Escala E2-1000, E3-1000, E4-1000

Secure and powerful infrastructure for business agility

The Escala E2-1000, E3-1000 and E4-1000 scale-out servers based on the Power10 processor have been designed to improve scale performance and security while delivering class-leading reliability and lowering IT costs through reduced footprint and lower cooling and electrical costs, and the required agility for the unpredictability of today's business. Organisations can benefit from the increased agility and deploy their business-critical workloads across private and hybrid clouds.

Faster response to business demands

The Escala Power10 scale-out servers deliver new levels of performance as compared to Power9 servers for the same workloads without increasing energy or carbon footprint, enabling more efficient scaling. Performance improvements are notably provided by:

- More performance per core and more memory bandwidth with the use of differential DIMM (DDIMM)
- Accelerated encryption
- PCIe Gen5 interconnects Internal storage exclusively based on Non-Volatile Memory Express (NVMe) devices
- Enhanced version of the power management EnergyScale technology.

Built-in security

With applications and data now residing everywhere, security is an increasingly critical concern for CIOs and IT Managers and has always been a design priority for Power-based architectures, which has allowed them to be ranked highly in terms of end-to-end security.

The new Escala Power10 scale-out servers introduce unique built-in security features strengthening data protection no matter where they are:

- Transparent memory encryption with no management set up and no performance impact
- 4x more crypto engines in every core compared to Power9
- Support of future cryptographic standards, such as quantum-safe cryptography and fully homomorphic encryption.

In addition, they benefit from the integrated security management capabilities that are offered by PowerSC.

In-core AI capabilities permit to run inferencing workloads inside the server without requiring additional hardware, keeping the data secure within the server.

Expand reliability and availability

The continuous operations of today's in-memory systems depend on memory reliability because of their large memory footprint. Each of the Power10 memory slots can be populated with a DDIMM that delivers 2x better memory reliability and availability than industry standard DIMMs. Moreover, the Active Memory Mirroring option enhances resilience by mirroring critical memory that is used by the PowerVM hypervisor so that it can continue operating if a memory failure occurs.

Ready for hybrid cloud deployment

The Escala Power10 scale-out servers include PowerVM Enterprise Edition to deliver virtualised environments and to support a frictionless hybrid cloud experience. Workloads can run the AIX, Linux and IBMi operating systems, including Red Hat OpenShift Container Platform.

Technical specifications

	Escala E2-1000	Escala E3-1000s	Escala E3-1000	Escala E4-1000
Form factor	• 4U (Tower option)	• 2U	• 2U	• 4U
# of sockets	• 1	• 1 or 2	• 1 or 2	• 1 or 2
Processor module offerings	• 4-core – 3 to 3.9 GHz • 8-core – 3 to 3.9 GHz	• 4-core – 3 to 3.9 GHz • 8-core – 3 to 3.9 GHz	• 12-core – 2.9 to 4 GHz • 16-core – 2.75 to 4 GHz • 20-core – 2.45 to 3.9 GHz	• 12-core – 3.4 to 4.GHz • 16-core – 3.1 to 4 GHz • 24-core – 2.75 to 3.9 GHz
Processor Interconnect	• N/A	• 4x2B @ 32 Gbps	• 4x2B @ 32 Gbps	• 4x2B @ 32 Gbps
# of memory channels	• 8 OMI channels	• 16 OMI channels	• 32 OMI channels	• 32 OMI channels
Max memory bandwidth	• 204 GB/s • w/ 16, 32, 64GB DDIMMs	• 408 GB/s • w/ 16, 32, 64GB DDIMMs	• 818 GB/s • w/ 16, 32, 64GB DDIMMs	• 818 GB/s • w/ 16, 32, 64GB DDIMMs
# of DIMMs	• 8 DDIMMs	• 16 DDIMMs	• 32 DDIMMs	• 32 DDIMMs
Max memory capacity	• 1 TB (post GA)	• 2 TB (post GA)	• 4 TB (post GA)	• 8 TB (post GA)
Acceleration ports	• NA	• NA	• 6 ports @ 25 Gbps	• 6 ports @ 25 Gbps
Max PCIe lanes	• 64 PCIe Gen4 @ 16 Gbps	• 64 PCIe Gen4 @ 16 Gbps	• 128 PCIe Gen4 @ 16 Gbps	• 128 PCIe Gen4 @ 16 Gbps
PCIe slots	• 1 PCIe G4 x16 or G5 x8 • 3 PCIe G5 x8 • 1 PCIe G4 x8	• 4 PCIe G4 x16 or G5 x8 • 4 PCIe G5 x8 • 2 PCIe G4 x8	• 4 PCIe G4 x16 or G5 x8 • 4 PCIe G5 x8 • 2 PCIe G4 x8	• 4 PCIe G4 x16 or G5 x8 • 4 PCIe G5 x8 • 2 PCIe G4 x8
Slots for internal storage	• General purpose			
# internal drives	• 16 NVMe U.2	• 8 NVMe U.2	• 8 NVMe U.2	• 16 NVMe U.2
Internal storage capacity	• up to 102.4 TB	• up to 51.2 TB	• up to 51.2 TB	• up to 102.4 TB
I/O expansion drawer	• 0.5	• up to 2	• up to 2	• up to 2
Active Memory Mirroring	• NA	• Available as an option	• Available as an option	• Available as an option
Service Processor	• Enterprise BMC (eBMC)			
PowerVM™	• Enterprise Edition included			

AIX rPerf (max)	• 254.2	• 477.8	• 1024.1	• 1331.8
AIX support	• 7.2, 7.3 or later			
Linux support	• RHEL 8.4, 9.0 or later • SLES 15 service Pack 3 or later • Red Hat OpenShift Container Platform 4.9 or later			
IBM I support	• 7.3, 7.4, 7.5 - Contact Bull representative for more details			

Bull and IBM: a perfect fit

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