

Datacenter Migration Services

SAVVIS: An Industry Expert

SAVVIS has deep experience migrating critical on-line systems for our valued clients. Our history of data center mergers and acquisitions motivated SAVVIS to develop a global and local team of experts from all system disciplines with one central goal: Ensure that our clients' critical on-line systems never miss a beat during the entire migration process.

Over the years clients have found that migrating environments, though complex and time consuming, has many advantages. Moving to a higher quality and higher capacity data center allows many clients to maintain and exceed system and application availability objectives.

Among the advantages is the ability to review and improve site design, architecture and performance. In addition, the updated documentation created during the process helps with overall site operational management.

Following are examples that qualify SAVVIS as an expert in client data center migrations.

Federal Agency Case Study

SAVVIS Federal Systems (SFS) managed the datacenter migration for a major government agency during its prime season. This agency could not risk any downtime, since it had substantial industry-facing and intra-governmental interfaces. Any downtime or missteps in the migration would have resulted in the agency losing money and credibility.

The migration included two sites, approximately 90 servers, associated network equipment, little documentation on existing sites, and a target of zero downtime. The migration also included a disaster recovery (DR) site.

KEY FEATURES

- Customers Migrated – 1400+
- Datacenters Involved – 26+
- Total Square Footage – 350,000+
- Network & Server Devices – 27,000+
- Data Circuits Migrated – 3000+
- Clients include numerous Fortune 500 companies in datacenters around the world.

SFS worked closely with the client to create a project schedule that met the desired 90-day migration timeframe, with no operational impact to the business parameters.

SFS exceeded the agency's expectations by delivering the new IT infrastructure services ahead of schedule, with zero downtime and with no interruption whatsoever to its business model.

SAVVIS PROFESSIONAL SERVICES

SAVVIS Professional Services supports the complete standard product offering tailored to the unique requirements of Federal clients, and also provides unmatched expertise in the following custom solution specialty areas:

- Compliance
- Business Continuity & Disaster Recovery
- Security
- Infrastructure
- Migration Solutions Services
- Program Management Services



eCommerce Case Study

The client in this case supported multiple business verticals, four different operating systems and a wide variety of shrink-wrapped and custom applications and databases inside a common physical footprint. This client had implemented a common network infrastructure and a shared backup and storage solution. This model allowed a single IT group to support multiple business verticals with 24/7 network storage and backup support. Each business group shares the hardware costs of storage, backup, and network equipment.

This client involved SAVVIS extensively in the preparation of the migration strategies required to move their environment between sites. The SAVVIS team comprised pre-sales, project management and consulting personnel, and was engaged from Day One of the migration planning. The SAVVIS team attended multiple strategy meetings with each of the client's business vertical teams to define the specific needs of each of these individual groups, and to gain an understanding of the function of each eCommerce application. The information gathered in these meetings provided the initial requirements of the first revision of the project plan

Sample Migration Project Plan

The project plan and other supporting documentation, which included network topologies, floor plans, and vertical rack layouts defined from the planning meetings, were used in the creation of migration budgets and schedules for moving, construction, hardware and re-certification. This documentation also allowed SAVVIS to configure the physical environment, and install and test power, Ethernet and fiber patch panels, weeks before the servers were due to be moved.

The largest hurdles identified in the planning meetings were the minimal downtime requirements of the eCommerce sites. SAVVIS and the client's engineers defined a plan to allow half of the servers to remain in place and half to be migrated to the new site, allowing the servers to communicate once reinstalled. In order to provide for such aggressive migration schedules, SAVVIS and the client engineers decided that the network and data support services needed to be installed, configured and tested before the migration of the servers could begin.

To deal with the requirement to have synchronized data at two sites simultaneously, SAVVIS and the client made a decision to install a new storage frame temporarily at the original site, replicate the data onto that new frame, and then transport the frame to the new site. Using the SAVVIS IP

backbone, five 100 Mbps tunnels between the data centers were created. Utilizing port channel technologies, three 100 Mbps connections were combined to create a single data replication path for asynchronous replication between the frames. By implementing this solution, the client was able to synchronize the frames on-site and then provide for the delta changes over the 300 Mbps tunnel, minimizing replication bandwidth requirements. This allowed the client to have all the data at both locations simultaneously.

Creating Layer 2 trunks over the remaining tunnels, between data centers, solved the network continuity issue. Once the servers were moved between data centers, the servers were able to re-establish connection to the both the original and new environment. Once the first wave of servers had been moved and tested, the second wave of servers were migrated. Extensive testing was then performed to verify the operational condition of the site.

After final testing, all client traffic was rerouted over the new network and all connections to the original site were removed.

The migration was a complete success. SAVVIS met all migration requirements for this client and its business verticals. The migration also provided the client with new updated documentation, all new support hardware, racks, and patch panels for both fiber and copper. More than 500 servers were moved with no more than two hours of down time per individual business group. SAVVIS managed all phases of this migration, which included third party contractors for cabling, moving and re-certifying the equipment. The SAVVIS consulting and hosting group provided all the support for un-racking, re-racking, cabling and testing of the servers.

Interactive Marketing Case Study

SAVVIS managed the data center migration for a major online direct marketing client that had recently been acquired by a parent corporation. SAVVIS' client needed to migrate their 26-server architecture from their data center in Washington, D.C. to a new location in Boston, Massachusetts. The migration had to be completed in less than five weeks, and the traffic flows of roughly 40 Mbps could tolerate zero downtime.

Once again, the SAVVIS migration management team was heavily engaged during the planning phase of the project. The fact that the client was using SAVVIS Intelligent Hosting managed services was a primary factor in the migration plan. The client did not have a DBA on staff, and relied upon the SAVVIS Managed Services team to provide a stable, reliable



platform for their database. In addition to DBA support, SAVVIS provided backup and restore services for the client, which was a critical element of being able to swing the site north without losing data, or revenue, for the client.

To achieve the client's goal of zero downtime, SAVVIS proposed the creation of a "swing" site architecture using loaner gear that could roughly duplicate the capacity of the client's production site. Since the client utilized SAVVIS Intelligent Hosting, most components of the client's architecture were available from inventory on a loaner basis. In two weeks, SAVVIS had allocated loaner hardware, built all replacement devices, and had the swing site ready for client code.

As if the short time frame and lofty technical goals were not challenging enough, the operational circumstances of the client's internet-based business soon threw another curve at the migration team. The client had recently started serving ads for one of the major search engines ad was therefore subject to more visibility and higher traffic loads. This introduced two issues for this fast-growing client in the middle of the migration. First, the client experienced a series of Denial-Of-Service (DOS) attacks that targeted the network infrastructure. In addition, the client's traffic began to increase by a significant margin. As a result, the client's firewall infrastructure was not able to keep up with the high number of very brief connections that are common in ad-serving environments.

SAVVIS had to revise the project plan to help compensate for these two major issues while still keeping the five-week goal in sight. First, SAVVIS called in its Managed Security Service (MSS) team to assess the implications of the DOS attacks. The offending attacker was identified and isolated from the client's infrastructure using traffic filters, and a SAVVIS-managed Intrusion Detection System (IDS) was installed for future forensic analysis.

After careful consultation between the client and SAVVIS Consulting Services, it was concluded that the client would upgrade their front-end networking infrastructure in the new Boston data center. The network topology was updated, and using the recommendations of the SAVVIS Consulting Services team, the client procured the hardware on an expedited basis.

In summary, a remarkable amount of work was achieved in a very short period of time. These achievements were made possible by the expertise of the SAVVIS Migration practice,

as well as the flexibility of the SAVVIS Intelligent Hosting platform. The SAVVIS Managed Security and SAVVIS Consulting Services groups were leveraged to address some of the unexpected developments during the course of the migration. Few other service providers would be able to bring these kinds of resources to bear on a project of this complexity.

About SAVVIS Federal Systems

The parent company, SAVVIS, Inc. (NASDAQ: SVVS) is a global IT Utility provider that leads the industry in delivering secure, reliable and scalable hosting, network and application services.

SAVVIS' strategic approach combines the use of virtualization technology, a utility services model, and an increased usage of automation software management and provisioning systems for enhanced customer performance.

As one of the world's largest providers of IP computing and communications services, comprehensive hosting services, and digital content services, SAVVIS allows customers to focus on their missions rather than focusing on their IT infrastructure.

SFS offers the entire SAVVIS solution set to Federal agencies and their contractors, via the GSA Schedule 70. We are pleased to be a subcontractor to small and large businesses, with proven performance credentials for providing best-value solutions to Federal clients.

Our solutions approach is to collaborate openly and honestly with our clients and partners, to design and implement end-to-end IT infrastructure solutions that support their mission-critical applications.

For more information about the broad range of services that SAVVIS Federal Systems offers to its customer base, please visit us at www.savvis.net/federal