VMware

vCloud Air Testing Process for the VMware Ready Program

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vmware

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Preface

This document outlines the steps required to test a specific application, as a step towards achieving VMware Ready status for that product. Its assumed that a VMware partner will be leading this testing, and that they are already a member of TAP, the Technical Alliance Program at VMware. General program guidelines for TAP and VMware are largely on-line, and outside of the scope of this document.

VMware Ready status helps identify products that have been specifically tested for use on VMware platforms, and as such provide added confidence to customers who are considering adopting those applications. However, the scope of such testing is limited by practical considerations, and the logo is no guarantee of functionality or performance, and it is recommended that vendors of VMware Ready applications perform rigorous performance and QA testing on VMware platforms, as they would before releasing their product on other platforms.

Summary

The following testing process focuses on how to get an application into a vCloud Air environment, how to make it externally accessible in that vCloud Air environment, and how to do load testing against the application in that environment. As such, it is assumed that the vendor performing is using a product that is generally available today, supported on vSphere deployments. It is also assumed that the vendor has basic hands-on skills with both vSphere and the vCloud Suite. Having engineers that are certified on these products is recommended.

This testing will include a simple load testing step, to ensure that the sizing and configuration of the application is reasonable for use in a vCloud Air configuration. We therefore assume the tester will have access to a load driver that drives load that is similar to what a real user might do with the product. In some cases this load driver could be a simple script or command line that initiates a batch operation, but more likely it will be based on a tool that allows simulation of on-line users, such as HP LoadRunner or the open source tool JMeter. Construction of new load tests is a labor intensive effort, and is outside of the scope of this testing, but it is assumed that vendors would already have a load driver to ensure they understand the performance of their products before they release them.

A vCloud Air environment will be provided to the tester for a short period (known as the on-line testing phase), during which the testing outlined below will be completed. Getting access to a vCloud Air environment for a longer period may be useful for a vendor interested in this program, but that is outside of the scope of this testing process – the below testing will take place within a 2 or 3 hour period on a loaner vCloud Air configuration that will be provided. At the completion of this testing cycle, it will be determined if the testing was a success or not, and if not, specific recommendations will be made to the partner on what to improve before the next testing attempt. After 3 such testing cycles, if the product is still not passing the tests, then testing will be assumed complete and the application will not have achieved the VMware Ready logo.

The general process of certification is a follows:

1. Partner creates appropriate vApp of the application to be tested, and provides it to the certification team (existing vApps may also be used)
2. Certification team and partner meet on via on-line collaboration tools (e.g. webex) to perform on-line testing phase.
3. Certification team and partner collaborate to deploy and license application from the vCloud Air service catalog, and then make it externally accessible by setting up appropriate networking and firewall configuration.
4. Partner drives load against deployed application and certification team gathers metrics to understand the capacity and performance of the vApp.
5. Certification team determines if the certification was successful and notifies partner.

Prerequisites

The minimum prerequisites for this testing are as follows: 1) a stable product that is in general availability and that is current supported to be run on vSphere, 2) a load driver or batch load that can drive the product to a reasonable CPU utilization, and that simulates a typical use of the product in production use, 3) TAP membership for the partner submitting the application for VMware Ready status for the application. It is also highly recommended that the vendor of the application have staff that has appropriate VMware certifications, such as VMware Certified Professional status. The tester will need to create a vApp or Virtual Appliance for the application under test (note: we use the terms vApp and Virtual Appliance interchangeably in this document, but generally a Virtual Appliance is one VM, which a vApp contains multiple VMs). Once the certification team has access to this virtual appliance, the on-line portion of the certification testing can take place.

vApp Creation, Upload and Deployment

The following sections provide guidance on how to create your vApp, how to upload it into a vCloud Air environment, and how to deploy it and configure it in that environment. It is the testers' responsibility to build such a vApp before the on-line certification process begins, as per the directions below. If the tester already has such a vApp, they may simply provide that for the on-line testing, but they should ensure that the below checklist is adhered to for that vApp. A vApp template uploaded to vCloud Air's service catalog is a definition of the applications virtual machine requirements, a snapshot of the default vanilla state of the application upon deployment and additional installers or configuration files to help the application run post deployment procedures in cloud.

vCloud Air uses OVF/OVA as its primary standard for upload of vApp templates in the service catalog. Below are some of the key points/checklist to remember while building a vApp/Virtual machine

template. There are multiple ways to create a vApp template, however creating templates using vCenter server is suggested.

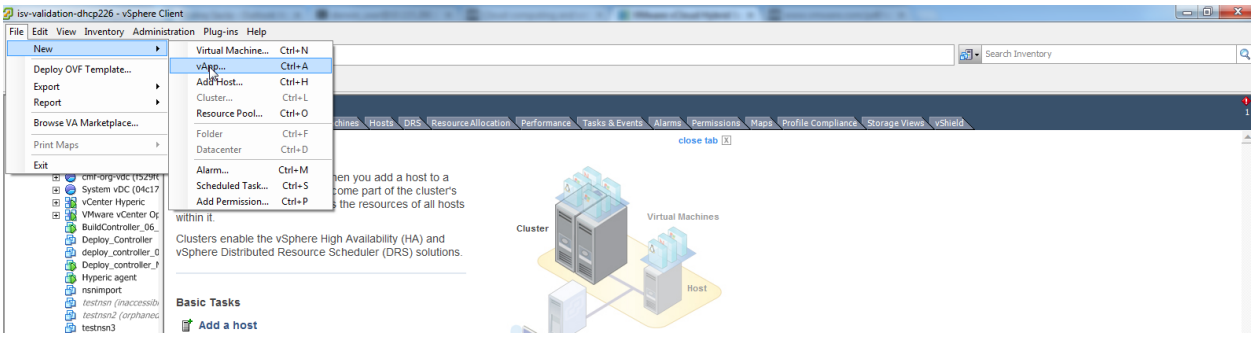
Checklist for building virtual machine templates:

1. The template must be in OVF/OVA format and should not have any residue IP/MAC addresses or static configuration attached to it. Using 'convert to template' feature in vCenter server ensures the static configuration content is overwritten
2. Create a virtual machine with default reservation, shares and limits
3. Use hardware version 7, 8 or 9 while building the virtual machine template. If using vCenter server 5.x and above the virtual machine template is automatically set to the highest hardware version available
4. Install latest VMware tools
5. Check if the Virtual Appliance's operating System is listed in the supported OS list, the current list is here, http://pubs.vmware.com/guestnotes/

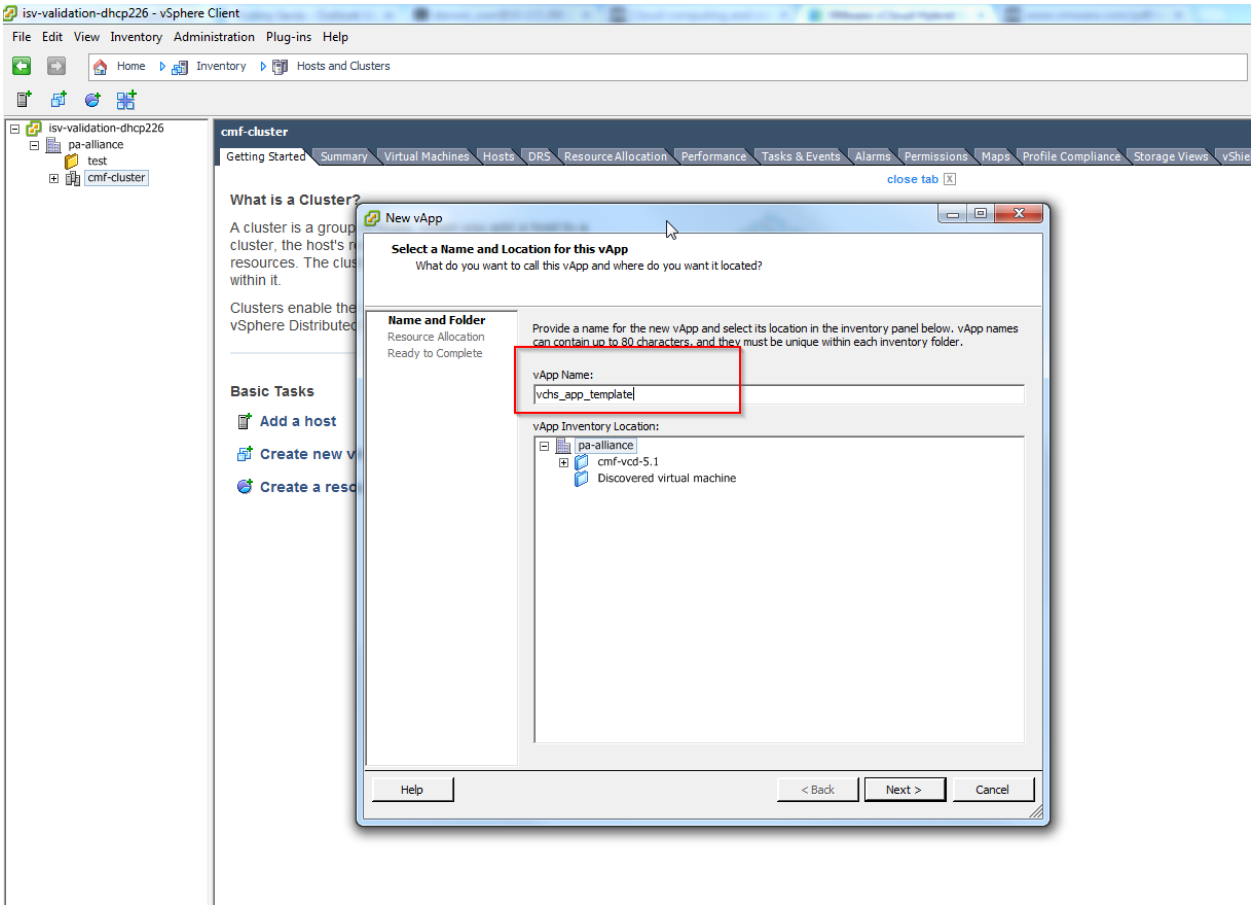
Creating Virtual machine template using vCenter server

Using vCenter server to creation your vApp or Virtual machine is the recommended approach, as it doesn't require larger install steps such as vCloud Director. However, existing vApps created through other mechanisms (e.g. VMware Studio or vCloud Director) may also be acceptable, if they fit the specified criteria.

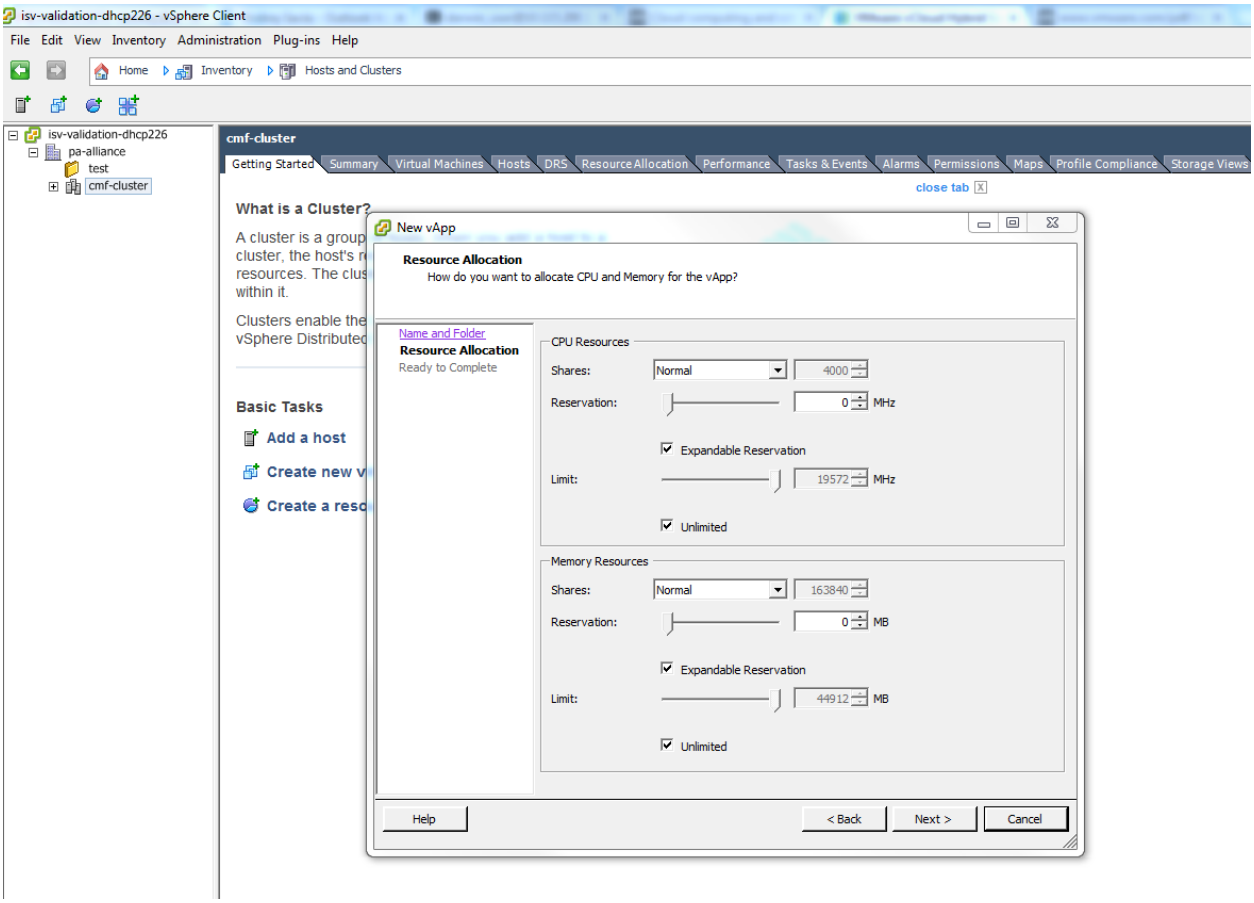
1. Log in to vCenter Server, version 5.x , select a cluster/datacenter, Click File->New->vApp



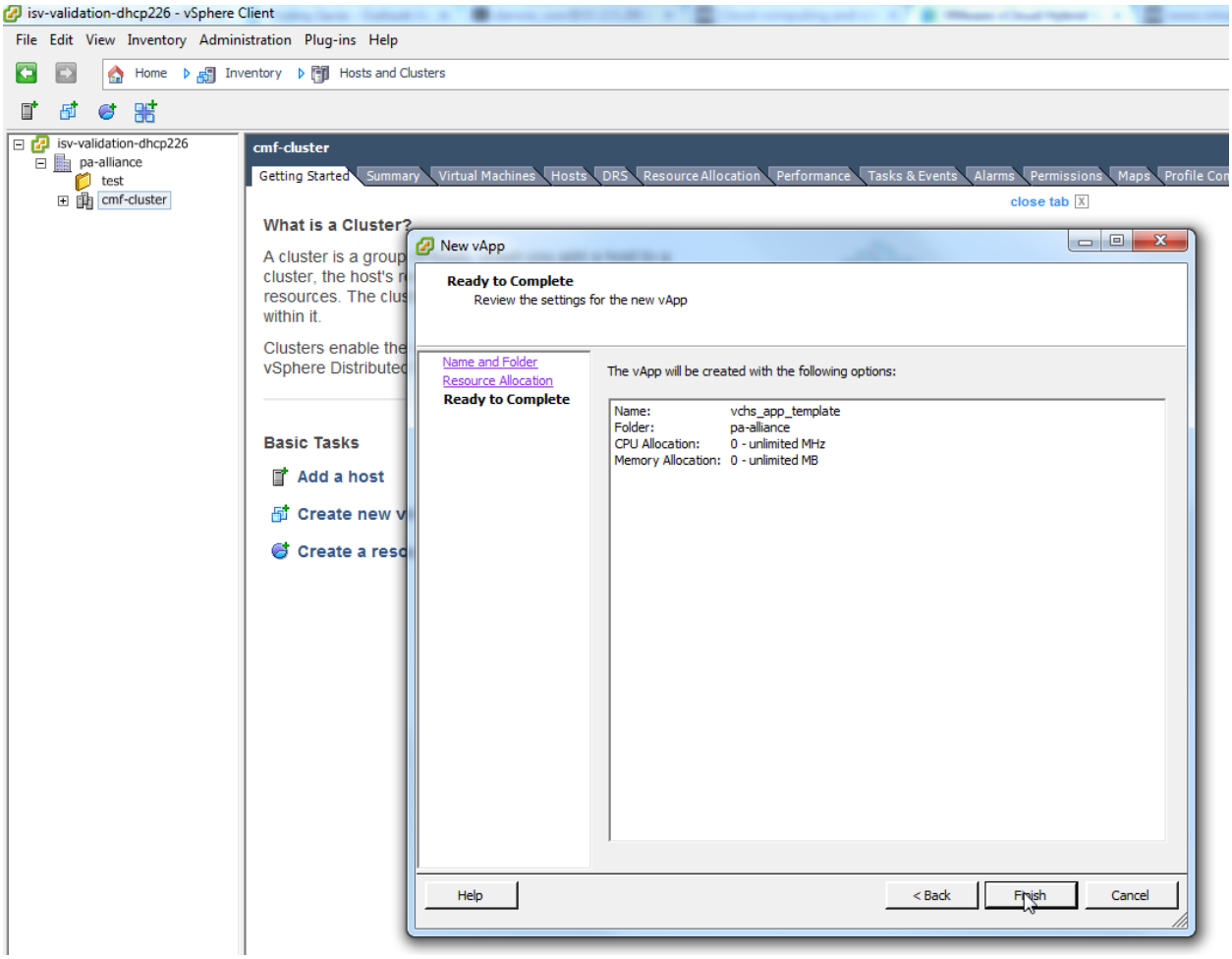
2. Give it a recognizable name, this will be the name that will be used in vCloud Air service catalog, please name it appropriately.



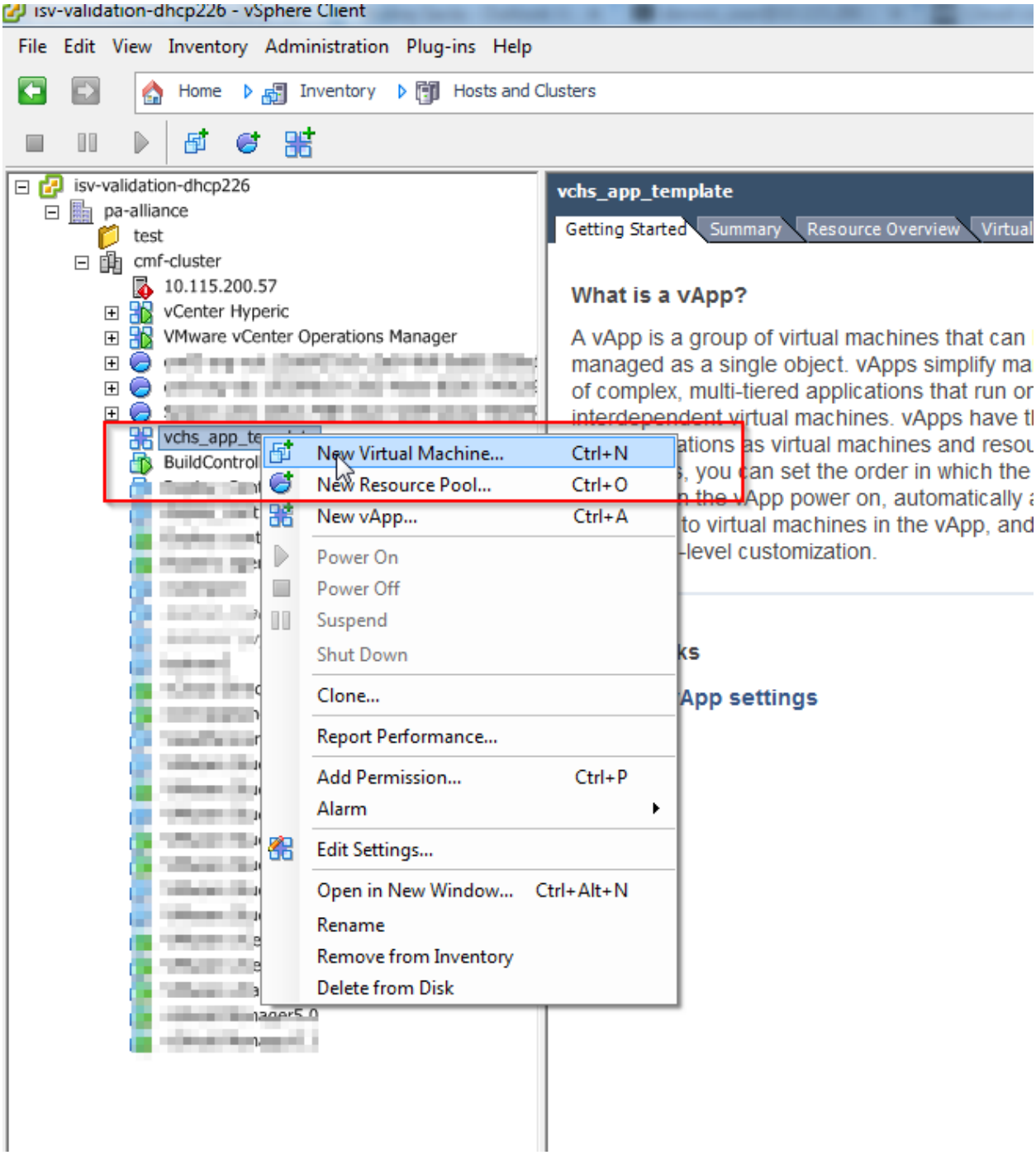
3. On the resource Allocation tab, leave the resources to Normal shares with no reservation or Limits applied. These sections are overwritten during vApp upload on vCloud Air


isv-validation-dhcp226 - vSphere Client
File Edit View Inventory Administration Plug-ins Help
Home Inventory Hosts and Clusters
isv-validation-dhcp226
pa-alliance
test
cmf-cluster
cmf-cluster
Getting Started Summary Virtual Machines Hosts DRS Resource Allocation Performance Tasks & Events Alarms Permissions Maps Profile Compliance Storage Views
close tab
What is a Cluster?
Basic Tasks
Add a host
New vApp
Resource Allocation
How do you want to allocate CPU and Memory for the vApp?
Name and Folder
Resource Allocation
Ready to Complete
CPU Resources
Shares: Normal 4000
Reservation: 0 MHz
Expandable Reservation
Limit: 19572 MHz
Unlimited
Memory Resources
Shares: Normal 163840
Reservation: 0 MB
Expandable Reservation
Limit: 44912 MB
Unlimited
Help
< Back
Next >
Cancel

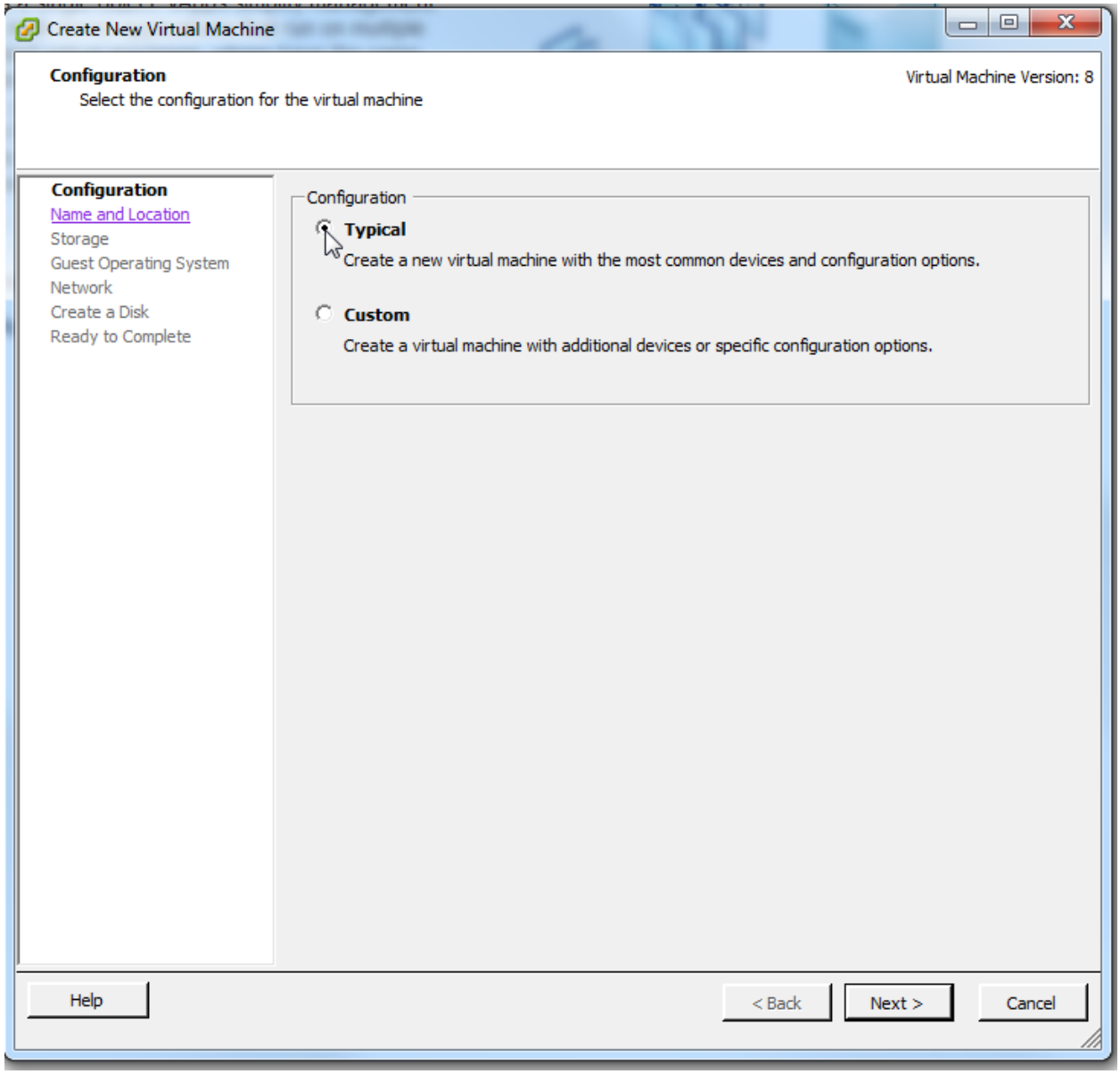
4. Confirm selections and Click Finish



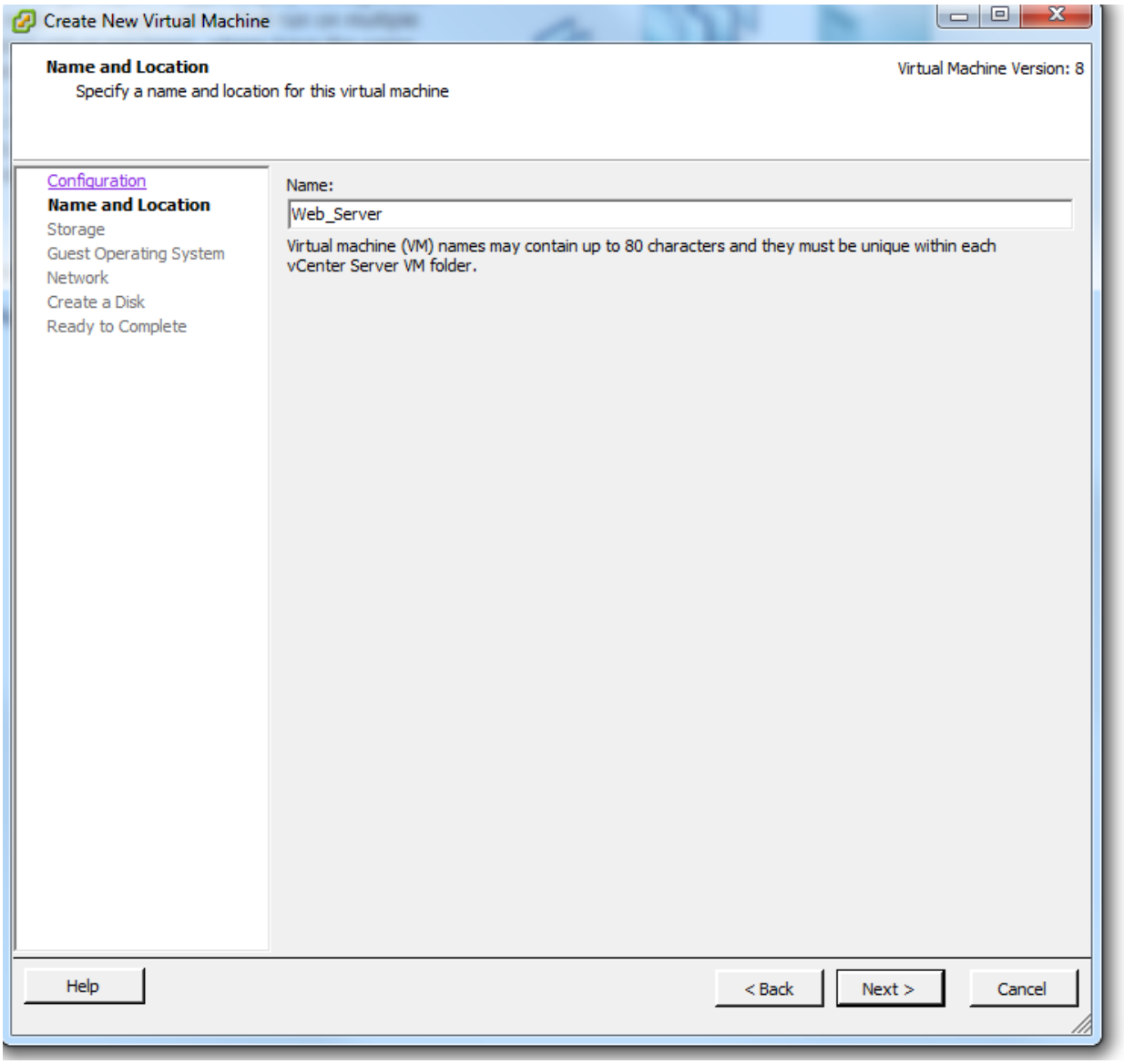
5. Right click the newly created vApp from the inventory list, click add a virtual machine

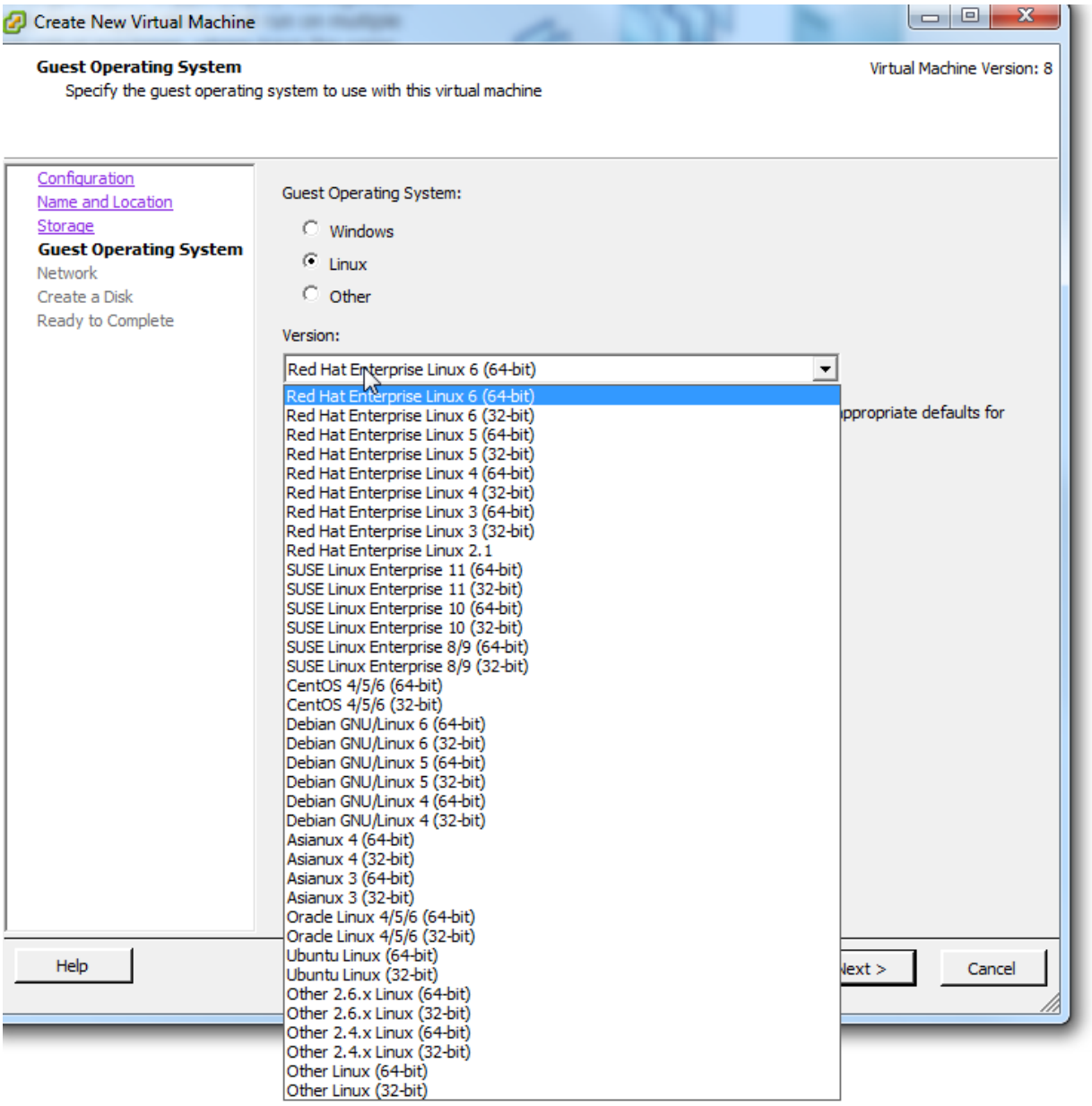


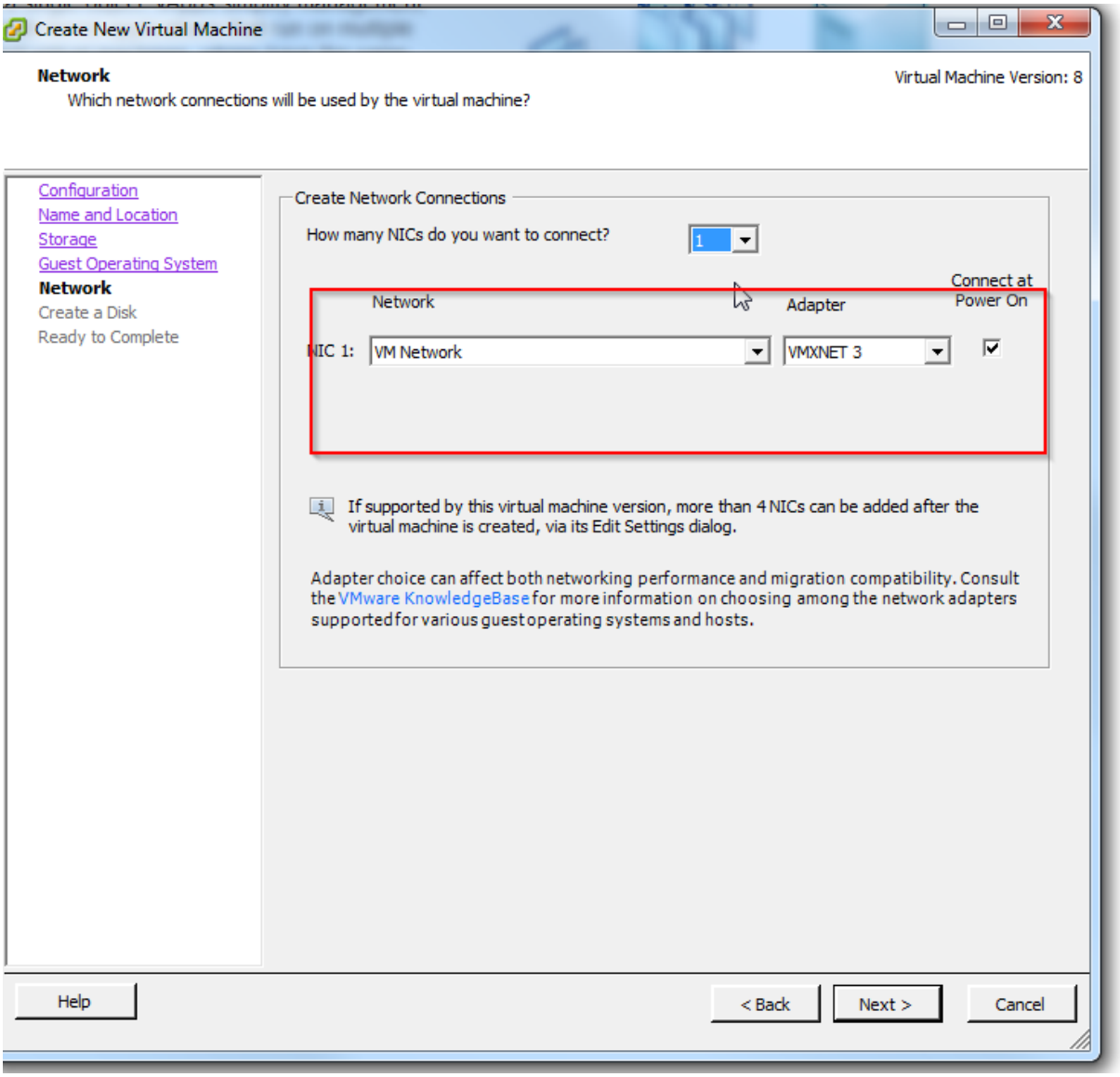
6. Create new Virtual Machine window pops up, select, ‘Typical’ radio button for configuration

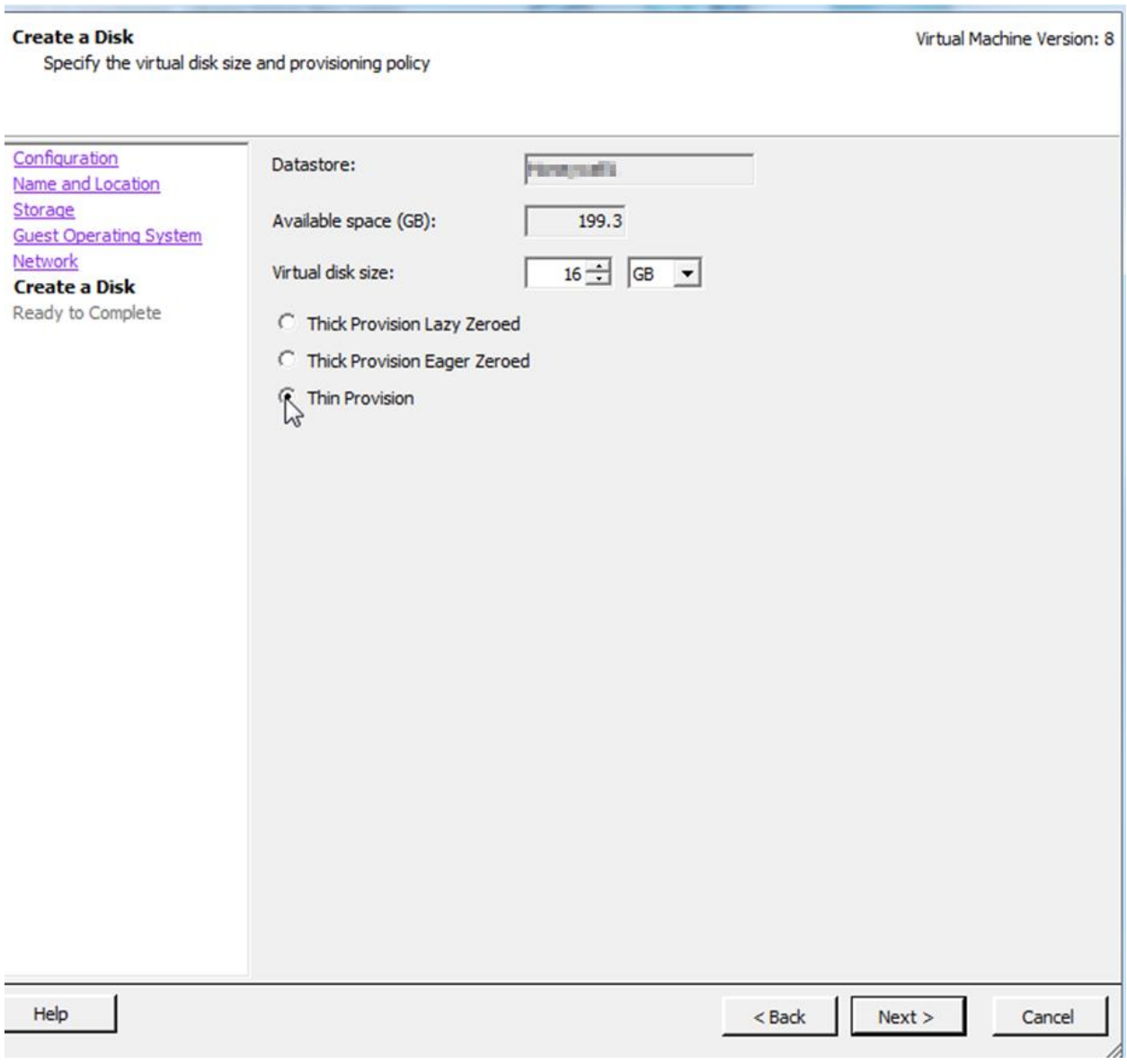


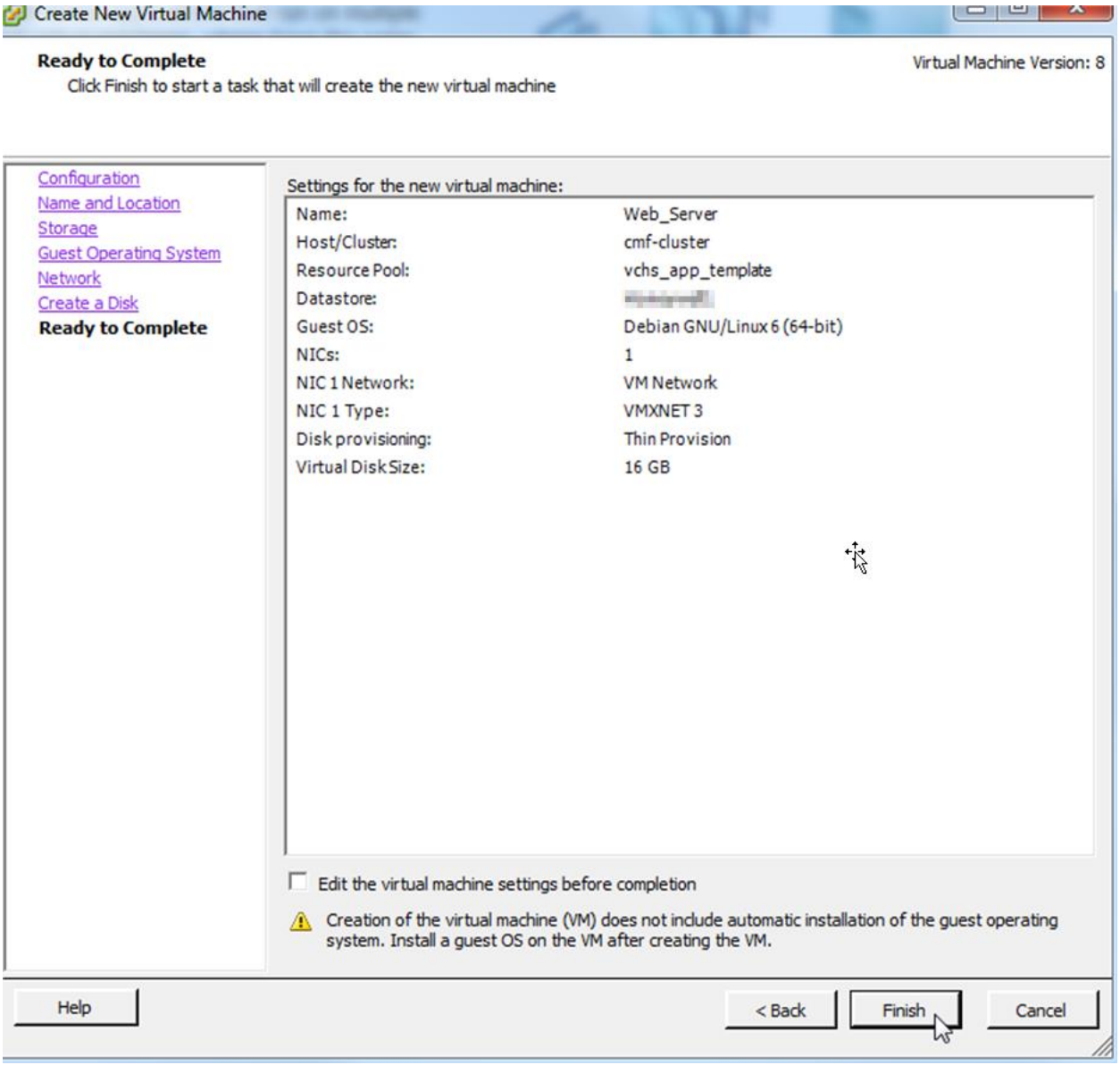
7. Give the Virtual machine Name, the name of the virtual machine should be meaning full, since the virtual machines created using this template will also follow the naming convention mentioned here. Add Storage information, The OS, Network and click complete, if ready. While selecting Network, Please use ‘VMXNET3’. Add disk information according to your vApp requirements.

8. 
Create New Virtual Machine
Name and Location
Specify a name and location for this virtual machine
Virtual Machine Version: 8
Configuration
Name and Location
Storage
Guest Operating System
Network
Create a Disk
Ready to Complete
Name:
Web_Server
Virtual machine (VM) names may contain up to 80 characters and they must be unique within each vCenter Server VM folder.
Help
< Back
Next >
Cancel

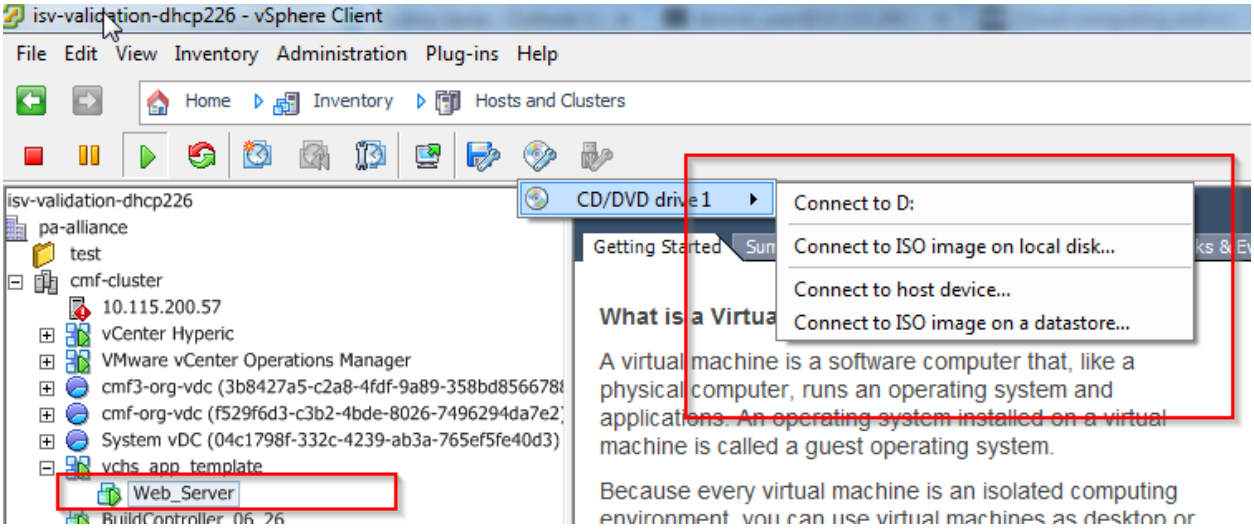

Create New Virtual Machine
Guest Operating System
Specify the guest operating system to use with this virtual machine
Virtual Machine Version: 8
Configuration
Name and Location
Storage
Guest Operating System
Network
Create a Disk
Ready to Complete
Guest Operating System:
Windows
Linux
Other
Version:
Red Hat Enterprise Linux 6 (64-bit)
Red Hat Enterprise Linux 6 (64-bit)
Red Hat Enterprise Linux 6 (32-bit)
Red Hat Enterprise Linux 5 (64-bit)
Red Hat Enterprise Linux 5 (32-bit)
Red Hat Enterprise Linux 4 (64-bit)
Red Hat Enterprise Linux 4 (32-bit)
Red Hat Enterprise Linux 3 (64-bit)
Red Hat Enterprise Linux 3 (32-bit)
Red Hat Enterprise Linux 2.1
SUSE Linux Enterprise 11 (64-bit)
SUSE Linux Enterprise 11 (32-bit)
SUSE Linux Enterprise 10 (64-bit)
SUSE Linux Enterprise 10 (32-bit)
SUSE Linux Enterprise 8/9 (64-bit)
SUSE Linux Enterprise 8/9 (32-bit)
CentOS 4/5/6 (64-bit)
CentOS 4/5/6 (32-bit)
Debian GNU/Linux 6 (64-bit)
Debian GNU/Linux 6 (32-bit)
Debian GNU/Linux 5 (64-bit)
Debian GNU/Linux 5 (32-bit)
Debian GNU/Linux 4 (64-bit)
Debian GNU/Linux 4 (32-bit)
Asianux 4 (64-bit)
Asianux 4 (32-bit)
Asianux 3 (64-bit)
Asianux 3 (32-bit)
Oracle Linux 4/5/6 (64-bit)
Oracle Linux 4/5/6 (32-bit)
Ubuntu Linux (64-bit)
Ubuntu Linux (32-bit)
Other 2.6.x Linux (64-bit)
Other 2.6.x Linux (32-bit)
Other 2.4.x Linux (64-bit)
Other 2.4.x Linux (32-bit)
Other Linux (64-bit)
Other Linux (32-bit)
ppropriate defaults for
Help
Next >
Cancel

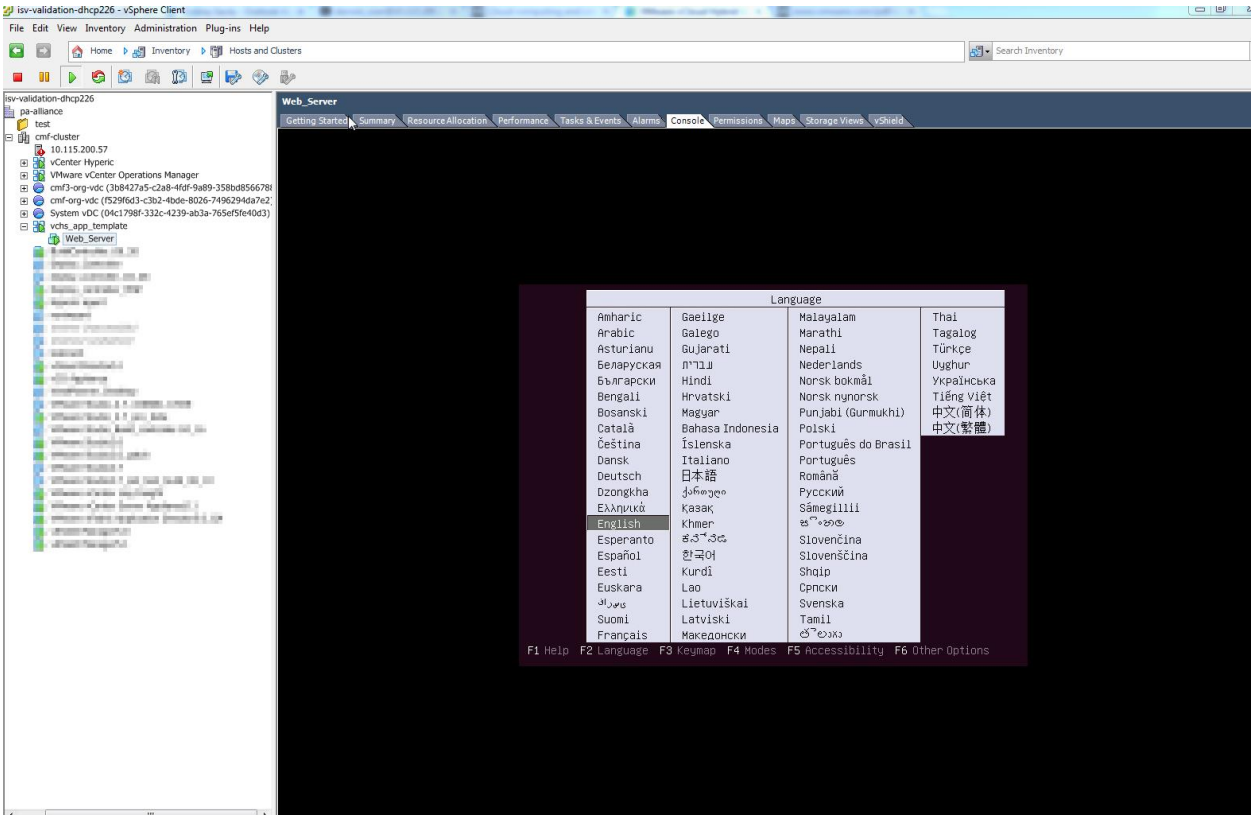

Create New Virtual Machine
Network
Which network connections will be used by the virtual machine?
Virtual Machine Version: 8
Configuration
Name and Location
Storage
Guest Operating System
Network
Create a Disk
Ready to Complete
Create Network Connections
How many NICs do you want to connect?
1
Network
Adapter
Connect at Power On
NIC 1:
VM Network
VMXNET 3
If supported by this virtual machine version, more than 4 NICs can be added after the virtual machine is created, via its Edit Settings dialog.
Adapter choice can affect both networking performance and migration compatibility. Consult the VMware KnowledgeBase for more information on choosing among the network adapters supported for various guest operating systems and hosts.
Help
< Back
Next >
Cancel


Create a Disk
Specify the virtual disk size and provisioning policy
Virtual Machine Version: 8
Configuration
Name and Location
Storage
Guest Operating System
Network
Create a Disk
Ready to Complete
Datastore:
Available space (GB):
199.3
Virtual disk size:
16
GB
Thick Provision Lazy Zeroed
Thick Provision Eager Zeroed
Thin Provision
Help
< Back
Next >
Cancel

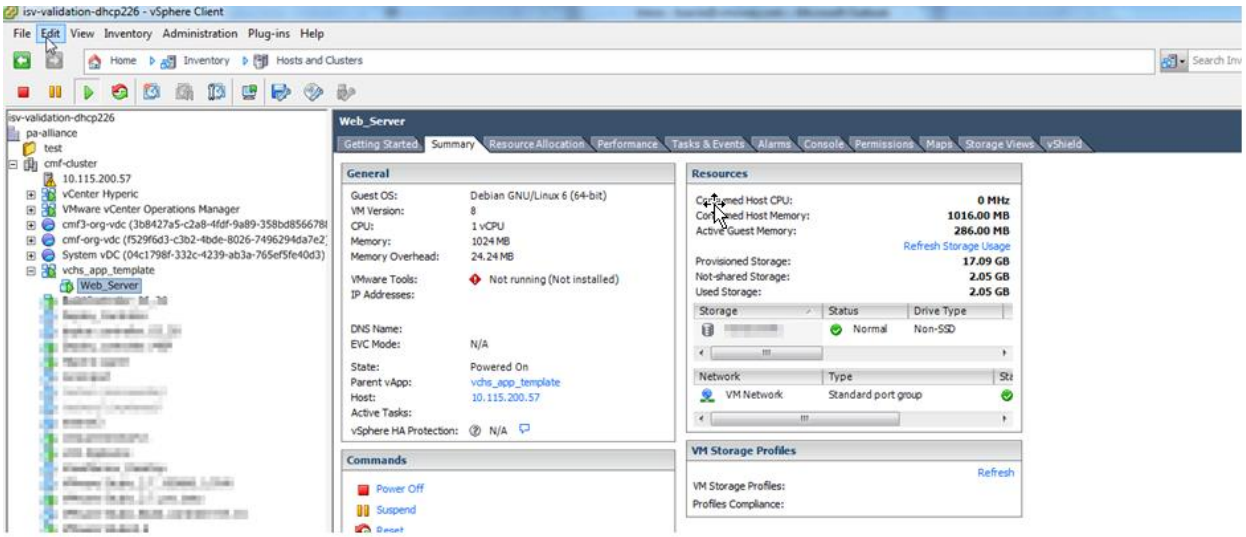


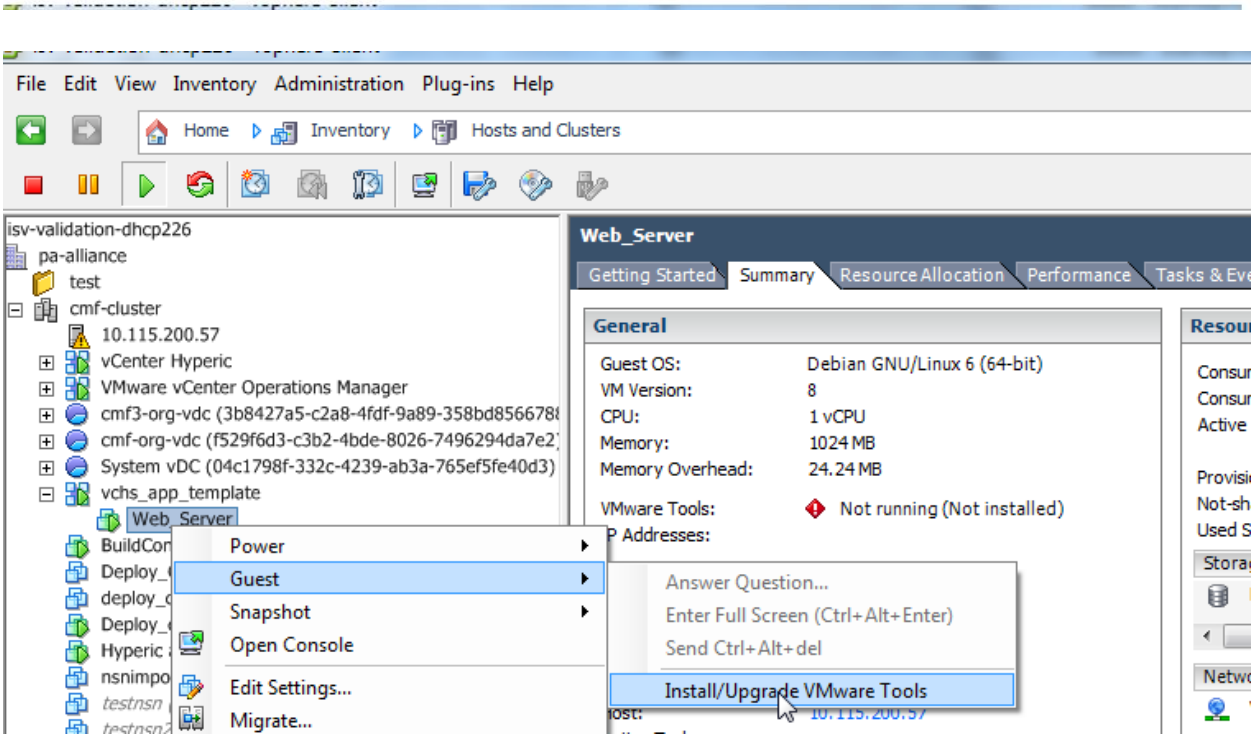
9. At this point, the first virtual machine for the Virtual applinace has been defined, if your application needs more virtual machined to be added please repeat the procedure to add a new virtual machine to the vApp. Else power ON the vApp, connect the Operating System ISO via USB/host ISO and proceed to install the OS and application

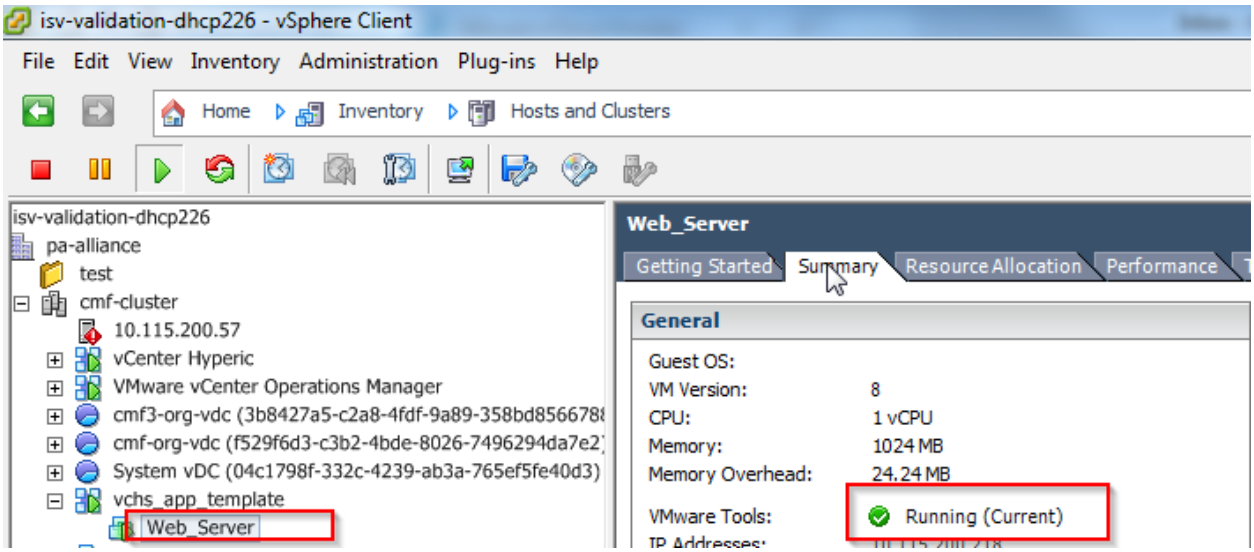




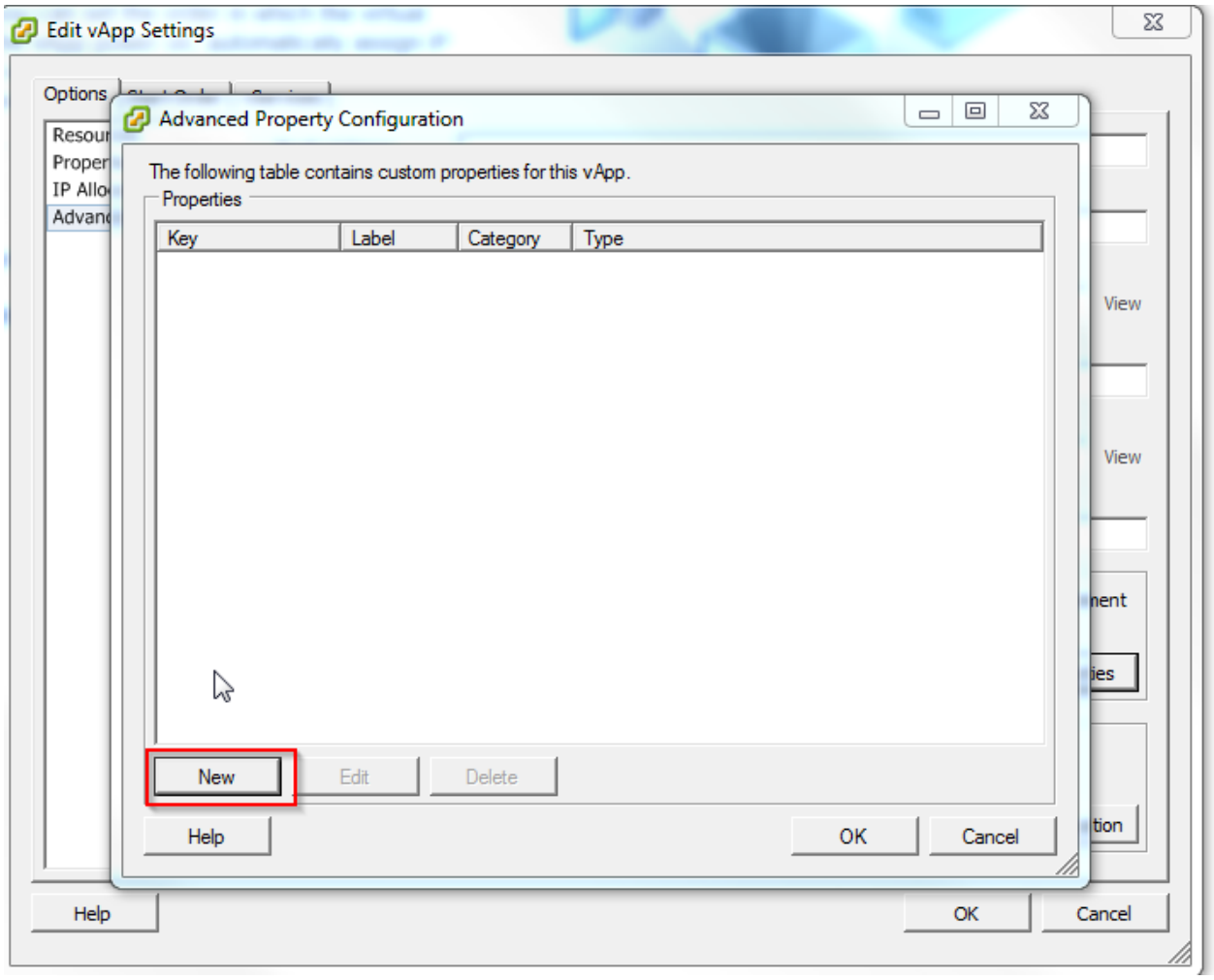
10. After the OS and application had been installed, go ahead and install VMware Tools , hot to install VMware tools: https://www.vmware.com/support/ws55/doc/ws_newguest_tools_linux.html#wp1127214


isv-validation-dhcp226 - vSphere Client
File Edit View Inventory Administration Plug-ins Help
Home Inventory Hosts and Clusters
isv-validation-dhcp226
pa-alliance
test
cmf-cluster
10.115.200.57
vCenter Hyperic
VMware vCenter Operations Manager
System vDC (04c1798f-332c-4239-ab3a-765ef5fe40d3)
vchs_app_template
Web_Server
Web_Server
Getting Started Summary Resource Allocation Performance Tasks & Events Alarms Console Permissions Maps Storage Views vShield
General
Guest OS: Debian GNU/Linux 6 (64-bit)
VM Version: 8
CPU: 1 vCPU
Memory: 1024 MB
Memory Overhead: 24.24 MB
VMware Tools: Not running (Not installed)
IP Addresses:
DNS Name:
EVC Mode: N/A
State: Powered On
Parent vApp: vchs_app_template
Host: 10.115.200.57
Active Tasks:
vSphere HA Protection: N/A
Commands
Power Off
Suspend
Resources
0 MHz
1016.00 MB
286.00 MB
Refresh Storage Usage
Provisioned Storage: 17.09 GB
Not-shared Storage: 2.05 GB
Used Storage: 2.05 GB
Storage Status Drive Type
Normal Non-SSD
Network Type
VM Network Standard port group
VM Storage Profiles
Refresh
VM Storage Profiles:
Profiles Compliance:

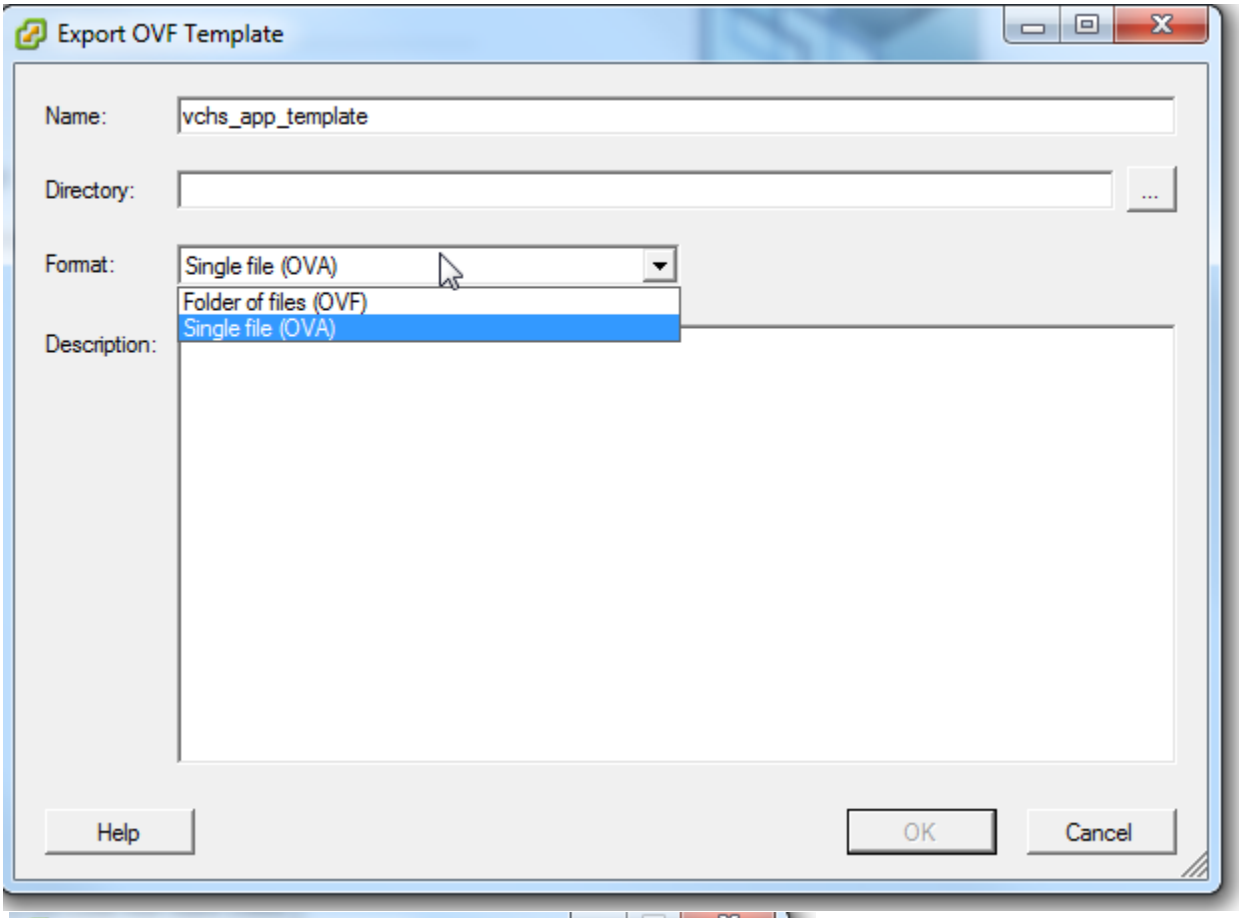

File Edit View Inventory Administration Plug-ins Help
Home Inventory Hosts and Clusters
isv-validation-dhcp226
pa-alliance
test
cmf-cluster
10.115.200.57
vCenter Hyperic
VMware vCenter Operations Manager
cmf3-org-vdc (3b8427a5-c2a8-4fdf-9a89-358bd856678
cmf-org-vdc (f529f6d3-c3b2-4bde-8026-7496294da7e2)
System vDC (04c1798f-332c-4239-ab3a-765ef5fe40d3)
vchs_app_template
Web_Server
Power
Guest
Snapshot
Open Console
Edit Settings...
Migrate...
Answer Question...
Enter Full Screen (Ctrl+Alt+Enter)
Send Ctrl+Alt+del
Install/Upgrade VMware Tools
Web_Server
Getting Started Summary Resource Allocation Performance
General
Guest OS: Debian GNU/Linux 6 (64-bit)
VM Version: 8
CPU: 1 vCPU
Memory: 1024 MB
Memory Overhead: 24.24 MB
VMware Tools: Not running (Not installed)

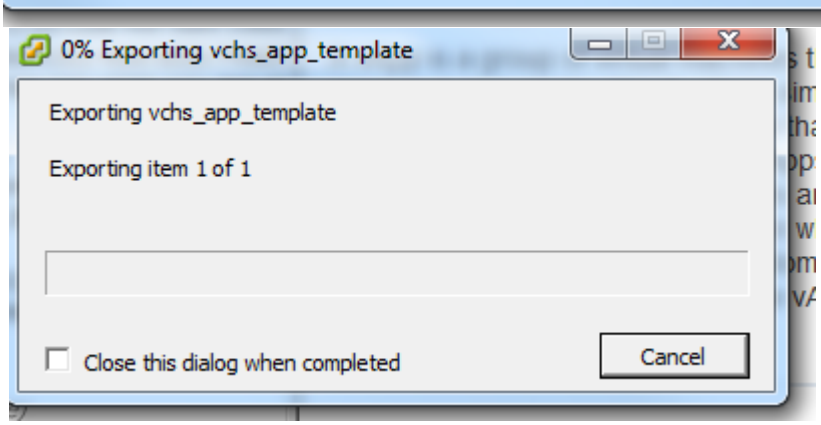


11. Configure Custom OVF properties:
    a. In case you would like to identify an custom OVF properties, add it after powering off the vApp, start orders etc.


Edit vApp Settings
Options
Advanced Property Configuration
The following table contains custom properties for this vApp.
Properties
Key
Label
Category
Type
New
Edit
Delete
Help
OK
Cancel
View
View
Help
OK
Cancel

12. Export the vApp Template, Select the vApp, File -> Export , click OVA as the format

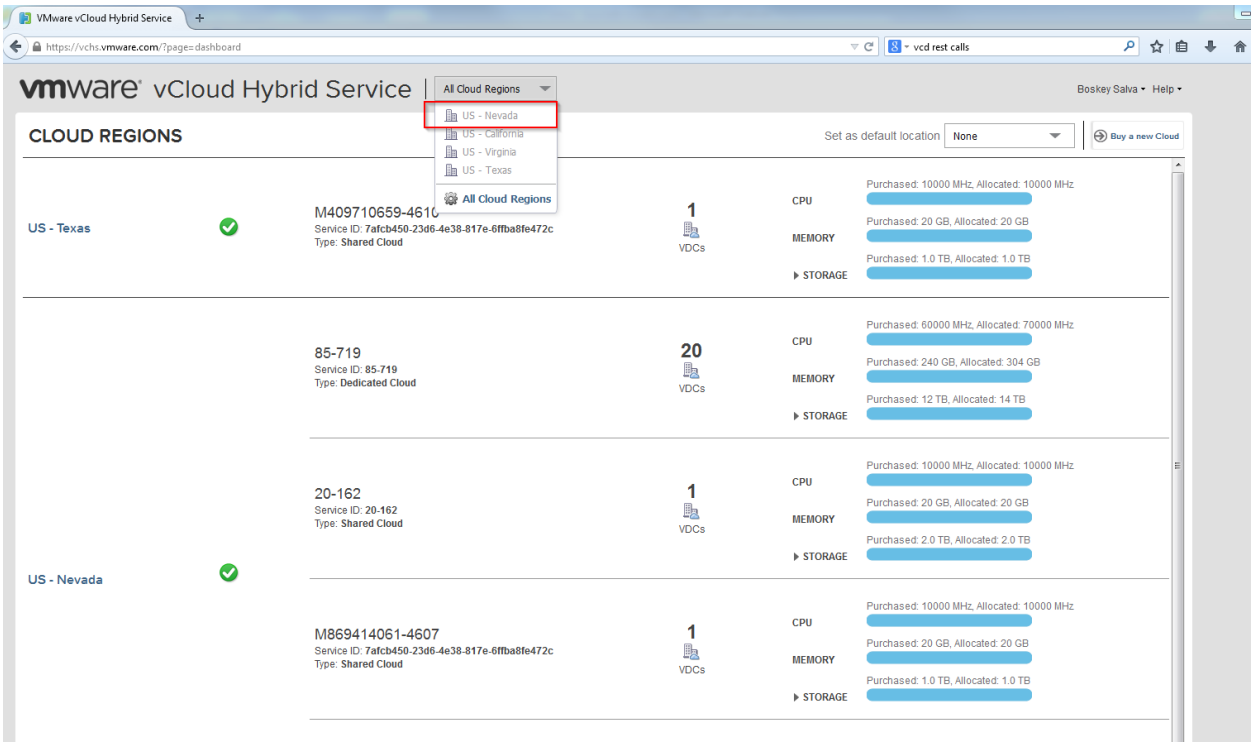




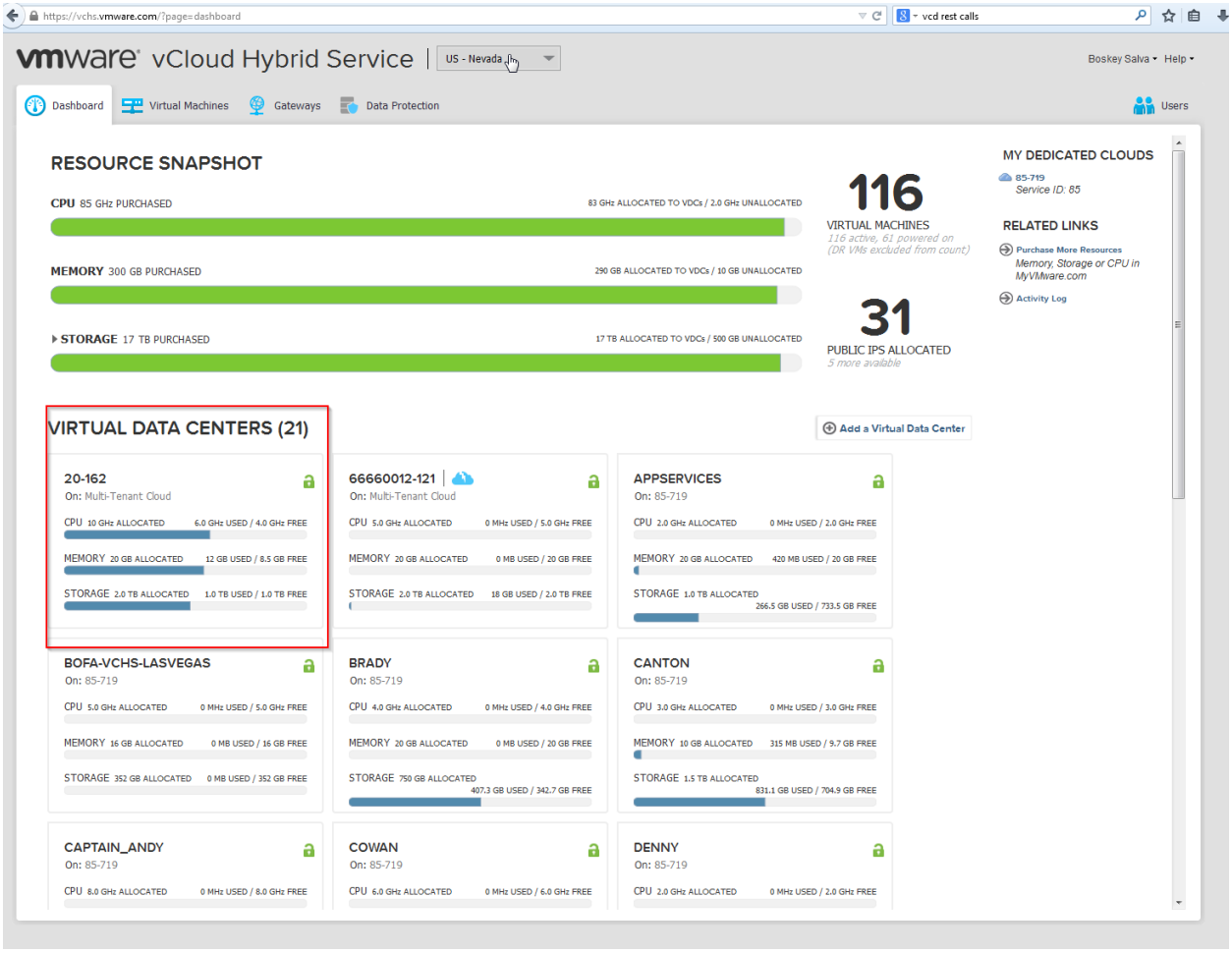
Uploading vApp template in vCloud Air service catalog

The Partner will upload the vApp based on the upload instructions provided by the certification team, the certification team will upload the vApp template into the service catalog using the below steps.

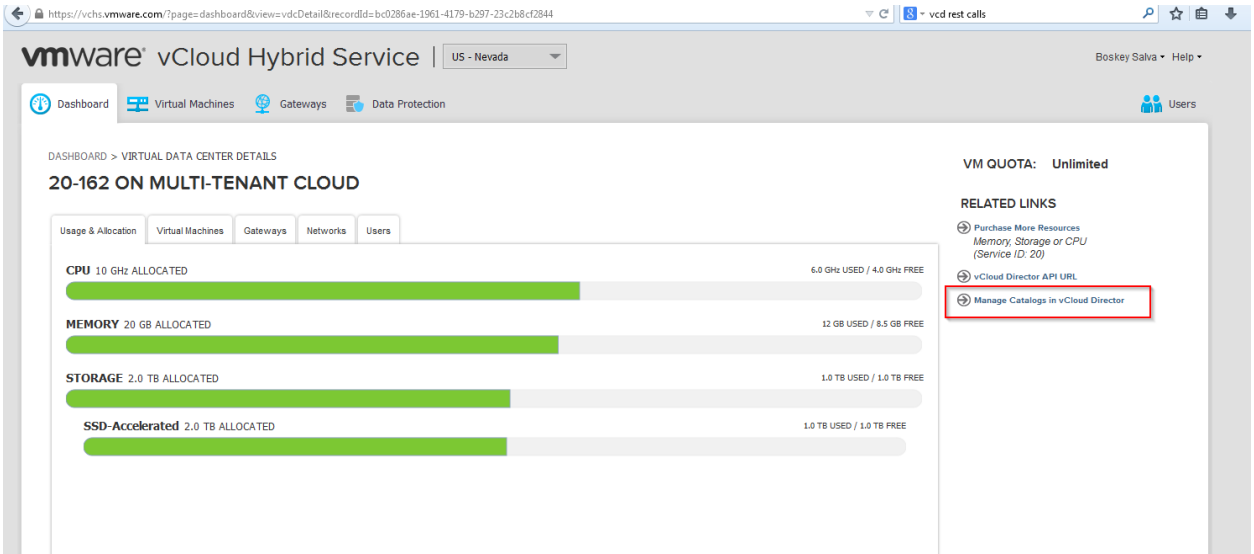
Login to your vCloud Air Public cloud instance with the user credential provided to you, https://vCloud Air.vcloud .com, upon landing on the dash board, select US-Nevada as your Cloud region from the drop down list on the top of the page



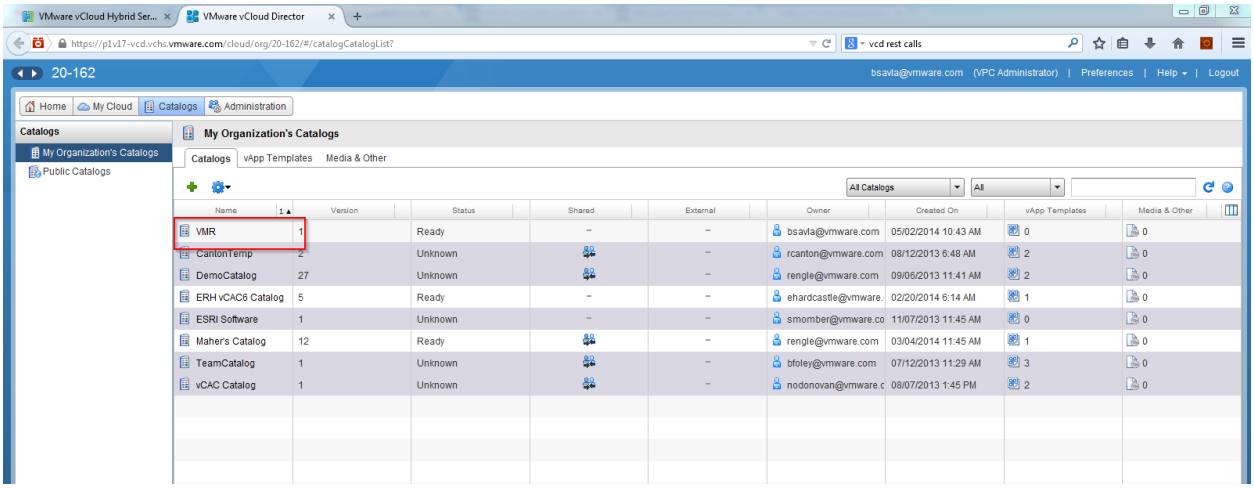
13. Once on the Dashboard for the US-Nevada region, select the virtual data given



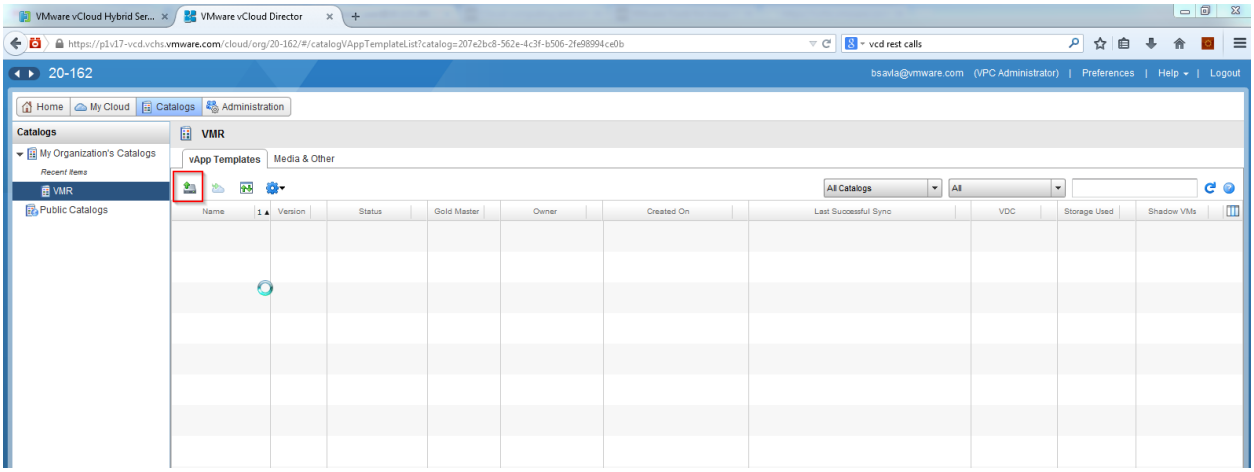
14. The Virtual Datacenter Dashboard is displayed, we want to add the vAPP catalog here, click on 'Manage Catalogs in vCloud Director'

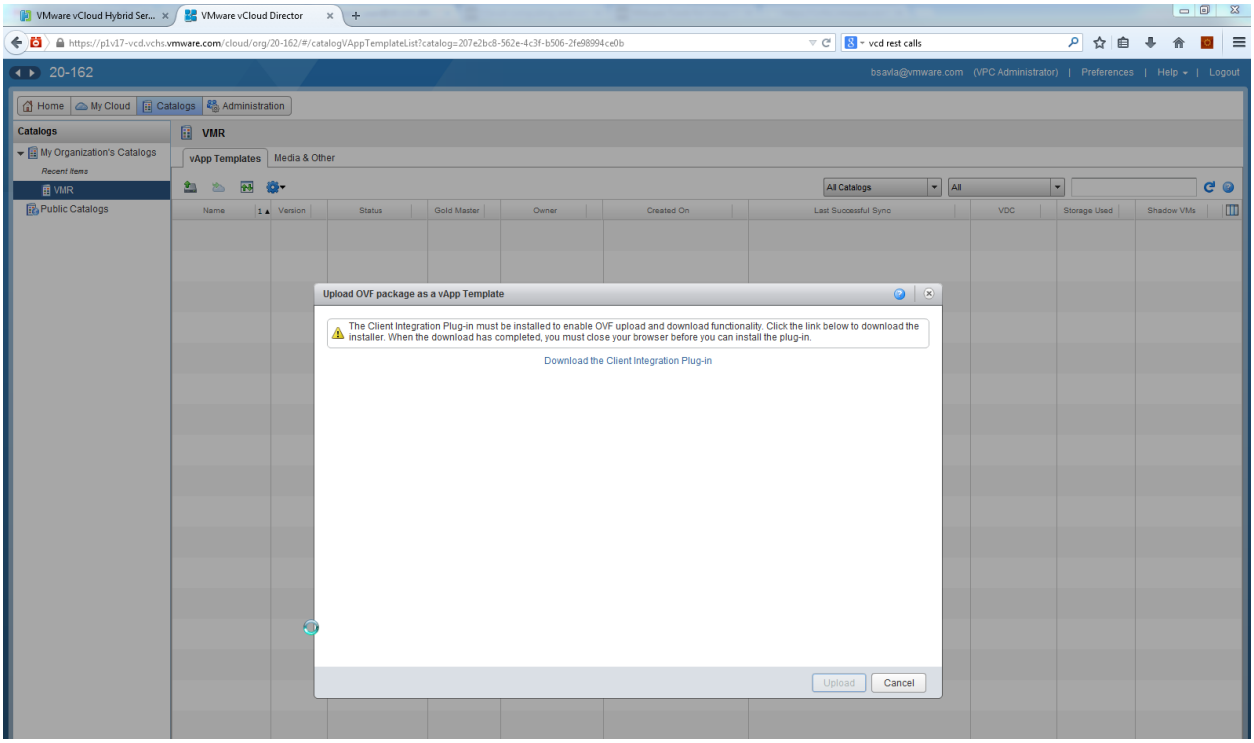


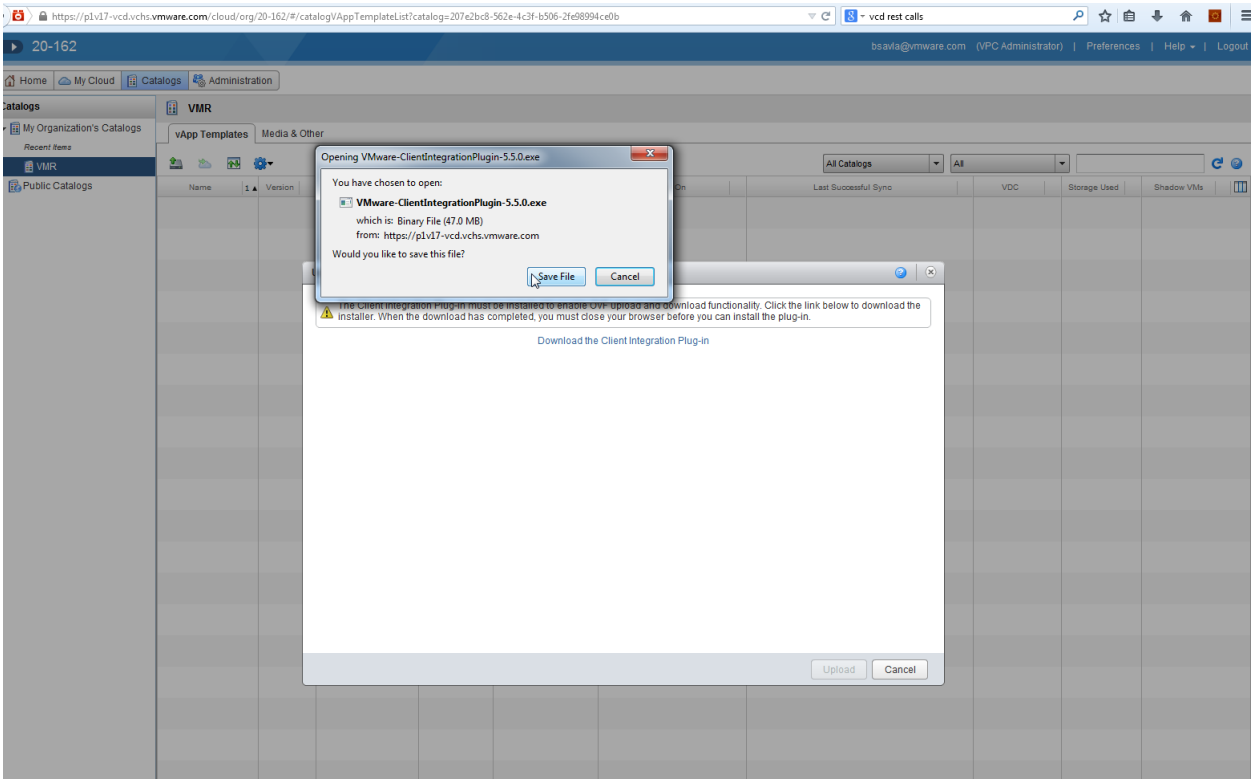
15. A new window/tab displaying vCloud Director's user interface with Organization Catalogs is displayed, select the catalog by name 'VMR'

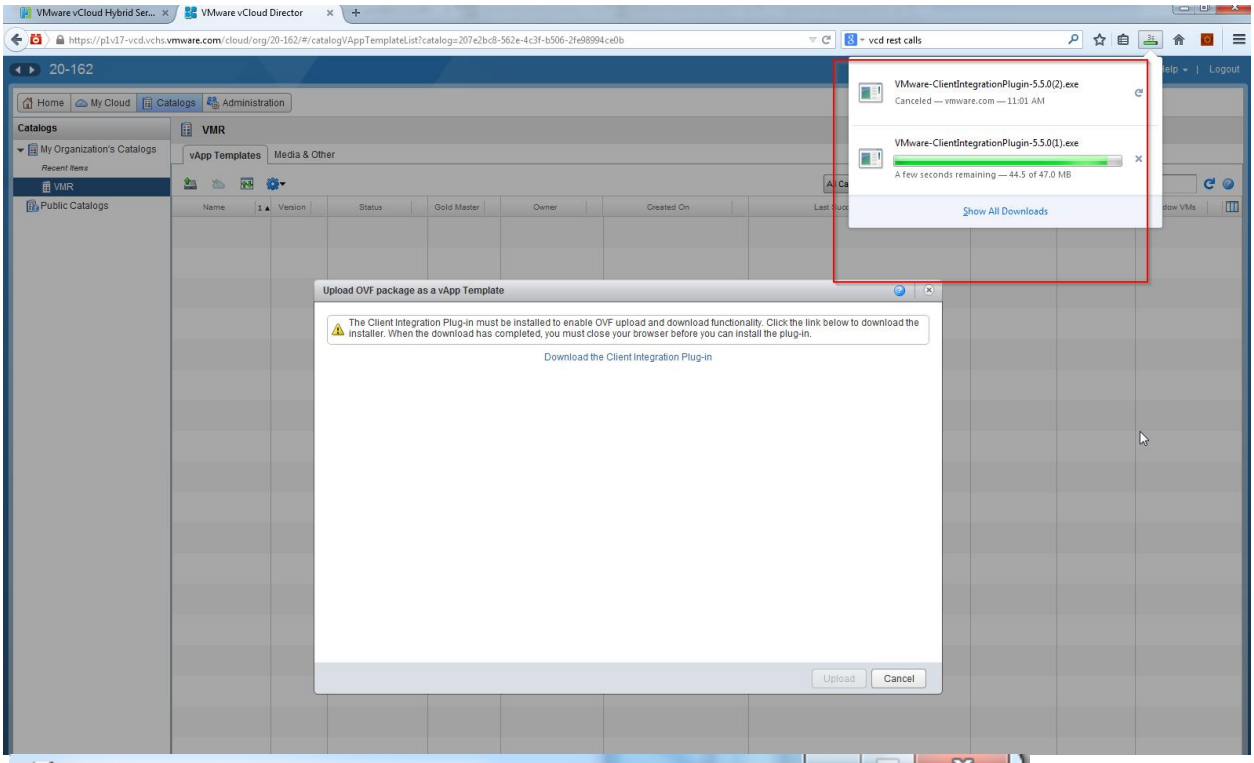


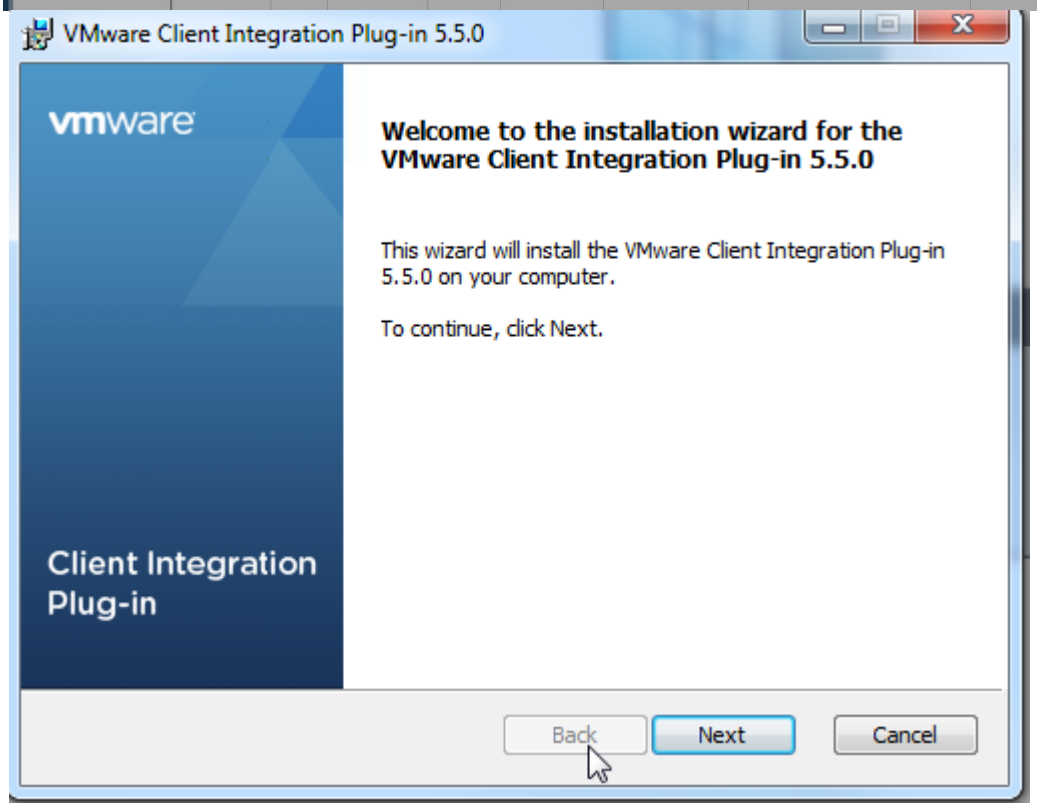
16. Once inside the VMR catalog in vCloud Director, click the upload button to locate the vApp OVA on your local system and upload it, if this is the first time uploading a vApp to vCloud director's interface, you will be prompted to downlaod and install the 'Client Integration Plugin'.

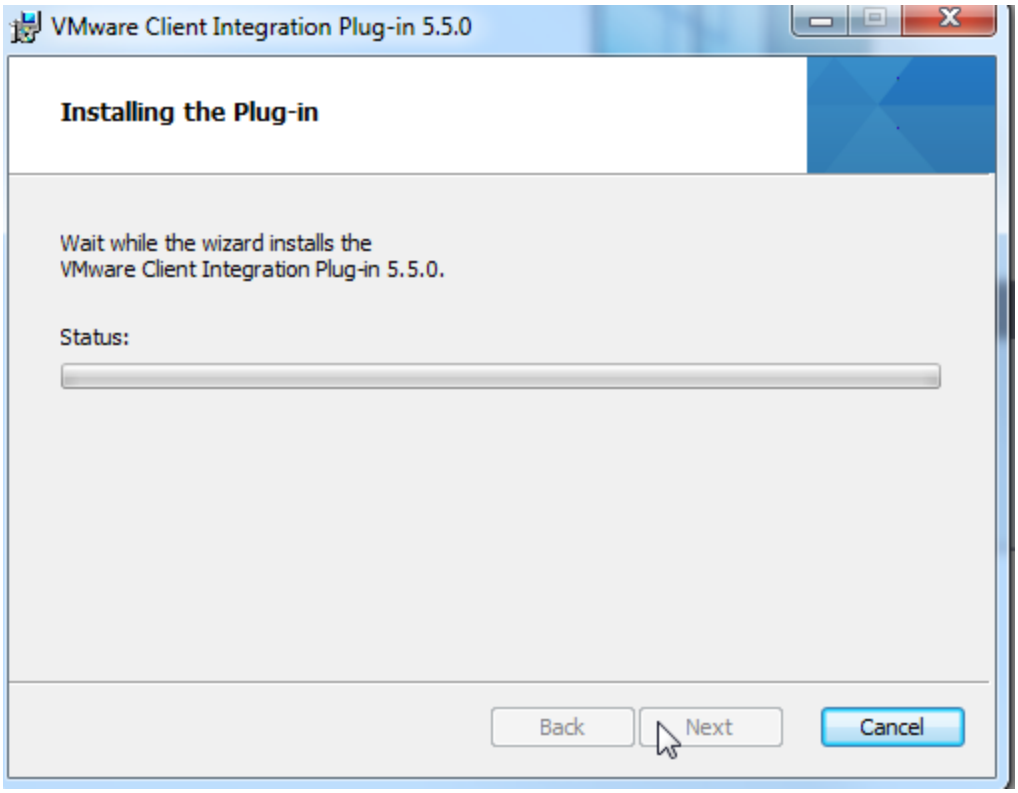


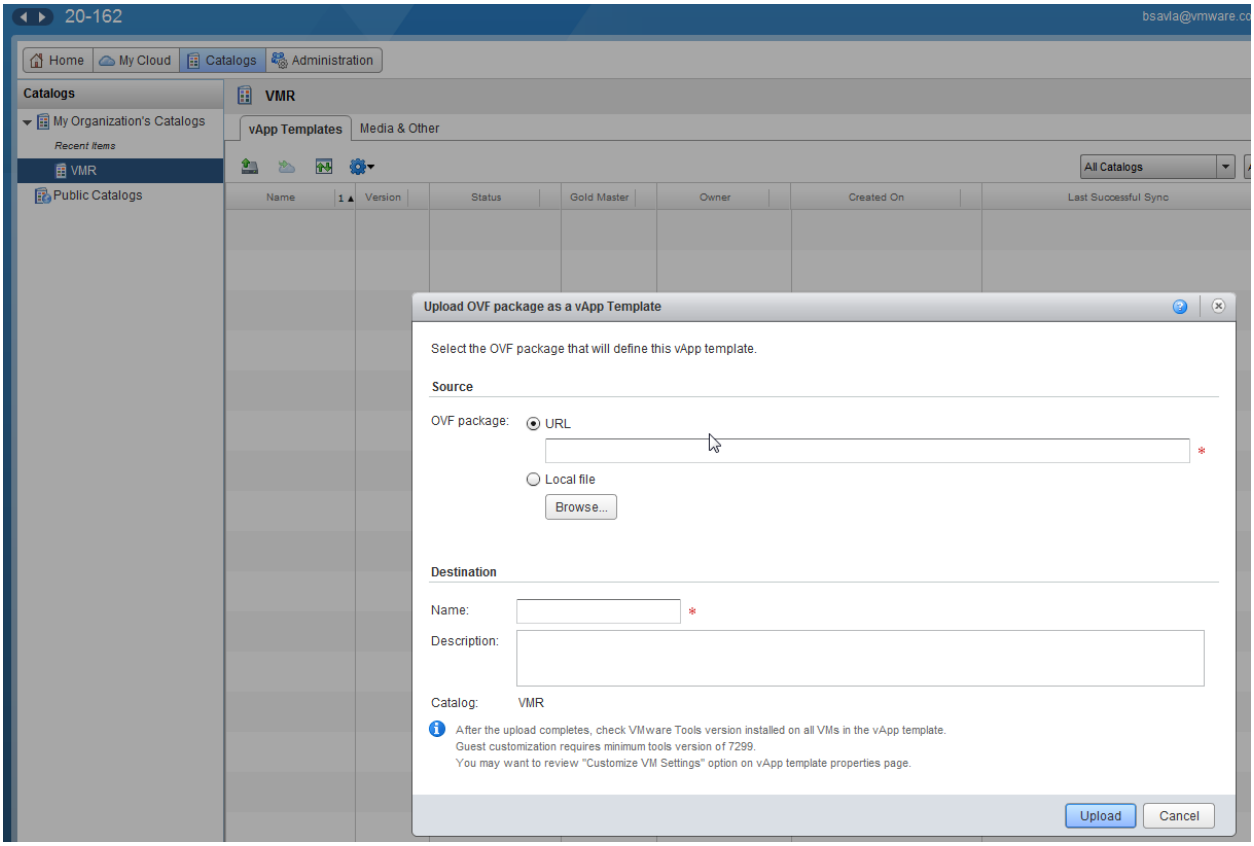

VMware vCloud Hybrid Ser...
VMware vCloud Director
https://p1v17-vcd.vchs.vmware.com/cloud/org/20-162/#/catalogVAppTemplateList?catalog=207e2bc8-562e-4c3f-b506-2fe98994ce0b
vcd rest calls
20-162
bsavla@vmware.com (VPC Administrator) | Preferences | Help | Logout
Home
My Cloud
Catalogs
Administration
Catalogs
My Organization's Catalogs
Recent Items
VMR
Public Catalogs
VMR
vApp Templates
Media & Other
All Catalogs
All
Name
Version
Status
Gold Master
Owner
Created On
Last Successful Sync
VDC
Storage Used
Shadow VMs
Upload OVF package as a vApp Template
The Client Integration Plug-in must be installed to enable OVF upload and download functionality. Click the link below to download the installer. When the download has completed, you must close your browser before you can install the plug-in.
Download the Client Integration Plug-in
Upload
Cancel

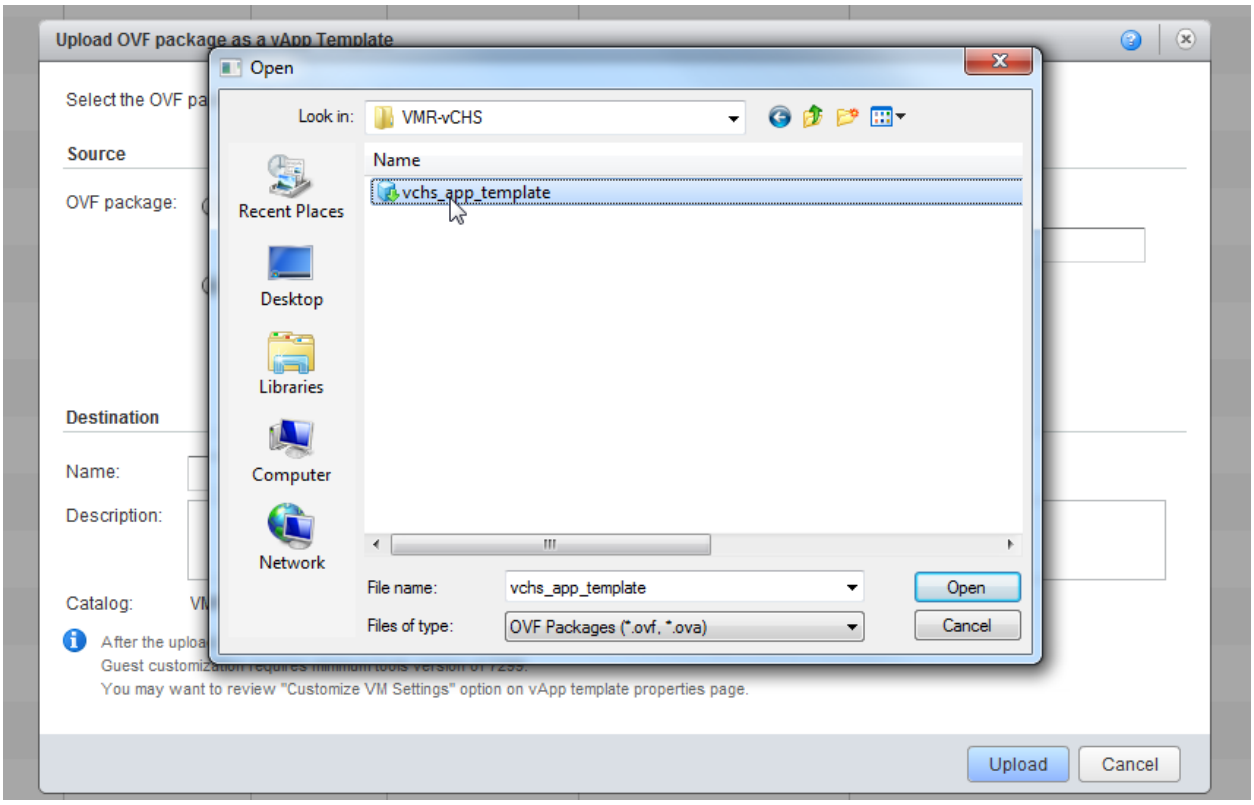

https://p1v17-vcd.vchs.vmware.com/cloud/org/20-162/#/catalogVAppTemplateList?catalog=207e2bc8-562e-4c3f-b506-2fe98994ce0b
vcd rest calls
20-162
bsavla@vmware.com (VPC Administrator) | Preferences | Help | Logout
Home
My Cloud
Catalogs
Administration
My Organization's Catalogs
Recent Items
VMR
Public Catalogs
VMR
vApp Templates
Media & Other
Opening VMware-ClientIntegrationPlugin-5.5.0.exe
You have chosen to open:
VMware-ClientIntegrationPlugin-5.5.0.exe
which is: Binary File (47.0 MB)
from: https://p1v17-vcd.vchs.vmware.com
Would you like to save this file?
Save File
Cancel
Download the Client Integration Plug-in
Upload
Cancel


VMware vCloud Hybrid Ser...
VMware vCloud Director
https://p1v17-vcd.vchs.vmware.com/cloud/org/20-162/#/catalogVAppTemplateList?catalog=207e2bc8-562e-4c3f-b506-2fe98894ce0b
vcd rest calls
20-162
Home
My Cloud
Catalogs
Administration
Catalogs
My Organization's Catalogs
Recent Items
VMR
Public Catalogs
VMR
vApp Templates
Media & Other
Name
Version
Status
Gold Master
Owner
Created On
VMware-ClientIntegrationPlugin-5.5.0(2).exe
Canceled — vmware.com — 11:01 AM
VMware-ClientIntegrationPlugin-5.5.0(1).exe
A few seconds remaining — 44.5 of 47.0 MB
Show All Downloads
Upload OVF package as a vApp Template
The Client Integration Plug-in must be installed to enable OVF upload and download functionality. Click the link below to download the installer. When the download has completed, you must close your browser before you can install the plug-in.
Download the Client Integration Plug-in
Upload
Cancel

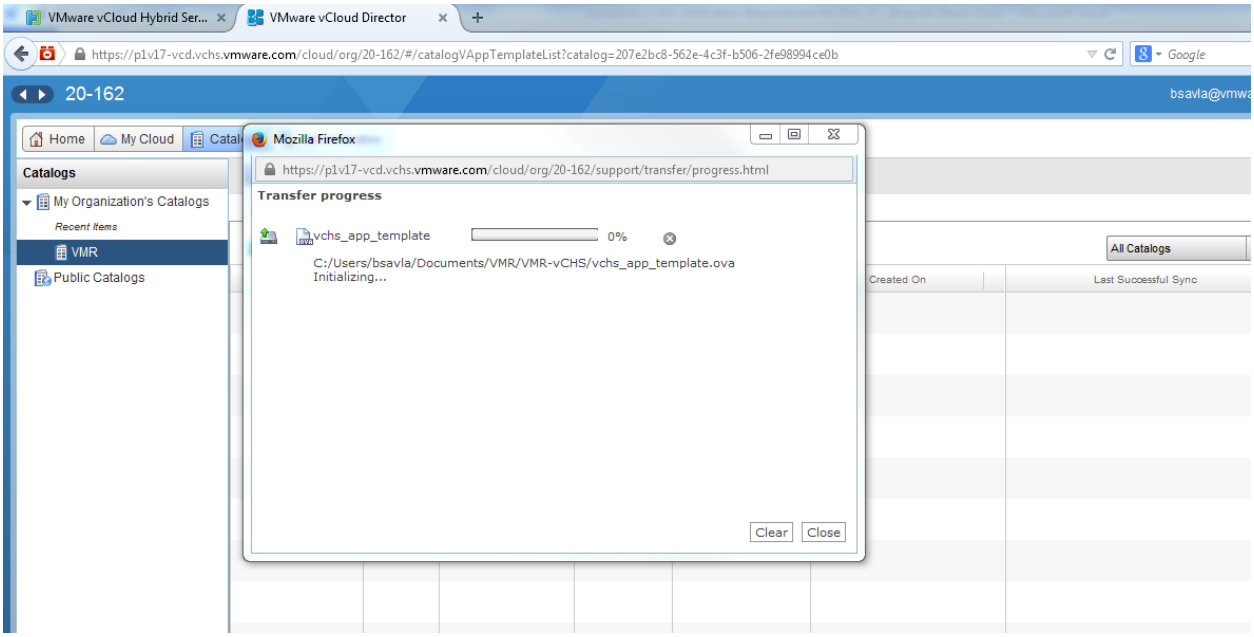

VMware Client Integration Plug-in 5.5.0
vmware
Welcome to the installation wizard for the VMware Client Integration Plug-in 5.5.0
This wizard will install the VMware Client Integration Plug-in 5.5.0 on your computer.
To continue, click Next.
Client Integration Plug-in
Back
Next
Cancel

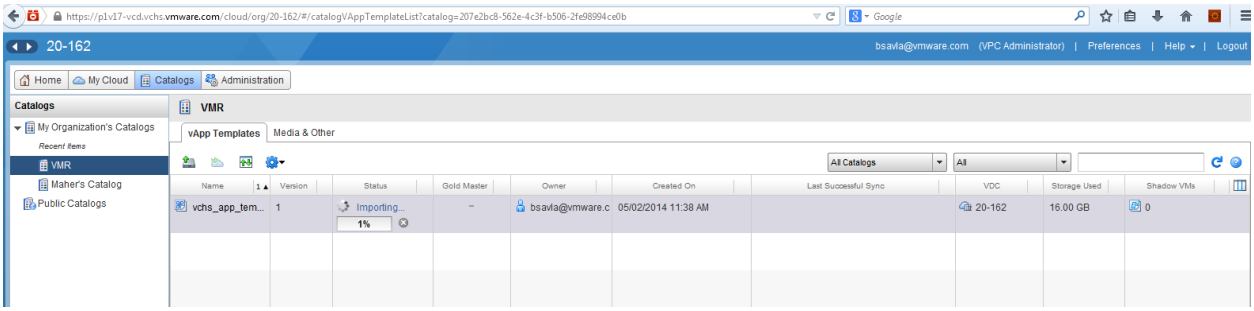

VMware Client Integration Plug-in 5.5.0
Installing the Plug-in
Wait while the wizard installs the
VMware Client Integration Plug-in 5.5.0.
Status:
Back
Next
Cancel

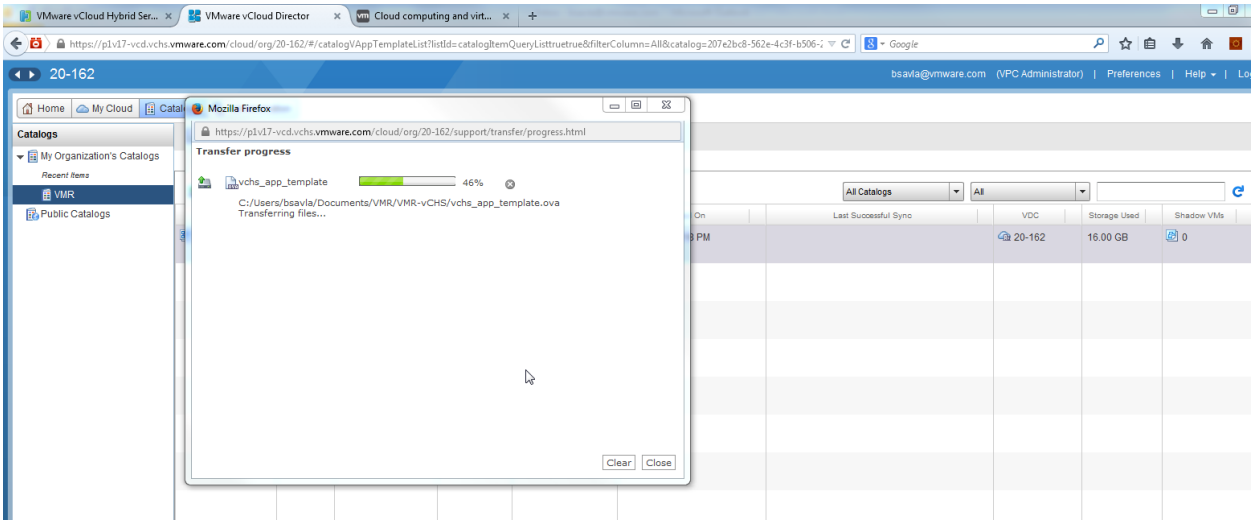

20-162
Home
My Cloud
Catalogs
Administration
Catalogs
My Organization's Catalogs
Recent Items
VMR
Public Catalogs
VMR
vApp Templates
Media & Other
All Catalogs
Name
Version
Status
Gold Master
Owner
Created On
Last Successful Sync
Upload OVF package as a vApp Template
Select the OVF package that will define this vApp template.
Source
OVF package:
URL
Local file
Browse...
Destination
Name:
Description:
Catalog:
VMR
After the upload completes, check VMware Tools version installed on all VMs in the vApp template.
Guest customization requires minimum tools version of 7299.
You may want to review "Customize VM Settings" option on vApp template properties page.
Upload
Cancel

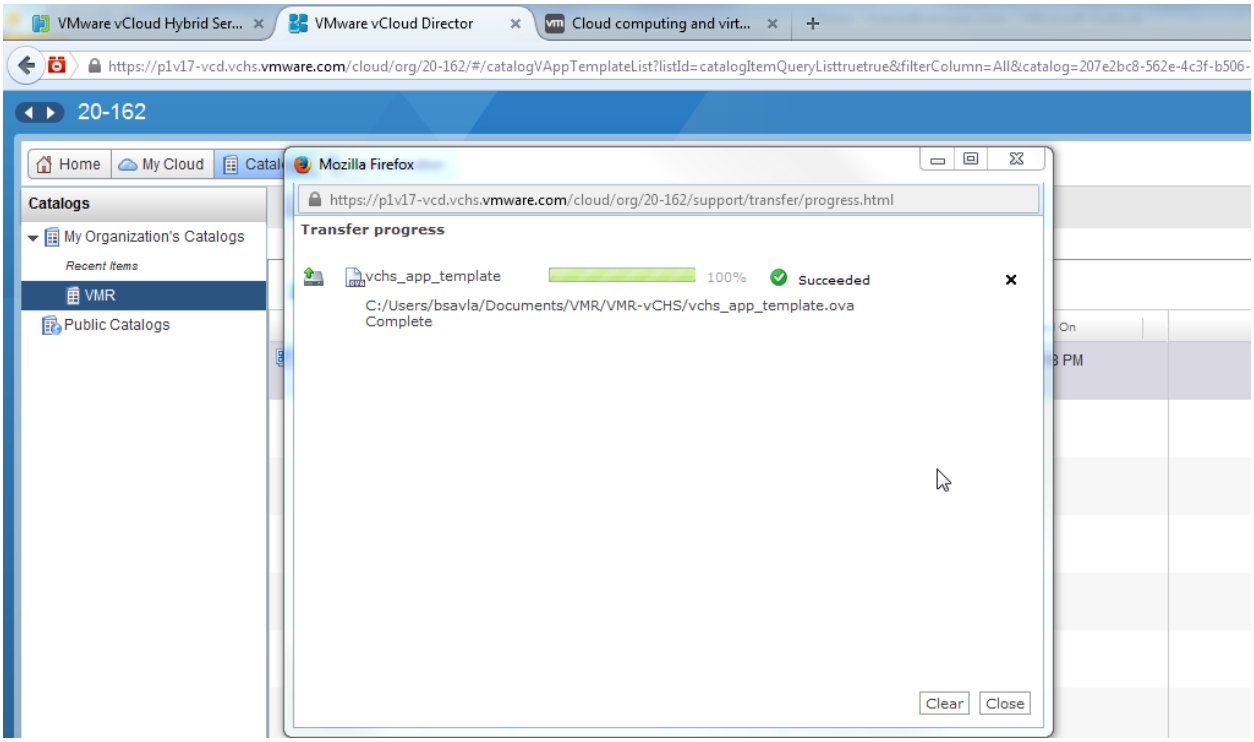


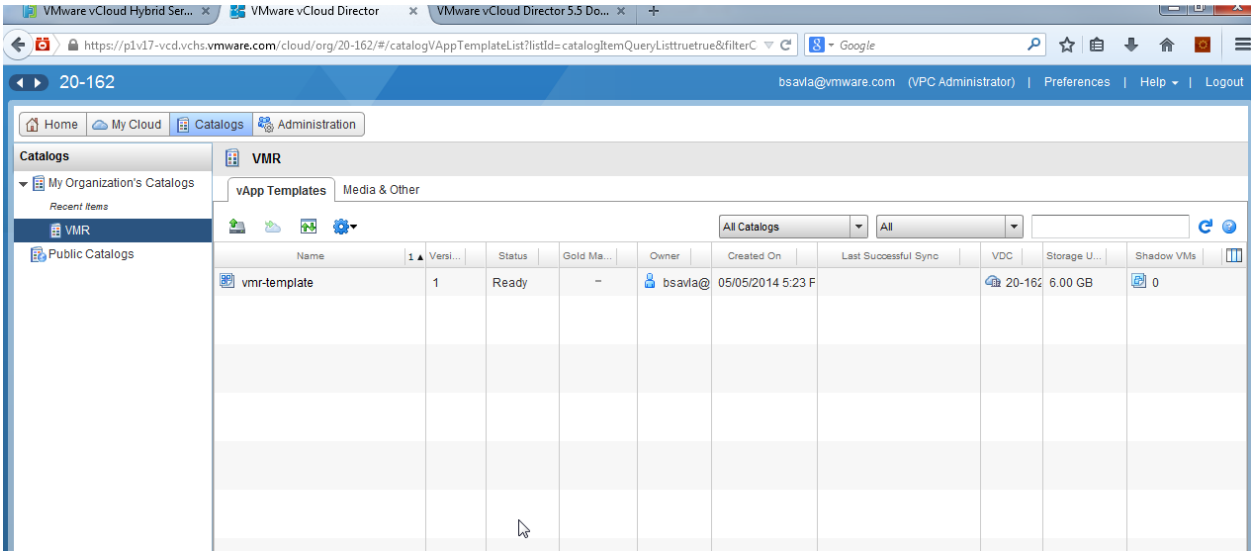
17. The upload begins, the upload time may vary based on the size of the vApp




https://p1v17-vcd.vchs.vmware.com/cloud/org/20-162/#/catalogVAppTemplateList?catalog=207e2bc8-562e-4c3f-b506-2fe98994ce0b
20-162
bsavla@vmware.com (VPC Administrator) | Preferences | Help | Logout
Home
My Cloud
Catalogs
Administration
Catalogs
My Organization's Catalogs
Recent Items
VMR
Maher's Catalog
Public Catalogs
VMR
vApp Templates
Media & Other
All Catalogs
All
Name
Version
Status
Gold Master
Owner
Created On
Last Successful Sync
VDC
Storage Used
Shadow VMs
vchs_app_tem...
1
Importing...
1%
bsavla@vmware.c
05/02/2014 11:38 AM
20-162
16.00 GB
0


VMware vCloud Hybrid Ser...
VMware vCloud Director
Cloud computing and virt...
https://p1v17-vcd.vchs.vmware.com/cloud/org/20-162/#/catalogVAppTemplateList?listId=catalogItemQueryListtruetrue&filterColumn=All&catalog=207e2bc8-562e-4c3f-b506-
20-162
bsavla@vmware.com (VPC Administrator) | Preferences | Help
Mozilla Firefox
https://p1v17-vcd.vchs.vmware.com/cloud/org/20-162/support/transfer/progress.html
Transfer progress
vchs_app_template
46%
C:/Users/bsavla/Documents/VMR/VMR-vCHS/vchs_app_template.ova
Transferring files...
Clear
Close
Catalogs
My Organization's Catalogs
Recent Items
VMR
Public Catalogs
All Catalogs
All
Last Successful Sync
VDC
Storage Used
Shadow VMs
20-162
16.00 GB
0


VMware vCloud Hybrid Ser...
VMware vCloud Director
Cloud computing and virt...
https://p1v17-vcd.vchs.vmware.com/cloud/org/20-162/#/catalogVAppTemplateList?listId=catalogItemQueryListtruetrue&filterColumn=All&catalog=207e2bc8-562e-4c3f-b506-
20-162
Home
My Cloud
Mozilla Firefox
https://p1v17-vcd.vchs.vmware.com/cloud/org/20-162/support/transfer/progress.html
Transfer progress
vchs_app_template
100%
Succeeded
C:/Users/bsavla/Documents/VMR/VMR-vCHS/vchs_app_template.ova
Complete
Clear
Close
Catalogs
My Organization's Catalogs
Recent Items
VMR
Public Catalogs



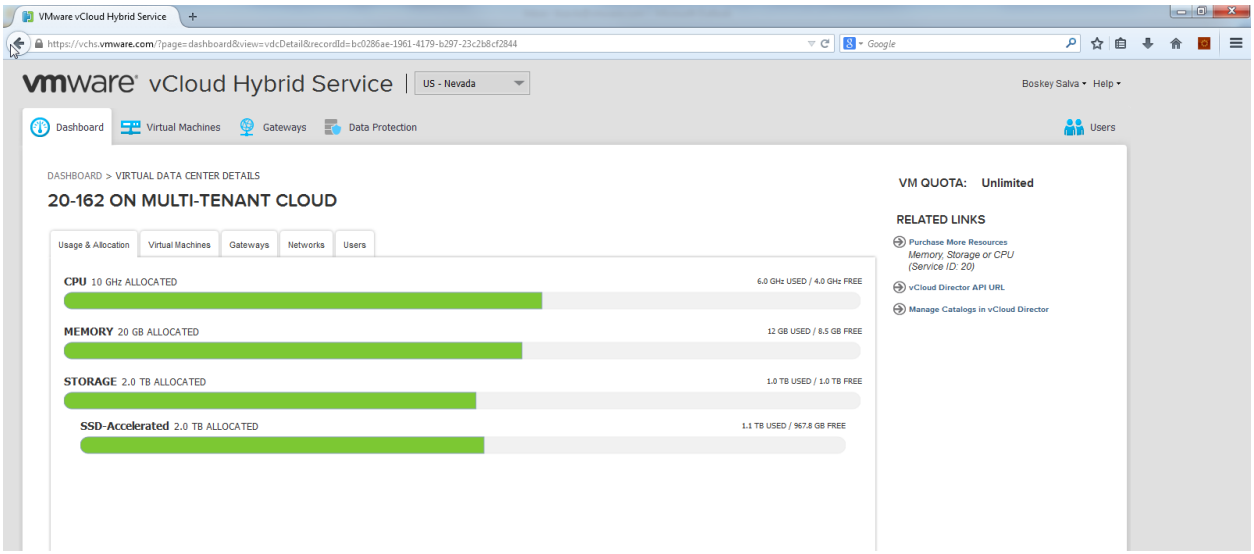
Adding Virtual machines from service catalog

Below section showcases in general steps to deploy a Virtual Machine/ vApp from a service catalog into active Cloud and also how to edit/change Firewall and Routing properties to enable traffic from external sites to reach your application in the Cloud. These steps will be executed by the tester and the certification team during the on-line testing phase, so the following is for information only.

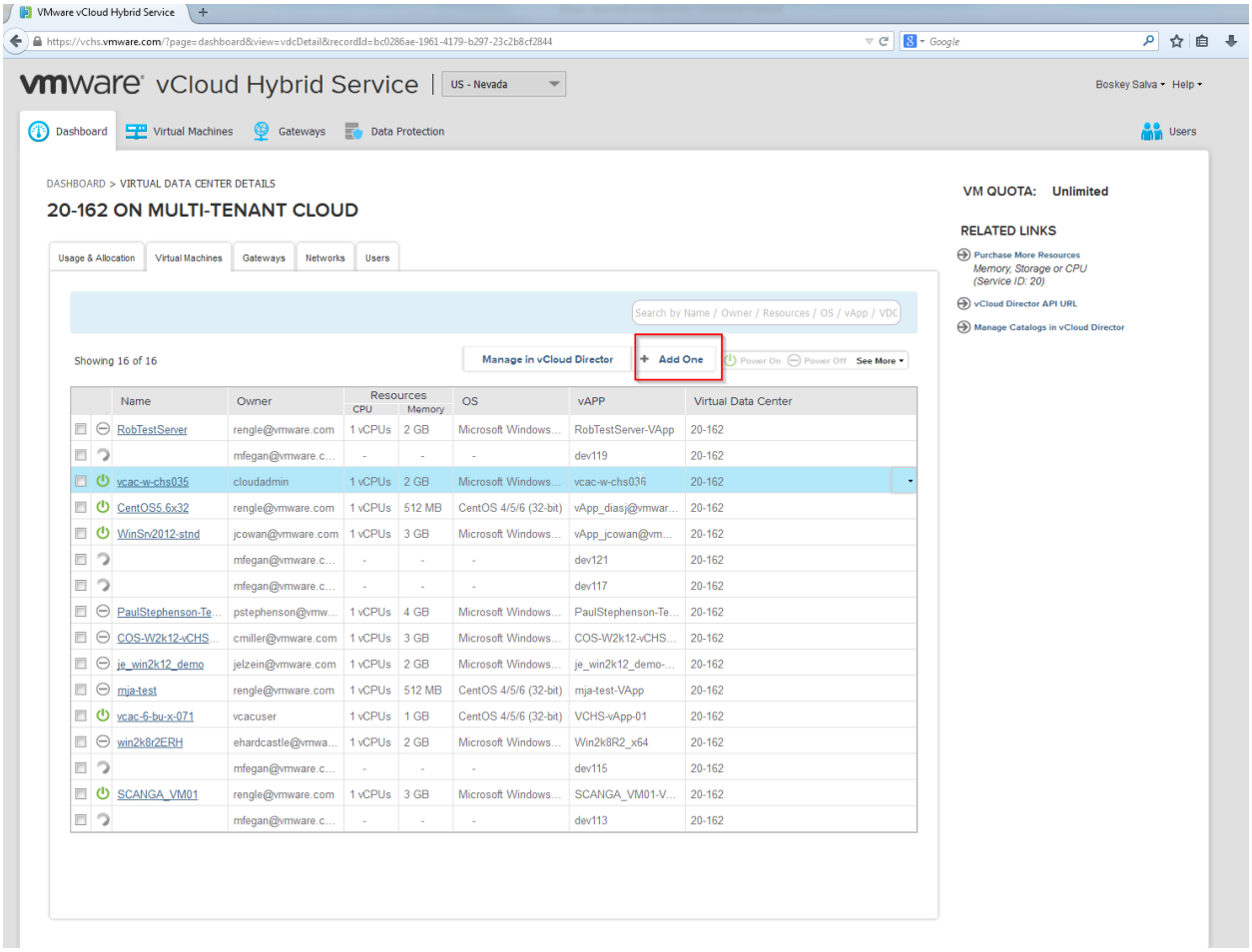
The sample virtual machine template used in the steps below is CentOS that was created using the above methods and has light-http service running on it (web server). The goal is to deploy the centos template from the service catalog and have it configured to have the web server accessible from any external network.

Deploying Virtual machines

1. Login to vCloud Air portal and click on the vDC where a new centos virtual machine with webserver needs to be deployed.

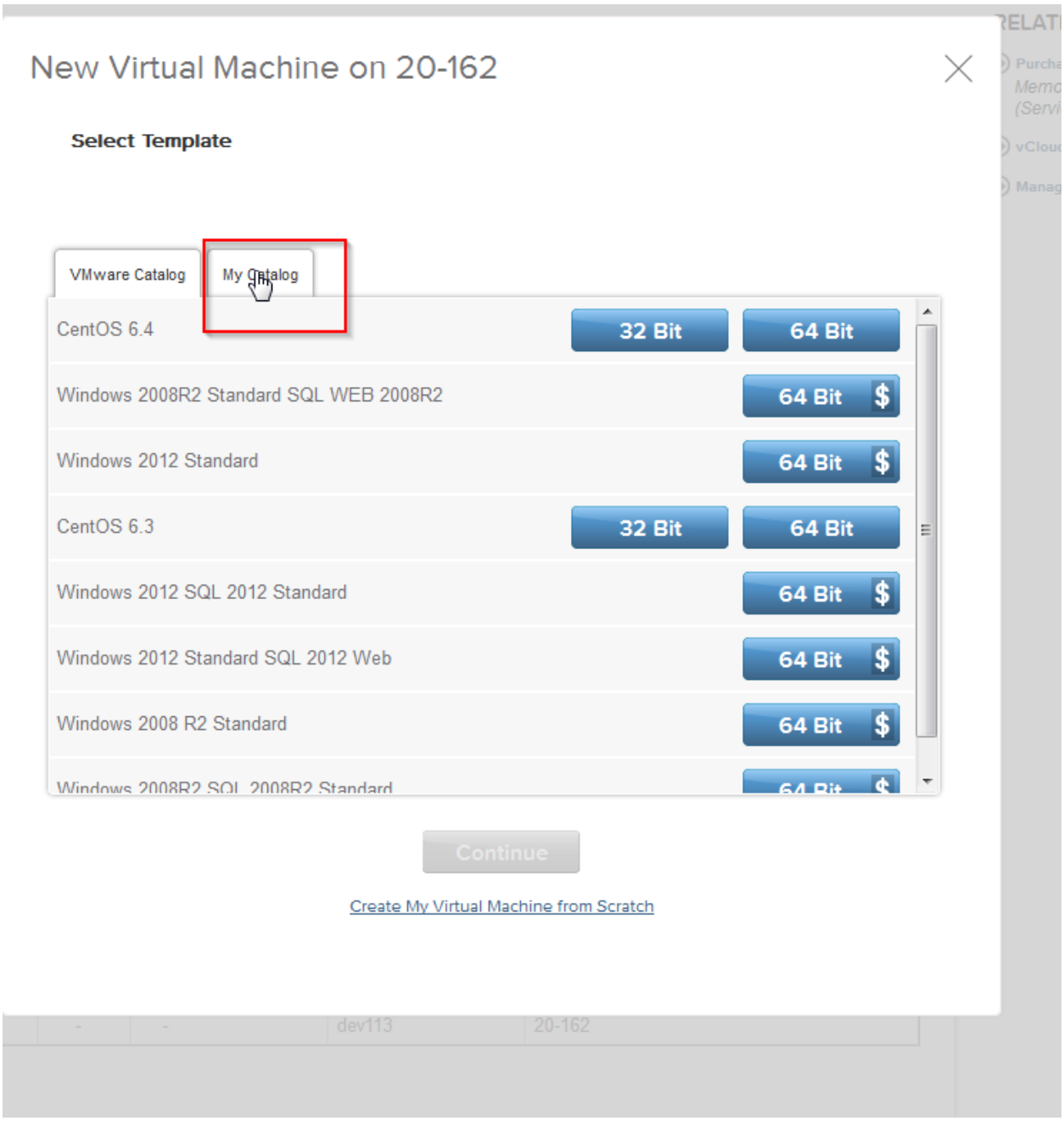


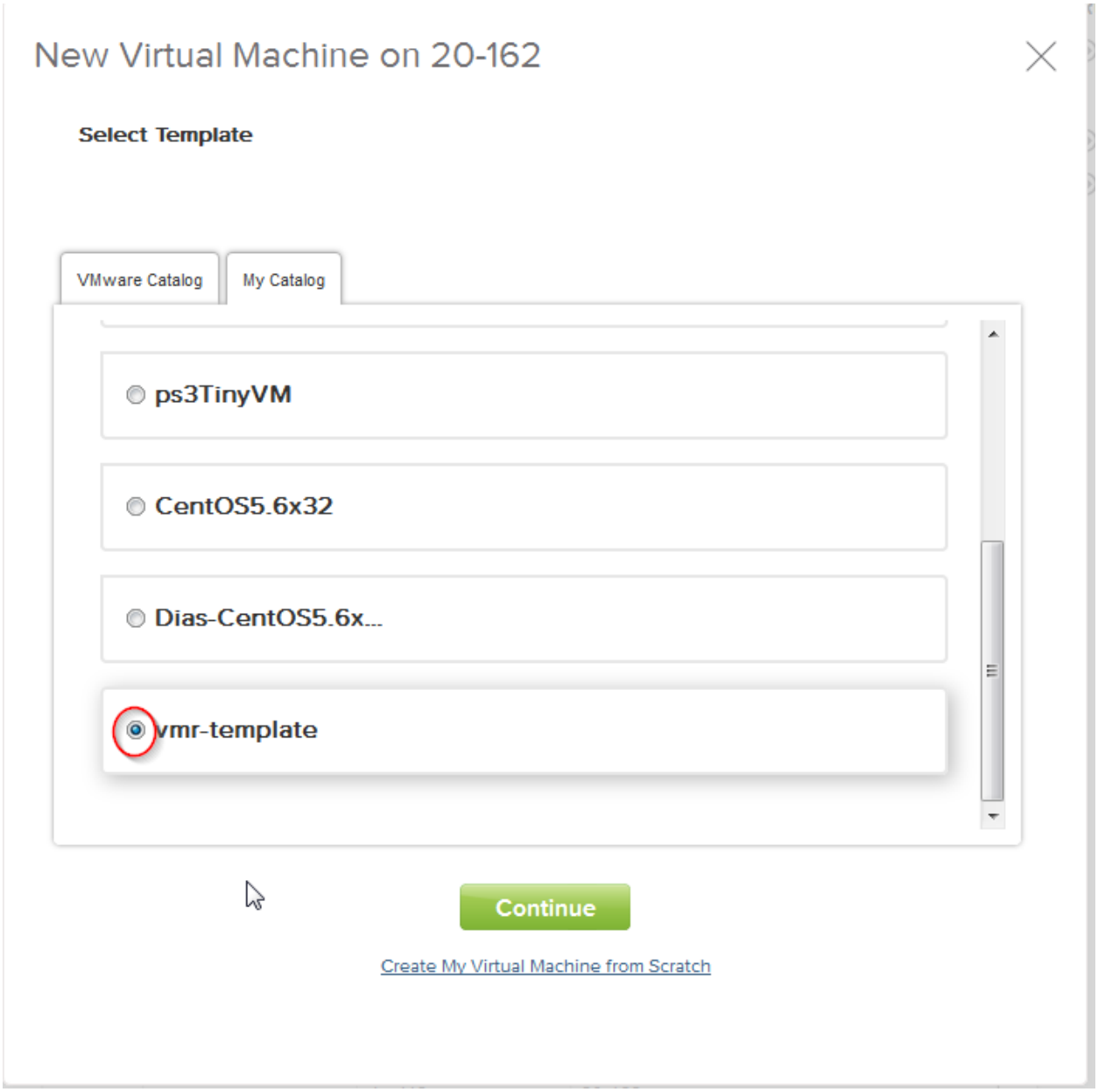
2. Click on the Virtual Machines tab and click ‘Add One’. The virtual machine view gives you a list of virtual machines that are currently added to the cloud.



3. A popup screen with a list of Catalogs appears, the catalog has two tabs, VMware Catalog and ‘My Catalog’. The VMware Catalog has images that are publicly available to all service

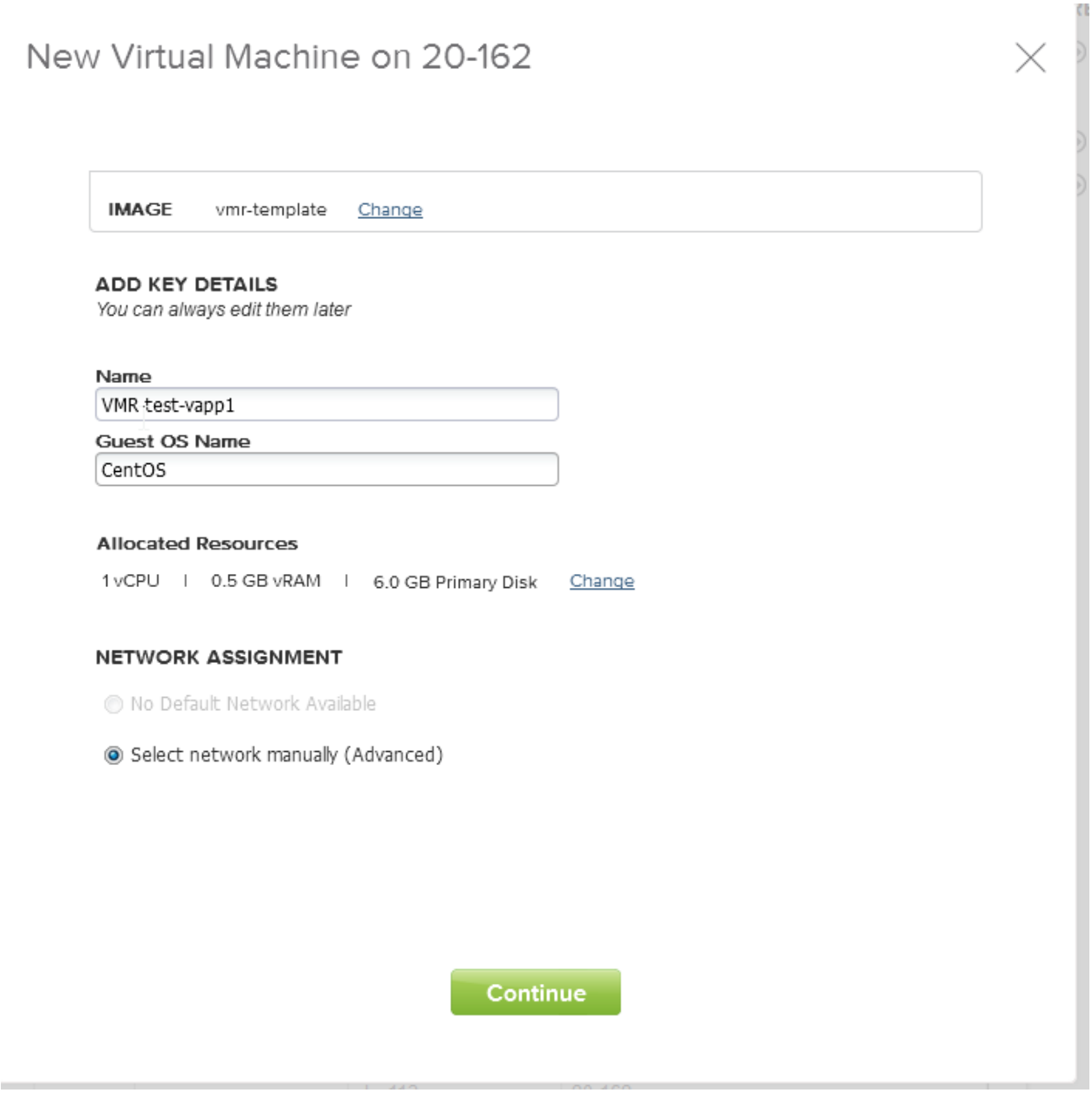
subscribers of vCloud Air. These are vanilla OS templates. The ‘My Catalog’ is where vApp templates uploaded by a user will be listed. Click on this tab to select a virtual machine template, select the template by clicking the Radio Button against it and click Continue.


New Virtual Machine on 20-162
Select Template
VMware Catalog
My Catalog
CentOS 6.4
32 Bit
64 Bit
Windows 2008R2 Standard SQL WEB 2008R2
64 Bit $
Windows 2012 Standard
64 Bit $
CentOS 6.3
32 Bit
64 Bit
Windows 2012 SQL 2012 Standard
64 Bit $
Windows 2012 Standard SQL 2012 Web
64 Bit $
Windows 2008 R2 Standard
64 Bit $
Continue
Create My Virtual Machine from Scratch
dev113
20-162

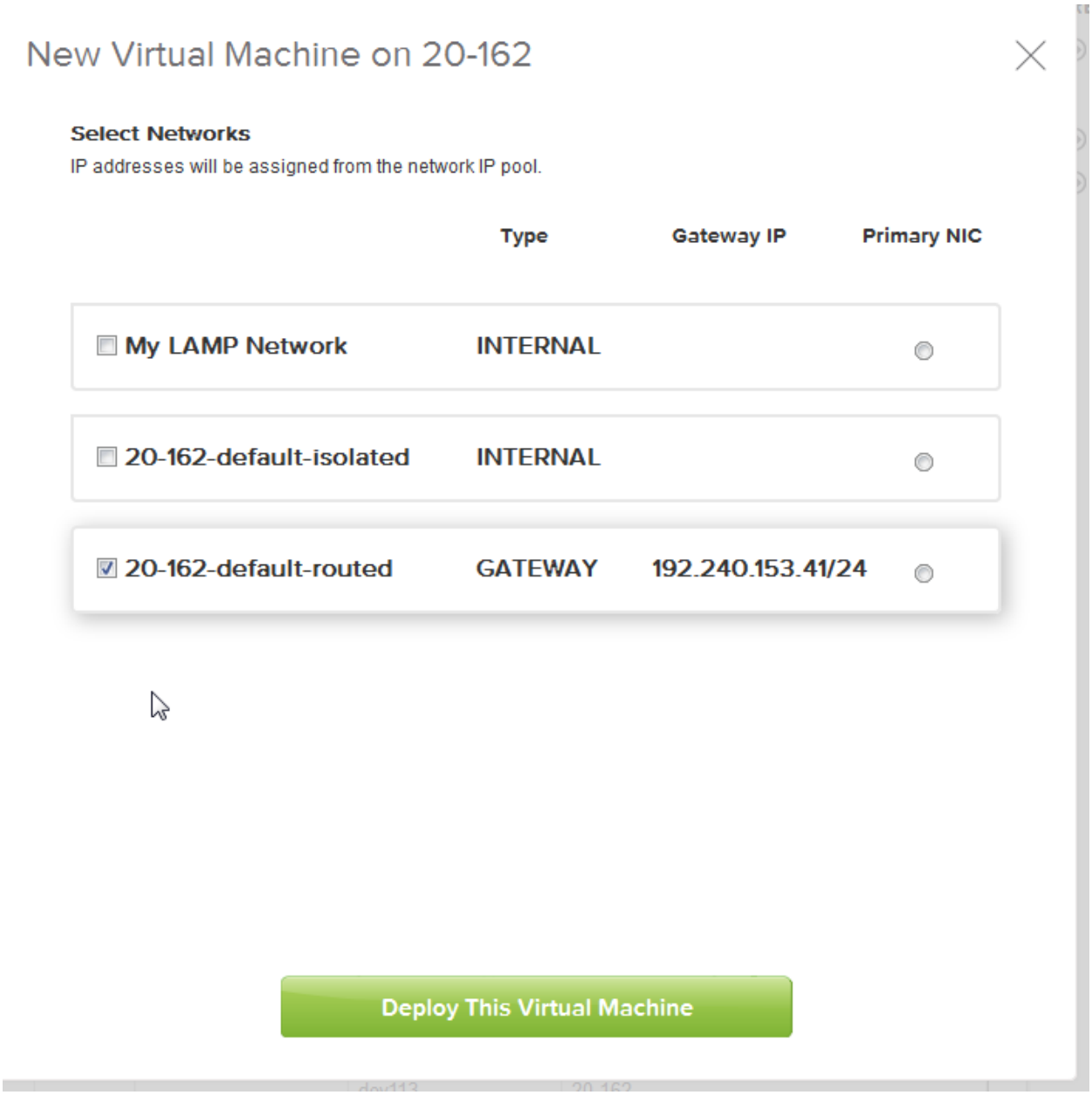


4. Next up, questions on the name to be given to this machine in the Cloud, networking and resource allocation will be asked. Give the virtual machine a name, click the radio button “Select network manually’. We can choose to add more disk space to the virtual machine that the one listed. However, the additional disk space will only be visible after the disk has been

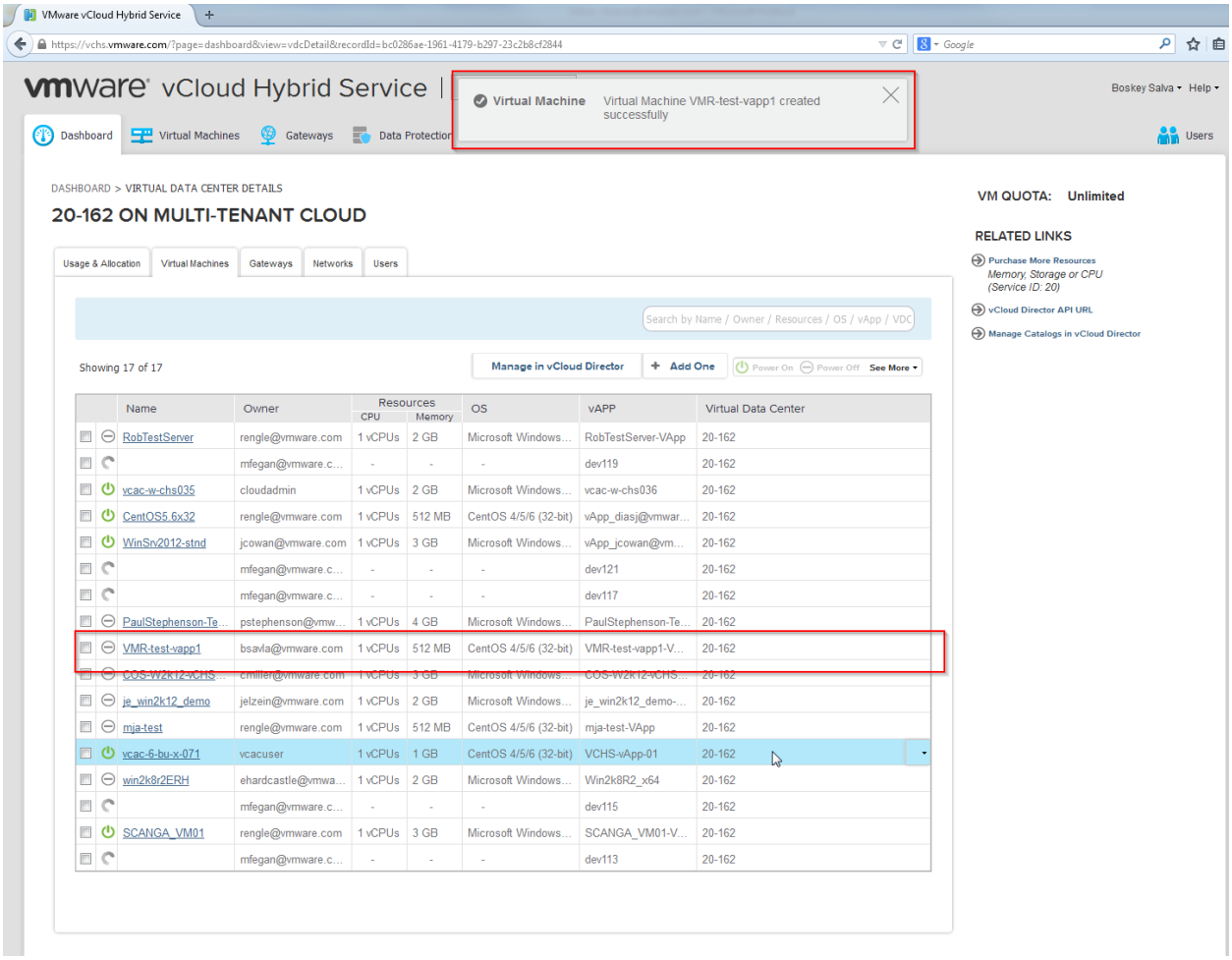
appropriately mounted on Power on.

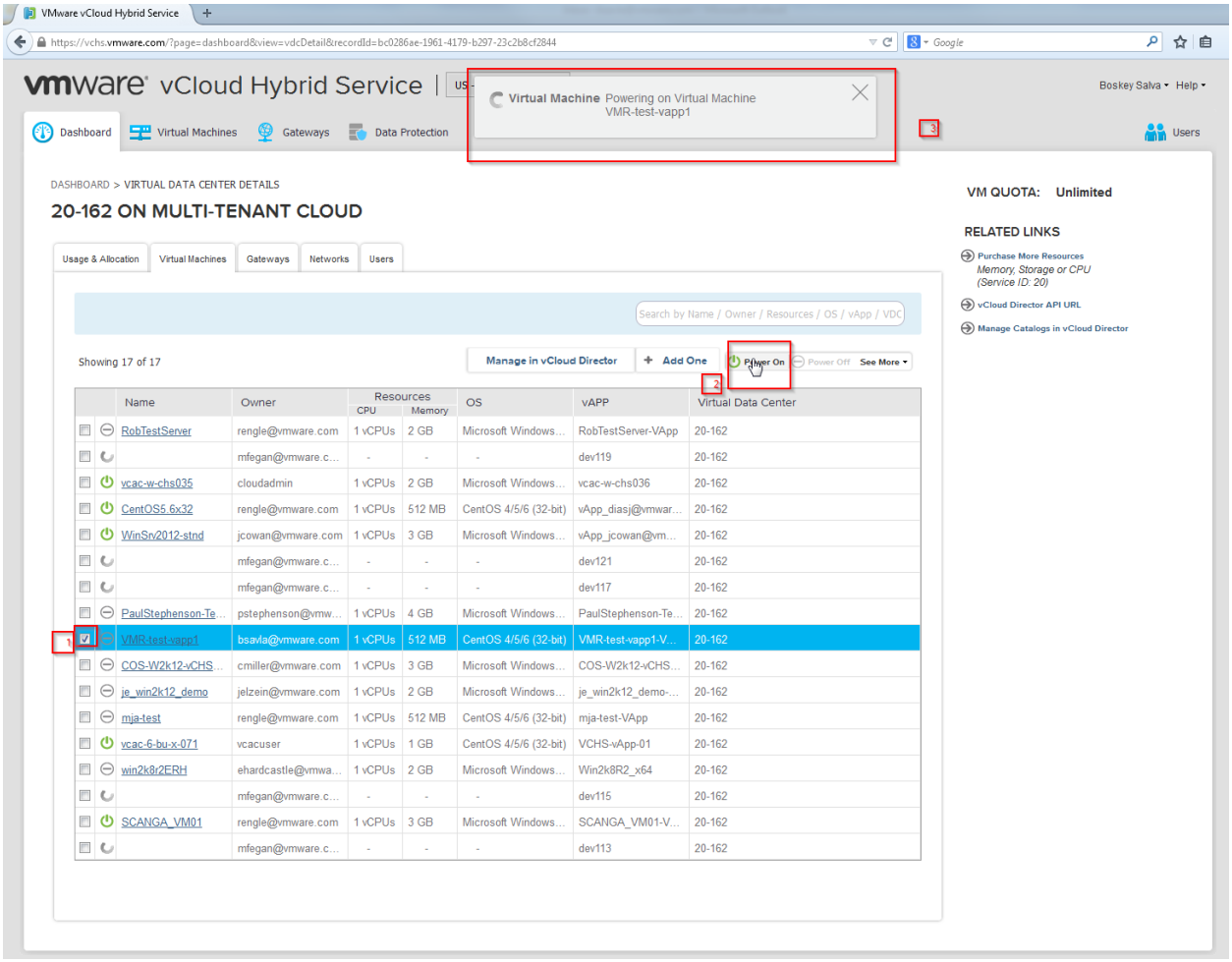


5. The next screen takes us over selecting the appropriate network to place the vApp into. By default a vDC will have two types of networks, an Isolated network, which is not accessible from any external interfaces, and a Routed network, which can be configured (with appropriate firewall policies and NAT rules) to be accessible from external networks. If the virtual machine you are deploying needs to be visible to external world, always place it in a Routed Network. In the example to follow, we want the webserver on the CentOS template to be visible, hence placing it in a Routed Org Network. Select the network, and click 'Deploy This virtual machine'.



6. The virtual machine gets deployed . Click on 'Power On' to start the machine. At this point the virtual machine has been deployed in cloud and is ready


VMware vCloud Hybrid Service
https://vchs.vmware.com/?page=dashboard&view=vdcDetail&recordId=bc0286ae-1961-4179-b297-23c2b8cf2844
vmware vCloud Hybrid Service
Virtual Machine
Virtual Machine VMR-test-vapp1 created successfully
Boskey Salva
Help
Dashboard
Virtual Machines
Gateways
Data Protection
Users
DASHBOARD > VIRTUAL DATA CENTER DETAILS
20-162 ON MULTI-TENANT CLOUD
VM QUOTA: Unlimited
RELATED LINKS
Purchase More Resources
Memory, Storage or CPU
(Service ID: 20)
vCloud Director API URL
Manage Catalogs in vCloud Director
Usage & Allocation
Virtual Machines
Gateways
Networks
Users
Search by Name / Owner / Resources / OS / vApp / VDC
Showing 17 of 17
Manage in vCloud Director
Add One
Power On
Power Off
See More
Name
Owner
Resources
CPU
Memory
OS
vAPP
Virtual Data Center
RobTestServer rengle@vmware.com 1 vCPUs 2 GB Microsoft Windows... RobTestServer-VApp 20-162
mfegan@vmware.c... - - - dev119 20-162
vcac-w-chs035 cloudadmin 1 vCPUs 2 GB Microsoft Windows... vcac-w-chs036 20-162
CentOS5.6x32 rengle@vmware.com 1 vCPUs 512 MB CentOS 4/5/6 (32-bit) vApp_diasj@vmwar... 20-162
WinSrv2012-stnd jcowan@vmware.com 1 vCPUs 3 GB Microsoft Windows... vApp_jcowan@vm... 20-162
mfegan@vmware.c... - - - dev121 20-162
mfegan@vmware.c... - - - dev117 20-162
PaulStephenson-Te... pstephenson@vmw... 1 vCPUs 4 GB Microsoft Windows... PaulStephenson-Te... 20-162
VMR-test-vapp1 bsavla@vmware.com 1 vCPUs 512 MB CentOS 4/5/6 (32-bit) VMR-test-vapp1-V... 20-162
je_win2k12_demo jelzein@vmware.com 1 vCPUs 2 GB Microsoft Windows... je_win2k12_demo-... 20-162
mja-test rengle@vmware.com 1 vCPUs 512 MB CentOS 4/5/6 (32-bit) mja-test-VApp 20-162
vcac-6-bu-x-071 vcacuser 1 vCPUs 1 GB CentOS 4/5/6 (32-bit) VCHS-vApp-01 20-162
win2k8r2ERH ehardcastle@vmwa... 1 vCPUs 2 GB Microsoft Windows... Win2k8R2_x64 20-162
mfegan@vmware.c... - - - dev115 20-162
SCANGA_VM01 rengle@vmware.com 1 vCPUs 3 GB Microsoft Windows... SCANGA_VM01-V... 20-162
mfegan@vmware.c... - - - dev113 20-162



Licensing Appliance

The virtual appliances that will be eventually uploaded to the service catalog will be listed in VMware marketplace (VSX). Since the appliance resides in a public domain and if the appliance needs a license, there has to be processes/mechanisms defined to deliver the License pre/post deployment.

There are multiple ways to deliver a license to 'activate' the application. The appliance can have Evaluation license already wired into the vApp template and a valid license can be delivered/applied post deployment upon purchase, Or, if the license isn't already wired and the vApp needs it upon deployment, an evaluation license can be published along with the user guide for the appliance.

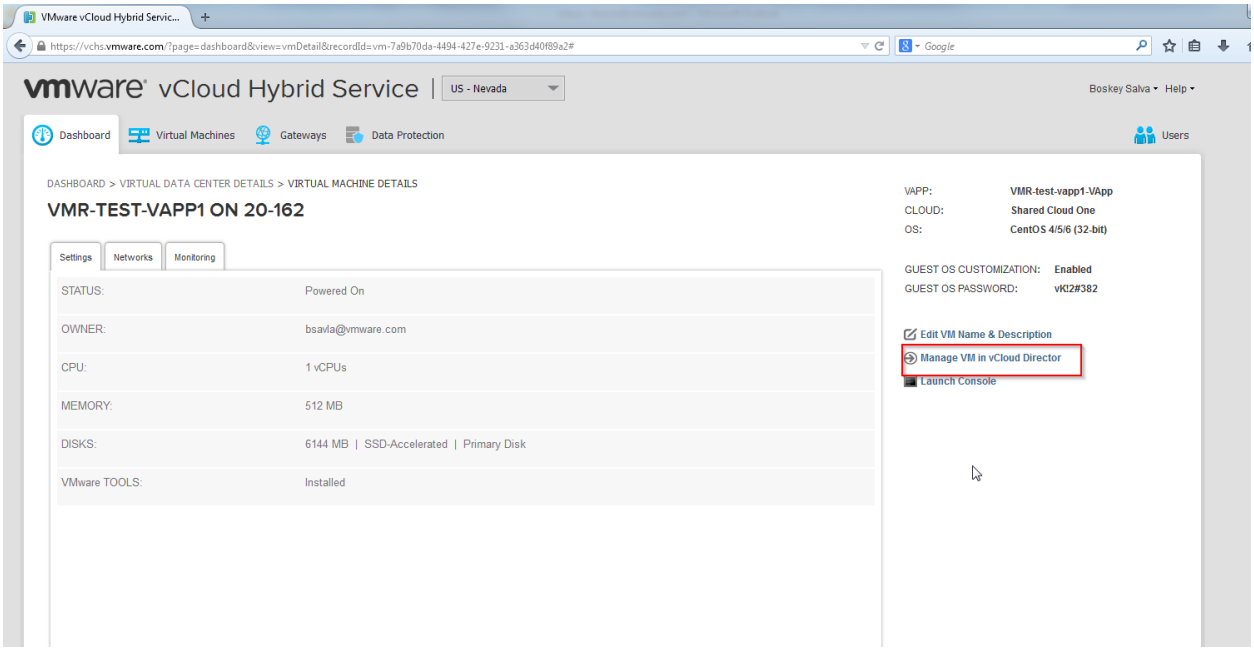
Configuring deployed VM for external access.

The Routed Org networks in vCloud Air are virtual private networks that by default do not allow any packets of data through and from the network to any outside or other private networks in the vDC, they

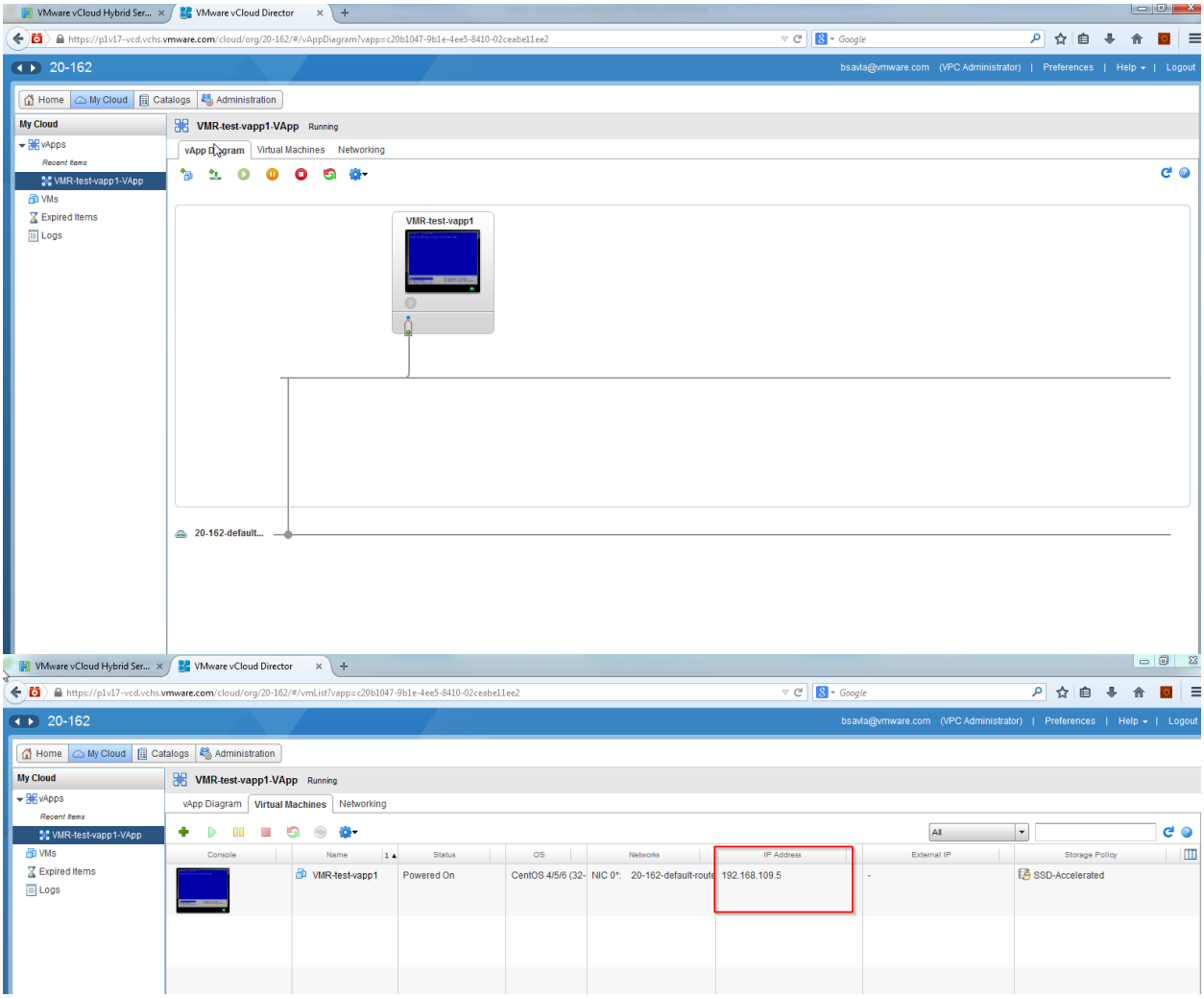
are protected by a Firewall. These networks can be customized such that only application level traffic can be exposed to external networks. Since we placed our virtual machines in this network and we want only the application specific traffic (web traffic in this case) to flow through the networks, we can append/customize Firewall/NAT rules to enable this. Below steps show how the IP address of the virtual machine which is a private non routable address on the internet is mapped to a Public Routable address to achieve traffic flow.

In order to map the private IP address to Public IP's, there needs to be Public IP address available in the vDC. A single Public IP can be mapped to multiple private IP's on a port basis, however if the mappings are done on all inbound TCP/UDP ports than Public IP 's needed will be equal to the private IP's mapped.

1. To begin configuring Firewall rules, first we need to identify the Private IP address of the virtual machine deployed, you can get this information by logging into your vDC and clicking on 'Manage VM in vCloud Director'. This opens up the native vCloud Director interface.

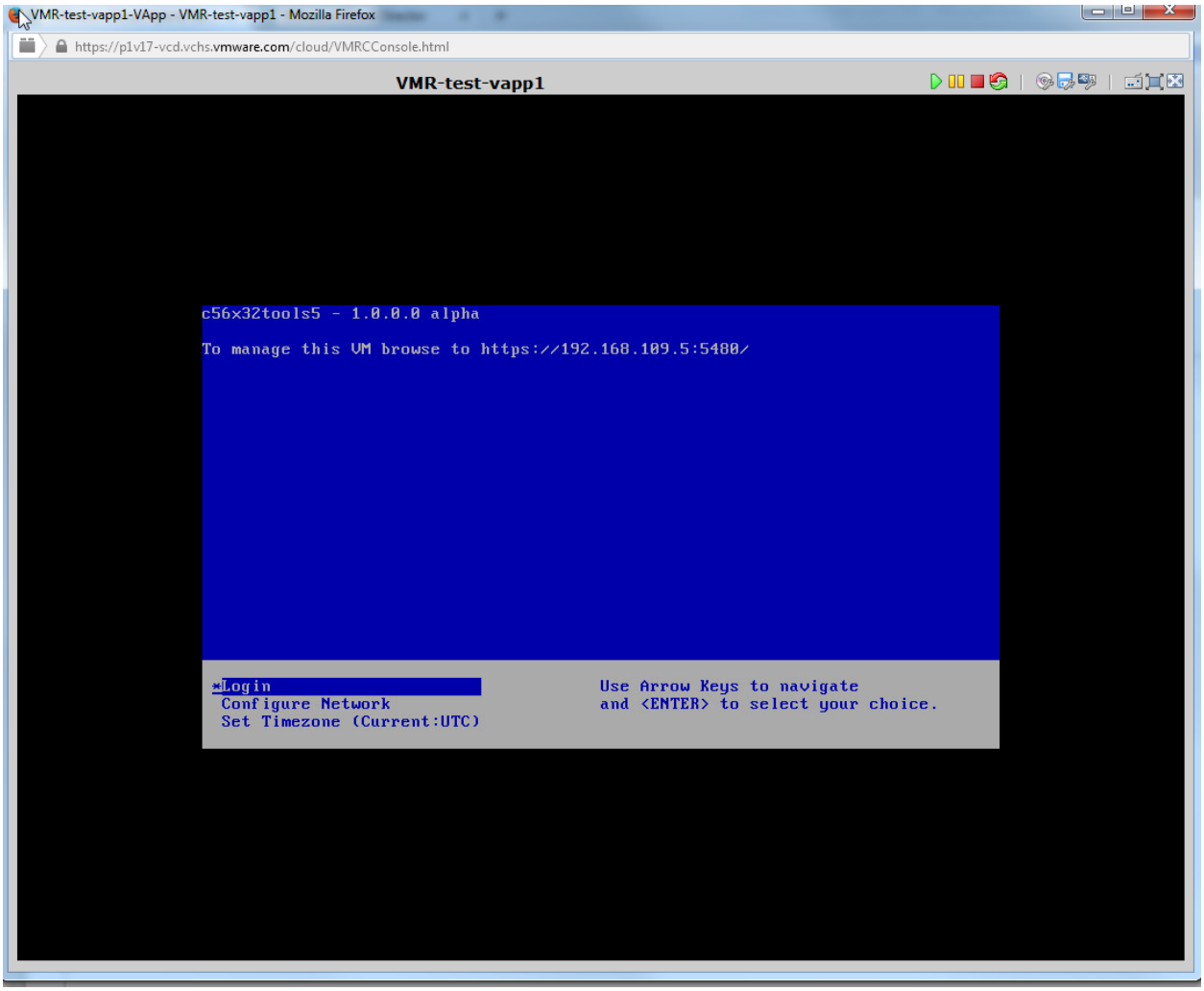


2. Once in the vCloud Director interface, Click on Virtual machines tab and note the IP address of the virtual machine. For this example, the virtual machine, VMR-test-vapp has a IP of 192.168.109.5



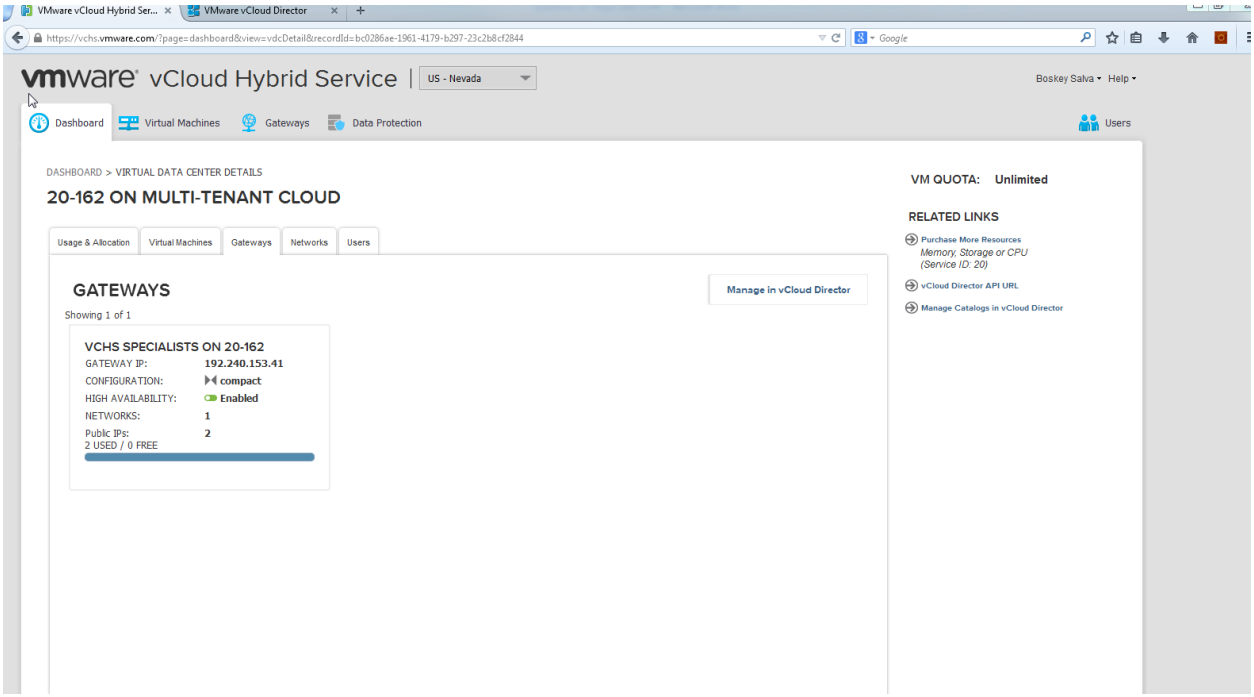
3. Looking at the console , there is a web server active on port 5480 of the virtual machine, Pointing the browser window to the https://192.168.109.5:5480 will not lead us to any site ,

since it's a non-routable address.



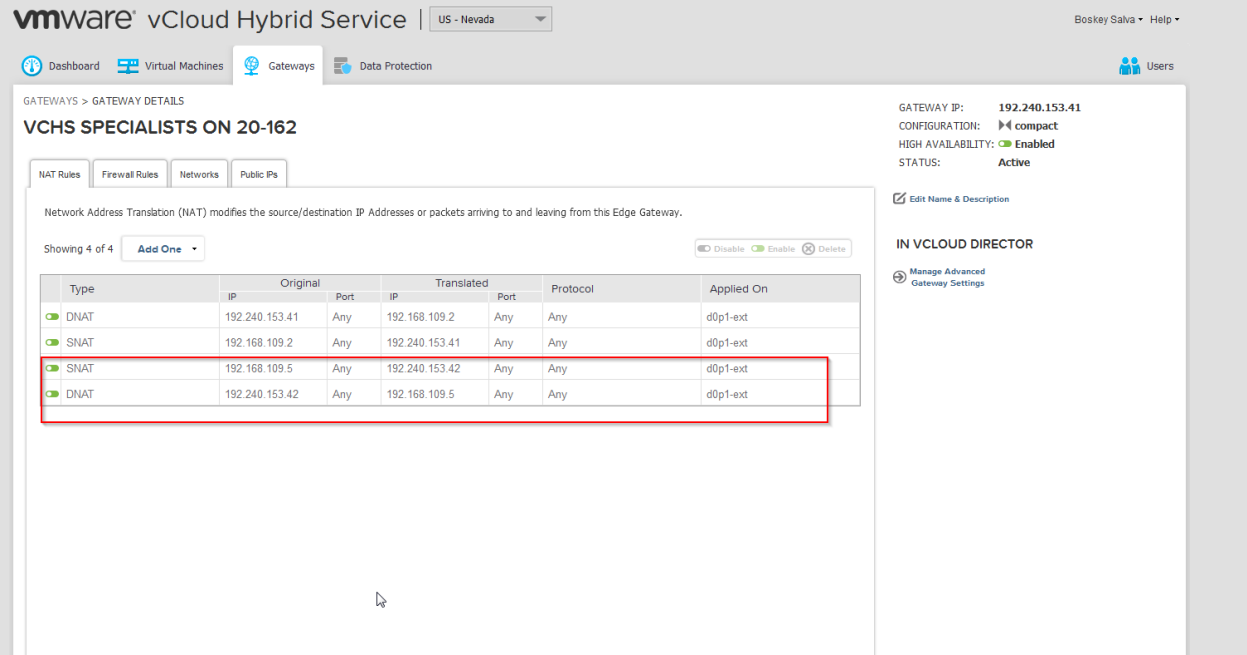
4. To change the network configuration, to allow inbound traffic on port 5480 to the virtual machine, we need to to append the Firewall and NAT(network address Translation) settings. Login to the vDC, click on the gateways tab. Double click the gateway listed to reach to the

configuration page.

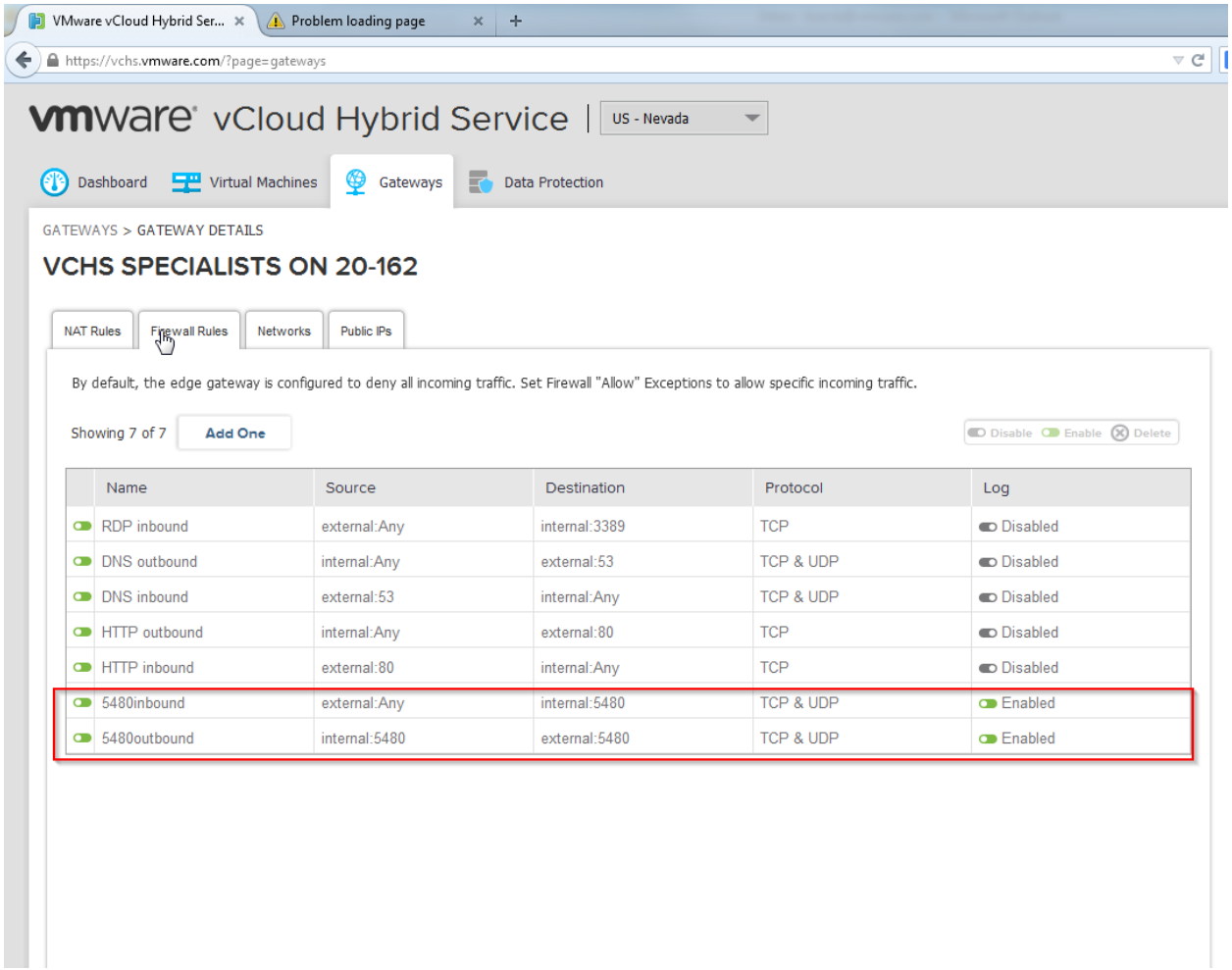


5. On the NAT tab, there will be two rules defined; one is a SNAT rule that will allow traffic that is out bound from the virtual machine to the outside/external networks and a DNAT rule that will allow incoming traffic from the outside world to this particular virtual machine via the Public IP address “192.240.153.42”.

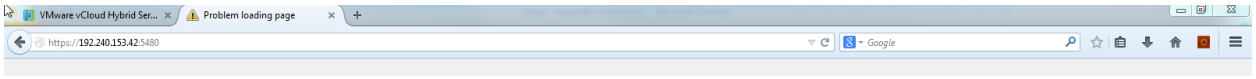
Click on ‘Add one’ , add a SNAT and a DNAT rules to allow all inbound and outbound ports from private IP ‘192.168.109.5’ to public IP ‘192.204.153.42’

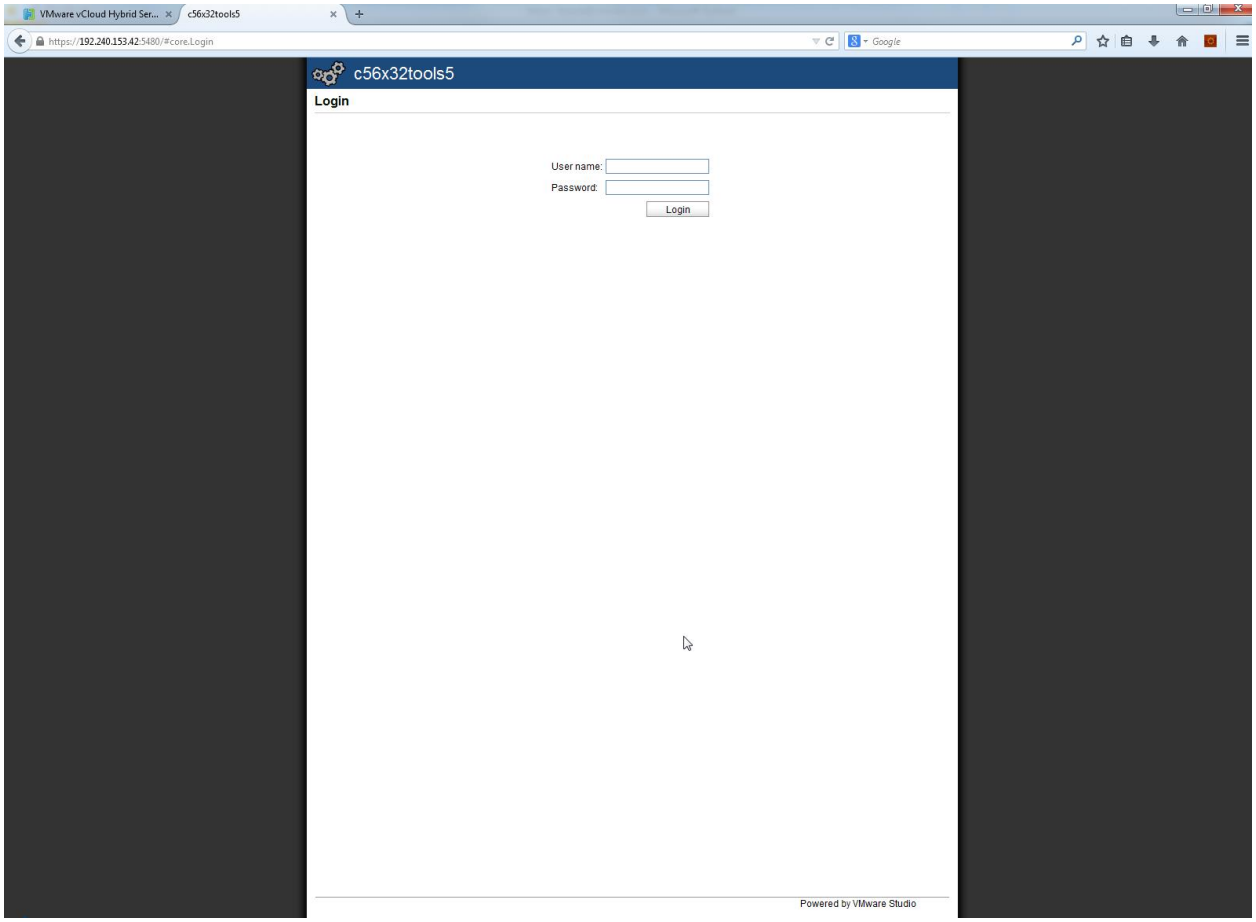


6. The NAT rules helps us map the IP's together, however Firewall still needs to enable to allow specific traffic between these two networks. On the same page in the vDC, click on the Firewall tab. We will allow any inbound packet from external network on port 5480 to the private network. Also for the reverse traffic allow any outbound packet from internal network on port 5480 to outside/external networks on TCP and UDP.



7. This completes the IP mappings and firewall changes, now if you point the browser to the external IP address @ port 5480 you will reach the virtual machines web page, see below.




VMware vCloud Hybrid Ser...
c56x32tools5
https://192.240.153.42:5480/#core.Login
Google
c56x32tools5
Login
User name:
Password:
Login
Powered by VMware Studio

Driving Load against the deployed vApp:

The next step for the certification process involves testing the application connectivity and performance by driving load across the WAN using the public IP address configured for the vApp. It is recommended to use the same tools being used for existing Physical / Virtual testing, and that the load driver will drive load from an on-premise configuration, across the WAN to the vCloud Air setup where your application is running.

Once the vApp has been successfully deployed and configured for external access, configure your load generator (LoadRunner, JMeter or in-house tools, etc.) to drive application load through the public IP address. Collect the in-guest resource utilization numbers during the test runs using vCloud Air portals's VM console. Use the Load generator results and correlate with VM resource utilization for the vApp.

As an example, the steps for Load testing using JMeter have been listed below.

Load Testing using JMeter 2.11

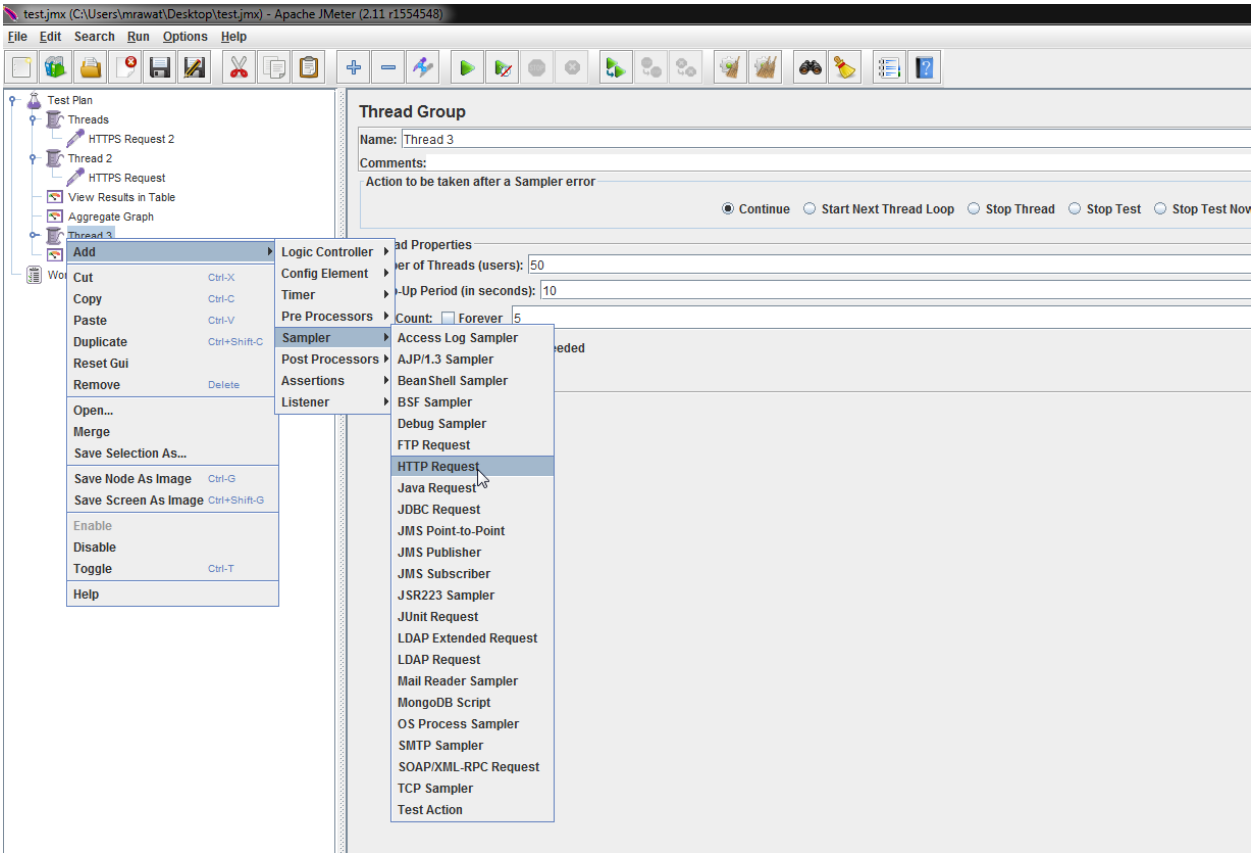
JMeter is a Java based application designed to load test and measure performance of various application resources (like Files, Web dynamic languages - PHP, Java, ASP.NET, etc.). Below mentioned steps highlight how JMeter can be used to simulate heavy Web traffic load on a lighthttpd server deployed on vCloud Air Cloud.

Prerequisites:

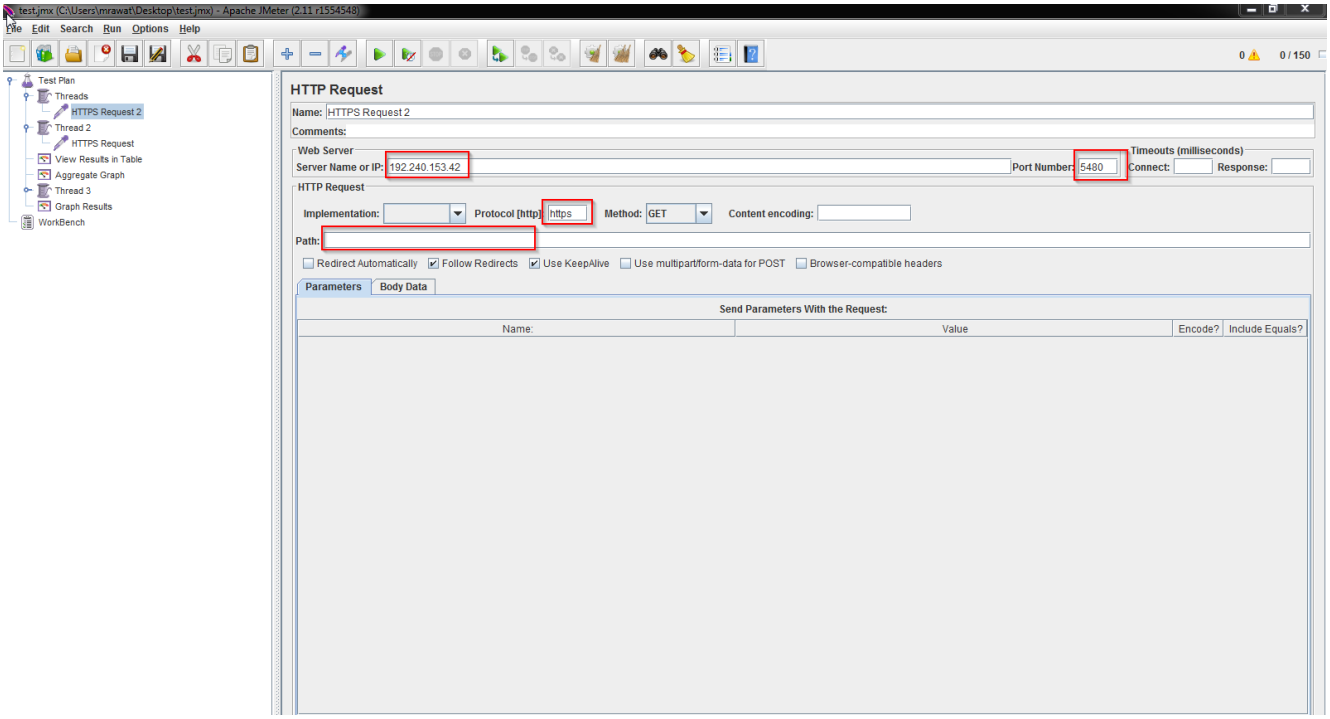
a. Confirm the Web Server is accessible externally using an IP address/hostname.
b. Latest versions of JMeter and Java are installed on the desktop being used for testing.
c. List information regarding 3-4 Webpages that can be used to serve the http/https requests generated by JMeter. The Webpages can be different links within the Website.

Steps to generate load using JMeter:

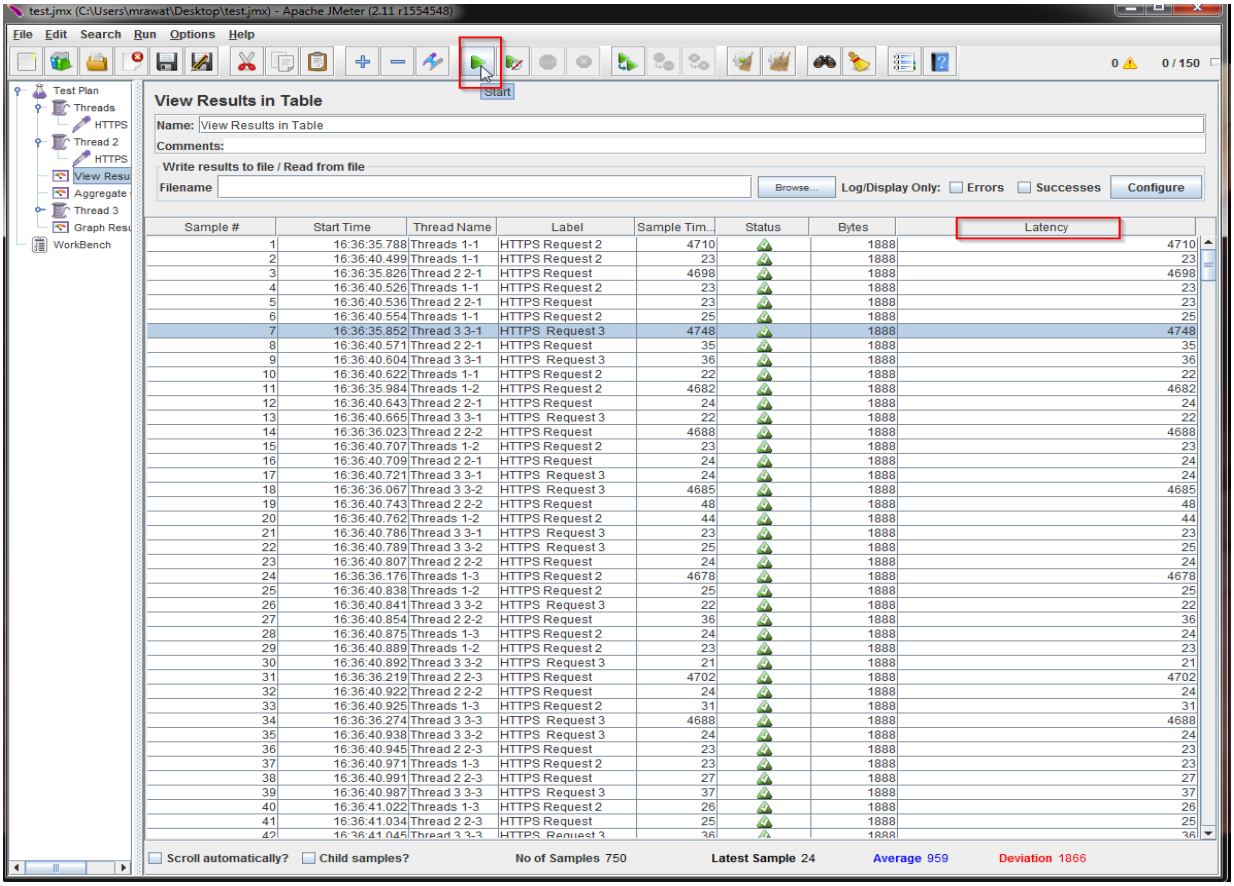
1. Create a Test Plan with 2 -3 Thread Groups and HTTP requests as shown below. For all the Thread groups, select the number of threads, ramp up time and loop count.



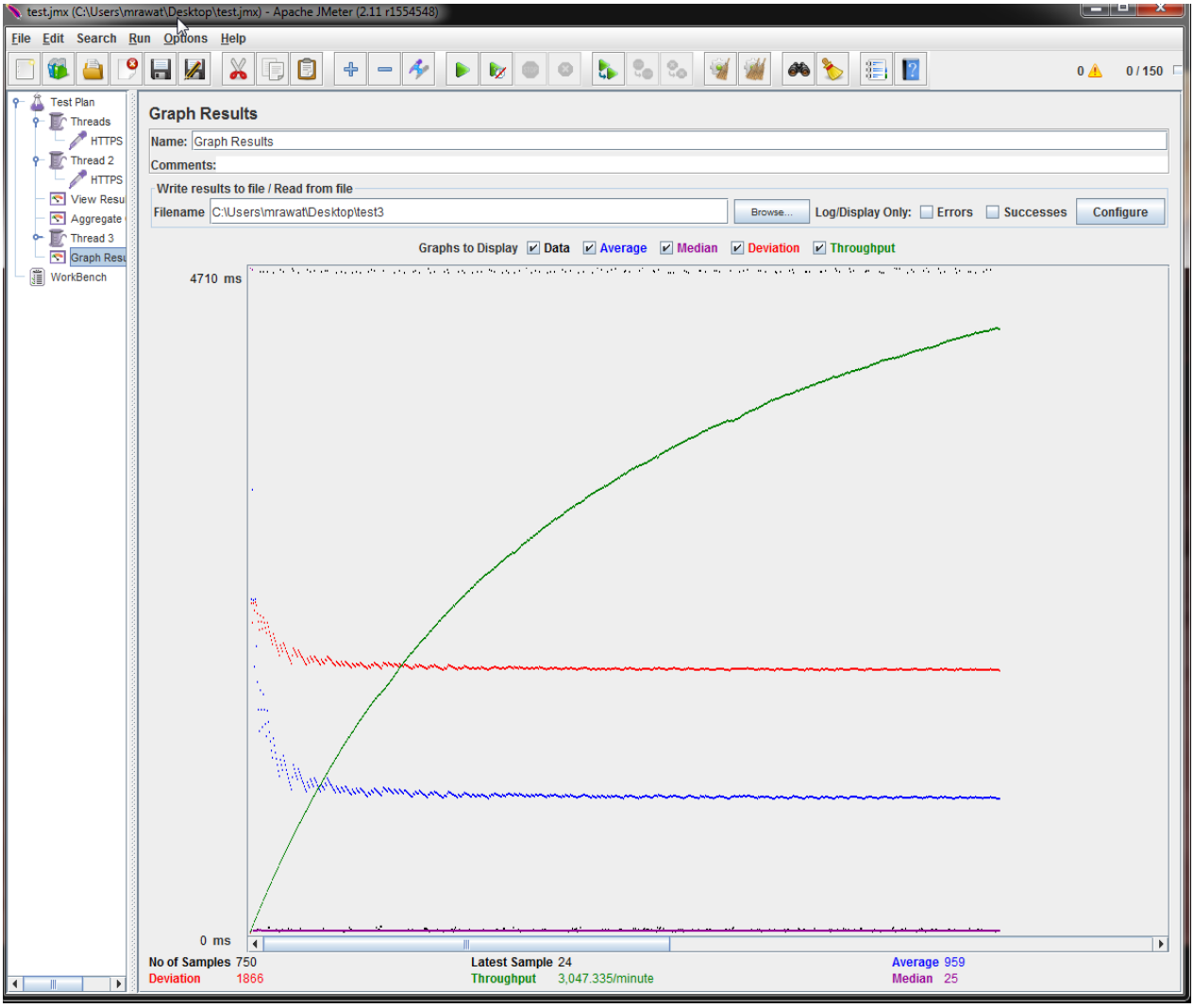
2. Enter the Web server IP, port number and path of the website. Change the protocol to https, if required.



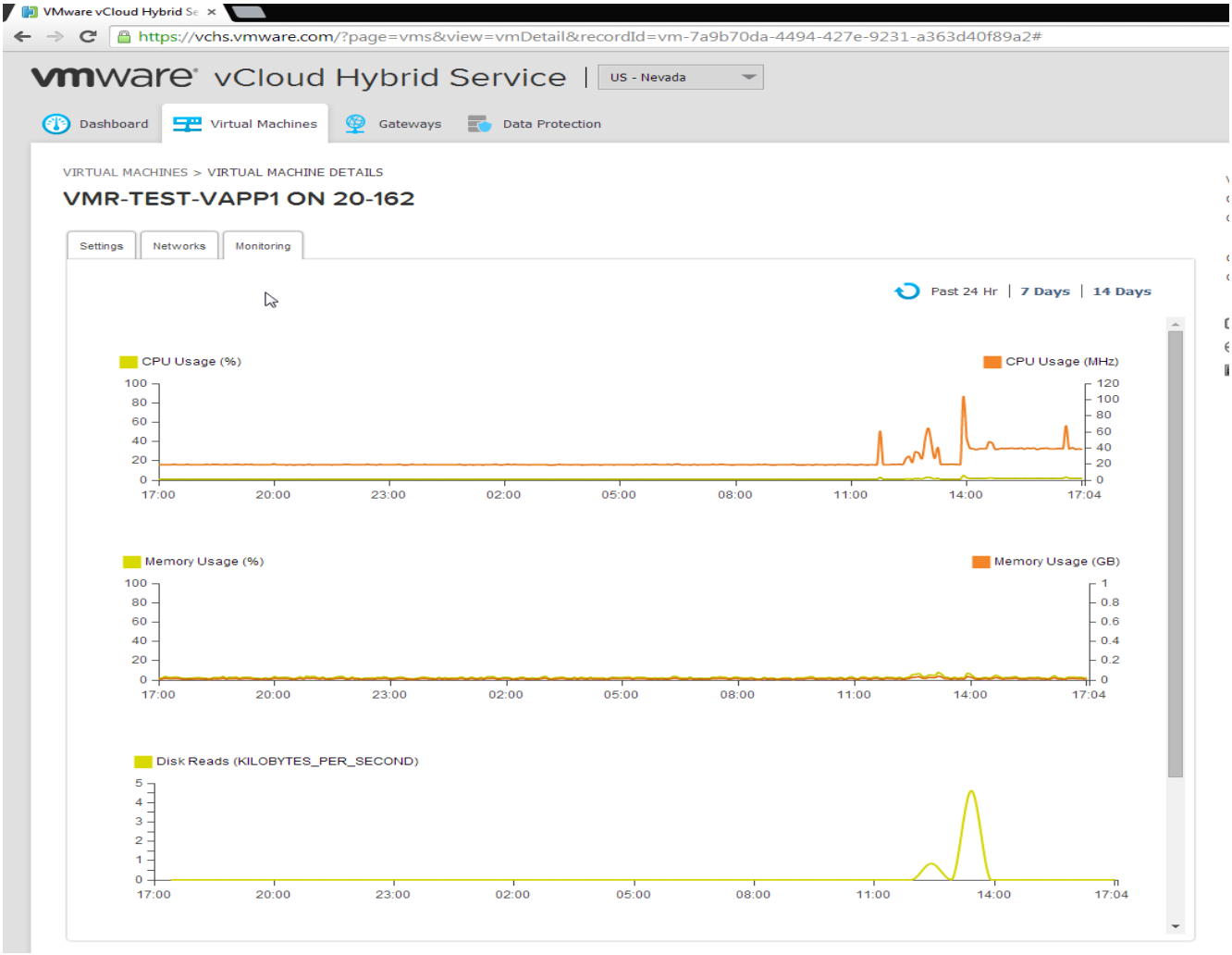
3. Add the “View Results in Table” and “Graph Result” tabs (Test Plan -> Add -> Listner)
4. Once the configuration is finished, Press Start button to start the test:



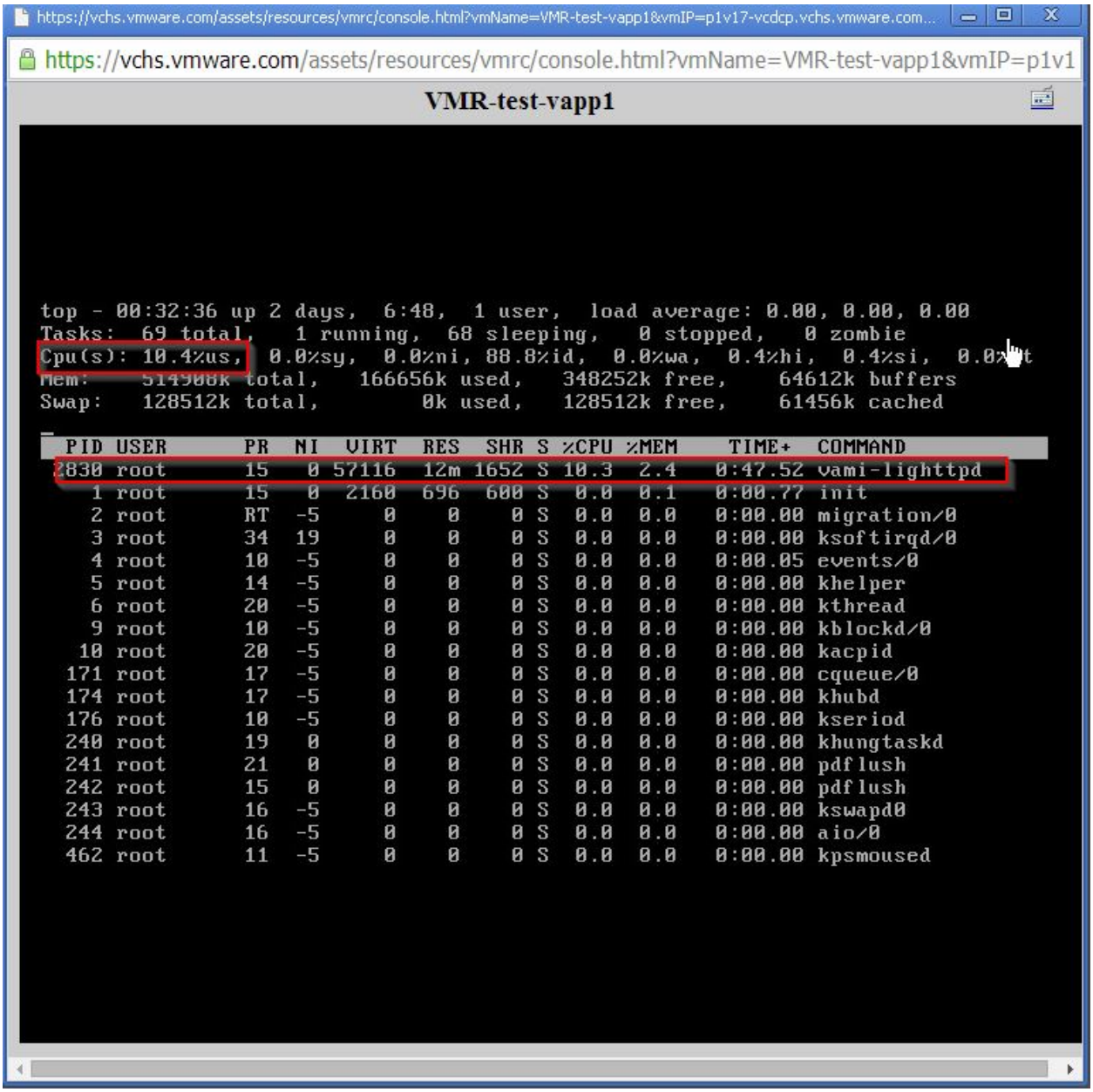
Graph:



5. Open vCloud Air.vmware.com, go to the VM (Webserver) detail page and click monitoring. Check the resource Utilization numbers for the VM. There should be a increase in the CPU utilization during the JMeter test execution. Ideally the amount of CPU utilization from the load test is typical of real production use, so between 10% CPU and 60% CPU.



6. Open the VM console by clicking the “Launch Console” button through the vCloud Air portal.
7. Use the top command to observe the increase in CPU utilization during the tests.



8. Use the “netstat –atc” command to observe the network traffic and queuing during the tests.