SRI LANKA INSTITUTE OF INFORMATION TECHNOLOGY

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Vmotion Requirements

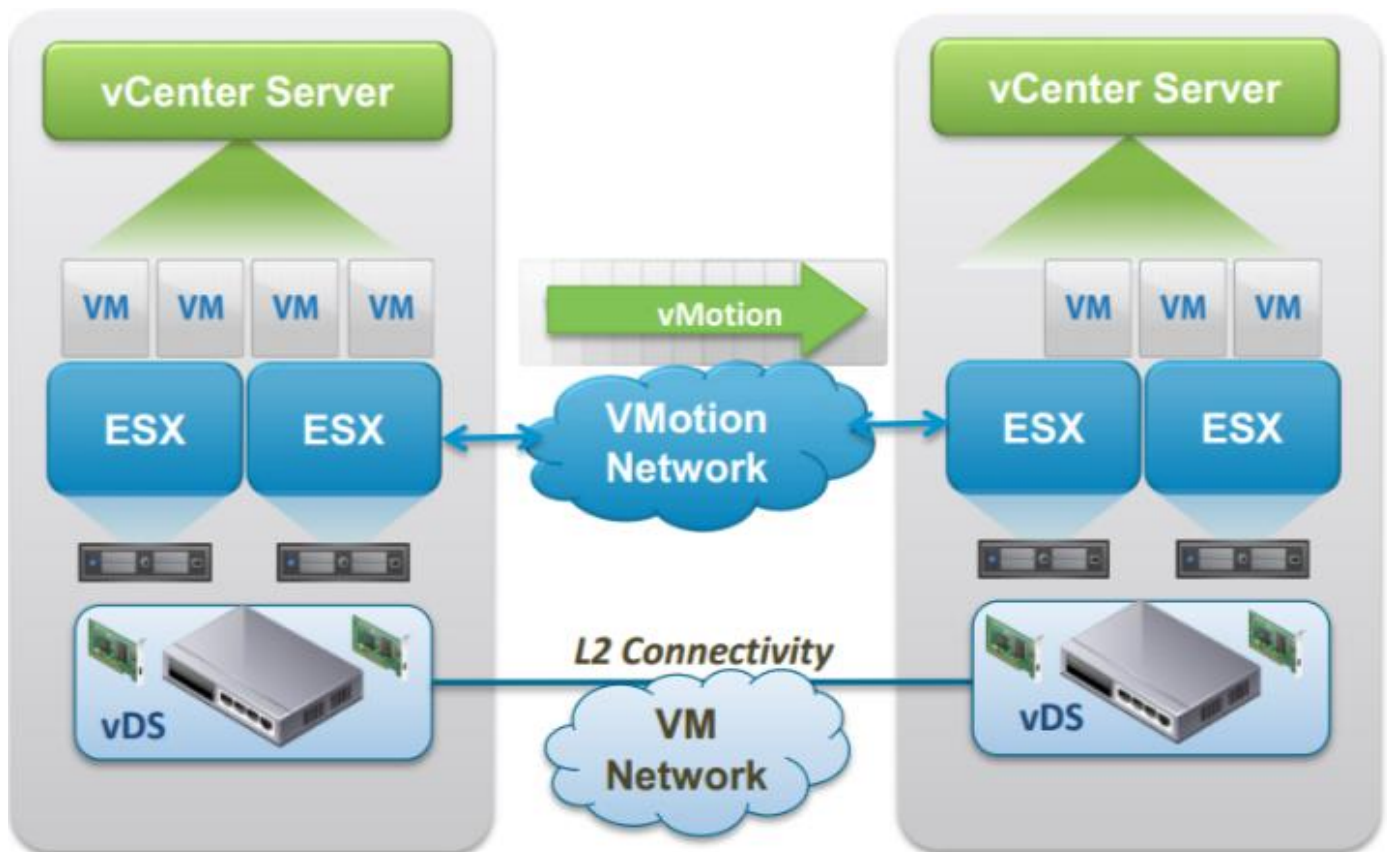**Name: Praneeth Chamara Paranavithana**

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Vmware Vmotion

What is Vmware Vmotion?

It is the technique that enables the feature of live migration of a running virtual machine from one physical server to another physical server without any downtime or service impact and complete integrity without the knowledge of the users.

Vmotion Architecture

Vmotion features

- Provide the ability to perform hardware maintenance without any scheduled downtime.
- Automatic allocation and optimization of the entire resource pool for achieving maximum resource utilization and availability.
- Enable virtual machine migration without any failure or service impact.

Vmotion requirements

If you are performing the first time installation of vCenter server, it is a must that you install all the components. For the installation process you can follow any of the methods explained below.

Simple installation:

The simple installation process install all the components (vCenter Single Sign-On, the vSphere Web Client, vCenter Inventory Service, and vCenter Server) in a single host or virtual machine. This type of installation is the best match for most of the deployments.

Custom installation:

The custom installation method lets you to install each component in locations you want them to be. For this method you have to install all the components in below order.

vCenter Single Sign-On
vSphere Web Client
vCenter Inventory Service
vCenter Server

Here you have the ability to install each component on a different host or a virtual machine.

Unlike vCenter Single Sign-On 5.1, the SSO service included in vSphere 5.5 synchronizes authentication data across locations. If you install vCenter Server systems in multiple locations, you can install a SSO server in each location. When you install the second and subsequent instances of SSO, you can point it to the first SSO instance during installation. The two instances synchronize their VMware Directory Service instances. Changes to one instance are propagated to the other instance.

Hardware Requirements for vCenter Server, vCenter Single Sign On, vSphere Client, and vSphere Web Client

You have the freedom to install the vCenter Single Sign On, Inventory Service, and vCenter Server in the same host machine as in simple installation or on different host machines as in custom installation.

Let's consider the custom installation where you can use different locations to install above mentioned components. Here you have two options.

1) vCenter Single Sign On, Running on a Separate Host Machine from vCenter Server.

2) vCenter Inventory Service, Running on a Separate Host Machine from vCenter Server.

Following table gives you the hardware requirements for each of the above two options.

Minimum Hardware Requirements for vCenter Single Sign On, Running on a Separate Host Machine from vCenter Server	
vCenter Single Sign On Hardware	Requirement
Processor	Intel or AMD x64 processor with two or more logical cores, each with a speed of 2GHz.
Memory	3 GB
Disk Storage	2 GB
Network Speed	1Gbps

Note: Memory requirement may require more if the VCenter SSO runs on the same host machine and the storage requirement also can be increased in such situation.

Minimum Hardware Requirements for vCenter Inventory Service, Running on a Separate Host Machine from vCenter Server	
vCenter Inventory service Hardware	Requirement
Processor	Intel or AMD x64 processor with two or more logical cores, each with a speed of 2GHz.
Memory	3 GB
Disk Storage	Minimum of 60 GB for medium to large sized inventories
Network Speed	1Gbps

Now consider the simple installation method, where you install all the components in a single host machine. There the Single Sign On and Inventory Service memory and disk storage requirements are in addition to the requirements for vCenter Server.

Minimum Hardware Requirements for vCenter Server	
vCenter Server Hardware	Requirement
CPU	Two 64-bit CPUs or one 64-bit dual-core processor.
Processor	Intel or AMD x64 processor with two or more logical cores, each with a speed of 2GHz.
Memory	The memory size depend on the configurations of the vCenter Server. *If vCenter Server is installed on a different host machine 4 GB RAM required. *If vCenter Server is installed with all other components 10 GB RAM required.
Disk Storage	The disk storage amount deepens on the configuration in the vCeneter Server. * If vCenter Server is installed on a different host machine 4 GB required. * If vCenter Server is installed with all other components 40 -60 GB required.
Microsoft SQL Server 2008 R2 Express disk	Up to 2GB free disk space to decompress the installation archive. Approximately 1.5GB of these files are deleted after the installation is complete.
Network Speed	1Gbps

Note: Memory requirement may require more if the VCenter SSO runs on the same host machine and the storage requirement also can be increased in such situation.

Another thing to be discussed is the JVM heap setting for the vCenter Server. Those settings depend on the size of your inventory.

- For a small inventory (1-100 hosts or 1-1000 virtual machines)

  3 GB for inventory service and 512 MB for storage service.

- For a Medium inventory (100-400 hosts or 1000-4000 virtual machines)

  6 GB for inventory service and 1 GB for storage service.

- For a Large inventory (More than 400 hosts or 4000 virtual machines)

  12 GB for inventory service and 2 GB for storage service.

When it comes to real world implementations. The number of hosts and powered-on virtual machines in your environment affects performance. Refer the below table for the minimum requirements to achieve a reasonable performance.

Deployment type	No. Hosts	No. Power-on VMs	Product	Cores	Memory	Disk
Medium	50	500	vCenter Server	2	4GB	5GB
			vSphere Client	1	1GB	1.5GB
Large	300	3000	vCenter Server	4	8GB	10GB
			vSphere Client	1	1GB	1.5GB
Extra Large	1000	10000	vCenter Server	8	16GB	10GB
			vSphere Client	2	1GB	1.5GB

Note: you can increase the above values if you want to achieve more performance.

The next thig is the vSphere Web Client. It has two components; which are the Java server and the Adobe Flex client application running in a browser. Following are the hardware requirements for vSphere Web Client.

vSphere Web Client Server Hardware	Requirement
Memory	Minimum of 2 GB; 1GB for Java heap and another 1GB for the resident code, stack for the java threads and java process.
CPU	2.00 GHz processor with 4 cores
Disk Storage	At least 2GB free disk space
Networking	Gigabit connection recommended