

WHITE PAPER

Optimizing Datacenter Performance and Building ROI: The TeamQuest Approach

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IDC OPINION

Even as the worldwide economy continues to improve, IT organizations remain under strong pressures to achieve cost containment and budget control through implementing operational efficiencies. At the same time, IT is challenged to demonstrate business relevance and show how it contributes to improving the corporate bottom line while responding to ever-changing business requirements. These pressures are driving the ongoing need for IT organizations to conduct effective performance management and capacity planning processes and to support these processes using performance and capacity management are vitally important in today's complex IT operating environments:

- Supporting key business processes by monitoring the performance of critical applications and delivering required service levels to end users in terms of workload volumes and fast response times
- Controlling costs especially capital expenditures by optimizing the process and timing of hardware acquisitions and deployments
- Improving the efficiency and ROI of the IT hardware and software assets, especially by improving server utilization
- Streamlining and simplifying IT infrastructure performance monitoring and management to reduce operational complexity
- Optimizing performance and capacity decisions required due to major datacenter infrastructure changes, such as server consolidations resulting from corporate mergers and acquisitions

OVERVIEW

This IDC White Paper examines the need for datacenter performance management and capacity planning, focusing on the solutions offered by TeamQuest Corporation, a 14-year-old company that specializes in performance management software. TeamQuest has a base of approximately 400 direct customers, and many more through resellers, with concentration in several vertical segments, including finance, insurance, telecommunications, and service providers. IDC interviewed four TeamQuest customers to determine the benefits and advantages they have derived from using TeamQuest products. Case studies are presented later in the paper. Benefits cited include the following:

- One organization saved a \$2 million application due to TeamQuest's ability to enhance system performance.
- A major financial services customer had \$5 million savings in hardware investment due to TeamQuest's ability to get more out of existing hardware infrastructure. The company also reduced its annual call center operating costs by \$800,000 due to efficiencies realized in reducing average call length.
- △ An insurance company nearly eliminated its downtime from 8 hours of system downtime per week to essentially zero hours — making claims processing flow more smoothly.
- TeamQuest implementation time is exceptionally fast because the product is very intuitive and can be learned quickly.

DATACENTER PERFORMANCE MANAGEMENT

Performance management and capacity planning are viewed by IT and corporate management as highly important processes needed for IT and business success. These activities involve potentially large capital expenditures, the effectiveness and efficiency of IT operations, the ability to properly host business applications, and the ability to meet required service levels. The introduction of major new applications or changes in line-of-business operations, such as changing applications platforms or moving to interactive end-user access to applications over the Web, can have dramatic impacts on the hardware capacity needed to meet the new service requirements.

Balancing Performance Needs Against Costs

IT performance management and capacity planning have always been exercises in balancing conflicting requirements. In general, the desire to acquire sufficient hardware to meet current operational needs and deliver good performance (with sufficient "headroom" for near-term growth) is traded off against the expense of hardware acquisition versus the risks of underestimating the capacity required to support production workload service objectives. A constant balancing act is required.

Performance Management Tasks

The performance management process involves a number of tasks, including keeping up with business trends, understanding evolving applications plans and deployments, meeting user service level requirements, tracking usage, assessing the impact of growth and change on performance requirements over time, evaluating hardware alternatives for proper sizing to meet capacity needs, developing a schedule for hardware acquisition, and optimizing the costs of capacity purchase or lease. In general, datacenter performance management and capacity planning are ongoing processes as applications and workload volumes change over time and require changes in hardware capacity — usually upgrades — to meet required service levels.

DISTRIBUTED PERFORMANCE MANAGEMENT

Today's distributed IT environments are driving the need to manage multitier and Web-based applications. This evolution of applications architectures and deployment platforms has greatly raised the complexity of performance and capacity management. The IT performance management task has moved from managing applications deployed on relatively small numbers of large hardware footprints to supporting applications on a large (and increasing) number of diverse hardware/OS platforms, with applications deployed in multiple tiers. The following is a summary of key challenges in distributed application performance management:

- Complexity: more components to track and size. One principal difficulty with distributed applications is dealing with the potentially very large number of infrastructure elements that combine to form today's multitier Web-based applications. This means tracking the current usage and performance measures for all of the major hardware components used by an application and projecting future capacity needs. It also means understanding where in the infrastructure performance bottlenecks will occur and where the next capacity increment will be needed.
- Need to support the end-user perspective. Traditional performance and capacity management has often tended to focus on individual components, such as the major servers located inside the corporate firewall, and to look at usage, service level objectives, and the impact of workload forecasts on a component or "silo" basis. With direct user access to applications over the Web, the focus shifts to providing capacity sufficient to meet end user–perceived service-level objectives, such as end-user response time. This requires monitoring and measuring performance from the end-user or transaction perspective "outside the firewall" as well as measuring the traditional "siloed" elements.
- ☑ Heterogeneous platforms. Distributed applications may be deployed on Unix, Linux, or Windows servers. The components of an individual distributed application may span platforms, such as a user interface on Windows and an application server on Unix, often with access to large corporate databases that may be hosted on Unix or even on mainframes.
- New applications environments: J2EE and .NET. Other key aspects are the need to manage the rapidly increasing number of applications deployed in J2EE environments, such as WebSphere and WebLogic, and the emerging need to manage applications built around .NET.

APPROACHES TO PERFORMANCE AND CAPACITY MANAGEMENT

Performance and capacity management processes are built around the concept of managing the performance of workloads (such as interactive requests or online transactions) with required performance objectives such as response times and transaction volumes (often specified as written service level agreements). At a high level, the performance management process involves tracking current performance against goals and understanding how performance will be affected by changes such as increases in workloads, changes in the hardware infrastructure, and new or changed applications. The management process is intended to cost-effectively deliver required performance levels as changes occur.

Performance and capacity management starts with two basic operations:

- Monitoring. Performance measurements form the foundation of performance management. Basic measurements, such as the utilization of individual hardware components or tracking local response times, are recorded periodically over predetermined time intervals. Software performance "agents" are often deployed to hardware components to measure and record more detailed data and perform other operations. Typically, measurements are stored for subsequent analysis, often in a performance database.
- Reporting. The performance measures are reported in the form of charts, data tables, or graphical displays so they can be observed and analyzed by the IT staff. Data is often normalized, such as "percent of total CPU capacity." Reporting can be immediate "in real time" or deferred for analysis over longer time intervals. Performance "health" is typically shown as the familiar "red-yellow-green" graphical display of performance measures to quickly indicate whether a particular infrastructure component is lightly, moderately, or heavily utilized during a time interval or whether service level requirements are being achieved.

These basic functions become the foundation on which performance management and capacity planning processes and supporting software tools are built. Some of the functions that help transform basic monitoring and reporting into more powerful management tools include the following:

- ☑ Thresholds and alerting. Thresholds or limits are specified for individual performance measures. Measured values are compared with the thresholds, and alerts are generated when thresholds are met or exceeded, serving as a warning to IT that performance bottlenecks are occurring or about to occur.
- ☑ Trending. Performance measures are tracked over time to determine the rate at which utilizations and response times are growing. Projection of these trends into the future can be used to obtain a simple estimate of when hardware capacity will be fully utilized. However, simple linear projection is not an accurate approach to forecasting response times, due to the rapid nonlinear increase in response time that can occur when one or more devices become saturated.
- Statistical analysis. Performance variations and trends can be analyzed using statistical methods. For example, variations in utilization or response time can be tested to see if they are in a normal range or if they are out of range for a typical time period, such as a peak hour. Trends over time can be analyzed using statistical techniques such as regression. Causes of performance degradation from bottlenecks can be analyzed using statistical correlation.
- Modeling for "what-if" analysis. Performance models can be built using simulation or analytic modeling approaches. The value of using performance models is the ability to calculate the effect of changes in hardware, software, or workloads on performance by varying model parameters. This provides a strong basis for decision support in the ongoing process of performance and capacity management.

TEAMQUEST CORPORATION

TeamQuest is a 14-year-old company that specializes in performance management software. The vendor provides software and services for supporting performance and availability management, capacity planning, and service level management, primarily in large, complex corporate datacenters. TeamQuest began life as a division of Unisys, before becoming an independent company. Today, TeamQuest has a base of approximately 400 direct customers, and many more through resellers, with concentration in several vertical segments, including finance, insurance, telecommunications, and service providers. TeamQuest provides a wide range of support for performance and capacity management, based on its software products and its staff expertise in applying performance analysis methodologies to IT processes for performance management and capacity planning.

THE TEAMQUEST APPROACH

TeamQuest provides software products that address a wide range of performance management and capacity planning functions for a variety of hardware, OS, and application platforms. The TeamQuest approach is based on quantitative performance measurement and analysis that includes monitoring, reporting, statistical analysis, trending, and analytic modeling for "what-if" performance analysis and capacity planning.

Agent-Based Measurements

TeamQuest builds its performance software on an architecture that uses agent-based technology for performance measurements and data collection at different levels of the IT infrastructure, including the base server platform, the application, the database, the network, and the end-user client. TeamQuest agents have configurable levels of detail, retention periods, and distribution of performance data. The following is a summary of TeamQuest agent capabilities:

- Server Agents: Collect detailed resource usage by process on individual servers. Data is organized by business workload.
- ☑ Network Agent: SNMP data collector. Response time measurements. Network data from server.
- Application Server Agents: Collect detailed measurements on standard J2EE application servers, including WebSphere and WebLogic running on AIX, Solaris, Linux, and Windows platforms.
- Web Server Agents: Collect measurements for standard Web servers, including IIS and Apache.
- SAP Application Agent: SAP R/3 performance by user, transactions, response times, detailed buffer, and memory usage.
- ☑ Database Agents: Collect detailed measurement data for standard databases, including Oracle, SQL Server, and Sybase.

- Storage Agents: Specific measurements for server storage, EMC Symmetrix.
- □ **User Agent:** Collects data regarding business processes, packaged applications, or custom applications.

Measurement Data Collection and Storage

The measurement data is stored using a distributed enterprise performance database architecture, which records detailed measurement data in local data repositories at individual servers and rolls the data up to a summary level at a central Enterprise Database stored on the TeamQuest Administration Server. This permits detailed analysis at the level of the individual server plus centralized management across the entire set of managed servers. Figure 1 illustrates the distributed nature of TeamQuest's measurement data storage architecture.

As can be seen, data collected at the managed server nodes by TeamQuest agents is stored locally. Data stored in the local databases can be accessed directly by TeamQuest analysis software or can be summarized and sent to the centralized Enterprise Database. Data can also be sent to external enterprise management frameworks such as IBM-Tivoli, CA Unicenter, or HP OpenView.

FIGURE 1



TEAMQUEST PERFORMANCE SOFTWARE

TeamQuest provides performance management and capacity planning facilities with a product suite organized into four functional areas, as shown in Figure 2. The TeamQuest Performance Software products access data from a common component called TeamQuest Manager, which collects, stores, manages, and administers performance data. Each of the products then retrieves data from TeamQuest Manager for analysis. Another component, called TeamQuest Administration Server, is used to manage the configuration of multiple instances of TeamQuest Manager.

FIGURE 2



Source: TeamQuest, 2005

The basic functions of the TeamQuest Performance Software suite can be summarized as follows:

- TeamQuest Alert is a performance management console that can be used to evaluate and track the performance health of distributed systems. TeamQuest Alert uses built-in rules of thumb to evaluate server and application performance measures and can display key performance indicators as text messages or using color graphics. TeamQuest Alert can send alerts to notify that performance problems are occurring by using email, by calling a beeper, by pager, or by sending an SNMP trap to a management console. When problems are detected, IT staff can drill down to view problem-related performance information and user activity details to support top-down analysis.
- ☑ TeamQuest View supports extensive performance reporting and analysis capabilities for both real-time and historical analyses of multitier distributed systems. TeamQuest View can be used to display monitored performance values, thresholds, and exceptions. It can be used to detect and investigate bottlenecks and to drill down to identify the users and processes active at the time of a performance

problem to aid in problem detection, problem diagnosis, and trend analysis. TeamQuest View can also be used to track service levels and analyze end-to-end performance. The product supplies a variety of "out-of-the-box" reports, charts, and graphs with the ability to customize reports for individual IT datacenter views. It also performs correlation, finding resource statistics that correlate with symptoms. This can be a very useful tool for finding the root cause of a performance problem.

☑ TeamQuest Model provides "what-if" analytic modeling capabilities for predicting the impact on performance of changes in hardware, software, or workloads. The model can be used for performance prediction, such as predicting the increase in response times that will occur as workloads increase, and to make capacity planning decisions, such as sizing the server capacity needed to support expanded workloads. The model can also be used to evaluate configuration changes, consolidation options, and the impact of variations in demand levels to help IT allocate the right resources to meet business priorities.

Two particularly important uses of TeamQuest Model are optimizing server consolidation activities and sizing new hardware acquisitions. Server consolidation often means deploying two or more applications on a single server. The model can be used to calculate the effects on service level measures that will occur as the result of such deployments. Ideally, server consolidation increases utilization of the target server while maintaining service levels of the workloads deployed on it. Sizing new hardware helps IT acquire the right amount of capacity, as needed, avoiding the cost of overbuying capacity that will be underutilized.

TeamQuest Model supports the analysis of multitier environments. It can be used to predict response times from different components in a multitier environment. It can identify underutilized resources for redeployment and meet service level requirements without wasting resources. Other uses of the model include predicting application performance under varying loads, preparing for unexpected spikes in demand, and avoiding outages and slow response times.

☑ TeamQuest On the Web provides Web access to performance reports, which is an important requirement for communicating service level status and performance exceptions to a variety of constituents, including IT management and staff as well as members of the business units that depend on IT for operation of key systems and applications. TeamQuest On the Web provides Web access to real-time and historical performance reports for heterogeneous distributed systems and applications. This allows remote viewing of performance information, at any time, using a standard browser. TeamQuest On the Web supports automated reporting for remote access and simplified distribution of performance reports to a variety of users.

BUSINESS VALUE BENEFITS OF PERFORMANCE AND CAPACITY MANAGEMENT SOFTWARE

The key business value benefits of deploying performance and capacity management software of the type provided by TeamQuest and applying these capabilities to a well-defined performance management process are IT service delivery improvements, optimization of IT resources, and cost control, especially hardware acquisition and support costs. These benefits can be achieved based on the following considerations:

- Reducing hardware costs through timely acquisition practices, based on ongoing performance management and capacity planning actions. Avoid overbuying new hardware, provision existing hardware effectively, perform server consolidations efficiently. Provide a better return on the hardware investment. Hardware and the attendant software and services cost reduction will constitute 45–60% of total business value benefits for most enterprise deployments.
- Ensuring performance service level objectives are achieved. Provide the network availability, required workload throughput volumes and end-user response times under varying conditions. Avoid performance degradation and slow response times, especially during peak periods and usage "spikes." Performance management software typically improves availability by reducing unplanned outages by 35–60%.
- △ Aligning service levels with the service requirements of key business processes and applications. Deliver the IT services meeting the performance needs of lineof-business managers. Increasing availability of revenue generating business processes by .1% results in an average revenue gain of over \$500,000. Communicate service status over the Web.
- Avoiding performance crises and eliminating the turmoil and overload on IT staff resulting from serious performance problems.
- Managing performance proactively. Detect trends that can lead to performance problems, and make adjustments before problems grow to impact end users. Use capacity planning to ensure that systems are configured optimally to handle expected, or even unexpected, workloads.
- Reducing the complexity of IT operations by providing a consistent methodology and supporting software tools for performance management and capacity planning.
- Automating problem detection and alerting, freeing up IT Staff resources to focus on more high value business activities. Performance software will increase IT staff productivity by 17–25%.
- Leveraging staff knowledge by providing the same "look and feel" across all platforms.

Previous IDC studies have shown that the combined business benefits of deploying performance management and capacity planning tools will show a positive ROI ranging from 250–400% (using the NPV method with a 12% discount rate), and payback within 12 months of deployment.

CASE STUDIES OF TEAMQUEST CUSTOMERS

IDC interviewed four TeamQuest customers, nominated by TeamQuest, to help understand the value and benefits they have derived from TeamQuest Performance Software. The following is a summary of key benefits noted in our interviews. Case studies are presented below.

Key Benefits Cited by TeamQuest Customers

- \$2 million application saved due to TeamQuest's ability to enhance system performance.
- \$5 million savings in hardware investment resulting from software that cost \$500,000, due to TeamQuest's ability to get more out of existing hardware infrastructure.
- ☑ Reduction of \$800,000 in annual call center operating costs due to efficiencies realized in reducing average call length.
- △ Near elimination of downtime from 8 hours of system downtime per week to essentially zero hours.
- TeamQuest implementation time is exceptionally fast; the product is very intuitive and can be learned quickly.

U.S. Financial Services Organization Achieves Significant Return on Investment Using TeamQuest Model and View

The IT management of a large United States-based financial services company decided to improve its performance management and capacity planning processes to achieve greater operating efficiencies. The basic decision was to improve processes by combining the existing "stovepiped" groups into a single organization reporting to the executive in charge of all hardware purchases. Previously, performance and capacity management processes were centered around individual technology silos, including Windows, Sun, AIX, AS/400, and networks. The silo-based organization meant that each individual group managed its own technology stack for performance, and each stack was sized for hardware capacity independently, resulting in considerable excess hardware capacity overall when viewed across the silos.

The new IT organization needed software tools that could support a unified approach to performance and capacity management with a common look and feel across functions and platforms. Also, a common performance database to store information for use by all members of the combined group was needed. After a survey and analysis of existing tools on the market, TeamQuest software was chosen to support the combined performance and capacity management group. Some of the factors leading to the selection of TeamQuest included lower license costs compared with those of competing vendors, fast time to configure and install ("a matter of days to become up and running"), and well-integrated functions and data between performance management and capacity planning. The company has invested approximately \$500,000 in TeamQuest software products, including Model and View. In addition to impressive cost efficiencies, as discussed below, TeamQuest's Enterprise Database allows everyone to work from the same database, solving many internal reporting problems.

Utilizing the TeamQuest tools, the company has been able to better utilize existing hardware and thus did not have to invest \$5 million in new hardware. For example, an application deployment initially estimated to require 32 servers was deployed using only 12 servers while still meeting performance goals. Continuous process improvement using TeamQuest's structured methodology and tools was the key to such efficiencies.

The company also saved significant money in its call center operations due to TeamQuest. Based on analysis using the TeamQuest tools, improvements in response time for a key call center application were implemented, resulting in a five-second reduction in the average call time. Although such a small amount of time may seem trivial, the company calculated that this improvement resulted in a savings of \$800,000 in annual call center operating costs. Such a large savings was due to the company's call volume of millions of calls per month, taking into account the cost of call center staff and supporting telephone infrastructure costs.

Overall, the company has been able to use TeamQuest software effectively to support the combined performance and capacity team and unified processes. This has permitted a shift toward focusing on meeting the performance requirements of key business workloads, such as the call center application. In addition to the hardware and call center savings, the company also estimates that TeamQuest will allow it to reduce IT staff costs once the system has become fully ingrained into the company's operations. Senior management at the financial services organization was a little apprehensive about TeamQuest's ability to offer support, given TeamQuest's size, but TeamQuest has provided better support than other IT vendors the company uses.

T-Systems International Improves Capacity Planning with TeamQuest

T-Systems is one of Europe's leading providers of information and communications technology (ICT). The company is a subsidiary of Deutsche Telekom Group, which includes more than 60 multinational groups, large public authorities, and thousands of diverse companies. T-Systems helps companies optimize their processes, reduces costs, and gives its customers additional flexibility in their core business. The company offers services on an ASP model and hosts solutions from companies such as Siebel or SAP. The company has a presence in over 20 countries. One of its major computer centers is in Münster, Germany, running IT for the mobile telecommunications branch of Deutsche Telekom.

Since 1998, network capacity planning and performance management tools have been used extensively at T-Systems International, according to Josef Kreutzmann-Voll, Head of the Capacity Management Group. The company began using another product for performance management in 2000 but then replaced it with TeamQuest Model in 2004. TeamQuest tools had been acquired through acquisition and were subsequently evaluated against the incumbent product during a tools consolidation project. The decision was made to migrate to TeamQuest View and TeamQuest Model because they were found to be more advanced and easier to use and to offer greater flexibility and stability at the data collector level. Rollout of 320 systems was undertaken in October 2004 following an intensive three-day training workshop. The deployment was extremely effective and took less time than anticipated.

T-Systems International currently uses both TeamQuest View and TeamQuest Model. TeamQuest View is used for on-demand reporting and monitoring by system managers, applications managers, and to some extent, program developers. TeamQuest Model is used for cyclic capacity planning. Through modeling, T-Systems identified underloaded servers and shifted workloads for better balance and optimization. T-Systems has realized the benefit of significant server consolidation. The company has also achieved a reduction of more than 25% in CPU and memory usage.

Operationally, the TeamQuest solution has been vastly more efficient than the company's former solution, resulting in improved business processes and increased productivity. Access to the system has been substantially improved for a larger number of personnel, and bottlenecks have been identified and addressed. Overall the TeamQuest solution is seen as very stable and reliable, and it allows for network monitoring in a decentralized manner.

One of the benefits of TeamQuest was rapid implementation, according to Kreutzmann-Voll. "The initial implementation was really out of the box. Just read the manual, understand it, and then implement. There were no problems. And it is not the case with many other tools that we have here, which are much more complex to understand. There were very few bugs or problems with TeamQuest. Just install and advance. This is not always the case with other solutions." Ease of use is another strong benefit of TeamQuest. Kreutzmann-Voll also cites TeamQuest's unique ability to interface with Microsoft Excel and multiple mail clients, which allow for instant on-demand analysis, reporting, and documentation. Visual and graphical representation of data is exceptional, and data collected through TeamQuest is easy to understand. TeamQuest allows T-Systems to perform the same tasks it used to perform with its former solution in less time and provides instant access to a larger number of users, resulting in faster response times for troubleshooting and network optimization.

T-Systems International's level of satisfaction with TeamQuest is high, according to Kreutzmann-Voll. "Generally, it is really very satisfactory. We had some problems that are normal in a large installation, but the support was excellent, especially in the first phase. We had very good contact to the hotline, and they were very fast and responded in a very competent way," says Kreutzmann-Voll. He adds that from the outset, T-Systems has had exceptional access to and continued personal contact with TeamQuest's experts.

Noridian Mutual Insurance Company Improves Claims Processing with TeamQuest

Noridian Mutual Insurance Company provides private health coverage, life insurance, medical claims processing, and other products and services. Founded in the 1940s, the company is headquartered in North Dakota and currently operates in 12 states. With over 2,000 employees, Noridian and its subsidiaries and affiliates are collectively known as The Noridian Network of Companies.

In 2003, Noridian launched an initiative to improve systems monitoring and optimize performance management and capacity planning. Following an extensive search process during which several technology vendors were evaluated in 30-day trials, Noridian chose to implement TeamQuest. Prior to implementing TeamQuest, the company used only Unix and Linux command-line utilities to monitor its systems.

Noridian first deployed the TeamQuest solution on a test server. After a satisfactory experience, the company began implementing TeamQuest on 5 AIX and 90 Linux servers. All Unix servers have now been fully deployed, and Linux servers are being added at the rate of 5 servers per month. Unix server implementation took three weeks, while Linux servers required a little longer, due mostly to the fact that the OS was being upgraded concurrently with the deployment of TeamQuest. According to Nick Benson, Project Lead, the TeamQuest implementation has been pain-free and very satisfactory. He adds that the implementation was faster than he had expected on Unix and has been very easy on Linux servers.

Noridian currently uses TeamQuest Alert, View, and On the Web for strategic and capacity planning, workload balancing, trending, efficiency, performance management, and service level management. The company's electronic claims department is able to monitor queue depth, timing queue, and many other parameters through the use of TeamQuest's report generation capability and a Noridian custombuilt monitoring system. This allows the department to identify peak loads and underutilization of the system by claims submitters, enabling a smoothing out of the claims submission process so that the system is not taxed. This balancing has resulted in improved application availability and allows Noridian to more efficiently plan for and sometimes avoid purchases of additional hardware and software to handle system-taxing peak loads. "We saved a lot of money in that respect," says Benson. He adds, "To us, the licensing fees are appropriate, and we do think that the benefits far outweigh the costs."

Other significant improvements achieved by Noridian through its use of TeamQuest have been a major reduction in downtime and the ability to better fulfill service level agreements through increased capacity planning. Applications availability has been vastly improved. Prior to implementing TeamQuest, Noridian experienced downtime periods of about eight hours per week, but since the TeamQuest implementation, downtime has virtually been eliminated. Other IT improvements were made concurrently with the deployment of the TeamQuest solution, but Benson still credits TeamQuest with dramatically increasing the efficiency of the system.

There have been no obstacles surrounding Noridian's use of TeamQuest's products. In fact, the relationship with the TeamQuest Customer Service Organization has been "exceptional," says Benson. Initial worries that the implementation of TeamQuest would not provide Noridian with necessary support have been eliminated, and satisfaction with TeamQuest is high. "We are very satisfied because of the ease of implementation, the information that we are able to get out of it, and the support we have gotten from TeamQuest," says Benson. He adds, "We have no complaints. Implementing TeamQuest has been a very good experience for us."

The United States Patent and Trademark Office Enhances Its Operations with TeamQuest

For over 200 years, the main role of the United States Patent and Trademark Office (USPTO) has remained the same: to promote the progress of science and the useful arts by securing for inventors the exclusive right to their respective inventions for a specified period of time. Through the issuance of patents, the USPTO encourages technological advancement by providing incentives to invent, invest in, and disclose new technology worldwide.

Prior to 1999, the USPTO had been using another company's performance software to collect data from its HP-UX systems. A combination of several factors prompted the USPTO to investigate TeamQuest, including a multimillion-dollar project that was in jeopardy due to poor system performance. By deploying TeamQuest, the USPTO was able to understand current performance metrics and study the results to determine the bottlenecks. It ran analytic "what-if" models using TeamQuest, expanding disks and systems as well as redistributing workloads to try and discover scenarios that would resolve performance issues. Bottlenecks were removed and the project was saved in large part because of TeamQuest Model.

With 130 HP-UX servers, over 250 Windows NT/2000 servers, 4 AIX servers, and multiple Linux servers, the USPTO must understand the current metrics of each system and the impact of adding hardware, servers, or applications or altering current configurations before doing so. Performance data from all of these heterogeneous servers is collected and modeled, and "what-if" scenarios are evaluated prior to proceeding with proposed changes.

The ROI of deploying TeamQuest has been realized through many means. The USPTO is able to purchase additional TeamQuest licenses for less money than the previous annual maintenance budget, allowing the organization to expand its capabilities as more demands are placed on the system. Furthermore, other benefits include keeping projects from failing, consolidating servers, and using hardware and software more prudently. All requests to upgrade systems are validated through modeling to ensure these requests indeed are the proper remedy. The USPTO is especially pleased with the service that it has received from TeamQuest, which has been very responsive. This allows the USPTO to provide its customers with better service.

CHALLENGES FACING TEAMQUEST

TeamQuest faces several challenges going forward. Perhaps the most important is to gain greater identity and recognition in the IT management software space in a market that is rapidly consolidating and dominated by large enterprise vendors that sell a broad range of system and application management software. TeamQuest competes as a dedicated "best-of-breed" software vendor, with benefits to customers coming from its tight focus on market requirements and product technology needed to support performance and capacity management. At the same time, TeamQuest must leverage its ability to connect to the major management software frameworks in a way that effectively positions the company as the vendor of choice for performance management, regardless of the management "framework" that may be established at a customer site.

Another challenge, which is not unique to TeamQuest, is to further simplify overall performance management activity through increasing automation and integration in the software. Applications deployments are getting more and more complex with multiple tiers that may include Web servers, application servers, and databases, often with multiple instances. The challenge here is to continually simplify performance management in an environment that requires dealing with many managed systems with heterogeneous operating environments.

SUMMARY AND CONCLUSION

The benefits of performance management and capacity planning are well-established and include improved service levels, better performance, and cost savings stemming from improved operational efficiencies, more productive business processes, and savings in capital expenditures for hardware and software. The effectiveness of the TeamQuest performance software suite in performing the associated management tasks and realizing quantifiable benefits is well-confirmed by the user case studies described in this white paper.

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