HP Continuous Access pays off in Visa EU's complete IT infrastructure upgrade

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VISA

"HP is the obvious choice for us. They offer leading technology that meets our business requirements, coupled with the ability to deliver against stringent deadlines. Now we have the infrastructure that allows us to deploy new applications and services easily."

– Vice President of Corporate Systems John Barcock, Visa EU

Business need:
Based in London, England, Visa EU is one of six autonomous regional organizations that make up Visa International, a leading provider of payment solutions for financial institutions throughout the world. Visa EU needed to make substantial upgrades to its corporate IT infrastructure, which delivers applications and services to its member institutions, including reports, customer case histories, and other critical information. Although corporate IT doesn't process actual transactions, it supports the regional processing centers that do. Visa EU's objectives included:

- Upgrade corporate IT's disaster-recovery and business-continuity systems;
- Provide for rapidly growing data and application needs within a distributed and complex IT environment;
- Move the London headquarters over a *single weekend* – a significant challenge to Visa EU's IT team.

HP solution is on the money for Visa EU
To ensure business continuity and a robust disaster-recovery capability, Visa EU installed two storage area networks (SANs) at two different sites 117 kilometers apart, each with an HP StorageWorks Enterprise Virtual Array 5000 (EVA5000) and HP StorageWorks Continuous Access (CA) for EVA software. A fiber-optic, wide-area link synchronizes the SANs, providing rapid data transmission and disaster recovery. HP OpenView Storage Area Manager software monitors them efficiently, and an HP StorageWorks ESL9595 tape library provides additional disaster recovery at a third site. The SANs integrate with three clusters of the HP StorageWorks NAS e7000, which provide a gateway to the EVA5000-based SANs for Visa EU's file-level data. This fusion of NAS and SAN limits the need for expensive and complex integration and management so that all servers – including file servers – integrate into the SAN for complete centralized storage management.

A critical feature of HP storage technology is its ability to provide high-speed data transmissions over existing, standard data networks such as Fibre Channel over IP. In this case, Dense Wavelength Division Multiplexing (DWDM) over dark Fibre Channel was available to Visa EU. The EVA5000 systems use this to replicate rapidly between sites. A Cisco local area network (LAN) infrastructure integrates the servers and EVA5000 at Visa EU headquarters.

In addition, Visa EU consolidated its 90 IBM servers to an integrated server farm with a combination of 80 HP ProLiant DL- and ML-series servers, with production servers at headquarters and backup servers in the regional processing centers for disaster-recovery purposes. Visa

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EU's Vice President of Corporate Systems John Barcock and his team use HP OpenView technology to manage the servers, which includes a "call home" feature that notifies HP automatically if a disk is in danger of failing so that immediate preventive action can be taken. They also installed HP 950 HPTFT monitors and a variety of HP printers.

To ensure a rapid installation, Barcock and his team engaged HP Services to provide project management services for the challenging headquarters move. HP Services also configured and installed the SANs as well as the Cisco LAN. Barcock sums up why they chose HP: "We felt they had our best interests at heart, they were price competitive, they had the right strategic fit, and they were prepared to go the extra mile for us."

Visa EU's new IT environment leverages the HP Adaptive Enterprise architecture to deliver a storage utility through virtualization. HP provides adaptability where business and IT are synchronized and ready to embrace and capitalize on change. Explains Barcock, "We stay at the leading edge of technology solutions, which entails rapid and often unpredictable growth. Robust IT is essential for delivery of exceptional service to them. HP has provided it."

The agility to upgrade an entire infrastructure on the fly

Perhaps the clearest proof of HP-enabled agility is the ease with which Visa EU completed its IT upgrade – even as it physically moved its London headquarters. "We decided to use the move as the impetus to upgrade our infrastructure," notes Barcock. "But then management said they wanted to achieve it in a single weekend. We knew it was going to be a challenge."

HP Services made it manageable. Barcock says, "They helped us select products, configure the storage system, configure the networks, and get everything to work together correctly. That allowed us to focus on our business and on the more strategic aspects of the project."

The result? "When our people came into work on Monday after the move, they were able to start using the new system within minutes," notes Barcock. "Their reaction was enthusiastic. Our feedback, from the first, has been that the system is faster and more stable. Surveys show that user satisfaction is up 30 percent. In addition, our people point out a number of specific improvements reflecting a more stable infrastructure. For instance, SAN pooling makes it easier for the system to handle unusual data loads such as color printing – much to the delight of our users."

A safe place for financial data

The changes to Visa EU's disaster-recovery and business-continuity capabilities were also profound and measurable. "After 9/11, we did a study of how long it would take us to recover from a major disaster," says Barcock. "With the previous infrastructure, we would be faced with rebuilding the system a server at a time and restoring data from tape backups. That could take at least 24 hours for a significant failure, and under certain rare circumstances, it could take up to 11 days to fully recover."

With remote, real-time data replication and rapid transmission between the two sites, the HP Continuous Access software has changed all that. "Now, in the event that one site goes completely down," says Barcock, "we can have a full restore from the other remote SAN in one hour with only a few mouse clicks. In the event that *both* SANs go down, we can do a complete restore from our HP ESL9595 tape libraries at a third site, in less than 12 hours. Also, where it used to take us 36 hours to perform a full backup, we can now do it in less than 10. I can tell you I sleep a lot better at night with this system."

In addition, HP Services installed an HP StorageWorks Multi-Site Disaster Tolerant Solution blueprint. "This solution allows a completely non-technical person, if necessary, to run the CA EVA software to achieve complete failover," says Andy Martin, Barcock's technical design authority. "I could walk someone through the steps by phone in a few minutes."

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Barcock is also pleased with the fault-tolerant capabilities of the EVA5000. "Under the old system, failure of a single disk could bring down an entire system. Now if a disk fails, we can remove it from the pool and replace it, with no downtime."

An extensible HP solution provides greater return on IT assets

The HP StorageWorks solution can adapt to rapidly growing application and data demands, yet control costs, improve efficiency, and free VISA EU's IT team to focus on providing new and better services for its customers.

VISA EU regularly engages in special projects and new application deployments for its members and regional processing offices. One example is a new remedies system. Notes Barcock, "Previously, we would have to devote substantial design time, as well as resources, to make necessary modifications to our infrastructure. We might have to buy new servers, find physical storage space for them, determine whether we had enough power, and so forth. Now we have the infrastructure that allows us to reallocate existing storage capacity to accommodate new applications. If we do need to add capacity, we simply drop new disks into the storage pool. Gone are the days when the IT staffers have to stop and scratch their heads over how to handle new projects."

Andy Martin elaborates: "For the new remedies application, we simply placed an 'empty shell' (server with no disks) into production at headquarters, placed another 'empty shell' server at the regional processing office (for disaster-recovery purposes), tied them into the SAN, and started running the applications. It's quite nice."

A key to providing such cost savings and convenience is HP's virtualization technology, which maximizes Visa EU's disk capacity utilization to cut costs and improve performance. If a particular database receives heavy use threatening system performance, the Virtual RAID striping feature of the EVA5000 intelligently spreads data around the pool, eliminating I/O "hot spots." "It allows us to stay on top of data needs and reallocate storage capacity to where it's needed for greater efficiency," says Barcock. Moreover, Barcock and his team can manage Visa EU's entire storage data pool using the simple, GUI-interface Lite Touch software that comes with each EVA5000.

Barcock also points to the efficiency of the SAN infrastructure itself. "We need 10 fewer servers," says Barcock. "We also have lower costs per server by using shared storage."

Going forward, Barcock has great confidence in HP's ability to keep Visa EU at the forefront of financial services and payment solutions. "HP was the obvious choice for us. They offered leading technology that met our business requirements, coupled with the ability to deliver against stringent deadlines." Barcock is particularly pleased with the quality of HP's people. "Their people are very good, very pragmatic. They go beyond the hype and really do try to meet your needs. Many of their people went well beyond the call of duty." Andy Martin concurs in assessing the capabilities of his partners in HP Services: "They are technically proficient and not afraid to get their hands dirty to solve a problem."

About Visa EU

Visa EU is one of six autonomous regional organizations that make up Visa International, a leading provider of payment solutions for financial institutions throughout the world. Based in London, Visa EU serves more than 5,000 member institutions in Western Europe, Israel and Turkey, who have issued some 211 million Visa cards. Visa's goal is to create global standards for interoperability, security and new technologies, so that end users can use their cards to pay for purchases "anywhere, anytime and in a manner they choose." Robust information technology is critical to achieving these business goals.

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Challenge

- Upgrade the corporate IT infrastructure, including disaster-recovery and business-continuity systems
- Move the London headquarters IT infrastructure over a single weekend
- Provide for rapidly growing data and application needs within a distributed and complex IT environment
- Improve server manageability and establish a centrally managed storage pool

Solution

Hardware

- 2 HP StorageWorks Enterprise Virtual Array 5000 (EVA 5000) systems configured in 2 separate storage area networks (SANs) which are 117 kilometers apart
- 6 HP StorageWorks NAS e7000 servers in 3 stretched clusters
- HP StorageWorks ESL9595 tape library
- 4 HP StorageWorks Network Storage Routers
- 4 HP StorageWorks B-Class Core Switches 2/64
- 80 HP ProLiant DL- and ML-series servers
- Metro optical Dense Wave Division Multiplexing link over dark Fibre Channel
- Cisco-based local area network (LAN)
- HP 950 HPTFT monitors

Software

- HP StorageWorks Continuous Access (CA) EVA software
- HP StorageWorks Multi-Site Disaster Tolerant Solution blueprint
- HP OpenView Storage Area Manager
- Microsoft Windows 2000 Server for the ProLiant servers

HP Services

- Overall project management
- Configuration and installation of SANs and Cisco LAN

Results

- Moved Visa EU's entire corporate IT infrastructure in a single weekend, added 2 remote SANs, and improved management of 80 servers.
- Improved user satisfaction with IT by 30 percent, due to a more stable and resilient infrastructure
- Decreased time for complete recovery from disaster from 24 hours (and in certain rare cases, 11 days) to no more than 1 hour, achievable with a few mouse clicks
- Lowered costs due to reduction of server count from 90 IBM servers to 80 smaller HP DL380 and DL360 servers, and networked storage
- Enhanced manageability due to consolidation of distributed servers with individually managed storage to a centrally managed storage pool
- Improved ease of deployment for new applications and services due to greater capacity utilization and extensibility of the HP Adaptive Enterprise infrastructure.

For more information on how working with HP can benefit you, contact your local HP representative, or visit us at www.hp.com.

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