In order to retain their competitive edge, spot new trends, and analyze customer information, businesses must quickly access and analyze the ever-growing amount of data they have available to them in their SQL-based decision support systems. Delays, which cost businesses untold dollars and productivity hours, are unacceptable.

Worldwide, the volume of business data is doubling every 1.2 years, according to MIT Sloan. The average company sees a 41-percent increase in data volume, year-over-year, according to a 2010 report by the Aberdeen Group. This surge in volume is compounded by an average of 15 unique data sources—such as social media, video, websites, and databases—that supply information into an organization’s business intelligence and decision support solution, the research firm said.

Companies need to act fast on this data: In 2010, 42 percent of businesses reported requiring near real-time access, within seconds or minutes, said Aberdeen. By comparison, in 2008 only 28 percent of businesses needed such rapid access, the research firm found.

Yet SQL-based decision support systems are not always up to end-users’ speed demands. Used throughout an organization, these applications all have different CPU, memory, input/output (I/O), and storage requirements. Business users, frequently spread throughout different geographies or buildings, are connected via networks to data centers that may be thousands of miles away; information can be stored in different devices and solutions, and the result can be bottlenecks, latencies, and frustrated users.

Companies need powerful servers able to deliver an immediate response to users’ decision-support queries. They require cost-effective, scalable storage and high-speed networks to unify distributed workforces without delay or latency. Legacy systems may be inadequate to meet the challenges of today’s fast-growing influx of data—and the immediate responses business users require.

In this white paper, we will explore the results of a recent Quantitative Market Research Report about decision support workloads. Conducted on behalf of Dell®, this report will demonstrate how Dell’s twelfth-generation servers and Dell solutions meet organizations’ decision support solution (DSS) requirements, based on business users’ responses.

**Key Findings: State of the Market**

In the study of 400 decision-makers, 81 percent said they are currently using decision support software on x86 servers. Sixty-four percent are running or plan to run decision support in a virtualized environment, the study found. Dell is the preferred server vendor, taking the top spot with 68 percent of the installed base.

Driven, no doubt, by the need for speed, by the sheer volume of data, and by the increasing number and type of data sources, 48 percent of organizations plan to implement new workload-purchases for their decision-support functions. In addition, 37 percent expect to upgrade their workload infrastructure to boost their decision-support solutions. Overall, 85 percent plan to purchase new servers or upgrade their decision-support workloads within the next two years. (See Figure 1)

<table>
<thead>
<tr>
<th>Decision-support</th>
<th>Make New Purchase</th>
<th>Upgrade Current Workload</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>48%</td>
<td>37%</td>
</tr>
</tbody>
</table>

**FIGURE 1:** About 85 percent of respondents are planning to purchase new servers or upgrade their decision-support workloads within the next two years—Quantitative Market Research/Dell
More than half the respondents—in fact, 56 percent—are using Microsoft® SQL 2008 R2™ for decision-making support. Fifty-seven percent have implemented Excel™ from Microsoft Office 2010™, and 53 percent are using Microsoft SharePoint™. Decision-makers also cited Microsoft PowerPivot™, Oracle® Business Intelligence Enterprise Edition™, and Oracle Hyperion™, among others.

Today, 27 percent of respondents operate decision support in the cloud—with many more planning future implementations. Twenty-nine percent are considering a public cloud, 14 percent are looking into a private cloud, and 10 percent are reviewing a hybrid cloud, for a total of 51 percent.

When it comes to metrics, organizations are all-too aware of the importance of performance: Indeed, application performance was the top metric cited by 59 percent of executives. Other key metrics monitored and managed to ensure that decision support was operating successfully included total cost of ownership (TCO), application availability, security metrics/compliance, and uptime. (See Figure 2)

What Companies Want
With so many organizations planning new server purchases and upgrades, what features and capabilities do they need to support data-intensive, memory-hungry decision support solutions?

When it comes to decision support servers and storage, organizations know what they want: Performance. Almost two-thirds—or 65 percent—of respondents cited performance as the top must-have capability in DSS servers. As the amount of data increases, user tolerance for latency is only expected to decrease. Within storage, the results were similar with 64 percent of decision-makers stating performance was the primary capability. TCO was also important in both

![Figure 2: Key Metrics Used to Monitor Decision Support](image)

**Application performance**

- 59%

**Total cost of ownership**

- 58%

**Application availability**

- 54%

**Security metrics/compliance**

- 50%

**Up time**

- 47%

**Compliance with service agreements**

- 39%

**Unscheduled down time**

- 34%

When it comes to decision support servers and storage, organizations know what they want: Performance.

![Figure 3: Important Purchase Criteria for Decision-Support (USA)](image)

**SERVERS**

- Performance: 65%
- Total cost of ownership: 50%
- Management capabilities (i.e. firmware, updates, monitoring, deployment): 48%
- Features (i.e. memory, disc space, I/O, availability): 46%
- Complete solutions (including services): 41%
- Industry/Vendor certifications and benchmarks: 28%
- Customer references: 22%

**STORAGE**

- Performance: 64%
- Total cost of ownership: 63%
- Features (i.e. availability, monitoring, management, recovery): 62%
- Complete solutions (including services): 50%
- Industry/Vendor certifications and benchmarks: 33%
- Customer references: 27%

Performance is critical in the data-intensive decision support category, whether the hardware involved are servers or storage.
server and storage categories, not surprising at a time when IT budgets are tight and scrutiny over spending is severe.

Within servers, management features such as firmware updates, monitoring capabilities, and deployment, were cited by 48 percent of respondents, and features including memory, I/O, disk space, and availability were mentioned by 46 percent of decision-makers. In addition, the ability to buy complete server solutions, including services, was important to 41 percent of respondents. Decision-makers also cited industry and vendor certifications, and customer references.

When it came to storage, availability of a full range of features was important to 62 percent of those surveyed, while ability to buy a complete solution, including services, from one provider was valuable to half of those polled. Other important capabilities included industry or vendor certifications and customer references. (See Figure 3)

To ensure they are maximizing their DSS, 63 percent of respondents work with a service partner for installation and deployment. Only 37 percent of those surveyed either handle this in-house or did not know how their company addressed installation and deployment. Working with a service partner ensures organizations are purchasing an integrated solution, and provides an assurance that it will be installed correctly and employees will receive the training necessary to fully reap the solution’s benefits.

Sixty-four percent of organizations surveyed prefer to purchase a turnkey solution rather than buy piecemeal. Twenty-two percent of respondents would rather buy separate components and then contract with a service provider to deliver a complete solution, while 17 percent prefer to buy the technologies separately and then integrate their decision-support system in-house. (See Figure 4)

Purchasing a turnkey solution from a hardware vendor is cost-effective, convenient, simplifies the process, and ensures complete integration between hardware and software, respondents said. It also provides speedy implementation and access to knowledgeable experts, anecdotal evidence showed. Buying from a software vendor saves time, augments in-house staff, and is cost-effective, decision-makers said. Turning to a service provider allows businesses to customize, speeds implementation, and saves money, they noted.

When asked about ways to improve decision-support solutions, performance, availability, and accessibility were cited most frequently. Decision-makers were most concerned about improving up-time rates, eliminating crashes, enhancing scalability to meet evolving business needs, and improving end-customer satisfaction.

“Getting better performance for our clients is always a priority ...,” wrote one study respondent.

Organizations concerned about performance, speed, and uptime need powerful, reliable servers that can deliver next-generation computing today. Dell is meeting organizations’ decision-support needs with its new PowerEdge twelfth-generation servers, and its industry-leading hardware, network, storage, and services

Why Dell?
To meet this thirst for performance, Dell PowerEdge twelfth-generation servers feature leading-edge Intel® Xeon™ processors, designed for 24/7 reliability, world-record performance, improved scalability, and intelligent adjustment to meet workload demands. The servers include up to 24 hard drive bays for data storage with two additional internal drives. With this amount of storage on-hand, some organizations will no longer require additional external storage, and all organizations can be assured of accelerated performance and enhanced productivity.

This latest iteration of PowerEdge servers includes PowerEdge RAID Controller (PERC) cards, a family of enterprise-class controllers designed for enhanced performance, increased reliability and fault tolerance, and simplified management. These powerful controllers create an easily manageable, yet robust, infrastructure, and help organizations maximize their server uptime.

---

**FIGURE 4: Important Purchase Criteria for Decision-Support (USA)**

The vast majority of respondents prefer to work with a service provider to integrate their decision-support solutions.

<table>
<thead>
<tr>
<th>Preferences If Buying Today</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefer to buy turnkey solutions from my hardware vendor</td>
<td>34%</td>
</tr>
<tr>
<td>Prefer to buy turnkey solutions from my software vendor</td>
<td>30%</td>
</tr>
<tr>
<td>Prefer to by the best components and then contract a services provider to deploy and integrate the solution</td>
<td>22%</td>
</tr>
<tr>
<td>Prefer to by the best components and then integrate them myself</td>
<td>14%</td>
</tr>
</tbody>
</table>
In order to attain organizations’ database bandwidth needs, Dell incorporated new and improved controllers that are significantly faster for disk I/O. The servers also can handle large amounts of memory, to ensure optimal performance at all times. In addition, Dell designed PowerEdge twelfth-generation to be easily scalable, allowing organizations to grow their solution—virtual or on-premise—along with their businesses and their databases.

Building on its extensive expertise in storage, the twelfth-generation of Dell PowerEdge can connect to both storage area networks (SANs) and direct-attached storage. SQL-based database users can access the important information they need, no matter which type of storage an organization uses to house the data.

Dell Services can simplify the implementation process even further by designing, installing, and supporting a SQL database solution so internal IT staff can focus on other business-centric issues and projects. Working with industry-leading partners such as Intel and Microsoft, Dell provides a complete array of solutions that feature hardware, software, and networking technologies, while delivering a full suite of database services and single point-of-contact for support.

Microsoft and Dell are long-time partners, working together on many initiatives and technologies for more than a quarter-century. This relationship allows the companies to leverage each other’s technological strengths; the PowerEdge twelfth-generation, therefore, optimizes SQL’s features and execution to provide business users with the decision-making performance they need in today’s competitive environment.

In addition to their technology-development partnerships, Dell is a Microsoft customer. Dell used Microsoft SQL Server 2008 R2™ software in its mission-critical Dell Premier site, an online service that facilitates the procurement of IT products and services for corporate customers. The IT department must respond to any problems, including issues with the underlying databases, in less than one hour, so insight into and management of the powerful databases are critical components of a smooth-running system.

“They’re investing in a database as a service model, and Dell is there to support them,” said Reinaldo Kibel, Senior Database Engineer, at Dell.4

The two companies’ engineers also worked closely together on the Microsoft SQL Server Fast Track Data Warehouse from Dell, a methodology and set of reference architectures designed specifically for data warehousing. Engineers from both Dell and Microsoft pooled their expertise to develop these reference structures which help scale-up capacity and performance for symmetric multi-processing (SMP), which can dynamically balance the workload so more users are served faster. In addition, organizations can more easily design and implement balanced configurations for their data warehouse databases, ensuring a hardware-balanced approach and predictable out-of-the-box performance.

With SQL Server 2008 R2 Enterprise running on twelfth-generation PowerEdge Dell machines, Dell can leverage the power of Microsoft’s management technologies such as the Application and Multiserver Management (AMM) tools, which help Dell proactively manage its server environment. AMM includes dashboards, for improved visibility, and enhanced data-compression capabilities.

The combination of twelfth-generation Dell PowerEdge servers connected to Microsoft SQL databases rapidly provides end-users with the information they need to do their jobs and provide value to their organization, resulting in productivity savings and opportunities for increased revenue.

Dell’s extensive array of vendor partnerships ensure compatibility and maximized use of each product’s commanding capabilities; Dell’s expertise and experience ensure the PowerEdge twelfth-generation generation-powered solution drives faster decision-making—resulting in a more competitive, productive, and profitable organization.

To Learn More, Please visit
www.Dell.com/SQL