



THE TECHNOLOGY YOU NEED WHEN YOU NEED IT®

TOOLS FOR MAPPING APPLICATIONS: USING HERCULES TO HELP UNDERSTAND YOUR BUSINESS AND TECHNOLOGY DEPENDENCIES

Introduction

Data center optimization and relocation can result in tremendous savings for your organization. The process, however, necessitates mapping of the data center — a huge, complicated endeavor: Without sophisticated technology and an advanced approach, the cost of mapping can eliminate or severely diminish the savings.

Here is why: To support evolving business needs, most data centers are built ad hoc and over time. As a result, typically, there is limited knowledge of a data center's actual inventory and the interdependencies of its assets. This becomes a significant obstacle when an organization considers optimization or relocation. In both cases, a current mapping of the data center is required, which involves exhaustively identifying all assets and applications and figuring out their complex interrelationships.

Description of Problem and Goals

Knight Point began executing a datacenter relocation program for the US Department of Treasury's Financial Management Services (FMS) in 2007. The goal of the Program was to migrate assets from Hyattsville, Maryland to Kansas City and another data center location. Upon beginning the discovery, Knight Point learned that FMS maintained over three times the number of assets than previously thought and there was very little understanding of how

Knight Point Systems combines years of hands-on experience, a proven methodology and a proprietary tool, Hercules, to rapidly and thoroughly execute data center mapping. Hercules expedites both the data collection and analysis processes by quickly digesting asset, application, people and facility data and then defining their complex physical and logical interrelationships. Hercules is unmatched in its ability to process such a wide variety of data. Our consultants leverage the complete data center mapping constructed in Hercules to develop optimization and relocation strategies. Our methodology and use of Hercules allow us to rapidly assess data centers at a high level of detail. We then leverage our visibility into the data center to craft comprehensive optimization and relocation strategies. By providing data center mapping quickly and efficiently, we enable our customers to take advantage of the savings that relocation and optimization can offer.

this hardware mapped to applications and business units – and very little time to make it happen.

Unless an organization maintains a through Enterprise Architecture (EA) program – and keep an EA tool up-to-date, it is extremely time consuming and expensive to implement a full EA program in order to optimize or migrate an infrastructure environment.

Description of Approach, Rationale, Results, and Timeline

The overall driver for the relocation process and how it is executed comprise the business needs of the Financial Management Service. FMS employs a series of applications that support the Knight Point's Data Center Migration Services Federal Data Center Consolidation Initiative (FDCCI) functionality of the business and the overall mission. Detailed analysis of the application layer data allows the team to assess the overall impacts to the business during the relocation process and provide strategies to mitigate the risks and negative impacts to the Department. To plan successfully, it is imperative to have an in-depth understanding of the application environment to include: the business requirement(s) that each application fulfills, the application relationships, the business impacts, the costs associated with any downtime, the data inputs and outputs, application security, the application architecture, physical connection, technical application requirements, and recommended move strategies.

Knight Point met with each of the application managers or system development managers to collect the application or business area data required for creating impact clusters and relocating the data centers. Using a standard template in Hercules, the team members conducted one-on one sessions with each of the application managers to collect all pertinent information for each application:

- All Hardware (make and model, processing capability, storage etc.)
- Software (Versions and License Requirements)
- Detailed Telecommunications (All connectivity internal and external by type)
- Logical Application Design and Interdependencies

The output of this process included two critical documents: the application relationship matrix and the application outage schedule. The application relationship matrix provided a visual

representation of all relationships that exist between and among applications within FMS. These relationships include both upstream and downstream relationships, as well as the magnitude

Defining Impact Clusters and Move Groups

Using the relationship matrix and hardware inventory, Knight Point developed Impact Clusters. An Impact Cluster is a collection of application and infrastructure architectures that have one or more of the following relationships:

- Business – applications that have no technical dependencies but affect the same user group (business area);
- Technical – application and infrastructure architectures that have a technical dependency on one another; and
- Physical – applications that rely on shared hardware.

Each Impact Cluster is a logical group of hardware that should be moved together due to the relationships that each piece of hardware has with others within the group. Impact Clusters is the tool used to define the overall move strategy for each piece of hardware. Each Impact Cluster is assigned to a Move Group or wave in accordance with the FMS overall project schedule.

When organizing and arranging Move Groups, careful consideration was given to:

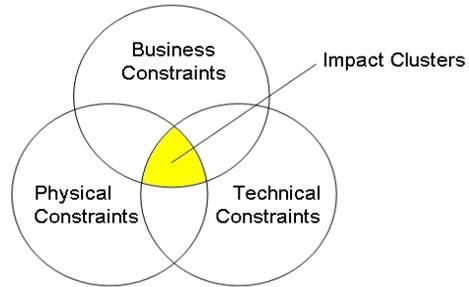
Results

Knight Point was able to utilize Hercules to capture application mapping data, including application-to-data center resources/resource utilization, application-to-database, application-to dependencies, Application-to-Technical Reference Model and application security requirements. The team worked with FMS stakeholders to validate mapping data to reflect data center conditions, and as changes occur, ensure such changes are

The Speed of Hercules at Linden Labs

Additionally, when the creators of “Second Life,” Linden Labs (www.secondlife.com), sought an evaluation of their data centers they turned to Knight Point Systems. Utilizing Hercules, we were able to map three distant data centers — totaling 7,900 servers — in less than 3 weeks.

of the relationship and effects that will be realized by the user community.



- Minimize end-user impact and down times;
- Infrastructure and facility migration constraints;
- Availability of resources (support, testing, etc.); and
- Impact on move complexity vs. application availability.

Upon completion of the Move Groups, an Outage Schedule was developed to represent the timeframes that each server and subsequent applications will be offline or have a degraded performance due to data availability and other relocation activities.

properly and accurately reflected in the mapping of applications. FMS stakeholders were able to graphically depict the relationships among all applications and hardware within the organization. This mapping led to the development of logical move groups for the execution of an organization-wide consolidation effort. FMS gained full visibility into their entire IT environment in a fraction of the time, and at far faster than implementing a full EA product.

After analyzing the information captured in the mappings, we developed and executed a plan to consolidate the data centers into one, negotiating significantly lower data and facility costs at the new location. Linden Labs achieved a return on their investment just 6 months after relocation and \$1.5 million in annual savings.