SRI LANKA INSTITUTE OF INFORMATION TECHNOLOGY

Enterprise Standards and Best Practices for IT Infrastructure

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What is Vmotion?

VMware VMotion enables the live migration of running virtual machines from one physical server to another with zero downtime, continuous service availability, and complete transaction integrity. It is transparent to users.

capabilities

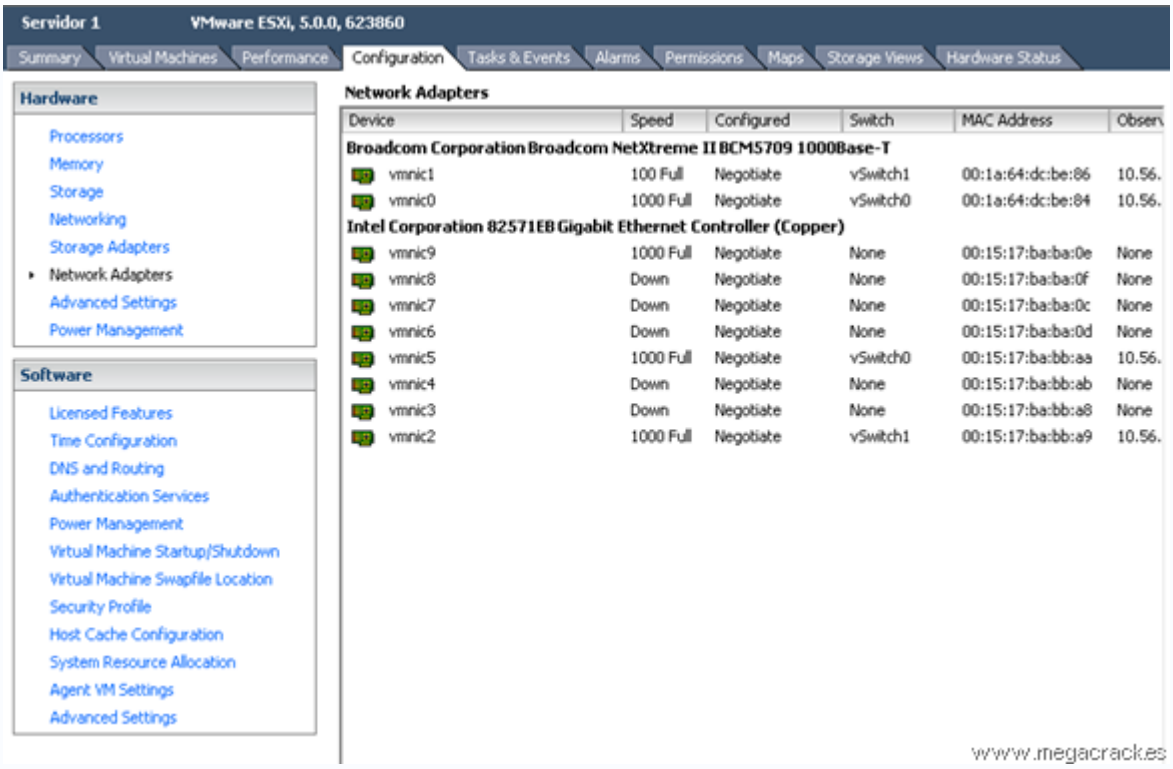
- **Load balancing**: VMware's distributer resources scheduler can load-balance virtual infrastructure resources between ESX servers. If one of the hosts nears overutilization, guest VMs can be migrated from one ESX Server to another while in use by end users.
- **Distributed Power Management:** moves running VMs from one ESX server to another using VMotion so that ESX Servers can be powered off when the load on the virtual infrastructure is low. This can tremendously reduce a company's power and cooling costs.
- **Maintenance of ESX servers**: with VMotion, VMware administrators can move running virtual machines off one ESX server to another to perform hardware or software maintenance.

How VMotion Work?

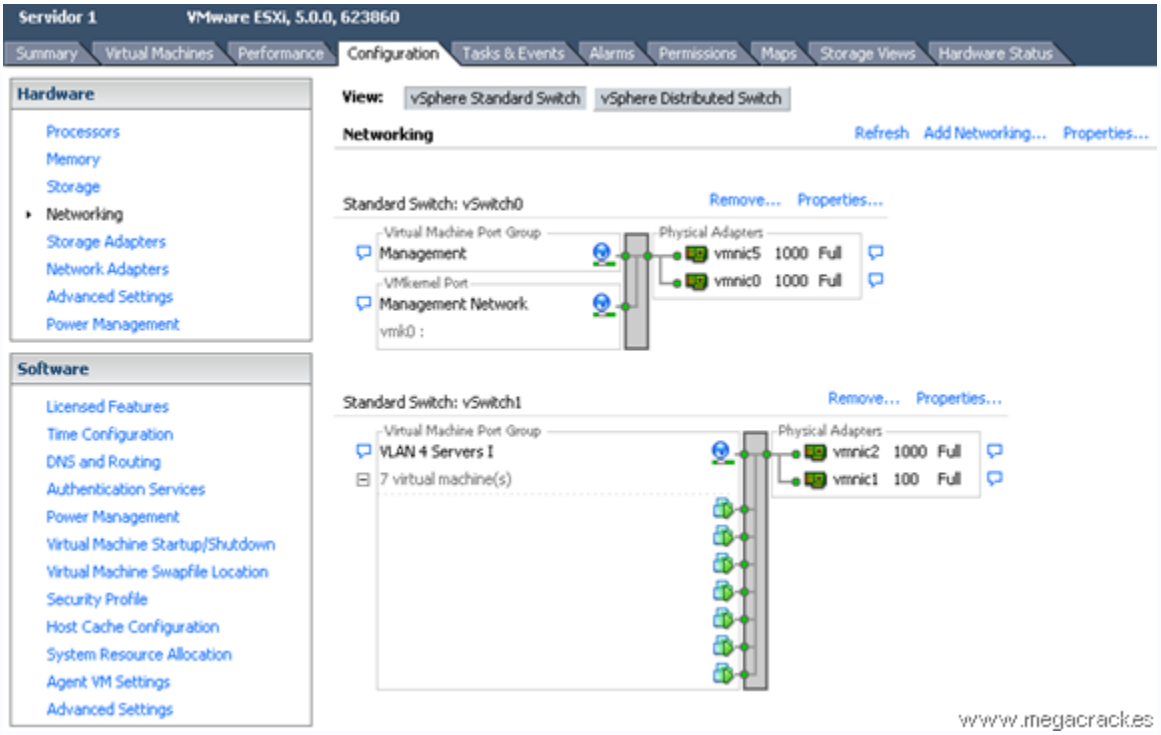
Live migration is an important virtualization feature. It allows a VM to be migrated from one machine to another while the VM is running. VM data to be migrated include CPU state, memory, and other virtual devices state such as virtual network devices. Live migration typically consists of the following steps. Mark memory pages. In the beginning of live migration, the VM will be briefly paused. All memory pages of this VM will be marked as dirty, and will be migrated later. Pre-copy. After all memory pages are marked, the pre-copy phase starts. Pre-copy iteratively scans the entire VM memory and migrate pages that have been marked as dirty. During the pre-copy phase, the VM is running. A page that has been migrated may be modified again. The hypervisor needs to trap those modifications and mark those pages as dirty, to make sure they are migrated. Tracking dirty pages can be done with hardware support or without hardware support (e.g., shadow page table). Pre-copy can have several iterations until only a small number of memory pages are

left or the specified criteria are met. The pre-copy phase may be time-consuming if VM memory is large or the VM has memory-intensive workloads. Checkpoint. After the pre-copy completes, the hypervisor will pause VM again and checkpoint the virtual device state and the virtual CPU state. Switch-over. The checkpoint data and the remaining dirtied pages that are not copied by the pre-copy phase will be transferred to the destination. Resume VM. After all data are transferred, the checkpoint data will be restored to the VM in the destination host. The VM is then resumed on the destination host

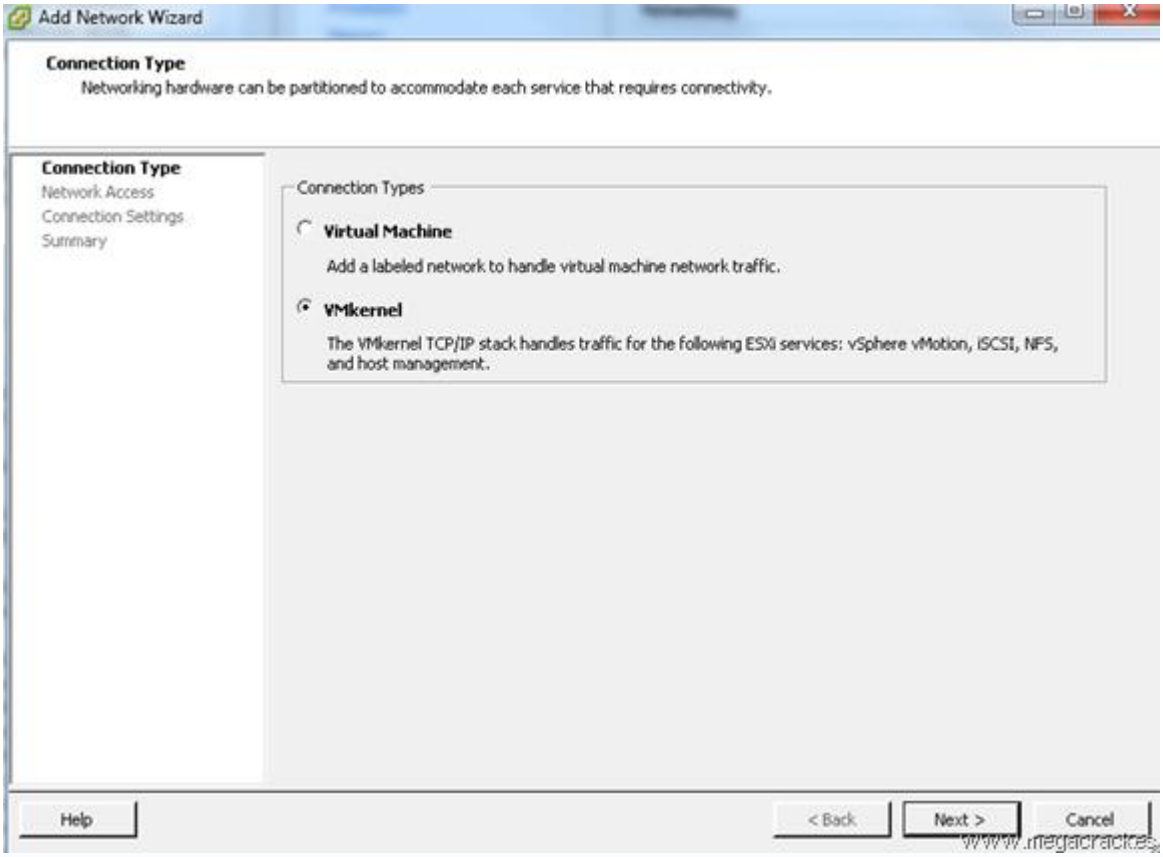
1. Configuration Networking



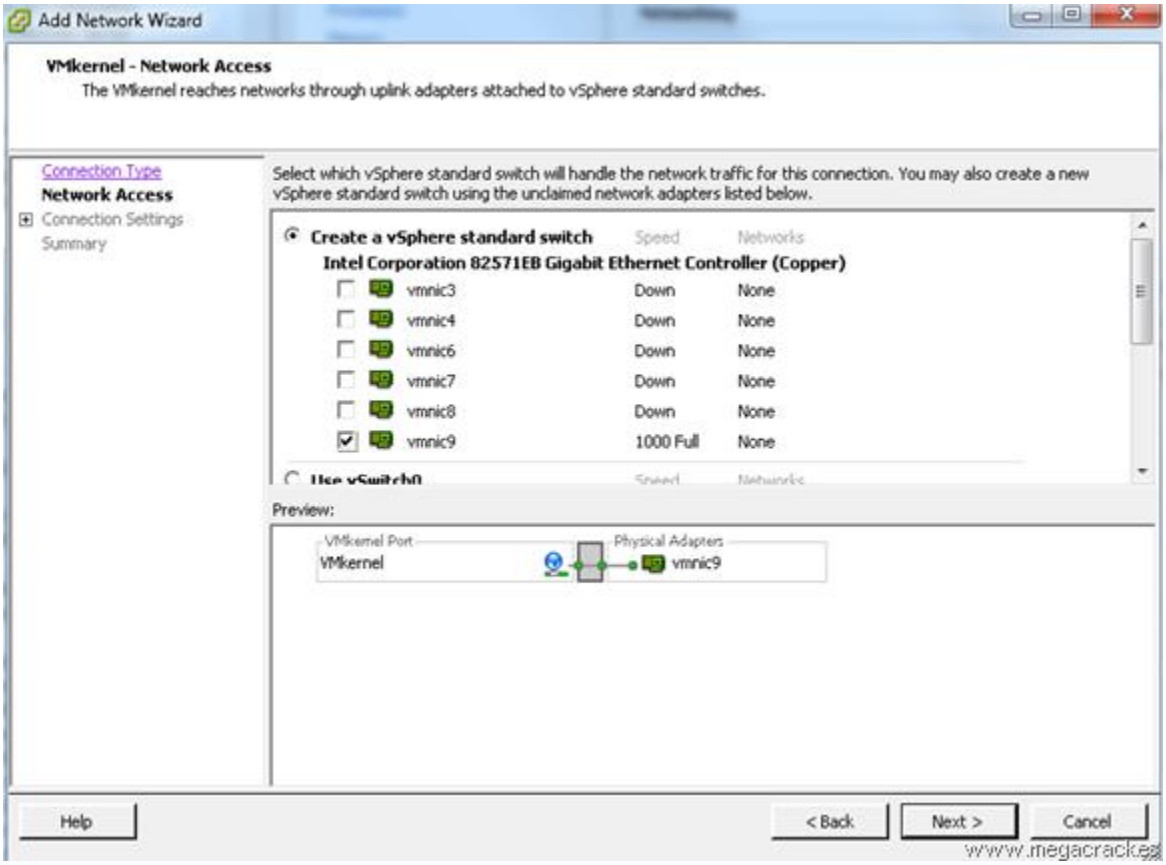
2. Creating Networking vSphere vSwitch.



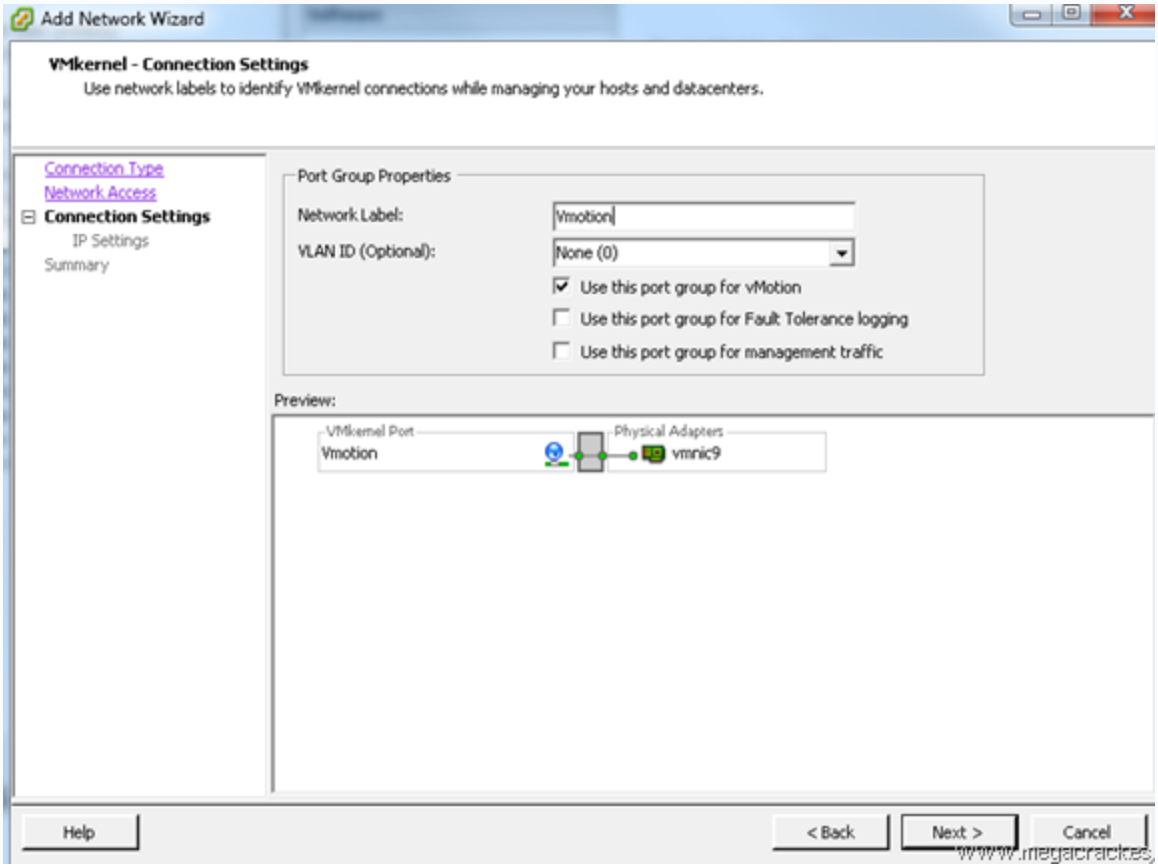
3. Select connection type each service that request



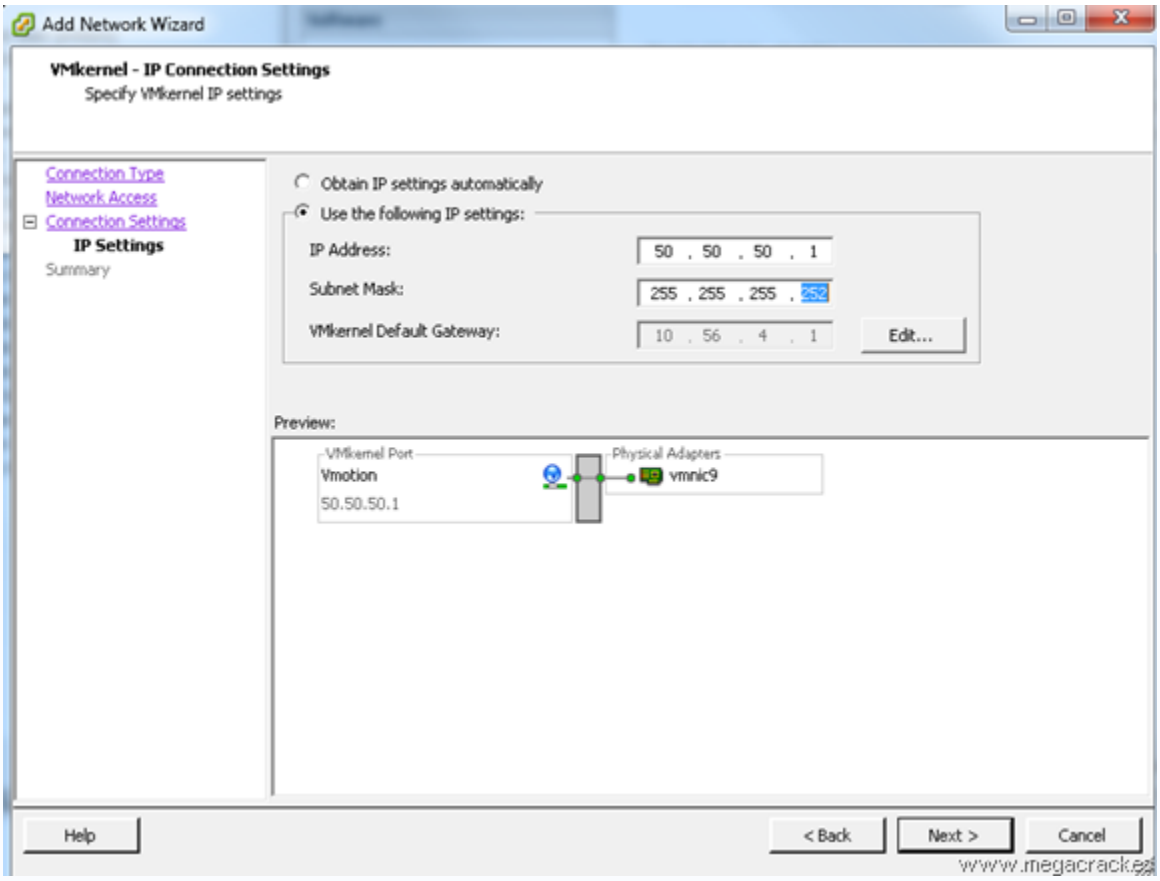
4. **get network access adopters switch to vSphere standers switch**



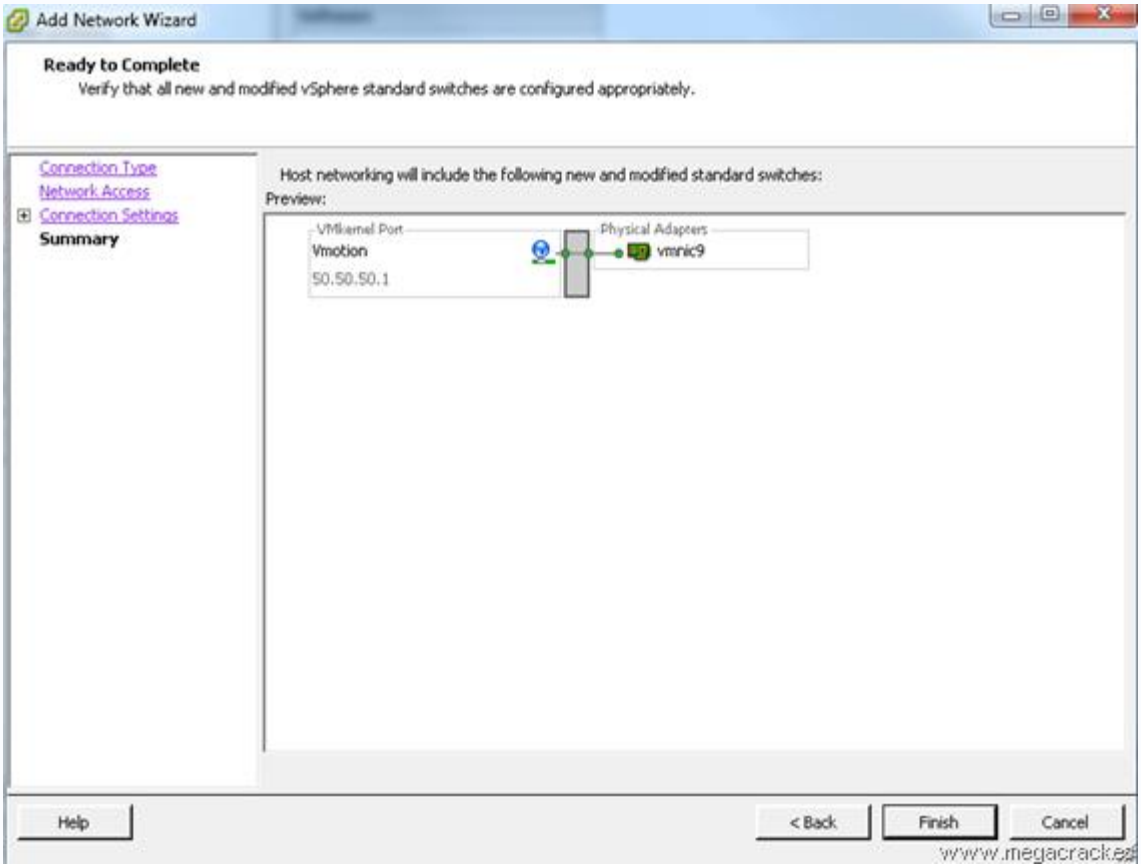
5. Change the connection settings host and data center



6. **IP Connection settings**
    - **IP Address: 50.50.50.1**

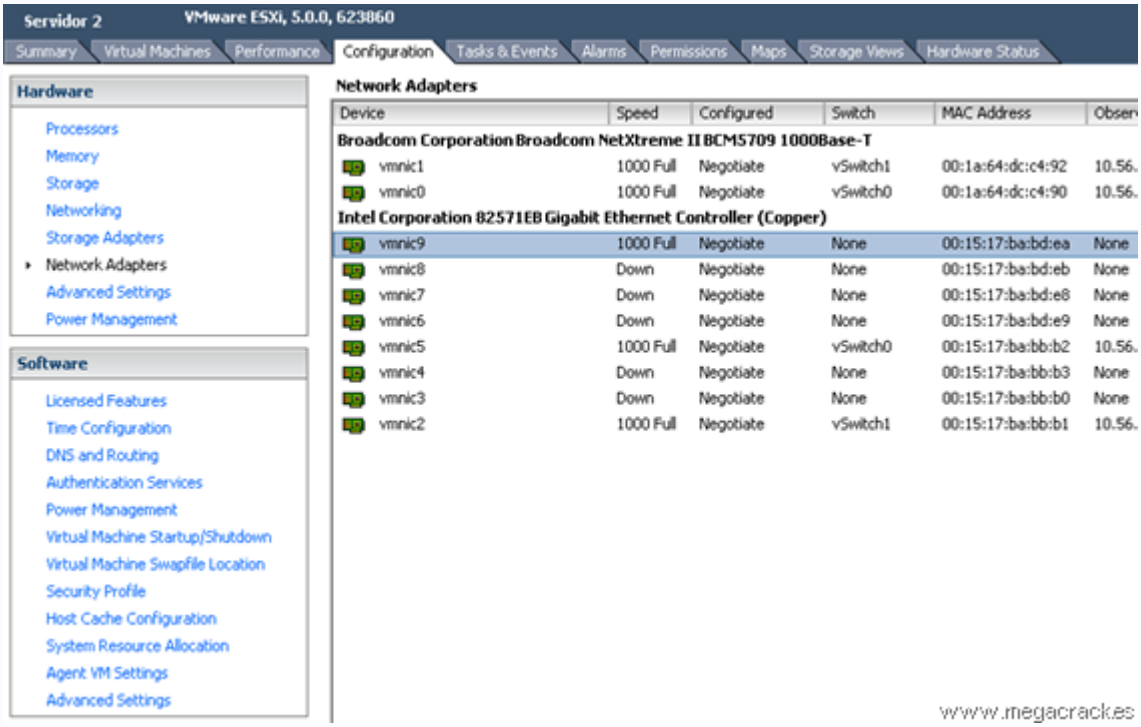


7. Verify vSphere switches are configured correctly

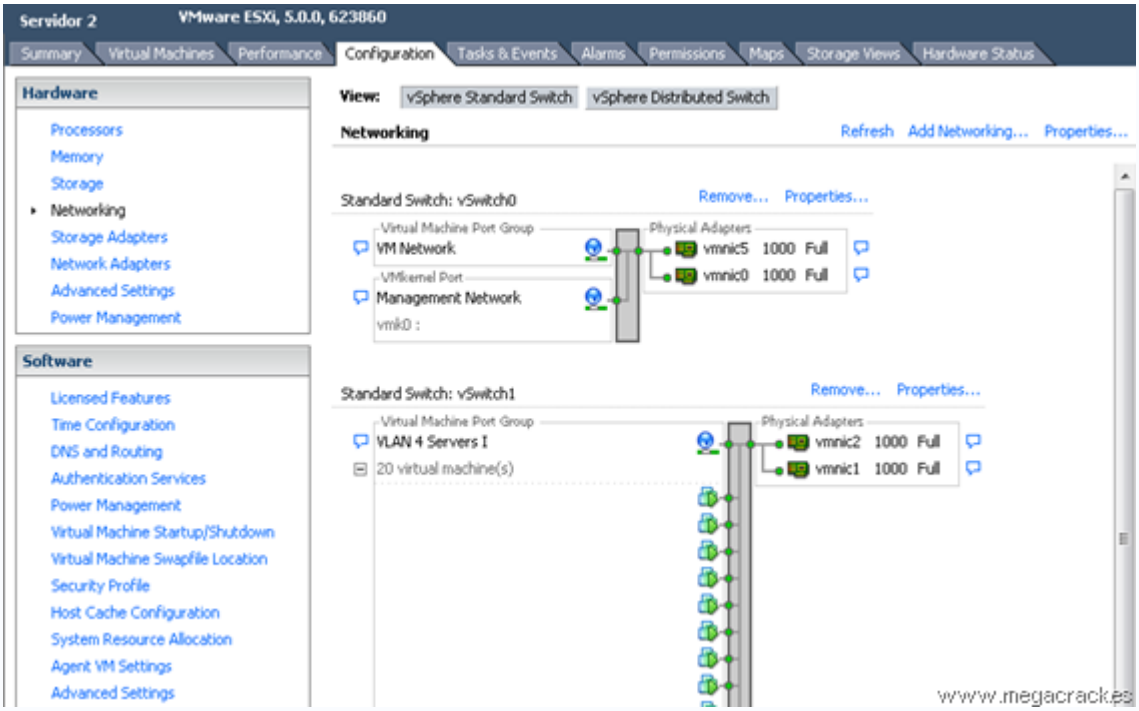


8. Get and identify the visibility of the new connections.

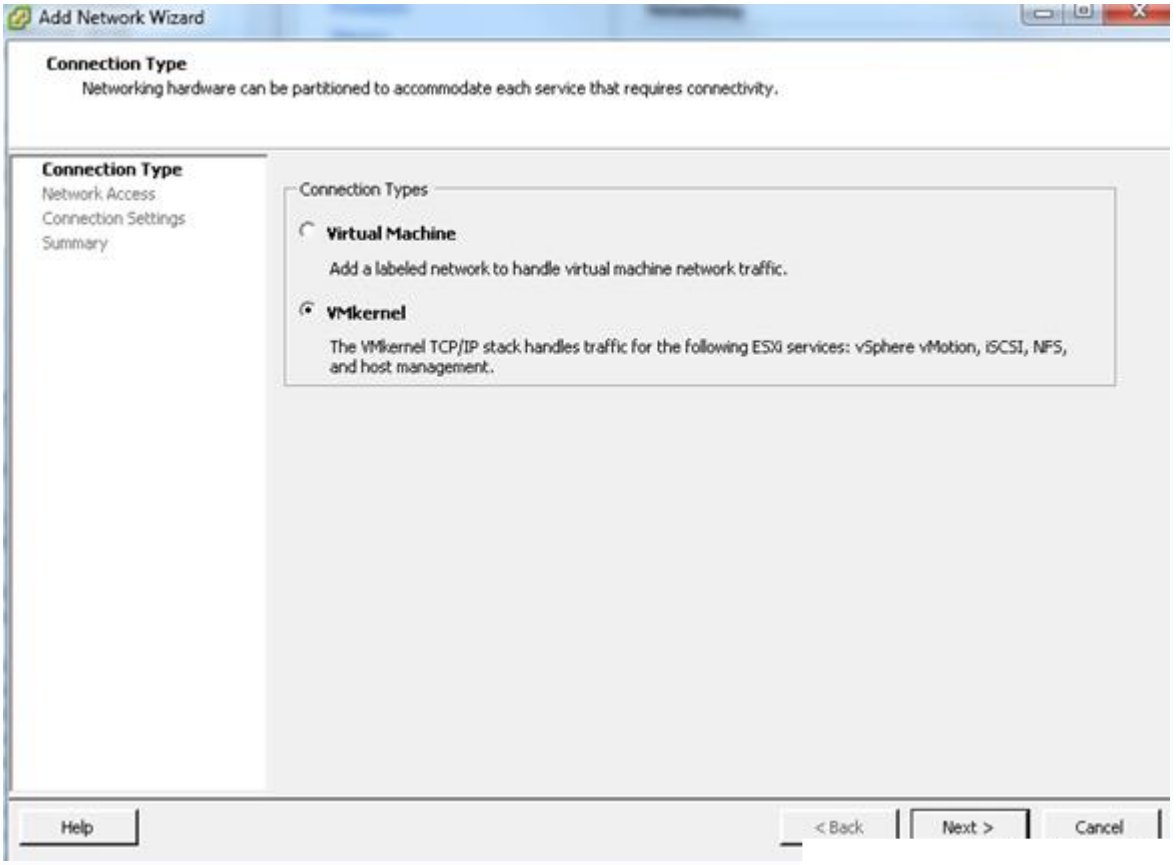
9. Check the Networking adapter



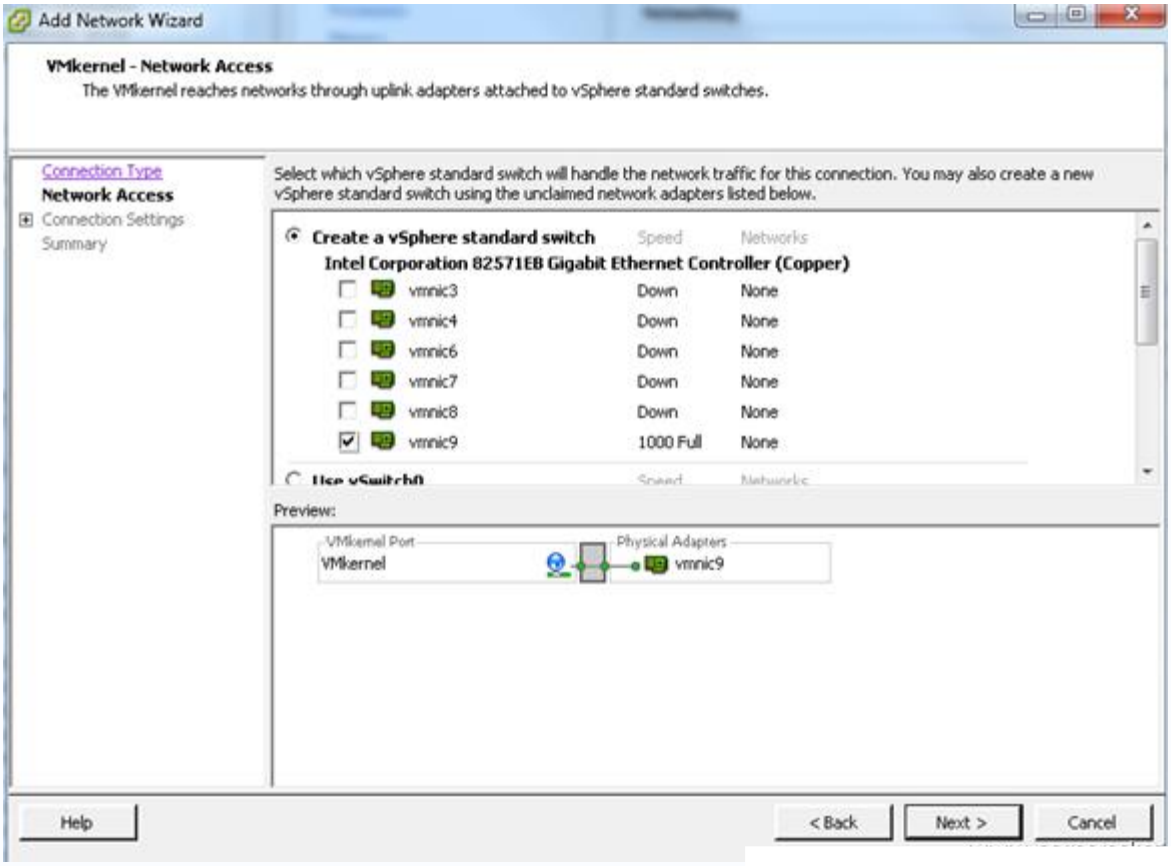
10. Networking to create vSphere sundered vSwitch.



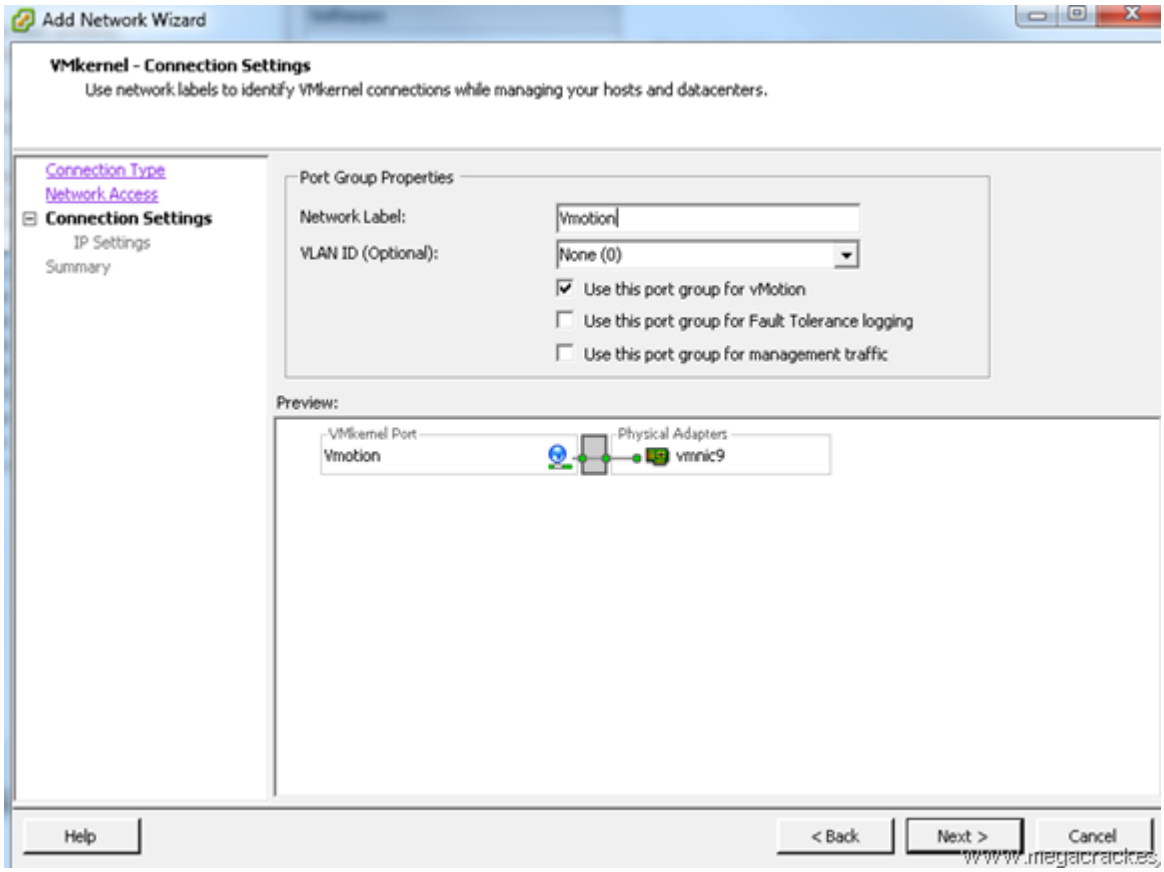
11.Select connection type each service that request



11. Use this port group for VMotion.

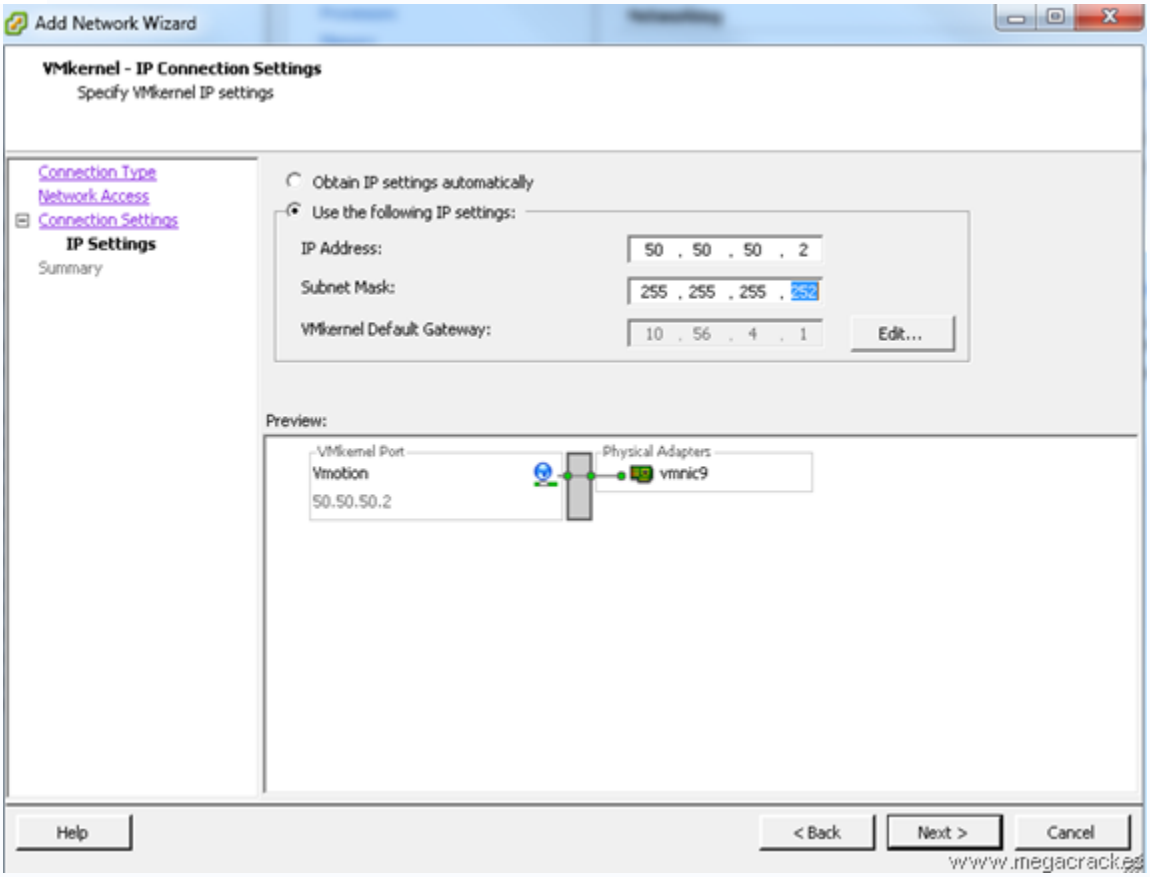


12. managing host and datacenter

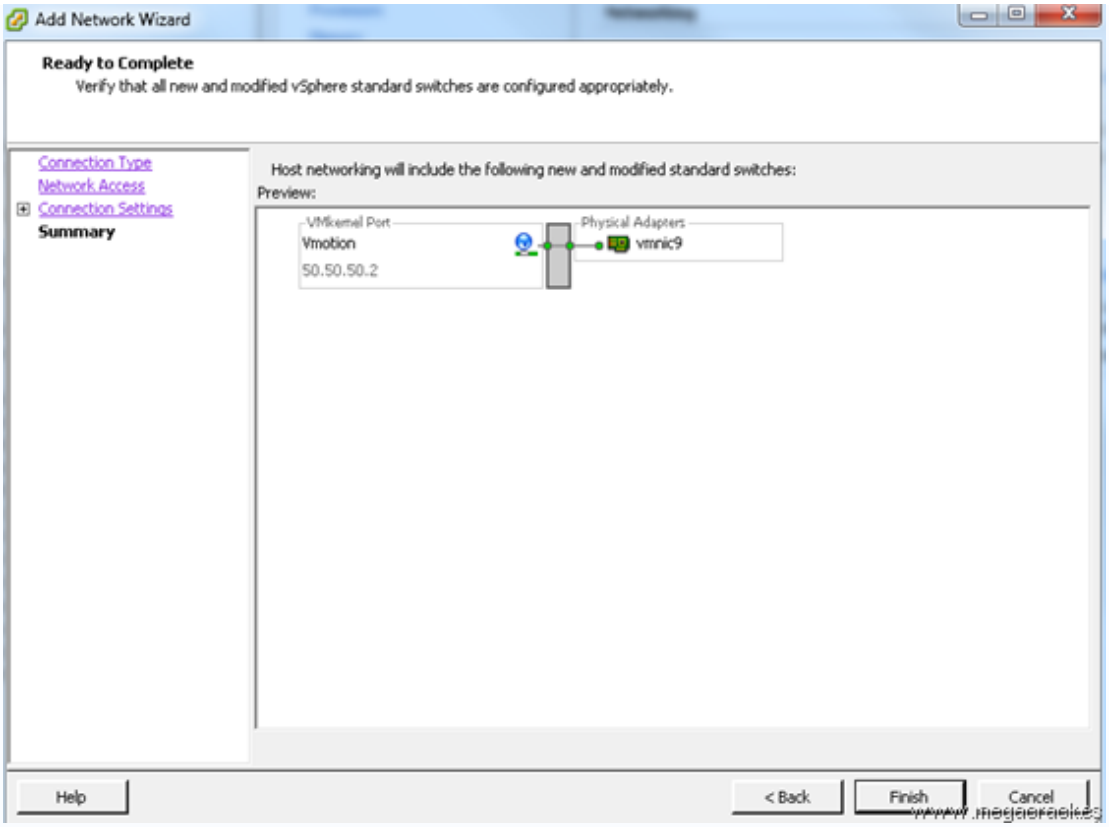


13. Change the Ip connection setting

IP Address: 50.50.50.2

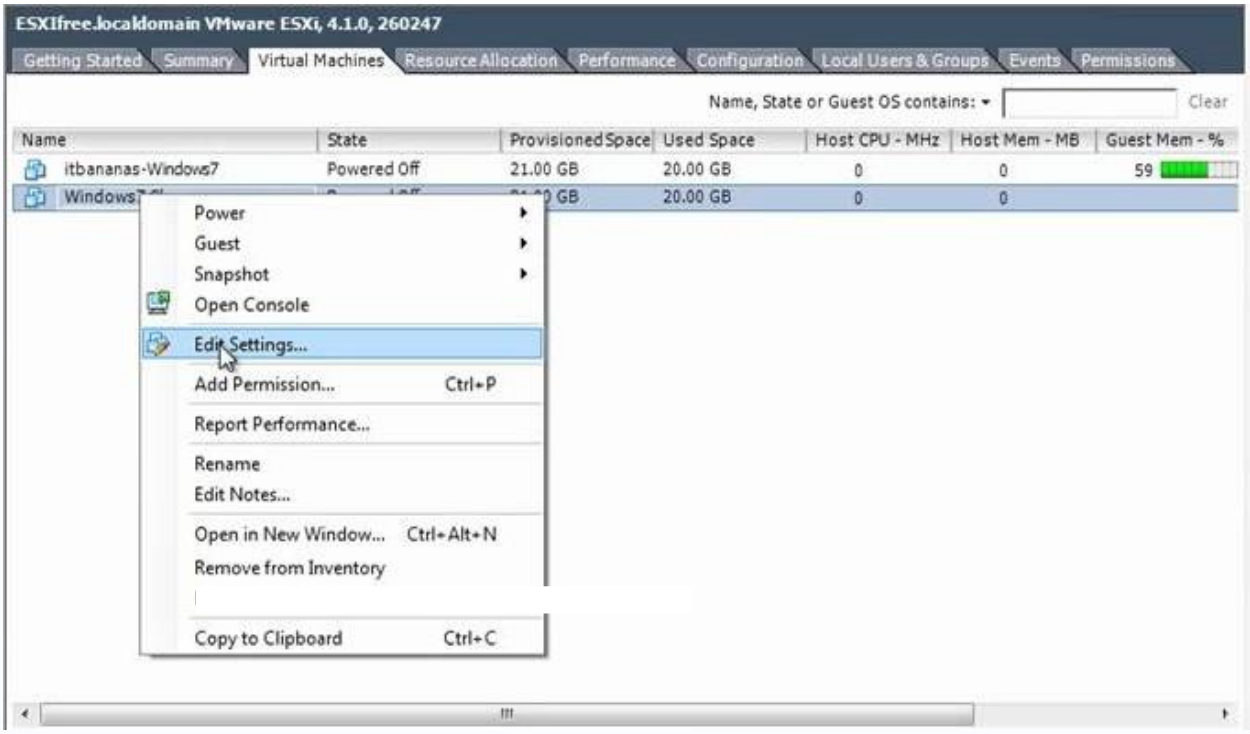


14. Verify the all new and modified vSphere switchers

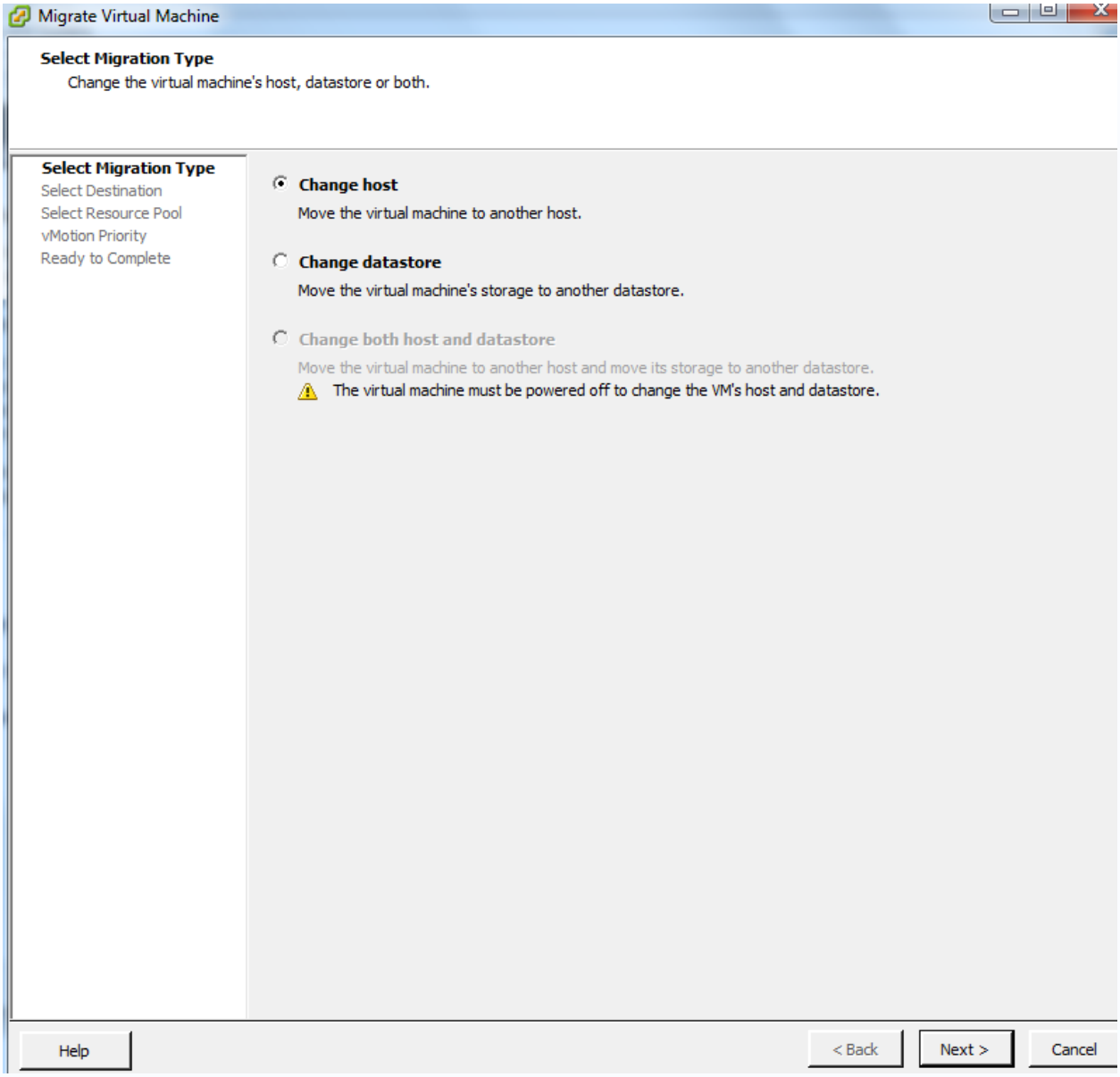


Now what we will do to ensure that the entire system is working properly migrate a VM from one ESXi to the other using Vmotion functionality you just configured.

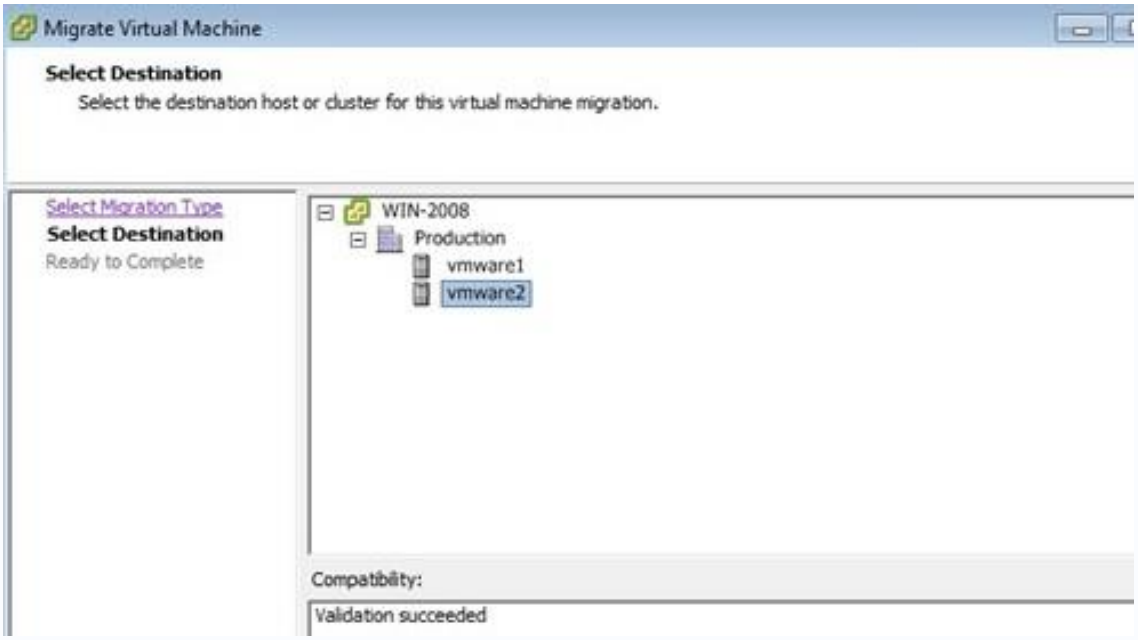
15. Edit the settings



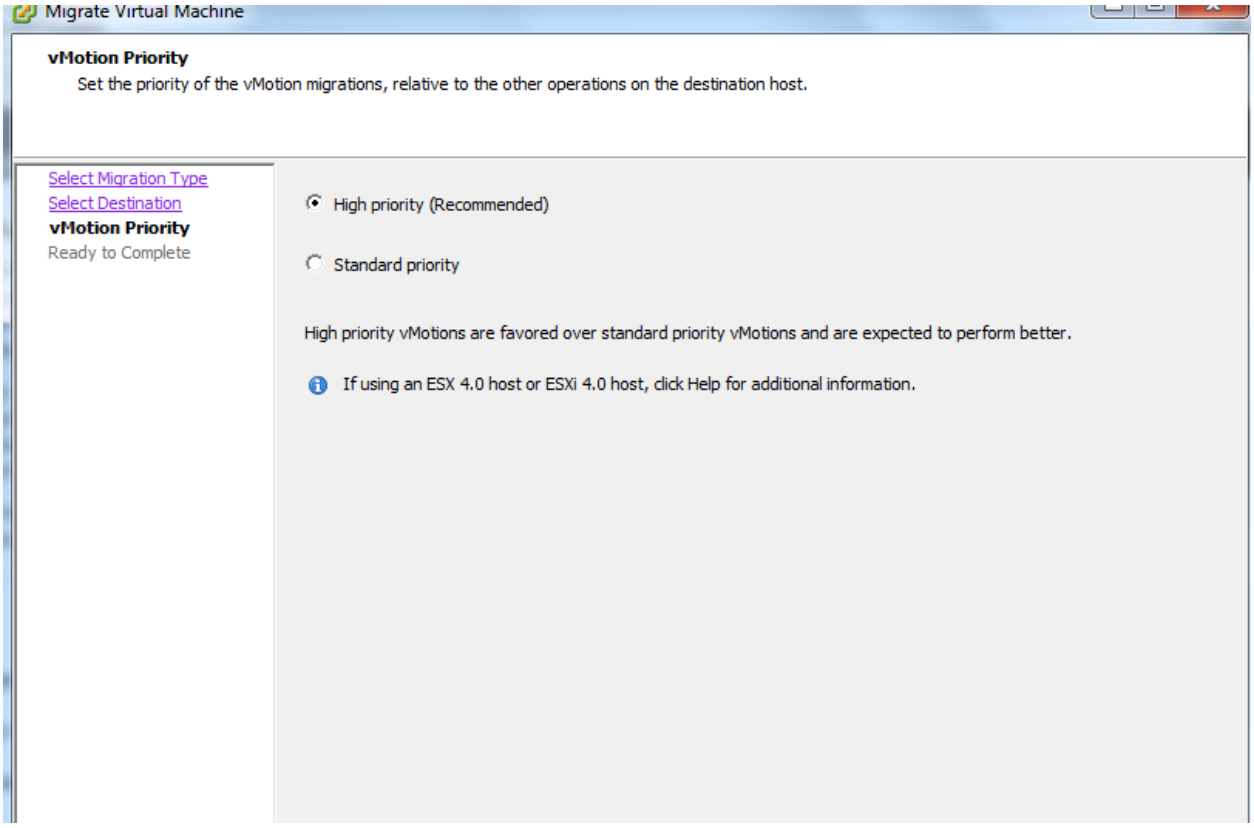
16. Change the virtual machine host and data store both.



17. Select destination host for data store for this virtual machine migration



18. Set the vMotion priority for migration



19. Complete Migration