SRI LANKA INSTITUTE OF INFORMATION TECHNOLOGY

Enterprise Standards and Best Practices for IT Infrastructure

4th Year 2nd Semester 2016

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Practical Session: WE Monday

Practical Number: Lab 7

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Date of Evaluation : _____

Evaluators Signature : _____

VMware vMotion

vMotion

vMotion means the live migration of a running virtual machine from one physical server to another physical server with zero downtime (no downtime) or without losing service.

In here the two physical servers are the two ESXi hosts where the virtual machines are created. So a running virtual machine can be migrated from one host to another.

Pre Requisites for vMotion

- The hosts must be licensed for vMotion (at least one vSphere Essentials Plus license on the corresponding ESXi host).
- At least one vMotion interface (minimum 1GB adapter)
- Same naming for virtual port groups.
- Same VLAN and VLAN label.
- Sufficient resources on the target hosts.
- All hosts should have access to the same data stores and networks.
- Virtual machine should be running on one of the supported operating systems.

Software Requirements for vMotion

- The hosts must be running ESXi 5.1 or later.
- VMware tools should be installed.

Hardware Requirements for vMotion

- CPU compatibility
- Processor compatibility
- No CD ROM attached
- Shared central mass storage
- GigaBit Ethernet network between hosts

Pros and Cons of vMotion

Pros

- Zero downtime (no downtime)
- Continuous service availability
- Useful when performing maintenance on the ESXi host
- Maximum hardware utilization and availability.
- Load balancing

Cons

- Does not allow migration with vMotion between Intel and AMD processors.
- BIOS settings of the hosts need to enable hardware virtualization and execute protection.

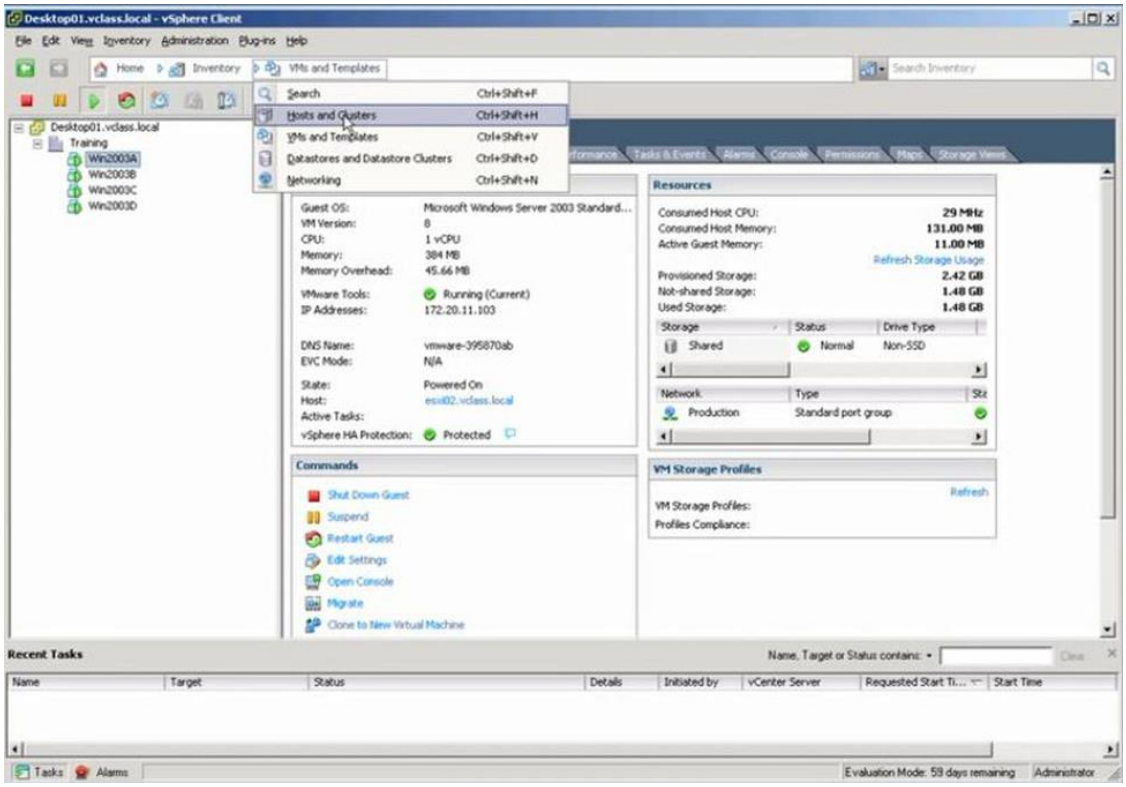
Steps of doing vMotion on VMware

- Power on the ESXi hosts and connect using VMware vSphere client software.
- Create a virtual machine on the host and power on it.
- Select the host and go to 'Configuration' tab.
- Go to 'Networking' and click on 'Add Networking' to create the vSwitch.
- Choose 'VMkernel' on ADD Network Wizard and click on Next.
- Choose 'Create a vSphere standard switch' and click on Next.
- Provide a network label and set 'Use this port group for vMotion'.
- Set the IP settings (IP address and subnet mask) and click on Next.
- Click on Finish.
- Go to 'Networking' tab and click on 'Add Networking'.
- Perform the same steps from step 4 to step 8. (When providing an IP in IP settings provide a different IP than the earlier one)
- Click on Next and Finish.
- Right click on a virtual machine and click on Migrate.
- Select 'Change host' and click on Next.
- Select the target server where to move the virtual machine and click on Next.
- Select the vMotion priority as 'High priority' and click on Next.
- Click on Next from the 'Ready to Complete' tab.
- Click on Finish to start the migration. It will take 60 seconds (approx.) to complete the migration process.

How to configure hosts to do the vMotion

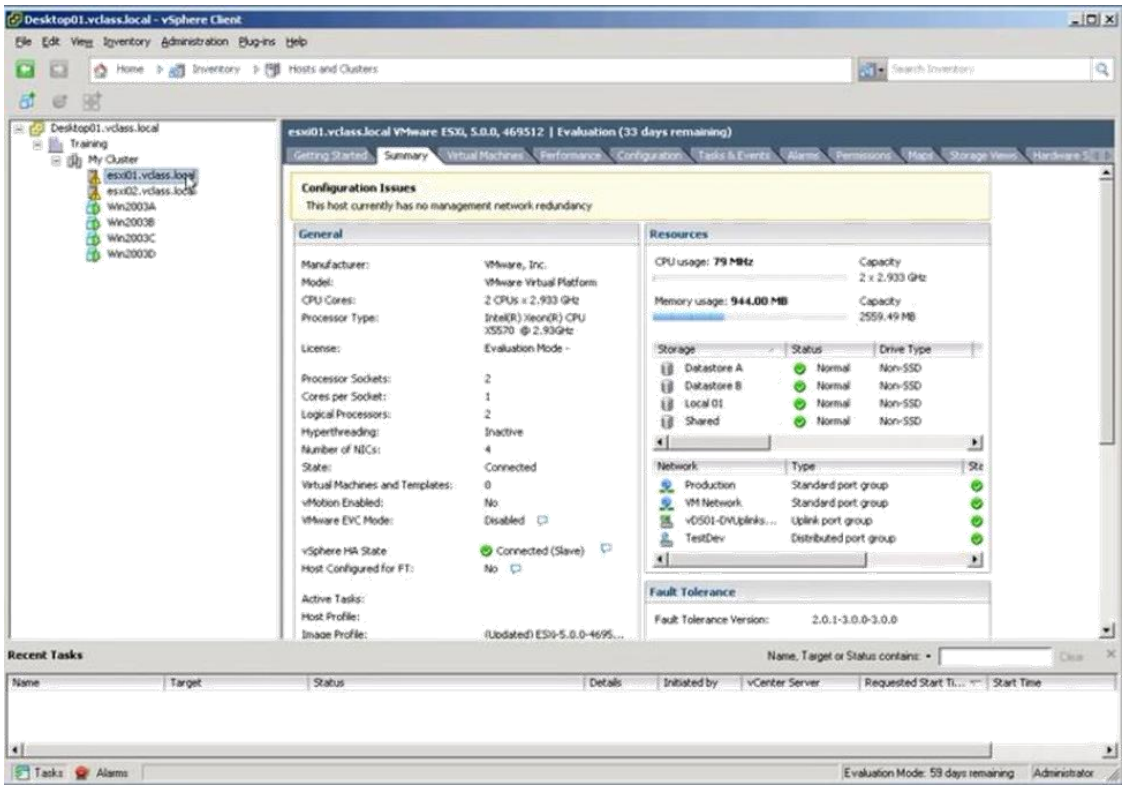
First make sure virtual machines reside inside a shared storage.

Then change VMs to hosts and clusters.

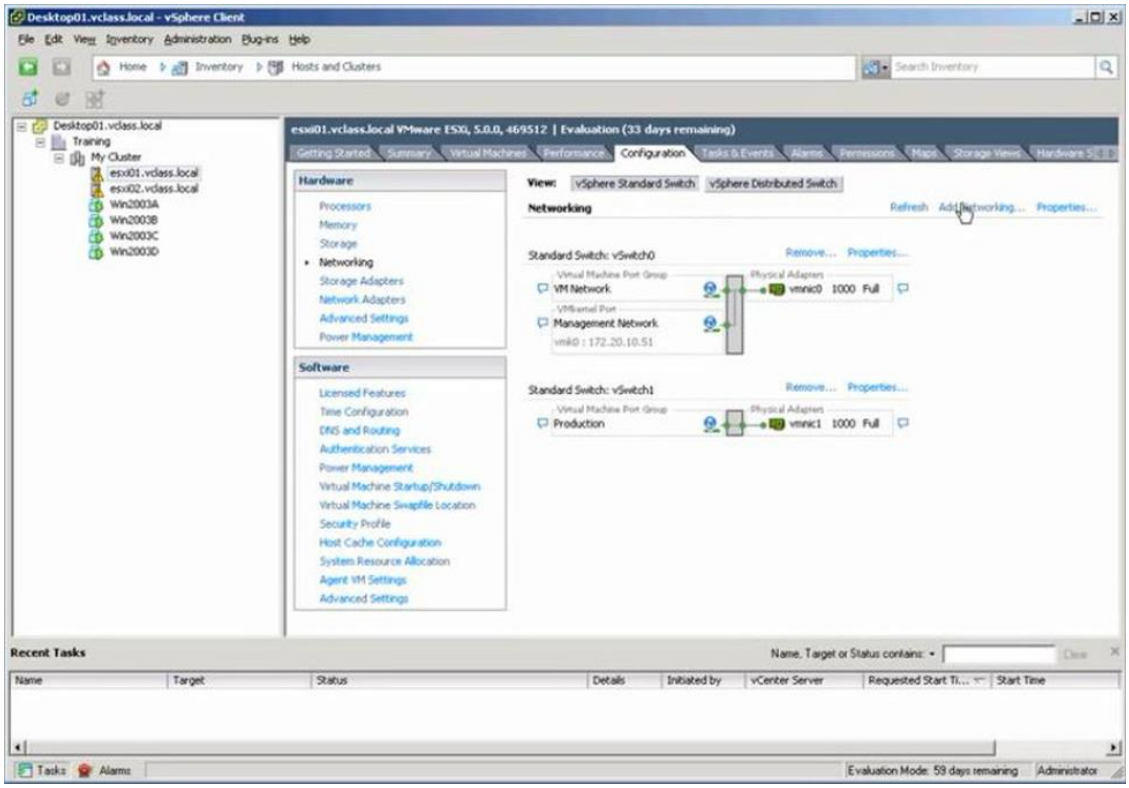


Then create VM kernel port on each host.

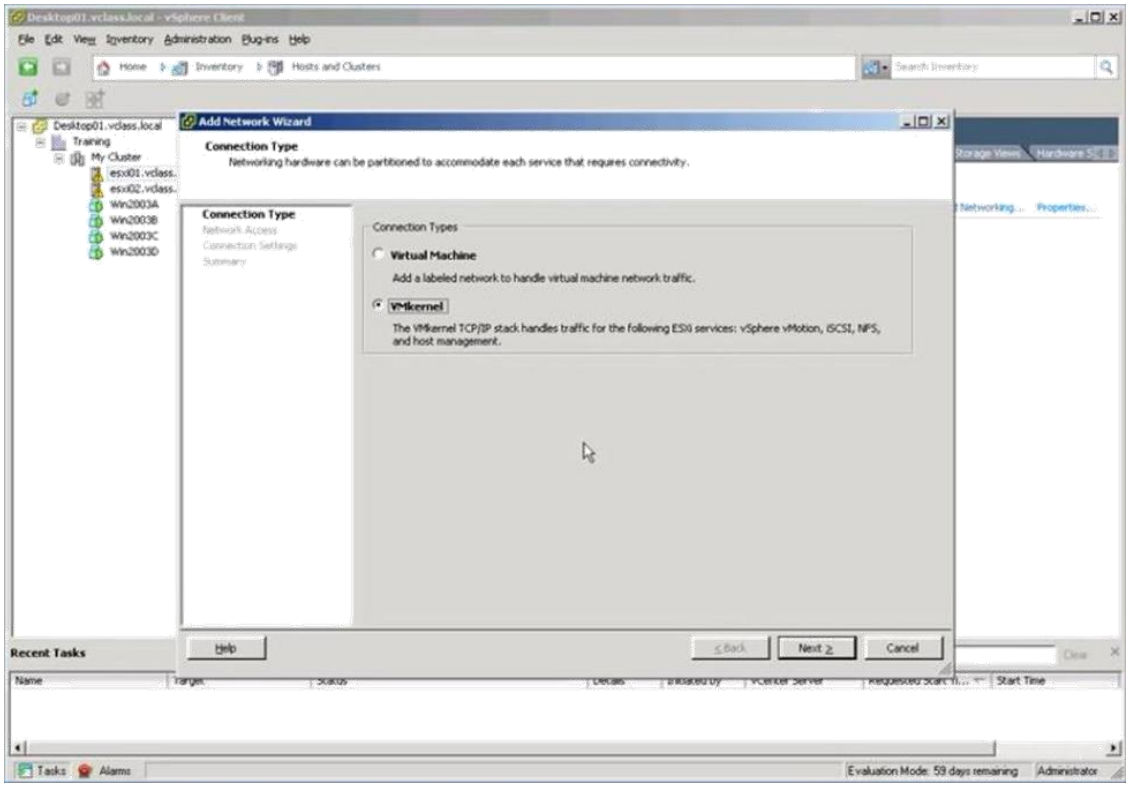
Select the 1st ESXi host and go to the configuration tab --> networking.



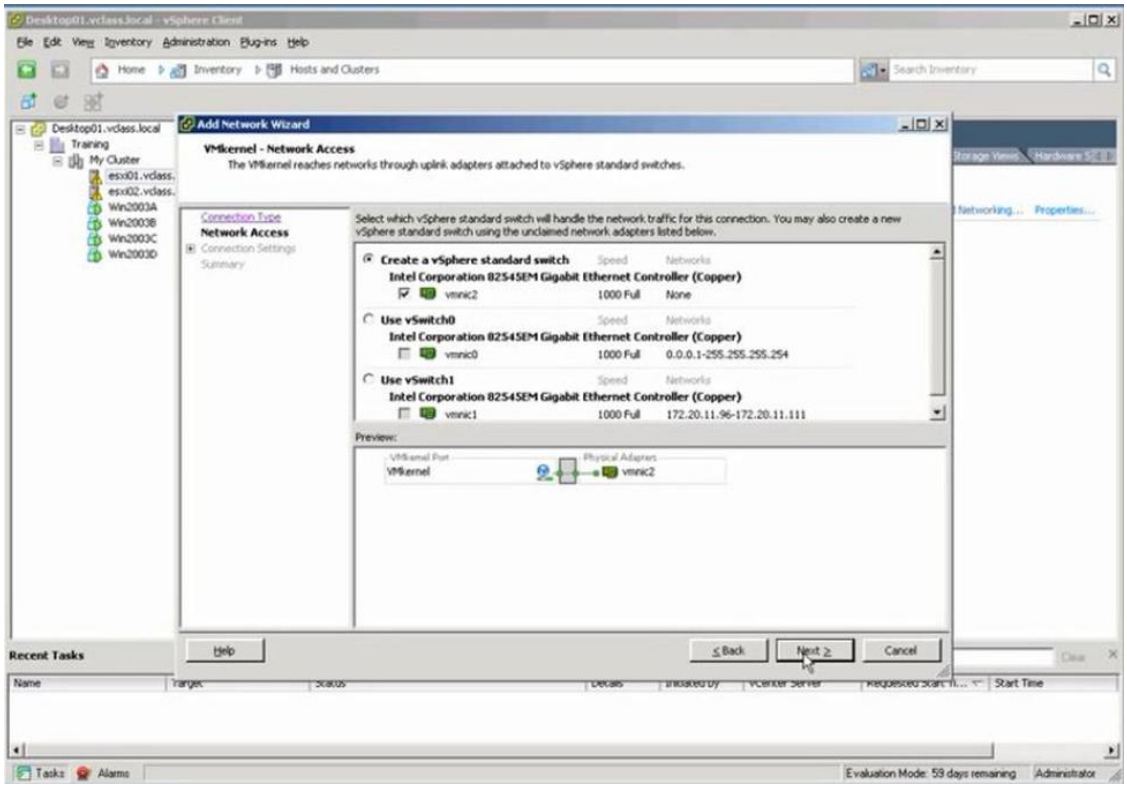
Then select add networking.



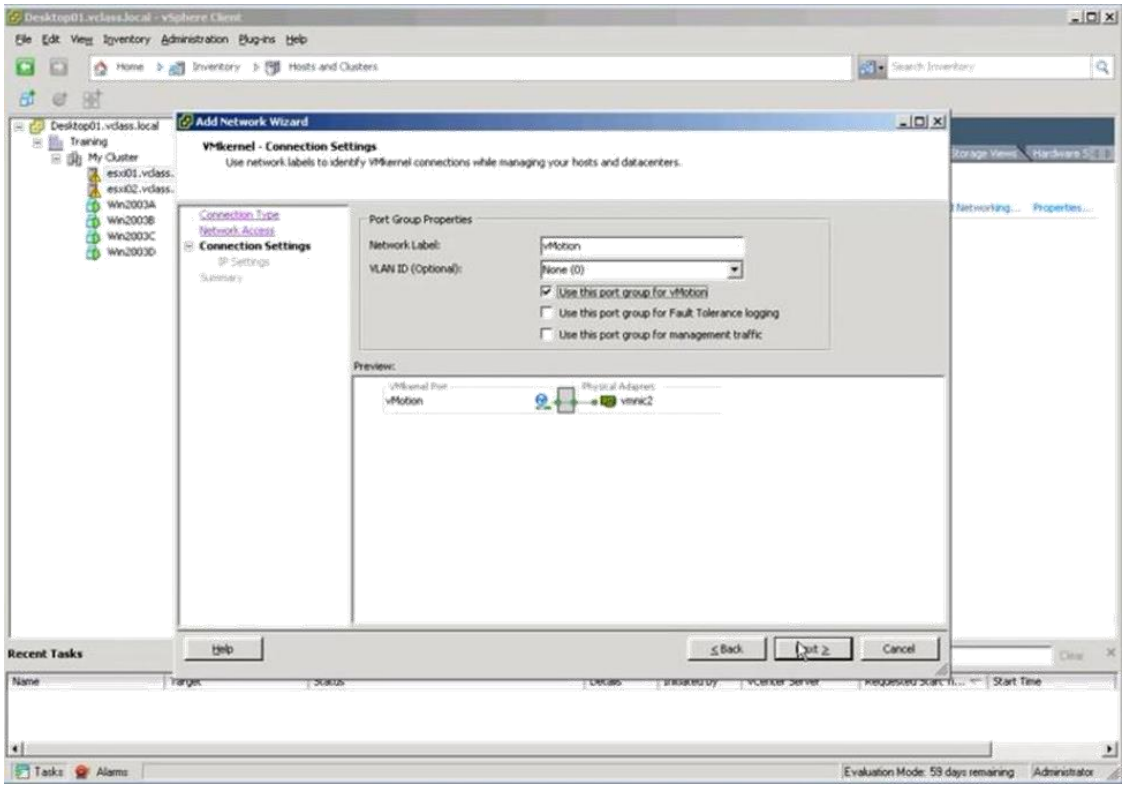
Select the VM kernel and go next.



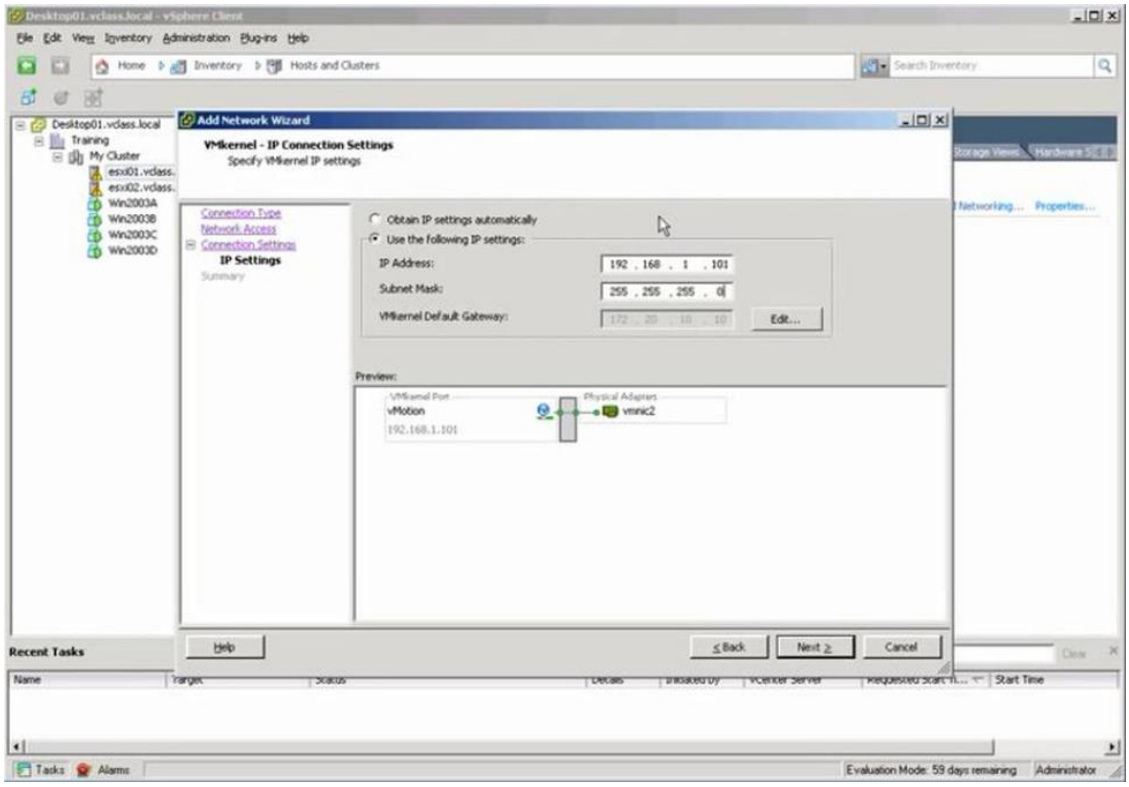
Specify which physical network the vMotion traffic will be transmitted through.



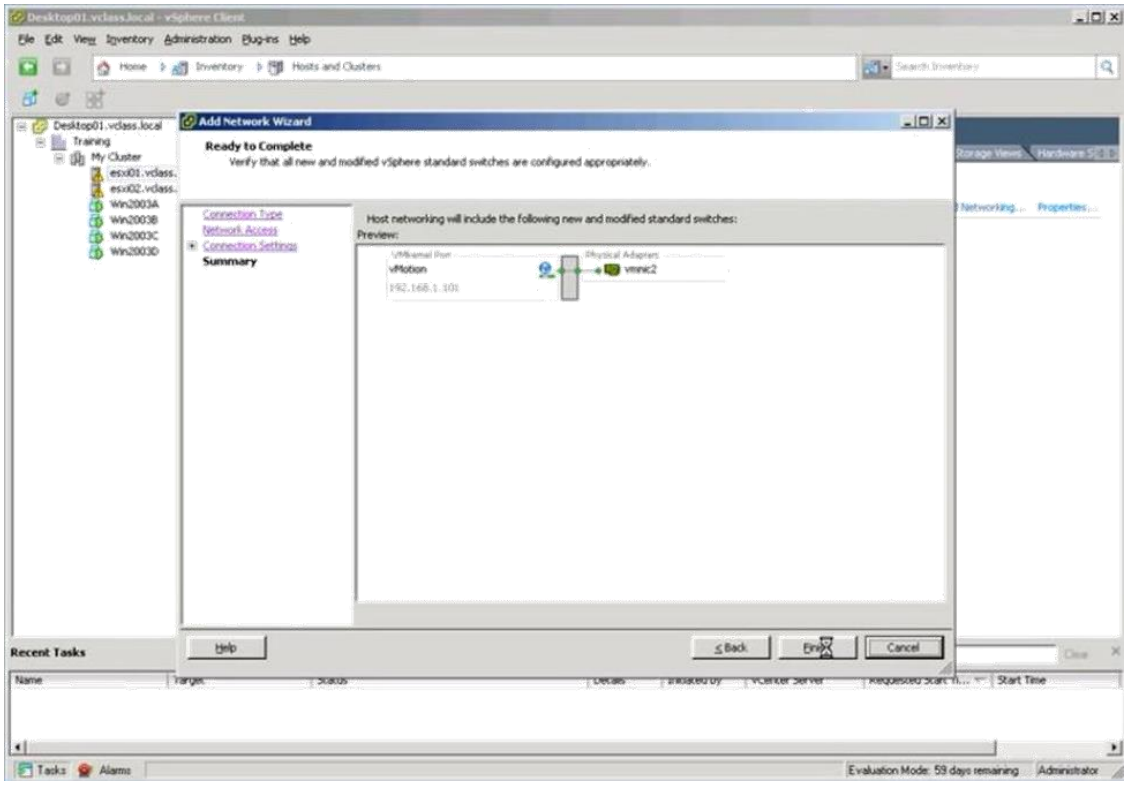
Then click next.



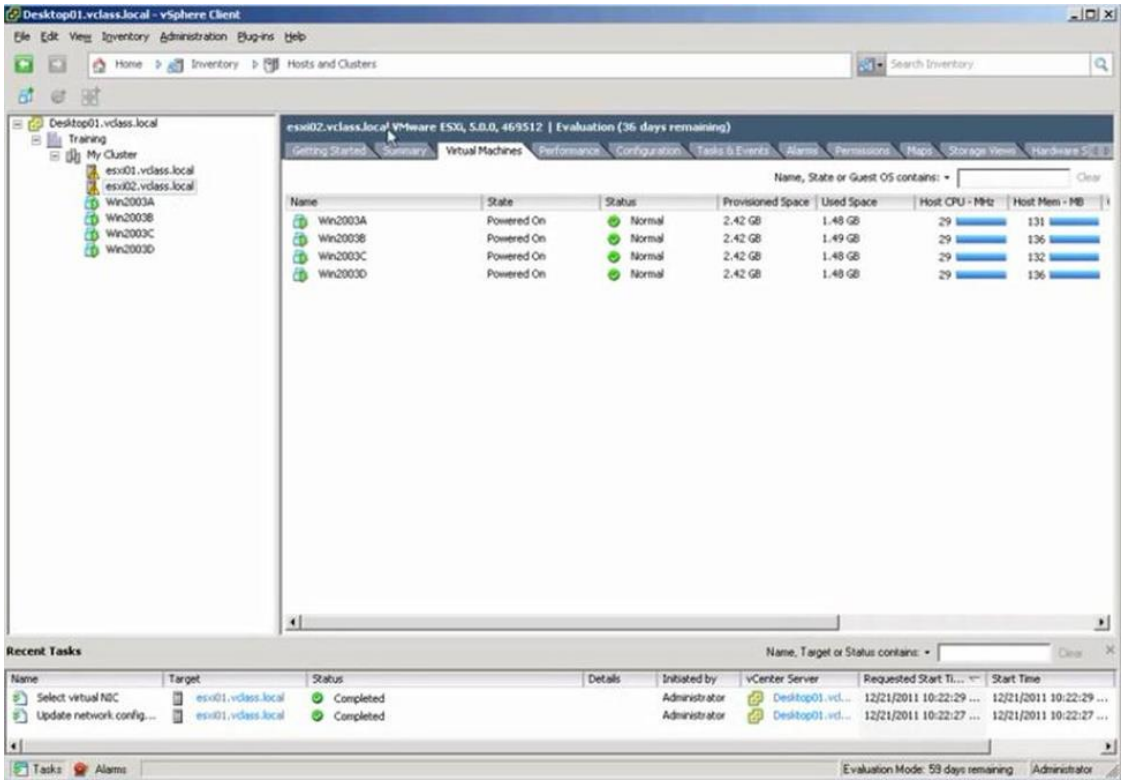
Port group for vMotion and click next.



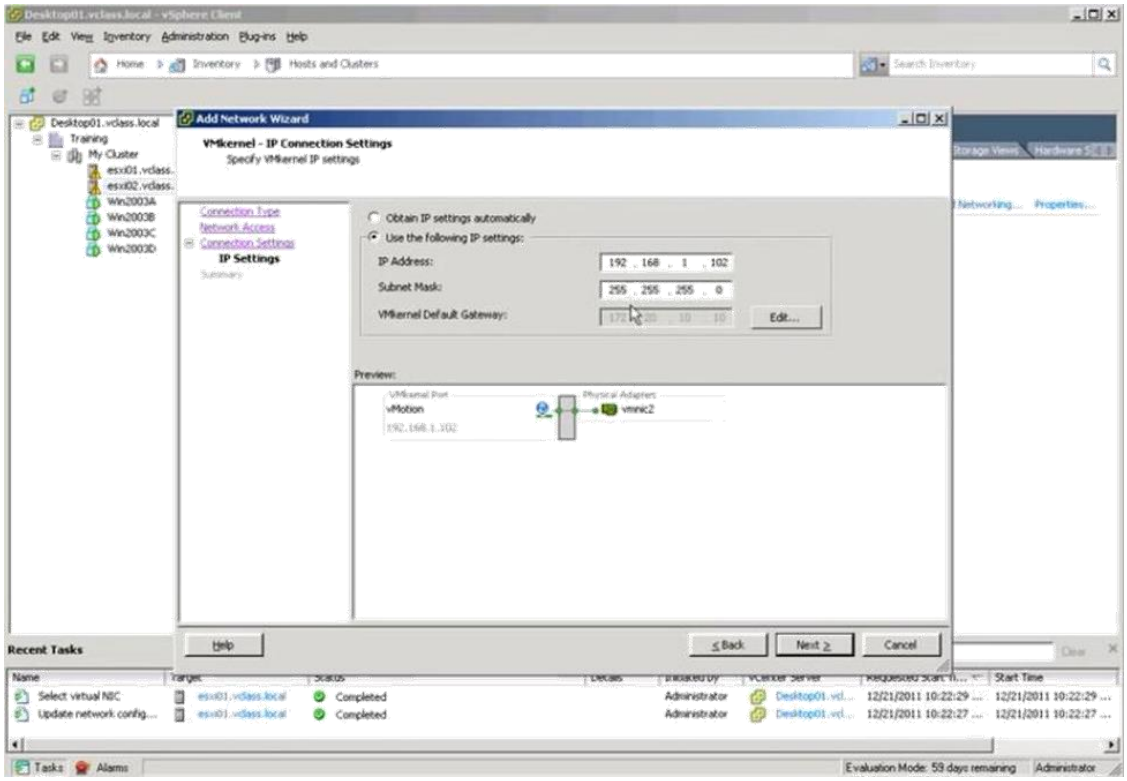
Specify the IP address (198.168.1.101) and the subnet mask. Then click next.



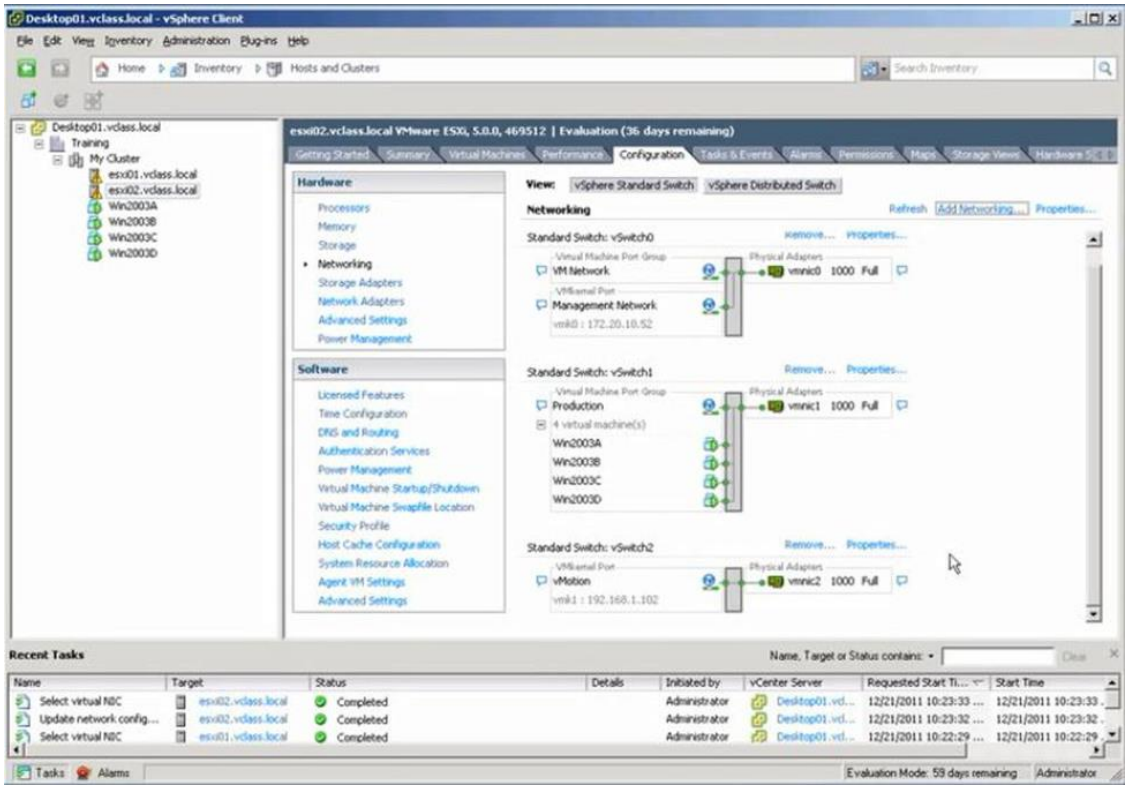
Then click finish. Repeat the same to the 2nd host.



Give the IP as 198.168.1.102

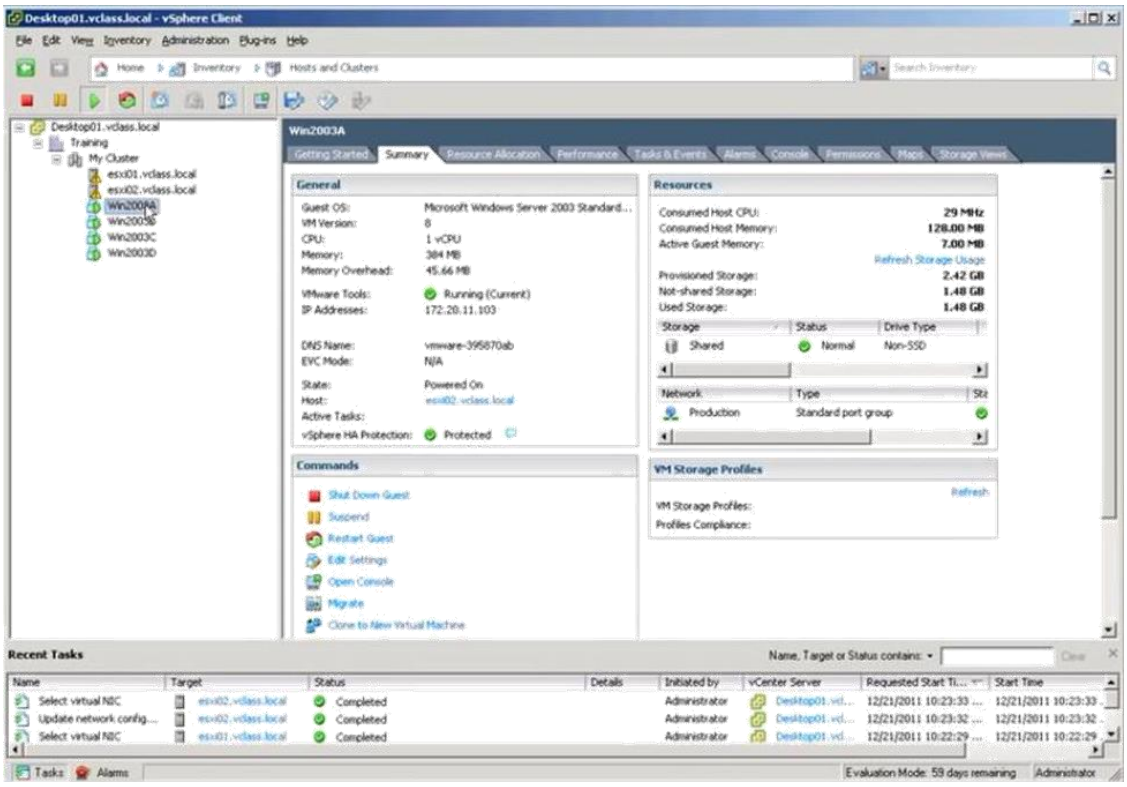


Created virtual machine switch under the 2nd host.



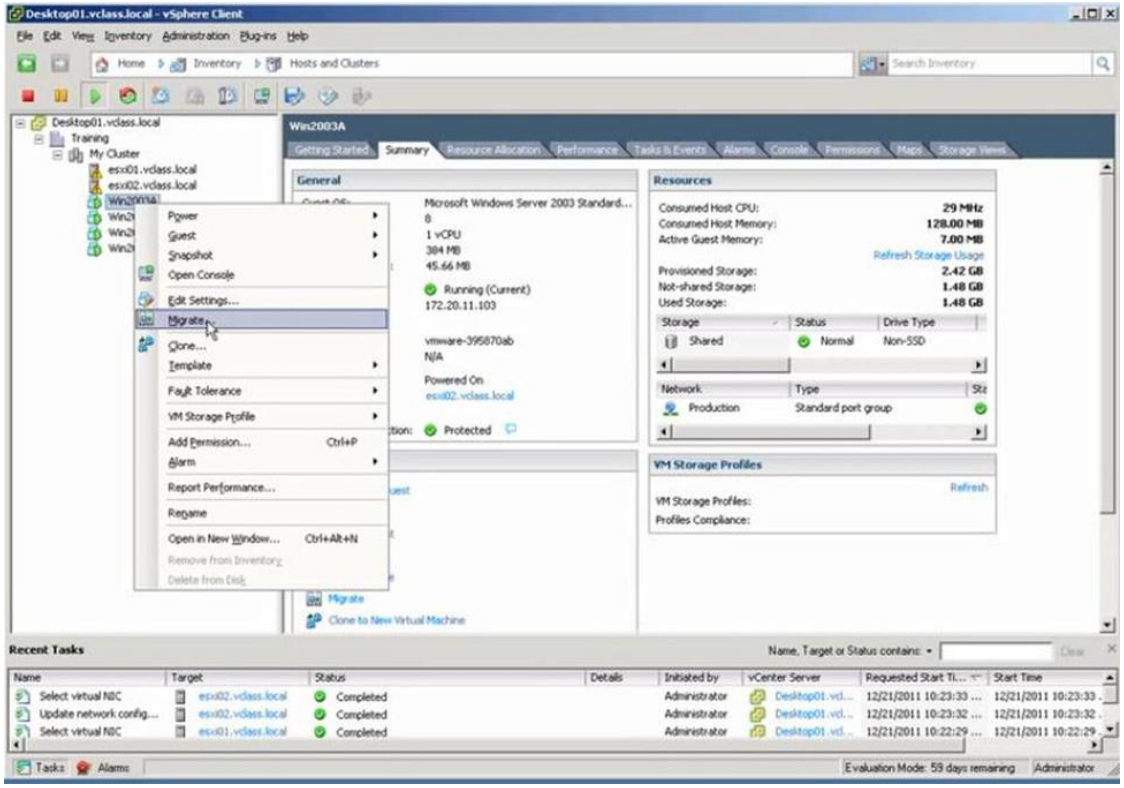
After configuring 2 hosts, migrate one virtual machine to another.

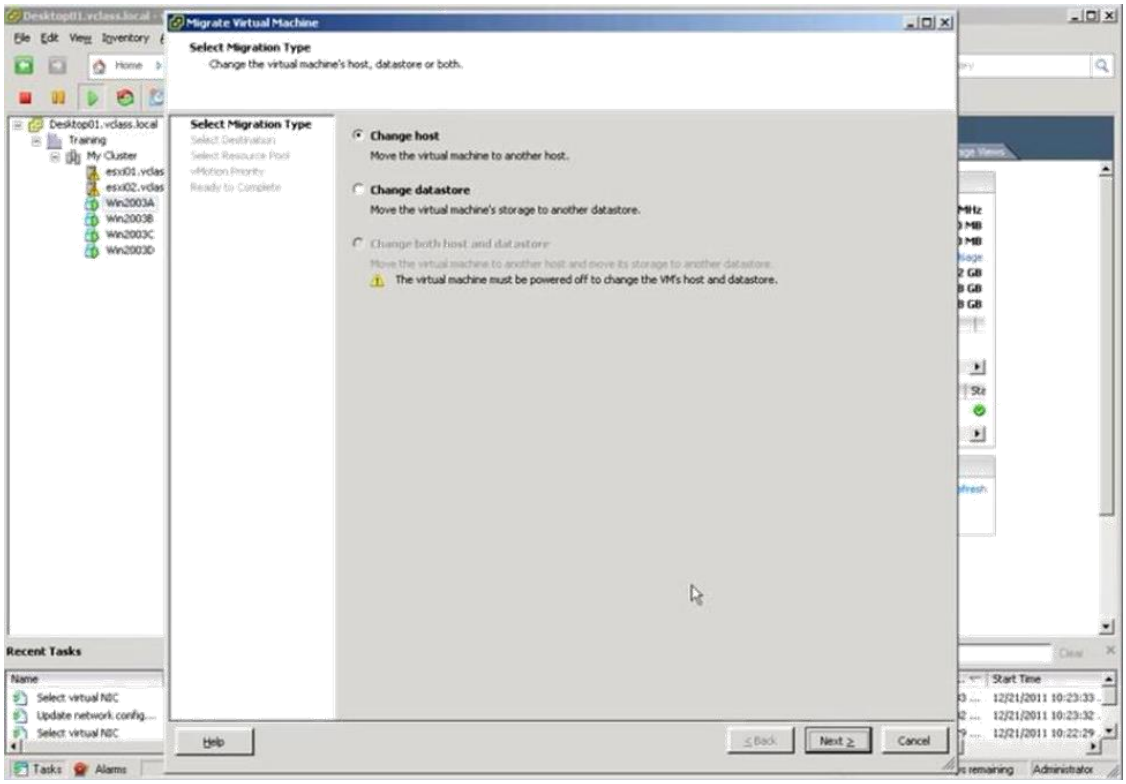
First pick a virtual machine, which wants to migrate.



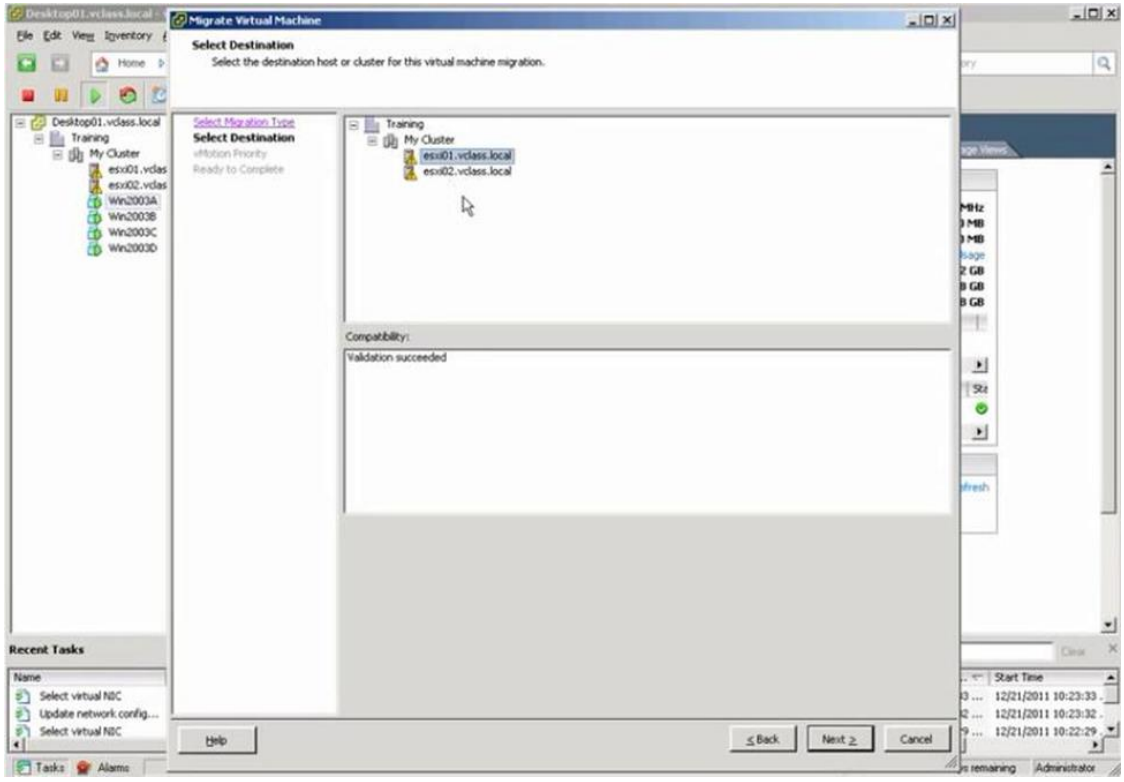
This particular virtual machine is currently running on the host 2.

Migrate this virtual machine to host 1. Right click on the virtual machine and click migrate.

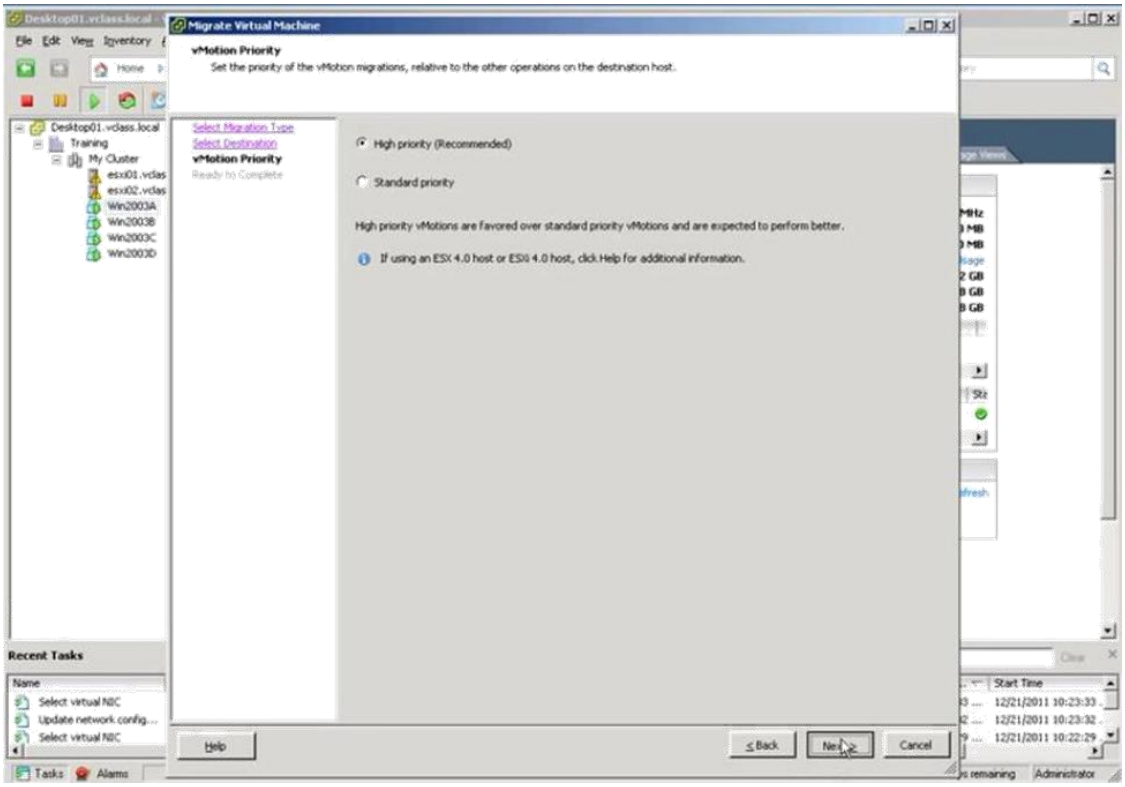




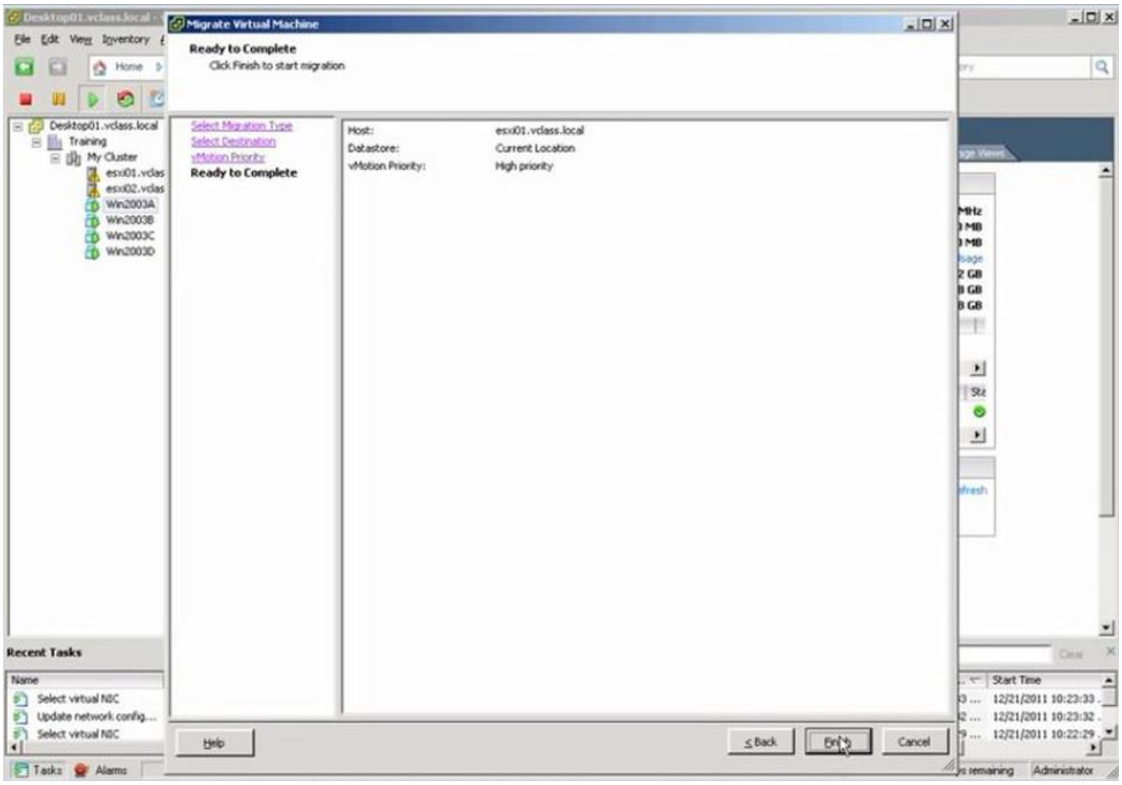
Click next. Then specify which ESXi server should migrate to virtual machine. Select the ESXi1.



In compatibility there are no issues at the moment. Then click next.



Tick the high priority and click next. The summary report.



Then click finish. After that the migration begin as follows.

The virtual machine is now running on ESXi2 server.