vMotion Report

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vMotion

What is vMotion ?

vMotion allows you to move virtual servers and desktops from one physical server to another without having to shut down the virtual desktop or server. All of this is done in real time without the user of the virtual machine even knowing they have been moved. vMotion is the first step among many VMware software solutions

What is vMotion Migration ?

vMotion migration moves a powered –on virtual machine from host to another.

vMotion can be used to,

- Improve overall hardware utilization.
- Allow continued virtual machine operation while accommodating scheduled hardware downtime.
- Allow vSphere distributed scheduler (DRS) to balance virtual machine across hosts.

How vMotion Migration works ?
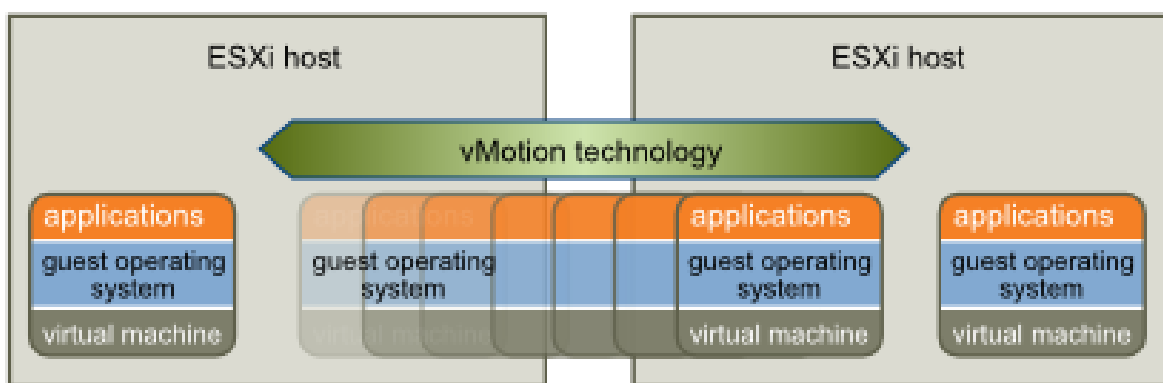
Between two hosts we need to have a shared storage. Virtual machine files needs that shared storage.

When you migrate a virtual machine with vMotion, the new host for the virtual machine must meet compatibility requirements in order for the migration to proceed.

Migration with vMotion happens in three stages:

1. When the migration with vMotion is requested, vCenter Server verifies that the existing virtual machine is in a stable state with its current host.
2. The virtual machine state information (memory, registers, and network connections) is copied to the target host.
3. The virtual machine resumes its activities on the new host.

If any error occurs during migration, the virtual machines revert to their original states and locations.

Migration of a suspended virtual machine and migration with vMotion can be referred to as hot migration, because they allow migration of a virtual machine without powering it off.

Virtual machine has following requirements.

Hardware Requirements

- Virtual machine must have a connection to a virtual device(such as a CD ROM or floppy drive) with a local image mounted.
- Virtual machine must not have a connection to an internal vSwitch (vSwitch with zero upload adapters)
- A virtual machine must not have CPU affinity configured.

Host Requirements for vMotion Migration

Source and destination host must have

- Visibility to all storage(fiber channel,iSSCI or NAS) used by the virtual machine

- At least a Gigabit Ethernet network,

    1. Four concurrent vMotion migrtions on a 1 Gbps network.

    2. Eight concurrent vMotion Migrations on a 10 Gbps netwok.

- Access on the same physical network compatible CPU.

- The hosts must be licensed for vMotion.

- The hosts must be running ESXi 5.1 or later.

- The hosts must meet the networking requirement for vMotion.

- The host on which the virtual machine is running must have a license that includes Storage vMotion.

Software Requirements for vMotion Migration

- Server requires a 64-bit operating system, and the 64-bit system DSN is required for vCenter Server to connect to its database.

- vCenter Server requires the Microsoft .NET 3.5 SP1 Framework. If it is not installed on your system, the vCenter Server installer installs it.

- The .NET 3.5 SP1 installation might require Internet connectivity to download more files.

Methods for addressing CPU Compatibility Requirements

There are several methods which can be used to address vMotion CPU Compatibility requirements.

- Procure CPU with identical CPU.

- Compatibility masking in the Vsphere client.

- Enhanced the vmotion compatibility.

Advantages of the vMotion Migration

- Automatically optimize and allocate entire pools of resources
- Move VM's from failing or underperforming priorities
- Minimizes scheduled Downtime

## Disadvantages of the vMotion Migration

- VM type type may not be part of organisation standard
- Swivel is often deployed in the DMZ and a VM infrsatructure may not be present

vMotion Migration Demonstration

Step1-Log in to the vmware vSphere Client to do the vmware vsphere migration.
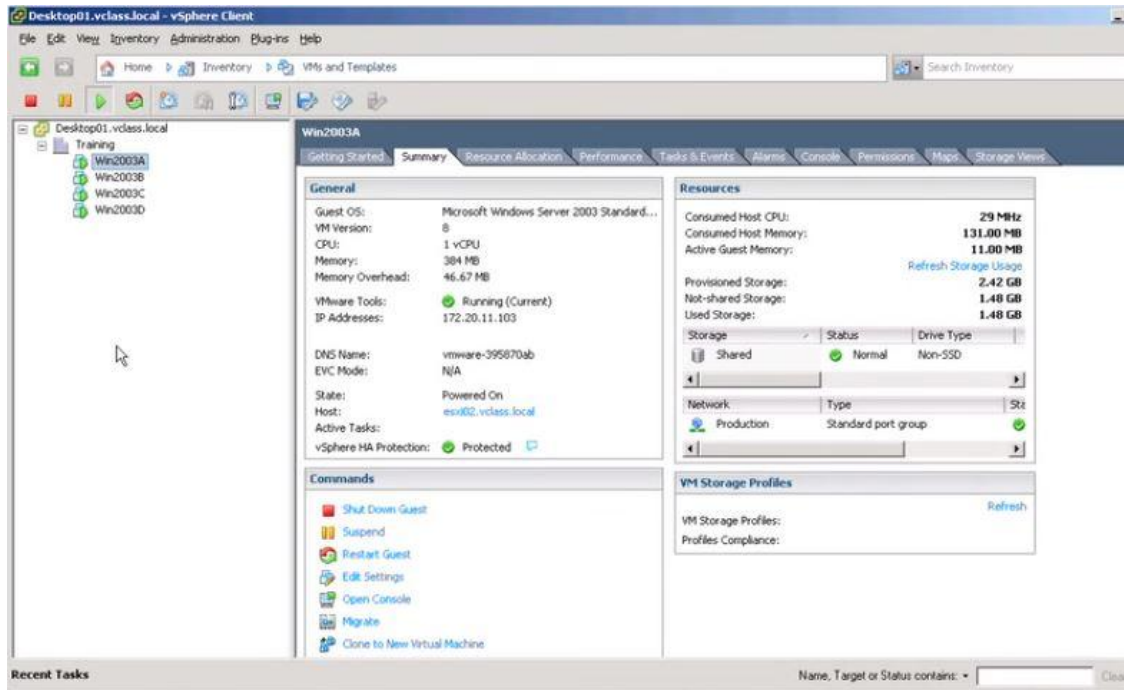
Step2 – if we have the files in shared storage we have to change VMs and Templates to Host and clusters. Then select the exsi01 and go to the configuration tab. Select Networking in hardware section. After that click on the Add networking
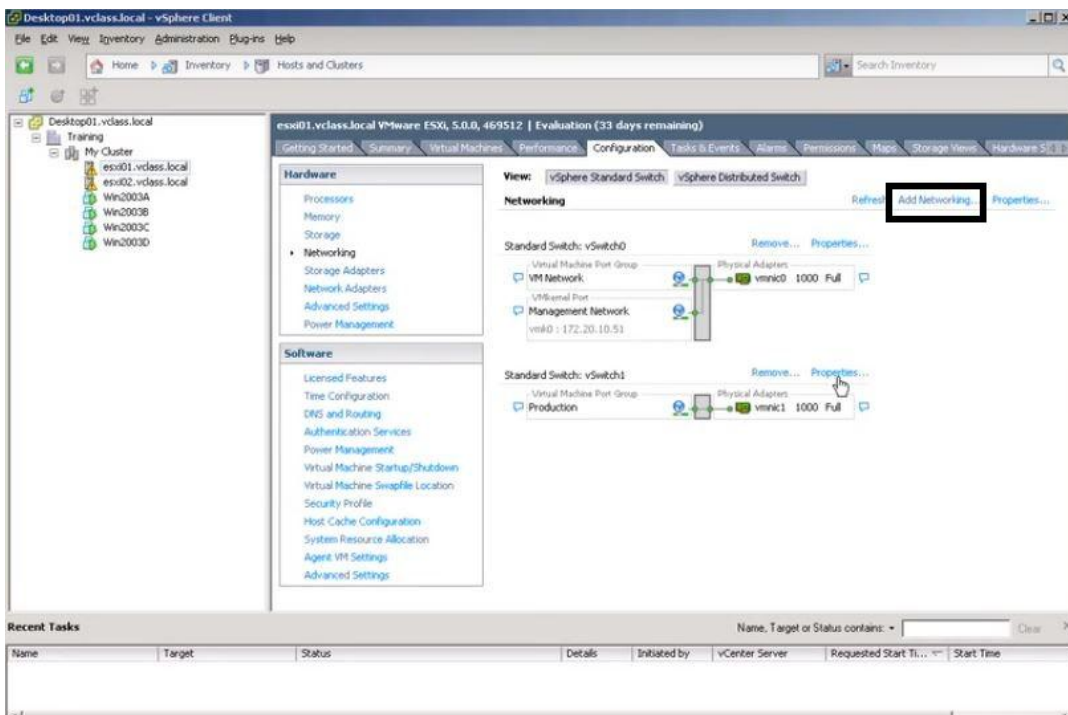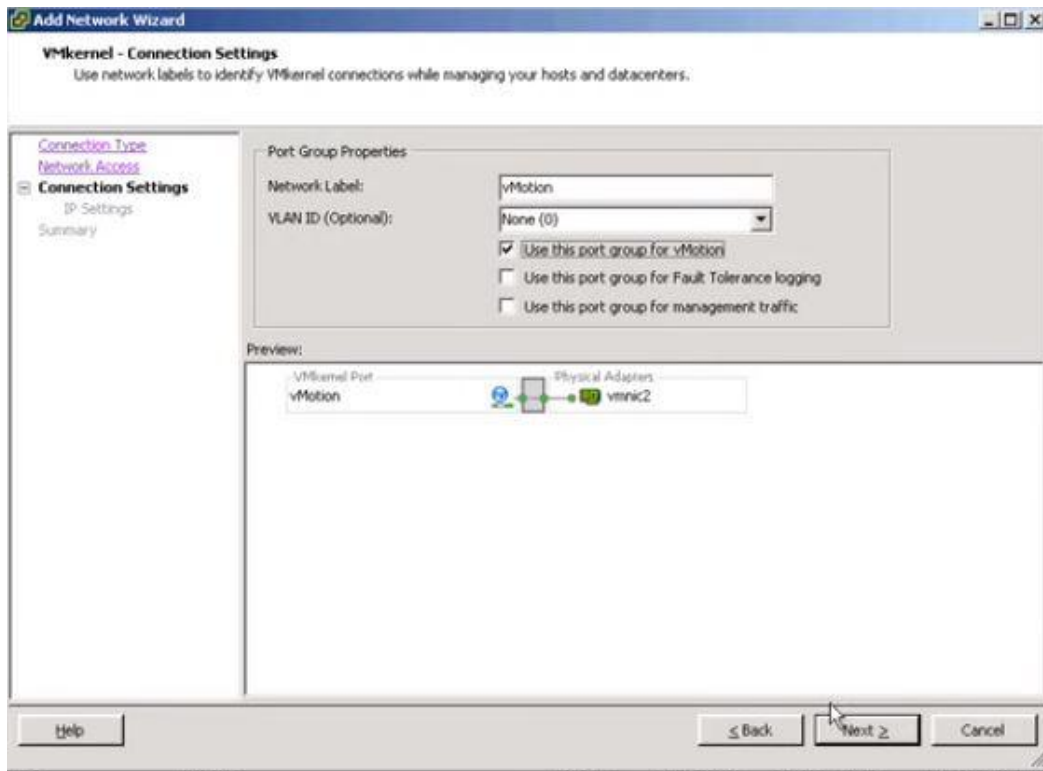
Step3 – Select connection type as VMKernel in the Add network Wizard. then click Next.
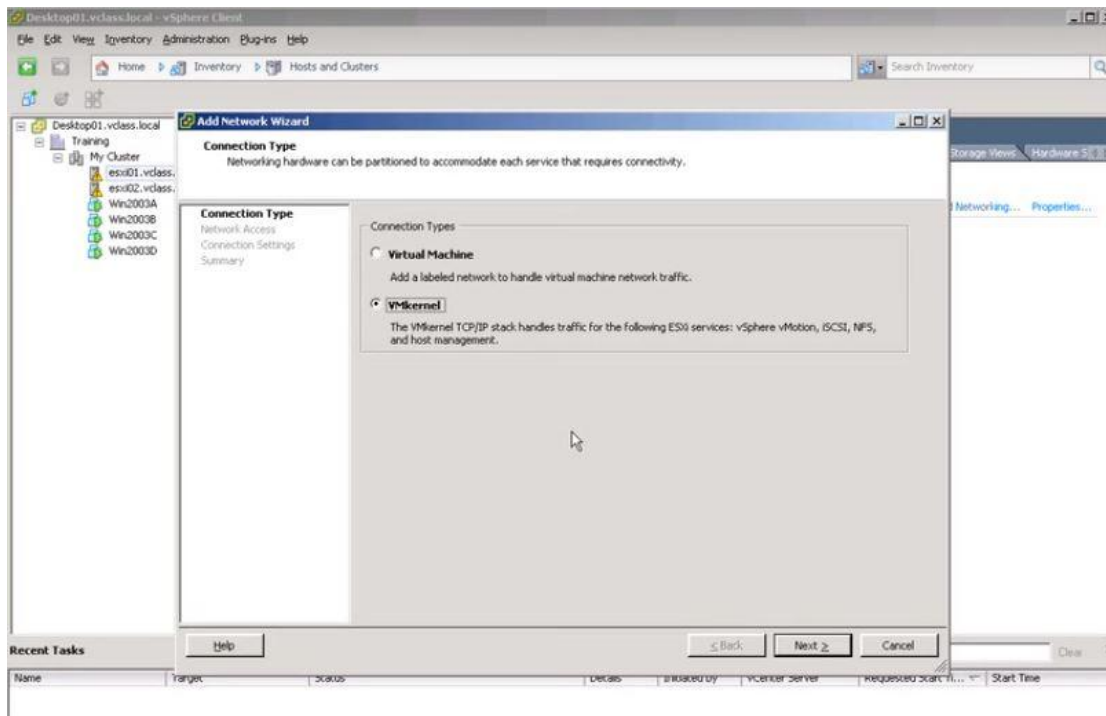
Step 4 – After appearing this window then click next button. Don't change any default selection.
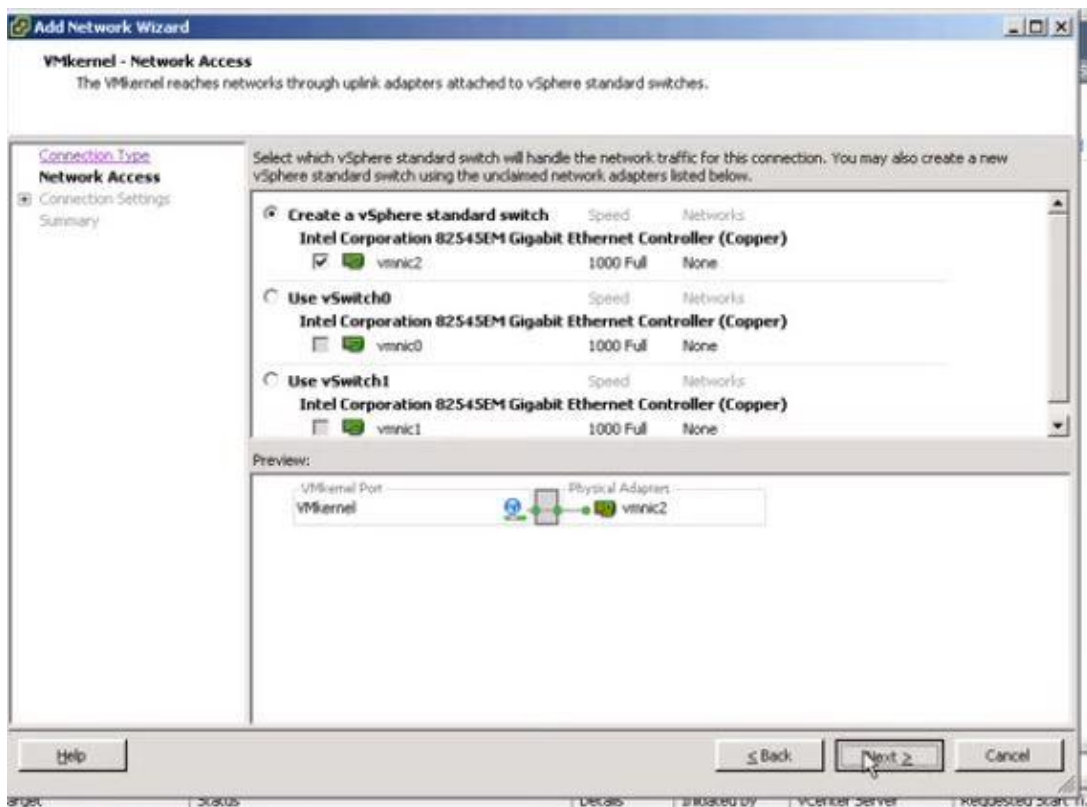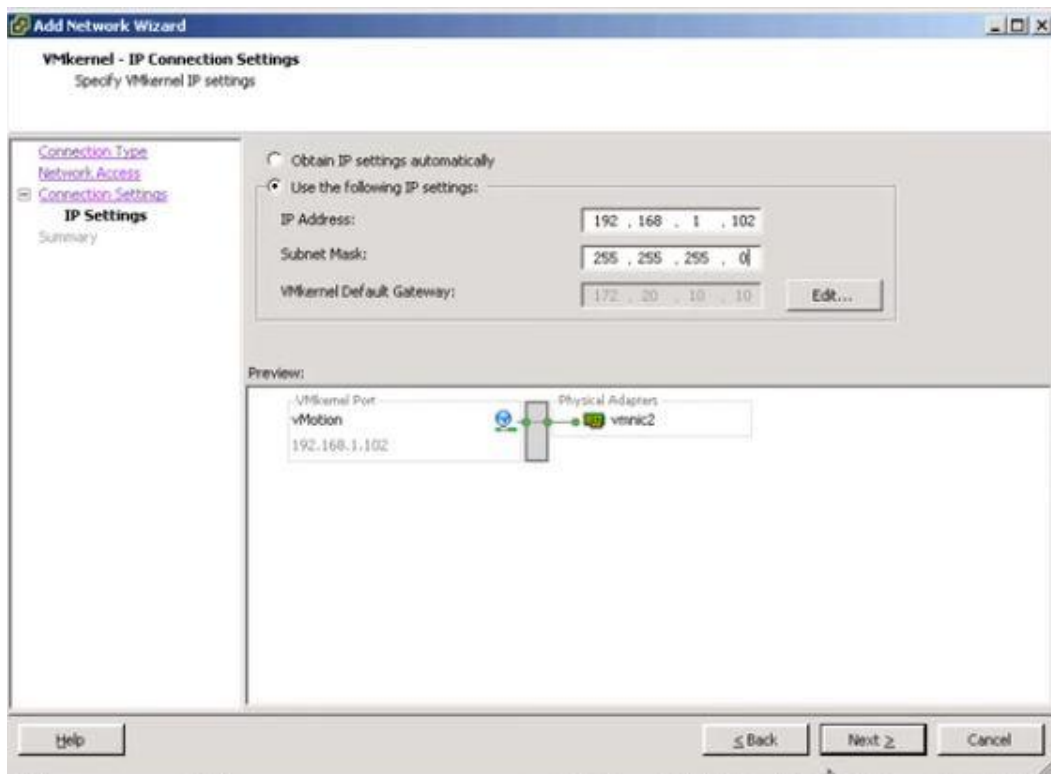
Step 5- give the network label as vMotion. And select the first option as the VLAN ID. This is key step of the scenario. After doing that click next button.
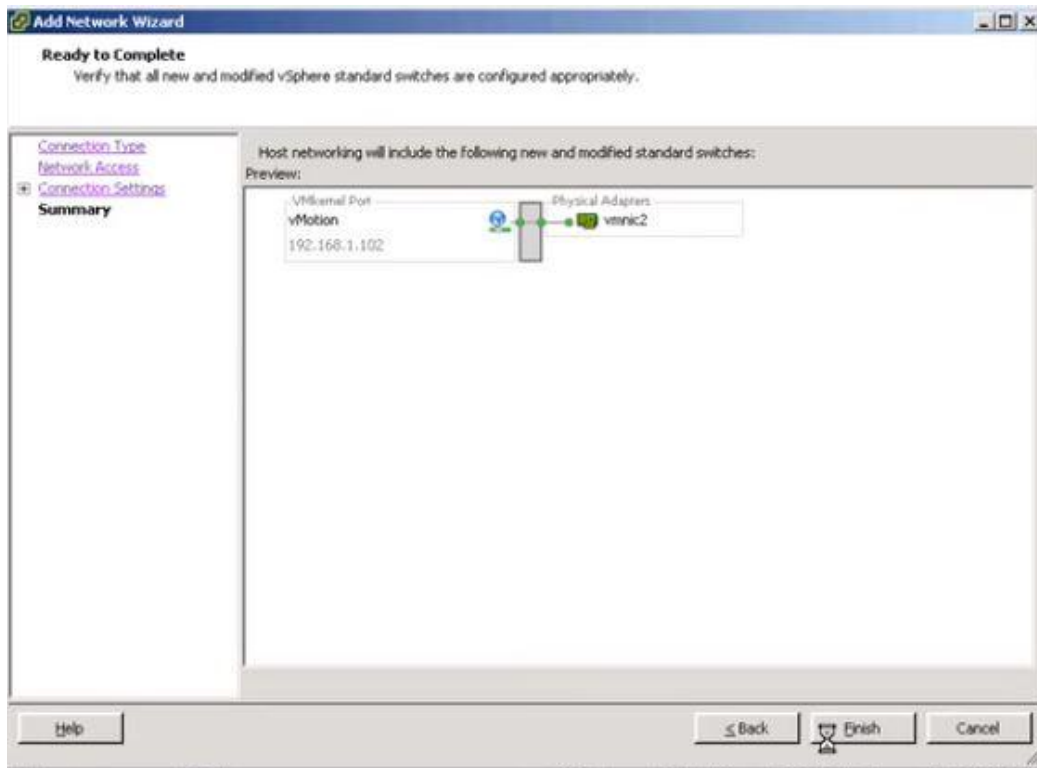

Step 6- we have to give unique

ip address – 192.168.1.102   Subnet Mask – 255.255.255.0

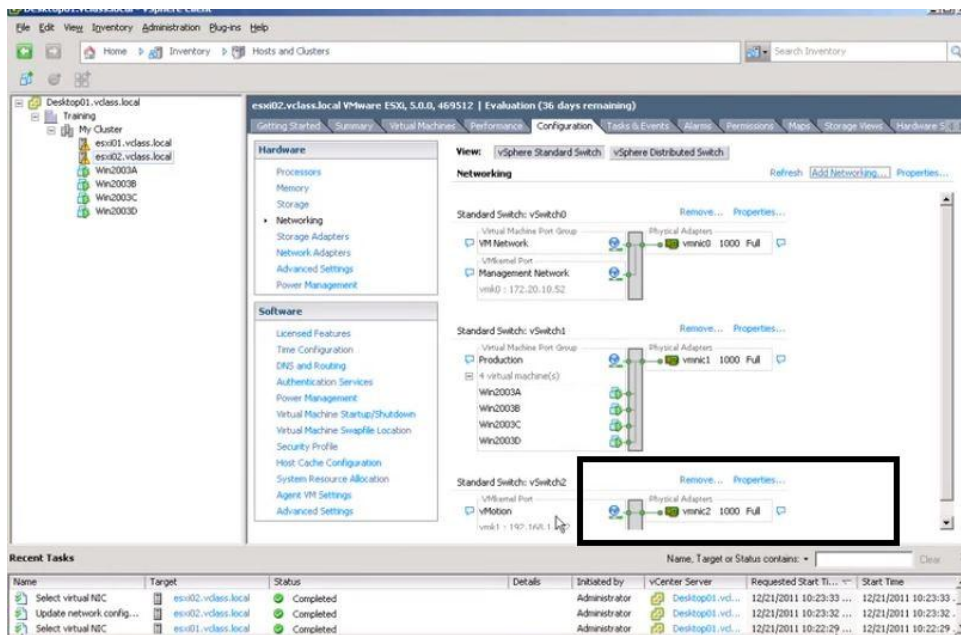Do not change the default gateway. After that click next.

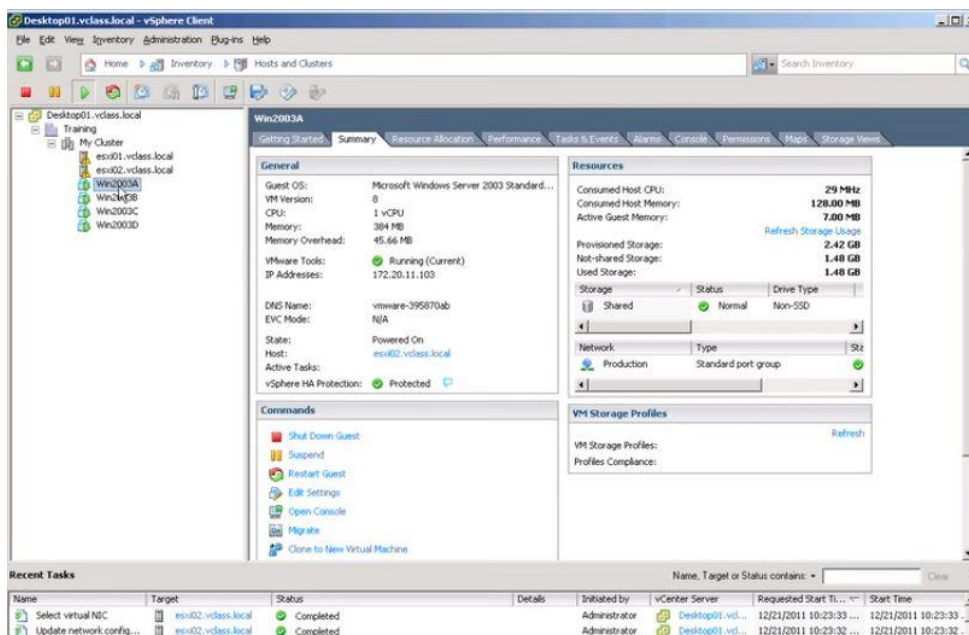Step 7 – Click on the finish button.

Step 8 – Do the same procedure starting from step1 to step 7 to the exsi02.
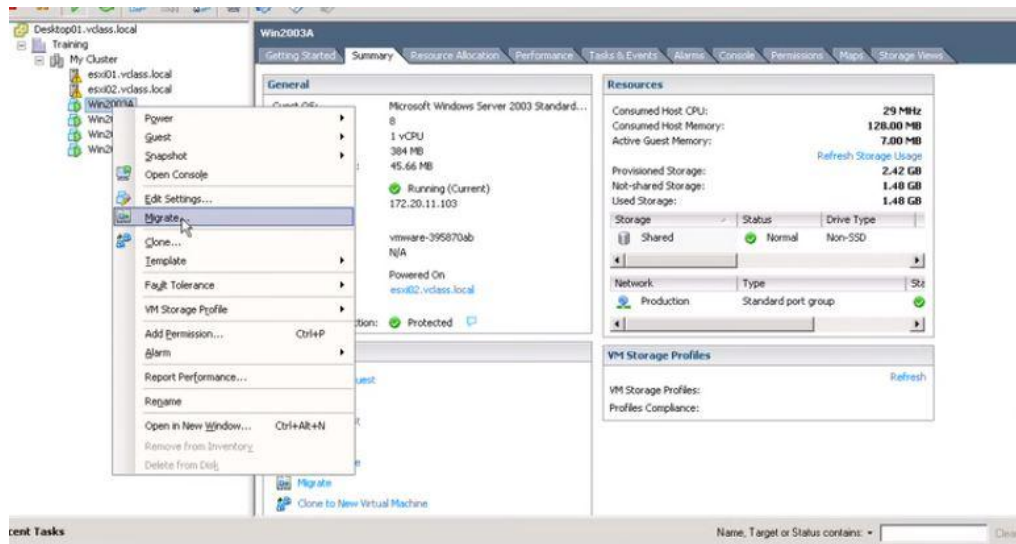
Step 9- The selected gate will be (Created switch) reduce traffic
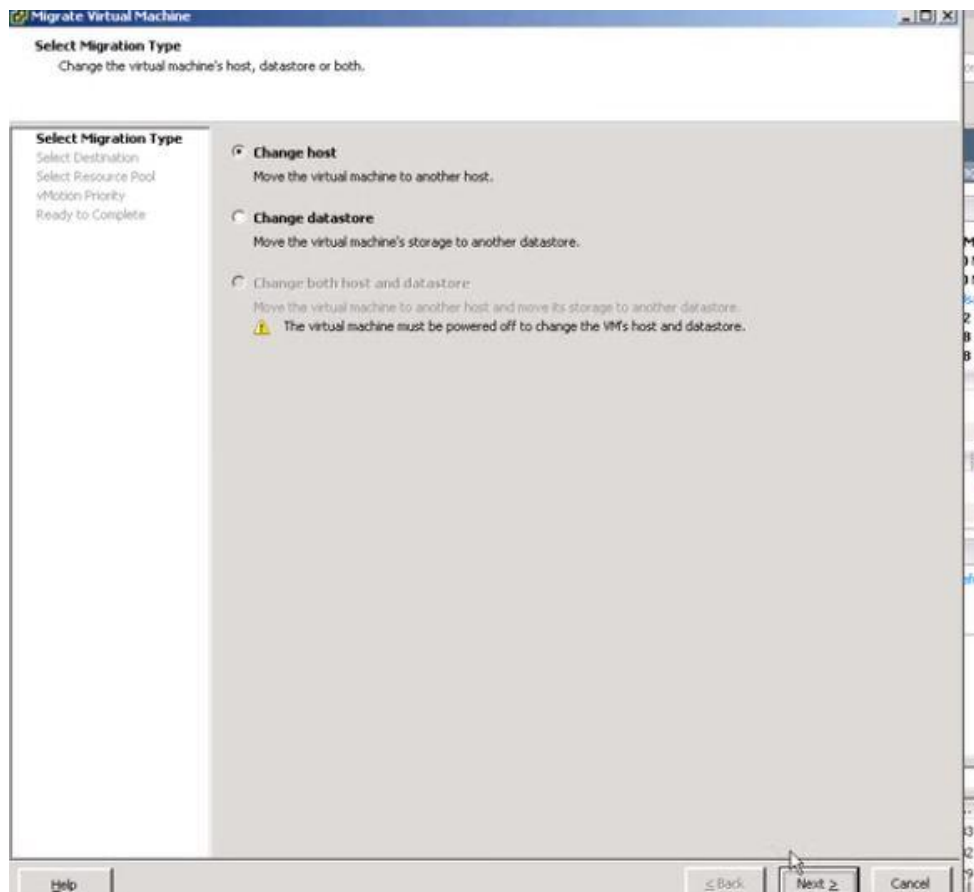

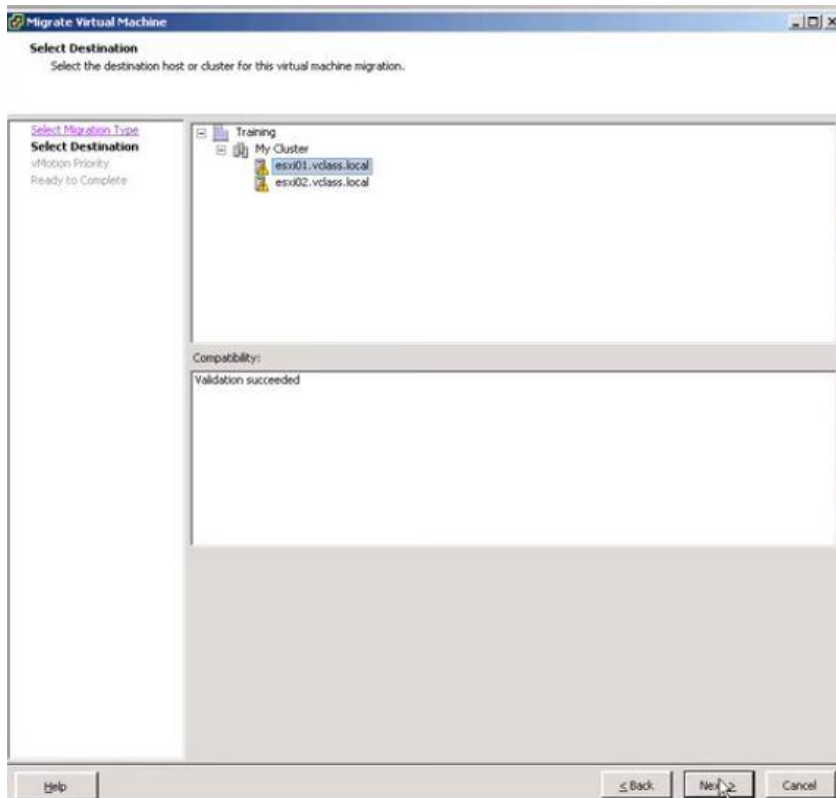Step 10- select the virtual machine.

Step 11- Right click on that virtual machine and select the migrate button.
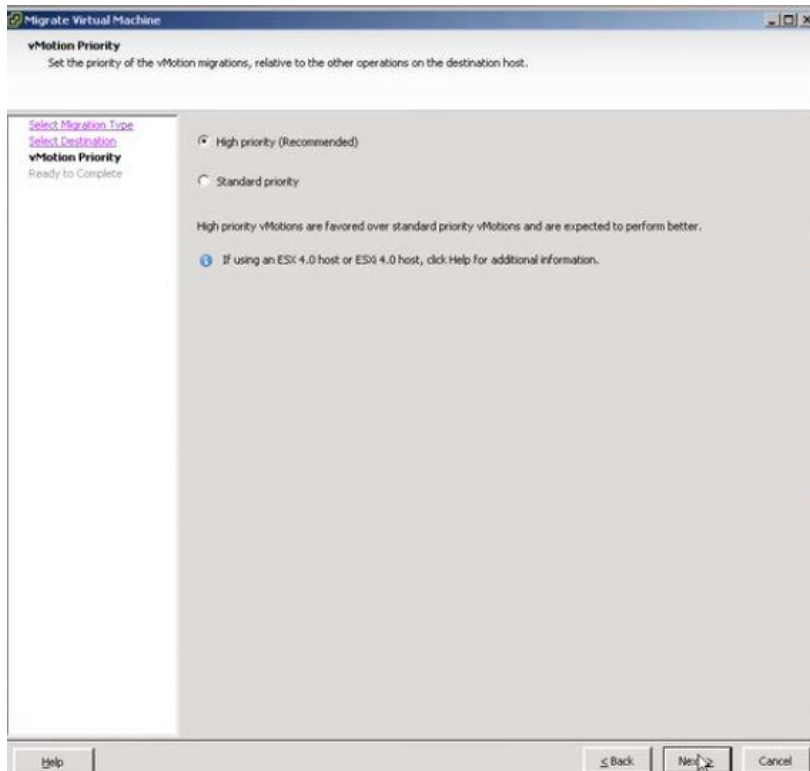

Step 12- Then select the change host as the migration type and click next.
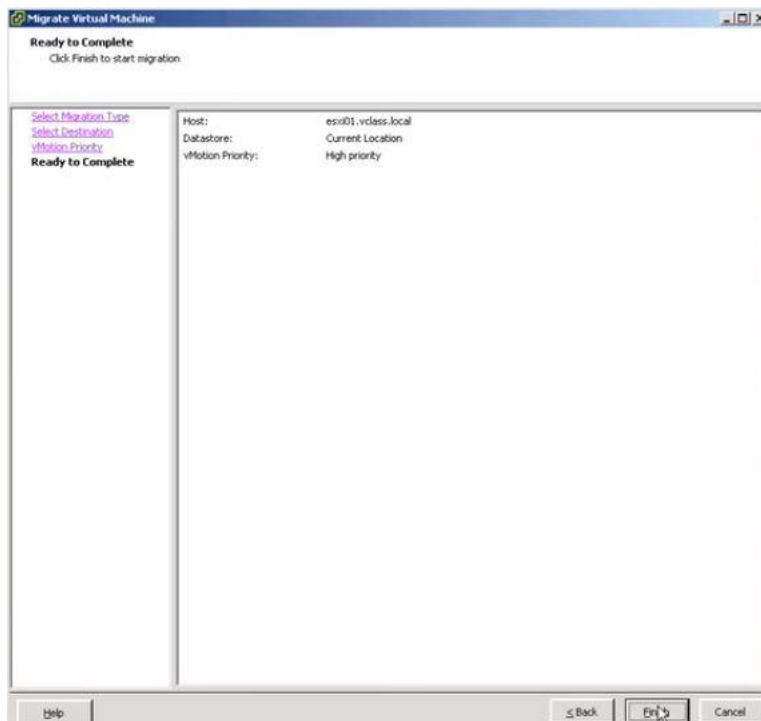
Step 13- Select the host that we want to migrate. In our case we select that host as VM exsi01 and click next.
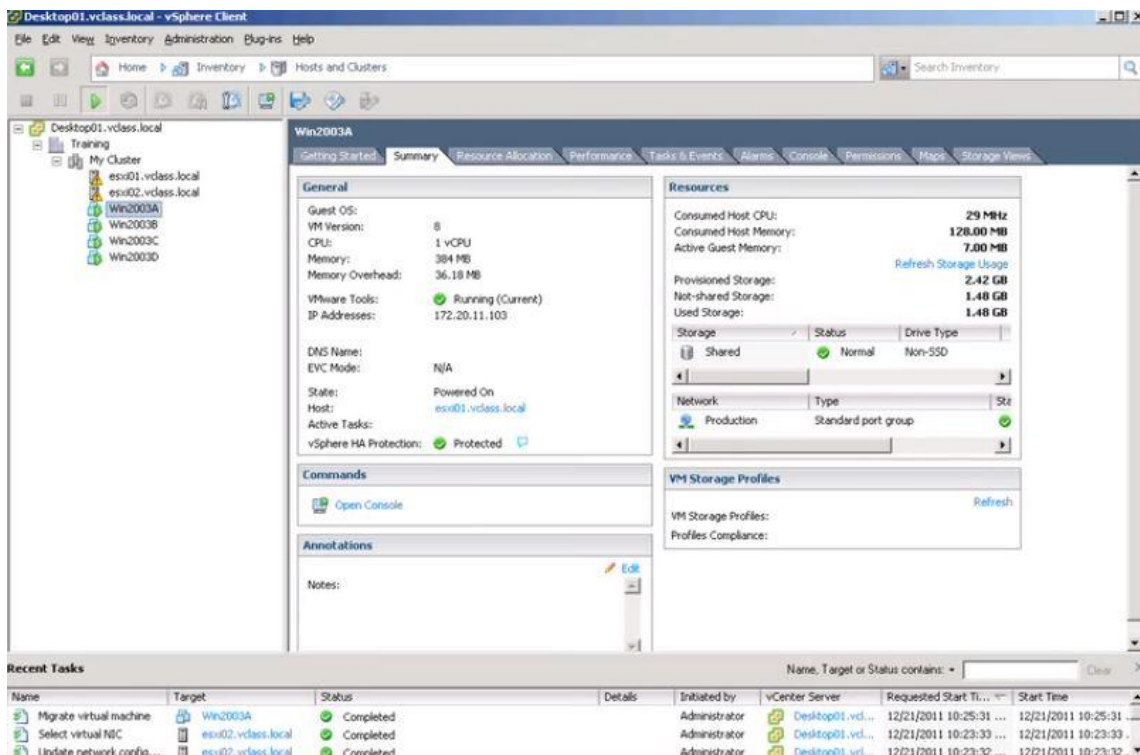

Step 14- Set the priority as high Priority and click Next

Step 15- Click on the finished button.

Step 16- After clicking that button we can see the migration begun. Then you can see the VM was running exsi01 and used the shared storage datastore.

Win2003A

General

Guest OS:	
VM Version:	8
CPU:	1 vCPU
Memory:	384 MB
Memory Overhead:	36.18 MB
VMware Tools:	✔ Running (Current)
IP Addresses:	172.20.11.103
DNS Name:	
EVC Mode:	N/A
State:	Powered On
Host:	esxi01.vclass.local
Active Tasks:	
vSphere HA Protection:	✔ Protected

Resources

Consumed Host CPU:	**29 MHz**
Consumed Host Memory:	**128.00 MB**
Active Guest Memory:	**7.00 MB**
	Refresh Storage Usage
Provisioned Storage:	**2.42 GB**
Not-shared Storage:	**1.48 GB**
Used Storage:	**1.48 GB**

Storage	Status	Drive Type	
📁 Shared	✔ Normal	Non-SSD	

Network	Type	Sta
🖥 Production	Standard port group	✔

Commands

- 🟥 Shut Down Guest
- ⏸ Suspend
- 🔄 Restart Guest
- Edit Settings
- Open Console
- Migrate
- Clone to New Virtual Machine

VM Storage Profiles

Refresh

VM Storage Profiles:	
Profiles Compliance:	

Name, Target or Status contains: ▾ [   ] Clear

	Status	Details	Initiated by	vCenter Server	Requested Start Ti... ↤	Start Time
	✔ Completed		Administrator	Desktop01.vcl...	12/21/2011 10:25:31 ...	12/21/2011 10:25:31 ...
local	✔ Completed		Administrator	Desktop01.vcl...	12/21/2011 10:23:33 ...	12/21/2011 10:23:33 .