Escala E5-1100

Resilient mid-range server for memory- and data-intensive workloads

The Escala E5-1100 is a secure, energy-efficient 4-socket server built on the Power11 processor, ideal for memory- and data-intensive workloads. Designed for AIX® and Linux®, it supports AI integration, application modernisation, and system consolidation—delivering reliable performance and agility for today's hybrid cloud environments.

Up to 55%	28%	5-8 hours saved
better core performance compared to Power9	better server efficiency with the new Energy Efficiency mode compared to Maximum Performance mode on Power11	Of IT staff time per ticket

Increased performance, efficiency and density to lower TCO

The **Escala E5-1100** delivers a leap in performance and efficiency, helping reduce total cost of ownership (TCO) while supporting demanding enterprise workloads.

Faster workloads

- 55% higher per-core database performance with a 25% better transactional response time[1]

Greater energy efficiency

- 20% more rPerf per watt compared to E5-1000
- 2× performance per watt at max power vs. comparable x86 systems[2]
- New Energy Efficiency mode improves server efficiency by 28%[3]

E5-1100 space-conscious, energy-efficient design enables organisations to scale workloads without over-provisioning and to reduce datacenter footprint - ideal for infrastructure modernisation focused on ROI and agility.

The E5-1100 helps reduce software licensing costs, including for platforms like Oracle Database.

Key performance enablers

- Up to **120 Power11** cores with higher frequencies
- **30-core sockets**
- High-speed DDR5 memory (50% more bandwidth)
- **Accelerated encryption**
- Modular I/O and storage
- **PCIe Gen5** adapters
- **NVMe-based internal storage**
- Enhanced version of the power management Energy Scale technology.
- Innovative 2.5D ISC (Integrated Stacked Capacitor) Interposer delivers 50-100MHz frequency increase to Power11 processor providing +7-10% rPerf increase.

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

Built-in security

With applications and data residing everywhere, security is a critical concern for CIOs and IT Managers. Power-based architecture has long been recognised for their **end-to-end security** and the **Escala E5-1100** continues this tradition with advanced, integrated protections.

Key security features

- Transparent memory encryption with no management set up and no performance impact
- Support of future cryptographic techniques, such as quantum-safe cryptography and fully homomorphic encryption
- Rapid ransomware detection and automated recovery, helping minimise disruption and financial impact
- Advanced cryptographic protections intended to help meet evolving compliance needs and robust data security

Additionally, organisations benefit from **centralised security** management through **PowerSC**, streamlining governance across workloads.

[1] Based upon internal measurements of a commercial core banking solution running on Escala E5-900 compared to an E5-1100.
[2] Performance is based on QPI data as of May 15, 2025 from IDC available at https://www.idc.com/about/qpi.)
[3] Based upon measurements on servers comparing Maximum Performance Mode to Energy Efficient Mode while running compute-, disk-, and memory-based workloads.

Industry-leading reliability and availability

For over 13 years, Power-based platforms have led industry in infrastructure reliability - and the **Escala E5-1100** continues that legacy with innovations that maximise uptime and operational continuity.

Unmatched platform reliability

Designed to be the most reliable in its class, the E5-1100 features **advanced recovery and diagnostics**, along with **OMI-attached differential DIMMs** that deliver **twice the memory reliability and availability** compared to industry-standard DIMMs.

Resilience against failures

With **Active Memory Mirroring**, critical memory used by the PowerVM hypervisor is duplicated, allowing the system to continue operating even if a memory failure occurs. Plus, **two spare cores per socket** ensure computing continuity in the event of hardware issues.

Zero planned downtime

The Power11 generation introduces capabilities that allow **planned maintenance without taking critical workloads offline**, ensuring **continuous availability**.

Faster problem resolution

Automated diagnostic data collection can save your IT team **5 to 8 hours per support ticket**, dramatically accelerating problem identification and resolution and reducing mean time to repair and freeing up resources for strategic initiatives.

Ready for hybrid cloud deployment

The Escala E5-1100 server **embeds PowerVM Enterprise Edition to deliver virtualised environments** and to support a frictionless hybrid cloud experience. Workloads can run the AIX and Linux operating systems, including Red Hat OpenShift Container Platform.

Technical specifications

Form factor	• 4U		
# of sockets	• 2 sockets	• 3 sockets	• 4 sockets
Processor module offerings (SMT8)	• DCM 16-core + 2 spare – 3.5 to 4.2 GHz (max 64) • DCM 24-core + 2 spare – 3.25 to 4.2 GHz (max 96 cores) • DCM 30-core + 2 spare – 3 to 4.1 GHz (max 120 cores)		
Processor Interconnect	• 4x2B @ 32 Gbps		
# of memory channels	• 64 Open Memory Interface (OMI) channels		
Max memory bandwidth	• 512 GB/s w/ 2x 32GB DDIMM DDR5 • 1024 GB/s w/ 2x64, 2x128, 2x256GB DDIMMs		
# of DDIMMs	• 64 DDIMMs 4000 MHz (16 per DCM)		
Max memory capacity	• 16 TB		
Max PCIe lanes	• 170 PCIe Gen4 • or 64 Gen5 + 64 Gen4		
PCIe slots	• 6 PCIe G4 x16 or G5 x8 • 2 PCIe G5 x8 • 3 PCIe G4 x8		
Slots for internal storage	• General purpose		
# internal drives	• up 10 NVMe U.2		
internal storage capacity	• up to 153 TB		

I/O expansion drawer	• up to 2	• up to 4	• up to 4
Active Memory Mirroring	• Available as an option		
Active Memory Expansion (AME)	• Available as an option		
Capacity on Demand	• mobile CoD, Power Enterprise Pool as an option		
Service Processor	• Enterprise BMC (eBMC)		
# USB port	• 2 Front USB 3.0 + 2 Rear USB 3.0 + 2 Rear eBMC USB 2.0		
PowerVM™	• Enterprise Edition included		
AIX rPerf (max w/ 4 Sockets)	• 1154 w/ 32-core • 1564 w/ 48-core • 1796 w/ 60-core	• 1702 w/ 48-core • 2306 w/ 72-core • 2649 w/ 90-core	• 2251 w/ 64-core • 3050 w/ 96-core • 3503 w/ 120-core
Software support	• AIX: 7.2, 7.3 or later • VIOS 4.1.0, VIOS 4.1.1 • RHEL: 8.6, 9.4, 9.6 and 10 • SLES: 15 SP6 or later • Red Hat OpenShift Container Platform: 4.19 or later • No IBMi support		

Bull and IBM: a perfect fit

For 33 years, Bull and IBM have built a unique relationship, with IBM leading to a highly productive technological cooperation. This has fundamentally strengthened the AIX ecosystem, by regularly generating innovations, in areas such as scalability, RAS, virtualisation and cloud enablement.

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