

## Hosted DR Solution for IBM i Gives Mining Company Two Offsite Recovery Points

By: Robert Gast

A day rarely passes when fate doesn't blindside an unsuspecting business with an event that disrupts its IT infrastructure. The result is often painful and costly, regardless of the circumstances that cause it. That's where a good recovery strategy comes in. With many backup, recovery, and disaster recovery (DR) options available in the IBM i marketplace, it's difficult to conceptualize which one best suits your needs. According to technologists who work in the Center of Excellence for JDE Support for Teck Mining Company in Canada, a solution offered by United Computer Group, Inc., (UCG) recently resolved Teck's challenging backup and recovery issues and yielded some unexpected benefits as well.

In December 2009, Teck Mining Company deployed UCG's VAULT400. VAULT400 is a business continuity solution for virtualized backup and recovery. It secures Teck's business-critical data by transmitting highly compressed and encrypted data packets over the web to two secure managed datacenters. VAULT400 is comprised of multiple components for data collection, compression, encryption, and replication. One agent resides on Teck's production System i model 800, and another component called a Director runs on a Windows server and stores the backup to a SAN at the pair of data centers that UCG hosts. Teck's second and third data sets are available for immediate, user-initiated recovery 24x7x365.

Teck, according to its website, is Canada's largest diversified mining company. Headquartered in Vancouver, British Columbia, Teck operates in more than 20 countries and mines natural resources such as gold, coal, copper, zinc, and other specialty metals. Teck employs approximately 9,500 people globally, and in 2009 it booked nearly \$7.7 billion in revenues. Over the past few years, Teck shifted its computing strategy from one that called for IBM midrange systems running JD Edwards EnterpriseOne and World situated at each site to a virtualized strategy with control centralized in Vancouver. In part, Teck made this decision because of the limited computing skill sets available at desolate areas where the mines often exist. Although many of Teck's mining sites now operate under the new virtualized construct, others continue to run their own systems with assistance from their partners in Vancouver. Still, Teck's new standards for IT, which are in part driven by Sarbanes-Oxley (SOX) legislation, apply to all its facilities. Such is the case for Teck's operation at Highland Valley Copper, a mine situated about 35 miles southwest of Kamloops, British Columbia.

Teck previously relied on a tape-backup routine that included daily, weekly, and monthly saves. Aside from being relatively labor intensive compared to an automated system, tape backups left Teck vulnerable to common tape failures. Furthermore, roughly two hours had to be carved out every night to run backups. During this time, users couldn't access their apps, and batch jobs had to wait in the queue. Decision-makers at the corporate level decided to implement a unified backup and recovery strategy that included a high level of automation, offsite replication, and technology that could accommodate limited bandwidth and facilitate a full recovery in less than 48 hours. In response to corporate directives, technicians at Teck's Highland Valley Copper site began to investigate disaster recovery options.

Mario Amantea, a member of Teck's Center of Excellence for JDE Support, began to help the Highland Valley team find a suitable solution that met the company's stated criteria. Amantea's search unearthed VAULT400. UCG explained its tiered recovery options that accommodated 1-, 12-, and 24-hour recovery windows. UCG also presented an option called DR Quick Ship that involves the shipment of a preconfigured replacement system within 48 hours.

## **Vaulting Fits New Disaster Recovery Strategy**

Teck sat in on a web-based demonstration, decided that VAULT400 met its technical and budgetary requirements, and opted for the 24-hour DR recovery option. Implementation was straightforward, and the vault was seeded in less than four hours, with VAULT400 compressing 125GB of data to 40GB. According to Teck's Larry Holm, the technician tasked with managing the implementation, "I arrived at the Highland Valley site at 8:30 a.m. and was finished by lunchtime. The installation was all menu driven and really easy. At first, our firewall blocked our transmission out, but we quickly diagnosed the problem and created an exception within the firewall." [Figure 1](#) shows VAULT400's initial screen.

In early December 2009, an initial test was conducted in which technicians from the mining company, aided by a recovery specialist from UCG, restored access to all Teck's core business applications over a VPN connection that tunneled through Teck's Vancouver facility. "We told everyone that we were simulating a disaster at a specific time and date," said Holm. "First, UCG configured an iSeries environment that mirrored the one in Highland Valley. We obtained temporary codes for our applications, and once the system was ready to go and we had our devices connected to it, we entered our password and were back in business." To check the integrity of the remote system, Teck ran payroll along with a few applications on the purchasing side. The outcome matched earlier benchmarks obtained from the Highland Valley system.

After the test, UCG provided Teck with several documents, including a 49-page DR plan detailing the processes that occurred throughout the test to serve as proof of recoverability. In short, it took 147 minutes to prepare the hosted system for recovery. This included the installation of the operating system at the appropriate release level, a disk configuration rebuild, the installation of logical partitions and PTFs, and the configuration of a TCP/IP connection. It then took UCG 381 minutes to restore user profiles, user libraries, and the IFS and perform all remaining necessary tasks before going live. "On our first pass, we were able to recover in roughly one fifth of the amount of time that we specified as our RTO [Recovery Time Objective]," said Holm. "Elsewhere in the organization, where the computing environment is completely virtualized recovery procedures take about the same amount of time."

## **Online Automated Backups a Bonus**

Holm adds that Teck didn't license VAULT400 necessarily for its online backup and restore capabilities, but the company is finding these features helpful and is now using them extensively. Encrypted files are immediately available online, which is much easier than going offsite to locate the tape and the specific file. Frequent incremental vaulting backup intervals are used to satisfy daily, weekly, and monthly backup requirements and maintain parity between Teck's production system and its offsite backup. "The backup solution was a bonus for us. Because we're managing as much of this operation as possible from hundreds of miles away, we were relieved when we realized that we didn't need to have people mount tapes and run backups," says Holm. "Once everything was set up, it was a runaway, and there wasn't much to do. Now we can do backups on the fly with no downtime, and it's completely automated."

To prove that Teck's data was accessible and recoverable, Holm deleted several files on Highland Valley's server. He then accessed the data from VAULT400, drilled down to the files he needed to restore, tagged them, and in a few seconds verified that they once again appeared on the Highland Valley Copper production server.

## **An Economical Choice That Scales**

When considering whether to use an in-house solution, Teck factored in the costs of human capital, hardware, software, and offsite storage hardware, and the price associated with implementing VAULT400 was much less. "We weighed the value of re-platforming the Highland Valley Copper site to conform to our virtualization initiative and also considered making another machine available. But besides requiring hardware, we'd need staff," said Holm. "Then, we'd need a way to replicate the data across to that machine. We looked at all the prices, and VAULT400 really stood out as the most cost-effective option. And when our vaulting requirements grow, VAULT400 will accommodate us."

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