Cal EMA
CALIFORNIA EMERGENCY
MANAGEMENT AGENCY

California Emergency Management Agency (Cal EMA)

Leverages Pancetera and IBM capabilities to support state-wide emergency services

Ready for
IBM. | **Tivoli.**
software

BUSINESS IMPACT

- Operational and end user levels of service were maintained, a critical need for an emergency services agency.

- Virtualization environment backup data reduced by 75%

- Backup window reduced from 20 hours to 5 hours

- TSM's deduplication and archiving functions were fully leveraged

- Significant cost savings over alternative backup approaches

CONTACT

Business Overview

Cal EMA was established in 2009 combining the Office of Emergency Services and Office of Homeland Security to manage the coordination of overall state agency response to major disasters in support of local government. The agency is responsible for assuring the state's readiness to respond to and recover from all hazards—natural, manmade, war-caused emergencies and disasters—and for assisting local governments in their emergency preparedness, response, recovery and hazard mitigation efforts.

Challenges

Cal EMA has a variety of data it has to support and archive for decades, including information on physical assets across the state, reimbursement for damages, aid packages, critical infrastructure and real-time data collected by satellite across California's 58 counties. For example, the agency is still responsible for the data on remediation and recovery for the 1994 Northridge earthquake in Los Angeles.

About 20 percent of Cal EMA's data is live. The agency relies on IBM tape storage for archived data on projects years and even decades old. To increase management capabilities, the agency is consolidating and managing this data on virtual machines.

To backup Cal EMA's virtual environment, a full "snapshot" of the data would require about 15 to 20 terabytes of data to be backed up and multiple snapshots must be made as part of the backup process. So, storage resources are being strained by the virtualization backup process. Further, backups would take approximately 20 hours to run.

"Our new backup combination allows us to master our virtual and physical infrastructure by backing up data with greater ease and speed."

– Lovell Hopper
Manager, Infrastructure Services
California Emergency Management Agency

Due to the significant backup processor and network load, running full backups would decrease overall response time, thereby compromising the user experience for Cal EMA internal staff and customers.

Solution

The first option considered by Cal EMA was putting a virtualization-only backup system in place. These systems typically utilize a pool of storage, called proxy storage, that is used to stage Virtual Machine (VM) data snapshots made by add-on agents installed in each VM. By using proxy storage, then running VMs can be reliably backed up.

The second option did not require additional backup software, proxy storage, or agents. Cal EMA already relied on IBM Tivoli Storage Manager's (TSM) centralized, policy-based, enterprise class, data backup and recovery software for production and archive data. To

SOLUTION HIGHLIGHTS

- VMware virtualization environment

- **Pancetera Unite:** Optimizes backup of virtualization environment both to online and offline (tape) storage.

- **IBM Tivoli Storage Manager:** Manages both production and backup storage resources.

- **IBM Tape Storage:** Used to store inactive / archive data.
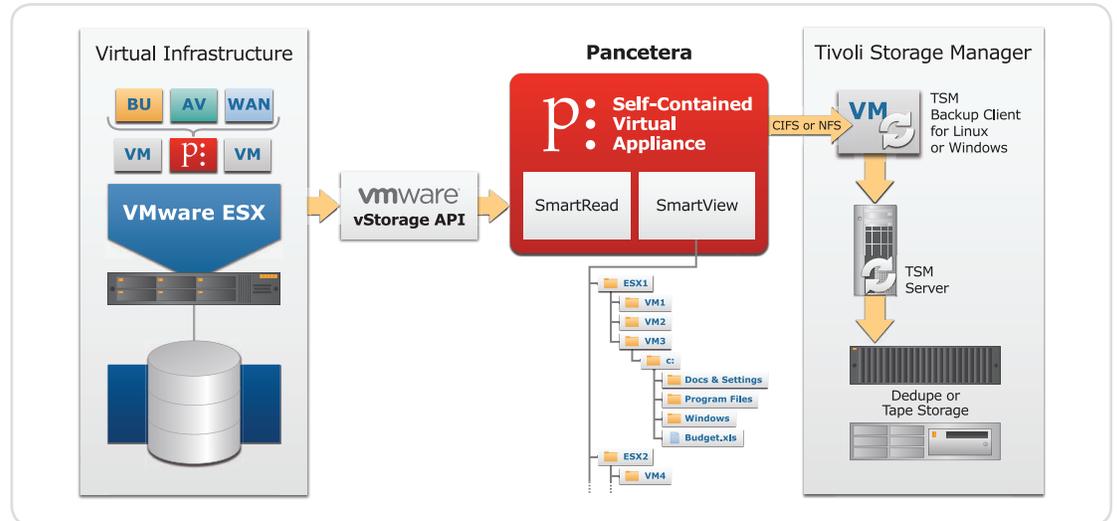
extend TSM to backup of the VMware virtualization environment, Cal EMA rolled out the virtual storage optimization solution from Pancetera, Pancetera Unite®.

Pancetera Unite is a Linux-based virtual appliance. It scans across operating systems and VMs to provide a single, file-level view of the virtualization environment. Pancetera Unite also recognizes the agency's unique new data that needs to be backed up, eliminating the need to move large amounts of empty space and redundant data. Pancetera Unite is unique in that it can make copies of even running VMs without disrupting the virtualization environment.

TSM then backs up Pancetera Unite as it would any other filesystem. Existing backup processes, archival to tape rules, and training are all fully leveraged by this approach. Further, TSM storage efficiencies in terms of data deduplication are fully leveraged on top of the efficiencies provided by Pancetera Unite.

Results

The project both enabled improvements in the core service provided by Cal EMA and reduced direct and indirect costs:

✔ **Levels of service maintained:** Due to reductions in I/O load and network bandwidth, back-ups can be run anytime without impacting the performance of production systems. As a result, operational and end user levels of service were maintained, a critical need for an emergency services agency.

✔ **Backup data reduced by 75%:** Pancetera software enabled a 75 percent reduction in the amount of virtualization environment data that Cal EMA backs up.

✔ **Backup window reduced from 20 hours to 5 hours:** Total backup time went from approxi-mately 20 hours to under 5 hours, again a 75% reduction.

✔ **Storage management:** TSM's ability to deduplicate and archive data were fully leveraged to the virtual environment.

✔ **Significant cost savings over alternative backup approaches:** As compared to other solutions, Cal EMA had significant cost savings due to elimination of the purchase of a second backup system, of proxy storage for virtualization data staging, and of backup agents for each virtual machine.

2953 Bunker Hill Ln, Ste 203, Santa Clara, CA 95054 • 408-886-7007 • pancetera.com • sales@pancetera.com