



SRI LANKA INSTITUTE OF INFORMATION TECHNOLOGY

Enterprise Standards and Best Practices for IT Infrastructure

4th Year 2nd Semester 2014

Name: K.M.S.H.Karunarathna

SLIIT ID: IT13072902

Practical Session: WE friday

Practical Number : 702

Github Link : <https://github.com/sachinihirunika/ESBPll.git>

Date of Submission: 11/09/2016

VMOTION

- **What is v-motion?**

V-Motion allows move virtual servers and desktops from one physical server to another without having to shut down the virtual desktop or server. All of this is done in real time without the user of the virtual machine even knowing they have been moved. V-Motion is the first step among many VMware software solutions that are incorporated to make sure that downtime is kept to a minimum, which include Fault Tolerance, High Availability, and Digital Resource Scheduler.

- **What the requirements are before do v-motion?**

- i. CPU compatibility
- ii. V-Motion interface (minimum 1 Gb adapter)
- iii. Shared central mass storage
- iv. Same naming for virtual port groups
- v. Sufficient resources on the target host
- vi. At least one vSphere Essentials Plus license on the corresponding ESX host

- **Compatibility things for v-motion.**

V Motion has quite a few requirements that need to be in place before it will work correctly. Here is a list of the key requirements for V Motion to work.

Each host must be correctly licensed.

Each host must meet shared storage requirements.

Each host must meet the networking requirements.

Each compatible CPU must be from the same family

When configuring v-Motion between hosts I would recommend keeping to one brand of server per cluster, i.e. Dell, HP, IBM. Also always ensure that these servers are compatible with each other. You can confirm this by speaking to the server manufacturer.

A very important item to consider is to always ensure you are using the latest BIOS version on each of your hosts. Ensuring that the CPU's are compatible with each other is essential for v-Motion to work successfully, this is because the host that the virtual machine migrates to have to be capable of carrying on any instructions that the first host was running. If a virtual machine is successfully running an application on one host and you migrate it to another host without these capabilities the application would most likely crash, possibly even the whole server would crash, hence why v-Motion compatibility is required between hosts before you can migrate a running virtual machine.

It is user-level instructions that bypass the virtualization layer such as Streaming SIMD Extensions (SSE), SSE2 SSSE3, SSE4.1 and Advanced Encryption Standard (AES) Instruction Sets that can differ greatly between CPU models and families of processors, and so can cause application instability after the migration.

- **What are the benefits?**

The main benefit is that you can add servers with the latest processors to your existing cluster(s) seamlessly and without incurring any downtime. More importantly, EVC (Enhanced vmotion compatibility) provides you with the flexibility required to scale your infrastructure, lessening the need to decommission older servers prematurely, thus maximizing ROI. It also paves the way for seamless cluster upgrades once the decision to retire old hardware is taken.

- **Automatically optimize and allocate entire pools of resources**

By having all server and/or desktops virtualized we 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 is complete leaving the user unaware of the move. This allows network administrators to easily select resource pools to assign to the different VMs.

- **Move VM's from failing or underperforming priorities**

If there looks like a server is about to fail or is reaching its capacity, administrators can manually move VMs to another physical host, this allows us

Data center to be more dynamic in nature. Instead of having to upgrade hardware, we can move VM to another host to allow each VM to be more flexible in nature. If 2 VM's are putting a physical host to capacity then we could move one to another server that isn't being used as much.

➤ **Minimizes scheduled Downtime**

90% of downtime is scheduled, before V-Motion administrators had to do server maintenance late at night in order to avoid disrupting users. Having all the servers as virtual machines, we 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. With DRS (Digital Resource Manager), all we have to do is put a server in maintenance mode and V-Motion will automatically move all VM's to another server.

- **Pros of V-Motion**

- Dynamic allocation services of the software allow you to allocate resources and memory while the processes are running.
- Security service of the software is flexible and allows you to implement user defined policy enforcement.
- The software supports all major operating systems as well as wide range of hardware.
- V-Motion allows to precisely identify the optimal placement for virtual machine.
- Virtual machines can be optimized within resource pools automatically.

- **Cons of V-Motion**

- There is no module for performance management on the software.
- Unlike its competitors, the software does not offer any reporting capabilities.
- Configuration features of the software do not include auto recovery, configuration history, and NIC teaming capabilities.
- There are no performance management features of adaptive analysis, memory compression, and continuous resource allocation on the software