

I. Create Windows 2012 R2 VMware Template for Guest Customization

The purpose of this document is to illustrate the steps to create a VMware Windows 2012 Template that can be used with UCS Director Workflows. It is important to note that if you cannot successfully deploy a VM Using Guest Customization directly from vCenter, you will not be able to deploy it using UCS Director. UCS Director does not magically fix a flaky VMware Template. Creating a Windows 2012 R2 Template while ensuring Guest customization will work appropriately can be a daunting task to say the least. I suggest following this guide exactly to a T for your first deployment to build your confidence and then tweak things to see what works and what doesn't.

This was created and tested by Sam Fontenot and Orf Gelbrich on vCenter 5.1 Update 3 and vCenter 5.5. The template was then used for deployment in UCSD (5.2.0.0A and 5.2.0.1 with IBM patch)

II. VMware Guest OS Customization Support Matrix

Use the following link to verify your vCenter and ESXi Host are at the appropriate patch levels to support the Windows 2012 R2 Guest Customization.

<http://partnerweb.vmware.com/programs/guestOS/guest-os-customization-matrix.pdf>

The Chart below is a sample from the link above.

OS Release	vCenter Version				
	4.0	4.1	5.0	5.1	5.5
Windows Server 2012 R2	No	No	Yes ²	Yes ¹	Yes
Windows Server 2012	No	No	Yes ²	Yes ¹	Yes
Windows Server 2008 R2	Yes	Yes	Yes	Yes	Yes
Windows Server 2008	Yes	Yes	Yes	Yes	Yes
Windows Server 2003 R2	Yes	Yes	Yes	Yes	Yes
Windows Server 2003	Yes	Yes	Yes	Yes	Yes
Red Hat Enterprise Linux 7.x	No	No	No	Yes ³	Yes
Red Hat Enterprise Linux 6.x	No	Yes ¹	Yes	Yes	Yes
Red Hat Enterprise Linux 5.x	No	Yes	Yes	Yes	Yes

Key:

No = Not supported

Yes = Supported

Yes¹ = Supported from Update 1

Yes² = Supported from Update 2

Yes³ = Supported from Update 3

III. Download Windows 2012 R2 image and obtain license key

Log into MSDN Subscriptions and search the Subscriber Downloads for the following:

Windows Server 2012 R2 with Update (x64) - DVD (English)

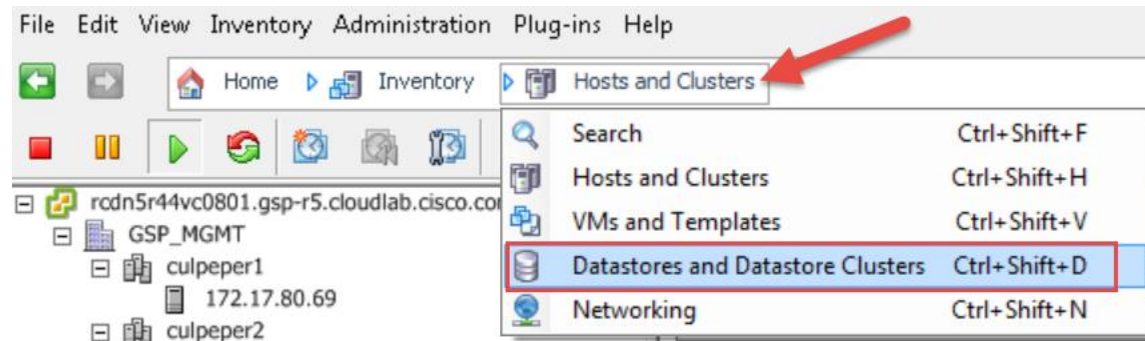
Note: The above is the exact image we use for our testing.

While your image is being downloaded, click the Product Keys button and select the type of server you want to install.

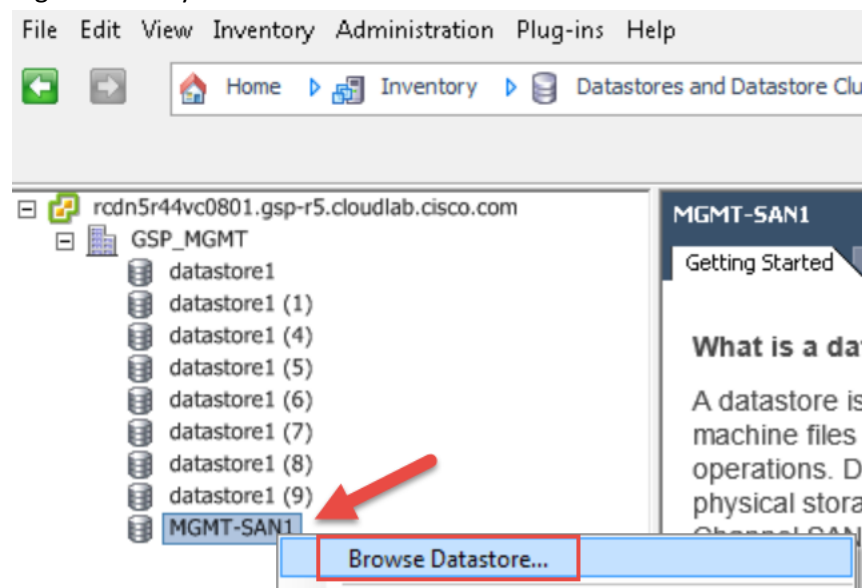
Note: Our test were completed using the **Windows Server 2012 R2 Standard** license key.

IV. Upload the Windows iso to a shared datastore

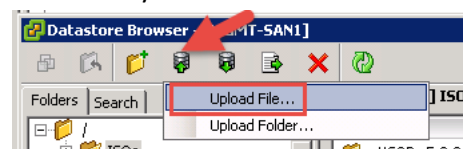
From vCenter, select Datastores and Datastore Clusters:



Right Click on your shared datastore and select Browse Datastore:



Browse to your ISOs folder and select Upload files to this datastore and then Upload File:



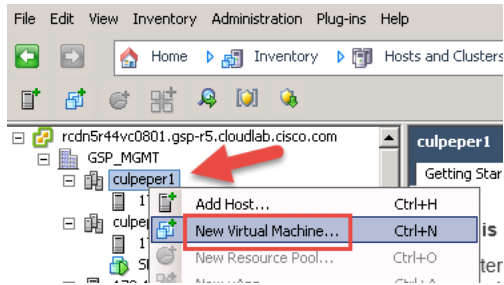
Browse to your iso image and select it to be uploaded:

en_windows_server_2012_r2_with_update_x64_dvd_6052708.iso

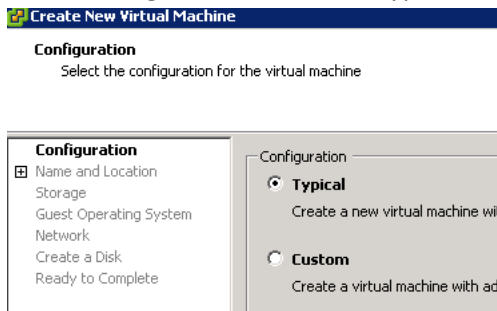
Select Yes to the messages that pop up.

V. Create Windows 2012 R2 VM to be used to create template

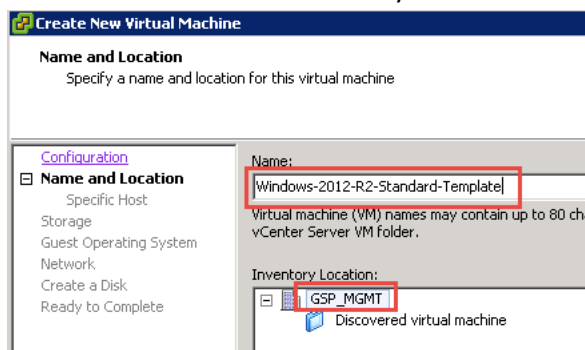
From vCenter, Right Click on a Data Center, Cluster or ESXi Host and select New Virtual Machine:



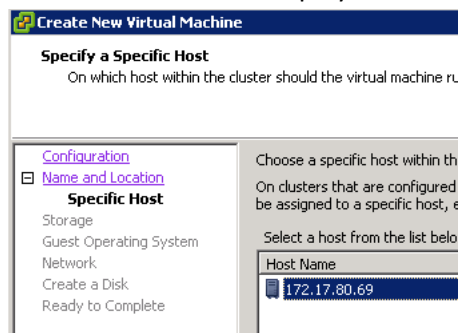
Leave Configuration default of Typical and click next:



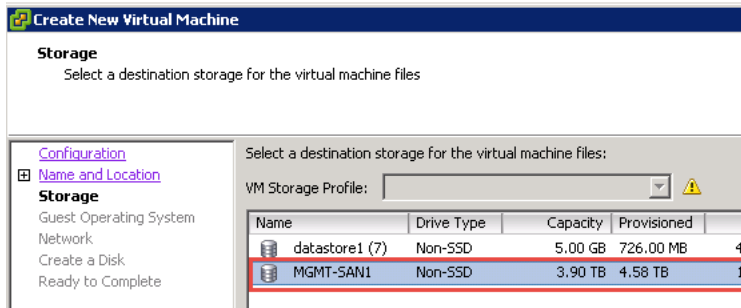
Name the VM that will eventually be converted to a template:



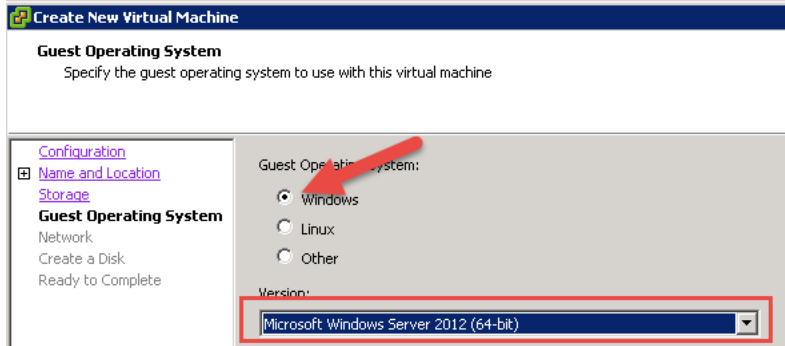
Select an ESXi host to deploy the VM to:



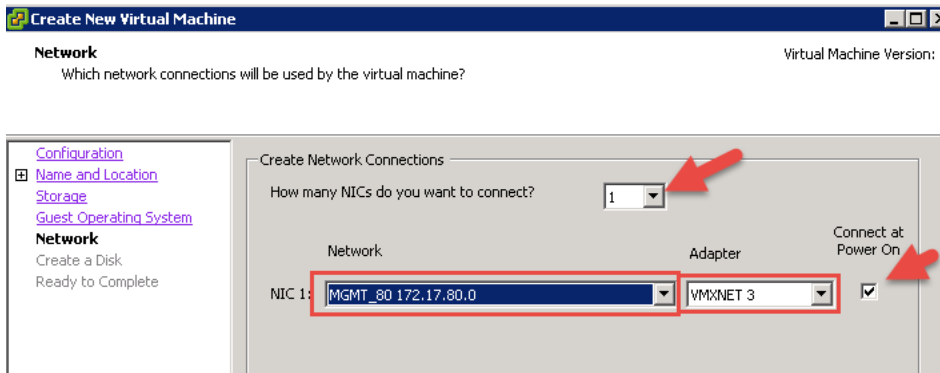
Select a shared datastore:



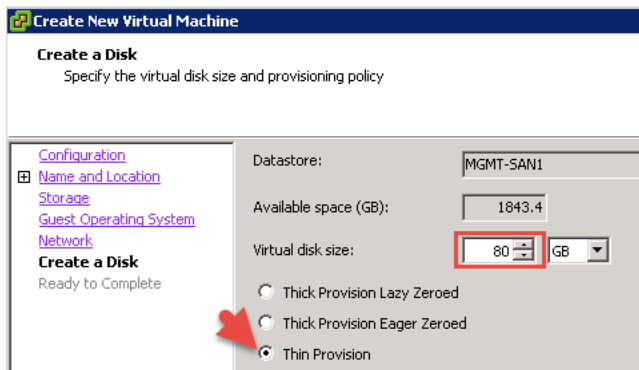
Select Microsoft Windows Server 2012 (64-bit) and click next:



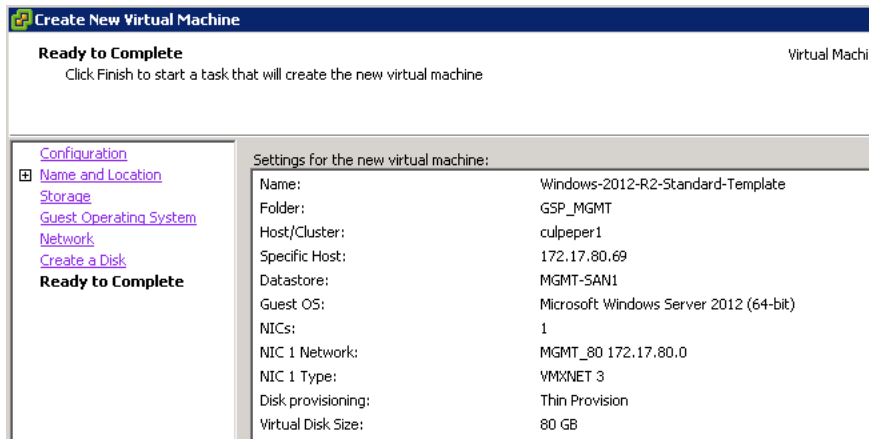
Select **your** network for NIC 1, VMXNET3 for the Adapter type and make sure Connect at Power On is selected:



Change the disk size to 80GB and choose your disk provision type: **Note:** we used Thin Provisioning for our test.

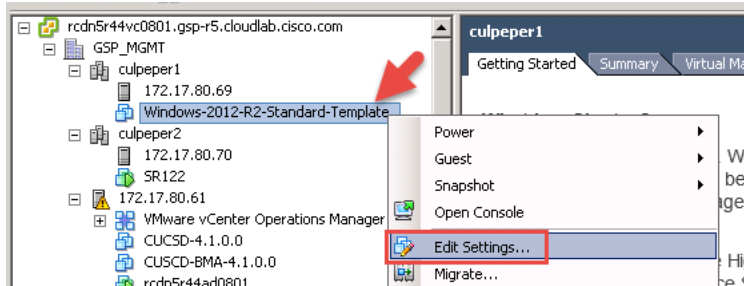


Verify Configuration and Click Finish:

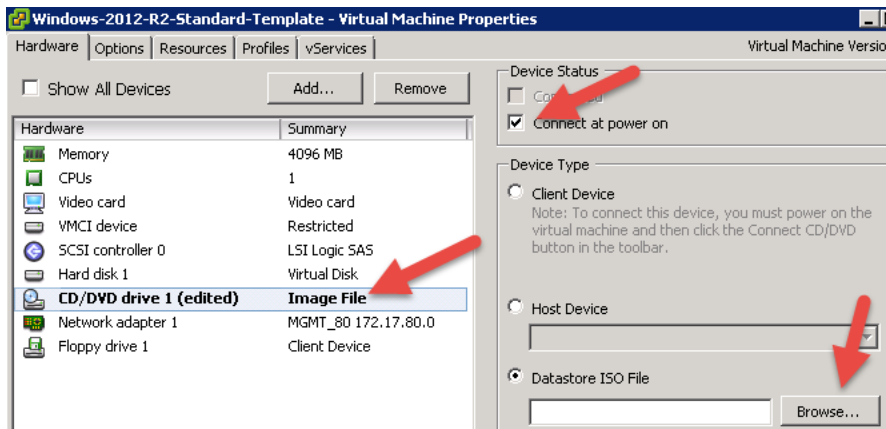


VI. Install Windows 2012 R2 Standard on your Virtual Machine

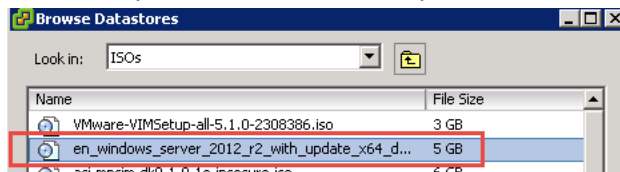
Right Click on the **Windows-2012-R2-Standard-Template** and select edit settings:



Select CD/DVD drive, select Connect at power on and select Datastore ISO File then click Browse:

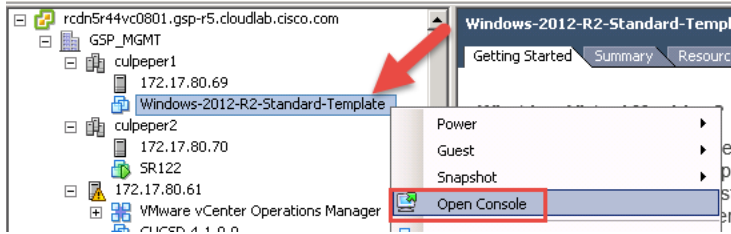


Browse to your ISO file located on your datastore and select it and click OK:



Then Click OK to close the VM Properties window.

Right Click on the **Windows-2012-R2-Standard-Template** and select Open Console:



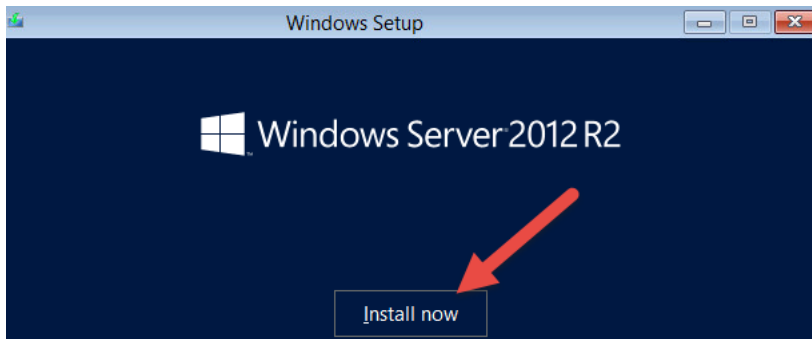
Click the Green Arrow button to power on the VM:



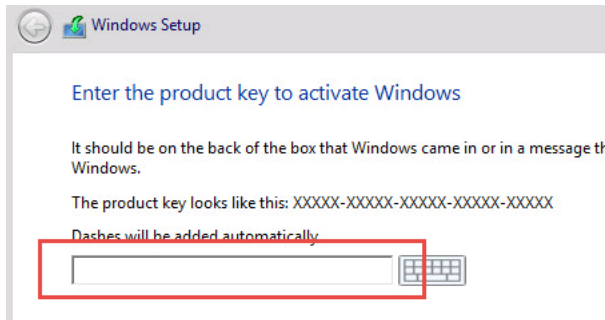
Watch the console and click next when you see this window:



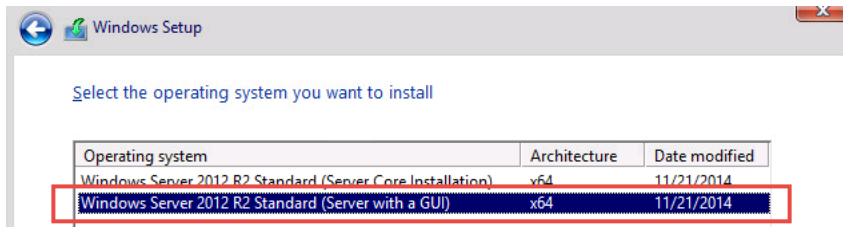
Select Install:



Enter your product key and click next:

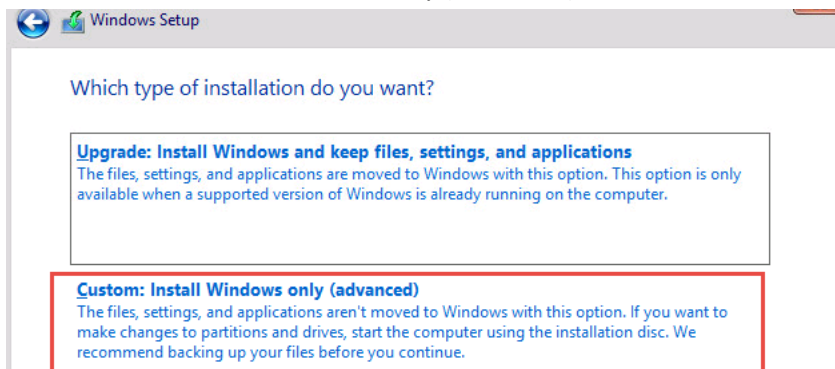


Select Windows Server 2012 R2 Standard (Server with a GUI) and click Next:

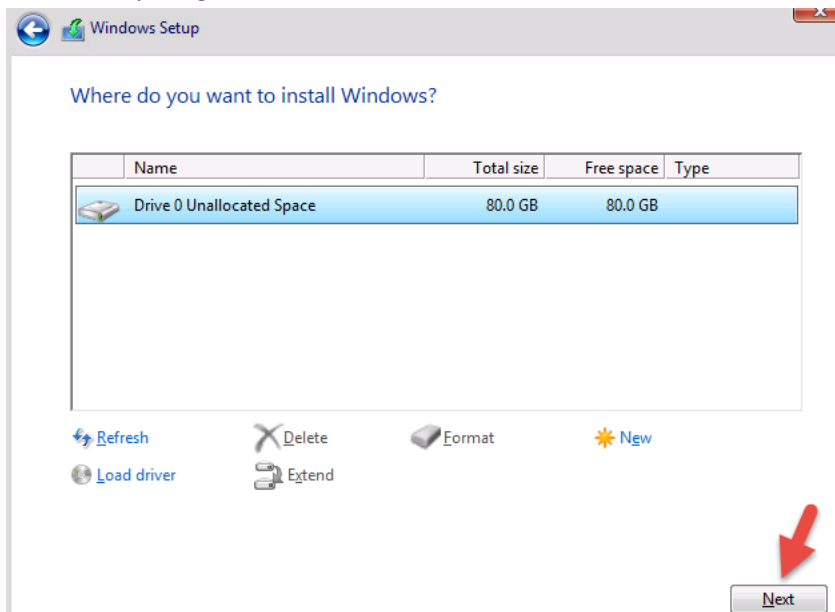


Accept the License terms and click next.

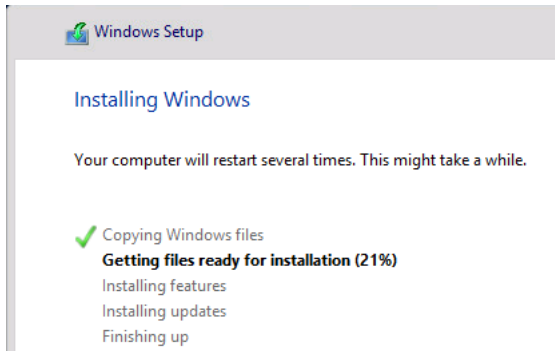
Select Custom: Install Windows only (advanced)



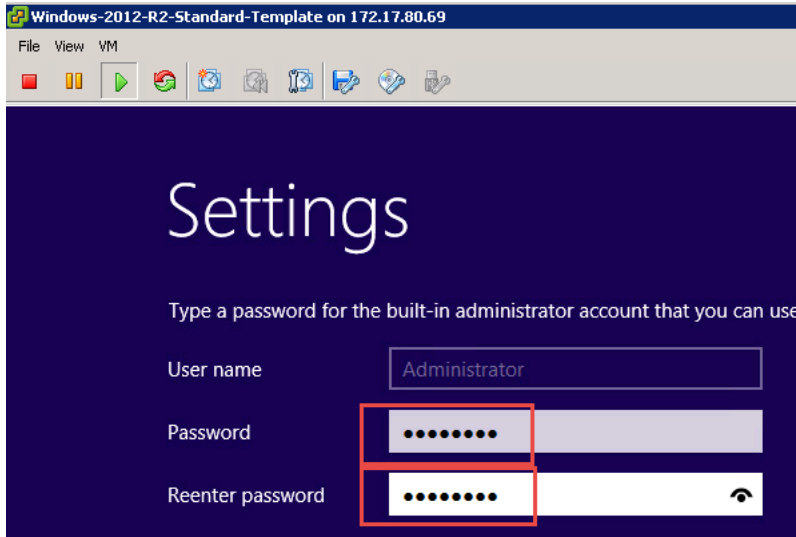
Leave everything default and select Next:



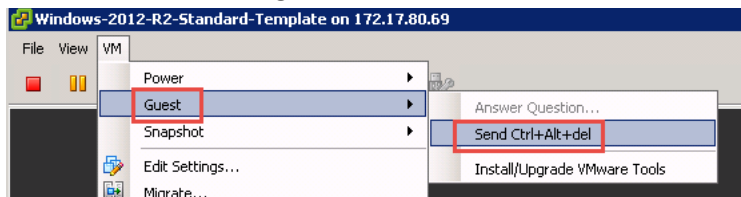
Watch the progress as the OS gets installed. Server will reboot.



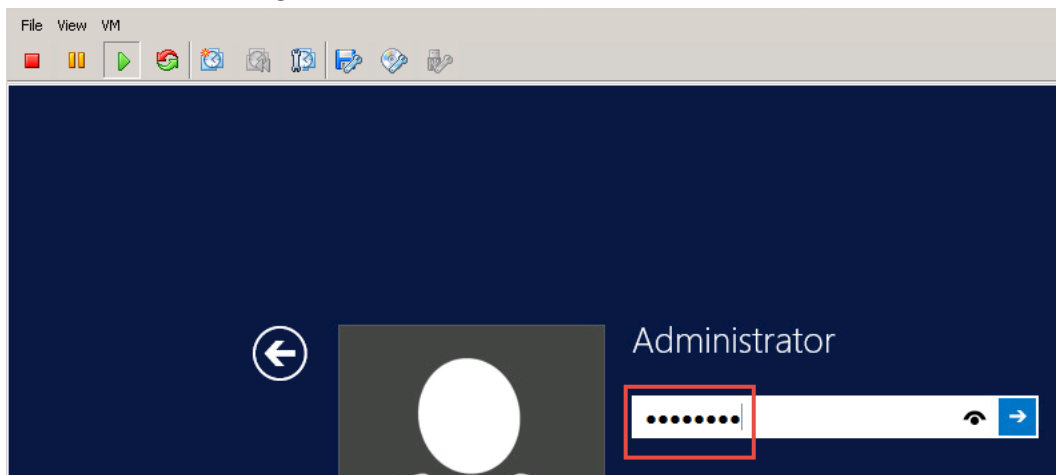
Enter an Administrator password twice and select Finish:



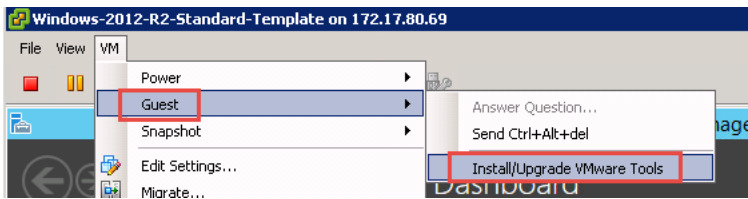
Send Ctrl+Alt+del to log into the VM:



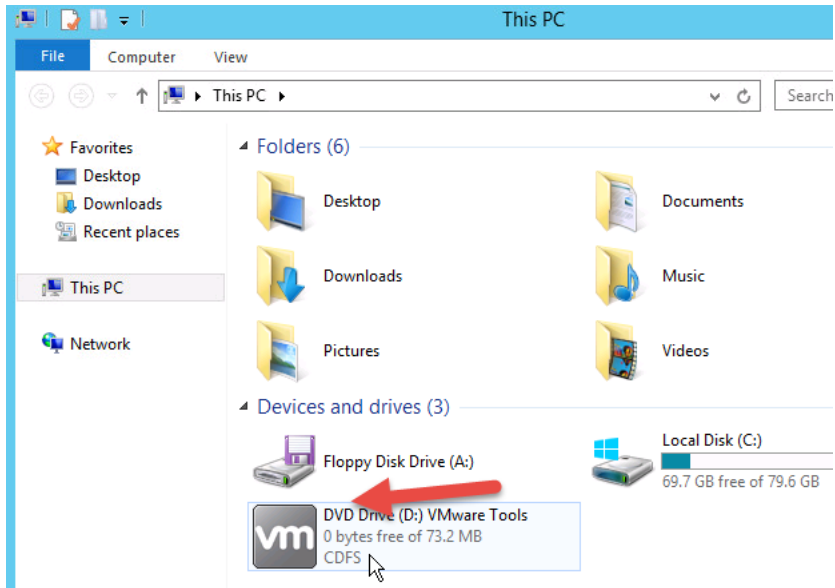
Send Ctrl+Alt+del to log into the VM:



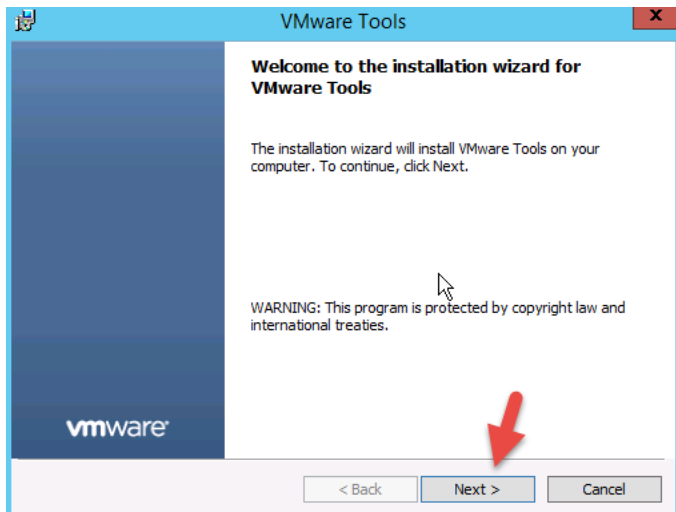
Select Install/Upgrade VMware Tools:



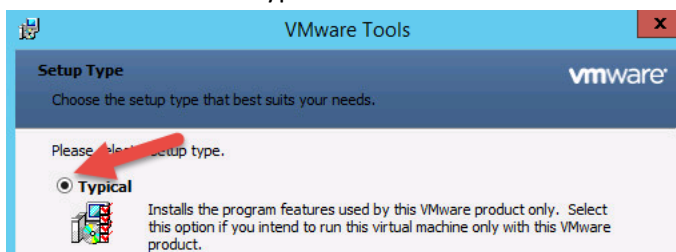
Open the VMware tools installer by double clicking on the DVD drive:



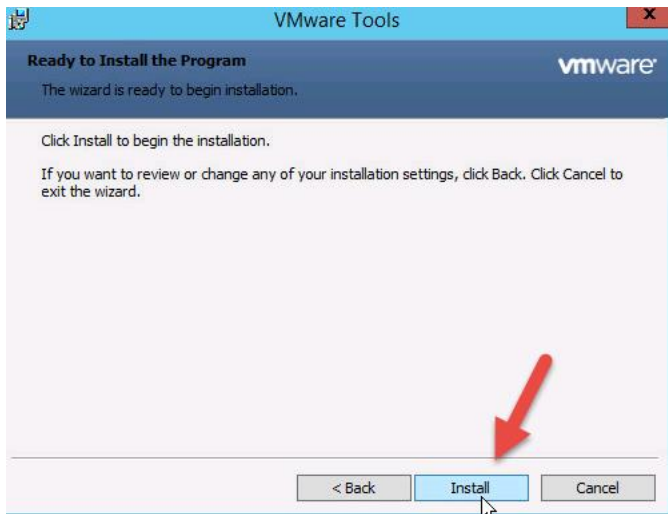
Select Next:



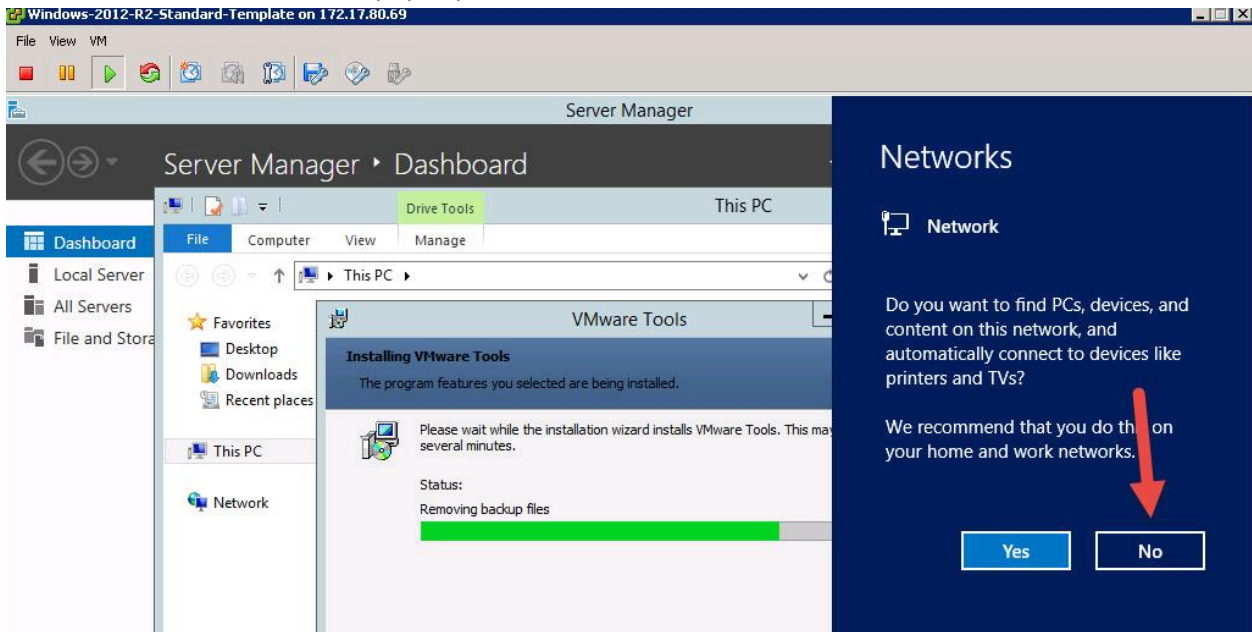
Leave the default of Typical selected and click Next:



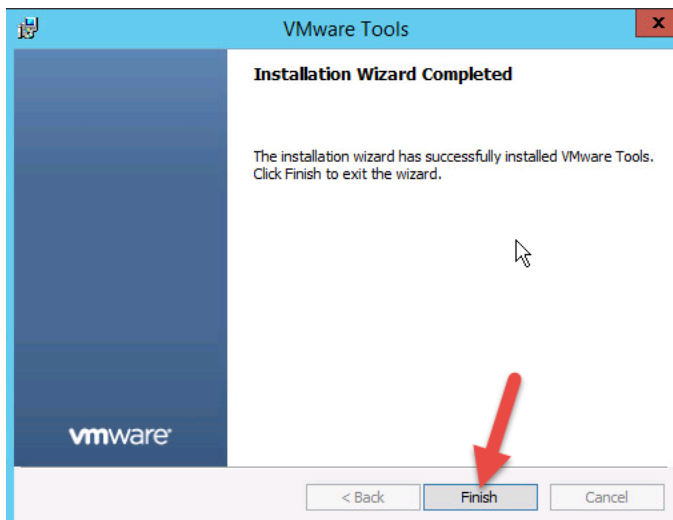
Select Install:



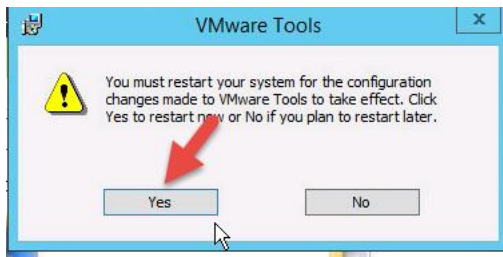
Select No to Networks when it pops up:



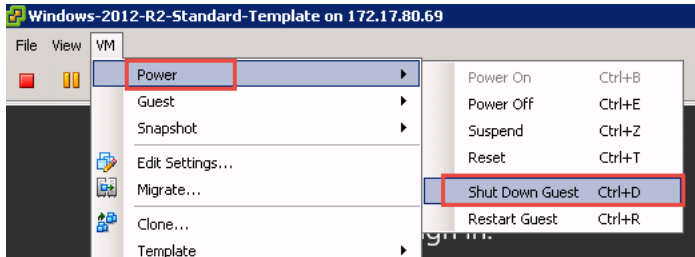
Select Finish:



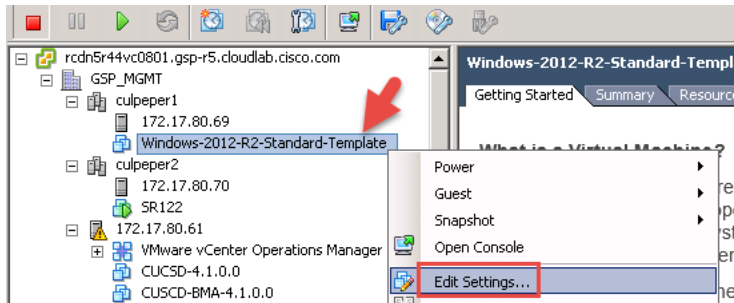
Select Yes to Restart the VM:



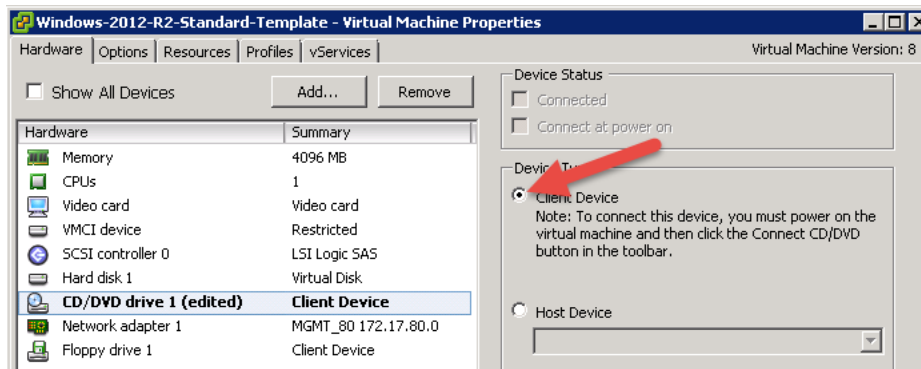
Select **Shut Down Guest** and Close the Console Window:



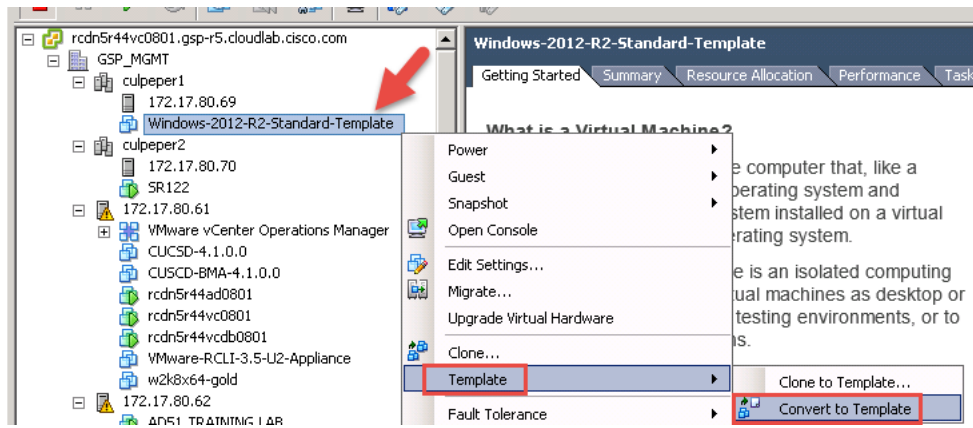
Right Click on the **Windows-2012-R2-Standard-Template** and select Edit Settings:



Disconnect ISO from CD/DVD by selecting Client Device and select OK:

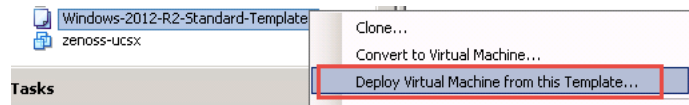


Convert VM to Template:

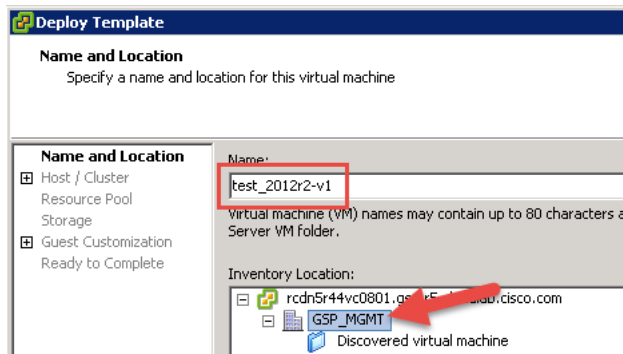


VII. Deploy VM from Template using Guest Customization in vCenter

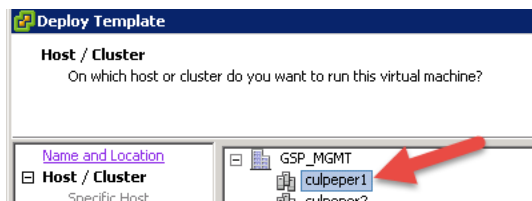
Right Click on the VM Template and select Deploy Virtual Machine from this Template:



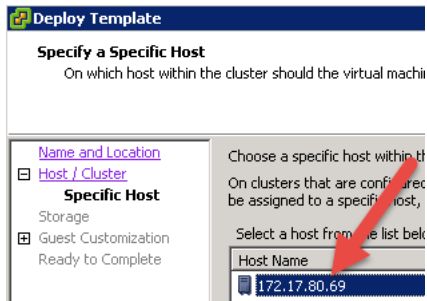
Name your VM and select your Data Center:



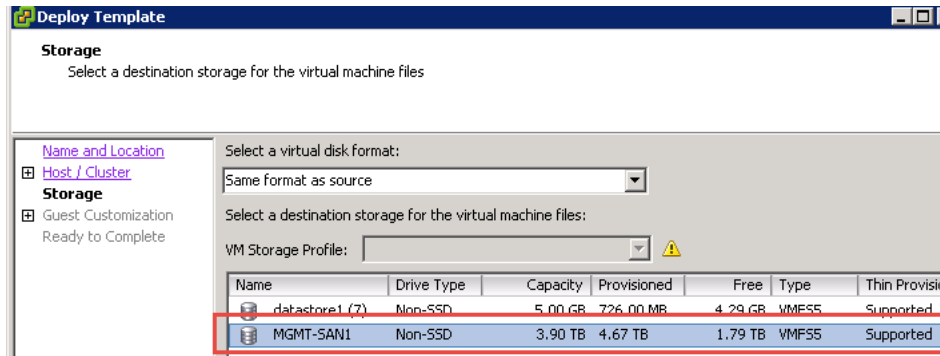
Select Cluster and click Next:



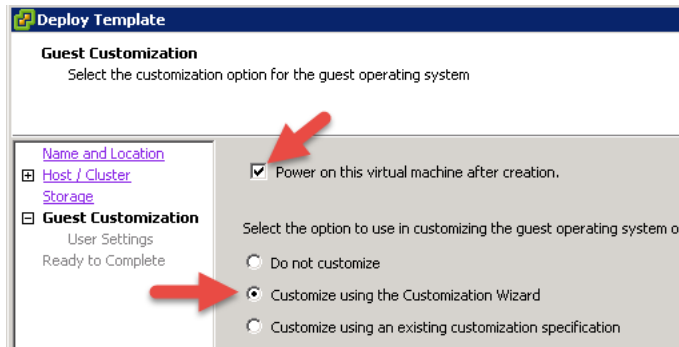
Select Host within the Cluster and click Next:



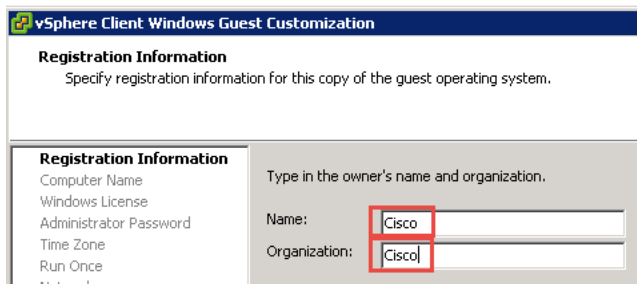
Select Shared Datastore and Click Next:



Select **Power on this virtual machine after creation** and select **Customize using the Customization Wizard** click Next:



Enter Name and Organization and click Next:



Enter VM name and click Next:

vSphere Client Windows Guest Customization

Computer Name
Specify a computer name that will identify this virtual machir

Registration Information
[Computer Name](#)
[Windows License](#)
[Administrator Password](#)

NetBIOS Name
 Enter a name

Enter Product Key and leave everything else default and click Next:

vSphere Client Windows Guest Customization

Windows License
Specify the Windows licensing information for this copy of the guest operating system.

Registration Information
[Computer Name](#)
[Windows License](#)
[Administrator Password](#)
[Time Zone](#)
[Run Once](#)
[Network](#)
[Workgroup or Domain](#)
[Operating System Options](#)
[Save Specification](#)
[Ready to Complete](#)

Enter the Windows licensing information. If this virtual machine does not require licensing information, leave these fields blank.

Product Key:

Include Server License Information (Required for customizing a server guest OS)

Server License Mode: Per seat Per server
Maximum Connections:

Enter Password twice and leave everything else default and click Next:

vSphere Client Windows Guest Customization

Administrator Password
Specify the password and auto logon option for the Administrator account.

Registration Information
[Computer Name](#)
[Windows License](#)
[Administrator Password](#)
[Time Zone](#)
[Run Once](#)
[Network](#)
[Workgroup or Domain](#)
[Operating System Options](#)
[Save Specification](#)

Type in the password for the Administrator account.

Password:

Confirm password:

Automatically log on as the Administrator
Number of times to logon automatically:

Select your timezone and click Next:

vSphere Client Windows Guest Customization

Time Zone
Select a time zone for this virtual machine.

Registration Information
[Computer Name](#)
[Windows License](#)
[Administrator Password](#)

Time Zone:

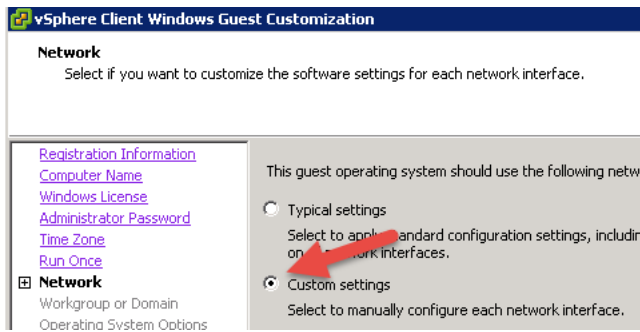
Leave default and click Next:

vSphere Client Windows Guest Customization

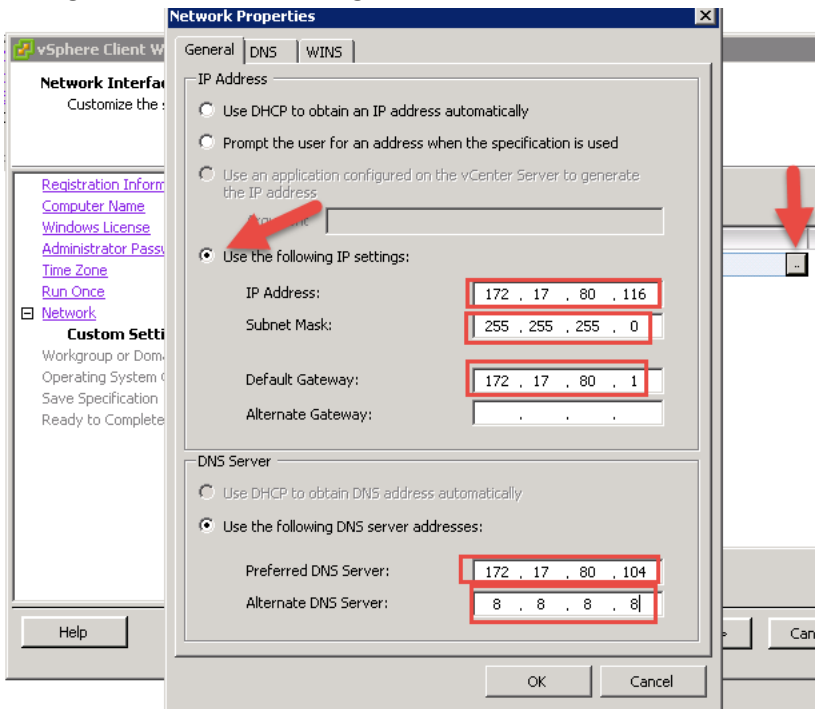
Run Once
Specify commands to be run the first time a user logs on.

Registration Information
[Computer Name](#)
[Windows License](#)
[Administrator Password](#)

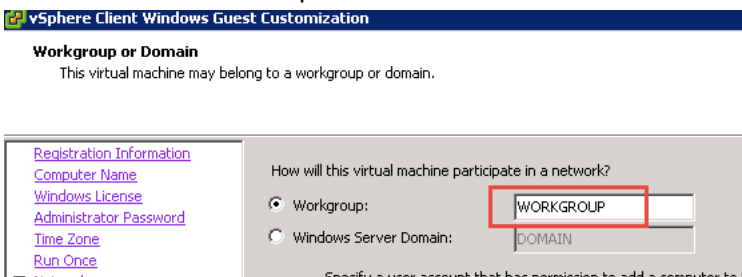
Select Custom Settings and click Next:



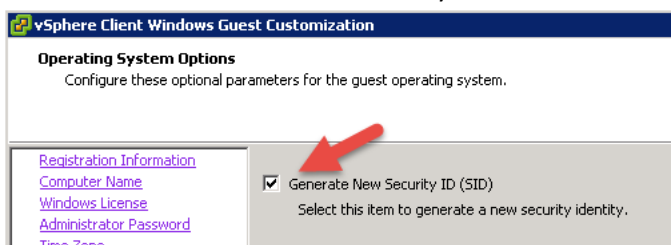
Configure the Network settings as follows and click OK and then Next:



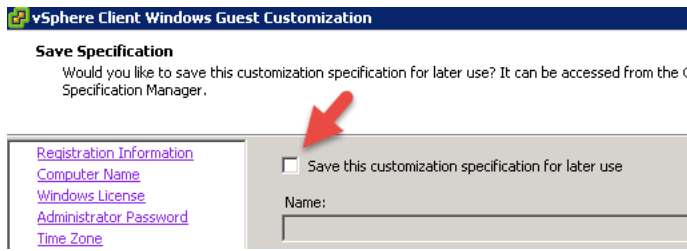
Leave Default WorkGroup and select Next:



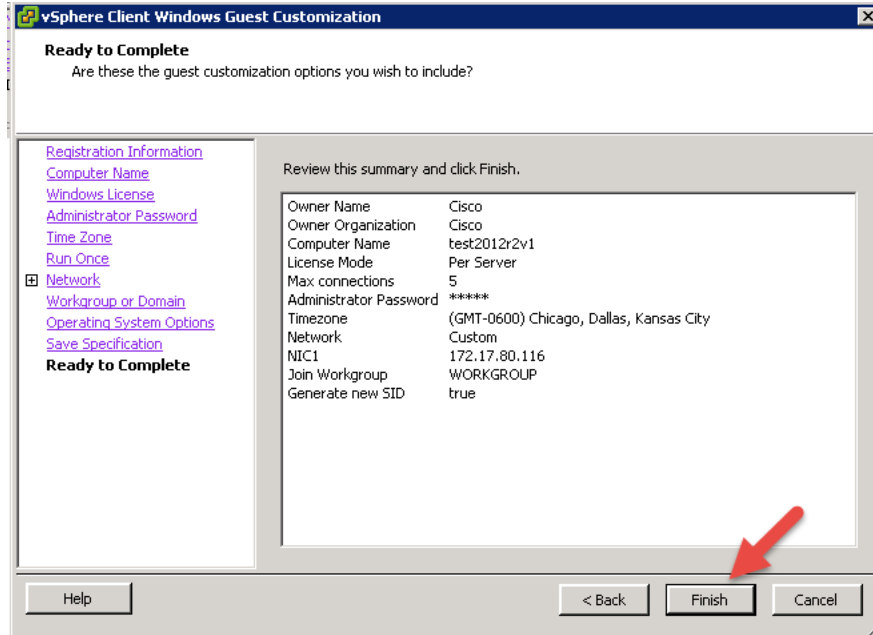
Leave Default Generate New Security ID selected and click Next:



Clear the check box for Save this customization specification for later use and click Next:



Click Finish:



Click Finish:

Deploy Template


Ready to Complete
Click Finish to start a task that will create the new virtual machine

[Name and Location](#)
[Host / Cluster](#)
[Storage](#)
[Guest Customization](#)
Ready to Complete

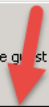
Settings for the new virtual machine:

Template to Deploy	Windows-2012-R2-Standard-Template
Name:	test_2012r2-v1
Folder:	GSP_MGMT
Host/Cluster:	culpeper1
Specific Host:	172.17.80.69
Datastore:	MGMT-SAN1
Disk Storage:	Same format as source
Guest OS Customization Specification:	Create a new specification

Edit virtual hardware (Experimental)

 Creation of the virtual machine (VM) does not include automatic installation of the guest operating system. Install a guest OS on the VM after creating the VM.

[Help](#) [< Back](#) [Finish](#) [Cancel](#)



VIII. Verify your VM has the Guest Customization settings you configured

Note: It will take some time after the VM is build an powerd on before your setting will be applied. You should allow 5 – 10 minutes for this process to complete. The output below is what it would look like if it is successful.

The screenshot displays the vSphere Client interface for a VM named 'test_2012r2-v1'. The left pane shows a tree view of the host 'rcdn5r44vc0801.gsp-r5.cloudlab.cisco.com' with a red arrow pointing to the VM. The main pane shows the VM's configuration details, including General, Resources, and Storage sections.

General

- Guest OS: Microsoft Windows Server 2012 (64-bit)
- VM Version: 8
- CPU: 1 vCPU
- Memory: 4096 MB
- Memory Overhead: 44.00 MB
- VMware Tools: **Running (Current)**
- IP Addresses: **172.17.80.116**
- DNS Name: **test2012r2v1**
- EVC Mode: N/A
- State: Powered On
- Host: 172.17.80.69
- Active Tasks: 0
- vSphere HA Protection: N/A

Resources

- Consumed Host CPU: 95 MHz
- Consumed Host Memory: 1377.00 MB
- Active Guest Memory: 4055.00 MB
- Provisioned Storage: **84.09 GB**
- Not-shared Storage: 13.17 GB
- Used Storage: 13.17 GB

Storage

Storage	Status	Drive Type
MGMT-SAN1	Normal	Non-SSD

Network

Network	Type	Status
MGMT_80 172.17...	Standard port group	Connected

VM Storage Profiles

- VM Storage Profiles: 0
- Profiles Compliance: Compliant