

Intel® Xeon® D Processors

SPECCPU2017 Performance Report for D-2798NT/D-2899NT

Document Number: 828855

Revision 1.0

July 2024



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Performance varies by use, configuration and other factors. Learn more on the [Performance Index site](#).

Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See backup for configuration details. No product or component can be absolutely secure.

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Revision History

Revision	Date	Description
1.0	July 2024	Initial release

CPU Specification Comparison

SKU	Intel(R) Xeon(R) D-2899NT	Intel(R) Xeon(R) D-2798NT
Core Arch	ICX	ICX
Total Cores	22	20
Total Threads	44	40
Max Frequency	3.1GHz	3.1GHz
Base Frequency	2.2GHz	2.1GHz
L1I Cache (KB)	32KB	32KB
L1D Cache (KB)	48KB	48KB
L2 Cache (MB)	1.25MB	1.25MB
L3 Cache (MB)	30MB (22 cores share)	30MB (20 cores share)
Mem Channels	4	4
Max Mem Speed (MHz)	3200Mhz	3200Mhz
PCIE (Number of Lanes)	32 lanes PCIE4.0	32 lanes PCIE4.0
TDP (W)	135W	125W

SPECCPU2017

Workload Description

SPECCPU2017: The SPEC CPU® 2017 benchmark package contains SPEC's next-generation, industry-standardized, CPU intensive suites for measuring and comparing compute intensive performance, stressing a system's processor, memory subsystem and compiler

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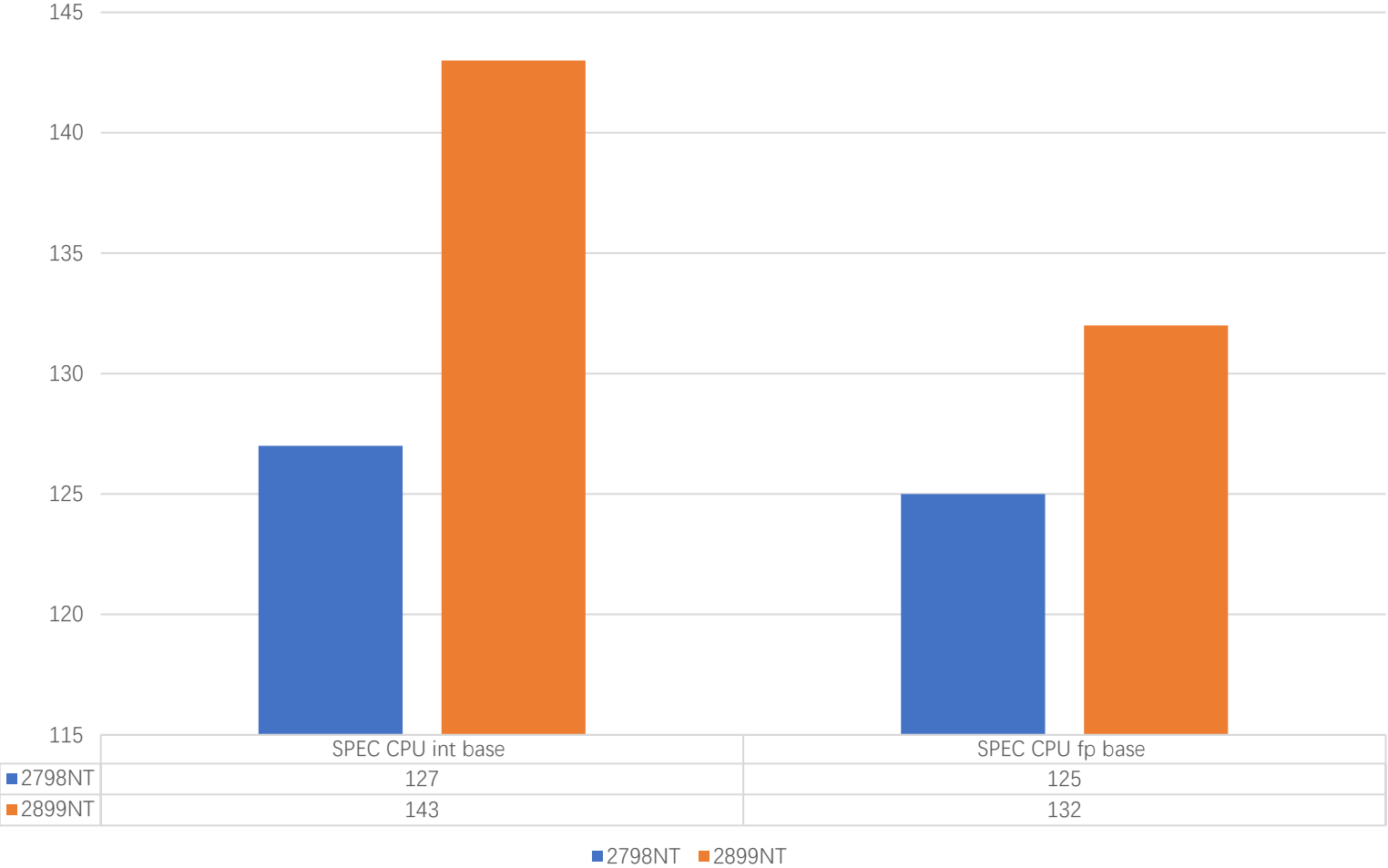
System Configuration (1/2)

Name	Intel(R) Xeon(R) D-2899NT	Intel(R) Xeon(R) D-2798NT
Time	Wed Jun 26 09:15:09 AM UTC 2024	Fri Jun 28 09:45:19 AM UTC 2024
System	ACCTON MOROCITY	ACCTON MOROCITY
Baseboard	ACCTON MOROCITY	ACCTON MOROCITY
Chassis	Intel Corporation Rack Mount Chassis	Intel Corporation Rack Mount Chassis
CPU Model	Intel(R) Xeon(R) D-2899NT CPU @ 2.20GHz	Intel(R) Xeon(R) D-2798NT CPU @ 2.10GHz
Stepping	1	1
QDF	SRMZ6	SRLCD
Microarchitecture	ICX	ICX
Sockets	1	1
Cores per Socket	22	20
Hyperthreading	Enabled	Enabled
CPUs	44	40
Intel Turbo Boost	Enabled	Enabled
Uncore RAPL	Enabled	Enabled
Base Frequency	2.2GHz	2.1GHz
All-core Maximum Frequency	2.8GHz	2.6GHz
Maximum Frequency	3.1GHz	3.1GHz
NUMA Nodes	1	1
Prefetchers	L2 HW: Enabled, L2 Adj.: Enabled, DCU HW: Enabled, DCU IP: Enabled	L2 HW: Enabled, L2 Adj.: Enabled, DCU HW: Enabled, DCU IP: Enabled

System Configuration (2/2)

Name	Intel(R) Xeon(R) D-2899NT	Intel(R) Xeon(R) D-2798NT
PPINs	365c904aba837101	6a9713158b45f367
Accelerators	DLB 0 [0], DSA 0 [0], IAA 0 [0], QAT 0 [0]	DLB 0 [0], DSA 0 [0], IAA 0 [0], QAT 0 [0]
Installed Memory	256GB (4x64GB DDR4 3200 MT/s [3200 MT/s])	256GB (4x64GB DDR4 3200 MT/s [3200 MT/s])
Hugepagesize	2048 kB	2048 kB
Transparent Huge Pages	madvise	madvise
Automatic NUMA Balancing	Disabled	Disabled
NIC	2x Intel Corporation	2x Intel Corporation
NIC Firmware	3.12 0x80017c8e 1.3243.0	3.12 0x80017c8e 1.3243.0
Disk	1x 223.6G INTEL SSDSC2BB24	1x 223.6G INTEL SSDSC2BB24
BIOS	IDVLCRB1.86B.0027.D26.2306270021	IDVLCRB1.86B.0027.D26.2306270021
Microcode	0x1000260	0x1000260
OS	Ubuntu 22.04.3 LTS	Ubuntu 22.04.3 LTS
Kernel	5.15.0-75-generic	5.15.0-75-generic
TDP	135 watts	125 watts
Power & Perf Policy	Normal (6)	Normal (6)
Frequency Driver	intel_pstate	intel_pstate

SPECCPU2017: D-2899NT & D-2798NT



	D-2899NT	D-2798NT
Power	135W	125W

Results estimated. See backup for workloads and configurations. Results may vary.

Backup: System / Workload Configuration

	Config1 (D-2899nt)	Config2 (D-2798nt)
Workload and Version	Speccpu2017-1.1.9	Speccpu2017-1.1.9
Compiler	ICC2024.1	ICC2024.1
Workload Configuration	reportable-ic2024.1-lin-core-avx512-rate-smt-on-20240308.sh	reportable-ic2024.1-lin-core-avx512-rate-smt-on-20240308.sh
Other Software Configuration	-	-
Operating Core Frequency	2.794GHz / 2.8GHz	2.594GHz / 2.6GHz
Operating Uncore Frequency	0.8 GHz / 2.1GHz	1.0 GHz / 2.1GHz
CPU Utilization	22c44t (100% each) rest 0%	20c40t (100% each) rest 0%

Some constraints for benchmarking exist:

- The number of CPU threads must be multiple of number of ports.
- Running with fewer cores may yield a better performance for some workloads.

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