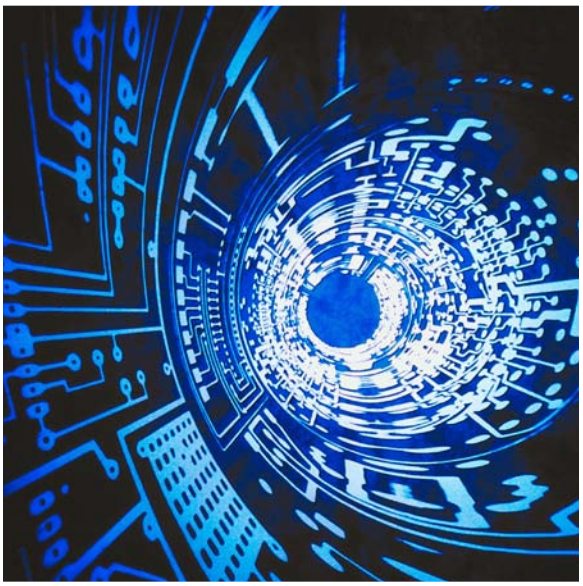
Increase the Processing Power Behind Your Mission-Critical Applications with Intel® Xeon® Processors



ServerWatch™

Executive Brief

For longer than many in the industry care to remember, IT prognosticators have predicted a world with seamless collaboration between co-workers, partners and suppliers; where paper-based manual processes are replaced by IT solutions that are faster, more cost-effective and efficient; and where high-performance computers could make quick work of complex equations to speed research and development. Changes such as these tend to come slowly and without much fanfare, but for many enterprises they are now a reality.

On the business side, a more connected workplace requires new applications to learn and a shift in the business culture. On the backend, applications with more users and more data present a number of new challenges for the IT administrators that need to build and maintain the infrastructure.

The first challenge is providing the applications that users need without significant downtime or latency. A business that relies on its IT infrastructure to power its collaboration and business processes needs the infrastructure to be reliable in order to operate. An unreliable infrastructure also opens the door for business users to keep working with slower, manual business processes, thereby risking the ROI for new business applications.

Another challenge comes from the need to supply sufficient processing power and memory to achieve the desired level of performance without investing in so many new servers that floor space, administrator, and power and cooling costs negate any savings that come from better business processes. This is why many enterprises are increasingly using server virtualization to consolidate their server workloads for mission-critical applications.

A third challenge is related to sheer amount of data that today's business users and their applications generate. Today's infrastructures need to scale to keep up with the demand, which means the IT infrastructure behind today's powerful business applications needs to be able to process and store data as it increases without putting the initial infrastructure investment at risk.

The infrastructure behind today's powerful business applications needs to be powerful, built for virtualization and scalable. What about the applications themselves?

Communication and Collaboration Applications

There is no shortage of applications available that enterprises can use to power their communication and collaboration capabilities. For many enterprises, Microsoft Exchange and Microsoft SharePoint play an important role in their day-to-day business processes.

Microsoft Exchange 2010 is a powerful enterprise collaboration platform. While it's still technically considered an email server by most end users and IT administrators, Exchange 2010 is part of a continued

evolution from text-based email messaging to full-fledged unified communications platform.

Microsoft Exchange 2010 offers features like voicemail transcription, downtime protection and information rights management to protect sensitive data. In short, Exchange 2010 makes it easy for business users to collaborate with co-workers and partners in a number of ways.

Microsoft SharePoint 2010 can help enterprises with document management and business process management. It makes team collaboration easier, and it's a platform on which businesses can build custom applications that help their business run more efficiently.

Businesses are excited about many of the new features in SharePoint Server 2010, including better reporting and enhanced workflow. It boasts richer data connectivity than previous versions and social software improvements as well.

On the technical side, both Exchange 2010 and SharePoint Server 2010 are available only as 64-bit applications, which serves as a testament to how powerful the applications are, but also requires businesses to invest in a 64-bit server infrastructure if they haven't already done so.

Exchange 2010 is actually engineered to require 70 percent less disk I/O than its predecessor, but it still requires significant resources. It feasts on local storage, for example. In addition to disk space, it requires a large amount of RAM.

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SharePoint 2010 also requires sufficient processing power to handle its workload as well as a decent amount of storage. Administrators need 80 GB for the SharePoint system drive and sufficient space for the base installation and diagnostics, such as logging, debugging, creating memory dumps and so on. For production use, SharePoint also needs additional free disk space for day-to-day operations. The rule of thumb for SharePoint administrators is to maintain twice as much free space as RAM for production environments.

How Dell PowerEdge Servers Can Help

The 12th generation of Dell's PowerEdge servers is designed to power the mission-critical applications used in today's enterprises like Microsoft Exchange and SharePoint. Featuring the new Intel® Xeon® processor E5-2600 product family, Dell's latest PowerEdge servers are made for virtual environments and include the memory density, I/O flexibility and scalability that makes them a perfect choice for IT administrators looking to build a more powerful and reliable infrastructure.

The Intel Xeon processor E5-2600 product family offers efficiency and flexibility to meet the diverse needs of today's data centers. From virtualization and cloud computing, to design automation or real-time financial transactions, the Intel Xeon processor E5-2600 series delivers industry-leading performance. It includes Intel® Integrated I/O technology, which helps eliminate data bottlenecks, streamline operations and increase agility. Intel VT FlexMigration supports combining servers from multiple generations into the same virtualized server pool to extend failover, load balancing and disaster recovery capability. The

Intel Xeon processor E5-2600 product family also provides advanced security features, including Intel® Advanced Encryption Standards New Instructions (Intel® AES-NI), which encourages pervasive encryption by reducing the performance penalties of encryption.

Dell's 12th generation PowerEdge servers are also available with the CacheCade I/O Accelerator and solid-state drives (SSDs) to further increase performance. These features allow administrators to get more performance out of workloads that do a lot of random reads — like databases — by caching the frequently accessed data to a solid state disk and saving that data until it is modified.

The newest PowerEdge servers can boost the performance of any application administrators throw at them. Microsoft SharePoint is just one example of an application that requires quick access to local data. With support for up to 16 internal disks, 768GB of RAM and solid state disk, Dell's PowerEdge R720 has enough performance, memory density and I/O flexibility, to handle SharePoint workloads and it easily scales to grow with SharePoint applications.

Microsoft Exchange 2010 is a good example of an application that prefers local storage. With support for up to 26 internal disks, the Dell PowerEdge R720xd features massive local storage, high-performance processors and the I/O flexibility needed to power Exchange 2010 instances now and as they grow in the future.

High-Performance Computing Solutions

Dell's 12th generation PowerEdge servers cannot only power the day-to-day applications that businesses use in their daily operations, but they are the foundation of Dell High-Performance Computing (HPC) Solutions.

HPC, or research computing as it's sometimes known, is an important part of R&D at many organizations. R&D is what makes businesses competitive in the long-term, because there's constant pressure to develop and market new products and stay ahead of competition. HPC also has an insatiable appetite for increased performance.

Businesses can use Dell HPC Solutions to power complex workloads and take advantage of the intelligent infrastructure of 12th generation PowerEdge servers engineered with the right combination of features.

Intel Xeon processor E5-2600 family are ideal for demanding technical applications, since Intel® AVX boosts performance up to 2x for vector and floating point operations.

These features allow businesses to more quickly turn turn their R&D and intellectual property activities into profit centers and adapt more quickly than their competitors.

Conclusion

Today's businesses need to deliver powerful applications to users in order to run the business. These applications have the potential to tax the IT infrastructure because of their ever-increasing need for processing power and data storage. Applications such as Microsoft Exchange 2010 and Microsoft SharePoint 2010 are just two examples of mission-critical applications that are requiring more computing power than their previous versions.

Dell's new 12th generation PowerEdge servers are designed with the power, scalability and virtualization needs of today's applications in mind. Thanks to powerful new Intel Xeon processors and features like Cachcade IO Accelerator and solid-state disks, the newest additions to the PowerEdge family can increase the performance of the most demanding applications.

The 12th generation Dell PowerEdge servers are also powerful enough to power Dell HPC Solutions, which can help businesses become more competitive by increasing the speed with which research and development and intellectual property activities take place. ■