



# IBM Power System E980 – Designed to support the most mission-critical applications

The most powerful, reliable, secure and scalable POWER9 server

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## Highlights

- Enhance performance with 4X more threads per core in POWER9 vs. x86
  - Slash time-to-insight with up to 64 TB of buffered DDR4 memory
  - Simplify cloud deployment with PowerVC™ & built-in IBM PowerVM™ Enterprise
  - Industry leading reliability with better than five-nines uptime
  - Respond rapidly & simply to dynamic business needs with Capacity on Demand
  - Lower TCO with Power Enterprise Pools to share resources/balance workloads
  - Protect data at rest and in motion with accelerated encryption on the chip
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The IBM Power® System E980 is the ideal foundation for a world-class private or hybrid cloud infrastructure, able to power the large-scale, mission-critical applications you need to transform data into a competitive advantage. Each Power E980 comes tailored to your unique requirements and ready to deploy—with enterprise-class security and efficient, built-in IBM PowerVM™ virtualization.

Massive throughput, performance and scalability in a modular high-end system with up to 192 POWER9 cores, up to 64TB memory, and the fastest POWER9 processors in the Power Systems portfolio. The E980 improves I/O throughput PCIe Gen4 (2x the bandwidth of PCIe Gen3), and it embeds analytics and algorithms on the chip to help the Power E980 run at an always-optimized dynamic frequency.

The modular design of the IBM POWER® architecture in the Power E980 lets you grow capacity by activating additional processors and memory—permanently using CUoD, or temporarily using Elastic CoD. So you can deploy a single Power Systems node to take advantage of these processor and I/O performance improvements now, then expand seamlessly as loads dictate.

Enable large-scale consolidation of older, under-utilized servers onto an ultra-efficient POWER9 high-end system with unprecedented levels of utilization and resource sharing to concurrently support AIX, IBM i and/or Linux applications.

Built with innovation that puts data to work, IBM Power Systems™ provides the foundation for organizations to bring insight to the point of impact quickly.



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IBM Power System E980



<b>IBM Power System E980 at a glance</b>		
<b>System configurations</b>	Model 9080-M9S	
<b>Configuration options</b>	One System Node	System maximum
<b>Microprocessors</b>	4 x POWER9 processors 8,10,11 or 12 cores each	16 x POWER9 processors 8, 10, 11 or 12 cores each
<b>Threads per core</b>	Eight	
<b>Cores</b>	32, 40, 44 or 48	128, 160, 176 or 192
<b>Level 2 (L2) cache per core</b>	512 K	
<b>Level 3 (L3) cache per processor</b>	Up to 120MB shared L3 cache (10MB/core)	
<b>Level 4 (L4) cache per processor</b>	128 GB off-chip eDRAM L4	
<b>Memory bandwidth per processor</b>	230 GB/s	
<b>Enterprise Memory</b>	32 DIMM slots Up to 16 TB buffered DDR4 CDIMMs	128 DIMM slots Up to 64 TB buffered DDR4 CDIMMs
<b>USB Ports</b>	2 x USB 3.0 per Node 1 x USB 3.0 in System Control Unit	5 x USB 3.0 in System Nodes 1-2 1 x USB 3.0 in System Control Unit
<b>Internal storage</b>	4 slots for non-volatile memory express (NVMe U.2)	16 slots for non-volatile memory express (NVMe U.2)
<b>DVD</b>	External DVDs (Optional) may be attached via USB	
<b>Integrated PCIe adapter slots</b>	8 PCIe x16 Gen4	32 PCIe x16 Gen4
<b>PCIe I/O Expansion Drawers</b>	Up to 4 (12 PCIe adapter slots each)	Up to 16 (12 PCIe adapter slots each)
<b>System Control Unit</b>	1	
<b>Flexible Service Processors</b>	2	
<b>HMC ports</b>	2	
<b>POWER Hypervisor™</b>	PowerVM Enterprise integrated	



<p><b>Reliability, Availability, and Serviceability (RAS) features</b></p>	<p>First Failure Data Capture            Processor instruction retry            L2 and L3 Cache ECC protection with cache line-delete            Extended cache line delete            Core contained checkstops            Dynamic processor deallocation            Chipkill protection for x8 and x4 DIMMs, with DRAM sparing            Processor fabric bus retry with data lane sparing            Dynamic deallocation of SMP cable and ½ bandwidth mode            Guided FSP &amp; SMP cable installation            Redundant phase and spare phase for voltage regulator modules (VRMs) supplying processors and DIMMS            Redundant service processors with automatic failover and concurrent repair            Redundant system clocks with dynamic failover            Redundant and spare voltage regulator modules            Redundant, hot-swappable power supplies and cooling fans            Concurrent add/repair of I/O drawers            Extended error handling on PCIe slots            Hot-plug/blind-swap PCIe adapter slots            Concurrent repair of Op-Panel            Selective dynamic firmware updates            Active Memory Mirroring for Hypervisor</p>																				
<p><b>Operating systems</b></p>	<p>AIX, IBM i and Linux for Power</p>																				
<p><b>Power requirements</b></p>	<p>Operating voltage: 200 to 240V AC</p>																				
<p><b>System dimensions</b></p>	<table border="1"> <thead> <tr> <th></th> <th><u>System Control Unit</u></th> <th><u>System Node</u></th> <th><u>PCIe Expansion Drawer</u></th> </tr> </thead> <tbody> <tr> <td>Width</td> <td>445.6 mm (17.54 in.)</td> <td>445.5 mm (17.54 in.)</td> <td>447.3 mm (17.54 in.)</td> </tr> <tr> <td>Depth</td> <td>779.7 mm (30.7 in.)</td> <td>867 mm (34.13 in.)</td> <td>737 mm (30.7 in.)</td> </tr> <tr> <td>Height</td> <td>86 mm (3.39 in.)</td> <td>218 mm (8.58 in.)</td> <td>173 mm (6.8 in.)</td> </tr> <tr> <td>EIA units</td> <td>2 EIA units (2U)</td> <td>5 EIA units (5U)</td> <td>4 EIA units (4U)</td> </tr> </tbody> </table>		<u>System Control Unit</u>	<u>System Node</u>	<u>PCIe Expansion Drawer</u>	Width	445.6 mm (17.54 in.)	445.5 mm (17.54 in.)	447.3 mm (17.54 in.)	Depth	779.7 mm (30.7 in.)	867 mm (34.13 in.)	737 mm (30.7 in.)	Height	86 mm (3.39 in.)	218 mm (8.58 in.)	173 mm (6.8 in.)	EIA units	2 EIA units (2U)	5 EIA units (5U)	4 EIA units (4U)
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<p><b>Warranty</b></p>	<p>1 year, 24x7 same day response; onsite (varies by country)            Warranty Service Upgrade and additional Maintenance Services options are available.</p>																				



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## Why IBM?

For over a century, IBM has pioneered technologies and provided services that help companies manage and mine their valuable business data. And for 25 consecutive years, IBM has topped the annual list of US patent recipients—receiving a record-breaking 9,043 patents in 2017. In addition, IBM Power Systems are trusted by 78 percent of the Fortune 100. Further, every one of the top 10 banking firms have Power Systems, as do 80 percent of the top insurance and retail companies.



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## Next steps

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## For more information

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<https://www.ibm.com/us-en/marketplace/power-systems-E980>.

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