SRI LANKA INSTITUTE OF INFORMATION TECHNOLOGY

Enterprise Standards and Best Practices for IT Infrastructure

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Practical Number : Vmotion Lab
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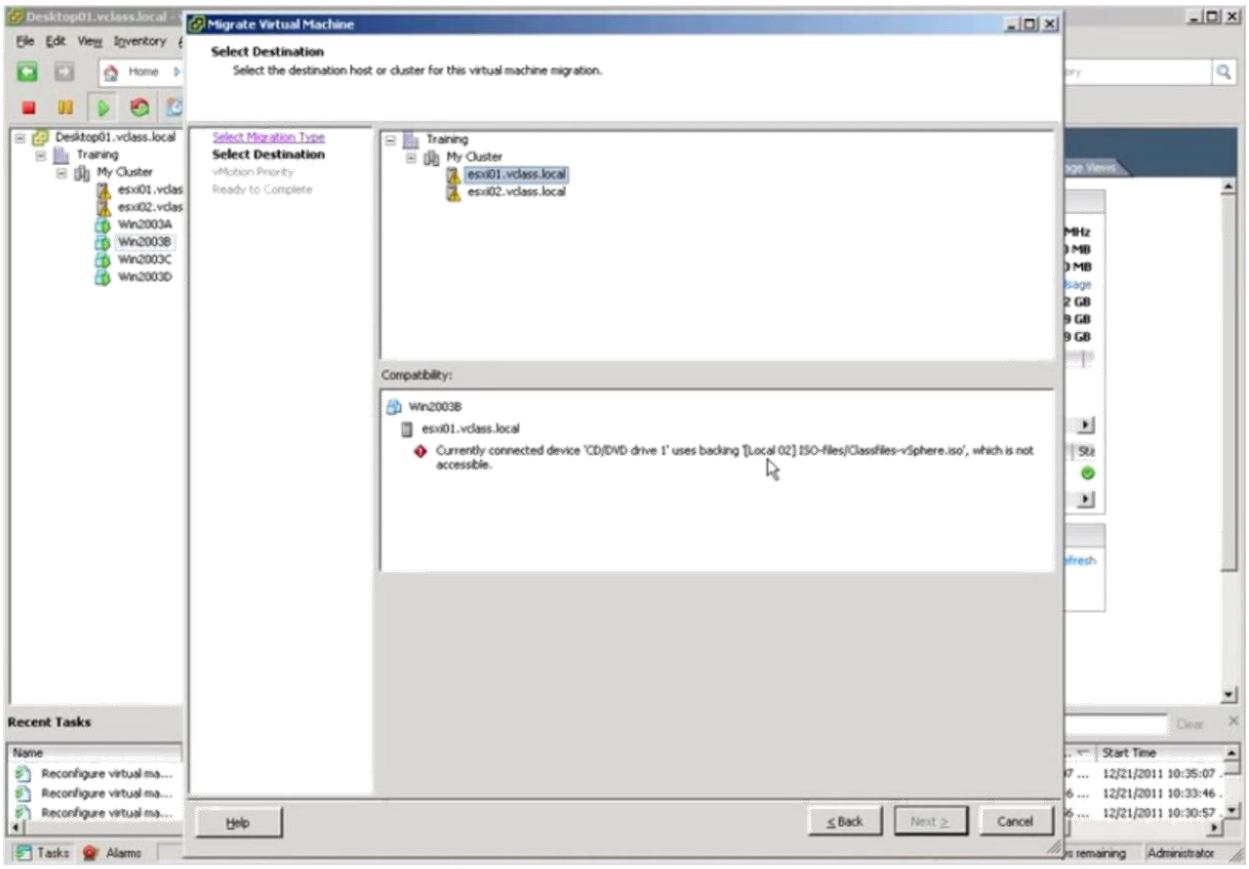
vMotion

Virtual machine can move from one physical server to another while it's running without any downtime to end users. (Running virtual machine moves from one host to another)

1. vMotion Requirements

- Virtual machine must not have a connection to a virtual device such as a CD-ROM with a logical image mounted. if they are connected to a host, that will block the Motion migration. Solution stores those devices in a shared data store.
- Need to make sure to have storage between ESXi servers- iSCSI, CF, NFS (shared storage) so the both hosts can see the VM files from the shared storage.
- Each host must have the Gigabit Ethernet network connection.
- Host must be plugged into the same physical network.
- VMotion works with standard switches or distributed virtual switches.
- Should have CPU compatibility. Otherwise we can't do the migration. Following is happen when there is no CPU compatibility. it says that the vMotion is blocking because, there is a CD-ROM is attached to the data store that is not accessible to the host.




```
Random_Init: Using random seed: 2044292605 (0x79d96dfd)
Reporting CPUID for 2 logical CPUs...

All CPUs are identical

    Family: 06 Model: 17 Stepping: 6

    ID1ECX     ID1EDX     ID81ECX    ID81EDX
    0x00082201 0x0febfbff 0x00000001 0x20100000

Vendor                    : Intel
Brand String              : "Intel(R) Xeon(R) CPU           X5482  @ 3.20GHz"
SSE Support               : SSE1, SSE2, SSE3, SSSE3, SSE4.1
Supports NX / XD          : Yes
Supports CMPXCHG16B       : Yes
Supports RDTSCP           : No
Hyperthreading            : No
Supports Flex Migration   : Yes
Supports 64-bit Longmode  : Yes
Supports 64-bit VMware    : No
Supported EVC modes       : None

PASS: Test 56983: CPUID
Press any key to reboot.
```

One way to identify CPU characteristics is to use the VMware CPU identification utility.

2. Benefits of vMotion.

- Automatically optimize and allocate entire pools of resources.

  By having all your server and/or desktops virtualized you can move VM's from one physical host to another, which is done rapidly over a high speed network connection, the original host and destination host stay in sync until the transfer it complete leaving the user unaware of the move. This allows network administrators to easily select resource pools to assign to the different VMs

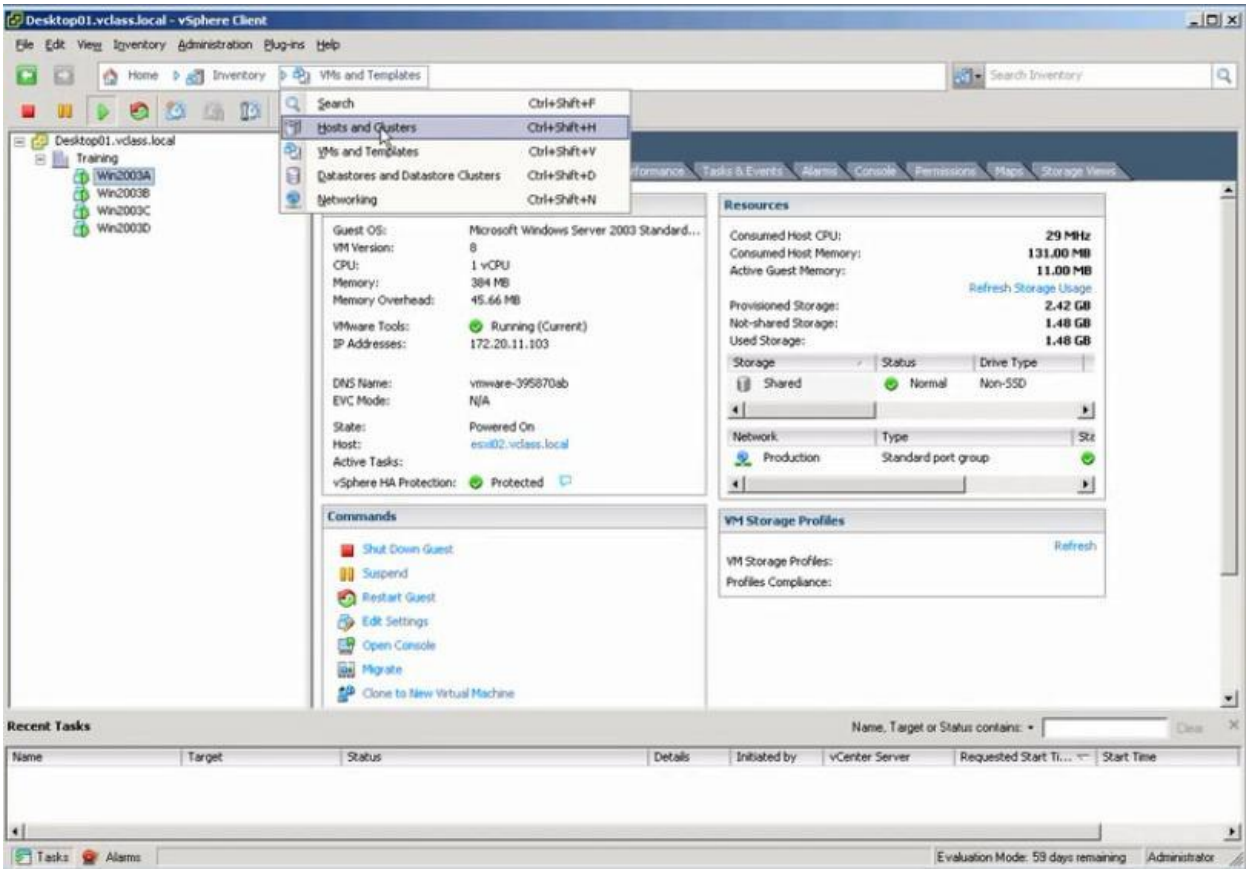
- minimize the scheduled downtime

  only have to move the VM to another physical host, creating zero downtime for the users and allowing administrators to perform maintenance at any time

3. How to configure hosts to do the vMotion.

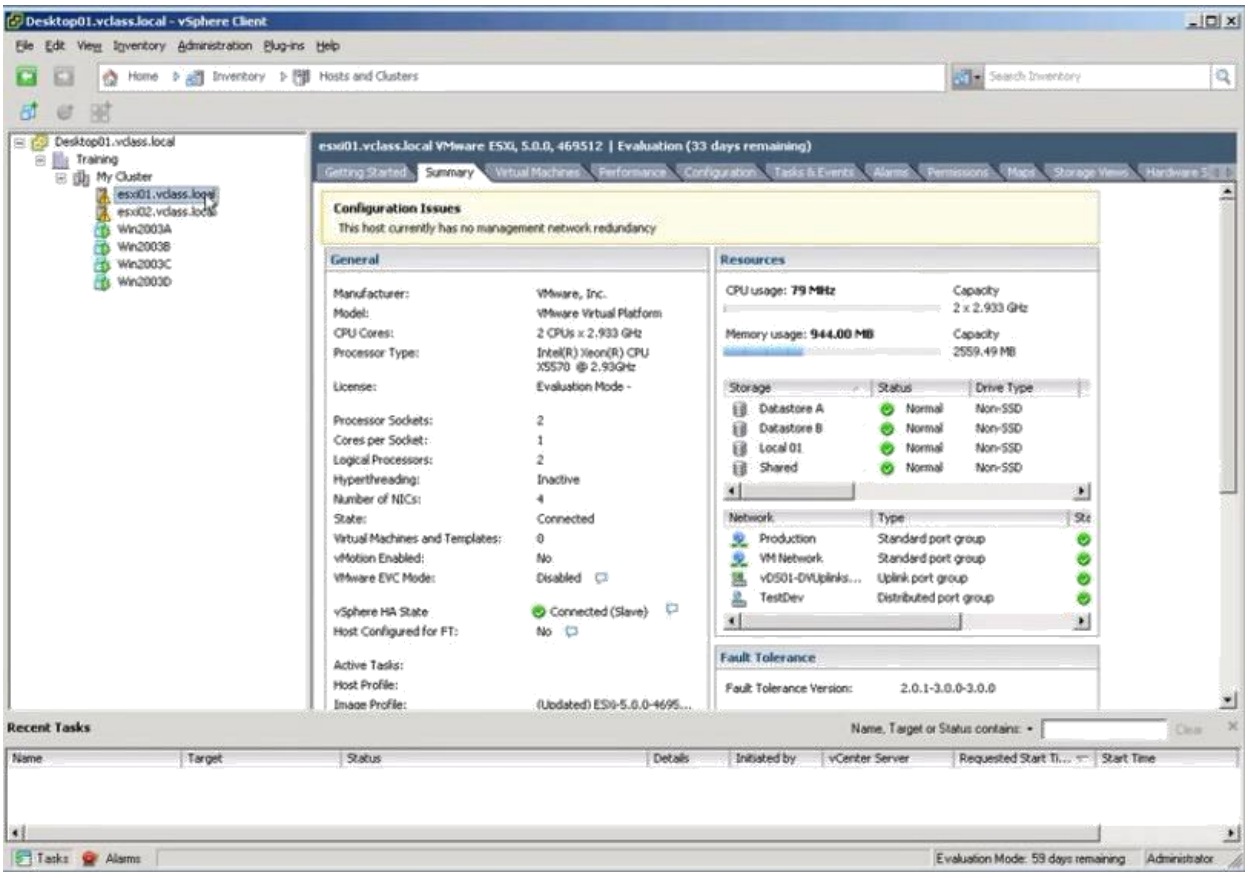
first make sure the virtual machines are resides inside a shared storage.

change VMs to the **hosts and clusters**.

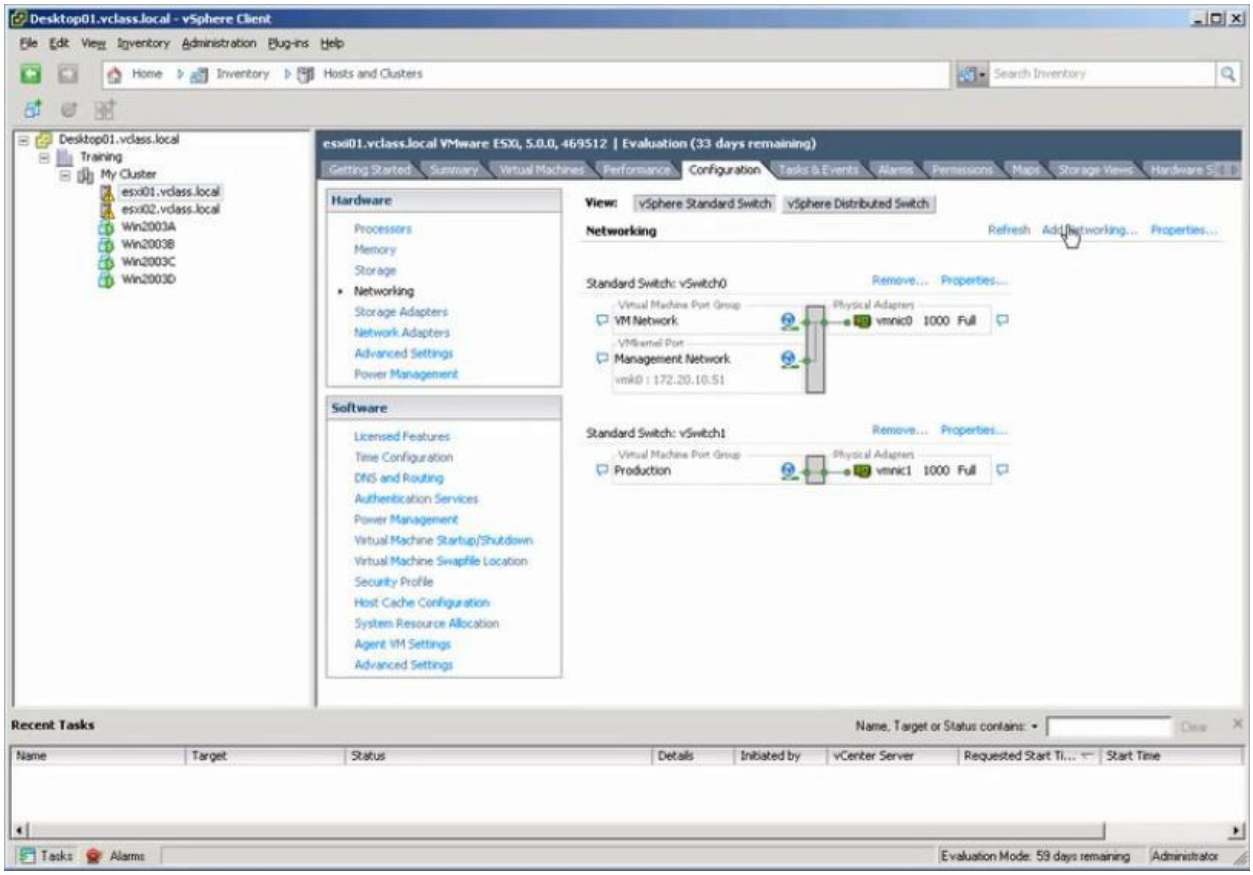


Then create VM kernal port on each host.

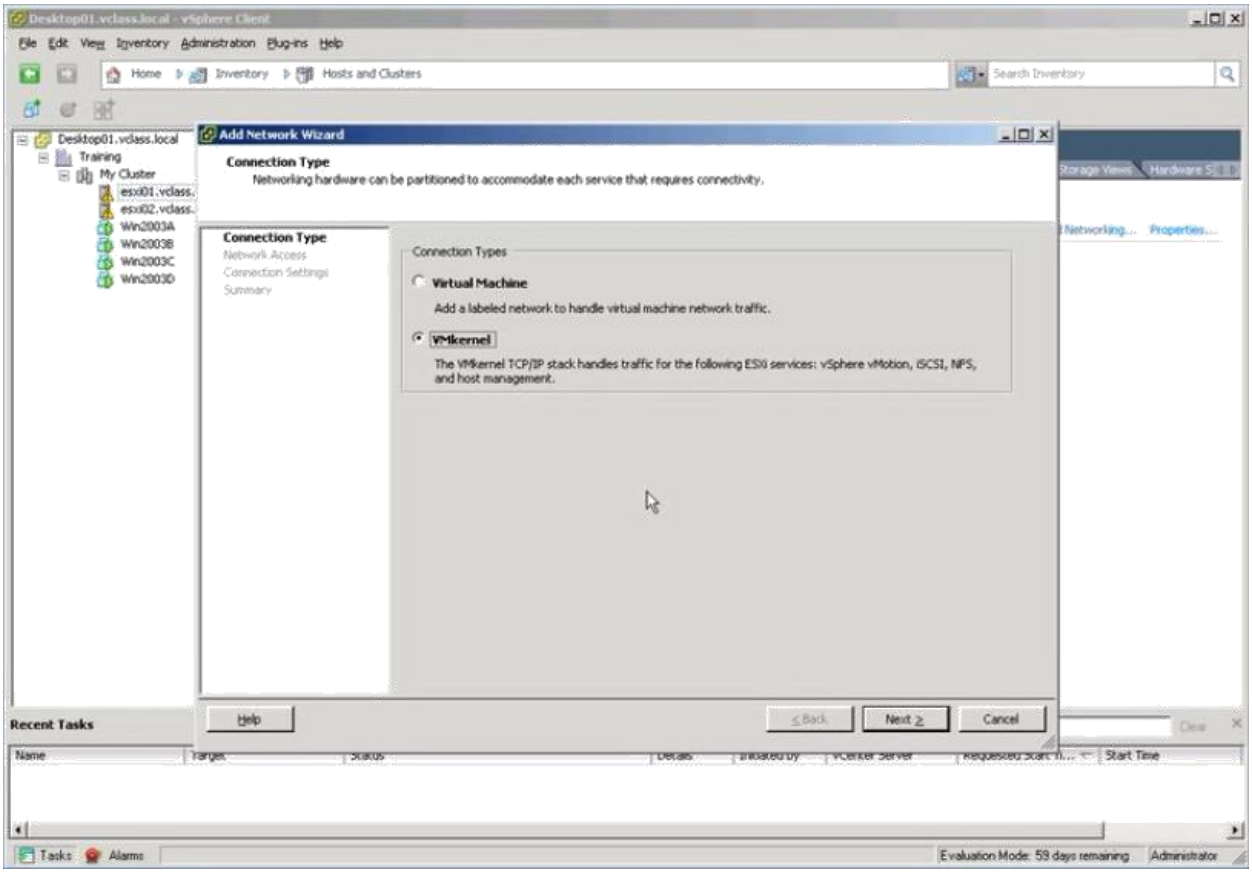
Select the **1st ESXi host** and go to the **configuration tab** --> **networking**.



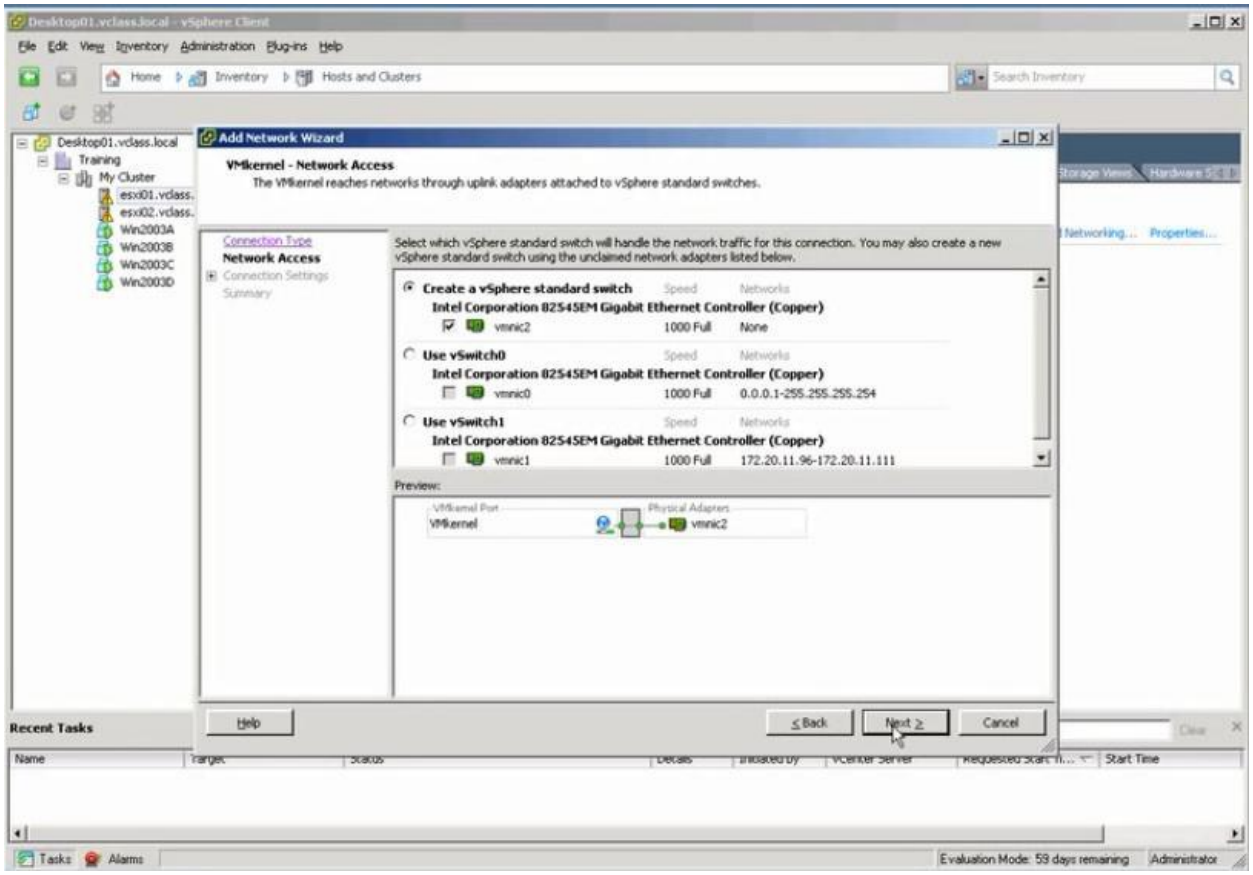
then select **Add networking**.



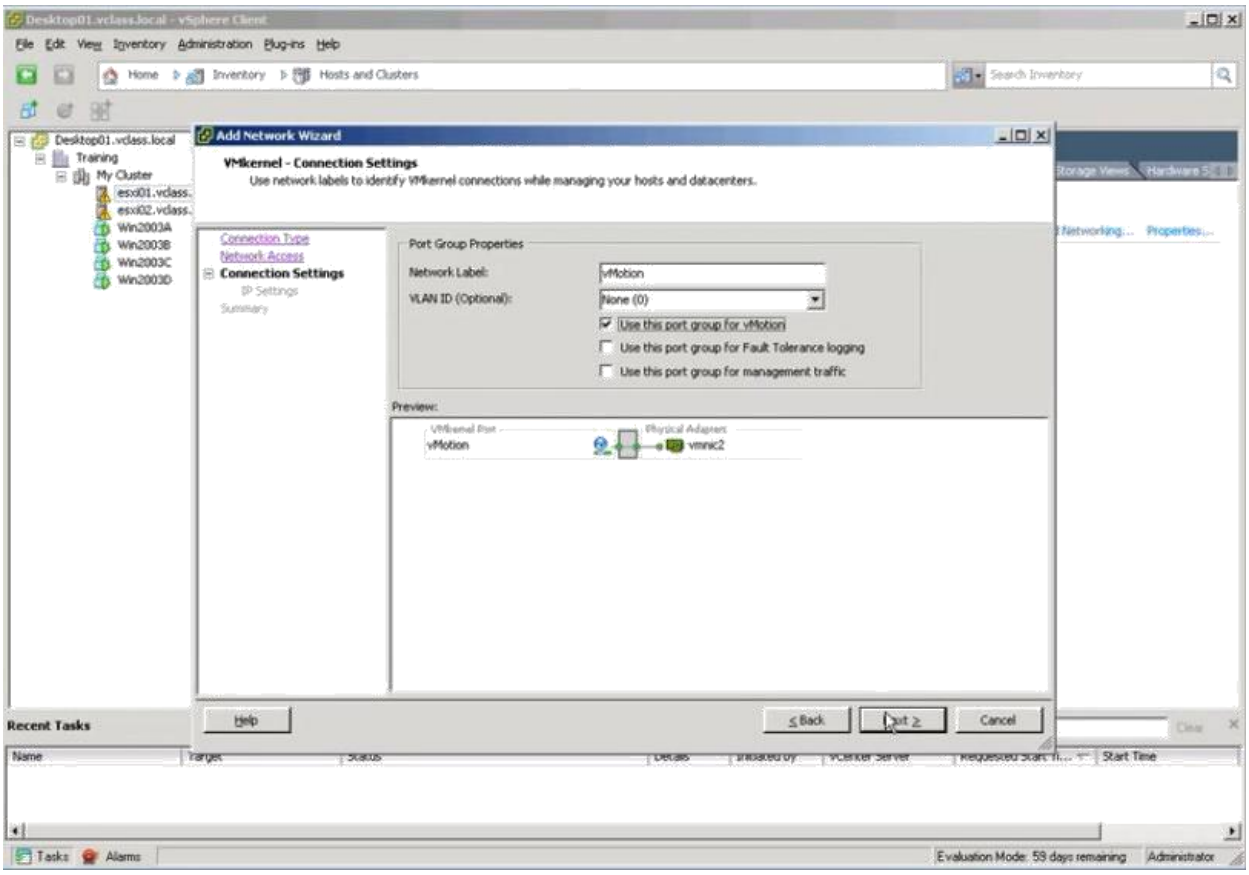
Select the **VM kernel** and go **next**.



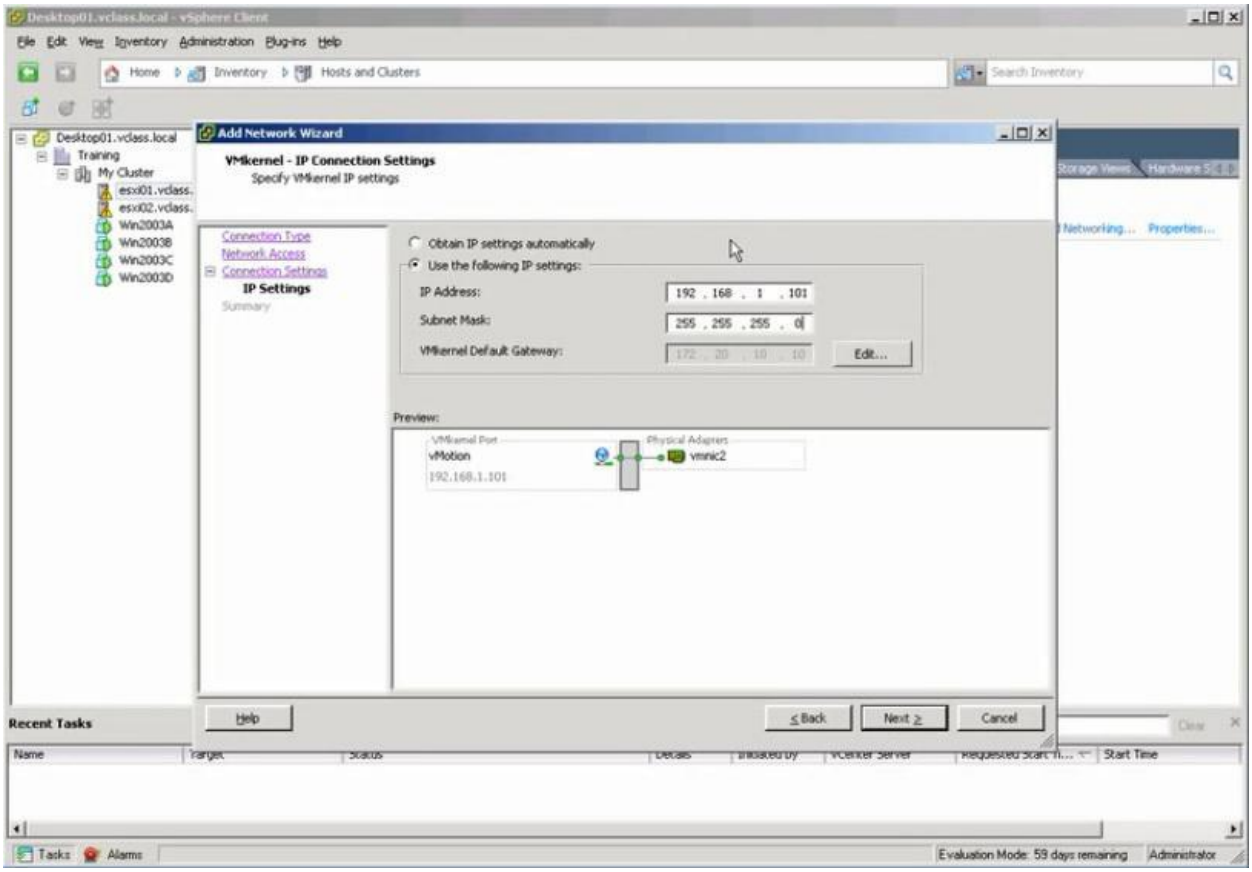
specify which physical network the vMotion traffic will be transmitted through.



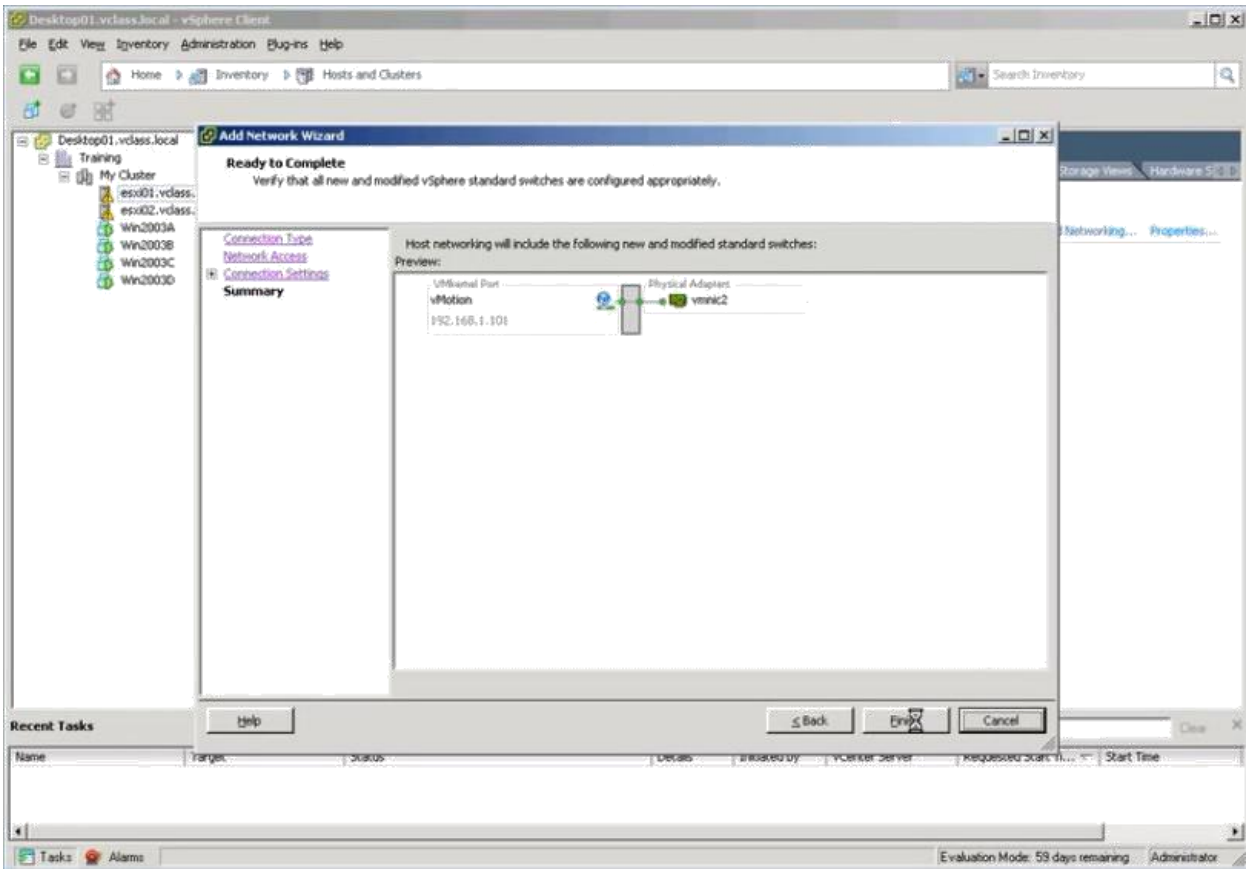
Then click **next**.



port group for vMotion and click **next**.

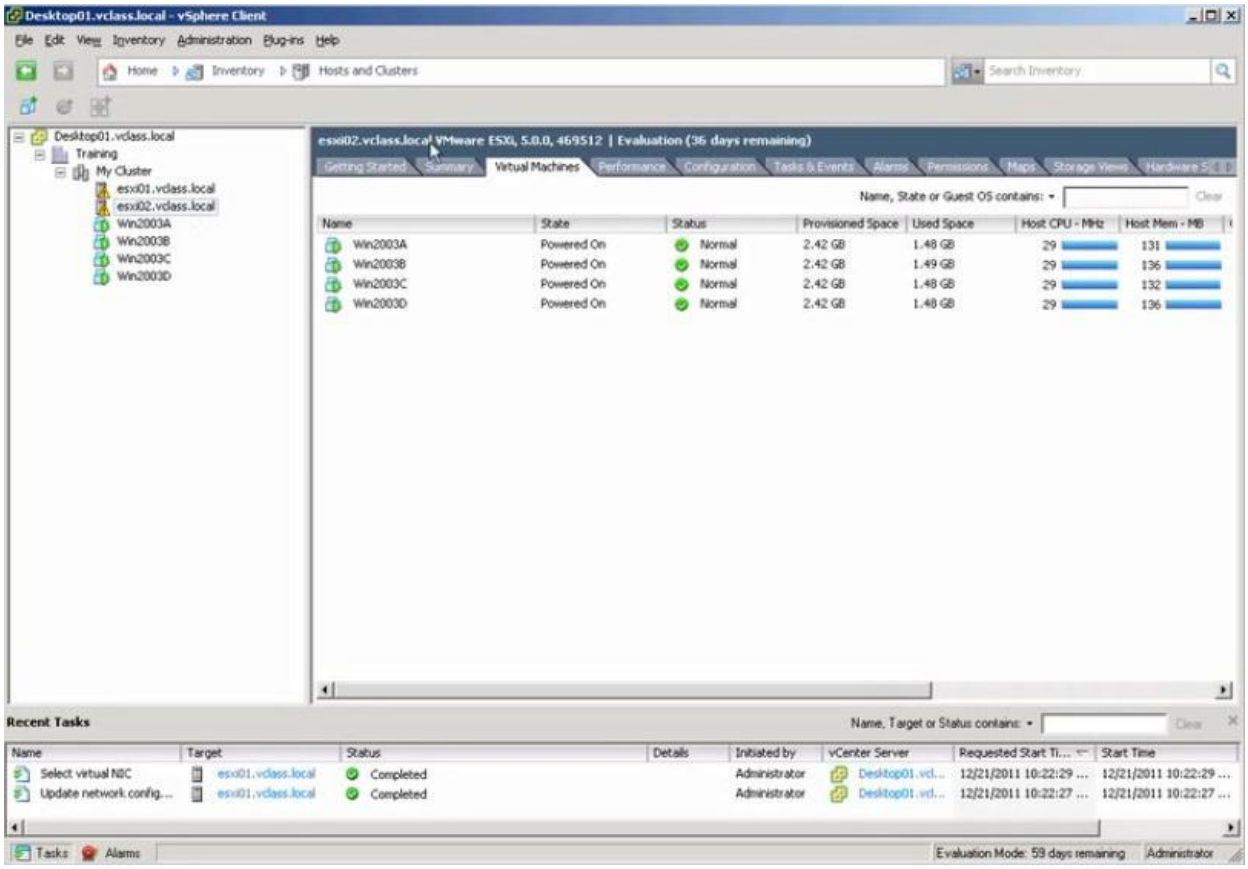


specify the **ip address** (198.168.1.101)and the **subnet mask**. and then click **next**.

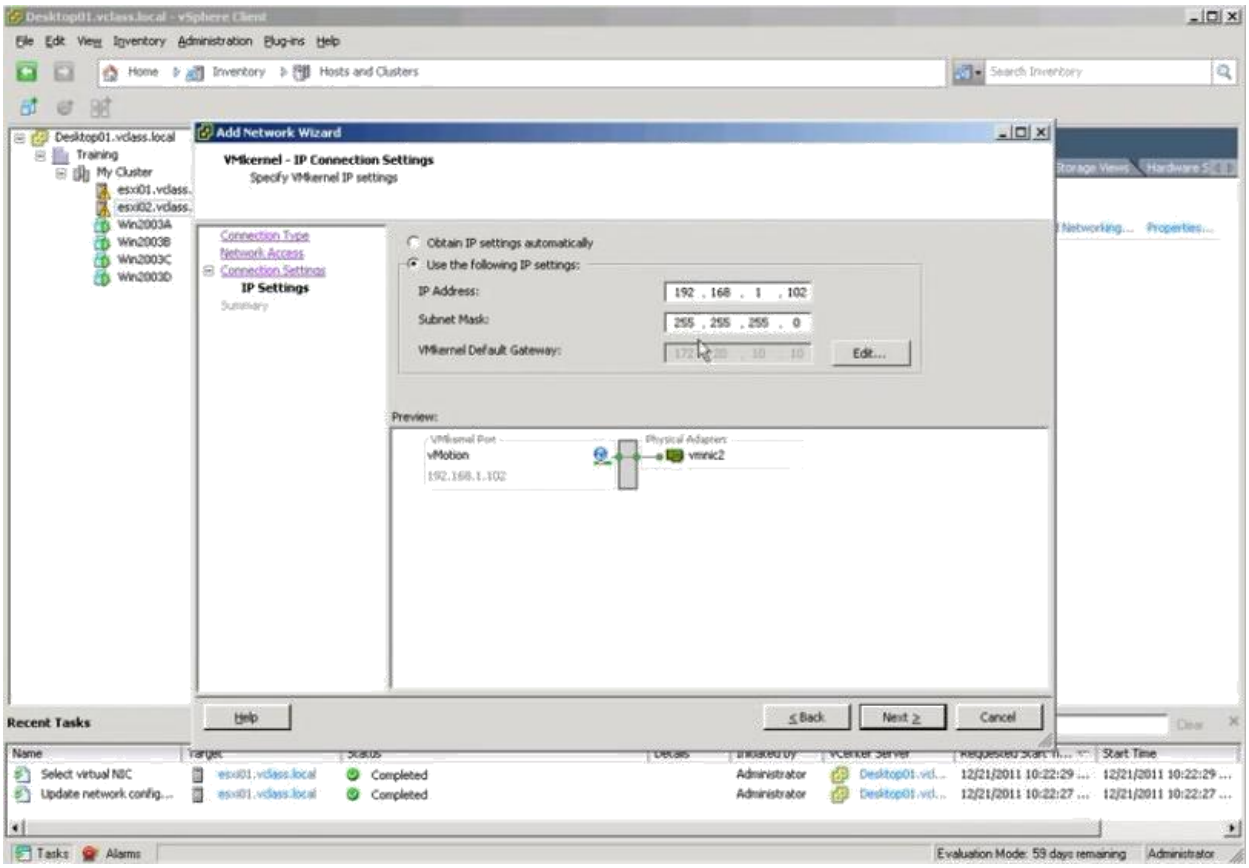


then click **finish**.

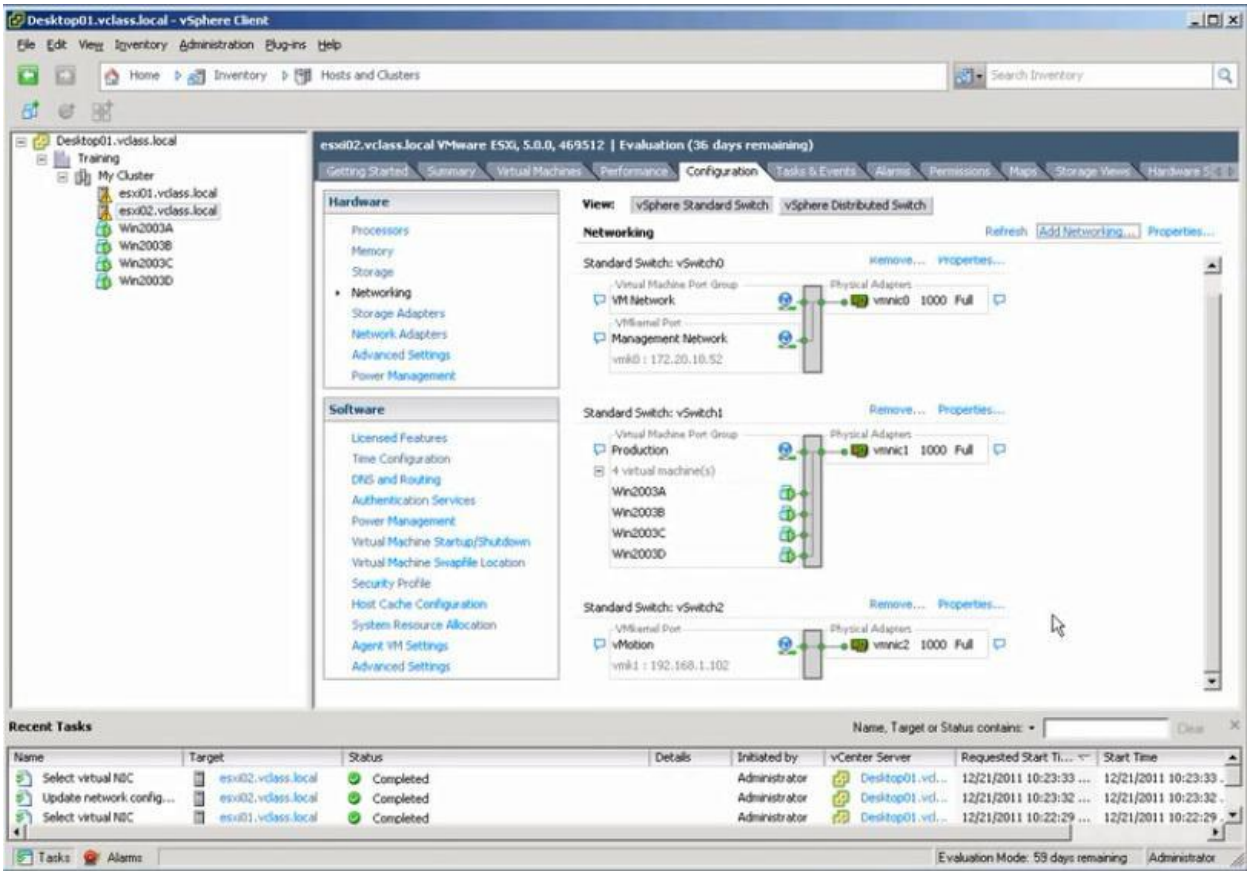
then again do the same to the **2nd host**.



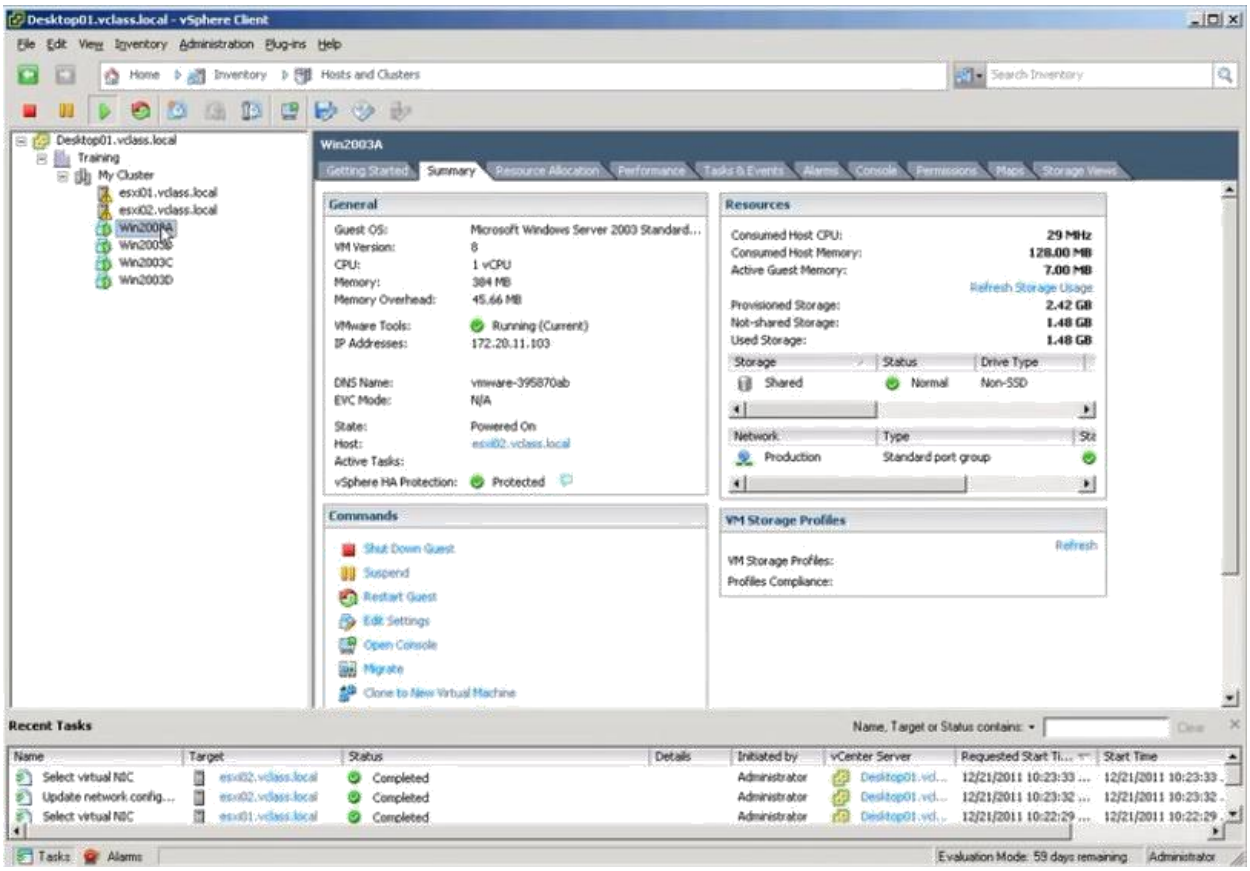
give the IP as 198.168.1.102



the created virtual switch below for the 2nd host.

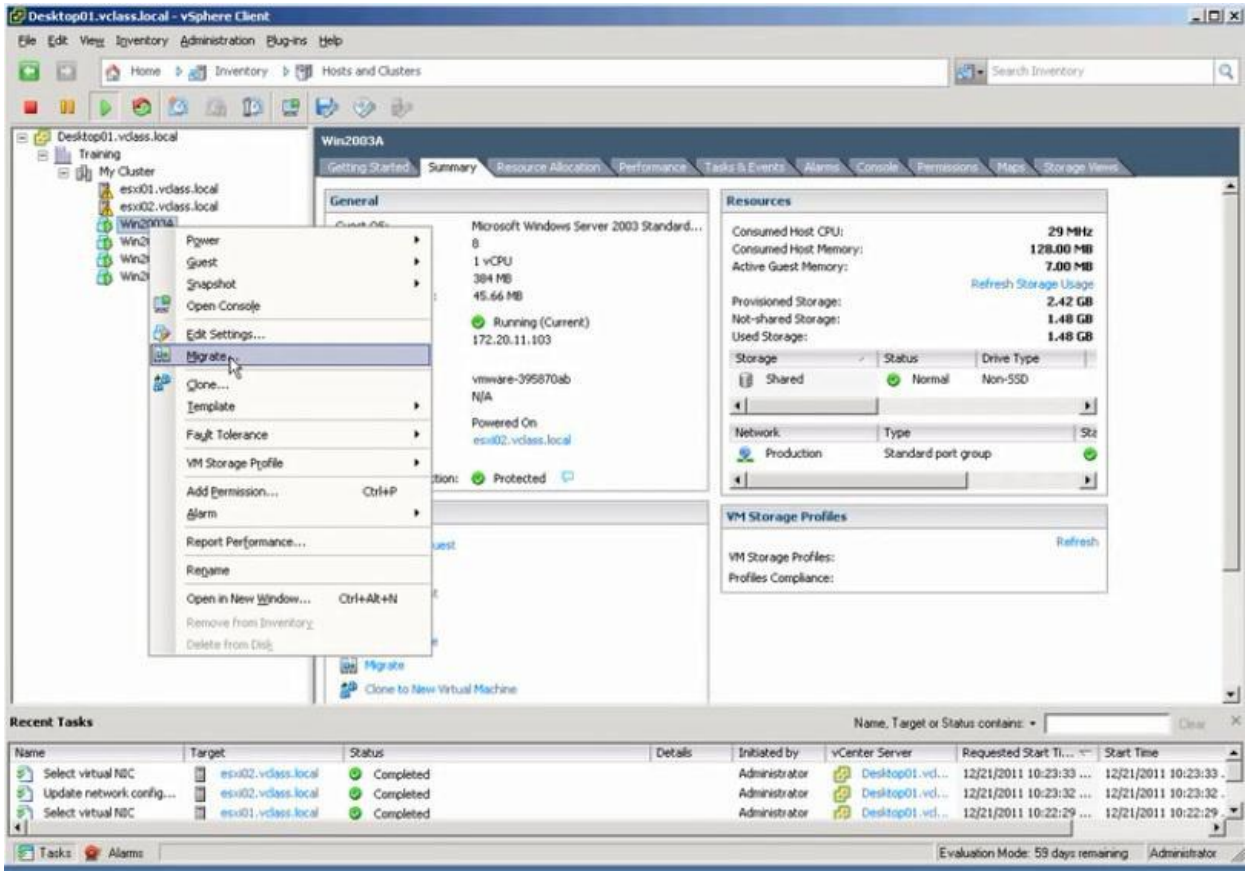


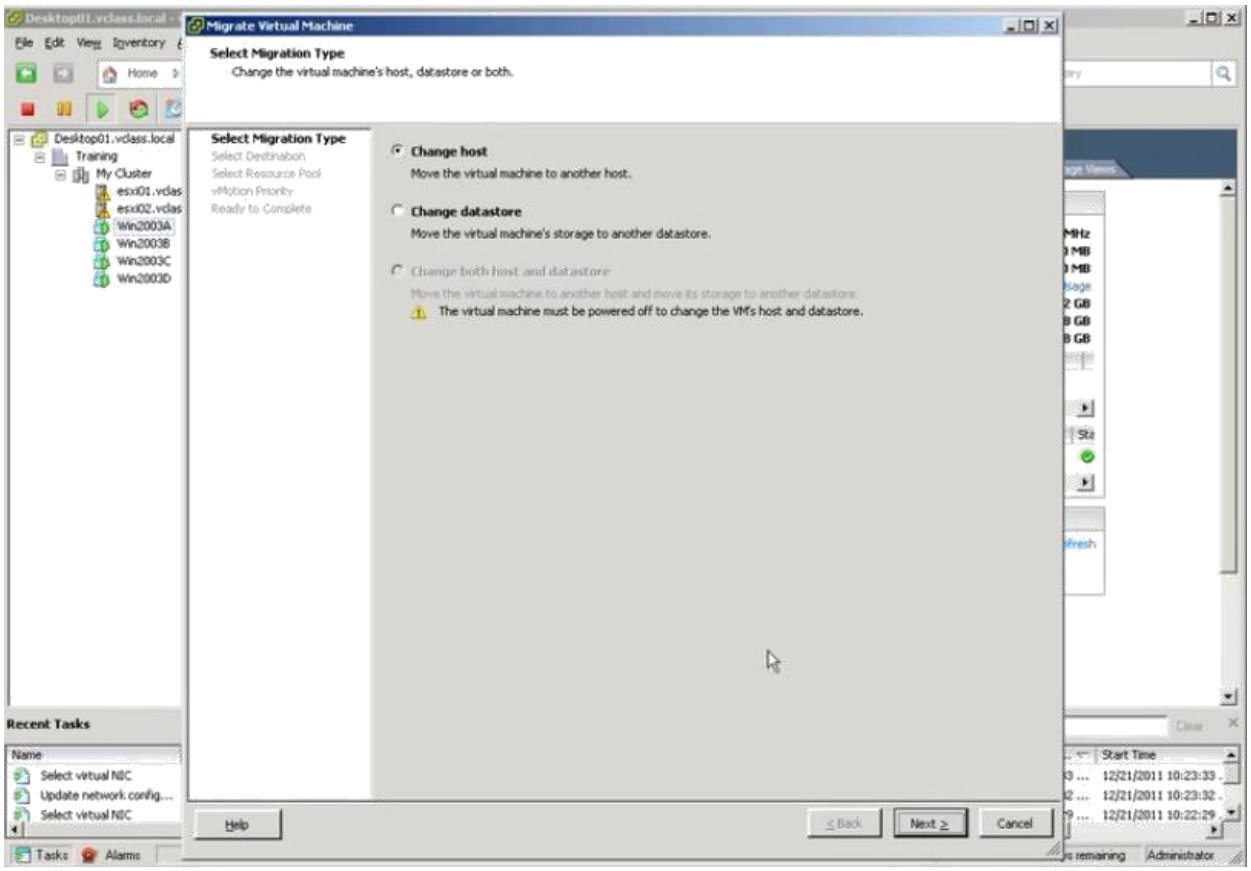
after configuring the 2 hosts we can migrate one virtual machine to another. First pick a virtual machine, which wants to migrate.



this particular virtual machine is currently running on the host 2. and migrate this virtual machine to host 1.

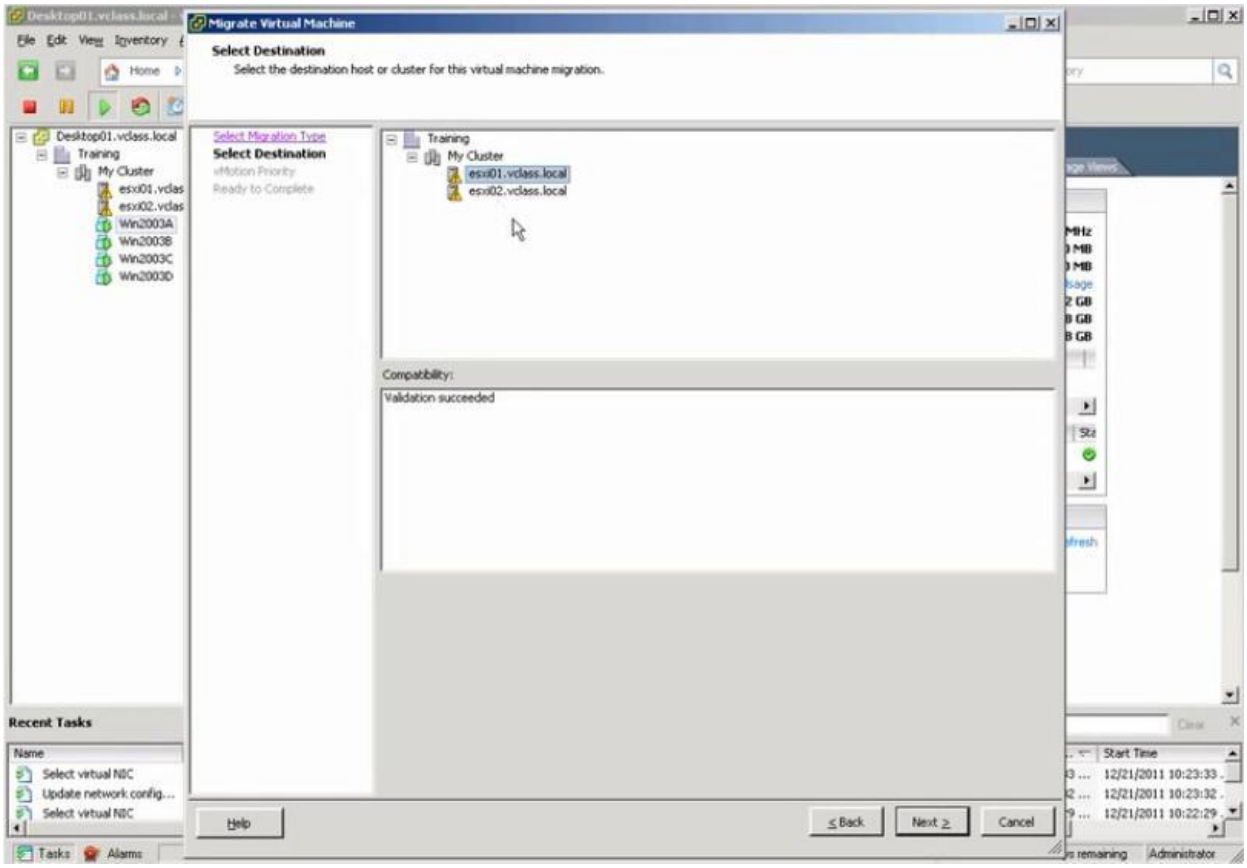
right click on the virtual machine and click **migrate**.



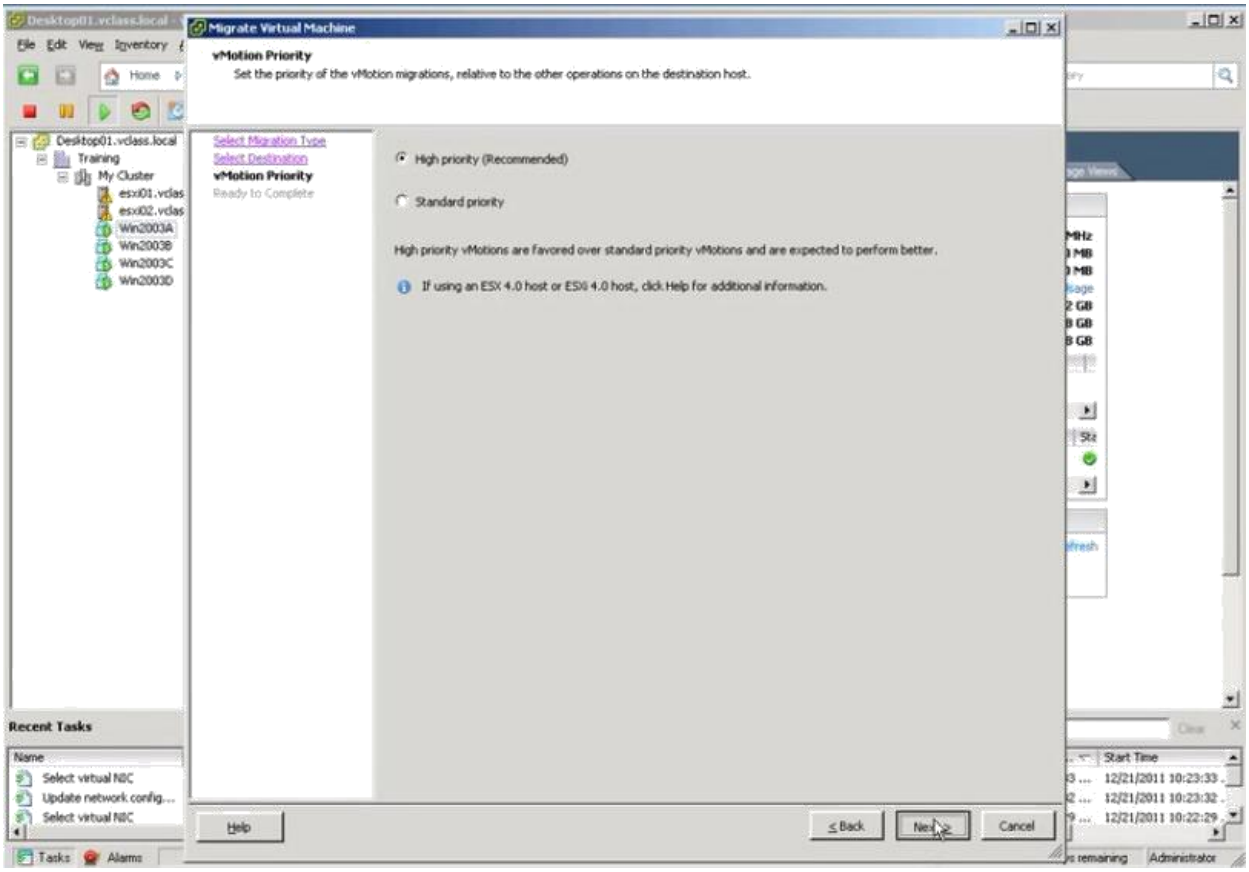

Migrate Virtual Machine
Select Migration Type
Change the virtual machine's host, datastore or both.
Select Migration Type
Select Destination
Select Resource Pool
vMotion Priority
Ready to Complete
Change host
Move the virtual machine to another host.
Change datastore
Move the virtual machine's storage to another datastore.
Change both host and datastore
Move the virtual machine to another host and move its storage to another datastore.
The virtual machine must be powered off to change the VM's host and datastore.
Help
< Back
Next >
Cancel
Recent Tasks
Name
Start Time
Select virtual NIC
Update network config...
Select virtual NIC
12/21/2011 10:23:33
12/21/2011 10:23:32
12/21/2011 10:22:29
Tasks
Alarms
Administrator

click **next**.

then specify the which ESXi server to migrate the virtual machine. select the **ESXi1**.

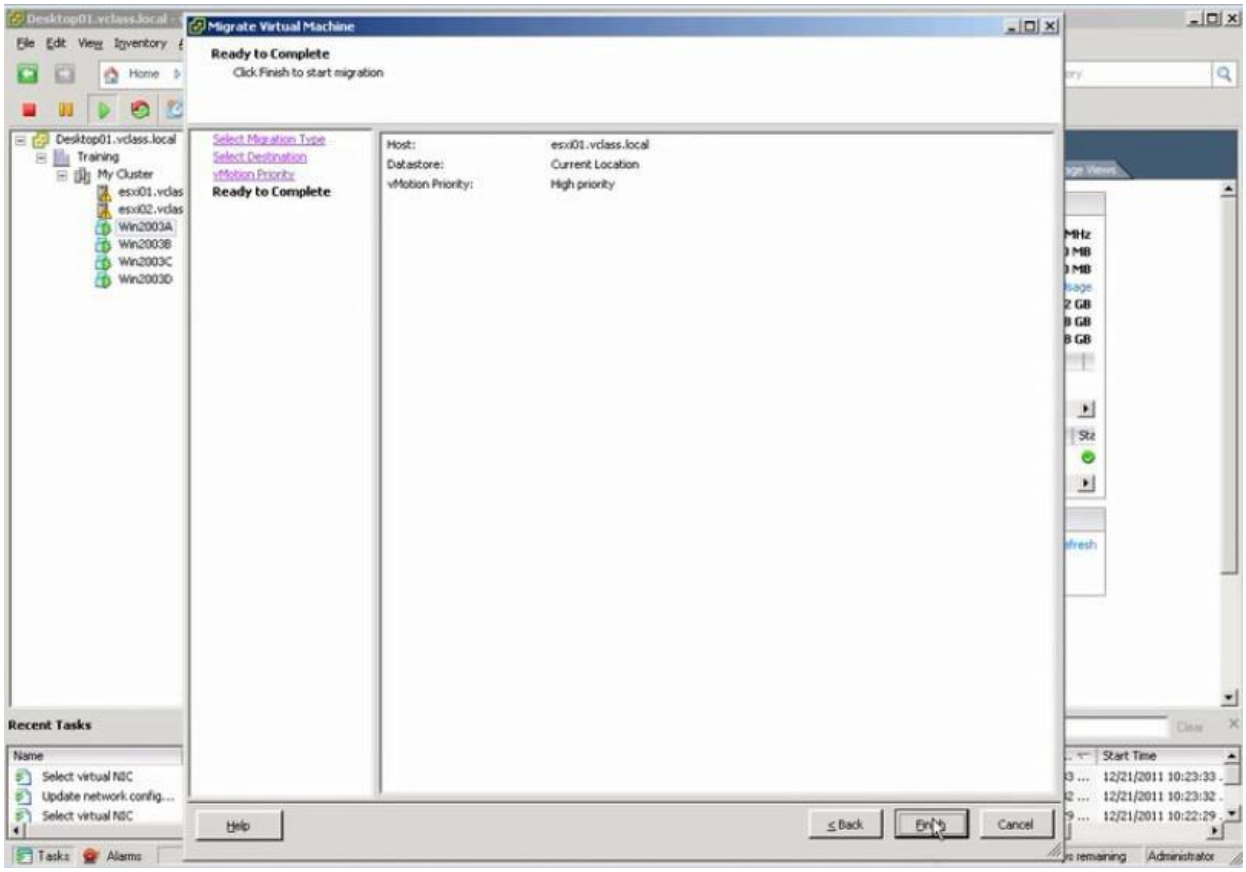


in compatibility there are no issues at the moment. and then click **next**.



tick the **high priority**. and click **next**.

the summary report.



then click **finish**.

after that the **migration** begin as the following.

when we look at the **summary tab**, the virtual machine is now running on the **ESXi2** server.