

Transit New Zealand: Down to the wire

Transit New Zealand develops, manages and maintains New Zealand's state highways. This is a network of 10,837 kilometers of major roads linking to 82,000 kilometers of local roads. There are 4,005 bridges and major culverts on the state highways. The whole highway network is a national asset worth in excess of \$13.1 billion.

This is a complex infrastructure, crucial to the social and economic well being of New Zealand. There are high expectations for Transit to behave in a responsible manner in many areas including social responsibility and environmental responsibility. Accurate data collection, collation and accessibility are critical for everything from route markers to archaeological sites, from potholes to landscape guidelines, from signs to major construction projects.

It is widely accepted that the best business continuity plans are usually made by outsourcing data management to a remote datacentre operation. But what happens when you demand all the benefits of outsourced business continuity capacity, without relinquishing control? The answer Transit New Zealand was a unique combination of EP (Ethernet protocol) and HdS's Virtual Datacentre® platform. A first for New Zealand business, backup over the 'wire' is delivering Transit unprecedented benefits of speed, scalability, and reliability while providing a pathway that addresses business continuity.

Like most businesses, Transit can't do business without uninterrupted access to its business information. The company was experiencing exponential growth in systems data, which was pressurising their existing enterprise tape backup system. Too many staff hours were being devoured by managing backups and restorations, which were increasingly taking too long. But, perhaps most compelling, was that Transit recognised that it needed a flexible storage platform that could solve its immediate problems and address broader needs for business continuity, capacity and the satisfaction of strict recovery time and recovery point objectives.

Operationally, Transit was facing a number of issues. With 12 offices spread throughout New Zealand it was challenged by escalating storage costs; lengthy backup windows and restore times extending into business hours; and limited visibility of the location and management of its data.

Gearing up its existing tape backup system so that it was operable as a storage recovery solution required significant investment. Other options, including duplicating backup and restore infrastructure to a recovery site, and a storage area network (SAN), did not stack up. They were too expensive.

Transit identified three key drivers: scalability, flexibility and risk reduction. The solution had to accommodate Transit's growing business data and possess inherent flexibility so that Transit could recover data from anywhere on its Wide Area Network (WAN). Because true business continuity capacity was required, it was hard to get away from outsourcing of some form. However, retaining control at Transit's end remained paramount. After surveying the market, the solution was found using Hitachi Data Systems SAN facility.

HdS backup and restore on-demand: systems backup and restores, via Ethernet, to a disk storage production environment on a Hitachi 9980V SAN, housed at HdS's Virtual Datacentre® - a scalable plug-in IT environment. Commvault Galaxy suite for backup, restore and business recovery put Transit in the driver's seat, providing self-managed backup, restores, monitoring and reporting.

"We didn't want full outsourcing," says Ganesan. "We wanted a lot of control back to us. We wanted to manage the data ourselves without committing our own people and resources - we wanted to be able to restore our own data without necessarily having to talk to HdS."

The opportunity for Ethernet backup was that it potentially offered a cheap way to move data. Backup over the 'wire' avoided requirements for storage channel extensions and, using a 100Mbps TelstraClear network connection to HdS's Albany data centre, provided sufficient capacity to manage backups and restores within acceptable timeframes. The key advantage was that HdS's datacentre could be treated as just another node on Transit's WAN, providing the pathway for information recovery anywhere on the network, without any need for data restore infrastructure.

Making redundant its own tape backup system, Transit's data is now backed up automatically, via Ethernet, to the HdS SAN. The setup provides Transit with a single pool of production environment storage that is accessed by Transit's helpdesk through a CommVault Galaxy interface.

Nightly incremental backups are executed automatically, after hours, at a capacity rate of up to 39.5GB per hour (uncompressed data). Full backups are initiated on the weekend and at month and year-ends. Surveying its internal customers, Transit gauged that 70 percent of historical data restores were for data less than two weeks old. To accommodate this demand, one terabyte of dedicated disk storage was allocated for backup and restores, which, in turn, is backed up onto tape. Should Transit's demands grow, more disk space is simply added.

Transit has resolved its ongoing data growth and day-to-day data management issues by automating and speeding up data backup and restoration. Strategically, it has created a centrally managed storage platform to deliver true business continuity capacity.

Immediately, backups and restores were taken off Transit's hands and delivered back to the company for a fixed fee based on a service level agreement. Transit was able to sidestep expenditure on upgrading its own tape backup systems and, in turn, free up one-and-a-half FTE days from backup management activities for higher value business projects. Additionally, the company's sole reliance on tape backup has been addressed and the risk of backup failure minimised.

Backups no longer encroach on Transit's business hours and are completed well within the 12hour after-hours window; and the time required for full weekly backups, conducted over the weekend, is down from 60 hours to 30. Staff time managing the backups has changed from four days per week to five minutes per day.

Combined with the intrinsic advantages of remote datacentre services, Transit is in a much stronger position to guarantee fulfilment of recovery time and recovery point objectives. Previously, Transit forecasted a requirement of up to 72 hours to get its systems data back online in the event of a disaster. Now, with a remote and centrally managed repository of WAN-connected data, Transit's worst-case recovery time objective is 12 hours. A best-case scenario could see recovery time down to just minutes.

"The real beauty of the solution is that HdS is just another node on the WAN. We can restore data at any office. So, in effect, the setup works as part of our business continuity programme," says Ganesan. "If we had a disaster we could potentially relocate to any office, where the data can be restored. As long as we can ship the hardware, the data doesn't matter. So, all the hassle of media and backup data devices is no longer an issue, which is critical for business continuity planning."

Demands for scalability have also been met, with data growth addressed by the simple addition of disk. "We don't worry about storage. We can grow as much as we want for a set fee increase. There's no drama, no downtime, no upgrades."