



## New Data Center Buildout and Data Migration

# case study

### Overview

Business decisions to migrate data centers can be driven by many things such as an IT cost reduction initiative, regulatory requirements, business service risk mitigation, a newer data center operation, or legacy data center environments that are incapable of hosting modern & dense IT infrastructure. Among the biggest risks organizations face when transitioning their Data Center is migrating IT systems and applications. A data center migration is a highly strategic project that must be executed without impacting business operations, Service Level Agreements, performance, availability and data protection requirements. Given the dynamic operational environment of today's data centers wherein applications and data are consistently changing, the most important things to acknowledge are the Data Center migration strategy, the migration plan and the many unique facets of the IT environment.

Our Client, Itelligence, is a leading, international, full-service provider of midmarket-focused SAP solutions employing 1800 dedicated employees. They had successfully implemented SAP solutions to more than 3,000 midmarket customers around the world. For over 20 years, Itelligence has been the recognized leader in SAP solutions for the mid-market. They provide mid-market focused SAP solutions from the start including SAP Software, Maintenance, Implementation Services, Hosting and Application Support. The American market is served by the Support Advantage Center based in Cincinnati (Ohio) where the Enterprise Support Team strives to consistently meet or exceed severity based service level targets for response times to new messages. Itelligence business has been growing exponentially and thus needed to move their data center into a world class center that can handle their growth. The issue they were facing is how to migrate their data center with a minimum impact to their customers.

### Keys to Success

- Project plan was maintained by a single source
- Created a team that defined the best set of solutions for the given environment
- Over 20 years of IT experience encompassing enterprise class technologies.
- Attention to the smallest details during the discovery phase
- A plan that was flexible to change in time and in tasks
- IBM SVC Global Mirror

### Challenges

#### *Time Constraints*

Faced with a data center relocation project just 8 months away, Itelligence turned to Infinium Technologies, Inc for a turnkey solution to Project Manage, Discover, Plan, and Execute their Data Center Relocation Project (DCRP). Itelligence trusted Infinium Technologies because of their vast experience in Enterprise Technology with Data Replication, Disaster Recovery, Cloning, Virtualization, and Data Migration. All of these areas are a smaller part of a complete data center relocation project.

## Products

IBM SVC Global Mirror

IBM DS8800

IBM DS4800

IBM AIX

IBM VIO

IBM TSM

VMWare ESXi

VMWare vCenter

Windows

RedHat Enterprise Linux

IBM Blade Center

IBM HS22/HS22V

IBM Power7

SAP

SQL Server

Oracle

### **Planning Obstacles**

Intelligence needed to move all their customers from one data center to the new data center with minimal downtime and at minimal expense. In addition to DCRP, the target data center was being built in a brand new building. The major challenge was being able to design a plan that would have flexibility when it came to dependencies and tasks within the project objectives while being able to distinguish small problems from the large ones to keep the project moving forward.

### **Multidimensional Complexities**

A data center relocation has many complex elements such as server migration, storage migration, data migration, size of data, bandwidth of WAN as well as SAN, storage compatibility, software driver compatibility, firmware compatibility, cable length, power availability, network ports, fiber ports, network configurations, SAN configurations, server configurations, cabinet availability, cabinet power, cabinet U capacity, storage requirements. A build out of a brand new data center in a brand new building brings all the above elements in addition to HVAC requirements, Halon requirements, PDUs, redundant power, single phase, 3-phase, circuit amps, security access, cabinet access, cabinet placements, storage placement, network placement, tape library placement, work zones, loading zones, staging zones, proper lighting, cable management, cabinet cooling, and equipment delivery.

### **Multivendor Coordination**

All of these elements had to be coordinated between the different vendors. Each vendor had tasks that depended upon another vendor and all of these tasks needed to be coordinated and adjusted. Multiple sub projects had to be tracked with multiple vendors interacting and potentially delaying the overall project.

## **Solution**

Every environment has its own challenges and one migration strategy does not fit every client environment. The bottom line consideration for a good migration strategy is a near-zero disruption of business services. This requirement drives a deeper and thorough understanding of the following major subsystems of a data center.

- **Applications** - Nature & Criticality that cater to different business services
- **Servers** - Shared hosting environments, Databases that host the applications or service logic.
- **Network** - Provides the access & security to information within Intranet, from Internet and VPNs.
- **Storage** - Storing data and the amount of disk space and the frequency of access varies greatly between different services/applications.

Performance & Service levels requirements - By necessity, moving or migrating services from one data center to another needs to consider all of these components. The level & effort for such due diligence is based on the current Data Center's application and Infrastructure portfolio, tolerance to unavailability

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of applications & services as well as time & budget constraints.

Infinium designed a plan that was flexible to change in time and in tasks. The flexible plan was essential to the success of the DCRP and was needed because of the following:

- unexpected construction delays of the new building
- unexpected construction delays of the data center
- failure of infrastructure components
- power fluctuations
- delayed shipments of equipment
- telco copper/fiber issues
- weather delays

## Keys to Success

The key to designing a flexible plan is defining the details in the scope of the project, establishing a budget, forming a team, and planning the project. Another very important element is paying attention to the smallest details during the discovery phase. The discovery included inventory of application software, inventory of hardware, developing a migration strategy, presenting technology alternatives for migration, organizing moving bundles, decluttering the move plan, analyzing risk, and create a back out plan.

### **Project Plan**

The overall project plan was maintained by a single source that coordinated the events from infrastructure teams, network teams, application support teams, project managers, reporting VPs, and Itelligence's customers. The migration strategy details were documented and each server as well as each customer was analyzed for migration risk. Unexpected problems could be addressed very easily and plans, tasks, and events could change without major disruption to the overall project. The project plan was made up of MS Project, Excel spreadsheets, as well as PDF & MS Visio documents.

*Thomas Runge, Vice President/CISO Itelligence, Inc. said " This is the biggest data center move that Itelligence globally ever did and it went flawless and the execution according to the plan fully supports and underlines Infinium's expertise and experience level – I could not ask for more"*

### **Team Collaboration**

Infinium and Itelligence created a team that defined the best set of solutions for the given environment. Without the team collaboration, the tasks could have never been completed under the time constraints. The team effort made a significant impact on reducing the cost of the overall project by selecting the right technology through the collaboration efforts of the team during the discovery phase. IBM SVC Global Mirror and VMWare provided many of the tools that performed the migration of over 180TB of data from one end of Cincinnati to the other end of Cincinnati.

### **Trusted Services**

Infinium's engineers each have over 20 years of IT experience encompassing enterprise class technologies. Infinium's knowledge and experience prepared Itelligence for the unexpected. No event popped up that Infinium did not already have an action plan because of their experience. Infinium's trusted

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**Geography**

Services Nationwide  
Services International, Europe,  
Africa, Central America

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Advanced Business Partner

engineers are not only good experienced leaders but are also very good listeners. Infinium prides itself on listening to their customers to find the real issues at hand and overcome those challenges and satisfy customer's needs and expectations.

## Summary

The first 6 months of the project were consumed with the planning, preparation, and testing with the last 2 of the 8 months used for the execution of the DCRP plan. The plan consisted of less than 4 hours of documented downtime for each customer (server) but averaged less than 20 minutes. Even with all the obstacles from various events and vendors, the customers never noticed anything beyond the communicated down time. A total of 180 TB was migrated from one data center to the other over a 4GB WAN using storage migration tools. Over 500 servers were migrated and over 400 devices were moved during those 2 months. Itelligence trusted Infinium Technologies because of their vision with Project Management, Discovery, Planning and Execution of the well laid out plan that was based on the collaboration efforts of Infinium and Itelligence.

## About Infinium Technologies, Inc.

Infinium Technologies, Inc. is a Georgia based corporation that provides IBM professional services centric to IBM Storage, IBM scalable e-Server products, as well as IBM High Availability, Virtualization and IT Management solutions. Infinium has set themselves apart in the marketplace by delivering professional consulting service focused on implementing and managing the top technical and business solutions available: AIX & Linux, IBM TotalStorage/SAN, SVC, TPC, HACMP/Highly Available Clusters, e-Business, pSeries, xSeries, OpenPower, Blade Servers, Tivoli Storage Manager, WebSphere, Apache, Oracle and SAP.