

Case Study: City of Airdrie, Canada

Double-Take® Software Customer Profile

Company: City of Airdrie, Canada
Business: A city in Alberta, Canada, located just north of Calgary with a population of 1,107,200 (in 2006)
Needs: Real-Time Replication, Failover and Migration in a VMware Environment; Flexible DR Tool

About the City of Airdrie

The City of Airdrie in Alberta, Canada knows a disaster can happen anywhere, anytime, any place. To ensure the City is prepared to provide a prompt and coordinated response to a disaster, they implemented a comprehensive Disaster Recovery (DR) plan. In addition to protecting the people of Airdrie, another critical component of any DR plan is to make sure the City's data and business critical applications are protected at all times. As a municipality, the City of Airdrie needs to ensure they have an accurate, up to the minute copy of their data at an offsite location at all times. This data is essential to the City because it contains information about taxes, licenses, permits, and other data required to maintain City services. As it is essential to guarantee this critical information is protected 24/7, the City of Airdrie requires a real-time data replication and failover to an offsite DR location.

Working with a DR consultant, the City of Airdrie looked at several DR products to meet their needs. One of the key requirements was real-time data replication and failover for remote availability. Once they evaluated the Double-Take® Software suite of products, it was an easy decision for the DR team.

"Double-Take was a great fit for our organization because it provided all of the required capabilities for remote availability in one product," said Paul Hurst, Network Administrator, City of Airdrie. "Due to its flexibility, real-time data replication, and automatic failover, Double-Take was the solution of choice to complement our backup and restore strategy."

"Double-Take is an Intelligent Tool"

The implementation process for the City of Airdrie was very unique. Since the City knew they were implementing Double-Take within a VMware environment, none of the virtual machines (VM) had been created yet. The implementation process began when the Double-Take Software engineer arrived on-site. The City of Airdrie created a total of seven VMs including a domain controller in exactly four hours. What would normally have taken them at least one full day in most environments took them only four hours with the joint solution of Double-Take Software and VMware. Even more impressive is the entire environment was up and running in four days, which normally takes two weeks.

To do this, the City of Airdrie leveraged the intelligence within the core Double-Take product to learn their environment, modify it as needed, and transition the solution into production. During implementation, the City took advantage of the advanced functionality within Double-Take Application Manager (DTAM) and Virtual Recovery Assistant (VRA).

DTAM is a unified console where the City of Airdrie can manage all of their application protection options. It automates the setup and configuration of real-time protection and application availability management for the City's business-critical applications and services. Features such as auto-discovery of servers and key application-related data files helped to simplify the process down to four steps reducing the risk of human error. VRA also allowed the City of Airdrie to set up protection from a physical or source machine to a VMware VM target. By using this virtual replication appliance to replicate data directly into the virtual disk, the target VM does not need to be running. VRA was also able to provision the target VM for the City and monitors the protected source machine.

Remote Availability for Business-Critical Applications

Today, the City of Airdrie utilizes Double-Take to protect the following applications: Microsoft® Exchange 2003, SQL 2000, BlackBerry Enterprise Server (BES), and File and Print Servers, as well as custom application servers such as Avanti, CAMALOT and Fleet Management Software.

"The beauty of this solution is that since Double-Take is hardware and application agnostic, we were able to leverage our existing infrastructure," said Hurst. "We didn't need to purchase any additional hardware or software to make it work."

The City of Airdrie is using Double-Take to replicate the production environment to a separate DR Site where they maintain a fully replicated version of Exchange, SQL Server, and files used by the organization. They also maintain a Domain Controller, Global Catalog and DNS. The City's production environment is connected to the DR Site with City-owned Fiber so replication to the DR Site is quick. Since the fiber is City-owned, their risk of an outage has been minimized (compared to an ISP solution with service level agreement). In regards to the Exchange and BES environment, the City of Airdrie replicates all mailboxes and public folders to the DR Site. They also replicate the SQL environment consisting of payroll, municipal information as well as data responsible for custom internal applications.

"In the event of a failure at our primary site, we know Double-Take can protect the City's critical data and failover to the remote site as needed," said Hurst. "With the Double-Take solution, the remote facilities can continue to operate as though nothing has happened and we know the restore process can happen quicker. In fact, the key in this situation is that in the event of a failure, we can worry about getting the environment back online instead of worrying about the City coming to a halt."

Using a hardware-independent solution like Double-Take allows for a myriad of uses not possible with other solutions. The City of Airdrie is looking to leverage the benefits of virtualization and will perform server migrations using VRA in the future.

"We are looking at performing server migrations using Double-Take Software products, primarily VRA to migrate our Physical Servers to Virtual Servers. This provides the organization with an ability to retain legacy software still in use while performing critical EOL replacement of critical boxes," added Hurst.

Future Plans: Migration, Enhance DR and Growth

With Double-Take and VRA, the City of Airdrie can migrate their physical servers to virtual services and give them the ability to retain legacy software still in use while performing critical migrations. Performing migrations to new hardware or any other project requiring moving data from one storage device to another is possible and efficient with Double-Take, and there are no distance limitations. Best of all, there is no installation or training required every time new hardware is added. The City of Airdrie simply connects the new storage to a host already running Double-Take, and then defines the data to be replicated.

"I'm proud to say we use Double-Take. It is a very cool product and it works," said Hurst. "The intelligence in the product to know what works and what needs to be fixed is amazing. It's just a very cool product."

Additional Information: The City of Airdrie's DR site consists of the following hardware and software:

Servers

- Dual DL380 Hewlett Packard Servers consisting of Dual Xeon Quad Core Processors
- Dual Host Bus Adapters
- Dual GigE Network Cards
- 20GB of RAM
- 600GB of Local Disk (Used as backup disk in event of SAN Failure)

SAN Switch

- HP StoraWorks 4/8 SAN Switch
- Avocent KVM over IP Switch

SAN

- HP Storage Works MSA2012FC (2 Shelves)
- Consisting of 12TB of SAN Space
- Carved into 2TB Chunks
- RAID50

UPS/Power

- Eaton PowerWare UPS
- Generator Power >=30 Seconds

Network

- Cisco 3560 Core Switch

Software

- ESX 3.01 – Host Servers
- Windows Server 2000 – Service Pack 4
- Windows Standard Server 2003 – Service Pack 2
- SQL Server 2000 Standard Edition – Service Pack 4 + Hotfix 8.00.2040
- Exchange Server 2003 – Service Pack 2

Hardware Configuration

- Servers consist of Dual Power Supplies to redundant Power Sources
- Servers have Dual HBA's connected to Fabric
- Servers have Dual Network Cards to Single Switch
- Servers have local disk to provide storage in event of SAN Failure the DR Servers could be rebuilt on local disk

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