AMD EPYC™ 8004 SERIES PROCESSORS
TOGETHER WE ADVANCE COMPUTING FOR CLOUD, EDGE, AND TELCO

AT A GLANCE

When you need to bring efficient, cost-effective computing into non-traditional environments including branch offices, retail locations, outdoor environments, and telephone central offices and cell sites, AMD EPYC™ 8004 Series processors are designed to deliver computing power where you need it—including challenging environments with wide temperature ranges. Designed using our high-density 'Zen 4c' processor cores, the EPYC 8004 Series is an example of how our hybrid, multi-chip architecture enables you to deliver solutions that overcome environmental and infrastructure constraints as well as helping contain system cost and power consumption.

PART OF THE 4TH GEN AMD EPYC PROCESSOR FAMILY

Enjoy the benefits of AMD EPYC processors

AMD EPYC™ 8004 series processors enable platforms for traditional data centers as well as diverse edge servers, NEBS™-friendly equipment, and innovative form factors targeted for manufacturing, healthcare, retail, and telco. As part of the AMD EPYC processor family, these CPUs are built with our "all in" philosophy of delivering a consistent set of features within each processor series. EPYC 8004 Series processors are designed for compact, single-socket servers and are configured for six DDR5 memory channels and 96 lanes of PCIe® Gen 5 I/O performance. The series delivers from 8 to 64 cores and up to 128 MB of L3 cache, together with the AMD Secure Processor to enable AMD Infinity Guard[1] security features.

DESIGNED TO MAKE COMPUTING PERVASIVE

When operating environments present challenges, the EPYC 8004 Series is designed to overcome them.

AMD EPYC 8004 processors complement the AMD EPYC 9004 series, bringing the established high-efficiency `Zen 4c' core architecture into lower core count CPUs with much lower TDP ranges and cooling requirements. The processors are designed to require low power and work within a wide range of temperatures, so servers can operate at room temperatures and can run quietly thanks to less need for high-speed cooling fans. This family enables servers for traditional data centers as well as diverse edge server deployments, sites with challenging space and power requirements, and other innovative form factors.

TRANSFORMATIVE ENERGY EFFICIENCY

Gain high performance per watt in data center, cloud, storage, and emerging intelligent edge applications .

Superior general-purpose application energy efficiency: Deliver 2.4x the integer performance per system watt when comparing single-socket servers using a 64-Core EPYC 8534P CPU compared to a 56-Core Xeon 8480+ CPU.[SP6-004]

Propel common AI/ML workloads: Choose single-socket servers using 64-core EPYC 8534PN CPUs over 52-core Xeon 8741N CPUs to deliver up to 2.6x the performance per system watt per system dollar (1.5x average) running five common AI/ML workloads.[SP6-006]

Speed IoT edge gateways: On the Apache® IoTDB benchmark, gain 23% more performance and ~1.8x better performance per system watt when you compare single-socket 8-core servers with an EPYC 8024P CPU to a Xeon 3408U CPU.[SP6-005]

Energy-efficient performance for telco environments: Deliver 1.9x more total Java® operations when comparing single-socket servers using 64-core EPYC 8534PN processors vs 52-core Xeon 8471N CPUs.[SP6-001]

AMD EPYC™ 8004 SERIES PROCESSORS

MODEL	CORES	THREADS	BASE FREQ. (GHZ)	UP TO MAX BOOST FREQ. (GHZ)[a]	ALL-CORE BOOST (GHZ)[b]	DEFAULT TDP (W)	CONFIGURABLE TDP (W)	L3 CACHE (MB)	DDR5 CHANNELS	UP TO MAX DDR5 MT/S (1DPC)	PER-SOCKET THEORETICAL MEMORY BANDWIDTH (GB/S)	PCIE® GEN 5 LANES	2P/1P
8534P	64	128	2.30	3.10	3.10	200	155–255	128	6	4800	230.4	96	1P
8434P	48	96	2.50	3.10	3.10	200	155–225	128	6	4800	230.4	96	1P
8324P	32	64	2.65	3.00	3.00	180	155–225	128	6	4800	230.4	96	1P
8224P	24	48	2.55	3.00	3.00	160	155–225	64	6	4800	230.4	96	1P
8124P	16	32	2.45	3.00	2.95	125	120–150	64	6	4800	230.4	96	1P
8024P	8	16	2.40	3.00	2.95	90	70–100	32	6	4800	230.4	96	1P
NEBS-FRIENDLY PROCESSORS													
8534PN	64	128	2.00	3.10	3.05	175	–	128	6	4800	230.4	96	1P
8434PN	48	96	2.00	3.00	3.00	155	–	128	6	4800	230.4	96	1P
8324PN	32	64	2.05	3.00	3.00	130	–	128	6	4800	230.4	96	1P
8224PN	24	48	2.00	3.00	2.90	120	–	64	6	4800	230.4	96	1P
8124PN	16	32	2.00	3.00	2.90	100	–	64	6	4800	230.4	96	1P
8024PN	8	16	2.05	3.00	2.95	80	–	32	6	4800	230.4	96	1P

a. Maximum boost for AMD EPYC processors is the maximum frequency achievable by any single core on the processor under normal operating conditions for server systems. EPYC-18.
b. All-core boost for AMD EPYC processors is the average frequency of all processor cores running in performance mode while utilizing a low activity workload. Actual achievable all-core boost will vary based on hardware, software, workloads and other conditions. EPYC-021