



Sprint Corporation - Case Study

About Sprint

Sprint Corporation is a Fortune 100 company with over 48 million customers and nearly \$36 billion in revenue. Sprint provides wireless services to 95% of American corporations. In addition to its well know retail products, Sprint provides the communications backbone for Redbox video kiosks and the Amazon Kindle. Sprint employs over 55,000 and is headquartered in Overland Park, Kansas.

The Challenge & Results

Over the past 5 years Sprint has acquired a number of companies including Nextel, IPCS, and Virgin Mobile. In December of 2007 Dan Hesse was named President and CEO. Under his leadership, Sprint delivered the Palm Pre and began deployment of the first nationwide 4G network. He established three clear goals for the company:

- Improve the customer experience
- Restore the brand
- Manage profitability

The Sprint IT Operations team was tasked with supporting these goals by delivering their services faster, better and cheaper.

Faster

In the past, many business portfolio managers insisted on having dedicated physical servers for each of their applications. The capacity

management team was able to demonstrate that many of these applications could be safely migrated to a virtualized environment. The benefits of virtualization included reduced maintenance windows for adding memory or CPU's, less downtime for application upgrades or patches, and faster provisioning and deployment of new services.

Sprint has created nearly 2000 virtual machines running in heterogeneous server environments including VMware, IBM Power VM and Sun Containers. Hyperformix Capacity Manager is employed to evaluate the current and future capacity requirements of each managed application and identify target VM's that will meet the forecast performance and capacity requirements, even if the source and destination servers/VM's have differing hardware, operating systems, networks, I/O configurations or hypervisors. The flexibility of Capacity Manager has accelerated the migration to virtualization.

Better

Capacity planning has been used by Sprint since 2001 when it started with just 5 applications. The results were highly accurate, but the process was completely manual. In 2003 Sprint began using a first-generation tool to support the planning process, but, accuracy suffered, calling into question the answers and resulting business decisions being made.

“By consolidating applications and spotting under-utilized servers; we have been able to reduce our software cost by a factor of 8 dollar digits.”

Gerry Lewis
Manager, Performance and
Capacity Management
Sprint Corporation



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In 2007 Sprint began using Hyperformix for capacity management. Sprint uses both historical application resource consumption and business projections to establish a baseline for future demand for IT services. Historical data is collected leveraging existing agents such as HP OpenView, IBM NMON and VMware. The data is then normalized and stored in Hyperformix Data Manager and forecasts are created with Capacity Manager. These results are stored in a central repository where they are used collaboratively by IT and the business portfolio managers to ensure adequate capacity is available to support business growth.

Using Hyperformix, Sprint has expanded the number of applications for which they predictably manage capacity to over 300 and improved their forecast accuracy to an impressive 93%. Figure 1 illustrates the past, present, and future capacity for a mission critical application. The horizontal blue and red lines indicate critical thresholds for capacity, providing months of advance notice when additional infrastructure will be required. The breadth and depth of these forecasts has allowed Sprint to predictably provision the required capacity and to ensure that application performance objectives are met while avoiding wasteful spending associated with over-provisioning.

Visualization of results is important when dealing with large numbers of applications and servers. Figure 2 is an example of results provided automatically by Hyperformix. The heat map shows the majority of servers are optimally utilized, shown in green. However, some servers are being under-utilized, and are shown in blue. These servers are candidates for consolidation. Servers shown in yellow are in jeopardy of causing a service level violation. Hyperformix software can quickly evaluate consolidation opportunities and forecast the changes required to remediate potential problems and to insure adequate capacity will be available in the future.

Cheaper

As a result of organic growth and acquisition, Sprint had amassed over 3400 applications. Application growth was driving 5-6% monthly growth in servers and the data centers required to house, power, cool, and administer them. Application consolidation and virtualization were employed to stem the tide of server sprawl. Over 2000 applications were identified for consolidation or elimination. Of the remaining 1367 applications, many have been safely virtualized, and additional virtualization projects are underway.

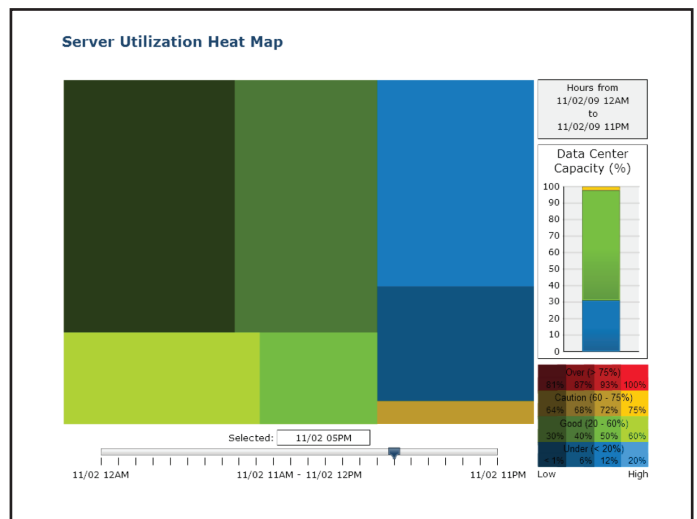


Figure 1 – Data Center Server Utilization Report – Graphically identifies servers that are candidates for consolidation and remediation.

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The results have been impressive. Sprint has been able to flat-line its server growth and has actually reduced the number of servers and their corresponding data center footprint. These changes have resulted in the reduction of two data centers at its headquarters location and consolidations within data centers located in Reston, Atlanta and Dallas, and have eliminated the need to construct an additional data center originally planned for 2012. This has resulted in additional savings of \$140 million in hard dollar costs.

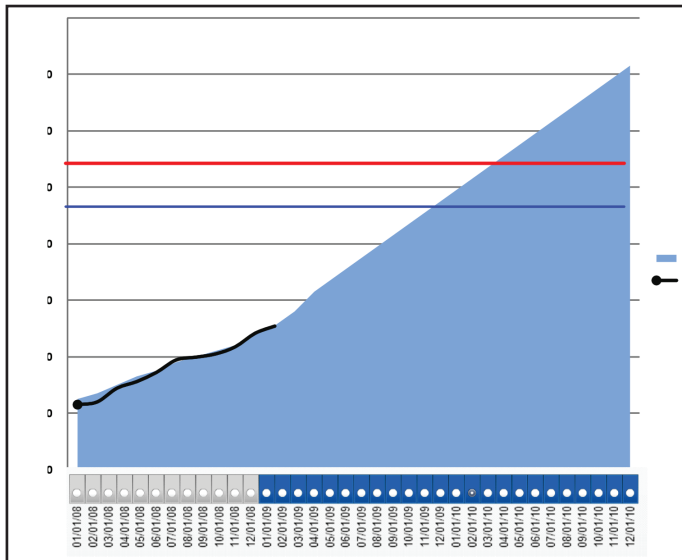


Figure 2 - Capacity Plan Report - Compares actual growth with projected growth and identifies dates when additional capacity will be required.

Summary

The results at Sprint have been dramatic. The company undertook a massive merger and consolidation effort. IT established an effective methodology for collaborating with their internal customers. They profile over 100 applications every month, with historical and projected performance published for review by the portfolio managers. This visibility ensures that portfolio managers have the information they need to feel comfortable that their business service level requirements will be met. Provisioning requests for new applications or to support business growth are quickly analyzed to determine the best, most economical deployment path. Partnering with their internal customers, the IT Operations team has successfully reclaimed over \$28 million worth of hardware, and has reduced operating expenditures in their data centers by \$20 million. They have doubled the utilization on many of their servers to about 60%, and have reduced their raised floor facility needs by over 100,000 square feet.

Want to learn more about successful capacity management at Sprint? View the webcast at www.hyperformix.com/short-form?docid=307

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About Hyperformix

The integrated software suite from Hyperformix enables IT organizations to make informed business decisions to predictably, efficiently, and dependably deliver good business outcomes, productivity and growth. Headquartered in Austin, Texas, Hyperformix has offices throughout the United States, Europe & Asia.

For more information, contact Hyperformix at 1.800.759.6333 or visit us online at www.hyperformix.com.