IPC Logistics Relies on Hitachi High-Availability Technology to Deliver Cloud Service With 99.99% Uptime

IPC Logistics Corporation (IPC) is the industry-recognized leader in providing complete Aviation Data Solutions to a wide range of aviation clients via the IPC Online Aviation Scheduling Integration Service known as OASIS. IPC is required to maintain a serious level of availability, roughly 99.99% uptime, or less than 1 hour of downtime per year in order to service their clients effectively. IPC meets these challenges with Hitachi Data Instance Manager (HDIM). This single-application solution protects all physical and virtual machines (VMs), and provides real-time replication, real-time continuous data processing (CDP) and live backup.

The IPC Environment
The IT Infrastructure at IPC consists of a mix of physical and Microsoft® Hyper-V® application servers and Web servers. For the past 2 years, IPC has had performance and configuration problems running their previous purchases of (Symantec) BackupExec and (Vision Solutions) DoubleTake software to help back up and replicate their entire server infrastructure.

IPC recently embarked on a full virtual upgrade consisting of highly available Dell servers running Microsoft Windows® 2003 and Windows 2008.

Each physical Dell host serviced multiple performance-hungry Windows Hyper-V VMs.

Critical Issues
IPC is currently delivering over 7,000,000 records of real-time data to clients each day. All data is related to important aviation logistics. IPC serves data on a 24/7/365 basis.

The previous backups were heavy and slow on both physical systems and VMs, and restores were unreliable. The previous replication method, implemented for VM failover, required exact
SUCCESS STORY

“Besides the great reduction in infrastructure investment for around the clock real-time protection, we estimate that we have reduced administrative costs and time by over 300%. We are eager to take advantage of the new solution’s enhancements.”

Pete Musacchio
President of Operations
IPC Logistics

operating system machines for mirrors, and any changes to the configurations resulted in drawn-out service calls.

**Before and After Scenarios**

IPC not only consolidated VMs onto fewer host machines, but they also enabled real-time protection of Hyper-V images with full deduplication and multiple recovery point objectives (RPOs).

**IPC Unifies Real-Time Replication With Live Backup and CDP**

IPC implemented a planned upgrade of their Dell hardware and networks. When the new machines arrived, they decided to research real-time replication alternatives for Windows as well as real-time backup and CDP. Hitachi Data Instance Manager caught their attention.

IPC was intrigued because HDIM offers a single Windows application to handle “zero-window” backups and CDP for physical machines and VMs for their entire all-Hyper-V infrastructure. It also provides real-time replication of VMs, hosts and virtual hard disk (VHD) files.

IPC began with using HDIM replication capabilities, employing its real-time changed-byte transfer to move VMs across the network to a secure site for failover. To their surprise, the Hitachi solution allowed IPC to replicate data to different operating systems (Windows 2003 to Windows 2008 R2), and to select data based on flexible data classifications. IPC standardized on replicating live VHD files to standby physical hosts.

IPC then began mixing continuous back-ups of the physical hosts and the individual VMs using HDIM backup and CDP tools. Ultimately, IPC began sending data to both the HDIM repository for backup and backup snapshots, and to the failover Hyper-V host to enable standby servers for their critical applications.
 Workflow for Data Management and Protection
IPC was able to create hosts and VM groups in Hitachi Data Instance Manager for easy application of certain policies and data flows. This allowed for whole-environment policy changes within seconds. After running HDIM replication, live backup and CDP, IPC was able to:

- Fail over VMs in minutes with real-time consistency (see Figure 1).
- Restore entire VMs to other Hyper-V hosts within minutes.
- Restore specific files within any machine, as needed, within seconds or minutes.

Solution Results
With Hitachi Data Instance Manager, IPC now boasts 99.99% uptime, and is able to recover and restore VMs in seconds and on the fly. If a VM or host is corrupted or fails in some way, they can rebuild the Hyper-V host or VM at will.

Unified Data Movement
When data recovery, restore and recovery functions are separate, there is an unaccounted cost that comes with such separation: bandwidth impact, I/O impact, CPU cycles, and so forth. IPC learned that by unifying such functions into a single solution with a shared framework, they could avoid redundant use of valuable resources.

Performance
Backup windows no longer exist, and snapshots are offloaded to the HDIM repository, thus eliminating the processing load from the VMs and their hosts.

Flexible RPO
Retention of any snapshot is tuned to IPC's needs: 1 hour, 1 day, or several years, with almost no added capacity impact.

Administrative Workload Unified
The unified HDIM approach saves huge amounts administrative time and allows 1 person to administer the whole environment with multiple tools and a single workflow.

Figure 1. HDIM User Interface: Failover and Backup