PowerEdge Servers and Solutions for Business Applications
PowerEdge servers and solutions for business applications

At Dell, we listen to you every day, and what you have been telling us is that your infrastructures are being pushed to the limits of capacity and your ability to manage them. The increasing complexity of new technologies, the escalating demands of business applications, and the huge surge in the volume of data that you need to process have your IT organizations struggling to keep up.

Dell’s consultant-led workshops, data center assessments and IT architecture designs can help you define a plan for integrating new technologies and optimizing your existing infrastructure to support your organization’s strategy. We have strategic partnerships with industry leading application providers, like Microsoft, Oracle, and VMware that allow us to work together to tune these applications for your environment, along with meeting requirements for Microsoft’s hardware compatibility list and other vendor certifications. And the innovations that we are introducing with the Dell™ PowerEdge™ 12th generation servers will let you get more out of any of these applications or usage environments like virtualization and high-performance computing (HPC).

Innovations on Dell PowerEdge servers:

- **SharePoint**: More memory and processing power permit greater consolidation of SharePoint roles
- **Exchange**: Up to 38TB of local drive storage and RAID options provide faster, safer collaboration environments
- **Lync**: Modular network options and increased I/O flexibility reduce communications latency
- **HPC**: Increased processor core count and memory density drive increased computational performance
- **Virtualization**: More processor cores and denser memory enables further server consolidation through more virtual machines (VMs) per server

**Achieve more**

Improve the performance of IT for business success

**Improve efficiency**

Use IT to boost productivity and get the most out of your investment

**Ensure business continuity**

Secure continuous access to services that power your business

**Virtualize and automate IT**

Customer-inspired, intelligent infrastructure engineered to run your business faster and more efficiently
Why Dell for your solutions?

Dell understands that applications are the lifeblood of your organization’s operations. For those applications to deliver at the levels of efficiency that today’s data centers require, you need an IT infrastructure that is flexible and scalable to respond to a changing landscape driven by the pressures like demand, growth, security, and compliance.

Dell has experienced industry and technology consultants in networking, storage and a comprehensive portfolio of services who can help transform your IT landscape to ensure alignment with your organizational needs and objectives.

Our solutions team uses a unique consulting methodology developed from proof-of-concept testing in our solution centers and backed by real-world experience in supporting a wide range of customer environments. Our proven approach helps you:

- Understand the implications of new technologies through workshops
- Assess your infrastructure to identify opportunities for improvement
- Design a customized plan to address your organization’s specific needs
- Implement market-leading solutions that help you grow and thrive
- Manage the complete functionality of the entire engagement

The following pages provide guidance for using PowerEdge servers in key solution areas.

**Dell provides**

- Single point of contact for complex solutions
- End-to-end solutions that are open, affordable, and capable
- Reference architectures and configuration aids to quickly identify the best fit
- Deployment, sizing, and support expertise to improve time-to-business result
- Services to provide expert guidance for every phase of the solution
- Strategic alliances with industry leading partners
The combination of economic pressure and skyrocketing fuel costs has led to a significant drop in business travel over the last few years. In its place, conferencing and collaboration tools are used to bring mobile or remote workers together electronically.

In Microsoft® SharePoint® environments where the key functions are data and web serving, lots of memory and I/O flexibility are most important. The PowerEdge portfolio provides superb choices for SharePoint because of the scalable memory and PCIe slot density.

Better collaboration and improved productivity
- Share documents in real-time with live-meeting, no matter where you and your team are
- Find colleagues faster
- Leverage existing application knowledge

Improved messaging
- Single storage repository for all messages
- Common interface for all messaging devices
- The right communication at the right time with the right resources

Reduced travel and conferencing costs
- Live meeting with remote access
- Video conferencing
- Single interface and reduced PBX costs

“Thanks to our unified communications solution from Dell, our agents can direct a customer call to the appropriate person in less than a minute.”

Neil Jones, Head of Information Systems, Newport City Homes

<table>
<thead>
<tr>
<th>SharePoint</th>
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</thead>
<tbody>
<tr>
<td><strong>Roles</strong></td>
</tr>
<tr>
<td>Database Server Role, Web Server Role, Application Server Role</td>
</tr>
<tr>
<td><strong>Racks</strong></td>
</tr>
<tr>
<td>R520 / R720 / R815</td>
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<tr>
<td><strong>Modular</strong></td>
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<tr>
<td>M915 / M620</td>
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<td><strong>Tower</strong></td>
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<tr>
<td>T620 / T420</td>
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<tr>
<td><strong>Server attributes supporting applications</strong></td>
</tr>
<tr>
<td>R520</td>
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<tr>
<td>R720</td>
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<tr>
<td>R815</td>
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<td>M915</td>
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<td>M620</td>
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<td>T420</td>
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<td>T620</td>
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These represent examples. Please see your Dell representative for details.
In almost all organizations, email is the lifeblood that allows day-to-day business to take place. Today, users send and receive more email than before, taxing infrastructures to their limits. This is placing new demands on the network that carries the messages and on storage systems, as the Exchange database grows to accommodate these messages and associated files.

Organizations using Exchange Server can select between different form factors of PowerEdge servers to effectively manage their email and integrate with other collaboration tools such as Unified Communications. Microsoft Exchange operates best with local storage—“the more the better”—so the high-density storage in PowerEdge servers are ideal collaboration solutions.

Dell provides innovative server and storage hardware that enables Exchange 2010 high availability to be cost effective and simple, whether deploying on internal storage or simplified SAN (PS Series). PowerEdge servers provide increased memory, processing, and storage capabilities to optimize Exchange 2010 features for compliance and security.

**Better email performance for larger mailboxes**
- Email archiving and more powerful retention policies
- Automated rights management protection of email
- Powerful multi-mailbox search UI for eDiscovery

**More resiliency of data centers**
- Single platform for high availability and disaster recovery
- Role-based administration and user self-service

**TCO and ROI performance**
- Faster ROI from defined architecture models and extensive mailbox migration experience
- Lower TCO due to low energy consumption, virtualization and centralized management

“With Dell Unified Communications, employees can [communicate] from almost anywhere using their PC, [with] a single interface and contact number that they can take when they work from home or travel abroad . . .”

Geriant Davies, Basingstroke and Dean Borough Council

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**Exchange**

<table>
<thead>
<tr>
<th>Roles</th>
<th>Edge Transport, Hub Transport, client access, unified messaging, mailbox, client access/hub transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Racks</td>
<td>R515-12 hard drive / R720xd</td>
</tr>
<tr>
<td>Modular</td>
<td>M620</td>
</tr>
<tr>
<td>Tower</td>
<td>T420 / T620</td>
</tr>
<tr>
<td>Application characteristics</td>
<td>Exchange prefers robust local storage. Also, main requirements focus on 2-socket platforms for a majority of the server roles listed above.</td>
</tr>
<tr>
<td>Server attributes supporting applications</td>
<td>R515-12HD  Performance with storage versatility for improved performance along with memory density and full availability options</td>
</tr>
<tr>
<td></td>
<td>R720xd  Massive local storage, performance processors, I/O flexibility for future scalability, RAID options, and network flexibility</td>
</tr>
<tr>
<td></td>
<td>M620  Performance processors, high DIMM density, flexible I/O, and networking options</td>
</tr>
<tr>
<td></td>
<td>T420  Solid performance, 2-socket tower for departmental and branch offices where dense local drive capacity and availability features are ideal for email</td>
</tr>
<tr>
<td></td>
<td>T620  Massive local storage with 32 drives, flexible I/O, RAID options, performance processors, Express Flash PCIe drives support lower latency along with RAS features to support business-critical email</td>
</tr>
</tbody>
</table>

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Today’s changing workplace often includes a distributed global workforce that can make it difficult to connect effectively. Organizations need integrated productivity tools to allow employees to work from anywhere and collaborate in real-time in a secure and cost-effective way.

Microsoft Lync™ Server delivers a fresh, intuitive user experience that brings together the different ways people communicate in a single interface. This unified experience facilitates rapid user adoption, while the ability to support a full range of communications from a single platform reduces both capital and operational costs.

For organizations using Microsoft’s Lync unified communications offering to integrate multiple business support services, such as audio/visual, phones, IM, and email, the PowerEdge portfolio has the range of servers needed to fit the various roles in a unified communication environment. For example, the PowerEdge 4-socket servers are an excellent choice for database roles where high availability is crucial—like phone and messaging databases. PowerEdge 2-socket server is suited for audio and video conferencing—because of its high memory and bandwidth capacities.

**Cost savings**
- Cost savings from reduced travel, communications, and IT expenses
- By unifying formerly disparate types of communications into one integrated solution, IT resources and security are maximized

**Improved productivity and communication**
- By improving individual productivity and team collaboration, business objectives can be met faster than ever before
- Communication is seamless and robust with a unified user experience

**Optimized resource utilization**
- Automatically locate the best resource to answer a question, approve a request, or perform a task
- The resource finder tool can reduce the time it takes to answer a question by 70%

**Communication | Lync Server**

“By adopting Unified communications, Dell anticipates significant savings on communications hardware acquisitions, long-distance calls, and employee travel expenses…”

Demetrio Gauna, Dell
Enable your organization to maximize technology's full potential through a modular, standards-based, high-performance computing cluster (HPCC) solution. Dell can help you address the most complex IT problems and meet your organization's demands for computing power and storage.

HPC and research computing have an insatiable appetite for increased performance, and the Dell PowerEdge 12th generation servers deliver outstanding performance in compute-intensive environments. With the latest generation of Intel® Xeon® processors, more graphics processing units (GPU) options on more servers, more internal solid-state storage options, and ultra-dense designs, these servers readily support demanding workloads like computational chemistry, weather forecasting, financial modeling, and academic research.

PowerEdge servers running HPC applications help you do more—whether it's delivering research results faster, accelerating the response time for huge financial calculations, or developing game-changing products.

When you need more capacity to scale your environment and accommodate ongoing growth, the portfolio of solutions from Dell can provide your total compute requirements. If you need pure performance, Dell can design solutions geared to absolute performance. If capacity and scale are top priorities in your environment, Dell can design solutions that can carry you through the next set of challenges. And if you just need systems sized to help your organization get ahead of your competitor, we have production-ready systems for all sizes, missions and charters.

<table>
<thead>
<tr>
<th>HPC</th>
<th>Compute Nodes</th>
<th>R620 / C6145 / C6220 / C410x</th>
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</thead>
<tbody>
<tr>
<td>Roles</td>
<td>Racks</td>
<td>Modular</td>
</tr>
<tr>
<td>HPC</td>
<td>HPC compute nodes require high I/O for storage, memory density to support caching and minimize I/O, performance processors and RAS features</td>
<td></td>
</tr>
<tr>
<td>Application characteristics</td>
<td>R620</td>
<td>2-socket, 1U includes GPU, I/O flexibility, memory density, full complement of RAS features, and Express Flash PCIe drives support FLOP intensive HPC workloads</td>
</tr>
<tr>
<td>Server attributes supporting applications</td>
<td>C6145</td>
<td>Two 4-socket servers in 2U, high memory density, 72 lanes of PCI Express expansion per node, high direct attach storage capability</td>
</tr>
<tr>
<td>C6220</td>
<td>High density, high efficiency, 2-socket performance, high TDP processor support, 4-node configs for maximum density, 2-node configurations for additional I/O and storage</td>
<td></td>
</tr>
<tr>
<td>M420</td>
<td>Quarter-height blade offers true hyperscale density with power efficiency, 10GbE I/O, and 2-socket performance</td>
<td></td>
</tr>
<tr>
<td>M620</td>
<td>Density, solid 2-socket performance, memory density, Express Flash PCIe drive support, flexible fabric and energy efficiency to support data center density and scalability of nodes</td>
<td></td>
</tr>
<tr>
<td>M915</td>
<td>4-socket, high core count for GFLOPS, memory density, I/O, and energy efficiency address HPC workloads requiring cache and are FLOP intensive</td>
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</tbody>
</table>

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Virtualization

Whether it is a few virtual machines running on a single physical computer or a whole server farm across multiple root servers, virtualization optimizes investments in hardware and network infrastructure by reducing server sprawl. Virtualizing workloads is just the beginning for realizing large-scale benefits such as improved utilization, reduced floor space, and reduced power costs along with providing a robust infrastructure that can deliver high availability and quick disaster recovery.

The PowerEdge 12th generation portfolio lets you pack more virtualization into a server, whether you are consolidating operations from several legacy servers or are looking to implement a large virtual desktop infrastructure. Get more out of the resources you have, enable better usage rates, and run your data center with greater efficiency using the Dell PowerEdge 12th generation servers.

More memory, more virtual machines, more results

- Run more VMs using the maximum memory densities available
- Boost virtual application throughput with faster, balanced I/O option, like more PCIe slots and 10GbE speed
- Flexibly allocate resources among VMs with switch independent partitioning technology

Greater reliability for virtual applications

- Maximize application uptime with automatic failover of redundant hypervisors

Deployment options

Whether you are adding new equipment to a data center or migrating end users to the newest laptops, upgrading to new systems is a daunting task. A slight misstep in integrating hardware and software into your environment can cause major disruptions, unnecessary expenses and longer-than-expected installation times.

Adopt a pain-free process that enables your organization to integrate new IT systems quickly. With careful, in-factory preparation of custom images, applications and hardware, Dell provides you with preconfigured systems that are ready for use, straight out of the box—so you can spend less time calibrating your infrastructure and more time doing business as usual.

During deployment, our certified technicians follow a proven methodology and apply expert knowledge to lower costs, avoid downtime, and reduce installation.

These represent examples. Please see your Dell representative for details.
Dell meets your solution needs

**Powerful alliances**
Long-term relationships with leading technology partners and jointly engineered solutions for Microsoft Exchange, SharePoint and Lync Server.

**Reduce risk, cost, time**
Dell has invested in defining architectures and repeatable consulting services that combine to reduce the risk, cost and time to successful implementation.

**Efficient product supply**
Our direct supply model delivers product-supply efficiencies within your SharePoint projects.

**Solution engineering**
Tools to get you started such as tested configurations, reference architectures, and best practice guides.

**Flexible delivery model**
Dell Services operate a flexible global delivery model that enables optimized skill and resource distribution, blended between locations in-country and off-shore and tailored to customer needs.

**Innovation**
Used as the foundation of a Unified Infrastructure, Dell products deliver new and innovative ways for information workers to find each other, connect and collaborate, while at the same time realizing cost efficiencies.

**Single point of contact**
A single point of contact for the entire solution covering Consulting & Systems integration around business process, application architecture, infrastructure architecture, operations, and management.
Have the power to do more with Dell.