



Enterprise Standards and Best Practices for IT Infrastructure

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Practical Session: WD

Practical: Vmotion

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VMotion

Introduction

Virtual machine migration among different virtual machines is known as Vmotion. Vmotion provides a zero downtime and achieve integrity while proceeding in migration. Therefore by migration using vmotion methods high availability is been achieved. In order to commence/achieving migration in between virtual machines the virtual machines must not have any hardware dependency. Only a shared storage must be available to achieve migration among the machines. The virtual machines must be connected through the same network.

The underlying network infrastructure will be determining the success of the success of the migration. In this way it is critical that IP system be flexible, strong, and very accessible. And also it lets the client to;

- Automatically streamline and apportion whole pools of assets for most extreme equipment use and accessibility.
- Perform equipment support with no booked downtime.
- Proactively relocate virtual machines far from coming up short or failing to meet expectations servers.

VMotion Requirements

VMware VMotion application mobility is based on certain infrastructure requirements:

- An IP network with a minimum bandwidth of 622 Mbps is required.
- The maximum latency between the two VMware vSphere servers cannot exceed 5 milliseconds (ms).
- The source and destination VMware ESX servers must have a private VMware VMotion network on the same IP subnet and broadcast domain.
- The IP subnet on which the virtual machine resides must be accessible from both the source and destination VMware ESX servers. This requirement is very important because a virtual machine retains its IP address when it moves to the destination VMware ESX server to help

ensure that its communication with the outside world (for example, with TCP clients) continues smoothly after the move.

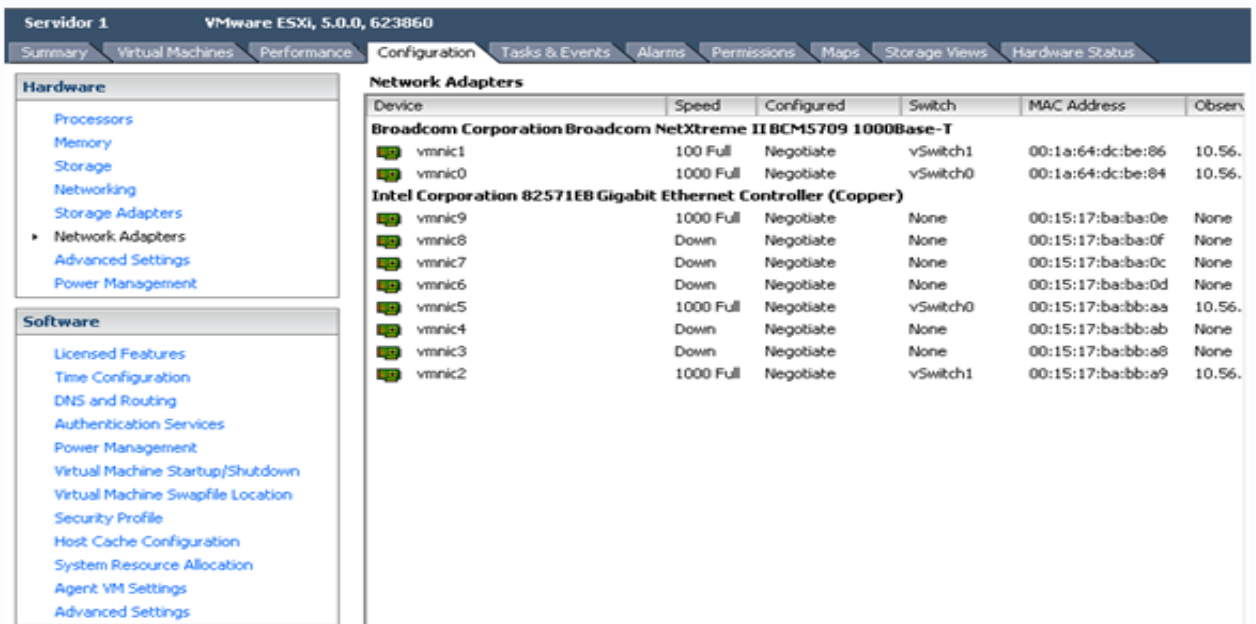
- The data storage location including the boot device used by the virtual machine must be active and accessible by both the source and destination VMware ESX servers at all times.
- Access from VMware vCenter, the VMware Virtual Infrastructure (VI) management GUI, to both the VMware ESX servers must be available to accomplish the migration.

Benefits of vMotion

1. Automatic resources are been allocated in an optimized method.
2. High availability is achieved.
3. VMware Storage VMotion allows you relocate virtual machine disk files between and across shared storage locations, which improves VM storage performance without creating downtime.
4. No down time is been occurred while migrating the servers. Therefor no service delay or not available is occurred.
5. Storage vMotion
While technically its own separate feature, it works similar to vMotion, except it deals completely with data.
6. Minimizes scheduled Downtime
Most of the downtimes are scheduled, before vMotion administrators had to do server maintenance late at night in order to avoid disrupting users.
7. Enhanced Application Performance and Availability

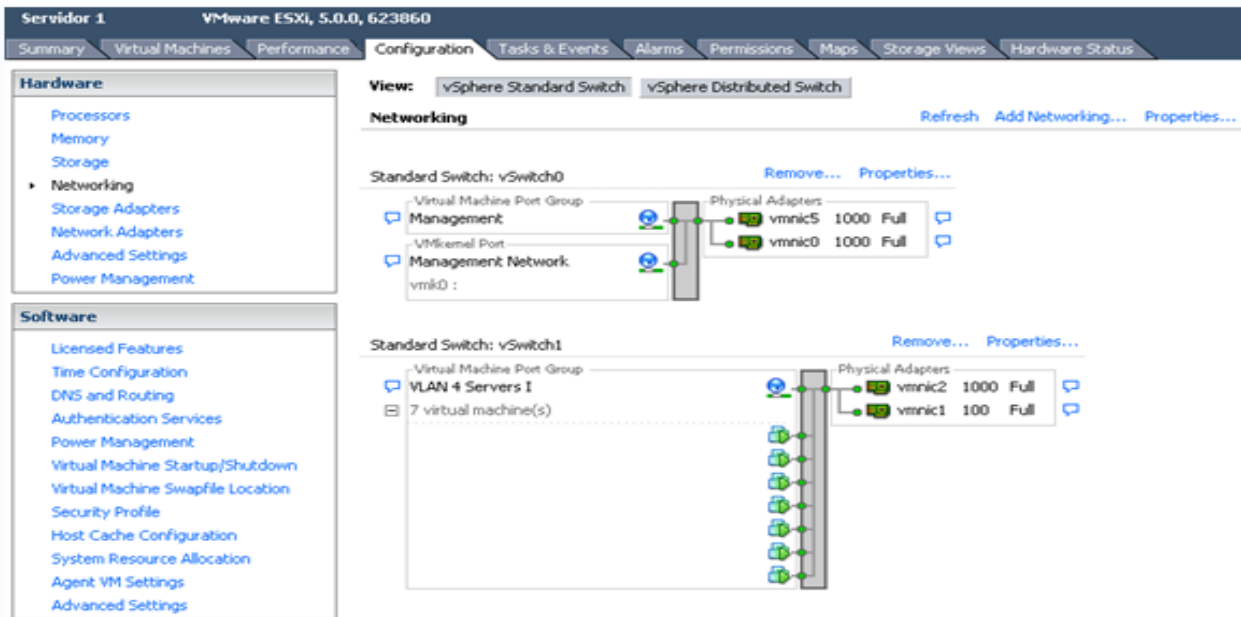
Actions to be taken through vSphere Client connected to VirtualCenter.

We connect to Virtual Center and gain access to one of the servers 2. We select the tab Configuration-> Network Adapters and we see that we have visibility of the new connections.

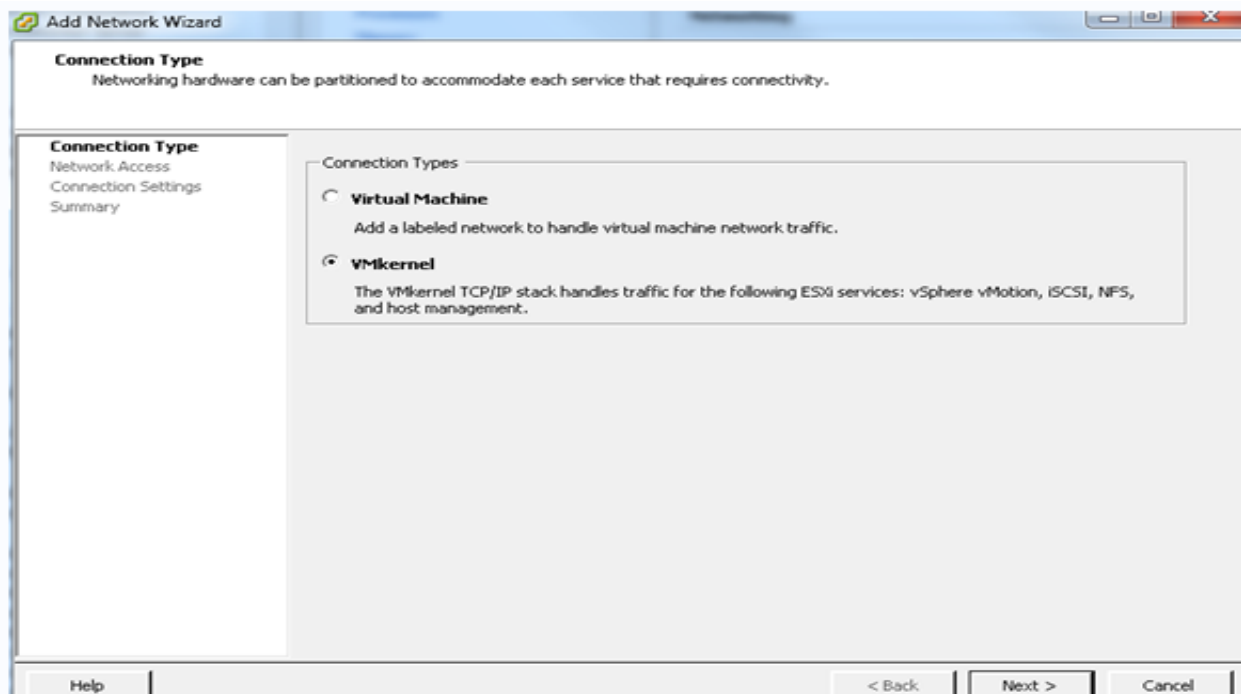


Servidor 1 VMware ESXi, 5.0.0, 623860					
Configuration Tasks & Events Alarms Permissions Maps Storage Views Hardware Status					
Network Adapters					
Device	Speed	Configured	Switch	MAC Address	Observations
Broadcom Corporation Broadcom NetXtreme II BCM5709 1000Base-T					
vmnic1	100 Full	Negotiate	vSwitch1	00:1a:64:dc:be:86	10.56.
vmnic0	1000 Full	Negotiate	vSwitch0	00:1a:64:dc:be:84	10.56.
Intel Corporation 82571EB Gigabit Ethernet Controller (Copper)					
vmnic9	1000 Full	Negotiate	None	00:15:17:ba:ba:0e	None
vmnic8	Down	Negotiate	None	00:15:17:ba:ba:0f	None
vmnic7	Down	Negotiate	None	00:15:17:ba:ba:0c	None
vmnic6	Down	Negotiate	None	00:15:17:ba:ba:0d	None
vmnic5	1000 Full	Negotiate	vSwitch0	00:15:17:ba:bb:aa	10.56.
vmnic4	Down	Negotiate	None	00:15:17:ba:bb:ab	None
vmnic3	Down	Negotiate	None	00:15:17:ba:bb:a8	None
vmnic2	1000 Full	Negotiate	vSwitch1	00:15:17:ba:bb:a9	10.56.

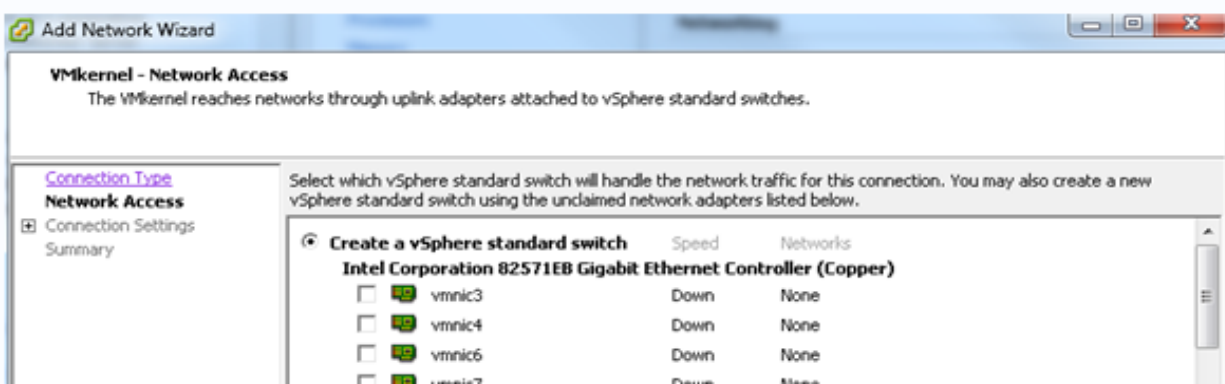
Navigate to Configuration-> Networking

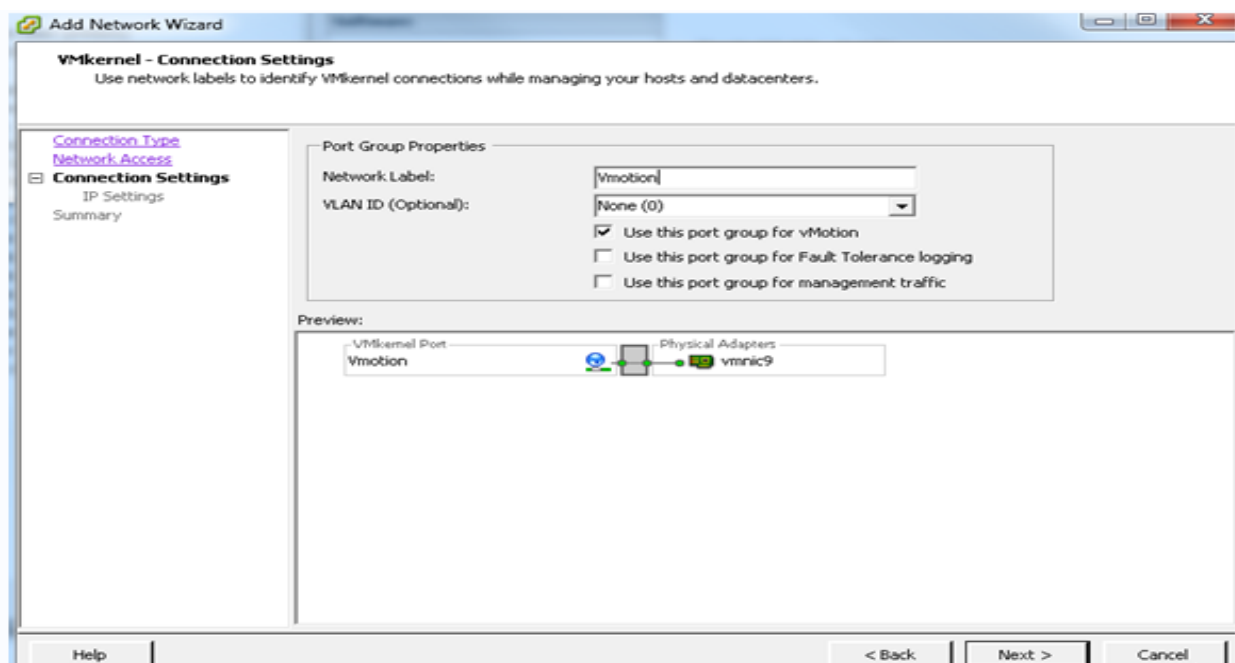


Create a new network VSwitch

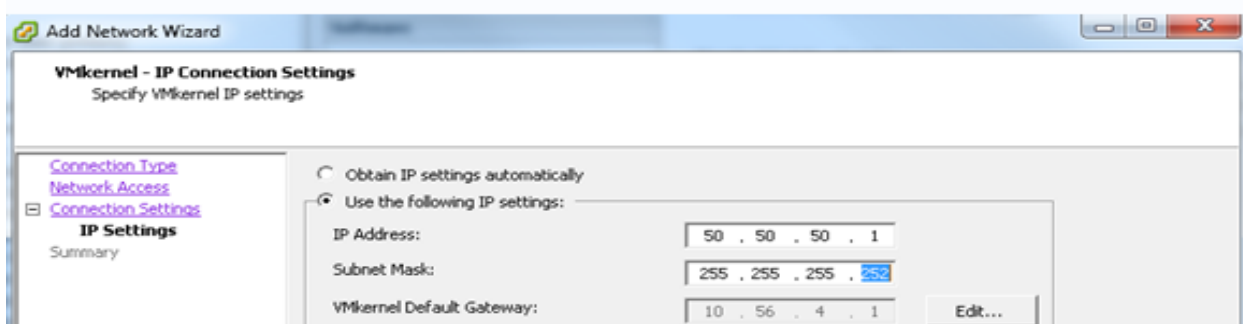


Choose required VMKernel.

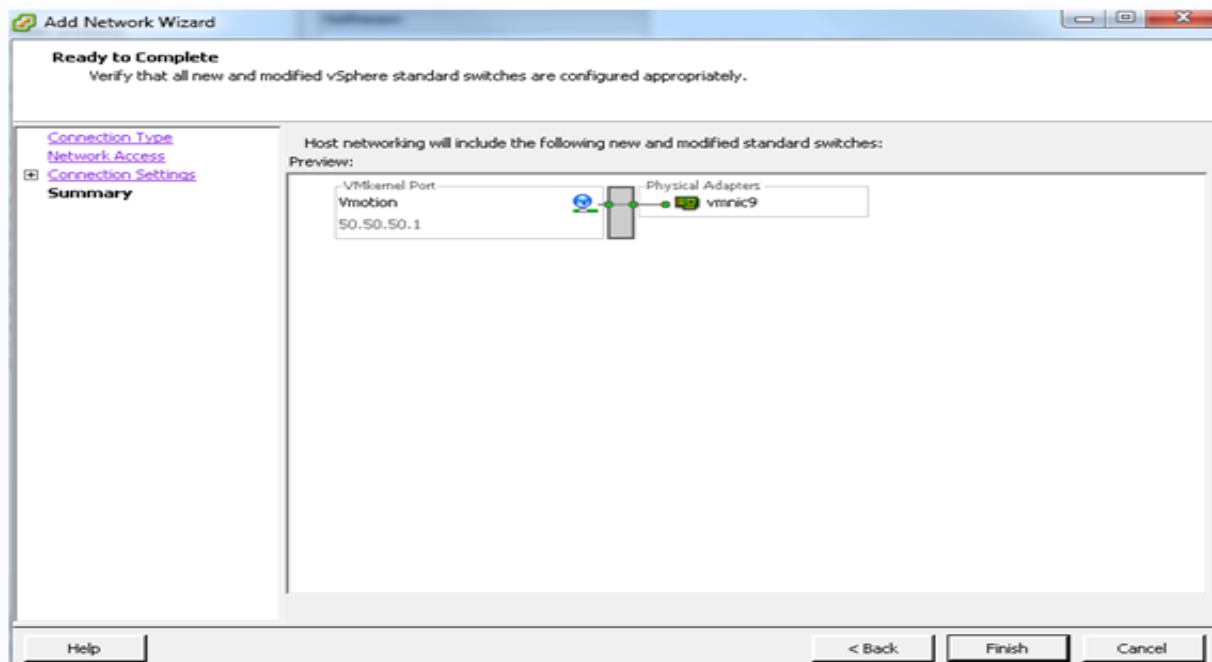




New port group for vMotion is been labeled for the different network if you want (optional) and click on Next. We for example we put Vmotion.



We set Use the following IP settings. IP Address as 50.50.50.1 and Subnet Mask as 255.255.255.252 (Since we will use only 2 ip's).



The entire system is been tested to check working properly to migrate a VM from one ESXi to the using Vmotion functionality you just configured.

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.

 Storage vMotion is not licensed on this host. To perform this function without a license, power off the virtual machine.

☐ 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.

Migrate Virtual Machine





Select Destination

Select the destination host or cluster for this virtual machine migration.

[Select Migration Type](#)

Select Destination


vMotion Priority
Ready to Complete

 **Nombre de la Organización**
 **Nombre del Clúster**
 **servidor 1**
 **servidor 2**

Compatibility:

Validation succeeded

Select the target server where we will move the virtual machine.

 Migrate Virtual Machine


vMotion Priority


Set the priority of the vMotion migrations, relative to the other operations on the destination host.

[Select Migration Type](#)
[Select Destination](#)
vMotion Priority
 Ready to Complete

☒ High priority (Recommended)
☐ Standard priority

High priority vMotions are favored over standard priority vMotions and are expected to perform better.

 If using an ESX 4.0 host or ESXi 4.0 host, click Help for additional information.

 Migrate Virtual Machine

Ready to Complete

Click Finish to start migration




[Select Migration Type](#)
[Select Destination](#)
[vMotion Priority](#)
Ready to Complete

Host: **servidor 2**

Datastore: Current Location

vMotion Priority: High priority

Completion of VM Migration

Name	Target	Status	Initiated by	Requested Start Ti...	Start Time	Completed Time
 Migrate virtual machine	 CONVERTER	 Completed		22/10/2012 14:55:02	22/10/2012 14:55:02	22/10/2012 14:55:49

