

Choice Case Study

Server Consolidation for MACH Mobiles

Inside This Case Study

Project Background and Challenge	1
VMware Virtualization	1
Key Solution Components	2
Client Benefits	2
About Choice Solutions	3

Project Background and Challenge

MACH was planning to consolidate 50 Mobile Application Servers. The environment is a heterogeneous environment where Windows and UNIX operating systems are involved with databases like Oracle, SQL and all these databases crucial workloads running on antiquated hardware to support a work environment of 24/7; where users access the data 16/7 shift wise and client also accesses data during his working hours. So the servers need to work with full performance at all the times. A simple delay in the data access leads to data file corruption.

The database sizes for these servers are more than 100 GB from each and as well few files. Due to the nature of current deployment storage it cannot be scaled independent of the servers. Servers were procured to augment storage needs. This has caused rapid proliferation of servers in the datacenter, increasing power needs, cooling needs and most importantly escalation of system administration costs. In order to mitigate these issues and gain additional benefits such as capacity on demand, a agile datacenter with increased business efficiency is needed.

VMware Virtualization

Choice Solutions in conjunction with the MACH technical team worked closely for this project. This was done to make sure that the solutions provided would overcome the limitations and support for the environment. The Choice team did the Capacity Planning to know the workload on servers and calculate the storage capacity, as well as ran the Capacity Planner Tool to know the present utilization and know the workload on the servers. Then finally Choice suggested the Hardware required for Consolidating 50 Server such as 9 Blade Servers and Storage of 7 TB with Virtualization explaining the benefits of High Availability, DRS, VMotion and Backup.

The suggested solution came with HP Blade Server, HP EVA 4400 Storage-Hardware and VMware ESX Server virtualization software. Backup Solution with Tape Library and Veritas Backup Exec should also connect to the SAN Switch. This SAN based backup reduces the backup window with its high data access rate as well as reduce the burden and avoid chocking the bandwidth of local LAN.

The suggested Solution came with HP Blade Server, HP EVA 4400 Storage – Hardware and VMware ESX Server virtualization software.

Key Solution Components

- **HP Hardware:** HP Blade Servers, HP EVA Storage, HP Tape Library.
- **VMware Software:** VMWare ESX Enterprise Server.
- **Backup Software:** Veritas Backup Exec.

Client Benefits

This architecture will help balance the workloads across the ESX Servers using DRS, VMotion for planned down times to move VMs from one ESX Server to other ESX Server and High Availability between VMs and ESX Server. Backup Solution integrated with Veritas Backup Exec and VCB from VMware to perform the Application level & Image level SAN based backup will reduce the backup window drastically when compared to standard backup method of LAN based. The recovery of the data is also in the same speed as customer will get the recovered data in less time window.

The recovery of the data is also in the same speed as customer will get the recovered data in less time window.

- **VMware Dynamic Resource Scheduler** → DRS monitors the workload of the running VMs and resource utilization and moves automatically VMs to optimize performance, if a new physical server joins the cluster, DRS moves VMs to the new server. If a physical server leaves the cluster, DRS will automatically re-assign its VMs to other remaining servers.
- **VMware VMotion** → VMotion enables migration of a live VM from a heavily-loaded physical server to a lightly-used server.
- **VMware Storage Motion** → Storage VMotion enables live migration of VM from one datastore to another. Allows administrators to perform maintenance of storage (upgrade FW, reconfigure disks, upgrade VMFS, optimize performance)
- **High Availability** → Feature monitors the heartbeat placed via an agent on all physical servers. Loss of a heartbeat initiates starting the VM and applications on another physical server, simple and low-cost alternative to host clustering. Quick restart of a VM and associated applications on another physical box, if the original hosting server fails. No need to configure application-level failover
- **Distributed Power Management** → With the inclusion of DPM, the system compares system-level and cluster-level to the user load. If a physical server is found to have enough free resource to take the load of other VMs, the other VMs are migrated; the freed-up physical server is powered-off. Later, if the host is required to take user load, it is powered on via NIA card using “wake-on-LAN” pings; DPM optimizes power consumption of the cluster. DRS and DPM are thus used together to implement load-balancing and power management.

About Choice Solutions

Established in 1991 Choice Solutions Ltd. is a leading IT and Facilities solutions provider. Choice Solutions Ltd. business comprises of Six different practices, namely

IMS

- Desktop, Server, Network, Storage, Support, OS, Assets, Apps, Non IT
- Hardware - A-Add, M-Modify, I-Install, C-Change, R-Repair
- Assets, Security, Software Distribution, Upgrades

Networking

- Packaged Services Monitoring & Management
- Products, Security, Design, Deploy, Maintain
- Auditing & Compliance, SOC

Datacenter

- DC Audit, Monitor & Manage, Training
- Assess, Design, Built, Deploy, Disaster Recovery

Consulting

- Business Consulting, CIO & Technology Services, Physical Security, Power Devices, IT Consulting
- DC Consulting, ERP, CRM & Custom Apps

Cloud Computing

- Cold Site – Backup, Disaster Recovery
- Hot Site – HaaS, Software, Manage
- Public Cloud, Private Cloud, Hybrid Cloud
- CaaS, License Software, IaaS
- Disaster Recovery

Power

- Power Audit, Equipment Management
- Physical Security, Power Devices
- Power Saving Devices
- Design & Audit
- Renewable Energy Products