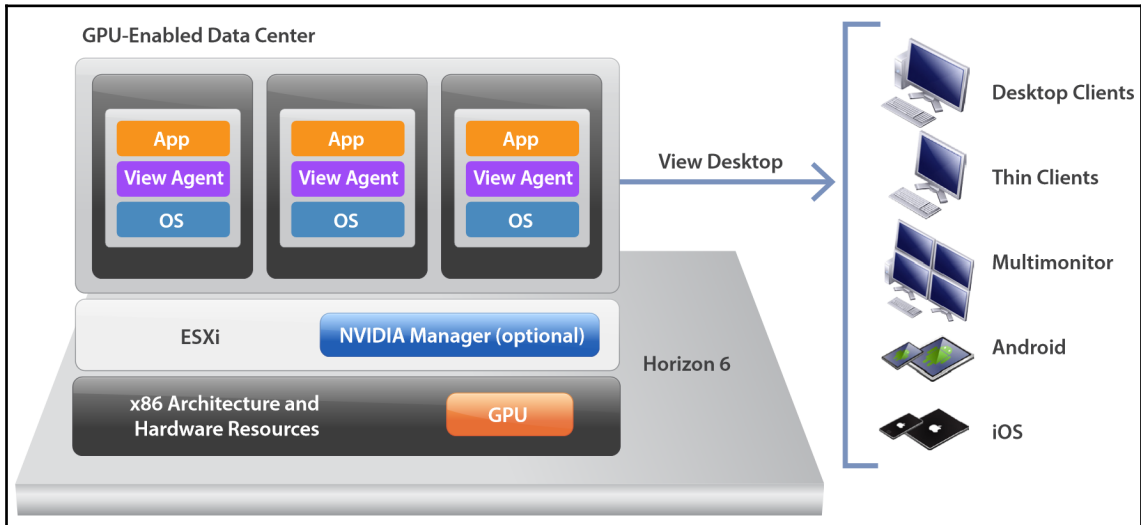
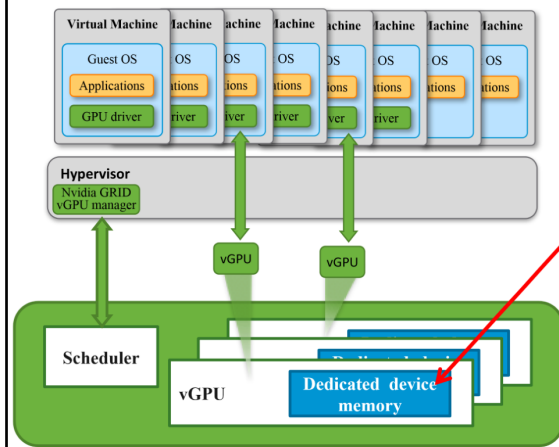


1: Machine Learning Capabilities with vSphere 6.7

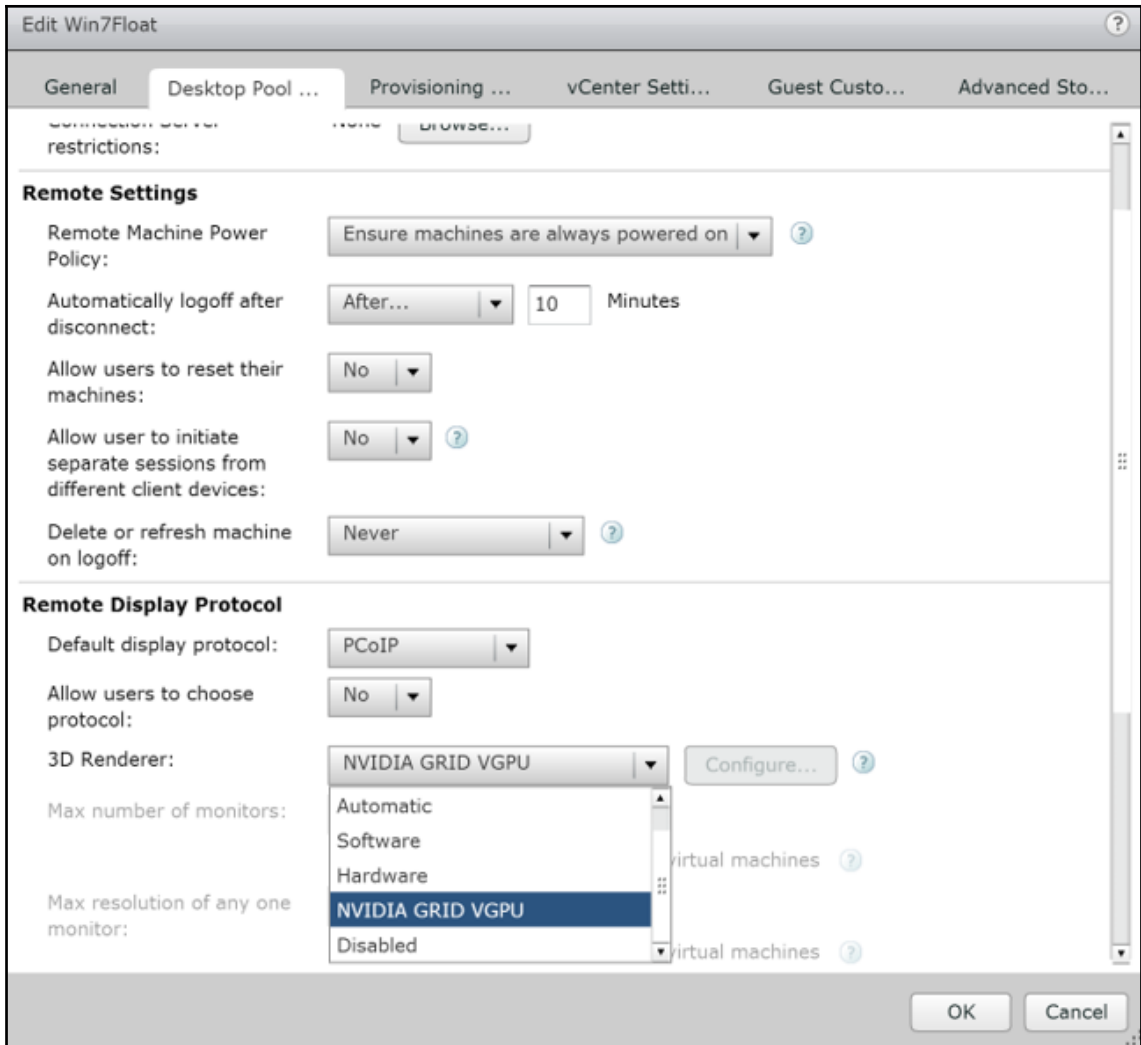


Machine Learning on VMware vSphere using Nvidia GPUs

Nvidia GRID vGPU



- Each vGPU is assigned with a profile
- Profile defines:
 - Size of memory each vGPU has
 - How many vGPUs per physical GPU
- For example: P40-1q profile for P40 GPU
 - vGPU has 1GB of device memory
 - 24 vGPUs per 1 physical P40



Win7x86 - Edit Settings

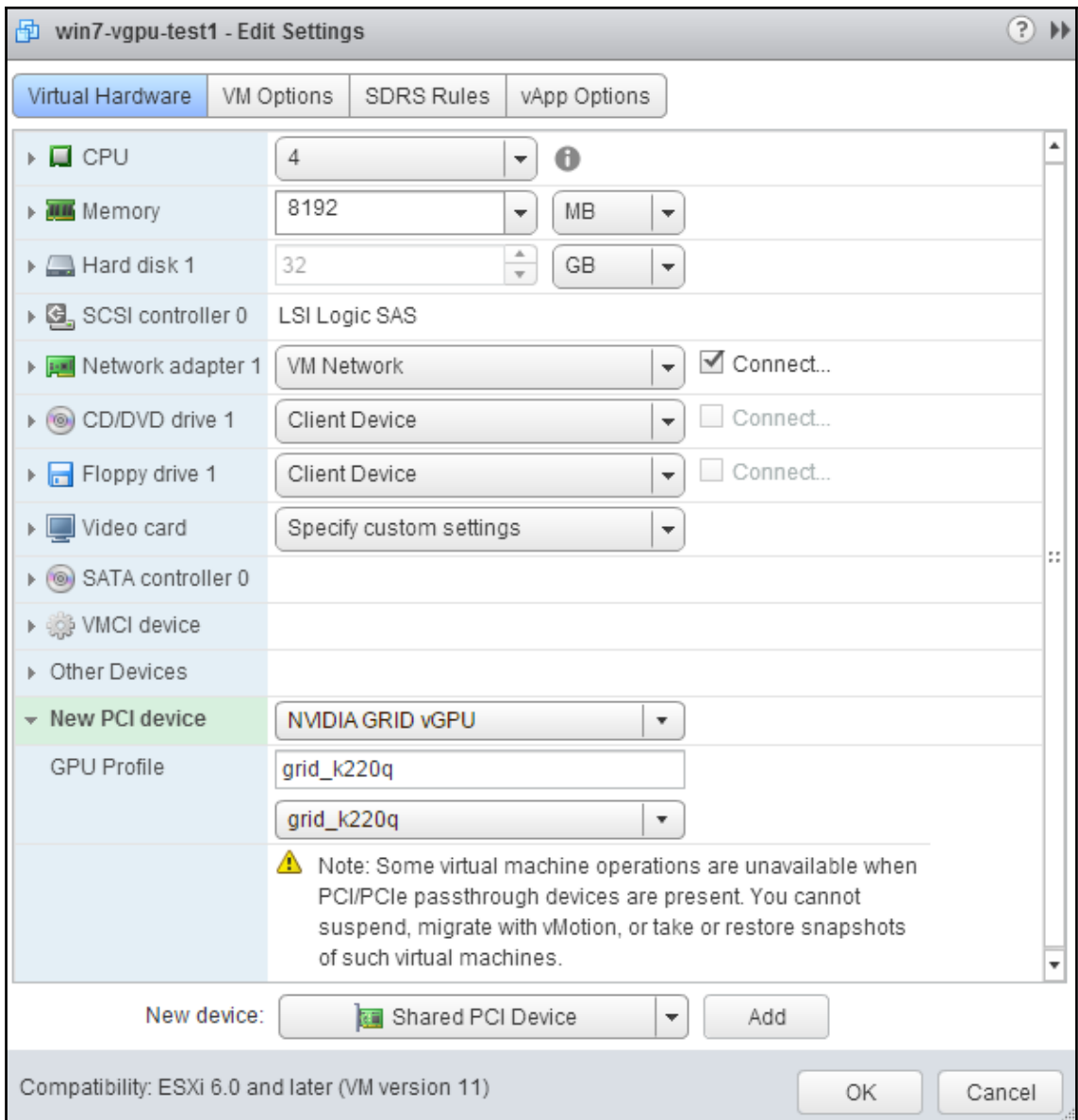
Virtual Hardware | VM Options | SDRS Rules | vApp Options

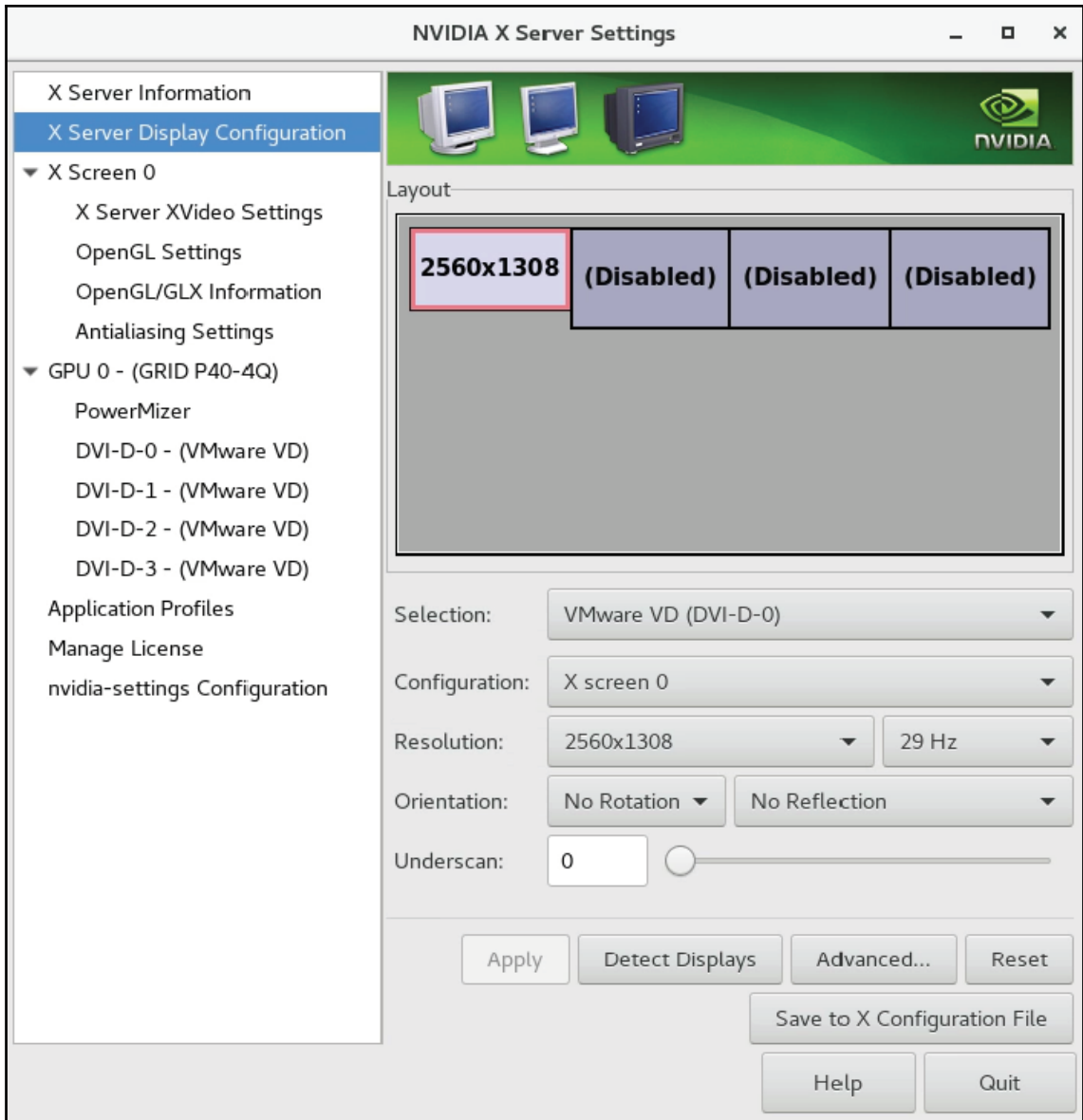
CPU	1	
Memory	1024	MB
Hard disk 1	24	GB
SCSI controller 0	LSI Logic SAS	
Network adapter 1	VM Network	<input checked="" type="checkbox"/> Connect...
CD/DVD drive 1	Datastore ISO File	<input checked="" type="checkbox"/> Connect...
Floppy drive 1	Client Device	<input type="checkbox"/> Connect...
Video card	Specify custom settings	
PCI device 0	NVIDIA GRID vGPU	
GPU Profile	grid_m10-4q	
SATA controller 0	grid_m10-8q grid_m10-8a grid_m10-4q grid_m10-4a grid_m10-2q grid_m10-2a	
VMCI device		
Other Devices		

The maximum number of devices of this type has been reached.
























New device: Shared PCI Device Add

Compatibility: ESXi 6.0 and later (VM version 11) OK Cancel





3D Graphics (*)	<input checked="" type="checkbox"/> Enable 3D Support
3D Renderer	Automatic
3D Memory	256 MB

Setting	State
 Turn off Build-to-Lossless feature	Not configured
 Configure the maximum PCoIP session bandwidth	Not configured
 Configure the PCoIP session MTU	Not configured
 Configure the PCoIP session bandwidth floor	Not configured
 Enable/disable audio in the PCoIP session	Not configured
 Enable/disable microphone noise and DC offset filter in PCoIP ses...	Not configured
 Configure the PCoIP session audio bandwidth limit	Not configured
 Configure PCoIP session encryption algorithms	Not configured
 Configure PCoIP USB allowed and unallowed device rules	Not configured
 Configure the TCP port to which the PCoIP Server binds and listens	Not configured
 Configure the UDP port to which the PCoIP Server binds and listens	Not configured
 Configure the Client PCoIP UDP port	Not configured
 Configure PCoIP virtual channels	Not configured
 Configure clipboard redirection	Not configured
 Configure PCoIP image quality levels	Not configured
 Configure PCoIP client image cache size policy	Not configured
 Enable Right SHIFT behavior when a PCoIP client is connected	Not configured
 Enable the FIPS 140-2 approved mode of operation	Not configured
 Enable access to a PCoIP session from a vSphere console	Not configured
 Turn on PCoIP user default input language synchronization	Not configured
 Use alternate key for sending Secure Attention Sequence	Not configured
 Disable sending CAD when users press Ctrl+Alt+Del	Not configured
 Use Enhanced Keyboard on Windows Client if available	Not configured

New device:

New PCI device	NVIDIA GRID vGPU
GPU Profile	grid_p40-4q
<p>Warning: The VM will not power on until its memory reservation equals its memory size.</p>	
<p>Reserve all memory</p>	

New Virtual Machine

Virtual Hardware | VM Options | SDRS Rules

- 1 Select creation type
 - 1 a Select a creation type
- 2 Edit settings
 - 2 a Select a name and folder
 - 2 b Select a compute resource
 - 2 c Select storage
 - 2 d Select compatibility
 - 2 e Select a guest OS
 - 2 f Customize hardware**
- 3 Ready to complete

Virtual Hardware

- *CPU: 4
- *Memory: 8 GB
- *New Hard disk: 100 GB
- New SCSI controller: LSI Logic SAS
- New Network: VM Network Connect..
- New CD/DVD Drive: Client Device Connect..
- New Floppy drive: Client Device Connect..
- Video card: Specify custom settings
- VMCI device
- New SATA Controller
- Other Devices
- *New PCI device**: NVIDIA GRID vGPU **1**
- GPU Profile: grid_k240q
- grid_k240q

Warning: The VM will not power on until its memory reservation equals its memory size.

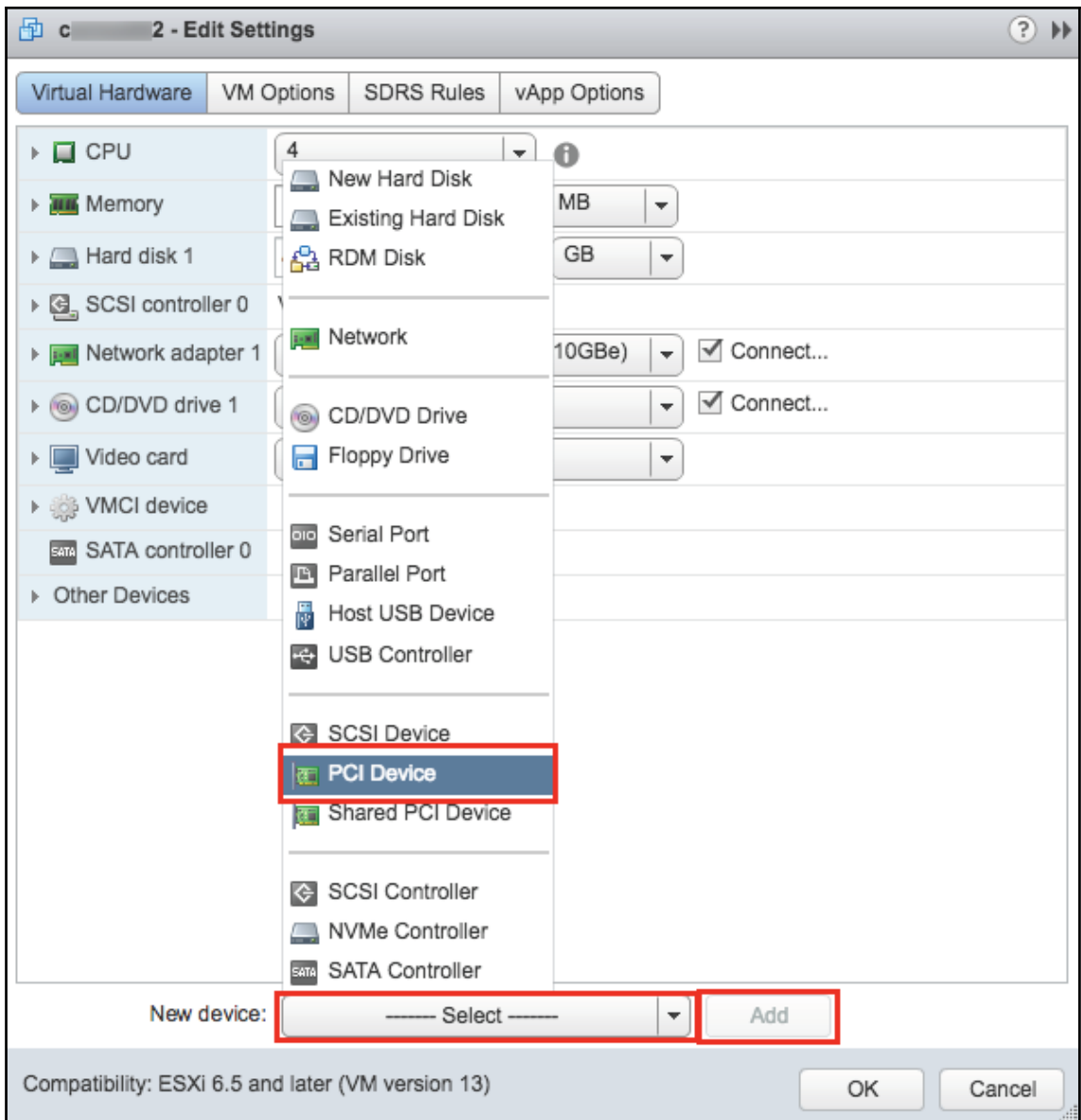
Reserve all memory **2**

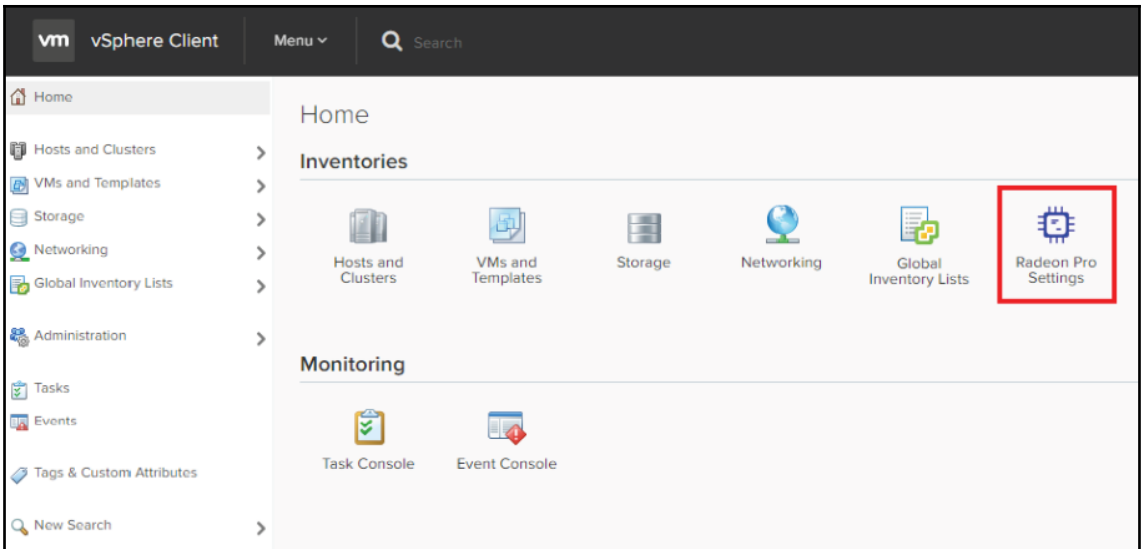
Note: Some virtual machine operations are unavailable when PCI/PCIe passthrough devices are present. You cannot suspend, migrate with vMotion, or take or restore snapshots of such virtual machines.

New device: Shared PCI Device Add

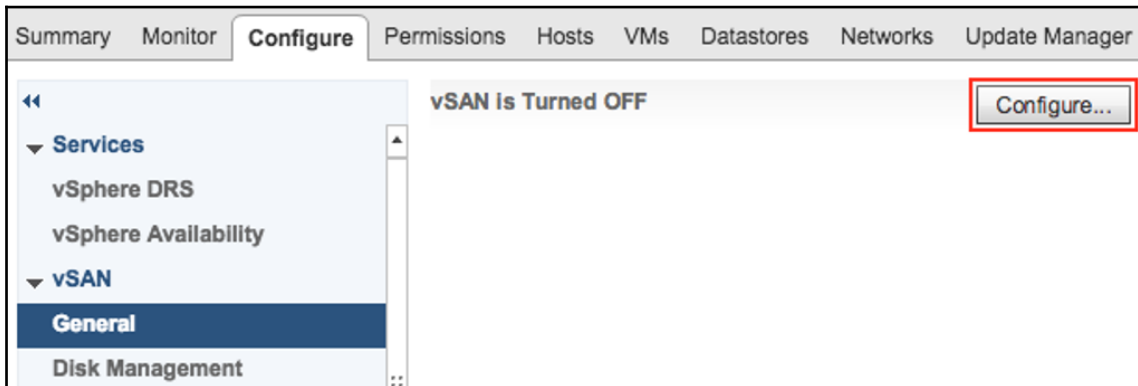
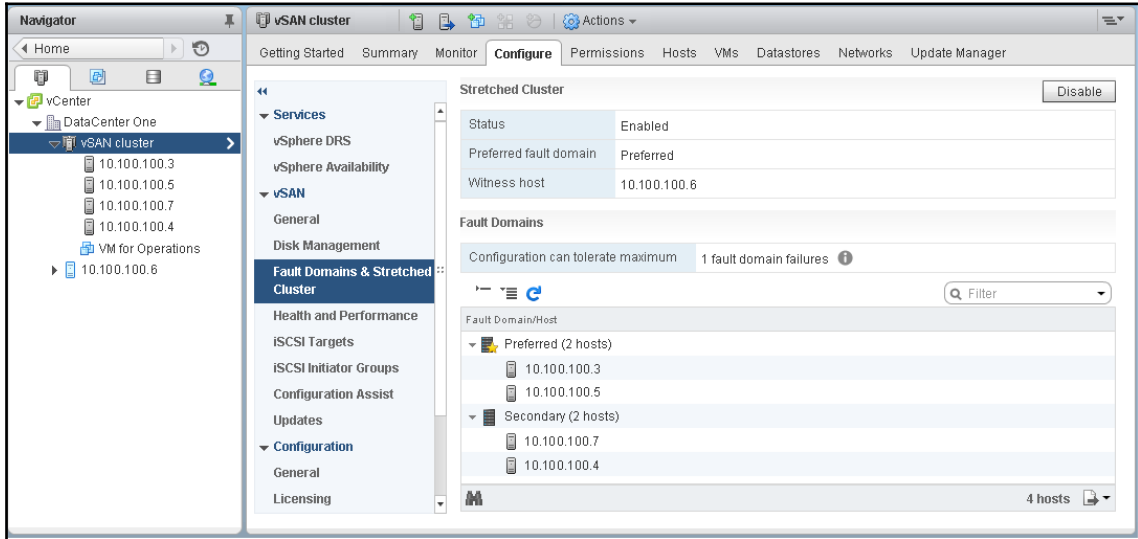
Compatibility: ESXi 6.0 and later (VM version 11)

Back Next Finish Cancel





Chapter 2: Proactive Measures with vSAN Advanced Analytics



Claim disks

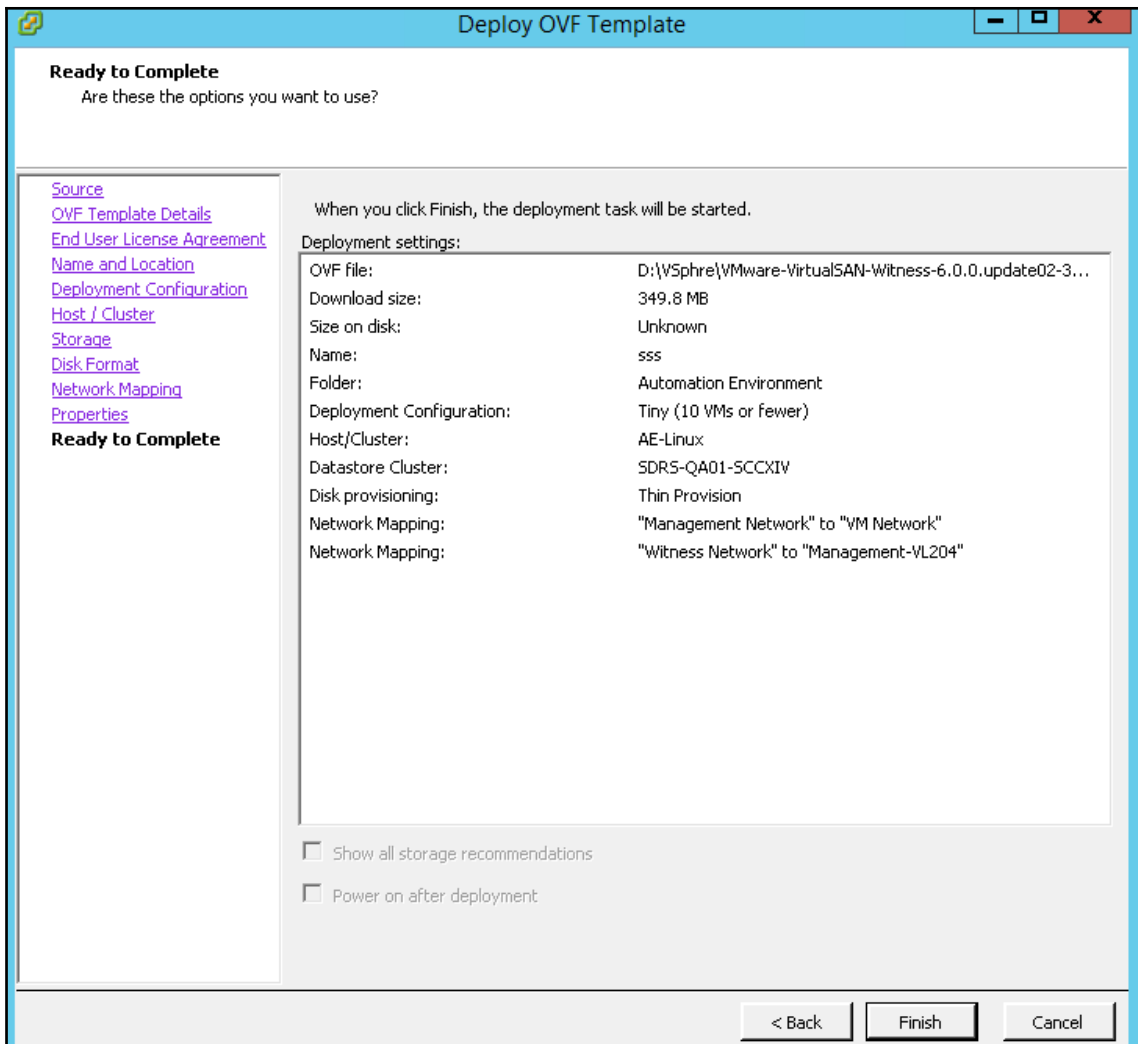
Select disks to contribute to the vSAN datastore.

Select which disks should be claimed for cache and which for capacity in the vSAN cluster. The disks below are grouped by model and size or by host. The recommended selection has been made based on the available devices in your environment. The number of capacity disks must be greater than or equal to the number of cache disks claimed per host.



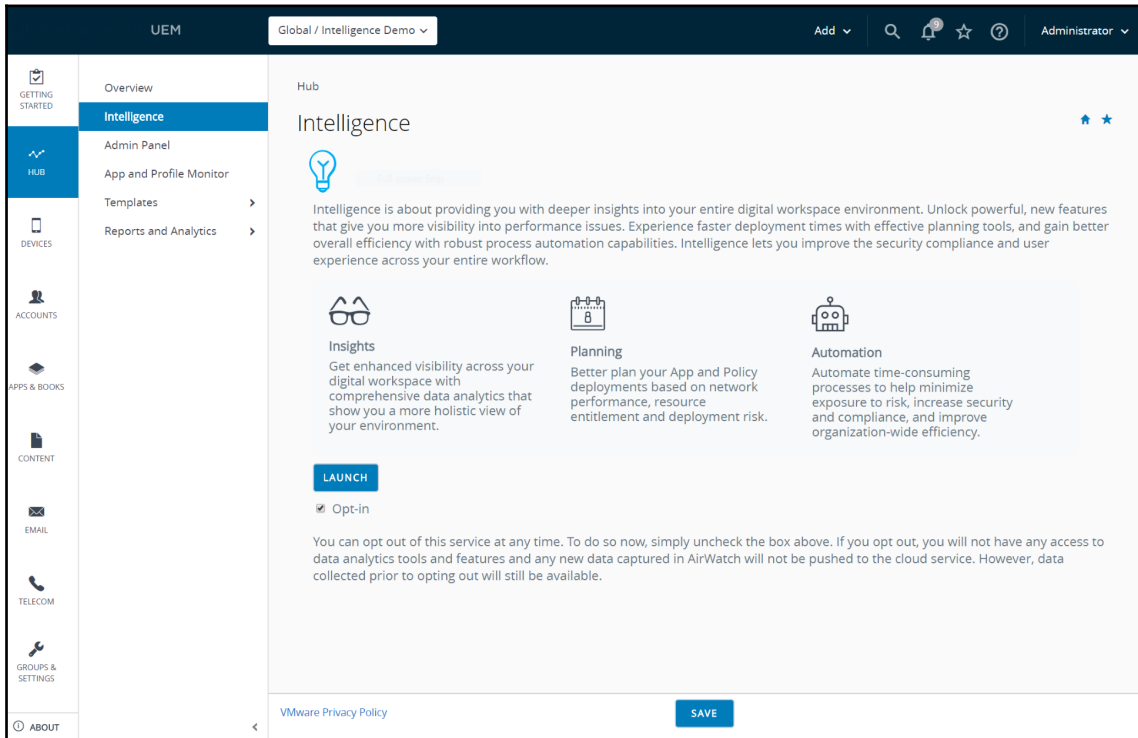
Group by: Disk model/size

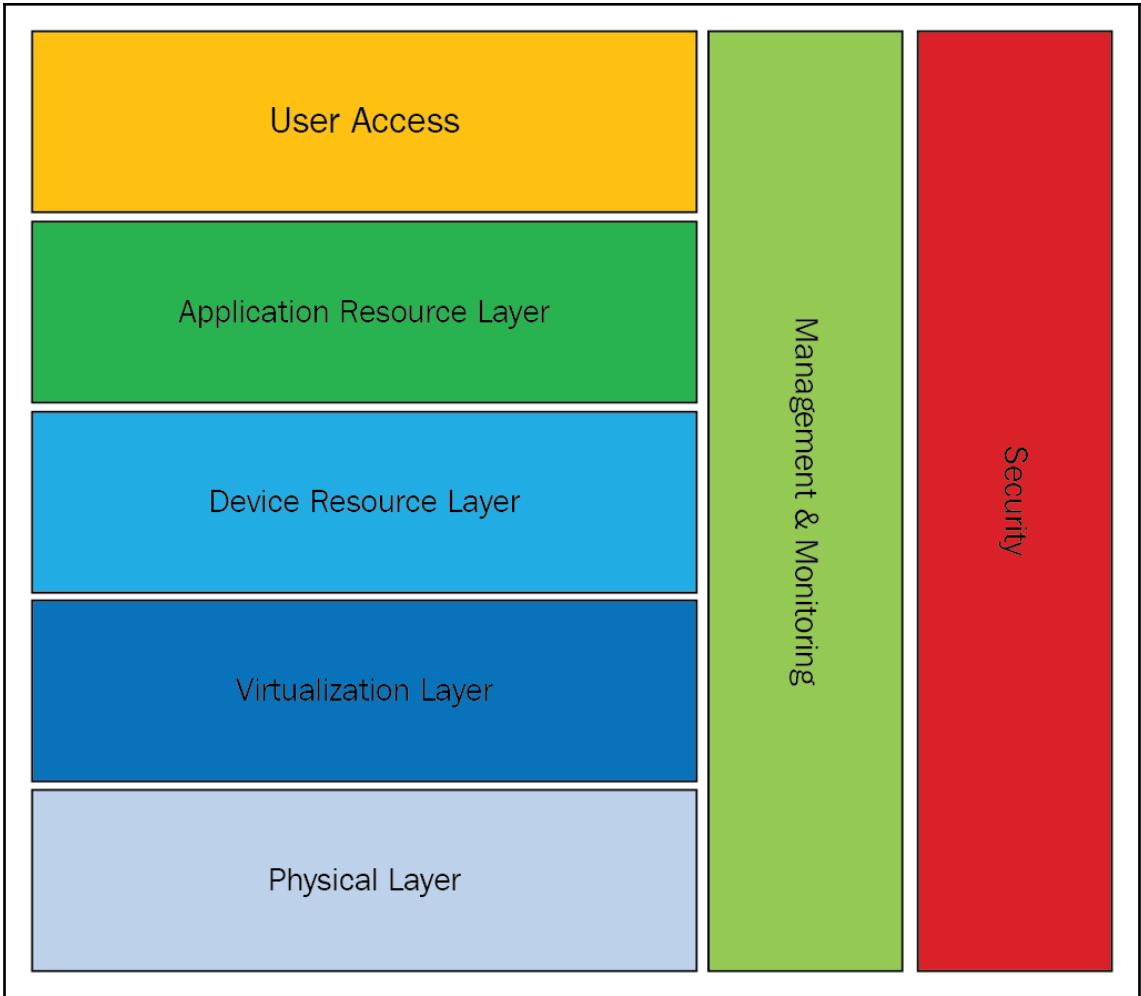
Disk Model/Serial Number	Claim For	Drive Type
▼ F HP LOGICAL VOLUME , 186.28 GB disks	Cache tier	Flash
F Local HP Disk (naa.600508b1001c869696d3da65cd8ee984)	Cache tier	Flash
F Local HP Disk (naa.600508b1001c08a23707bd08da1deae)	Cache tier	Flash
F Local HP Disk (naa.600508b1001cde36110326ce11cfdd24)	Cache tier	Flash
F Local HP Disk (naa.600508b1001cef3ffa079e90d0b41435)	Cache tier	Flash
▼ F HP LOGICAL VOLUME , 745.18 GB disks	Capacity tier	Flash
F Local HP Disk (naa.600508b1001cb34e0830978bd8c99544)	Capacity tier	Flash
F Local HP Disk (naa.600508b1001cad825d0226c02dfea511)	Capacity tier	Flash
F Local HP Disk (naa.600508b1001cf0547147eadf6cf24fe)	Capacity tier	Flash

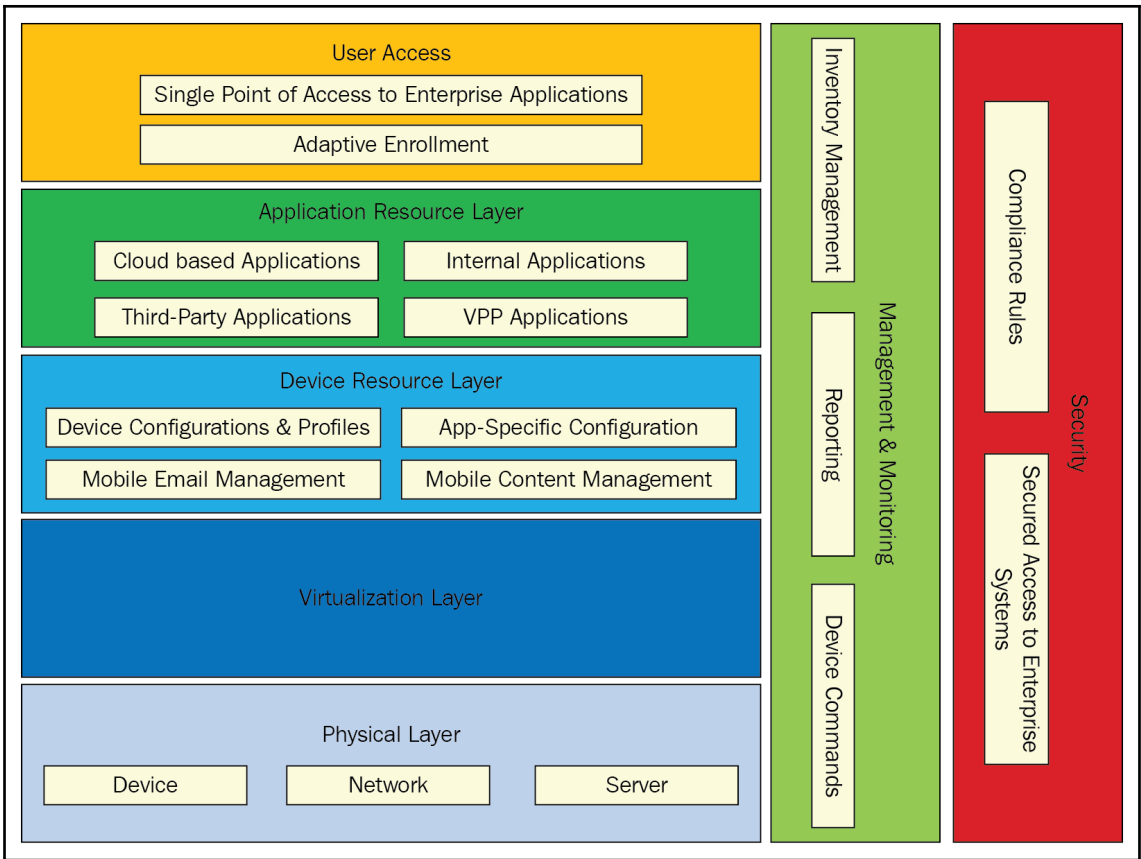


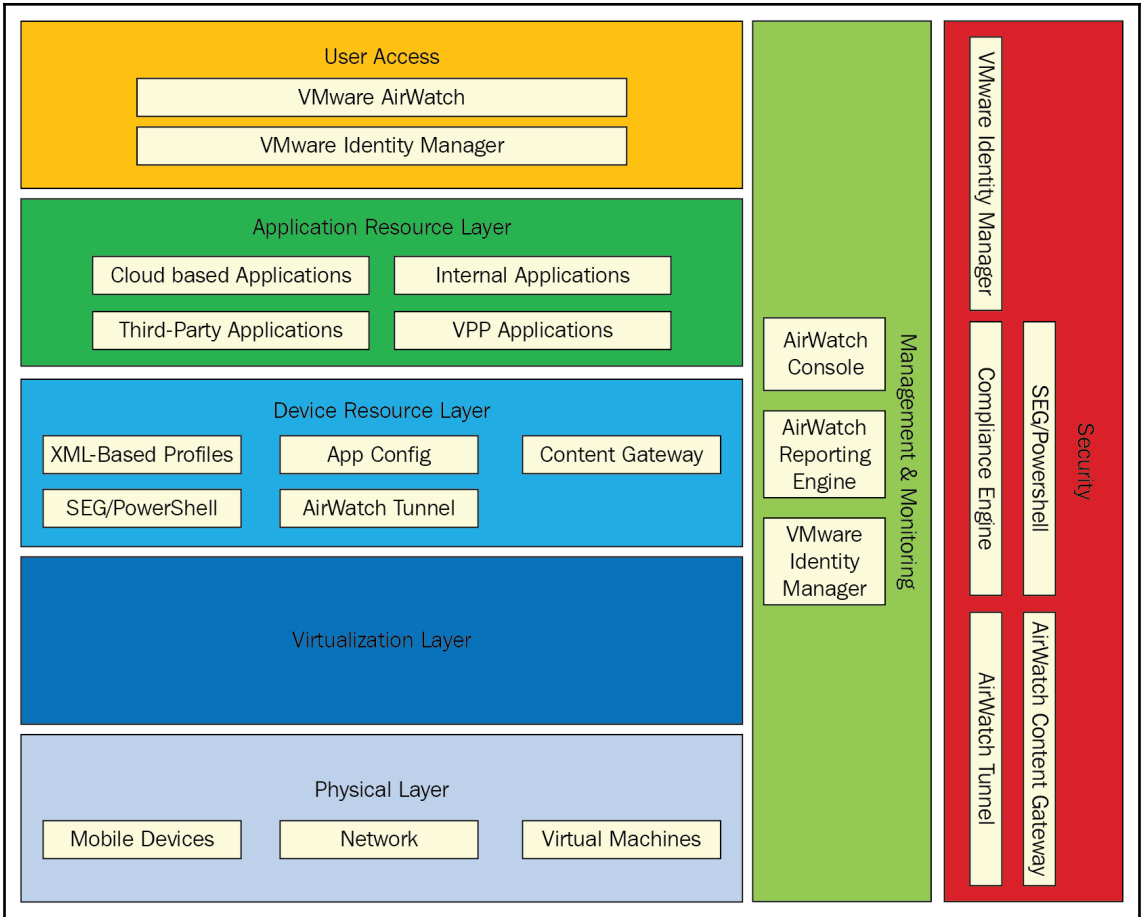
<i>NumberOfFailuresToTolerate</i> <i>e</i>	Fault Tolerance Method	Implemented Configuration	Number of hosts required
0	RAID-1	RAID-0	1
1	RAID-1	RAID-1	2
1	RAID5/6	RAID-5	4
2	RAID-1	RAID-1	5
2	RAID5/6	RAID-6	6
3	RAID-1	RAID-1	7

Chapter 3: Security with Workspace ONE Intelligence

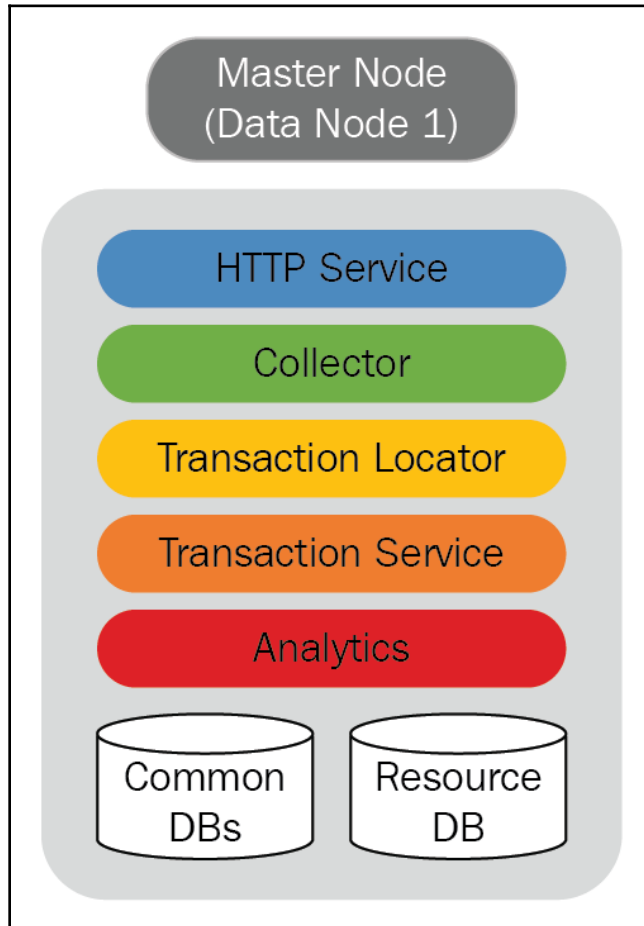


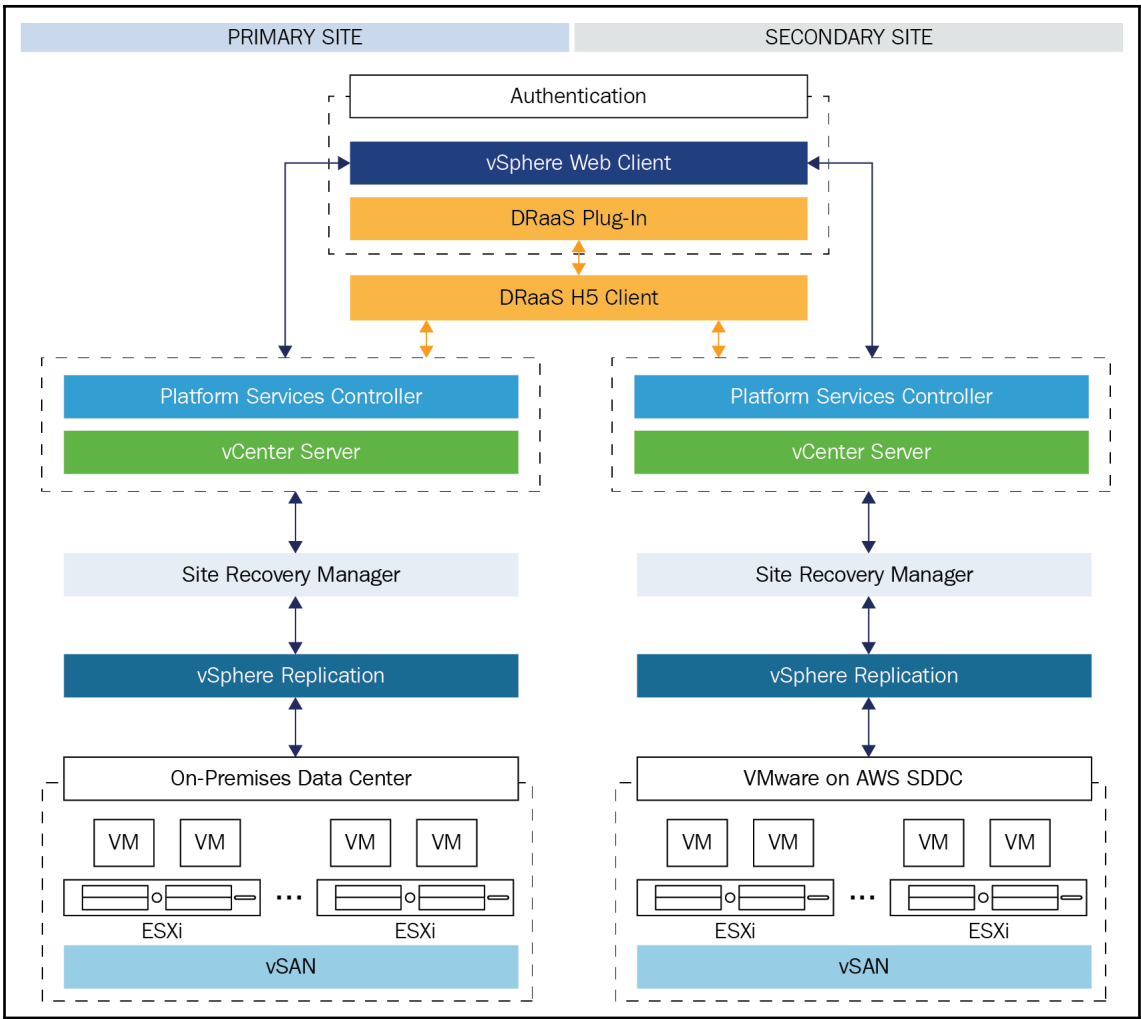






Chapter 4: Proactive Operations with VMware vRealize Suite





Welcome to VMware Cloud on AWS!

VMware Cloud on AWS makes it easy to run your familiar vSphere-based clouds on AWS.

Create your first Software-defined Data Center (SDDC) in the cloud now.

CREATE SDDC

The screenshot shows a web browser window with the URL <https://vmc.vmware.com/console/sddcs/create>. The page title is "Create Software-Defined Data Center (SDDC)". Below the title, there is a section titled "1. SDDC Properties" with the instruction: "Give your SDDC a name, choose a size, and specify the AWS region where it will be created." The form contains the following fields:

AWS Region	US East (N. Virginia) ▼ More regions coming later
Deployment	<input type="radio"/> Single Host <input checked="" type="radio"/> Multi-Host <input type="checkbox"/> Stretched Cluster ⓘ
SDDC Name	<input type="text" value="Enter a name for your new SDDC"/>
Number of Hosts	4 ▼
Host Capacity	2 Sockets, 36 Cores, 512 GB RAM, 10.7 TB Storage
Total Capacity	8 Sockets, 144 Cores, 2 TB RAM, 42.8 TB Storage

At the bottom of the form, there is a blue button labeled "NEXT".

vm VMware Cloud on AWS Brian Graf
Brian Graf's Organiz...

SDDCs Subscriptions Activity Log Developer Center Getting Started DARK

Software-Defined Data Centers (SDDC) CREATE SDDC INVITE USERS

1-Node-SDDC US East (N. Virginia)

READY

ⓘ This SDDC will expire in 21 days. [LEARN MORE](#) SCALE UP

CPU	Memory	Storage
83 GHz	512 GiB	10.7 TB

[VIEW DETAILS](#) [OPEN VCENTER](#) [ACTIONS](#)

Summary Networking & Security Add Ons Troubleshooting Settings Support

Overview

Network

- Segments
- > VPN
- NAT

Security

- Gateway Firewall
- Distributed Firewall

Inventory

- Groups
- Services

Tools

Gateway Firewall

Management Gateway

19 Rules

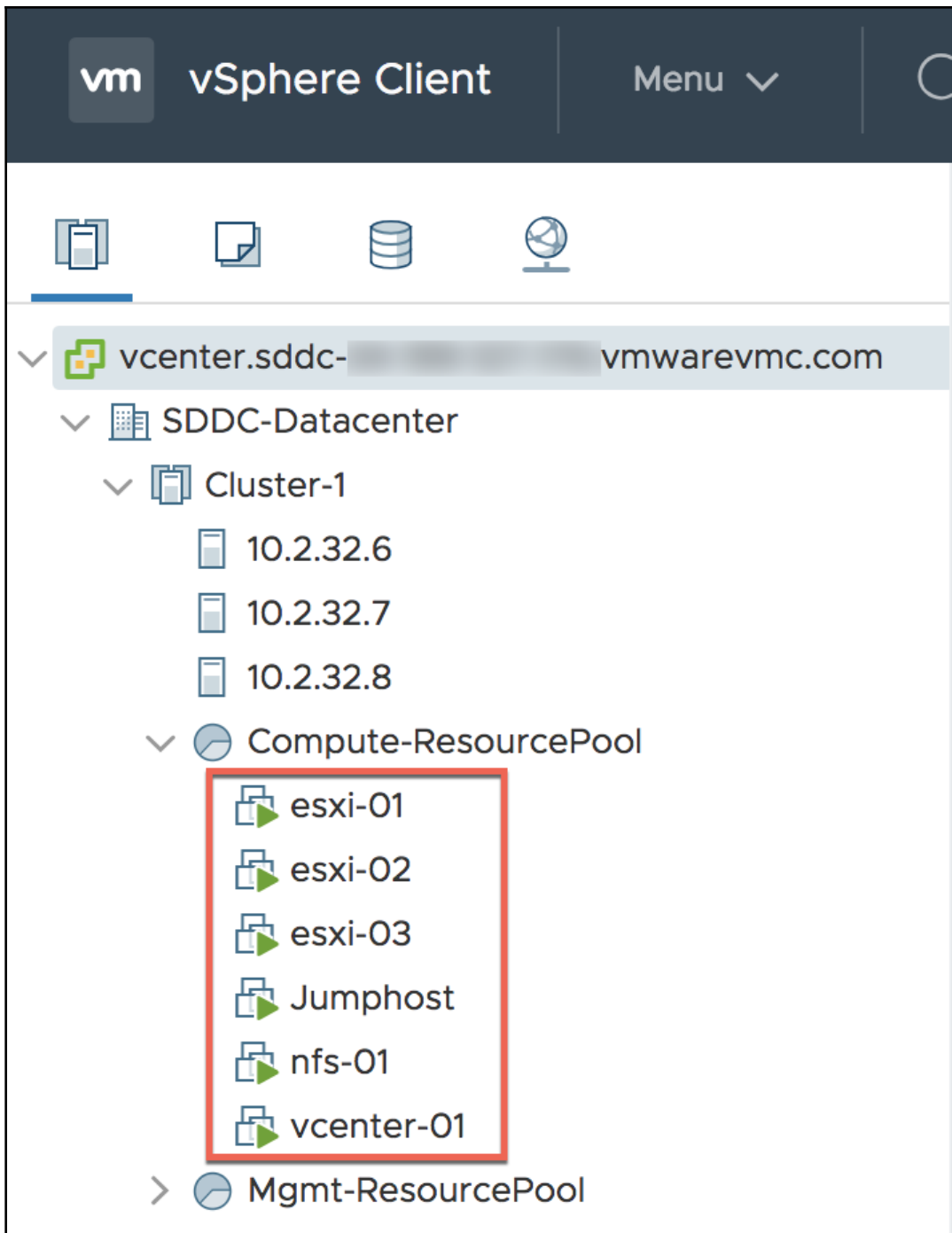
Compute Gateway

7 Rules

[ADD NEW RULE](#)

	Name	Source
⋮	Allow inbound to HCX Manager	Any
⋮	HCX Cloud Manager to Activation Server	HCX
⋮	Remote network to HCX	On-Prem-10_8, 1 more

[21]



vm vSphere Client Menu ▾ 🔍 Search ↻ emad@cpbu.lab ▾ Help ▾ 😊

Administration

- ▾ Access Control
 - Roles
 - Global Permissions
- ▾ Solutions
 - Client Plug-Ins
- ▾ Hybrid Cloud
 - Linked Domains**
 - ▾ Single Sign On
 - Users and Groups
 - Configuration

Linked Domains

vsphere.local

✔ Domain linked.

UNLINK

vCenter Cloud Gateway Appliance Installer

Installer

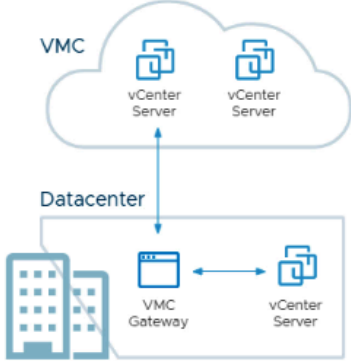
vm vCenter Cloud Gateway Appliance 6.8 Installer

< Configure Hybrid Linked Mode

1. What is Hybrid Linked Mode?

Hybrid Linked Mode

The VMC gateway is deployed on-prem and joins the existing on-prem Platform Services Controller's Single Sign-On domain. It connects to the cloud vCenter using Hybrid Linked Mode. To ensure that the appliance is deployed successfully, review the [HLM prerequisites documentation](#)



The diagram illustrates the Hybrid Linked Mode architecture. It shows a cloud environment labeled 'VMC' containing two 'vCenter Server' icons. Below this, a 'Datacenter' box contains a 'VMC Gateway' icon and a 'vCenter Server' icon. A double-headed arrow connects the VMC Gateway and the vCenter Server in the Datacenter. An arrow points from the VMC Gateway up to the VMC cloud, indicating connectivity between the on-prem gateway and the cloud vCenter servers.

NEXT

2. Hybrid Linked Mode Connect to the cloud SSO domain to enable Hybrid Linked Mode

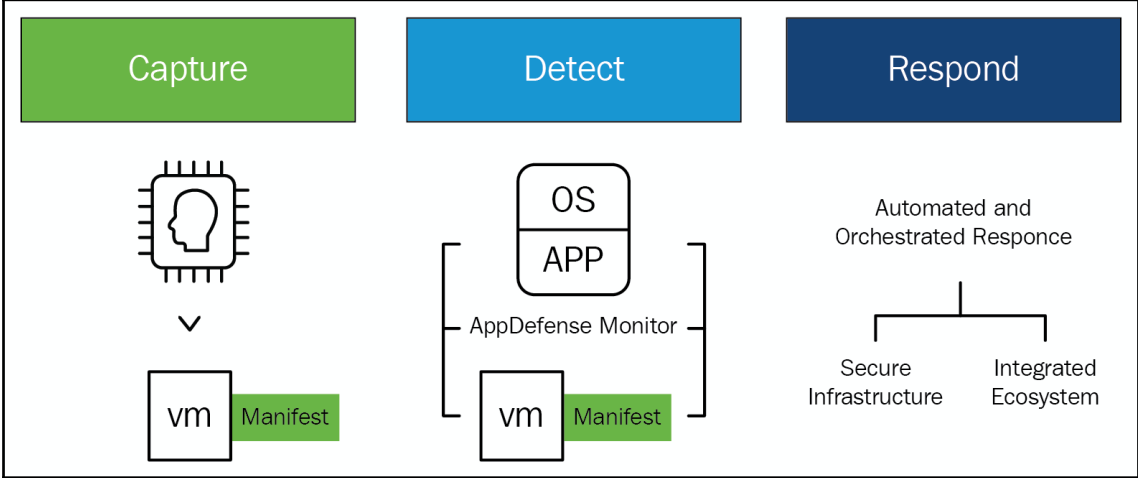
The domain has been linked

✔ To see the linked vCenter Servers, you must log in with your on-prem account.

Click OK to log out of your cloud account.

OK

Chapter 5: Intent-Based Manifest with AppDefense



VMware AppDefense
⚠ This scope has 3 uncleared alarms
VIEW ALARMS

Alarms

Scopes

Filter scopes

Maven Scope Test

Mortgage App-Learning

Mortgage Demo

ccorde@vmware.com

Mortgage De... ADD SERVICE

Search services

App-Tier 3			
Type	App Server	Rules	Unknown
VMs	1	Behavior	48

DB-Tier			
Type	RDBMS	Rules	4
VMs	1	Behavior	38

Behavior Members Rules

python.exe

Path C:\Python35\python.exe

CLI "C:\Python35\python.exe" C:\apps\goldilocks\wfastcgi.py

Hash f0cb3b7696d1dd3ade107e008ab507fa

Outbound connection behaviors:

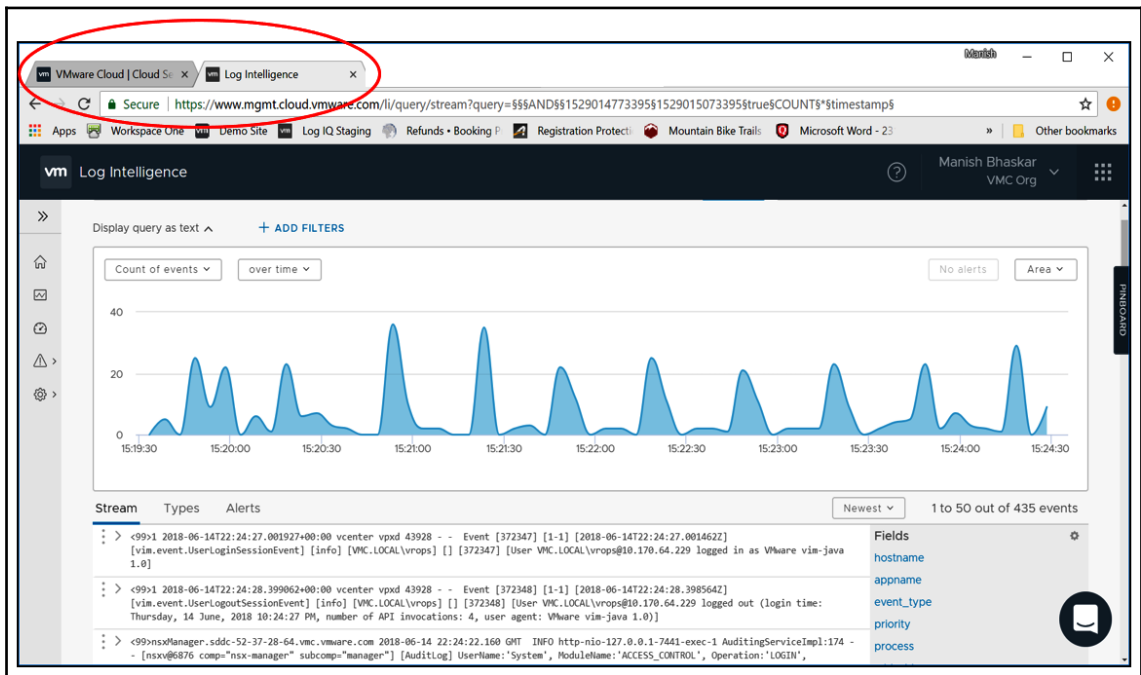
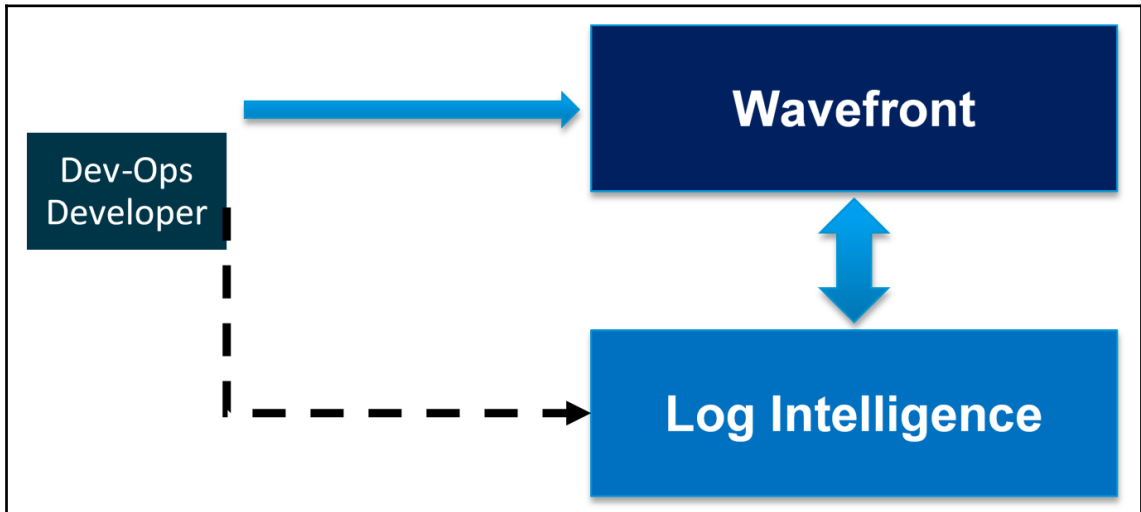
Protocol	Destination	Destination Port	Local Port
UDP	DB-Tier	1434	*
TCP	DB-Tier	1433	*

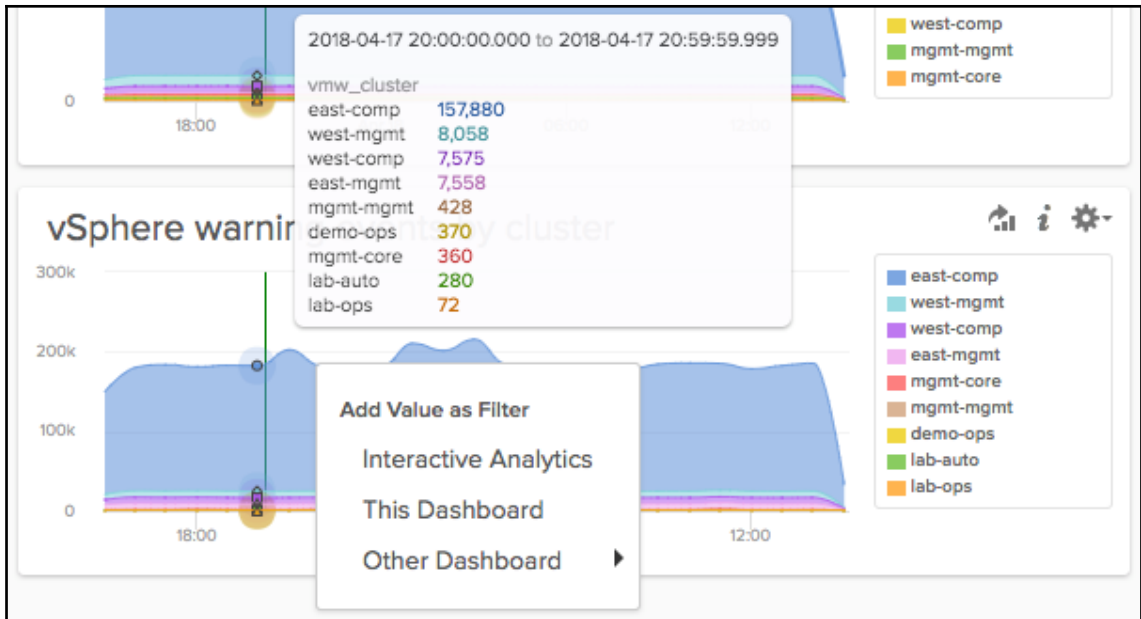
Inbound connection behaviors:

No Inbound Connection

- > rundll32.exe
- > services.exe
- > spoolsv.exe
- > svchost.exe
- > svchost.exe
- > svchost.exe
- > svchost.exe
- > svchost.exe
- > svchost.exe
- > svchost.exe
- > wsqmcons.exe

Chapter 6: ML-Based Intelligent Log Management





Add Query to Dashboard

Name:

Dashboard: **Client Connections** ▾

Widget Type: ▾

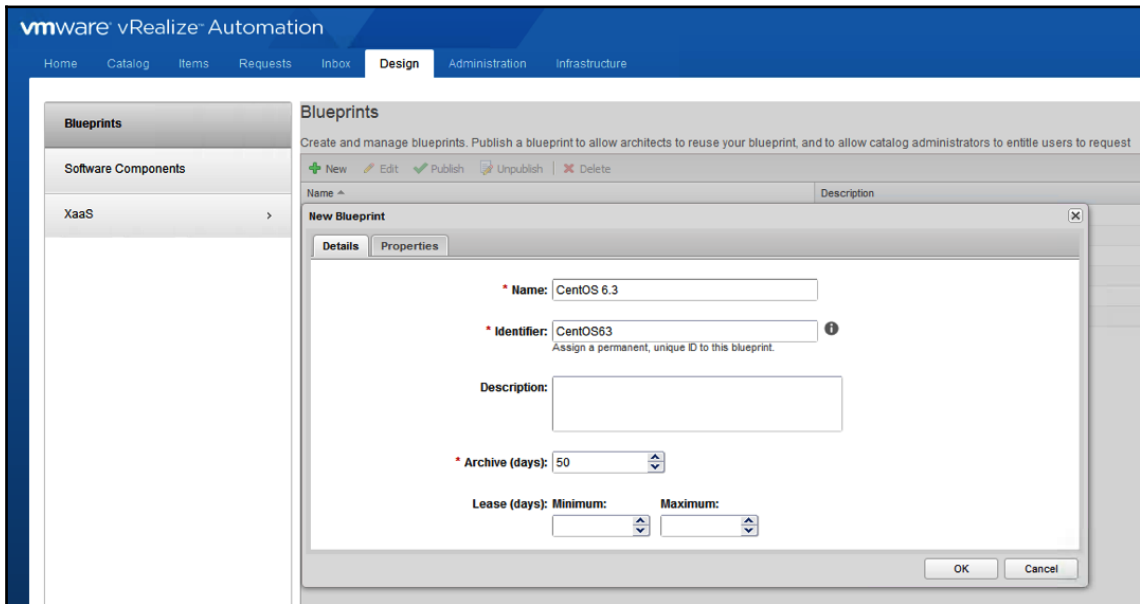
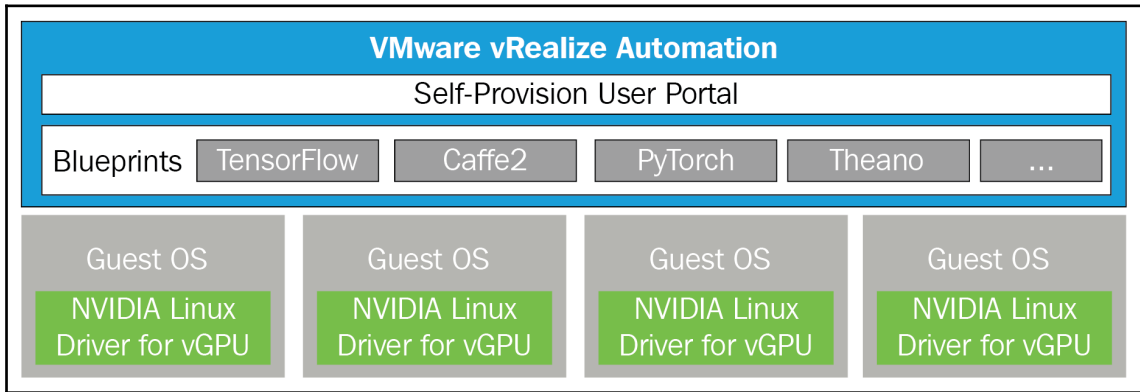
Notes: **B I U**

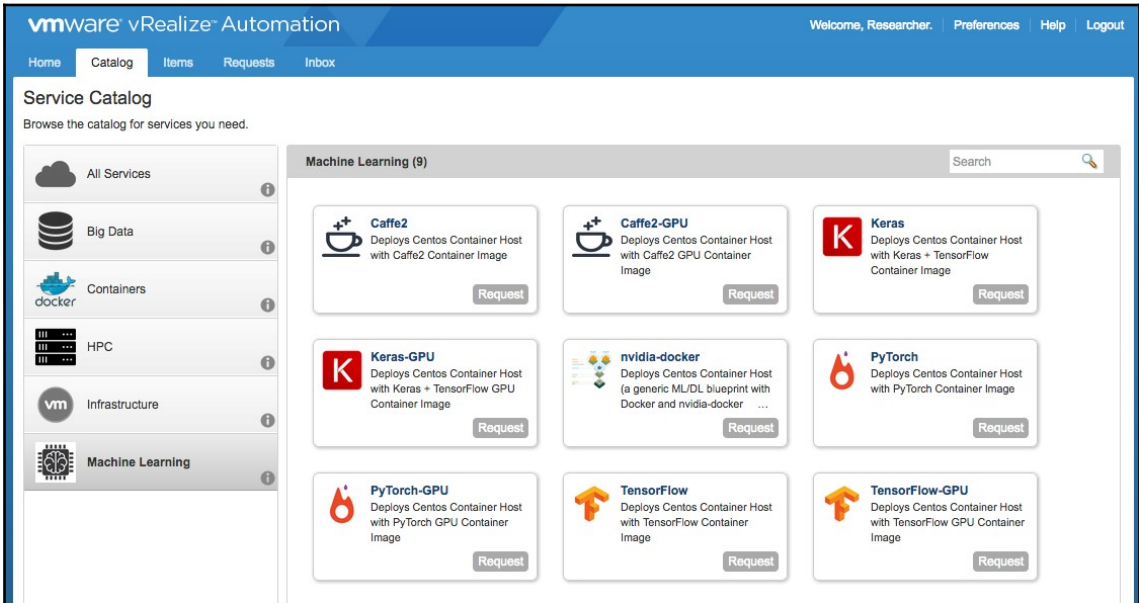
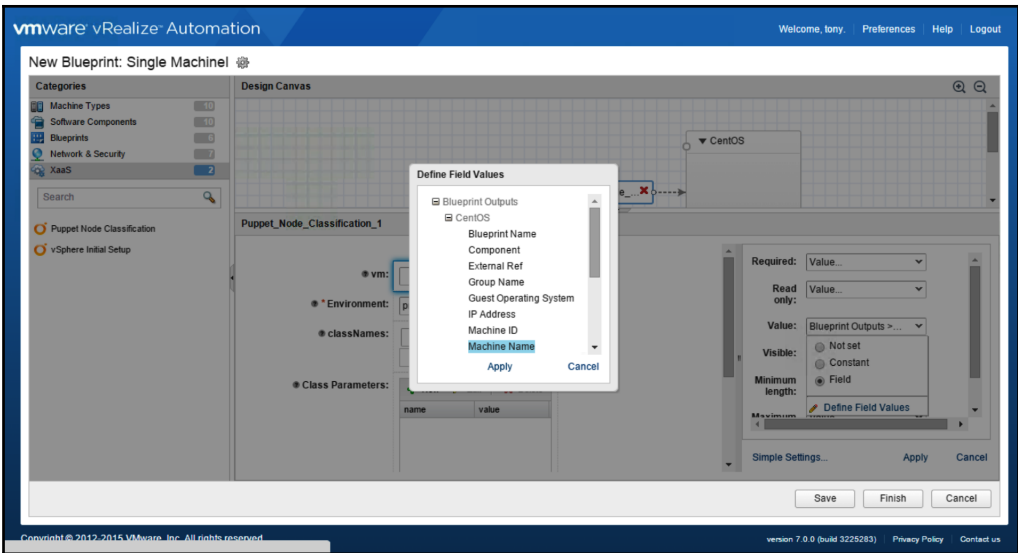
★ Latest 24 hours of data 🔍

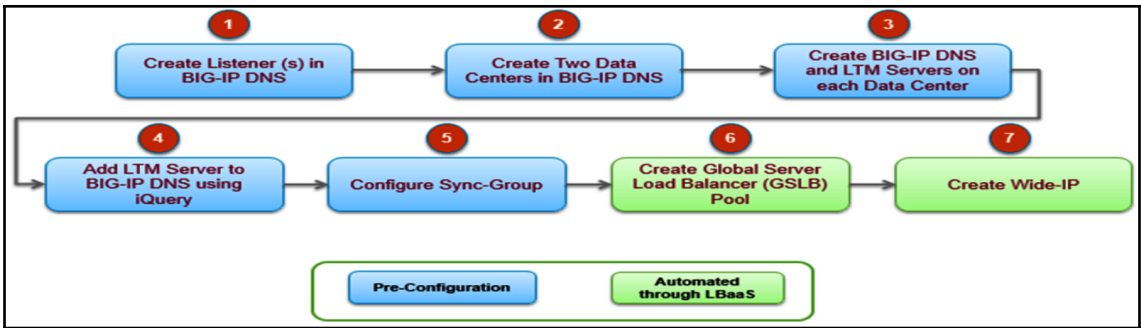
Match **all** of the following filters:

✕ vmw_vc_api_invocation	>	0 ✕
✕ hostname	contains	innovc1 ✕

Chapter 7: ML as a Service in the Cloud







New Request



Create a VIP

GTM

LTM

● App ID:

● Environment:

● Protocol:Port: +

No data selected

● Application Name:

● Application Description:

● LB Algorithm:

● Pool Members Rancho:

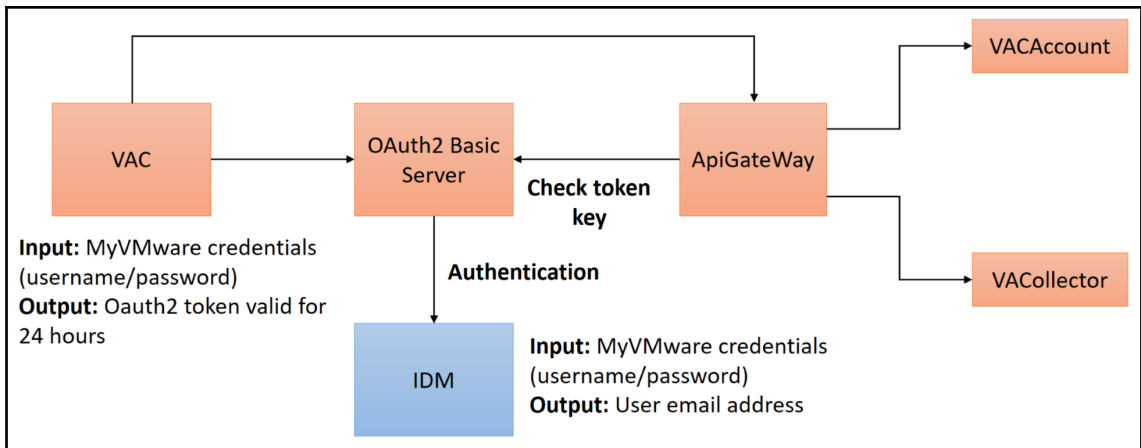
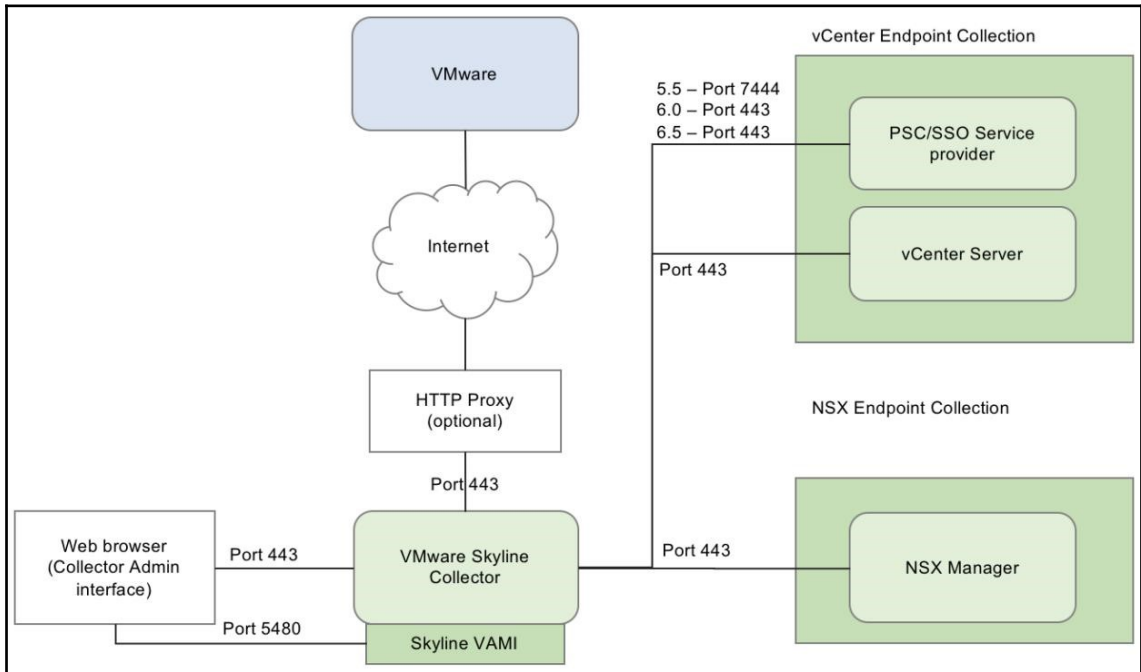
- vmware01_rancho
- vmware02_rancho
- vmware03_rancho

● Pool Members Fairfax:

- vmware01_fairfax
- vmware02_fairfax
- vmware03_fairfax

● vIPAddress:

Chapter 8: ML-Based Rule Engine with Skyline





System

Network

Update

Information

Time Zone

System Information

Vendor: **VMware Inc.**
Appliance Name: **VMware Skyline Appliance**
Appliance Version: **2.0.0.1 Build 11061851**

Hostname: **photon-machine**
OS Name: **VMware**

Actions

Reboot

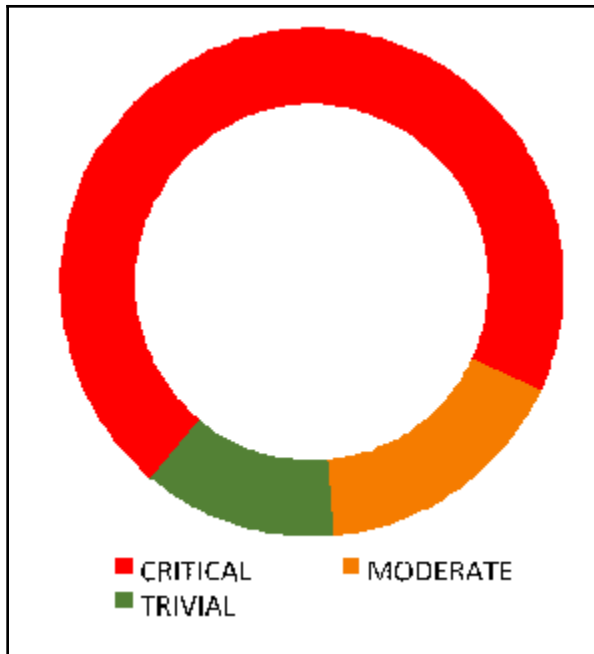
Shutdown

Skyline Collector

Username

Password

LOG IN



vm Skyline Organization Aruna Lakmal Organization

Register VMware Skyline Collector

In this section you can manage your VMware Skyline registration tokens.

Info: You need a Skyline Collector registration token to register your Collector. Note that once you use a token to register a Collector, that token will no longer appear in your active token list.

Active tokens available for collector registration:

Token Value ⓘ	Expires:	Created By	Actions
Currently you don't have any tokens. Click the "CREATE NEW TOKEN" button below to generate a token.			

CREATE NEW TOKEN ←

Once you have successfully created a token, enter this token on the Skyline Collector Installation interface. Upon successful Skyline Collector registration, you may proceed to Step 5 and access Skyline Advisor where you can view the proactive findings and recommendations for your environment.

Note: If you have existing registered Skyline Collectors, please proceed to Step 5 to migrate and associate the Collectors to this Organization.

[Need help?](#)

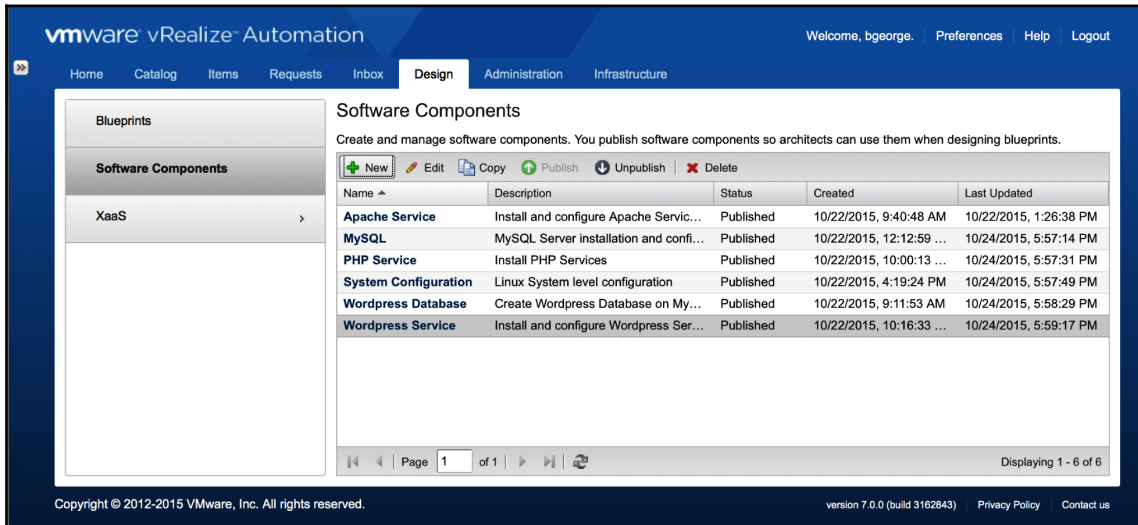
Skyline Collector

Username

Password

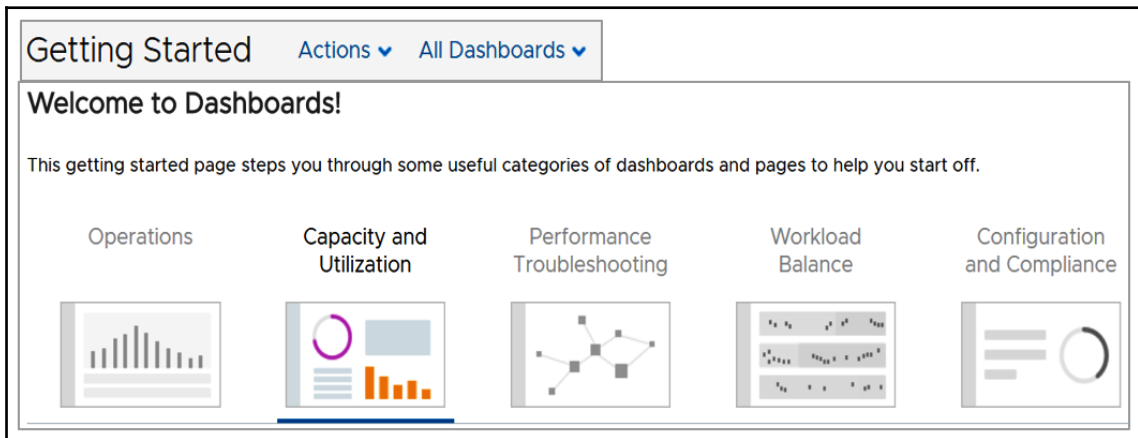
LOG IN

Chapter 9: DevOps with vRealize Code Stream

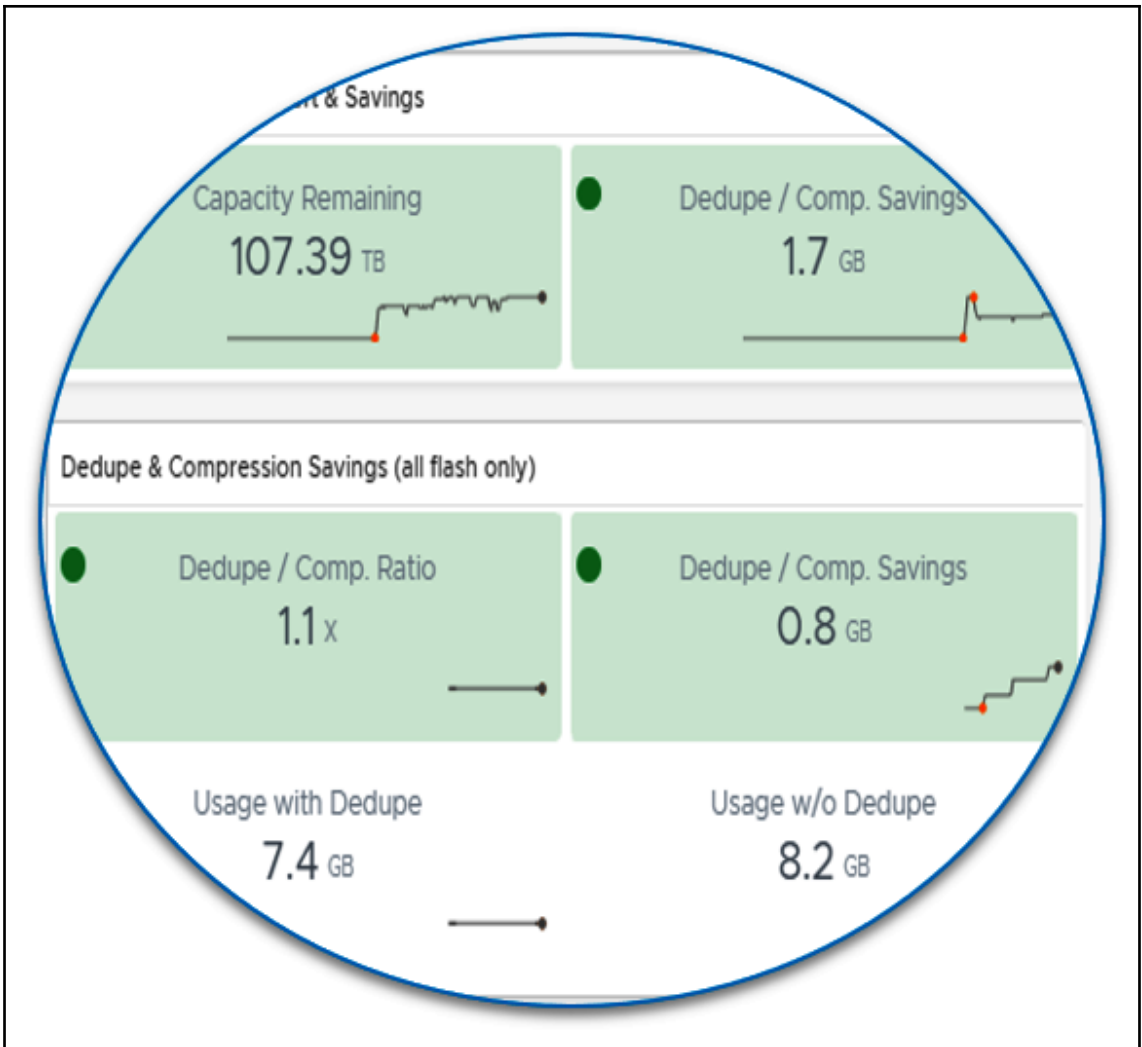


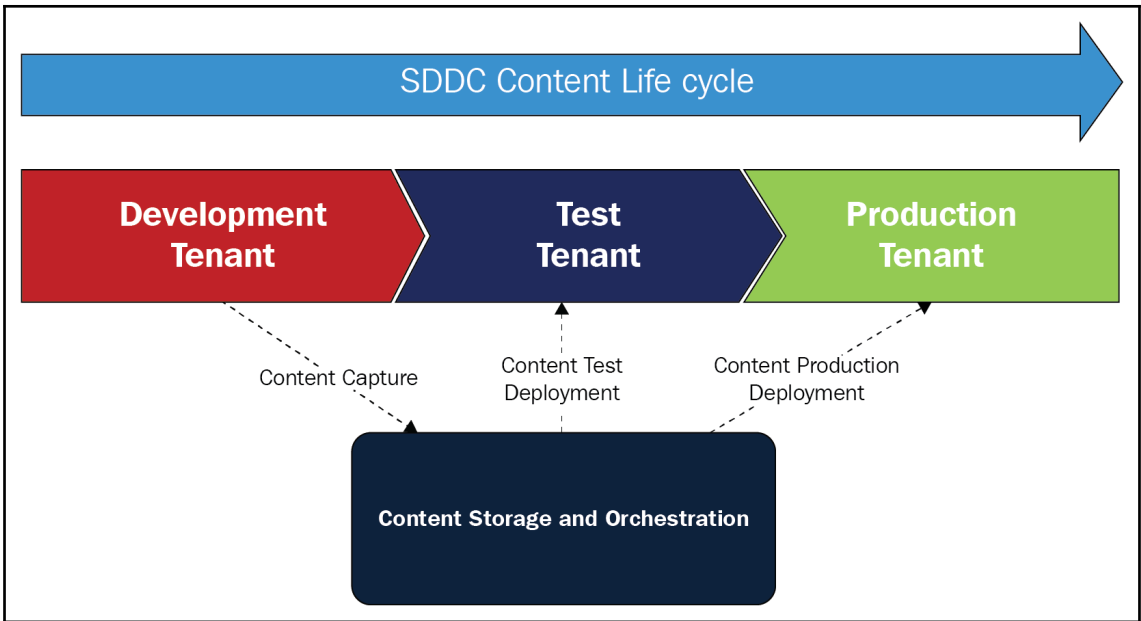
The screenshot shows the VMware vRealize Automation interface. The top navigation bar includes 'Home', 'Catalog', 'Items', 'Requests', 'Inbox', 'Design' (selected), 'Administration', and 'Infrastructure'. The user is logged in as 'bgeorge'. The main content area is titled 'Software Components' and contains a table of components. A sidebar on the left shows 'Blueprints' and 'Software Components' with a 'XaaS' link. The table lists components like Apache Service, MySQL, PHP Service, System Configuration, Wordpress Database, and Wordpress Service, each with a description, status, and timestamps.

Name	Description	Status	Created	Last Updated
Apache Service	Install and configure Apache Servic...	Published	10/22/2015, 9:40:48 AM	10/22/2015, 1:28:38 PM
MySQL	MySQL Server installation and confi...	Published	10/22/2015, 12:12:59 ...	10/24/2015, 5:57:14 PM
PHP Service	Install PHP Services	Published	10/22/2015, 10:00:13 ...	10/24/2015, 5:57:31 PM
System Configuration	Linux System level configuration	Published	10/22/2015, 4:19:24 PM	10/24/2015, 5:57:49 PM
Wordpress Database	Create Wordpress Database on My...	Published	10/22/2015, 9:11:53 AM	10/24/2015, 5:58:29 PM
Wordpress Service	Install and configure Wordpress Ser...	Published	10/22/2015, 10:16:33 ...	10/24/2015, 5:59:17 PM



The screenshot shows the 'Getting Started' page in vRealize Automation. It features a navigation bar with 'Getting Started', 'Actions', and 'All Dashboards'. The main heading is 'Welcome to Dashboards!' followed by a paragraph: 'This getting started page steps you through some useful categories of dashboards and pages to help you start off.' Below this are five categories, each with an icon: 'Operations' (bar chart), 'Capacity and Utilization' (pie and bar charts), 'Performance Troubleshooting' (network diagram), 'Workload Balance' (server rack), and 'Configuration and Compliance' (document and gauge).





Dev Machines < --- [Dev Network] --- NSX Edge < --- [NAT Network] --- Isolated VMs

Edit Redistribution Criteria - redist-all ? ×

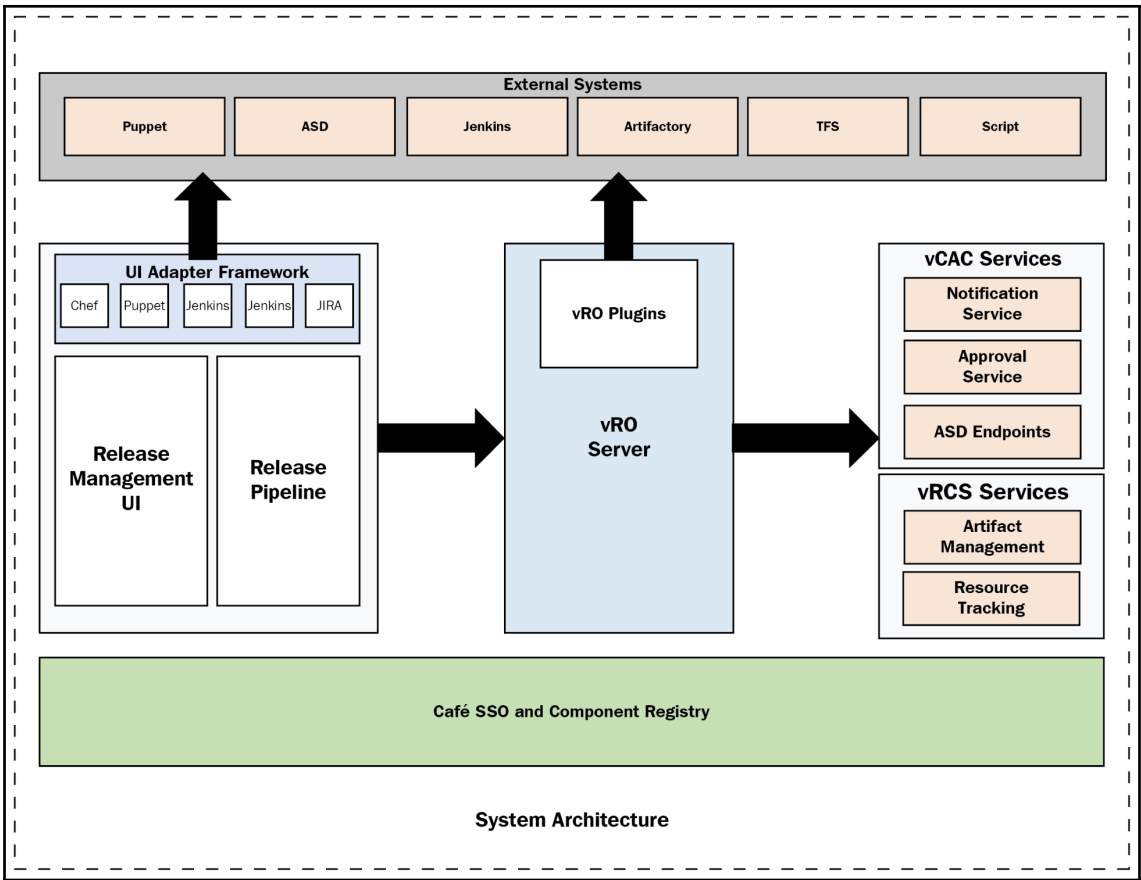
Name* redist-all

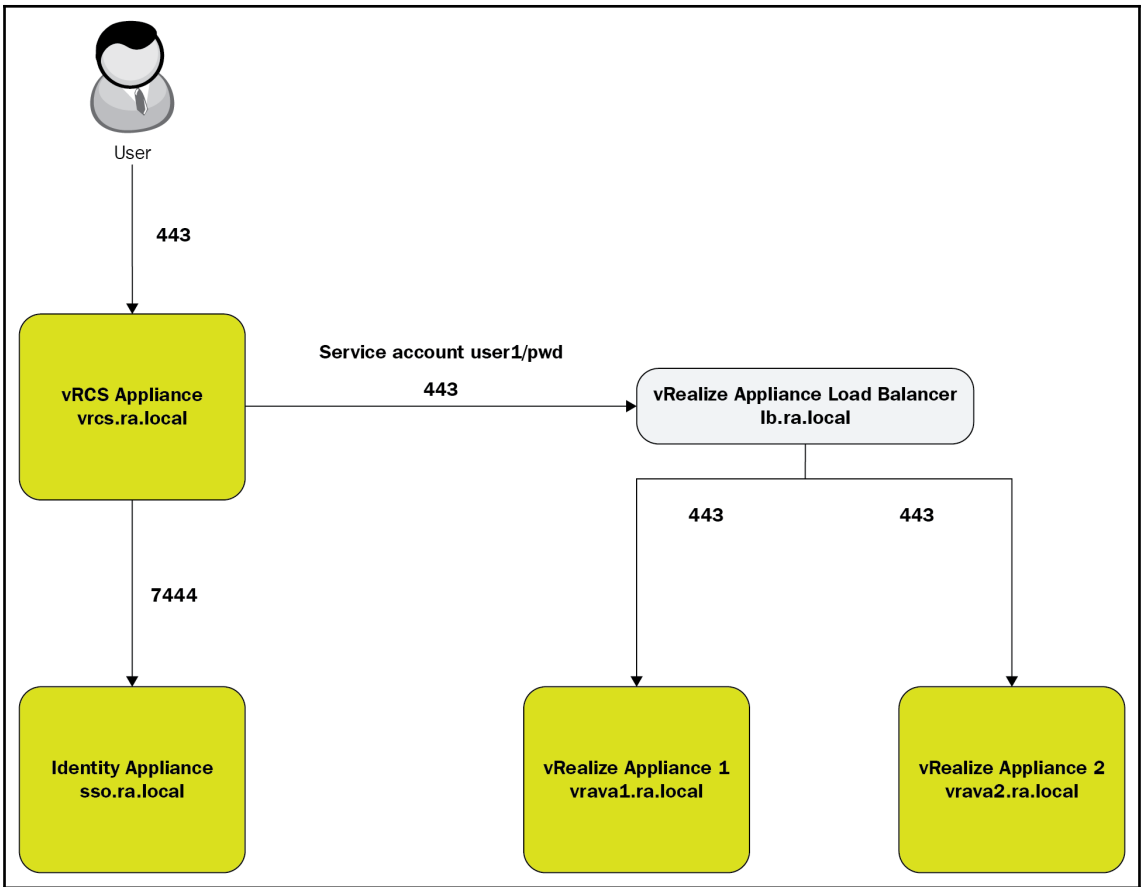
Description

Sources* Static Tier-1 NAT
 NSX Connected Tier-1 LB VIP
 NSX Static Tier-1 LB SNAT
 Tier-0 NAT

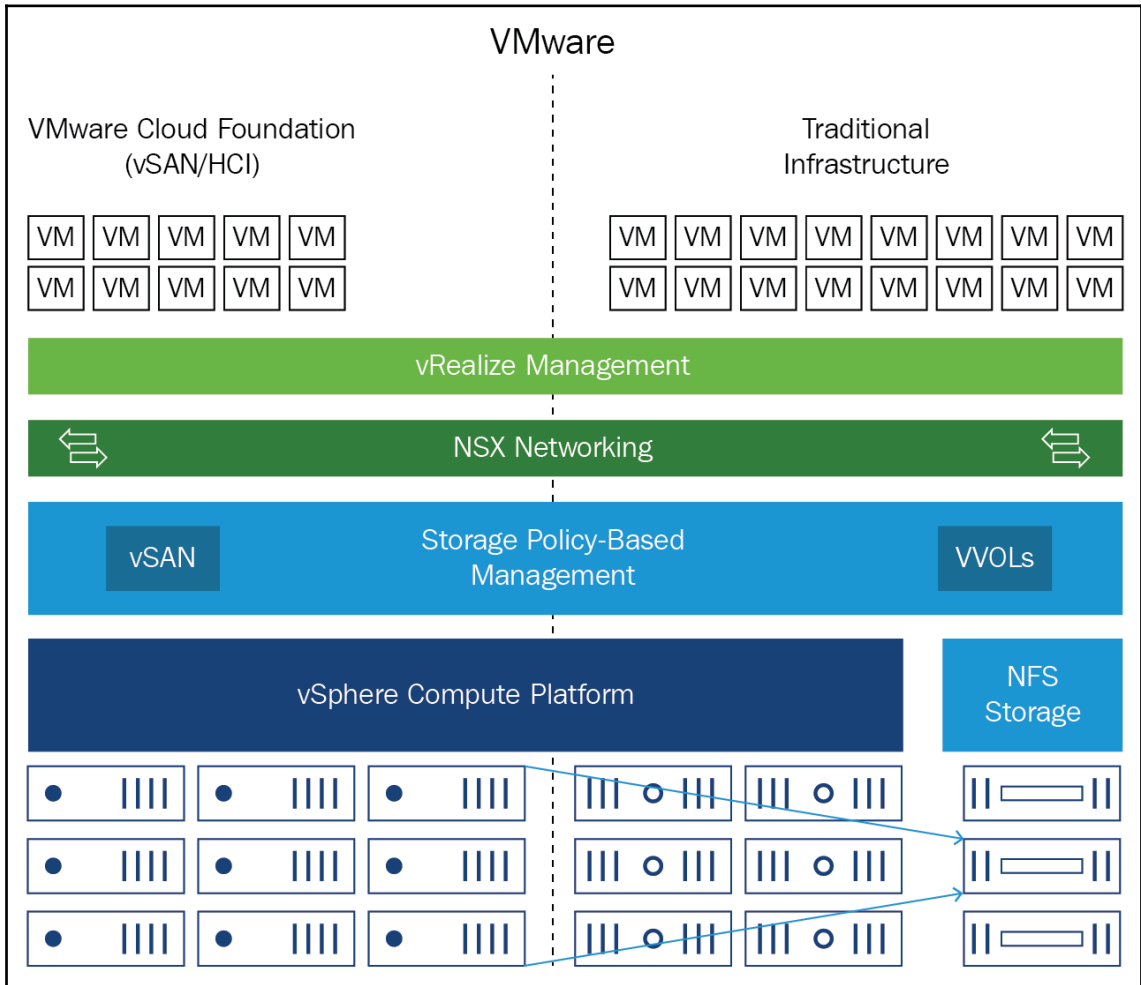
Route Map × ∨

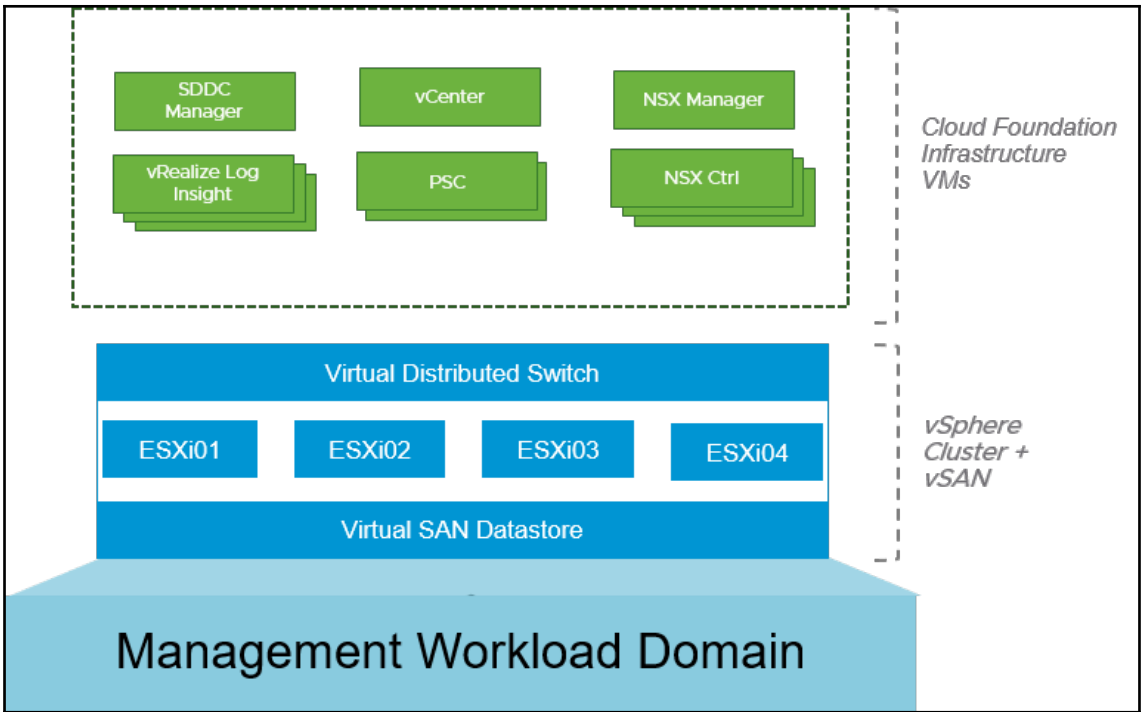
SAVE **CANCEL**





Chapter 10: Transforming VMware IT Operations Using ML





Chapter 11: Network Transformation with IoT

Deploy OVF Template

- 1 Select template
- 2 Select name and location
- 3 Select a resource
- 4 Review details
- 5 Accept license agreements
- 6 Select storage
- 7 Select networks
- 8 Customize template**
- 9 Ready to complete

Customize template
Customize the deployment properties of this software solution.

All properties have valid values [Show next...](#) [Collapse all...](#)

Property	Value / Description
Application	8 settings
EMQTT user name	This is an access control list with in EMQTT daemon and is not an OS user. The user will be created post deployment vmwpulseiot
Password corresponding to the EMQTT user	Password corresponding to the EMQTT user Enter password: [password field] Confirm password: [password field]
Password for generated SSL certificates	Password for generated SSL certificates Enter password: [password field] Confirm password: [password field]
Password for securing the database and the certificates	Password for securing the database and the certificates Enter password: [password field] Confirm password: [password field]
Public FQDN of the EMQTT server	Public FQDN of the EMQTT server demomqtt.vmwpulse.com
Public FQDN of the VMware Pulse API server	Public FQDN of the VMware Pulse API server demoapi.vmwpulse.com
Public FQDN of the VMware Pulse IoT Console server	Public FQDN of the VMware Pulse IoT Console server democonsole.vmwpulse.com
Timezone setting	Sets the selected timezone settings for all the Linux VMs which are part of this vApp. Etc/UTC
Networking Properties	18 settings

Back Next Finish Cancel

▼ Application	8 settings
EMQTT user name	This is an access control list with in EMQTT daemon and is not an OS user. The user will be created post deployment <input type="text"/>
Password corresponding to the EMQTT user	Password corresponding to the EMQTT user Enter password <input type="password"/> Confirm password <input type="password"/>
Password for generated SSL certificates	Password for generated SSL certificates Enter password <input type="password"/> Must be between 8 and 64 characters. Confirm password <input type="password"/>
Password for securing the database and the certificates	Password for securing the database and the certificates Enter password <input type="password"/> Confirm password <input type="password"/>
Public FQDN of the EMQTT server	Public FQDN of the EMQTT server <input type="text"/>
Public FQDN of the VMware Pulse API server	Public FQDN of the VMware Pulse API server <input type="text"/>
Public FQDN of the VMware Pulse IoT Console server	Public FQDN of the VMware Pulse IoT Console server <input type="text"/>
Timezone setting	Sets the selected timezone settings for all the Linux VMs which are part of this vApp. <input type="text" value="Etc/UTC"/> ▼

Settings IOT ▾

System

Devices & Users

- ▶ General
- ▶ Android
- ▶ Apple
- ▶ BlackBerry
- ▶ Symbian
- ▶ QNX
- ▶ Tizen
- ▶ Chrome OS
- ▶ Windows
- ▶ Linux
- ▼ **Advanced**
 - Bulk Management
 - Custom Fields
 - Device Groups
 - Area
 - Tags
 - User Migration
 - User Categories
 - Managed Device Wipe Protection
 - Unmanaged Device Wipe Protection
 - Profile Options
 - IOT Support**

Devices & Users > Advanced >

IOT Support ?

Current Setting Override Inherit Override

Enable IOT Support **Enabled** Disabled

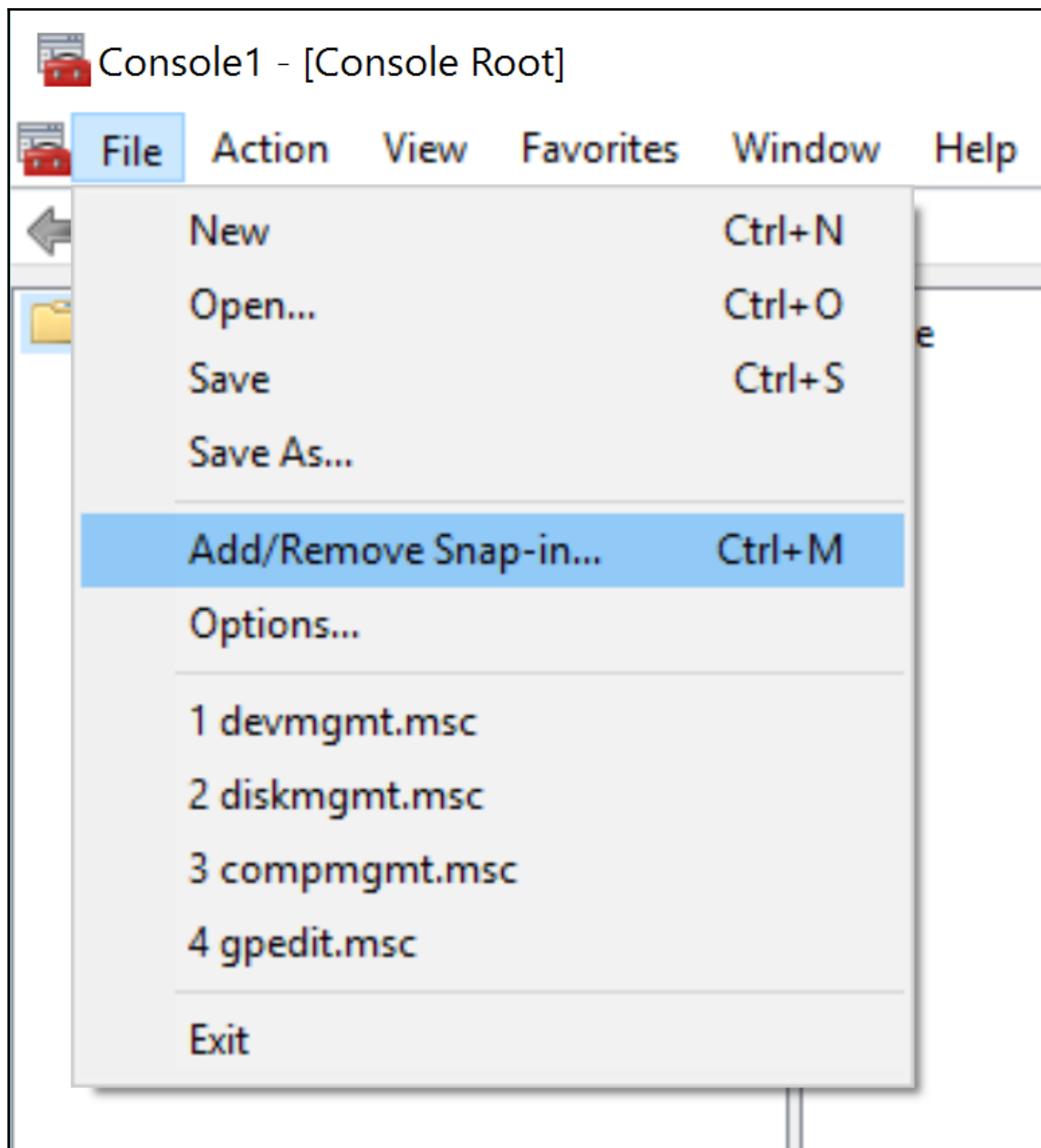
VROPS Integration

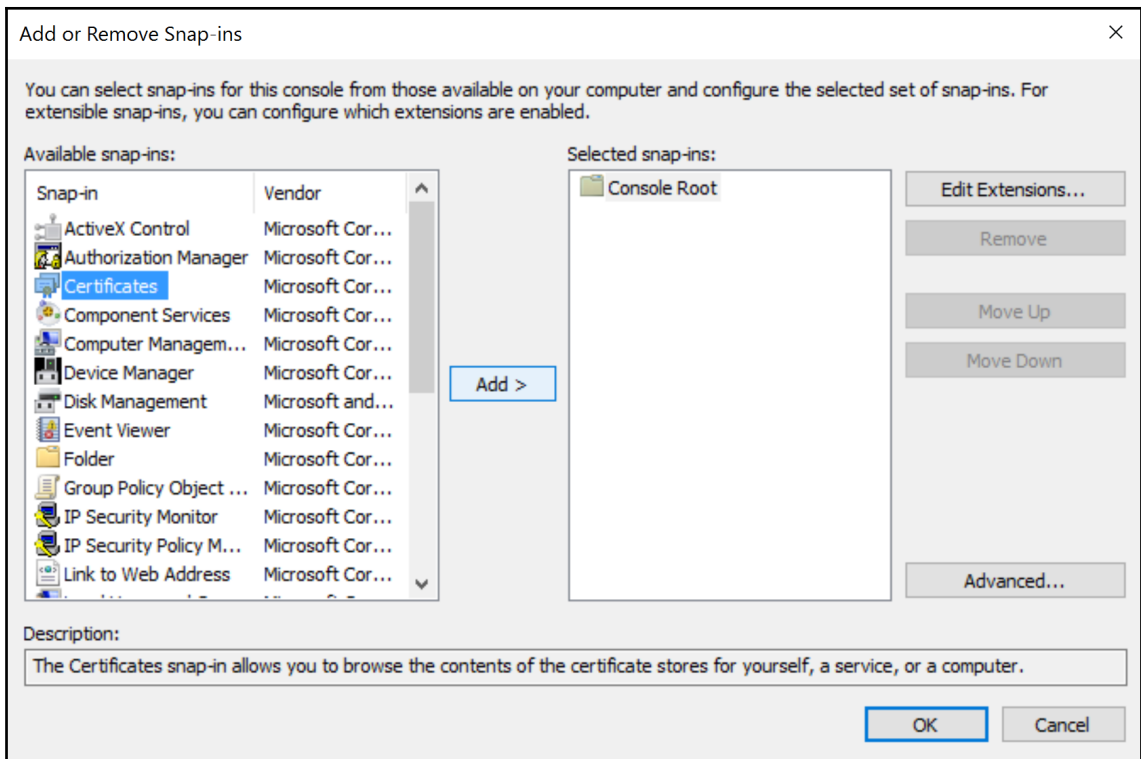
URL * ⓘ

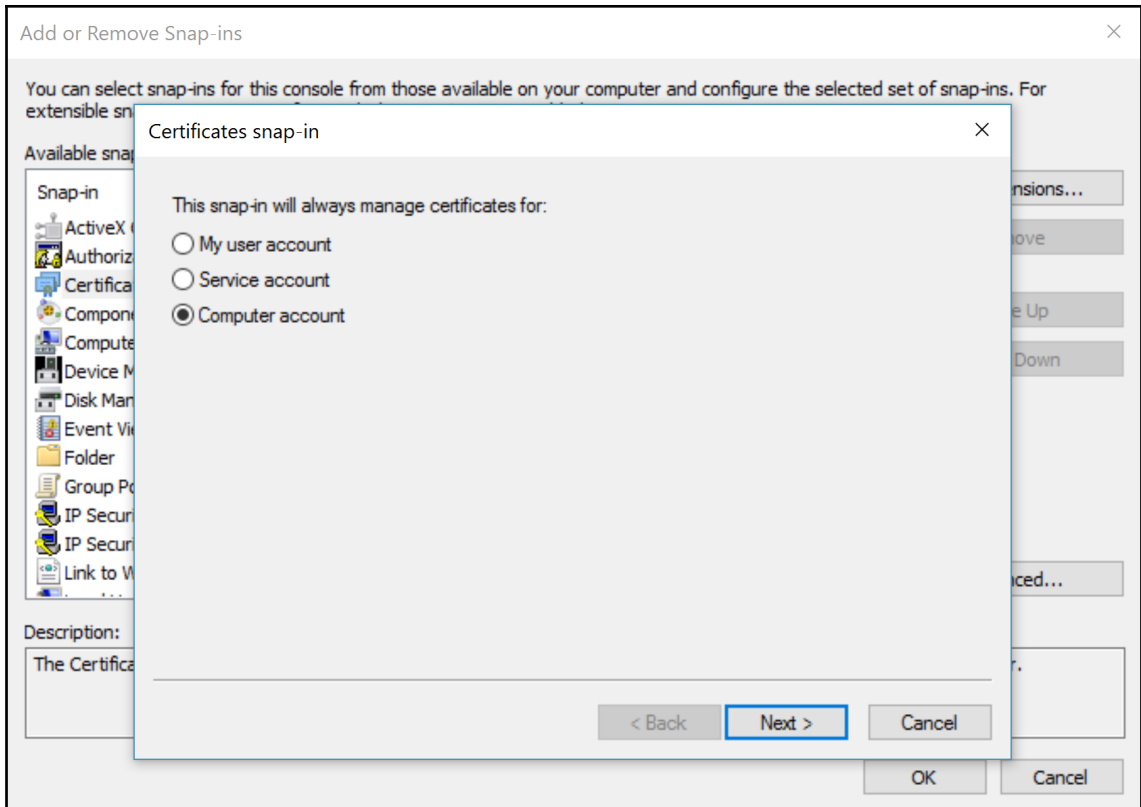
Username * ⓘ

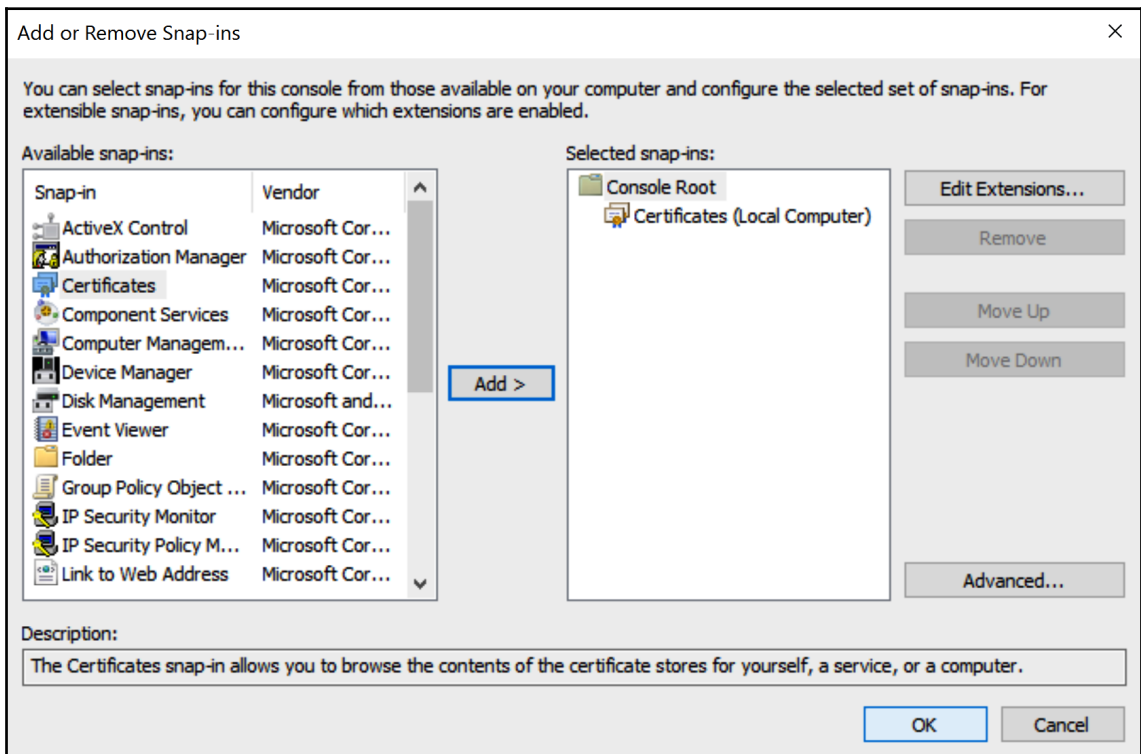
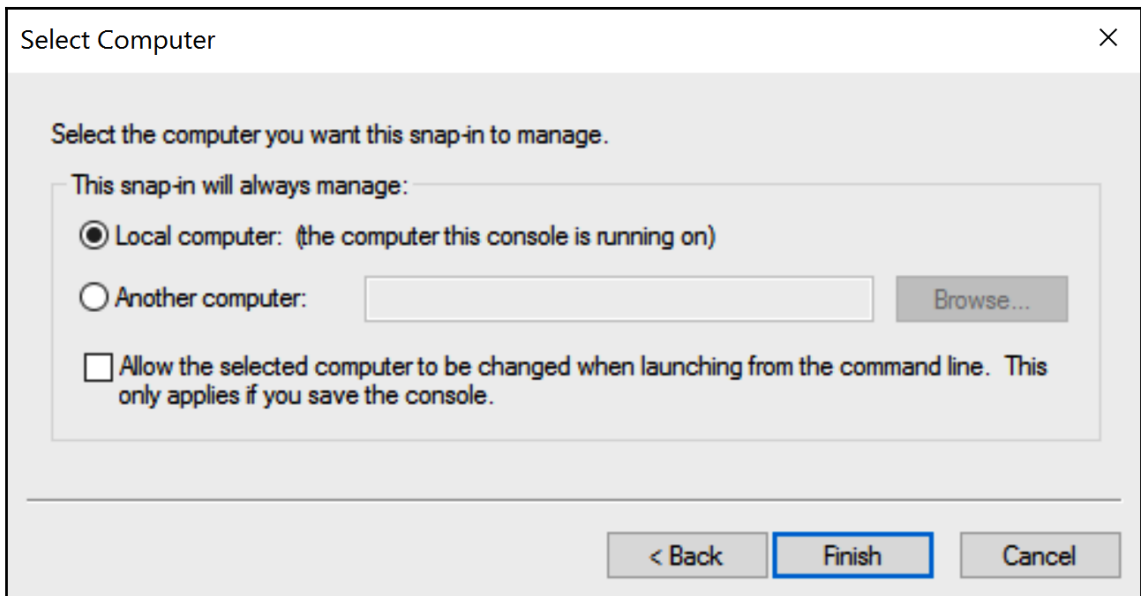
Password * Change ⓘ

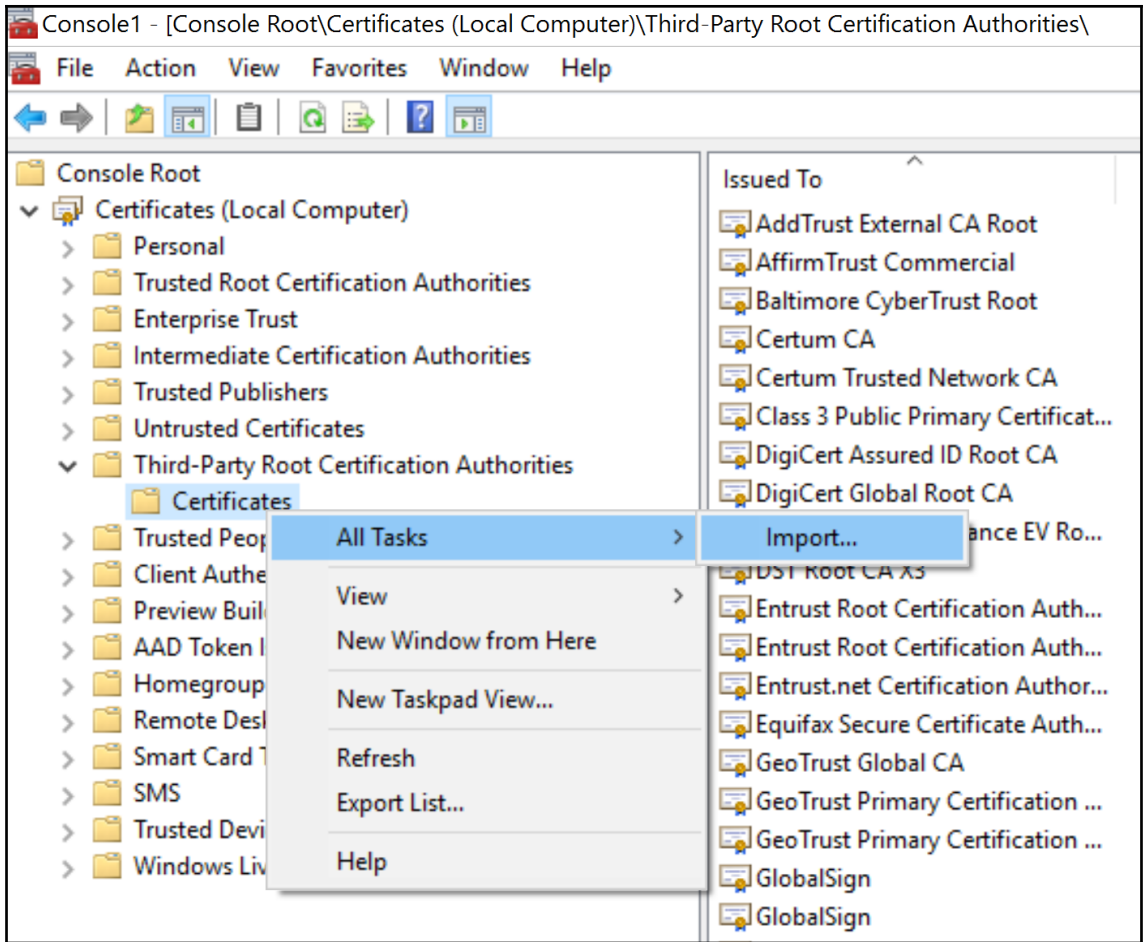
Edge System Naming Pattern * ⓘ











Edit Security Group
▶▶

- ✓ 1 Name and description
- ✓ 2 Define dynamic membership
- ✓ 3 Select objects to include
- ✓ 4 Select objects to exclude
- ✓ 5 Ready to complete

Ready to complete

Name: MQTT Servers

Description:

Scope: Global

Dynamic membership

Members matching (All) of the criteria below

Key	Criteria	Value
VM Name	Starts with	IoT
Security Tag	Starts with	MQTT-productive

Objects to Include

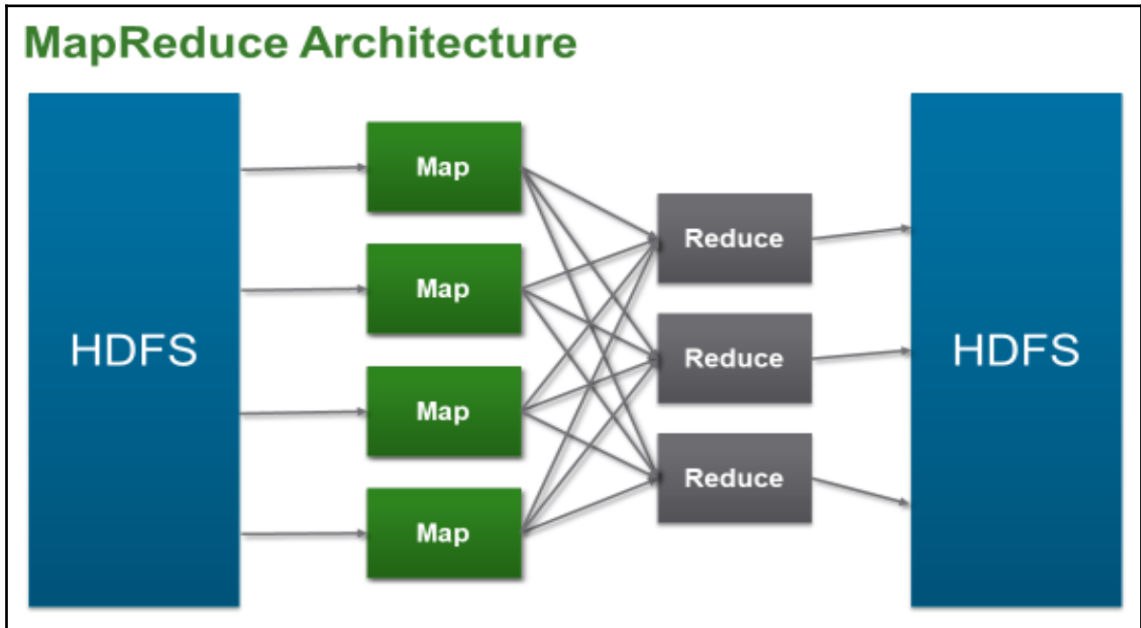
Name
MQTT Test Servers

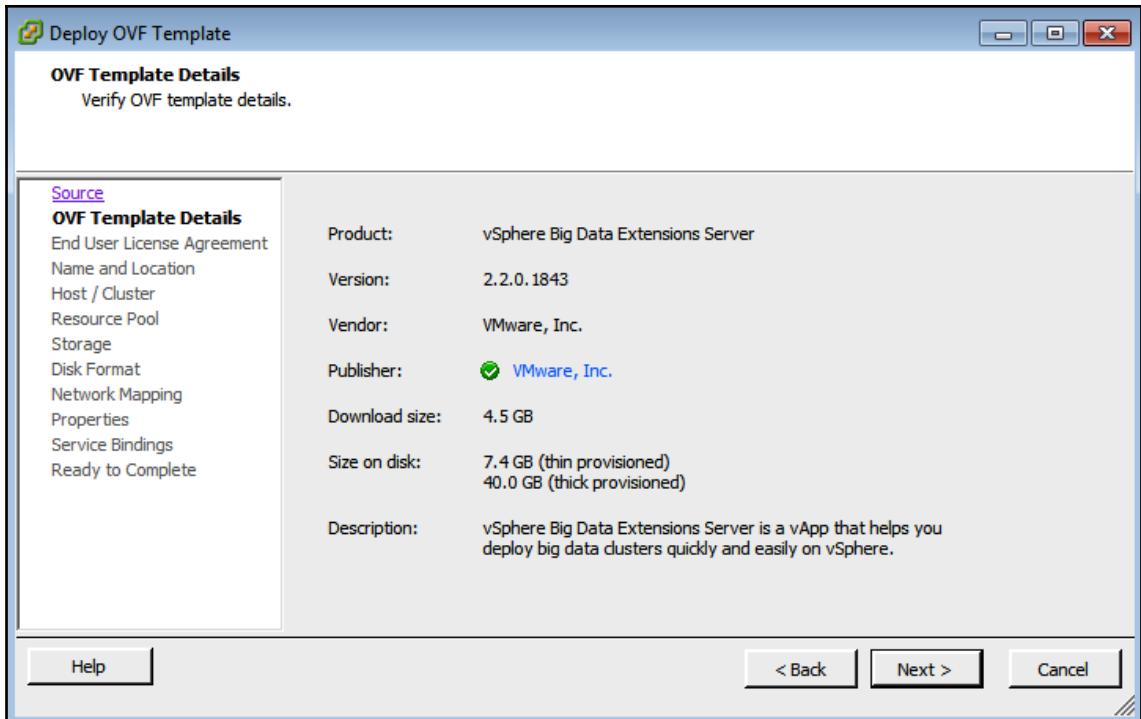
Objects to Exclude

Name
manage

Back
Next
Finish
Cancel

Chapter 12: Virtualizing Big Data on vSphere





← → ↻ https://10.103.1.75:8443/register-plugin/register.jsp?result=register_succeeded

vmware® Big Data Extensions

Install Uninstall

Registration Information

vCenter Server host name or IP address:

User Name:

Password:

Big Data Extensions Package URL:

← → ↻ <https://wchvplvca02.qvcdev.qvc.net:9443/vsphere-client/#extensionId=vsphere.bigData.home.summary>


vmware® vSphere Web Client


Updated at 12:54 PM


Home | Big Data Extensions

Getting Started | **Summary** | Manage

Big Data Extensions

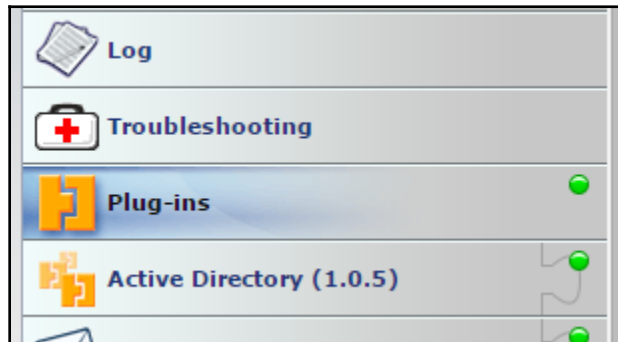
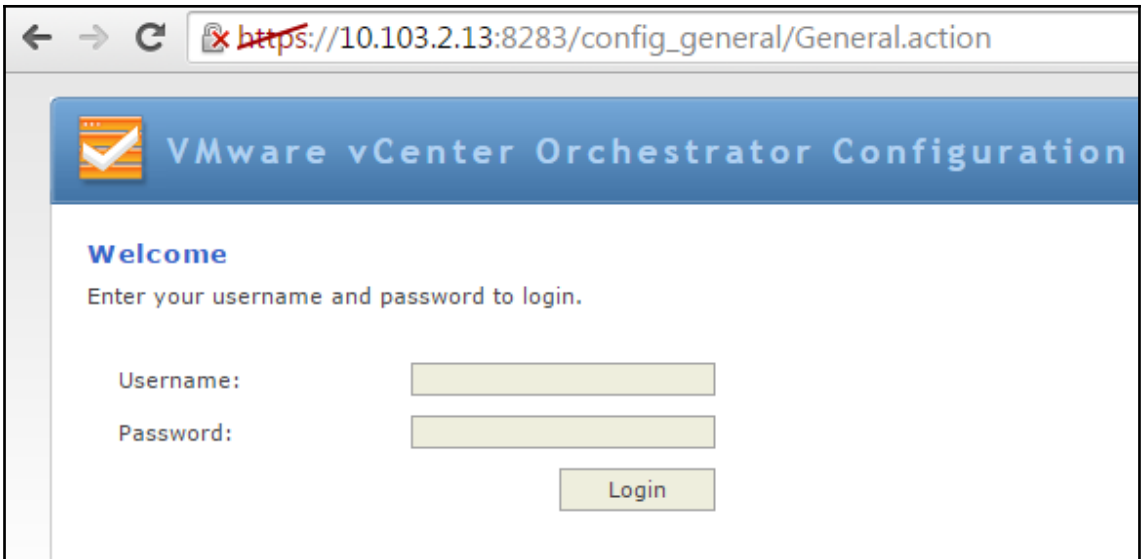


 Big Data Clusters: 0

 Application Managers: 0

Connected Server	
vCenter Server	Serengeti Server
Connect Server...	

Version Information	
Version	2.2.0
Build	1843



<input checked="" type="checkbox"/>	SSH 2.0.0.1840932	Installation
<input checked="" type="checkbox"/>	vCenter Server 5.5.2.1875635	Installation
Install new plug-in		
Plug-in file:	<input type="text"/>	<input type="button" value="Upload and install"/>
Reload all plug-ins		
<input type="button" value="Reload all plug-ins"/>		

Home

Settings

Search



Manage



Startup Options



Configure Authentication Provider



Advanced Options



Licensing



Certificates



Export/Import Configuration

Monitor and Control



Inspect Running Workflows



Runtime Metrics



JMX Console



Troubleshooting



File System Browser



System Properties



System Info

Database



Configure Database



Purge Database



Export Database



Import Database

Log



Export Logs



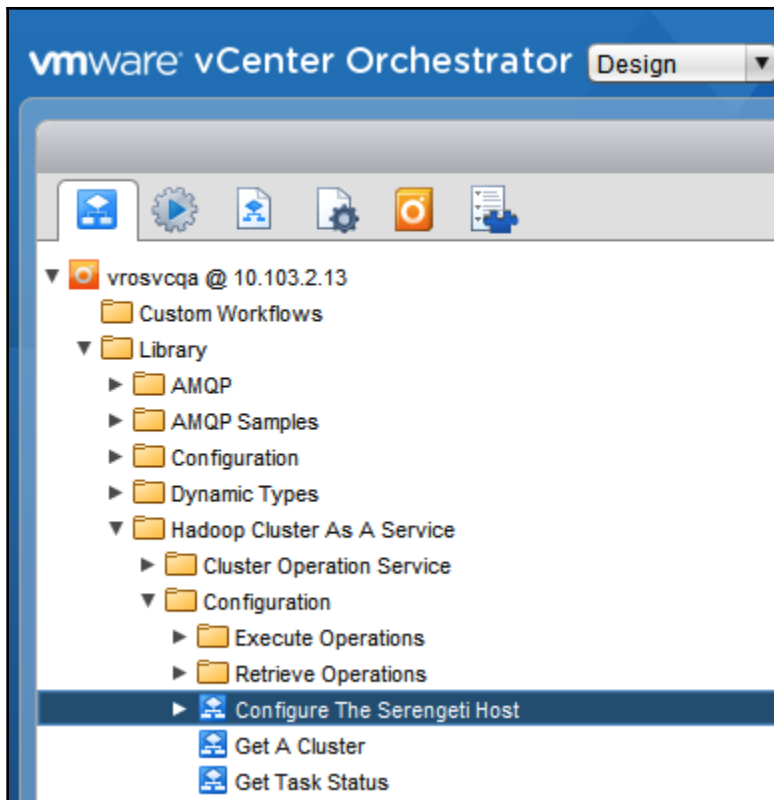
Live Log



Configure Logs



Syslog



Start Workflow : Configure The Serengeti Host

Common parameters

Connection url for a Serengeti host

vCenter Server username

vCenter Server password

Cancel Submit

Workflow interaction form - Configure The Serengeti Host : Accept SSL certificates

1 Certificate Warnings

- ✓ 1a Certificate Info
- ✓ 1b Wrong Site
- ✓ **2 Options**

Security Warning

An untrusted certificate is installed on the server and secure communication cannot be guaranteed. Depending on your security policy, this issue might not represent a security concern. You may need to install a trusted SSL certificate on your server to prevent this warning from appearing.

Common Name (6 characters min) : serengeti
 Organization : VMware Inc.
 Organizational Unit : Serengeti

Cancel Back Next Submit

Workflow interaction form - Configure The Serengeti Host : Accept SSL certificates

1 Certificate Warnings

- ✓ 1a Certificate Info
- ✓ **1b Wrong Site**
- ✓ **2 Options**

This server attempts to identify itself with invalid information, the certificate belongs to a different site, which could indicate an identity theft.

Server's name

Certificate issued to

Cancel Back Next Submit

< Back to Administration

Event Logs

Subscriptions

Add Workflow Subscription

Event Topic Conditions Workflow Details

Specify whether the workflow should be run for all events or based on conditions.

- Run for all events
- Run based on conditions

All of the following

Data > Lifecycle sta... Equals MachineActivated

Data > Machine > ... Operator...

- All of the following
- Any of the following
- Not the following

- Data
 - Blueprint id
 - Endpoint id
 - Lifecycle state
 - Machine
 - Component
 - Machine external reference
 - Machine id
 - Machine name
 - Machine type

Chapter 14: High-Performance Computing for Machine Learning

