VMotion Lab Report

Vishmi Iloka R

IT13018924

VMotion

What is Vmotion?

VMotion migration moves a powerful on virtual machines from one host to another. 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.

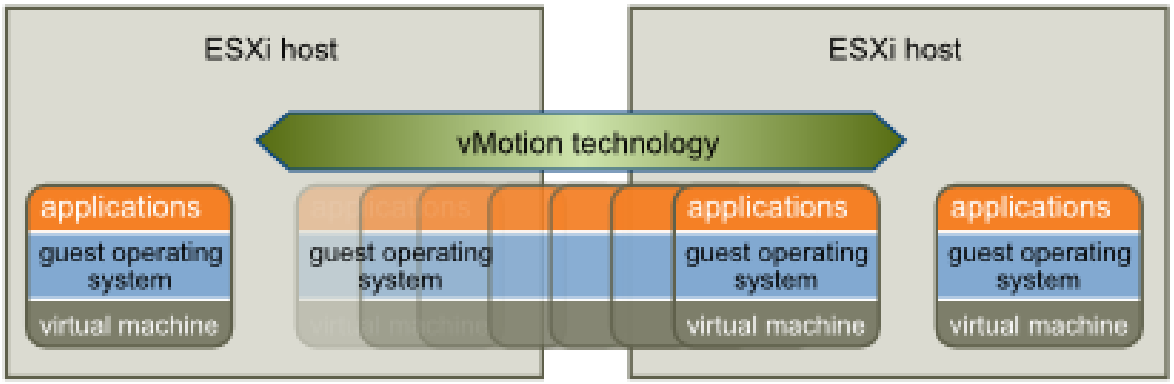
vMotion can be used to,

- 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 works?



Between two hosts we need to have a shared storage. Virtual machine files needs that shared storage.

When migrate a virtual machine with vMotion, 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.

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.

- Compatibility masking in the Vsphere client.
- Enhanced the vmotion compatibility.
- Procure CPU with identical CPU

Advantages of the vMotion Migration

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

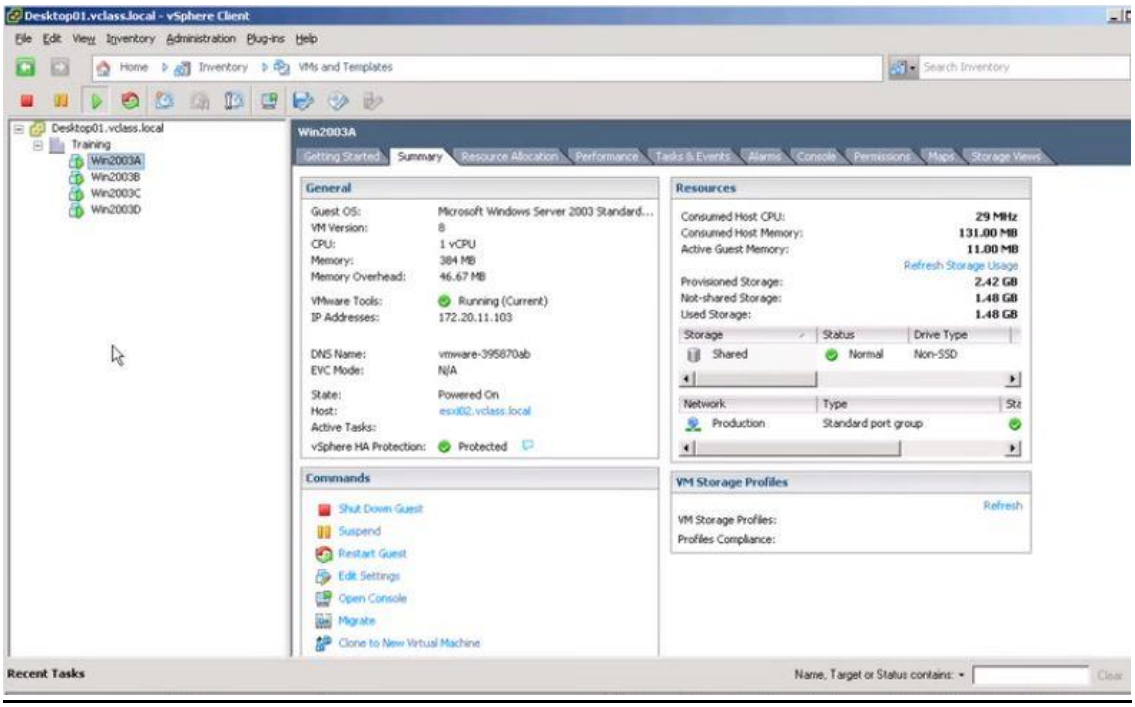
Disadvantages of the vMotion Migration

- 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

Step 1

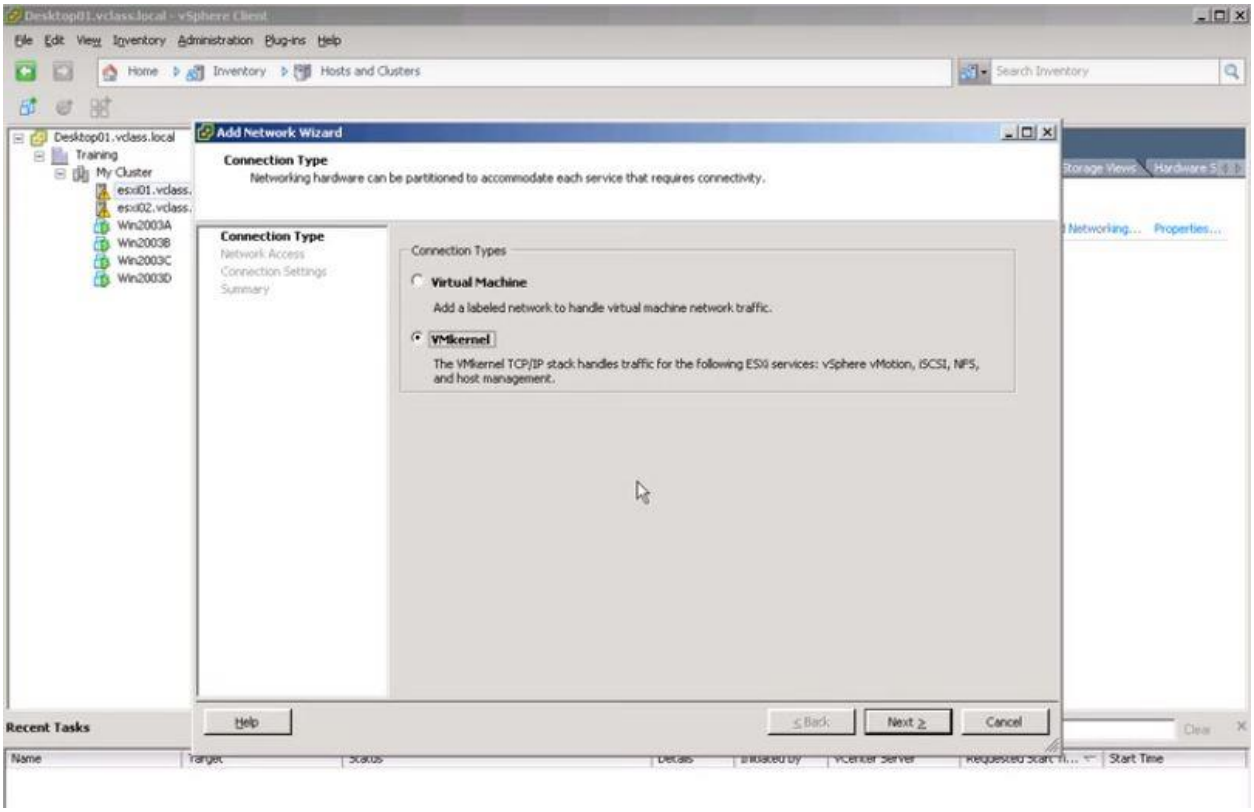
Log in to the vmware vSphere Client to do the vmware vsphere migration.



Step 2

At first change the VM and Templates to Host and clusters and on the left hand side select the esc01 and go to the configuration tab.

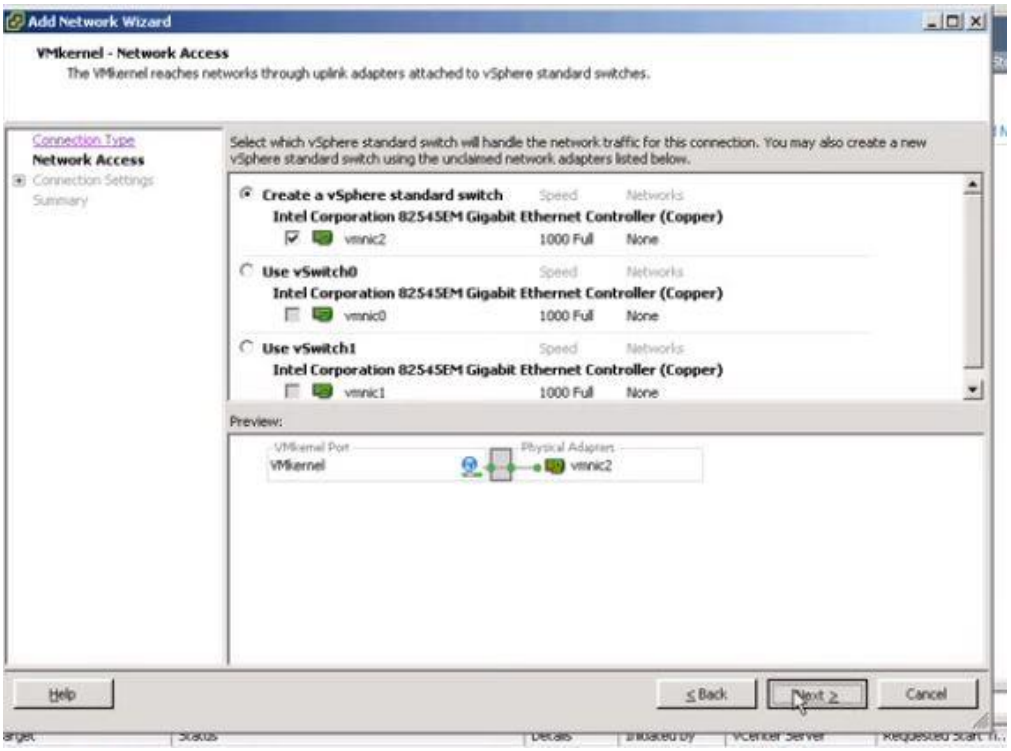
By selecting the network it will show the below image details.



Step 3

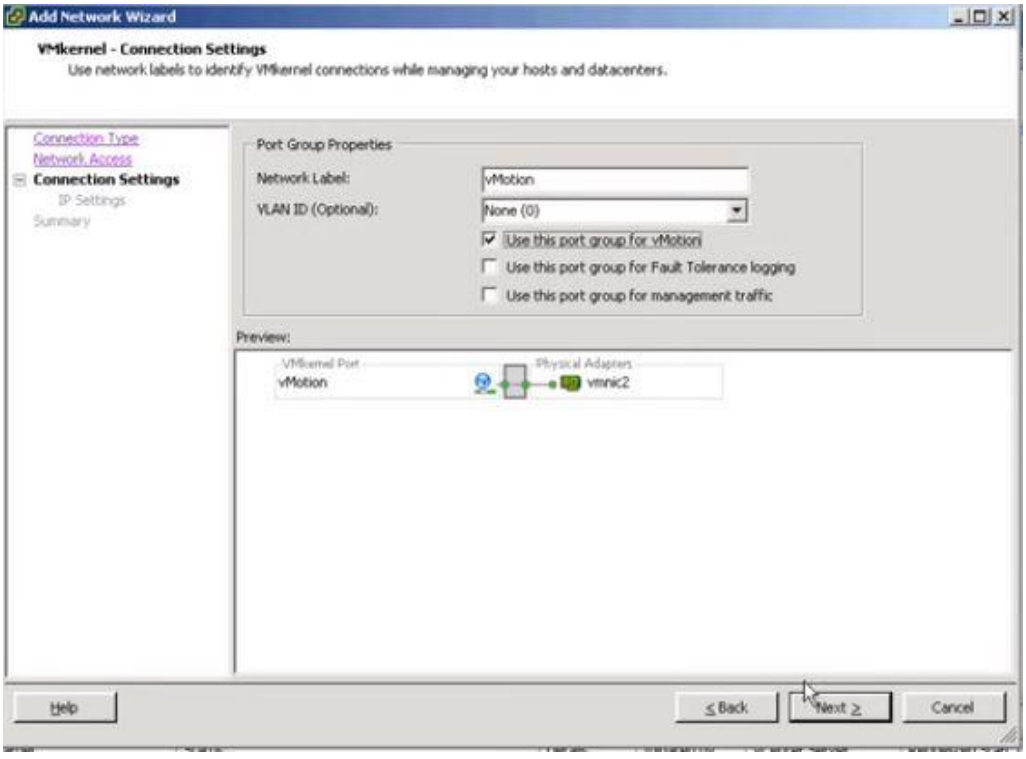
After appearing this window then click next button. Don't change any default selection.

Select the very first one and click on next.



Step 4

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.

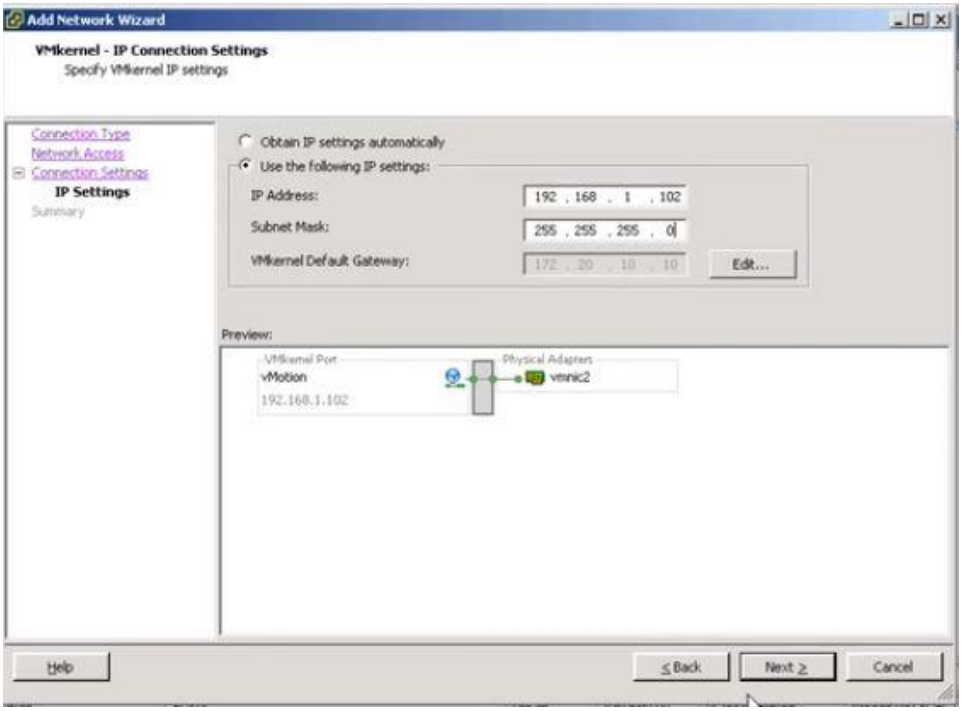


Step 5

- we have to give unique

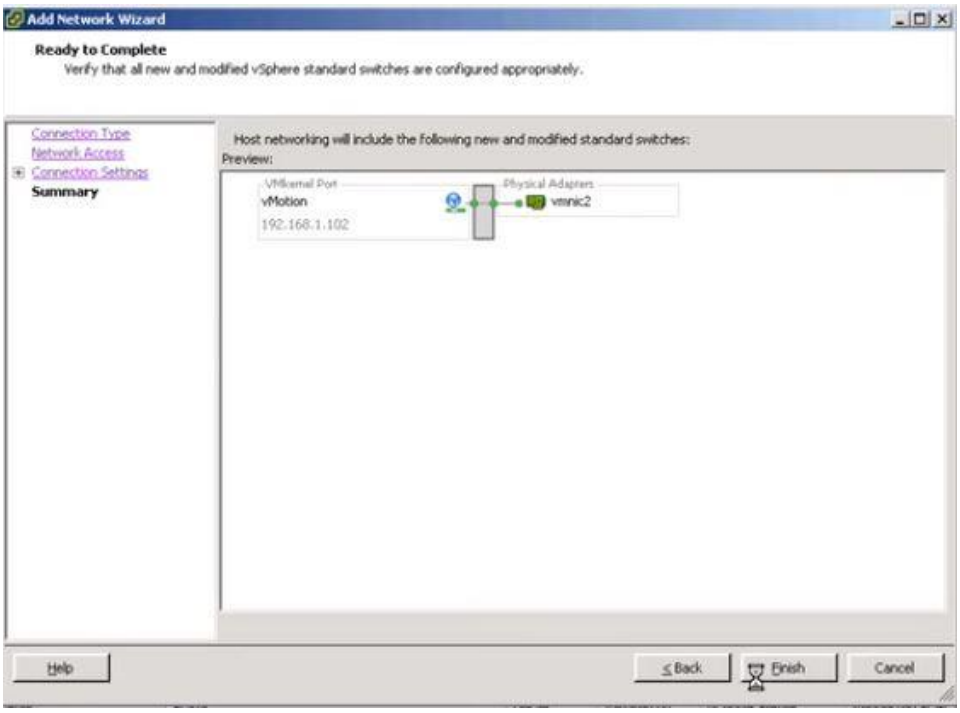
ip address – 192.168.1.102 Subnet Mask – 255.255.255.0

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



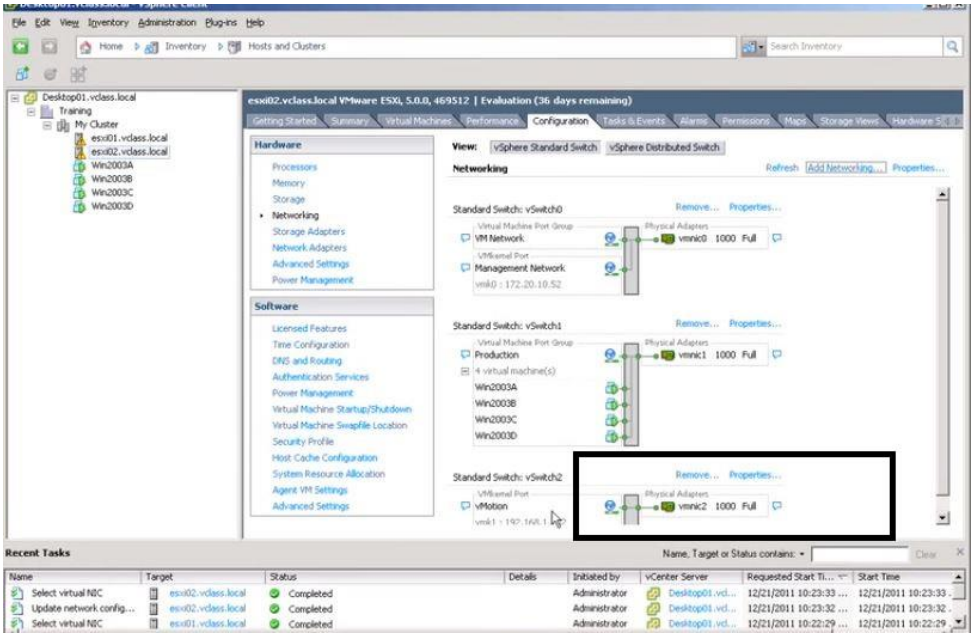
Step 7

Do the same procedure starting from step1 to step 7 to the exsi02.



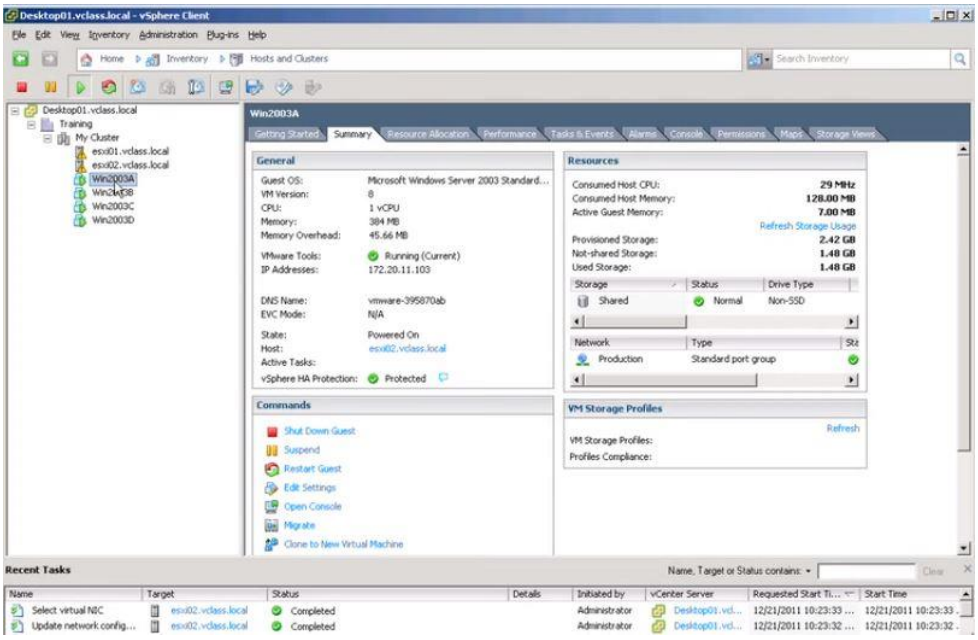
Step 8

The selected gate will be (Created switch) reduce traffic



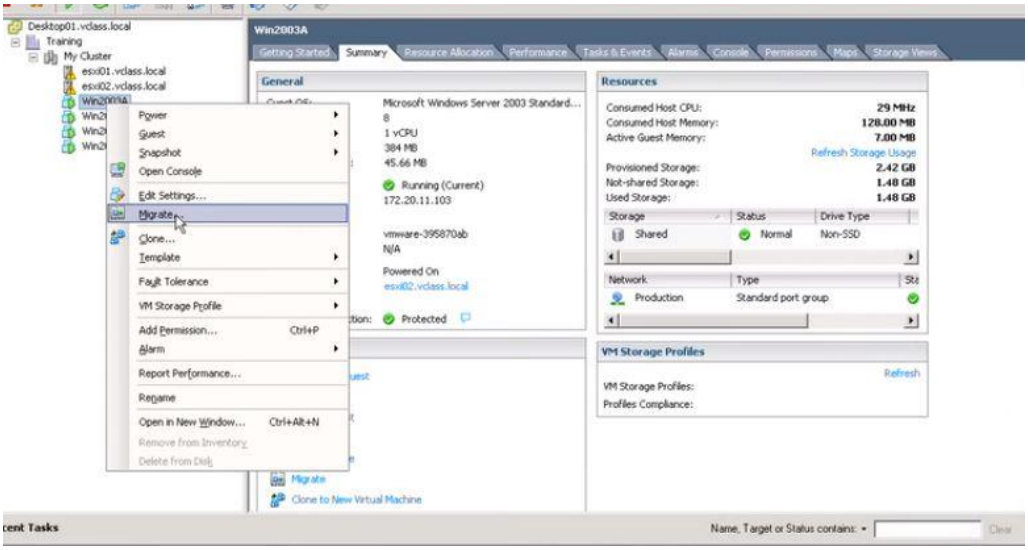
Step 9

select the virtual machine.



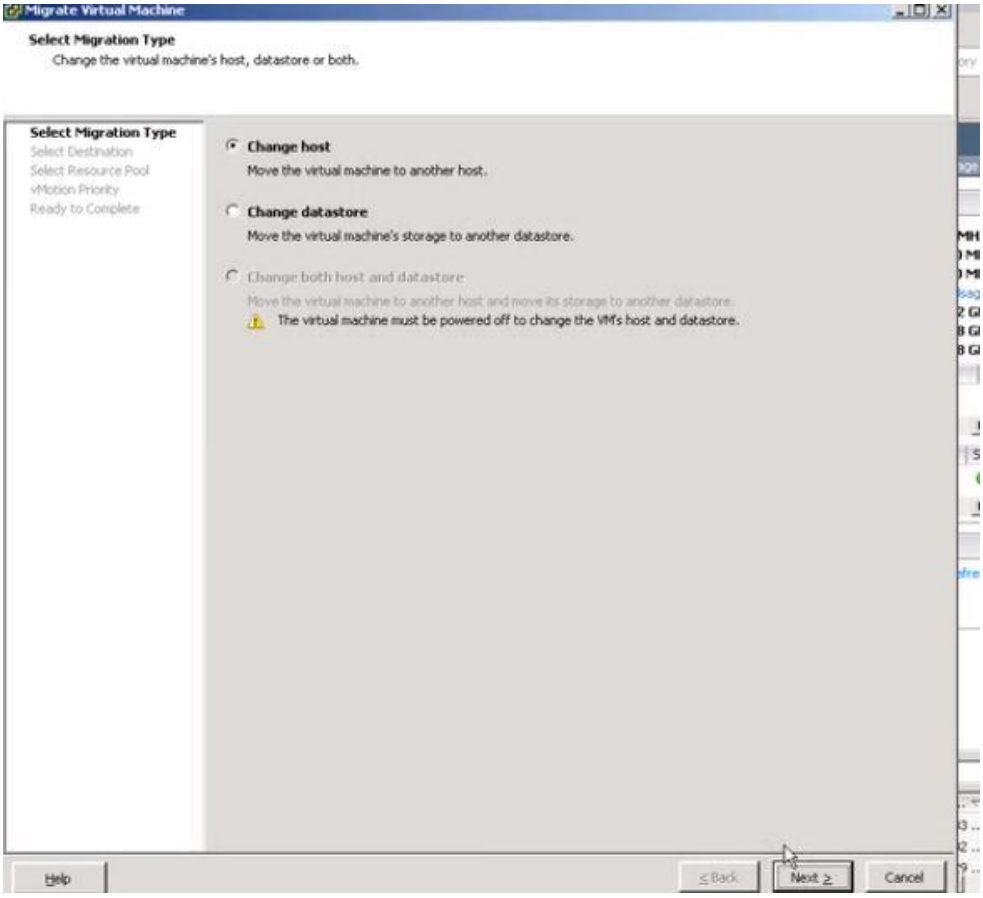
Step 10

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



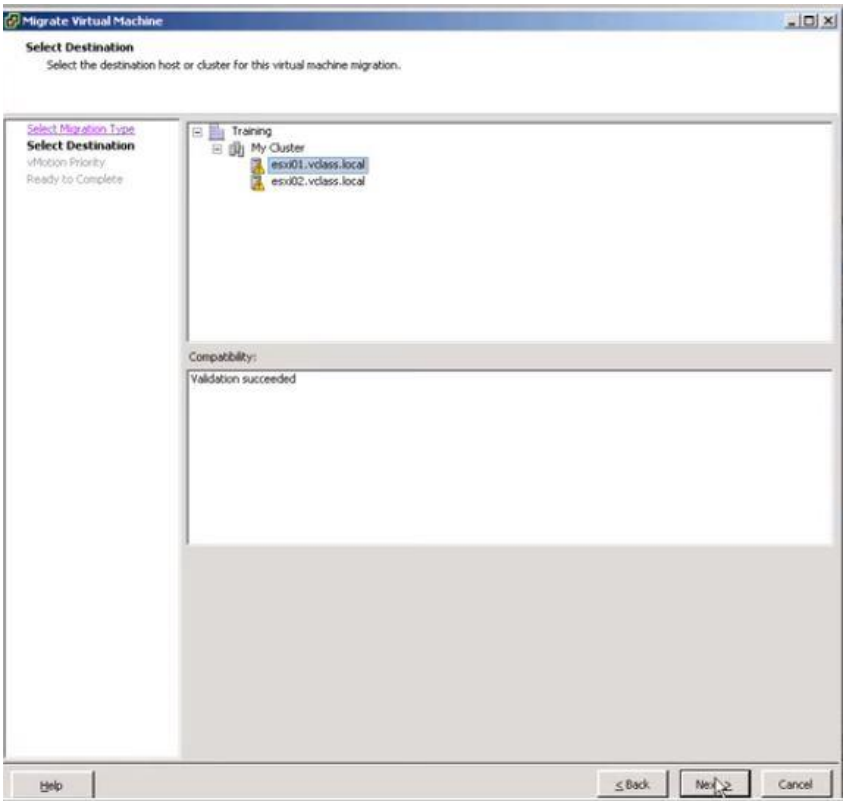
Step 11

Then select the change host as the migration type and click next.



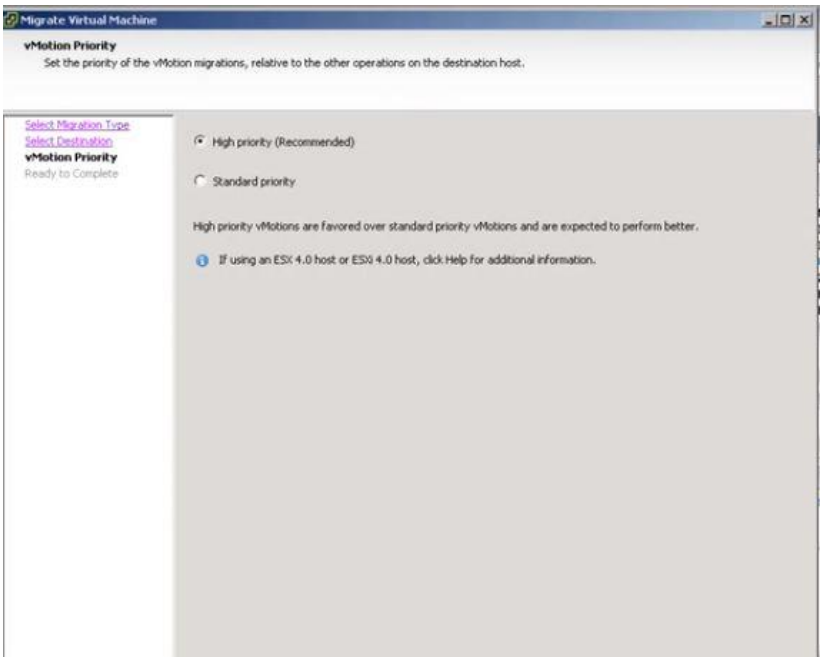
Step 12

Select the host that we want to migrate. In our case we select that host as VM exsi01 and click next.



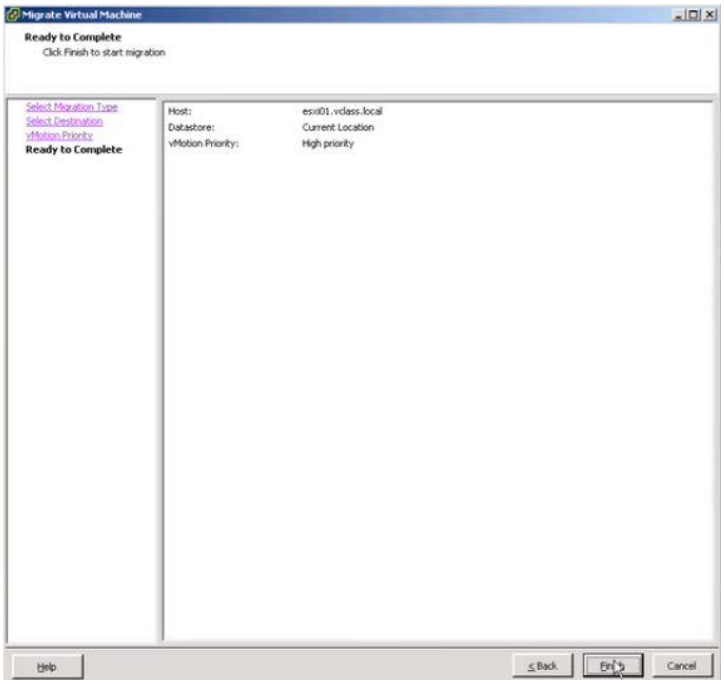
Step 13

Set the priority as high Priority and click on Next



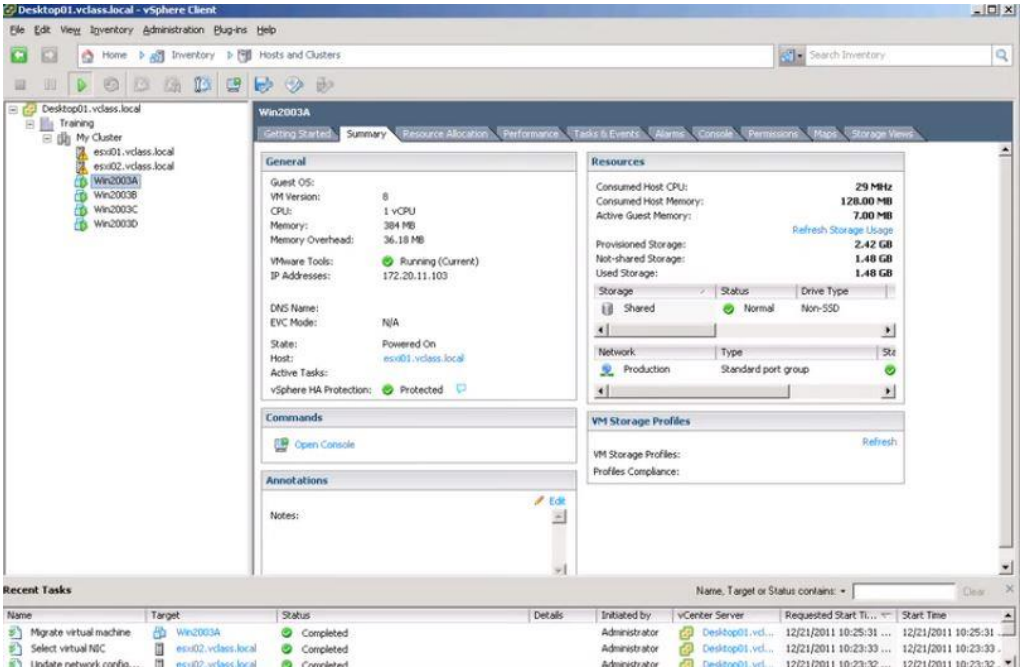
Step 14

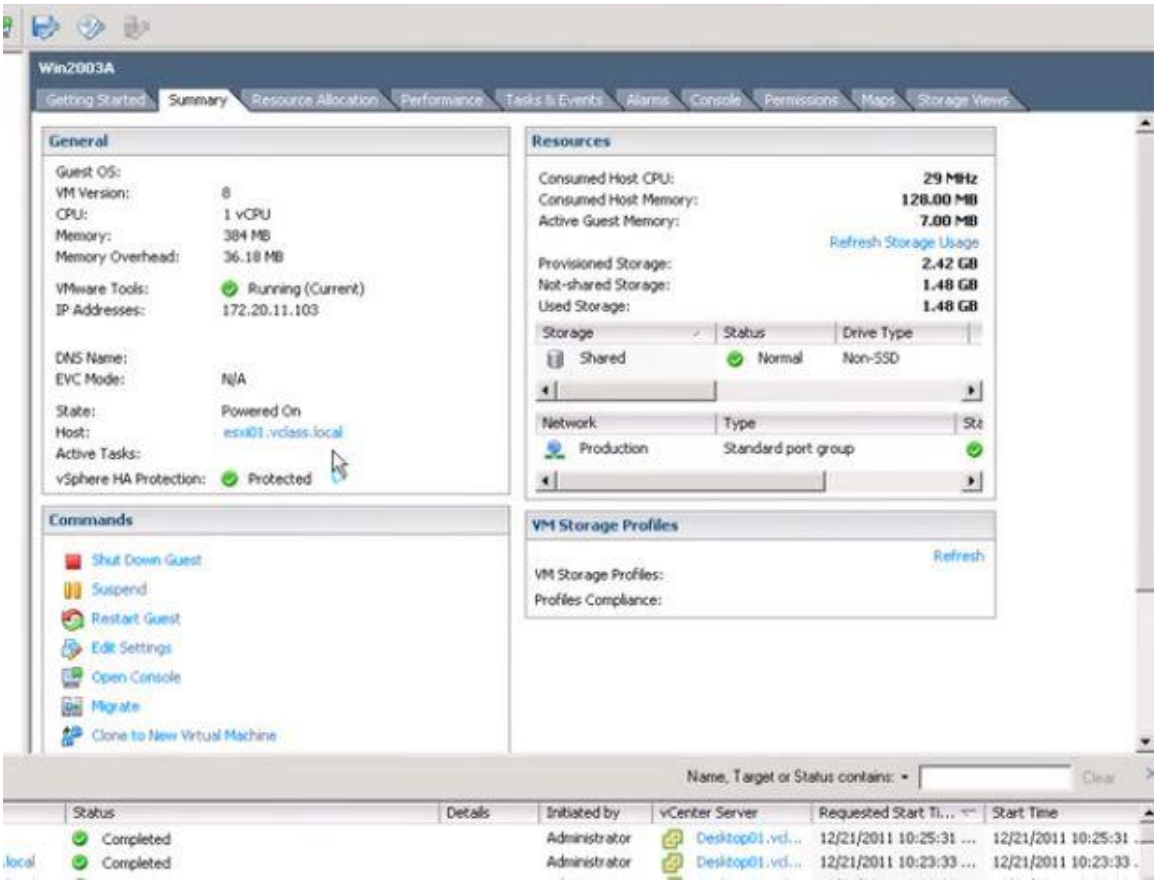
Click on the finished button.



Step 15

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
Getting Started
Summary
Resource Allocation
Performance
Tasks & Events
Alarms
Console
Permissions
Maps
Storage Views
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
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 ...
Completed
Administrator
Desktop01.vcl...
12/21/2011 10:23:33 ...
12/21/2011 10:23:33 ...