Pacific Capital Bancorp Enhances Investment in Branch Resources, Leverages Storage Solution from Hitachi and CaminoSoft

Pacific Capital Bancorp, Goleta, Calif., was sold on the value of the TagmaStore™ Universal Storage Platform from Hitachi Data Systems, Redwood City, Calif. Configured with 96 terabytes of high-performance storage capacity, TagmaStore offered the Bank some obvious high-performance benefits for their centralized corporate servers and mainframe computers. Fibre Channel connections could be made locally to the storage subsystem, which could be centrally managed and easily replicated to the Bank's disaster recovery site.

Technology Constraints

But the apparent benefits for the Bank's 100+ distributed Novell NetWare servers was a different story. Because of the logistics and distances involved, the remote branch locations were not candidates for Fibre Channel based consolidation objectives for common services and protection. To provide this services objective, better business access, and leverage supporting common storage resources within the TagmaStore infrastructure for these remote sites, several options were under consideration. This included an initial consideration on the use of iSCSI related services, using the Bank's existing wide area network, to accomplish the TagmaStore-to-server connections. Although the concept seemed workable, digging down revealed some technology constraints:

(1) Each branch NetWare server would likely require hardware upgrade of at least one additional network interface card to manage the traffic associated with the iSCSI-based I/O transactions. The remote servers would require an upgrade to NetWare 6.5, the minimum configuration for iSCSI. Together, the operating system upgrade and the network interface card requirements would mean significant downtime in every branch or the work would have to be scheduled during off-hours.

(2) The Bank's regulatory requirements for critical file records to be protected and secured within a new dual data center referenced architecture would require a substantial infrastructure and project investment for NetWare-based services to be supported within.

(3) The Bank was already running applications in the branches that utilized their wide area network. Given its available bandwidth, the extra burden of additional iSCSI traffic would likely have a negative impact on the performance of existing applications. Bandwidth infrastructure upgrades would also be required in order to avoid a significant degradation in performance.

(4) From a branch user's perspective, TagmaStore resources were to be utilized for real-time file storage and retrieval. However, even the fastest, most expensive wide area network infrastructure would only be able to provide suboptimal bandwidth for the iSCSI traffic, meaning that users would likely experience noticeable delays when accessing files from the TagmaStore as well as reduced application performance.

(5) iSCSI for NetWare can be broken into three major components: the infrastructure (discussed above); the Initiator, software loaded on each remote branch server; and, a central iSCSI Target NetWare gateway server physically connected to the TagmaStore. In effect, the Initators gain access to the storage via the Target. Each Initiator's share of the storage must be separately provisioned, managed, and monitored. Since there were 100+ servers to be connected via iSCSI, then the TagmaStore would need to be carved up into that many partitions, storage pools, and resulting NetWare volumes—a non-trivial management task.

Business Solution

Against this backdrop of technology constraints, the new requirements for a second data center, and increased regulatory protection requirements, Hitachi Data Systems and their channel partner/systems integrator, Consiliant Technologies, Irvine, Calif., introduced the Bank's IT team to an advanced Application Otomized Storage™ Lifecycle Solution option, including a policy-based hierarchical storage management (HSM) software solution from CaminoSoft Corp., Westlake Village, Calif. CaminoSoft's Managed Server HSM™ for NetWare product would become a key part of the solution, migrating seldom-accessed files from the remote servers to the target TagmaStore via a centralized NetWare server and utilizing the existing wide area

network infrastructure. This innovation addressed many, if not all, of the issues that had been raised, making the business solution a reality for the Bank:

(1) Network hardware upgrades were not necessary in order to utilize Managed Server HSM on the NetWare branch servers. By not deploying iSCSI, there was a much lower risk that the Bank's users would be adversely affected from a performance standpoint. This also was a persuasive cost argument supporting the dual data center objectives of storage service consolidation and business recovery based services.

(2) Because Managed Server HSM is Novell-certified and supports NetWare 4X, 5X, and 6X, the anticipated operating system upgrades were not required at the branch offices. And since the HSM agent software is deployable remotely, it could be implemented with little or no downtime. In fact, Bank administrators installed, configured, and set-up the HSM software on 80 servers in less than four hours.

(3) Virtually all of the wide area network traffic created by Managed Server HSM can be scheduled to occur during off-peak hours (controlled by the Bank's administrative policies), so there is a negligible impact on available bandwidth and the performance of existing branch applications during peak "production" hours.

(4) From an operational standpoint, the amount of time required for daily server backup of active files (and server recovery, in the event of an outage) has been substantially reduced. This is because seldom-accessed files have been migrated in their entirety to the TagmaStore, leaving behind only small pointers on branch server storage. With Managed Server HSM, a typical server can reclaim 65% or more of its local storage. This translates into a corresponding savings of 65% or more in backup time (and recovery time) and assures compliance with IT service level agreements. By implementing very aggressive migration policies (minimal elapsed time from file creation, access, or modification date), the Bank was able to reclaim up to 90% [VERIFY] storage headroom on some servers.

(5) The Managed Server HSM target flexibly manages migrated file content; an administrator can readily configure the storage subsystem into as many (100+) or few (1) logical drives and/or volumes as desired to facilitate the Bank's requirements. Branch users store and access files directly on their existing server storage resources with no reduction in performance. This also offered the ability to provide dual data center centric support for common NetWare file history within a common centralized

TagmaStore storage services infrastructure. Seldom-accessed files, which have been migrated to the TagmaStore per administrative policy, still appear to be in their original volumes and directories. From a user's perspective, file migration and demigration are transparent. And since administrators, not users, interact with Managed Server HSM, there is no software loaded on client workstations and no user training required.

   Applying the Hitachi/Consiliant/CaminoSoft solution toward imposing technical constraints enabled Pacific Capital Bancorp to justify the business case based on enhanced operational performance and cost avoidance for operating system upgrades, additional wide area network bandwidth, off-hours deployment, scheduled maintenance, and unscheduled downtime.

   Pacific Capital Bancorp's solution is in place and operational today. Recently, the Bank was able to recover a branch server following an outage and restore resources and user services within a couple of hours rather than several days, as previously experienced.

For further information, contact CaminoSoft at +1-805-370-3100 or visit www.caminosoft.com.