VERITAS™

Maine Medical Center

Boosting IT Resilience and Efficiency with Veritas Helps Leading Hospital Excel

Maine Medical Center is expanding its services to include virtualizing servers and protecting data at remote sites throughout the state. This brought new challenges in disaster recovery and data protection. The IT team turned to Veritas. Results include shortening the recovery time objective (RTO) from several weeks to two hours, reducing backup time by up to 10-fold, a 90 percent reduction in storage footprint, and avoiding $30,000 in additional hardware costs.

A generous provider

Maine Medical Center (MMC) is a complete health care resource for the people of greater Portland, Maine, the entire state, and northern New England. Incorporated in 1864, Maine Medical Center is the state's largest medical center, licensed for 637 beds and employing more than 6,000 people. Maine Medical Center's unique role as both a community hospital and a referral center requires an unparalleled depth and breadth of services, including the state's only medical school through a partnership with Tufts University School of Medicine and a world-class biomedical research center, the Maine Medical Center Research Institute. As a nonprofit institution, Maine Medical Center provides nearly 23 percent of all the charity care delivered in Maine.

As Maine's largest tertiary hospital, Maine Medical Center specializes in cancer care, joint replacement surgery, neuroscience, emergency medicine, trauma, cardiac care, primary care, neonatal intensive care, and much more. It is also home to The Barbara Bush Children's Hospital, the only pediatric hospital in the state.

To continue providing affordable healthcare to its at-risk patient population, the not-for-profit Maine Medical Center needs to keep costs low, while protecting critical medical data at sites throughout the state. As a result, the IT team has to remain within tight budgets, while building a centralized infrastructure for greater efficiency.

Partnering for disaster recovery

To provide superior care even during a crisis, Maine Medical Center recently established a disaster recovery site with solutions from Veritas, as well as virtualized about 40 percent of its servers with VMware. The hospital deployed Veritas Storage Foundation™ HA and Veritas NetBackup™ to create a clustered environment. As a result, the recovery time objective (RTO) and recovery point objective (RPO) were reduced from several weeks to two hours. "Veritas worked with us to find a creative solution," says Donahue. "We were able to create two backup environments and provide for disaster recovery."

Organization profile

Website: www.mmc.org
Industry: Healthcare
Headquarters: Portland, Maine
Employees: 6,000+

Veritas solutions

Data Protection
High Availability
Archiving

Why Veritas?

- Reduces backup time
- Eliminates redundant backup data
- Saves money on storage hardware
- Shortens recovery times
- Reclaims storage space with file system archiving

Because Veritas Storage Foundation and Cluster Server provide fast failover of applications and databases, the IT team can perform maintenance without interruption to end users. "Last year we had a storage issue that took all day to troubleshoot, but because the Veritas solutions allowed us to fail over services, customers didn't notice," says Donahue. "An interruption that long would have had serious implications."

Maine Medical Center also deployed Veritas Enterprise Vault™ with File System Archiving for archiving all types of data. Disk storage utilization had been nearing 100 percent, and Maine Medical Center was facing the purchase of $30,000 of added disk for storage. Enterprise Vault compresses and deduplicates the data it archives. This enabled the team to drive storage utilization from near 100 percent down to 21 percent, avoid a $30,000 storage purchase, archive three more terabytes of data on an existing EMC Centera array, as well as improve backup performance.

Gaining backup efficiencies

Following a successful Veritas deployment, Maine Medical Center sought to increase backup efficiency in its growing virtualized environment and upgraded to Veritas NetBackup 7. "Veritas NetBackup 7 together with VMware vSphere 4," says Donahue, "allows us to do virtual machine backups much more efficiently, faster, and with a smaller footprint." Maine Medical Center backs up over 150 terabytes of data of all types, "anything from file servers to Oracle databases which store patient data," says Donahue. Maine Medical Center uses the Oracle Agent of NetBackup to enable hot, non-disruptive backups of its Oracle database.

One efficiency Maine Medical Center gained with NetBackup 7 is streamlining the performance of virtual machine

Solutions at a glance

Key challenges
- Provide centralized data backups for physical and virtual servers
- Improve data protection efficiency
- Minimize IT staff time dedicated to backups and restores
- Use archiving to reduce data storage costs

Veritas products
- Veritas NetBackup™ 7 with:
  - Oracle Agent
  - NetBackup Deduplication Option
  - NetBackup OpsCenter
- Veritas Storage Foundation™ HA for Windows with:
  - Veritas™ Cluster Server
- Veritas Enterprise Vault™ with:
  - File System Archiving

Veritas services
- Veritas Business Critical Services
- Veritas Education Services

Technology environment
- Server platform: HP ProLiant BL460c, DL580, and DL360 servers running Microsoft Windows Server 2003
- Applications: VMware vSphere 4, Sunrise Clinical Manager, Sunrise Records Manager, GroupWise, Meditech Client-Server
- Databases: Microsoft SQL Server, Oracle, InterSystems Cache, Meditech Client Server, IBM Informix
- Storage: EMC Symmetrix DMX-3, Celerra, CLARiiON, and Centera storage arrays
- Tape library: IBM TotalStorage 3584

Business results and technical benefits

Disaster recovery/data protection
- 2-hour recovery time objective (RTO), down from several weeks
- 2-hour recovery point objective (RPO), down from several weeks
- Up to 10-fold reduction in backup times

Cost savings
- 90% reduction in storage requirements from deduplication
- $30,000 cost avoidance by eliminating need to purchase more storage
- $2,000 per month avoided in added network connection costs through efficient backups
- Almost five-fold decrease in disk utilization, from near 100% to 21%

Operational efficiency
- 14 hour weekly reduction in management of backups
- Two to five-fold faster restore times
- 80% reduction in recovery administration (from 10 hours to 2 hours per week)

backups by migrating from VMware Consolidated Backup (VCB) technology to VMware's vStorage APIs for Data Protection. With the older VCB technology, backing up virtual machines (VMs) would require making a copy of each VM on a proxy server as an intermediate step. "It was a challenge to schedule that," says Donahue. "We had to be careful with how many virtual machine backups we had coming in to that proxy server, because it would fill up. Using NetBackup 7 and its tight integration with the vStorage API eliminates this problem, making fully cataloged VMDK backups a snap."

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Joe Donahue
Storage and Backup Administrator
Maine Medical Center

Up to 10-fold reduction in VMware backup time

NetBackup 7 also supports VMware vStorage APIs, allowing for centralized virtual machine backups and eliminating the need to run backup tasks within each virtual machine. This improves manageability and reduces dependency on backup windows. "With Veritas NetBackup 7, using the vStorage API, we can back up the target on the storage where it's located today," says Donahue. "It doesn't move to an intermediary. We're able to save the time of making the copy, which was 10 minutes per virtual machine. It's really simplified the scheduling process."

With 256 virtual machines, Maine Medical Center has reduced backup times by as much as 10 fold. The IT team also has more flexibility in scheduling backups. "We're able to run backups at any point throughout the day, with minimal impact to the actual server loads it's occupying," says Donahue.

$2,000 per month avoided in added network connection costs

NetBackup 7 fully integrates NetBackup PureDisk deduplication capabilities to reduce the amount of data moving across the network, which enables Maine Medical Center to provide faster, more efficient backups and disaster recovery to its affiliate hospitals and clinics throughout the state. "All of our plans for remote backup revolve around NetBackup 7," says Donahue. "We want to deduplicate backup data at remote sites, and send copies to a PureDisk storage pool at the main data center in Portland."

As a pilot project, Maine Medical Center is deploying NetBackup 7 at Stephens Memorial Hospital in Norway, Maine, before deploying it to other sites. According to Donahue, after the original backup from the site, subsequent backups will be much smaller because only changed data is sent.

"That's a huge motivator for us because of the cost of the network connection between sites," he says. As a result, Maine Medical Center is able to avoid $2,000 in additional network connection costs with this one site alone.

Another advantage is the availability of data for faster restores. "If a remote site like Stephens Memorial loses an entire data volume, they can't afford the time for us to send it over the wire. A 200 gigabyte volume would take over 18 hours" says Donahue. "But with NetBackup 7, they can store data locally for short-term recovery whenever it's needed. They can restore that volume in about 2 hours instead of 18 hours," for nine-fold faster restore times.

A flexible backup and DR solution

Maine Medical Center backs up almost exclusively to disk. But in the case of legal documents that the hospital needs to retain for a period of several years, Maine Medical Center will back up to tape. "With NetBackup 7, we simply created a new storage life-cycle policy (SLP) for data to mimic the current SLP," says Donahue. "After our initial backup, we then make a duplicate of that back up to our disaster recover site. Then to comply with the SLA, we write the data to tape for long term storage." The built-in replication and deduplication features of NetBackup 7 combine to optimize storage efficiency at the disaster recovery site. To further enhance disaster recovery capabilities, Maine Medical Center also backs up critical applications to tape.

90 percent deduplication rate

With the NetBackup Deduplication Option, Maine Medical Center reduces the size of its backed up data by 90 percent, from 152 to 16 terabytes. This represents a cost avoidance of $320,000 worth of disk space for more valuable uses.

IT savings translate into better services

NetBackup 7 has also improved recovery times from 10 to two hours, a five-fold reduction. "With Veritas NetBackup 7, backups are located on the disk drive, so restore times are definitely faster," says Donahue. "We've been able to reduce recovery administration time by 80 percent, from 40 to eight hours per month, allowing IT staff to work on more valuable projects."

For an entire Oracle database, Maine Medical Center has reduced recovery time from 10 hours to 2 hours with NetBackup 7. "We make a snapshot copy with NetBackup 7 for immediate restores," says Donahue. "We have another database where we may follow the same strategy."

"With Veritas NetBackup 7, restore times are definitely faster. We've been able to redeploy two FTEs to other open positions."

Joe Donahue
Storage and Backup Administrator
Maine Medical Center

"With Veritas NetBackup 7, using the vStorage API, we can back up the target on the storage where it's located today. It's really simplified the scheduling process."

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14 hour reduction in management

Another advantage of NetBackup 7: centralized management through the Veritas OpsCenter, a Web-based monitoring, alerting, and reporting application tool.

OpsCenter predicts backup and email archive storage consumption through analysis and trending of data retained over a long-term period. "Veritas OpsCenter is essential," says Donahue. "We service entities such as Maine Medical Partners, and we can create a custom view for them to see the status of their backups and generate reports."

As Maine Medical Center deploys NetBackup 7 to remote sites, OpsCenter allows the team to accurately measure chargeback costs for storage. "With OpsCenter, we're able to take into account the data that was deduplicated to determine what their actual storage footprint is. We can then give them a reasonable number for their backup storage requirements. OpsCenter allows us to budget items like that."

Automating this process with OpsCenter saves seven to nine hours per week. "To do this by hand takes two to three hours each time it's requested," says Donahue. "With OpsCenter, it's automated and emailed out first thing in the morning."

OpsCenter also allows Maine Medical Center to be more proactive, heading off potential backup issues. "We're able to get a sense of how our system is trending with just a glance," says Donahue. "We can see our PureDisk storage pools very easily in an email, without having to check its status every day." Donahue says an email alerted the IT team of how much space remained for a backup. "We were then able to schedule an upgrade to expand LUNs to more than meet what we needed

for our target," a process that takes 15 minutes. Without the alert, Maine Medical Center would have spent several hours on remediating the issue.

Supporting systems with HP

A long-time HP shop, Maine Medical Center deployed an HP ProLiant DL580 server as its NetBackup master server, and HP ProLiant DL360 servers for its NetBackup media and PureDisk deduplication pool servers. "HP has been the vendor of choice for our Intel platform, Windows installations, and Linux," says Donahue. "We made the migration from UNIX to Microsoft Windows-based servers to take advantage of the knowledge base of our Platform Services team. Within that team, our Windows administrators help reduce the amount of time to work through an issue, whether it's a software or hardware problem."

Maine Medical Center has virtualized much of its environment on recently deployed HP ProLiant BL460 server blades, allowing the hospital to consolidate physical servers from 11 to one. This has reduced IT footprint by 36 percent, while reducing annual power and cooling by 25 percent.

What's more, Maine Medical Center's Veritas solutions fully support its HP servers. "We've had no problems at all," says Donahue. "The performance we're getting today is much higher than the performance we were getting before on the UNIX platform."

Partnering for success

To keep its system operating with full support, Maine Medical Center turned to Veritas Business Critical Services and Veritas Education Services. "Veritas Business Critical Services has been highly proactive," says Donahue. "They frequently

send updates on the status of tickets. They also provide on-site visits to offer more detail on tickets, as well as suggestions to help us get a faster resolution. I can't recommend Veritas Business Critical Services highly enough."

Veritas brings added confidence to Maine Medical Center's environment. "Veritas products live up to their word, and people say very good things about them," says Donahue. "We truly feel we've partnered with Veritas and are not just buying products from them. Just as important as the software has been the support. We've been extremely satisfied and even escalated our support level to take advantage of Veritas's proactive support engagements and priority response from advanced line engineers."

For more information

Contact your local Veritas Sales Representative or Business Partner, or visit our website at www.veritas.com.

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