

IBM Power E1050

High performance, secure 4-socket server with industry leading reliability designed for dynamic demands of enterprise computing



Highlights

Scale efficiently while benefitting from increased performance

Enhance security with transparent memory encryption

Maintain better uptimes with industry-leading reliability

Increase core performance and density to lower TCO

The core applications, data stores and processes that run your business simply cannot go down, no matter what. With accelerated digital adoption, the demands on these applications are increasing, along with security risks. To meet the challenges of today's market, your IT infrastructure needs to be modernized. This requires an infrastructure platform that efficiently scales to meet your business demands, protects your applications and data with pervasive and layered security, and enables you to transform data into insights quickly.

IBM® Power® E1050 offers a unique blend of enterprise-class capabilities in a space-efficient 4-socket 4U form factor. The Power E1050 server allows you to:



Respond faster to business demands with world record performance scalability for core enterprise workloads and flexible consumption options to enhance your hybrid cloud experience



Protect data from core to cloud with accelerated encryption and new in-core defense against return-oriented programming attacks



Streamline insights and automation with in-core AI inferencing and machine learning



Maximize reliability and availability with Open Memory Interface (OMI) attached memory DIMMs



Scale efficiently while benefiting from increased performance

The IBM Power E1050 server delivers efficient 4-socket performance with multiple world record benchmarks representing industry recognized enterprise workloads:

- World record 4-socket SPEC CPU 2017 benchmark result¹ on SPECrate2017_int_ peak of 1580 vs. 846, providing 2.2X greater efficiency per core vs. x86 Intel Xeon Platinum
- World record 4-socket two-tier SAP SD standard application benchmark result² that beats the best 8-socket x86 environment results

Enhance security with transparent memory encryption

With data residing in an increasingly distributed environment, you cannot set a perimeter to it anymore. This reinforces the need for layered security across your IT stack. IBM Power10 servers introduce a new layer of defense with transparent memory encryption. With this feature all data in memory remains encrypted while in transit between the memory and processor. Since this capability is enabled at the silicon level, there is no additional management setup or performance impact. Power10 also includes 4X more crypto engines in every core compared to IBM POWER9™ to accelerate encryption performance across your stack.

These innovations, along with new in-core defense for return-oriented programming attacks and support for post-quantum encryption and fully homomorphic encryption, makes IBM Power E1050 one of the most secure server platforms even better.

Maintain better uptimes with industry-leading reliability

IBM Power has been leading the industry in infrastructure reliability for the past 13 years³. With the Power E1050 we are making the most reliable server platform in its class even better with advanced recovery, diagnostic capabilities, and OMI-attached advance memory DIMMs. The continuous operations of today's in-memory systems depend on memory reliability because of their large memory footprint. Power10's new differential DIMMs deliver twice the memory reliability and availability compared to industry standard DIMMs.

Increase core performance and density to lower TCO

The Power E1050, with its increased core efficiency and dramatically improved system level performance, can provide the same performance in 2 sockets with 48 cores than ANY Power E850 or Power E950 with 4 sockets could provide. That means that in 2 sockets of Power10 you will get more computing capability than any 2, 3 or 4-socket E850 and E950.

This increased performance can lead to lower costs through server consolidation, lower energy consumption and potentially even lower software licensing costs when replacing older Power servers.

Conclusion

We live in a fast-paced world with ever-increasing demands. It's imperative that your infrastructure can scale on demand to ensure you are able to meet the ongoing needs of customers and drive growth. Power10 servers are engineered for agility. The Power E1050 provides best-in-class reliability, security and performance while taking full advantage of the benefits of Power10 technology to help clients modernize their IT needs to meet dynamic business needs.

For more information

To learn more about IBM Power E1050, please contact your IBM representative or IBM Business Partner, or visit ibm.com/products/power-e1050.

Power E1050
MTM: 9043-MRX

Processor module offerings	12, 18 and 24 Power10 cores Up to 96 cores
Processor interconnect	32 Gbps
Memory channels per system	64 OMI channels
Memory bandwidth per socket system (peak)	409 GB/s 1636 GB/s
DIMMs per system	64 DDIMMs
Memory capacity per system (max)	16 TB (Enterprise-class DDIMMs)
Acceleration ports	8 ports at 25 Gbps (OpenCAPI)
PCIe lanes per system (max)	170 PCIe G4 lanes or 64 Gen5 + 64 Gen4 lanes
PCIe slots per system	11 (8 PCIe G4/G5 and 3 PCIe Gen4 slots)
Slots for internal storage controller	General purpose
Internal storage	10 NVMe
I/O expansion drawers (max)	4
Service processor	Enterprise BMC (eBMC)
Power supplies	4x Titanium-class 2300W
RAS	Processor, memory and I/O VRM redundancy Concurrent maintenance on PCIe adapters, storage and fans
Security	Main memory encryption

© Copyright IBM Corporation 2022

IBM Corporation
New Orchard Road
Armonk, NY 10504

Produced in the
United States of America
July 2022

IBM, the IBM logo, IBM Power, and POWER9 are trademarks or registered trademarks of International Business Machines Corporation, in the United States and/or other countries. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on ibm.com/trademark.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

The registered trademark Linux is used pursuant to a sublicense from the Linux Foundation, the exclusive licensee of Linus Torvalds, owner of the mark on a worldwide basis.

Microsoft and Windows are trademarks of Microsoft Corporation in the United States, other countries, or both.

This document is current as of the initial date of publication and may be changed by IBM at any time. Not all offerings are available in every country in which IBM operates.

THE INFORMATION IN THIS DOCUMENT IS PROVIDED "AS IS" WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT.

IBM products are warranted according to the terms and conditions of the agreements under which they are provided.

1. Comparison based on best performing 4-socket systems (IBM Power E1050 3.1-3.9 GHz, 96 core and Inspur NF8480M6 2.90 GHz, Intel Xeon Platinum 8380H and Superdome Flex 280 2.90 GHz, Intel Xeon Platinum 8380H) using published results at www.spec.org/cpu2017/results as of 17 June 2022. For more information about SPEC CPU 2017, see www.spec.org/cpu2017
2. All results can be found at sap.com/benchmark and are valid as of 7 July 2022 IBM Power E1050; two-tier SAP SD standard application benchmark running SAP ERP 6.0 EHP5; Power10 2.95 GHz processor, 4,096 GB memory, 4p/96c/768t, 134,016 SD benchmark users, 736,420 SAPS, AIX 7.3, DB2 11.5, Certification # 2022018.

Dell EMC PowerEdge 840; two-tier SAP SD standard application benchmark running SAP ERP 6.0 EHP5; Intel Xeon Platinum 8280 2.7 GHz, 4p/112c/224t, 69,500 SD benchmark users (380,280 SAPS), SUSE Linux® Enterprise Server 12 and SAP ASE 16, Certification # 2019045.

HPE Superdome Flex; two-tier SAP SD standard application benchmark running SAP ERP 6.0 EHP5; Intel Xeon Platinum 8380H 2.9 GHz, 8p/224c/448t, 122,300 SD benchmark users (670,830 SAPS), Windows Server 2016 and Microsoft SQL Server 2012, Certification # 2021006.
3. ITIC 2021 Global Server Hardware, Server OS Reliability Report, ITIC, June 2021.

