Weatherford International Ltd.
Industry: Manufacturing/Energy (Oil & Gas)
Solutions: Data Center, Virtualization, Storage & Data Solutions, SIS

Long View Success Story

Weatherford Sees Substantial Time & Cost Savings with a Data Recovery Plan from Long View Systems

CLIENT OVERVIEW

Weatherford International Ltd. (NYSE:WFT, Weatherford) is one of the largest global providers of advanced products and services that span the drilling, evaluation, completion, production and intervention cycles of oil and natural gas wells. Weatherford employs approximately 43,000 people worldwide, operates in more than 100 countries to include 125 globally distributed manufacturing facilities supporting 800 service bases and 16 technology development and training facilities.

BUSINESS CHALLENGE

By June of 2008, Weatherford’s physical server landscape had grown to over 325 application and infrastructure systems. At the time, their MTTR (Mean Time to Recovery) was measured in weeks to rebuild and recover from tape, resulting in a potential operating loss of $192M/week. With the Global Business Units relying on Corporate for core IT infrastructure, Weatherford needed a sustainable Data Recovery (DR) Plan that could be measured in hours, not weeks.

APPLICATION & SOLUTION OVERVIEW

Weatherford and Long View Systems (Long View) has been working successfully together on various integration projects over the previous five years. As such, Long View was well acquainted with Weatherford’s IT environment as well as their unique business needs and technical requirements. In order to clearly define the best possible data recovery solution for Weatherford’s dynamic virtual data center, Long View experts worked with Weatherford executives and their technology partners to develop a series of data management policies as well as the technical solutions to carry them out. Ultimately, the core components of the infrastructure that would serve Weatherford’s Houston, as well as remote, data centers included:

• A third party Virtual Machine (VM) modeling application to monitor existing physical servers
• Data collection validation by NetApp to extend the DR Plan design
• A combination of VM’s, CIFS (Common Internet File Systems) Data, and physical servers

Specifically, Long View Systems was subcontracted to provide a VMware Assessment, including a thorough review of Weatherford’s administrative processes, and a detailed architectural review to ensure maximum availability. Long View also managed the physical to virtual (P2V) migration of 140 physical servers.

The VMware configuration consisted of:
• 4 ESX Clusters (19 ESX hosts)
  ▪ Dell PE 1950: 2 Quad-Core Processors, 32 GB RAM
  ▪ ~14 VMs/host (avg)
• 270 VMs (Windows)

The NetApp configuration consisted of:
• FAS3070HA: 18 NFS data stores, 400-800 GB in size, Up to 20 VMs/data store
• Deployment services (NetApp & Long View)

SOLUTION OVERVIEW

• Design and implementation/P2V migration of a dynamic, virtualized data center powered by VMware and NetApp technologies
• A Data Recovery Plan allowing for site to site recovery using SnapManager & SnapMirror for Virtual Infrastructure and other software technologies
• Upgrading of tape libraries and existing servers to systems designed for server and application virtualization
The Backup and Recovery Strategy involved SnapManager for Virtual Infrastructure (SMVI) for local backup snapshots and the future use of SnapMirror for replicating those snapshots to the remote data center. Site Recovery would be handled by asynchronous SMVI replication to a DR hot site (be it the main or remote data center). The ESX servers included 5-6 node clusters with Dynamic Resource Scheduling (DRS) and High Availability (HA) features enabled. The Update Manager was configured to ensure all hosts met a minimum patch benchmark, and redundant network interfaces for Service Console, data, and isolated NFS traffic were established. Since snapshots are volume based, the NFS volume naming convention was based on the DR Classification and grouping of similar servers within the same volume. Traditional, agent-based backup of 23 servers used to take 2+ hours. SMVI snapshots take 3 min/volume and can be archived, via NDMP (Network Data Management Protocol), outside of the prime backup window.

**BUSINESS RESULTS & BENEFITS**

The VMware configuration enables transformative cost savings and breakthrough levels of efficiency, flexibility, and serviceability to IT environments of all sizes. The award-winning VMware ESX Server, with innovative features like DRS and HA, is designed to deliver comprehensive virtualization, management, resource optimization, application availability and operational automation capabilities in an integrated offering.

The NetApp FAS3070 delivers exceptional storage value for mid tier Enterprise data centers and SMBs, including use for database applications, e-mail, and network storage shares. Its compact, modular design delivers integrated FC SAN, iSCSI, and NAS data serving in dual active-active systems scaling to 84TB. The FAS3070 filer features a 64-bit controller architecture and supports multiple network configurations while offering scalability to higher performance systems with seamless, painless upgrades and data migration.

All of Long View’s work was completed under budget and inside of 3 months. All requests for a dedicated server at Weatherford Corporate are now provisioned with a VM. Prior to this, the average cost of a physical server was approx. $4,200 and took 9 business days to quote, procure, rack, and build. Now, the cost of a VM is $1,800 and it can be handed over to the business in less than 3 hours. Virtualization has eliminated 140+ physical servers (8 racks) resulting in a monthly co-location cost savings of 32%. Current MTTR is 48 hours, and will be down to 4 hours before the 2009 hurricane season resulting in a $38M/day revenue savings.

**CONCLUSION**

In the past 12 months, Weatherford has provisioned 90+ new servers as VMs for a savings of $216K. With the exception of large SQL installs and Exchange, all servers at Weatherford will be a VM. With NetApp Deduplication, they are seeing an average savings of 40% per volume and 3.7 TB just on VMware NFS volumes and total Deduplication savings on CIFS and NFS is over 15 TB.

A co-location in Dallas has been chosen as Weatherford’s recovery hot site with network circuit costs as the driving factor. SnapMirror will replicate all SMVI, CIFS, Exchange and SQL snapshots brought online with VMs at the DR hot site. Plans are in place to implement VMware’s SRM to automate the failover and recovery of VMs when NFS support is released. Finally, Long View will be involved in the upcoming testing of Exchange 2007… as a VM!