PureSystems

IBM

IBM Flex System x220 and x240 Compute Nodes

Highlights

- Integration by design: compute nodes are preconfigured and deeply integrated with the system so your solution deploys quickly and is easy to manage

- Built-in expertise: automated management and deployment expertise for virtualization and management of compute resources so your experts can focus on innovation

- Simplified experience: no matter what OS or virtualization scheme you choose, the unified management tool makes maintaining your system simple
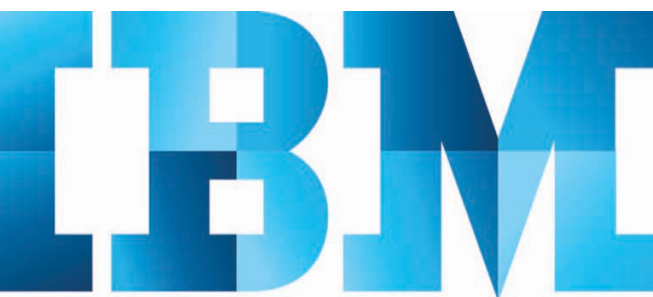
To meet today's complex and ever-changing business demands, you need a solid foundation of compute, storage, networking and software resources that is simple to deploy and can quickly and automatically adapt to changing conditions. You also need to be able to take advantage of broad expertise and proven best practices in systems management, applications, hardware maintenance and more.

The IBM PureFlex System combines no compromise system designs along with patterns of expertise and integrates them in complete, optimized solutions.

A building block for the PureFlex System family, the IBM Flex System™ x240 Compute Node is an Intel-processor based server optimized for virtualization, performance and highly scalable I/O designed to run a wide variety of workloads in your PureFlex System.

As a most affordable x86 building block for the PureFlex System family, the IBM Flex System x220 is versatile, easy-to-use Compute Node optimized for Price/Performance, power and cooling. The x220 is cost-optimized and designed for infrastructure workloads and entry virtualization.

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Latest generation Intel processors support extraordinary efficiency

The Flex System x240 Compute Node is performance-tuned and based on the Intel Xeon processor E5-2600 product family for maximum performance—up to 80 percent performance boost over previous generation processors.[1] These processors are designed to deliver and outstanding combination of performance, built-in capabilities, and cost-effectiveness. The processors also support automated power management with onboard sensors to give you more control over power and thermal levels across the system. Offering up to 50 percent more performance per watt than previous generations, the new processors are designed to improve your energy efficiency.[2] These capabilities, combined with memory capacity up to 768 GB are designed to help you get the most out of your systems.

The IBM Flex System x220 is versatile, easy-to-use Compute Node optimized for Price/Performance, power and cooling. The x220, based on the Intel Xeon processor E5-2400 product family, is cost-optimized and designed for infrastructure workloads and entry virtualization. The processors support automated power management with onboard sensors to give you more control over power and thermal levels across the system. These capabilities, combined with memory capacity up to 384 GB are designed to help you get the most out of your systems.

Virtual networking helps you control your infrastructure

With integrated virtual fabric and extraordinary I/O flexibility, you can take advantage of up to 32 ports of virtual networking capabilities. With 10Gigabit Ethernet (GbE) as a foundation, you get multiple protocols on the x240 Compute Node including Fibre Channel over Ethernet and iSCSI. The system also allows you to enable features on demand for a more flexible I/O solution. Virtual networking can require up to 75 percent fewer adapters, cables and upstream switch ports to help control costs. Compared to using multiple 1 GbE ports, you could save significant cost and reduce power consumption. You also get significantly simpler management with reduced cabling and fewer components to manage. The x220 Compute Node has 1GbE and works with iSCSI.

Flexible storage improves the agility of your business

Built in storage is available through two 2.5-inch slots that support hot swap hard drives or solid state drives. You can also upgrade the system to support RAID 0/1/5/6/10/50 with cache to flash capability and support for up to eight 1.8" SSD drives, utilizing the ServeRAID M5115. With the IBM Flex System x220 Compute Node you also have the ability to upgrade to hardware RAID with ServeRAID H1115, this gives you the RAID 0/1 capability. These features allow you to tailor internal storage to match your specific capacity, performance, cost, and reliability needs and support distributed database applications without sacrificing system density.

Advanced, integrated system management offers simplicity

With integrated IBM Flex System Manager you get advanced management capabilities for all resources in your IBM PureFlex System. Flex System Manager is designed to simplify and optimize your management of physical and virtual resources and the workloads that you run on them.

The software uses built-in expertise through wizards and auto discovery to help you deploy systems and expand your solution when needed. Add new hardware nodes and with a few clicks they become part of your resource pool. Deploying virtual machines is simple too. You define the resources needed and the software places the VM automatically.

IBM has decades of experience delivering essential IT

IBM has taken knowledge, expertise and technology gained from decades of experience and investment in IT solutions for business problems and integrated it into the PureFlex System. And with a commitment to open standards you can integrate IBM solutions with other elements of your own environment with your network of partners, customers and suppliers.

With a broad ecosystem of partners with technical and industry expertise, and the unique ability and skill to integrate it all together for you—along with an unwavering commitment to your success—you can rely on IBM and your IBM PureFlex System.

IBM Flex System x240 Compute Node at a glance

Processor	2/2, Intel Xeon E5-2600 Series Processor
Level 2 (L2) cache	256 KB per core
Level 3 (L3) cache	2C – 5 MB, 4C – 10 MB, 6C – 15 MB, 8C – 20 MB
Chipset	Patsburg Intel C600 Series IOH in CPU
Form factor	Flex System standard node
Memory	24 DDR3/DDR3L LP, 768GB Max with 32 GB LRDIMM
Internal Storage	2 x HS 2.5" (SAS/SATA/SSD)
Internal RAID	LSI 2004, RAID 0/1 Optional ServeRAID M5115/RAID 0,1,5,6,10,50 with LSI SAS2208 Controller
Internal USB	2 x Standard USB Flash Key + 1 x Front Access USB Key
Ethernet	Emulex BE3 2 x 10GbE LOM
Chassis Support	Flex System Enterprise Chassis
I/O Expansion	2 x Mezz Cards (x16 + x8 PCI Express 3.0) 1 x PCIe Expansion Node Connector (x16 PCI Express 3.0)
Power management	AEM, Active Energy Management
Warranty	3 year
Management	iMM V2, RTMM KVM Dongle
Operating systems	MS Windows Server SUSE RedHat Enterprise Linux VMware
RAS features	Chassis redundant/hot plug Power & Cooling Front Panel & FRU/CRU LEDs

IBM Flex System x220 Compute Node at a glance

Processor	2/2, Intel Xeon E5-2400 Series Processor
Level 2 (L2) cache	256 KB per core
Level 3 (L3) cache	2C – 5 MB, 4C – 10 MB, 6C – 15 MB, 8C – 20 MB
Chipset	Patsburg Rev B with "A" Feature Set
Form factor	Flex System standard node
Memory	12 DDR3/DDR3L LP, 192GB Max with 16 GB RDIMMs
Internal storage	2 x HS 2.5" (SAS/SATA/SSD)
Internal RAID	• SW RAID, RAID 0/1 • Optional HW RAID, ServeRAID H1135, RAID 0/1 • Optional ServeRAID M5115/RAID 0,1,5,6,10,50 with LSI SAS2208 Controller
Internal USB	2 x Standard USB Flash Key + 1 x Front Access USB Key
Ethernet	Broadcom Dual 1 GbE
Chassis support	Flex System Enterprise Chassis
I/O Expansion	2 x Mezz Cards (x8+x4) + x4 PCI Express 3.0 1 x PCIe Expansion Node Connector (x16 PCI Express 3.0)
Power management	Psate Capping, Power Maximizer
Warranty	3 year
Management	iMM V2, RTMM KVM Dongle
Operating systems	MS Windows Server SUSE Red Hat Enterprise Linux VMware
RAS features	Chassis redundant/hot plug Power & Cooling Front Panel & FRU/CRU LEDs

For more information

To learn more about the Flex System x220 and x240 Compute Nodes, visit: **ibm.com**/systems/flex/ or please contact your IBM representative or IBM Business Partner,

Additionally, IBM Global Financing can help you acquire the IT solutions that your business needs in the most cost-effective and strategic way possible. We'll partner with credit-qualified clients to customize an IT financing solution to suit your business goals, enable effective cash management, and improve your total cost of ownership. IBM Global Financing is your smartest choice to fund critical IT investments and propel your business forward. For more information, visit: **ibm.com**/financing

[1] Comparisons are top bin 5600 to top bin 2600 2S configuration. For more details, see: Intel Performance (http://www.intel.com/content/www/us/en/benchmarks/workstation/xeon-e5-2600.html)

[2] Performance comparison using SPECint*_rate_base2006 benchmark result divided by the processor TDP. For more details, see: (http://www.spec.org/cpu2005/results/res2011q4/cpu2006-20111121-19037.html)

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