

HP ProLiant servers have the advantage over IBM xSeries servers.

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HP ProLiant ML110 G3 server vs. IBM eServer xSeries 100

- The ML110 G3 PCI Express slots provide better performance with PCI Express capability of up to x16 (1 x4 and 1 x16). The xSeries 100 PCI Express capability is limited to x8 (1 x1 and 1 x8).
- The ML110 G3 offers up to a 3.0 GHz dual-core Intel® processor. The xSeries 100 offers up to only a 2.8 GHz dual-core Intel processor.
- The ML110 G3 offers up to 3 Ultra320 non-hot plug SCSI hard disk drives or non-hot plug SATA hard disk drives. The xSeries 100 offers only non-hot-plug SATA hard disk drives.
- The ML110 G3 offers 6 USB ports: 2 front, 2 rear, and 2 internal. The xSeries 100 offers only 4 USB ports.



HP ProLiant ML310 G2 server vs. IBM eServer xSeries 206

- The ML310 G2 supports five types of hard disk drives: hot-plug SCSI, non-hot plug SCSI, hot-plug Serial ATA, non-hot plug Serial ATA, and hot-plug 3.5" SAS hard disk drives. The xSeries 206 supports only three types of hard disk drives: hot-plug SCSI, non-hot plug SCSI, and non-hot plug simple swap SATA hard disk drives.
- The ML310 G2 support RAID levels 0, 1, 0+1, and 5. The xSeries 306 supports only RAID levels 0, 1, and 5.
- The ML310 G2 offers a 3-year pre-failure notification on processors, memory and SCSI hard disk drives. The xSeries 206 offers Predictive Failure Analysis on disks only.
- The ML310 G2 has a PCI Express slot (x8 connector, x4 speed). The xSeries 206 does not offer a PCI Express slot.



HP ProLiant ML150 G2, ML350 G4 and ML350 G4p servers vs. IBM eServer xSeries 226

- The ML150 G2 and ML350 G4 and ML350 G4p support 6 hot plug SCSI drives; the ML350 G4p also supports 6 hot plug SATA/SAS drives and the ML350 G4 supports 4 non hot plug SCSI drives. The xSeries 226 supports only non hot plug simple swap SATA drives.
- The ML350 G4p supports RAID for SATA drives at levels 0, 1, 0+1, and 5. The xSeries 226 RAID controller supports only levels 0 and 1.
- The ML350 G4 and G4p support up to 8 hot plug hard drives, for a maximum 2.4 TB internal SCSI storage. The xSeries 226 is limited to 6 hot plug hard drives, for a maximum 1.8 TB of internal SCSI storage or 1 TB internal SATA storage.
- The ML350 G4 and G4p server's comprehensive Pre-Failure Warranty covers hot plug hard drives, memory, and processors that are monitored by HP Insight Management Agents and reported through HP Systems Insight Manager. The xSeries 226 Predictive Failure Analysis only covers hard drives.



HP ProLiant ML370 G4 server vs. IBM eServer xSeries 236

- The ML370 G4 has 6 full-length, full-height PCI slots. The xSeries 236 has 5 full-length, full-height PCI slots and 1 low-profile PCI slot.
- The ML370 G4 has 4 PCI-X slots and 2 PCI-Express slots. The xSeries 236 provides only 3 PCI-X slots, 2 PCI-Express, and 1 legacy PCI slot.
- The ML370 G4 offers a choice of hot-plug SCSI, hot-plug 2.5" Serial ATA, or hot-plug 2.5" SAS hard disk drives. The xSeries 236 offers only hot-plug U320 SCSI drives.



HP ProLiant ML570 G3 server vs. IBM eServer xSeries 260

- The ML570 G3 offers an Ultra320 compatible SCSI Drive Cage standard with up to 10 drives (standard duplex backplane 8+2) in SCSI models or SFF SAS Drive Cage standard (18 drives) in SAS models. The xSeries 260 supports up to 12 slim line hot-swap U320 SAS SCSI hard drives: 6 drives in a standard cage and 6 drives in an optional cage.
- The ML570 G3 has 10 PCI slots, including 4 PCI-Express x4 slots, 2 hot-plug PCI-X 64 bit/133MHz slots and 4 PCI-X 64 bit/100MHz slots, while the xSeries 260 has only 6 PCI slots, all PCI-X.
- The ML570 G3 offers a denser 6U* tower or rack form factor. The xSeries 260 offers a 7U tower or rack form factor.



HP ProLiant DL140 G2 server

- The DL140 G2 is an affordable 1U, dual processor capable server equipped with essential performance features that provide customers with a platform to help design a fully optimized solution.
- IBM does not offer a server that is directly comparable to the DL140 G2.



HP ProLiant DL145 G2 server vs. IBM eServer 326

- The DL145 G2 supports an optional PCI-Express at x16 in place of the full-length PCI-X slot. The eServer 326 does not offer a PCI-Express option.
- The DL145 G2 offers a 500W power supply. The eServer 326 offers only a 411W power supply.



HP ProLiant DL320 G3 server vs. IBM eServer xSeries 306

- The DL320 G3 supports a full-height, full-length PCI slot as well as a half-length, low-profile slot. The xSeries 306 supports two PCI cards, both are half-length and one is low-profile.
- The DL320 G3 comes standard with HP Integrated Lights-Out (iLO), the integrated remote management solution from HP. The xSeries 306 Remote Supervisor Adapter II card is optional and uses a PCI-slot.
- The DL320 G3 supports three types of drives including one hot plug protocol: hot plug SATA/SAS, non-hot plug SATA, or U320 SCSI hard disk drives. The xSeries 306 supports only two types of drives and no true hot-plug protocol: non-hot plug U320 SCSI or simple swap Serial ATA drives only.
- The DL320 G3 comes with a three-year parts, one-year labor, one-year on-site service, Next Business Day limited global warranty and extended Pre-Failure Warranty covering processors, memory, and SCSI hard drives. SATA drives have a one-year warranty. The xSeries 306 has a one-year limited warranty with Predictive Failure Analysis on hard disks only.



HP ProLiant DL360 G4 and G4p server vs. IBM eServer xSeries 336

- The DL360 supports three types of drives. The DL360 G4 supports 2 Ultra320 SCSI or Serial ATA drives, and the DL360 G4p also offers support for up to 4 Serial Attached SCSI (SAS) drives. The xSeries 336 supports only SCSI hot plug or SATA simple swap hard disk drives.
- The DL360 G4 and G4p offer 2 PCI slots supporting 64-bit/133 MHz PCI-X protocol. The IBM xSeries 336 offers 2 PCI slots with only one supporting 133 MHz PCI-X protocol, and the other limited to 100 MHz. The xSeries 336 offers only one 133 MHz PCI-X slot and one low profile 100 MHz PCI-X slot.
- The DL360 G4 and G4p offer a choice of PCI-X, PCI Express, or one of each. The xSeries 336 offers either PCI-X or PCI Express at x8, not both.
- The DL360 G4 and G4p have traditional KVM ports for easy direct access to manage the system. The xSeries 336 does not have KVM ports at the rear; it requires one cable chain kit per chain of servers, or a NetBAY C2T Conversion Option and one of the NetBAY Advanced Connectivity Technology switch offerings, in order to receive KVM support.



HP ProLiant DL380 G4 server vs. IBM eServer xSeries 346

- The DL380 G4 has optional hot plug PCI slots. The xSeries 346 has non-hot plug PCI slots only.
- The DL380 G4 offers RAID 0, 1+0, or 5 with the integrated HP Smart Array 6i controller. The xSeries 346 offers only RAID 0, 1, and 10 with the integrated controller, with RAID 5 requiring an optional hardware solution.



HP ProLiant DL385 server

- The DL385 is engineered with HP ProLiant reliability and proven 2-way AMD Opteron™ performance for ease of ownership, enterprise-class uptime and manageability, and 2U density for a variety of rack deployments and applications.
- IBM's 2-way x86 solution is based upon Intel Xeon® technology, and as a result, does not offer benchmark numbers comparable to the DL385.

HP Systems Insight Manager and the ProLiant Essentials Server Migration Pack allows systems administrator to migrate between physical and virtual systems in minutes. IBM Director and Virtual Machine Manager have no comparable capabilities.

HP Systems Insight Manager and the ProLiant Essentials Virtual Machine Management Pack deliver security vulnerability scanning and patch deployment within one tool. IBM Director and Software Distribution Premium Edition allow distribution of patches, but provide no vulnerability scanning capabilities.

HP delivers a complete set of SAN storage management plug-ins to HP Systems Insight Manager through HP Storage Essentials. IBM does not deliver SAN-storage management plug-ins for IBM Director.



HP ProLiant DL560 server

- The DL560 redefines enterprise density by delivering scalable four-processor performance in an innovative 2U design that reduces power consumption in the data center.
- IBM does not offer a server that is directly comparable to the DL560.



HP ProLiant DL580 G3 server vs. IBM eServer xSeries 366 and eServer xSeries 445

- The DL580 G3 offers 7 PCI slots. The xSeries 366 offers only 6 PCI slots.
- The DL580 G3 offers online spare memory, hot plug mirrored memory, and hot plug RAID memory. The xSeries 366 does not offer hot plug RAID memory.
- The DL580 G3 offers a detailed diagnostic LED map to the specific failed component, using the QuickFind Diagnostic Display. The xSeries 366 uses a nonspecific component category LED map.
- The DL580 G3 has 4 hard drive bays. The xSeries 445 supports only 2 hard drives.



HP ProLiant DL585 server

- The DL585 offers leading 32-bit and 64-bit benchmarks for four-way x86 servers, combining AMD Opteron processor technology, best-in-class management, and outstanding uptime features in a system ideal for large data center deployments.
- IBM's 4-way x86 solution is based upon Intel Xeon technology, and as a result, does not offer benchmark numbers comparable to the DL585.



HP ProLiant DL740 and DL760 G2 servers vs. IBM eServer xSeries 445

- The DL740 has hot plug RAID memory (hot add, hot replace, hot upgrade), with hot plug access to all 64 GB of DIMMs. The xSeries 445 has only hot replace and hot add memory capability, and the stacked design makes only the top 32 GB of DIMMs hot plug.
- The DL740 hot add memory capability works with Microsoft® Windows® 2003 and Linux® operating systems. The xSeries 445 hot add memory capability only works with Microsoft Windows 2003 operating system.
- The DL760 G2 has 4 hot plug hard drive bays. The xSeries 445 has only 2 hot plug hard drive bays.
- The DL760 G2 has an integrated Smart Array 5i controller supporting RAID 0, 1, 1+0, and 5. The xSeries 445 has integrated RAID 1.



HP BladeSystem vs. IBM eServer BladeCenter

- The HP BladeSystem allows customers to manage up to 16 blades simultaneously via their dedicated iLO management processors, including remote graphical console and virtual media capabilities. IBM uses a traditional KVM solution which allows for a single connection to a single blade at a time, and the administrator needs to be local to the IBM BladeCenter to use the integrated CD drive (no remote virtual media).
- The HP BladeSystem results in only 4 power cables coming out of a 42U rack. IBM BladeCenter results in at least 12 power cables.
- The HP BladeSystem does not require Power Distribution Units (PDUs). IBM Blade Center requires as many as 16 PDUs.
- The HP BladeSystem has a fan in each server blade, which means up to 14 fans per enclosure. IBM BladeCenter has only two fans per enclosure.
- HP introduced server blades with 3000-watt power supplies that are still sufficient for today's blade servers, showing the HP commitment to design products for investment protection. IBM introduced its server blades with 1200 watts per power supply and has had four updates in just two years.
- The HP BladeSystem offers many choices and features that IBM BladeCenter does not: single, three phase, or 48V power; rack level power with a 3U power enclosure and scalable power bus bars or chassis level power using a 1U power enclosure;

HP Care Pack

HP Care Pack hardware support services provide speedy access to HP technical specialists for problem identification and resolution for ProLiant servers, helping to increase equipment availability and productivity with quality remote and onsite support. This flexible service option enables a choice from a range of response times, coverage windows, and service periods that meet customers' specific requirements. For 13x5x4 hour and 24x7x4 hour cover, HP provides response for onsite support within 4 hours of your call being logged.

HP's support services differ from IBM's commitment for response. Customers must wait for IBM to complete a problem diagnosis before a 4-hour response commitment to your call begins. It is IBM controlling the response times, not you.



a dynamic power feature on the 1U power enclosure for efficient power usage/cost savings; and a power calculator for customer site planning. IBM BladeCenter offers only single phase power, enclosure level power only, no comparable dynamic power feature, and no comparable power calculator feature.

- HP server blades offer "rip-and-replace" functionality—a server blade can be replaced and automatically configured identically to the removed blade without the need for administrator intervention. Management software detects the new device and sends an image to the blade automatically. This feature is more than a convenience—it saves significant time and money. IBM BladeCenter only offers rip-and-replace functionality with a software product from Tivoli that costs \$3200.



HP ProLiant BL20p G3 server blade vs. IBM HS20

- The BL20p G3 blade offers 4 Ethernet connections per blade standard. The HS20 offers only 2 Ethernet connections standard.
- The BL20p G3 blade supports 2 internal high-performance 15,000-rpm hot plug SCSI drives with an integrated Smart Array 6i controller. HS20 has an integrated SCSI RAID which is available with a SCSI storage expansion unit, at additional cost, that reduces the number of deployable blades by up to 50 percent.
- The BL20p G3 blade features 4 integrated Gigabit NICs plus 1 dedicated 10/100 NIC for iLO. The HS20 has only 2 integrated NICs standard.
- The BL20p G3 blade enables up to 48 blades supporting hot plug SCSI hard disk drives per 42U rack. The HS20 enables 84 blades per 42U rack. For SCSI support, additional hardware must be installed that reduces the blade density by up to 50 percent, so that a maximum of only 42 IBM blades will fit in a 42U rack. IBM offers a configuration with 84 SCSI blades per rack, but only has non hot plug hard disk drives.



HP ProLiant BL25p and BL35p server blades vs. IBM LS20

- The BL25p blade regularly achieves published performance benchmark results showing leading and outstanding performance on the two-tier SAP SD Standard Application Benchmark, and blade performance leadership on both the SPECweb99_SSL and the SPEC CPU2000 rates benchmarks. The LS20 as of the posting dates either had no publicly posted results or lower results for the same benchmarks.
- The BL25p blade offers up to 16 GB memory. The LS20 offers a maximum of 8 GB memory.
- The BL25p blade has four times as much memory (32 GB) and the BL35p blade has two times as much memory (16 GB) as the LS20.
- The BL35p blade enables up to 96 blades (with non-redundant power) supporting non-hot plug ATA hard disk drives or hot plug SAS hard disk drives in a 42U rack (80 with redundant power). The LS20 enables a maximum of 84 ATA hard disk drives in a 42U rack and offers no SAS hard disk drive capability.



HP ProLiant BL45p server blade vs. IBM HS40

- The BL45p blade supports 2 internal high-performance 15,000-rpm hot plug SCSI drives and comes standard with an Integrated Smart Array 6i Plus controller with integrated SCSI RAID. The HS40 supports SCSI drives with an extra-cost optional SCSI storage expansion unit that reduces the number of blades per enclosure by up to 50 percent. Integrated RAID is available only as an option.
- The BL45p blade supports up to 32 GB PC3200 or 64 GB PC2700 DDR memory. The HS40 supports only up to 16 GB memory.

Note: These product comparisons are the opinion of HP, based on comparable product features.

*1U = 1.75"

IBM eServer xSeries servers are referred to as "xSeries servers" in this document. Information concerning IBM servers was obtained from HP and IBM specifications published at www.hp.com and www.ibm.com. The information in this document is updated quarterly and is accurate as of October 2005. Not all IBM servers are represented in this comparison. Certain restrictions and exclusions apply for warranties. Contact the Product Information Center at 1-800-345-1518 for details. This comparison is based on published specifications for the featured products.

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