

IPC_benchmark

IPC_benchmark is a Linux inter-process communication benchmark.

To run this test with the Phoronix Test Suite (<https://github.com/phoronix-test-suite/phoronix-test-suite/>), the basic command is: **phoronix-test-suite benchmark ipc-benchmark**.

Project Site

github.com (https://github.com/detailyang/ipc_benchmark)

Test Created

28 February 2020

Test Maintainer

Michael Larabel (<https://www.michaellarabel.com/>)

Test Type

Processor

Average Install Time

2 Seconds

Average Run Time

1 Minute, 31 Seconds

Test Dependencies

C/C++ Compiler Toolchain

Accolades



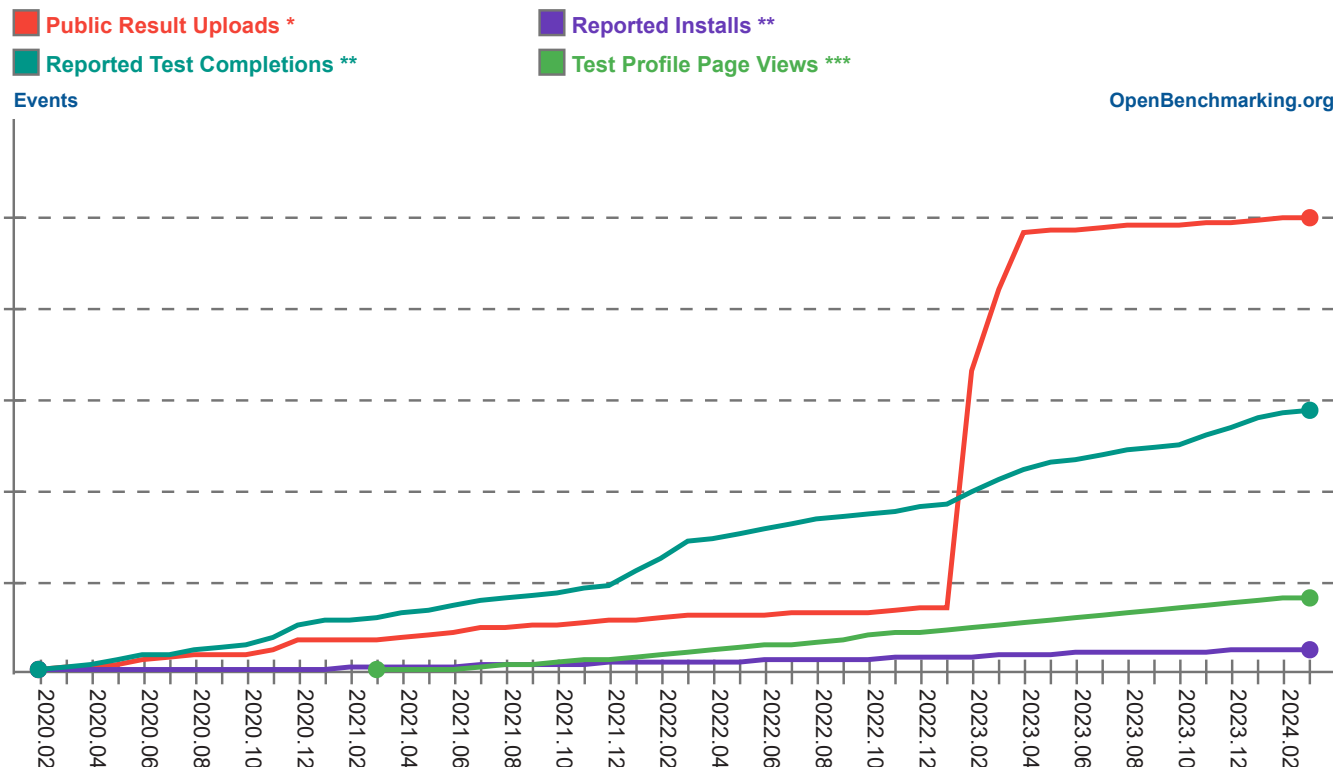
10k+ Downloads

Supported Platforms



IPC_benchmark Popularity Statistics

pts/ipc-benchmark



* Uploading of benchmark result data to OpenBenchmarking.org is always optional (opt-in) via the Phoronix Test Suite for users wishing to share their results publicly.

** Data based on those opting to upload their test results to OpenBenchmarking.org and users enabling the *opt-in* anonymous statistics reporting while running benchmarks from an Internet-connected platform.

*** Test profile page view reporting began March 2021.

Data updated weekly as of 2 March 2024.

Type Option Popularity

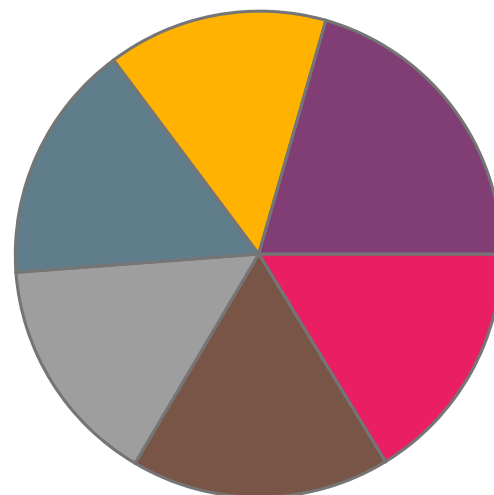
■ Unnamed Unix Domain Socket 24.6%
 ■ FIFO Named Pipe 24.5%
 ■ Unnamed Pipe 25.3%
 ■ TCP Socket 25.5%



OpenBenchmarking.org

Message Bytes Option Popularity

■ 1024 16.3%
 ■ 128 20.5%
 ■ 512 17.2%
 ■ 256 15.3%
 ■ 4096 16.0%
 ■ 2048 14.7%



OpenBenchmarking.org

Revision History

pts/ipc-benchmark-1.0.0 [View Source
(/innhold/d794e96e4dd2b112a07cb606dee42b2a752e62ca)]
Fri, 28 Feb 2020 15:51:48 GMT
Add IPC_benchmark.

Suites Using This Test
Common Kernel Benchmarks
(/suite/pts/kernel)

Performance Metrics

Analyze Test Configuration:

pts/ipc-benchmark-1.0.x - Type: TCP Socket - Message Bytes: 2048

IPC_benchmark

Type: TCP Socket - Message Bytes: 2048

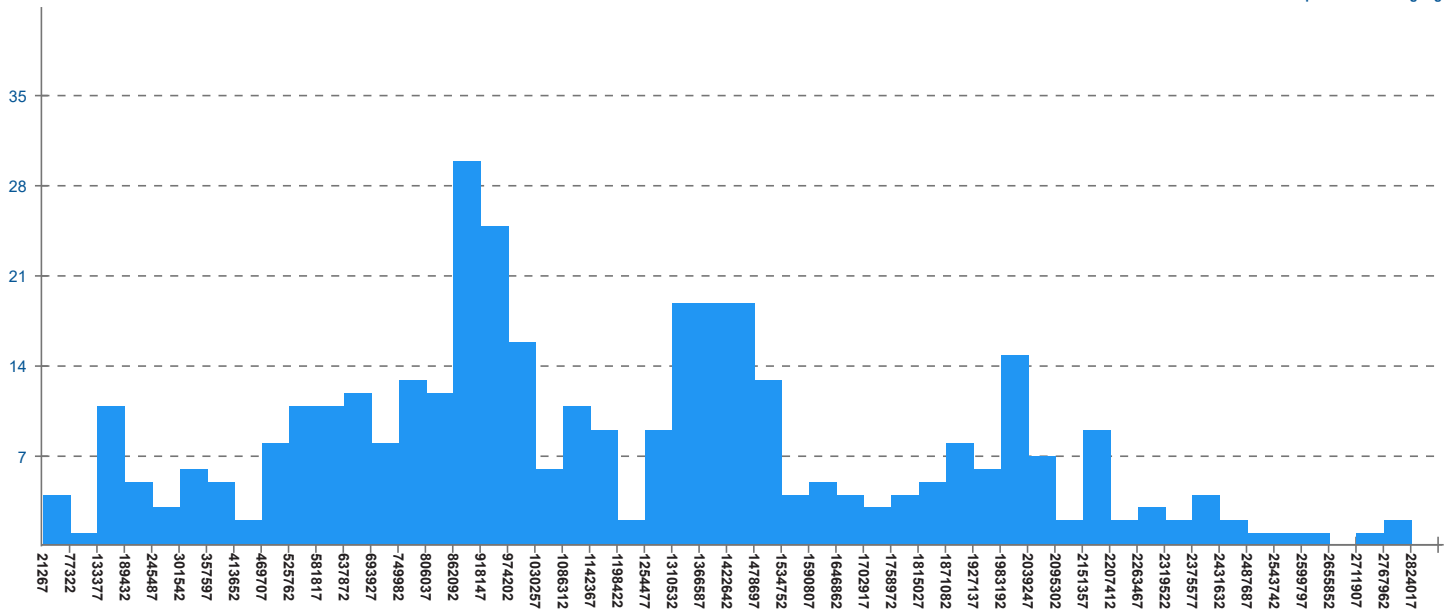
OpenBenchmarking.org metrics for this test profile configuration based on 381 public results since 28 February 2020 with the latest data as of 4 March 2024.

Below is an overview of the generalized performance for components where there is sufficient statistically significant data based upon user-uploaded results. It is important to keep in mind particularly in the Linux/open-source space there can be vastly different OS configurations, with this overview intended to offer just general guidance as to the performance expectations.

COMPONENT	PERCENTILE RANK	# COMPATIBLE PUBLIC RESULTS	MESSAGES PER SECOND (AVERAGE)
AMD Ryzen 9 5900X 12-Core (/s/AMD+Ryzen+9+5900X+12-Core)	100th	3	2637043 +/- 165805
AMD Ryzen 9 5950X 16-Core (/s/AMD+Ryzen+9+5950X+16-Core)	100th	3	2570453 +/- 372276
Intel Core i9-9900KS (/s/Intel+Core+i9-9900KS)	99th	3	2399982 +/- 6325
AMD Ryzen 7 3700X 8-Core (/s/AMD+Ryzen+7+3700X+8-Core)	90th	3	2014230 +/- 14813
AMD EPYC 7702P 64-Core (/s/AMD+EPYC+7702P+64-Core)	90th	3	2000740 +/- 9531
Mid-Tier	75th		< 1484177
Intel Core i9-10980XE (/s/Intel+Core+i9-10980XE)	70th	3	1435899 +/- 34616
Median	50th		1048134
Intel Core i5-6500 (/s/Intel+Core+i5-6500)	45th	7	971709 +/- 31499
Intel Core i3-2120 (/s/Intel+Core+i3-2120)	32nd	3	871891 +/- 1583
2 x Intel Xeon E5-2680 v2 (/s/2+x+Intel+Xeon+E5-2680+v2)	31st	3	860450 +/- 36708
Low-Tier	25th		< 774729
2 x Intel Xeon Gold 6226 (/s/2+x+Intel+Xeon+Gold+6226)	19th	4	642873 +/- 24516
ARMv8 Cortex-A72 6-Core (/s/ARMv8+Cortex-A72+6-Core)	6th	4	199987 +/- 5867
Intel Atom N2600 (/s/Intel+Atom+N2600)	4th	5	150094 +/- 9869

Distribution Of Public Results - Type: TCP Socket - Message Bytes: 2048

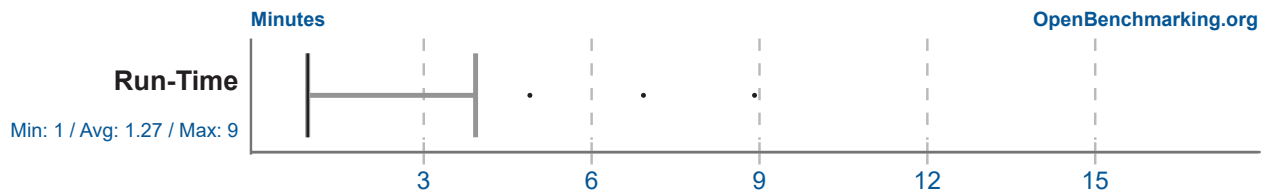
381 Results Range From 21267 To 2823973 Messages Per Second



Based on OpenBenchmarking.org data, the selected test / test configuration (**IPC_benchmark - Type: TCP Socket - Message Bytes: 2048**) has an average run-time of **2 minutes**. By default this test profile is set to run at least **3 times** but may increase if the standard deviation exceeds pre-defined defaults or other calculations deem additional runs necessary for greater statistical accuracy of the result.

Time Required To Complete Benchmark

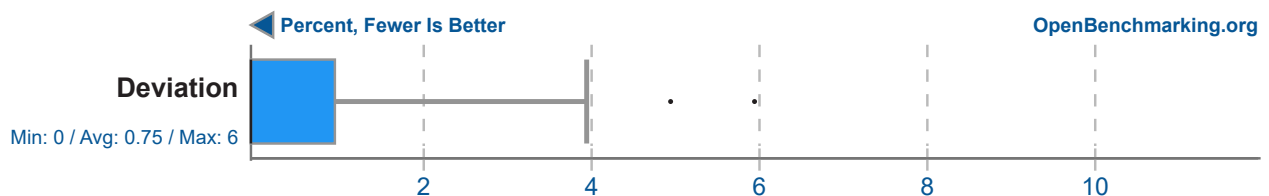
Type: TCP Socket - Message Bytes: 2048



Based on public OpenBenchmarking.org results, the selected test / test configuration has an average standard deviation of **0.8%**.

Average Deviation Between Runs

Type: TCP Socket - Message Bytes: 2048



Tested CPU Architectures

This benchmark has been successfully tested on the below mentioned architectures. The CPU architectures listed is where successful OpenBenchmarking.org result uploads occurred, namely for helping to determine if a given test is compatible with various alternative CPU architectures.

CPU ARCHITECTURE	KERNEL IDENTIFIER	VERIFIED ON
Intel / AMD x86 64-bit	x86_64	(Many Processors)

IBM Z	s390x	(Many Processors)
Loongson LoongArch 64-bit	loongarch64	Loongson-3C5000
Itanium 64-bit	ia64	2 x Madison up 9M cache
ARMv7 32-bit	armv7l	ARMv7 rev 3 4-Core
ARMv8 64-bit	aarch64	ARMv8 Cortex-A53 4-Core, ARMv8 Cortex-A57 4-Core, ARMv8 Cortex-A57 6-Core, ARMv8 Cortex-A72 4-Core, ARMv8 Cortex-A72 6-Core, ARMv8 Cortex-A73 6-Core, ARMv8 Neoverse-N1, ARMv8 Neoverse-N1 8-Core, ARMv8 Neoverse-V1, Rockchip ARMv8 Cortex-A72 6-Core

Recent Test Results

(/saved)

<input type="checkbox"/> ituietst311-ol93-rhck-20240124-try2 (/result/2402148-NE-ITUIETST332) 1 System - 370 Benchmark Results	4 x Intel Xeon Gold 6240 - Intel 440BX - Intel 440BX Oracle Linux Server 9.3 - 5.14.0-362.13.1.el9_3.x86_64 - GCC 11.4.1 20230605
<input type="checkbox"/> ituietst311-ol93-rhck-20240124 (/result/2402055-NE-ITUIETST344) 1 System - 280 Benchmark Results	4 x Intel Xeon Gold 6240 - Intel 440BX - Intel 440BX Oracle Linux Server 9.3 - 5.14.0-362.13.1.el9_3.x86_64 - GCC 11.4.1 20230605
<input type="checkbox"/> ituietst309-ol89-rhck-513.11.0.1 (/result/2402057-NE-ITUIETST340) 1 System - 370 Benchmark Results	4 x Intel Xeon Gold 6240 - Intel 440BX - Intel 440BX OracleServer 8.9 - 4.18.0-513.11.0.1.el8_9.x86_64 - GCC 10.3.1 20210422
<input type="checkbox"/> ituietst321-uek-5.15.0-202.135.2 (/result/2402028-NE-ITUIETST359) 1 System - 370 Benchmark Results	2 x Intel Xeon Gold 5118 - Cisco UCSB-B200-M5 - Intel Sky Lake-E DMI3 Registers Oracle Linux Server 9.3 - 5.15.0-202.135.2.el9uek.x86_64 - GCC 11.4.1 20230605
<input type="checkbox"/> 2024-01-31-1541 (/result/2402022-NE-INTELS26077) 62 Systems - 456 Benchmark Results	2 x Intel Xeon E5-2680 v4 - Intel S2600CWR - Intel Xeon E7 v4 SystemRescue 10.01 - 6.1.30-1-lts - X Server 1.21.1.8
<input type="checkbox"/> 2024-02-01-2209 (/result/2402014-NE-20240201260) 1 System - 42 Benchmark Results	2 x Intel Xeon E5-2680 v4 - Intel S2600CWR - Intel Xeon E7 v4 SystemRescue 10.01 - 6.1.30-1-lts - X Server 1.21.1.8
<input type="checkbox"/> 2024-01-31-kernel (/result/2402018-NE-20240131K50) 1 System - 205 Benchmark Results	2 x Intel Xeon E5-2620 0 - ASUS Z9PE-D16 - Intel Xeon E5 Ubuntu 22.04 - 5.15.0-92-generic - X Server 1.20.11
<input type="checkbox"/> ituietst312-1051 (/result/2401313-NE-ITUIETST391) 1 System - 342 Benchmark Results	4 x Intel Xeon Gold 6240 - Intel 440BX - Intel 440BX CentOS 7.9.2009 - 3.10.0-1160.105.1.el7.x86_64 - X Server

☐ [ituietst203-uek-5.15.0-202.135.2 \(/result/2401269-NE-ITUJETST244\)](/result/2401269-NE-ITUJETST244)

1 System - 153 Benchmark Results

2 x Intel Xeon Gold 5222 - Cisco UCSB-B200-M5 - Intel Sky Lake-E DMI3 Registers

OracleServer 8.9 - 5.15.0-202.135.2.el8uek.x86_64 - GCC 10.3.1 20210422

☐ [ituietst311-ol93-rhck-20231201 \(/result/2401098-NE-ITUJETST373\)](/result/2401098-NE-ITUJETST373)

1 System - 370 Benchmark Results

4 x Intel Xeon Gold 6240 - Intel 440BX - Intel 440BX

Oracle Linux Server 9.3 - 5.14.0-362.8.1.el9_3.x86_64 - GCC 11.4.1 20230605

☐ [ipc-result \(/result/2401049-NE-IPCRESULT44\)](/result/2401049-NE-IPCRESULT44)

1 System - 24 Benchmark Results

Intel Xeon Platinum 8378C - OpenStack Foundation Nova - Intel 440FX 82441FX PMC

HuaweiCloudEulerOS 2.0 - 5.10.0-60.18.0.50.r1064_49.hce2.x86_64 - GCC 10.3.1

☐ [ol92-rhck-ituietst311-bigdisk \(/result/2312294-NE-OL92RHCKI75\)](/result/2312294-NE-OL92RHCKI75)

1 System - 370 Benchmark Results

4 x Intel Xeon Gold 6240 - Intel 440BX - Intel 440BX

Oracle Linux Server 9.2 - 5.14.0-284.25.1.0.1.el9_2.x86_64 - GCC 11.3.1 20221121

☐ [ol89rhck-ituietst309 \(/result/2312182-NE-OL89RHCKI28\)](/result/2312182-NE-OL89RHCKI28)

1 System - 354 Benchmark Results

4 x Intel Xeon Gold 6240 - Intel 440BX - Intel 440BX

OracleServer 8.9 - 4.18.0-513.5.1.el8_9.x86_64 - GCC 10.3.1 20210422

☐ [2023-12-10-1631 \(/result/2312139-MITT-202312119\)](/result/2312139-MITT-202312119)

1 System - 486 Benchmark Results

Intel Core i3-12100 - MSI MAG B660M MORTAR DDR4 - Intel Alder Lake-S PCH

Arch Linux - 6.1.66-1-lts - GCC 13.2.1 20230801 + Clang 16.0.6

☐ [2023-12-10-1631 \(/result/2312131-MITT-202312118\)](/result/2312131-MITT-202312118)

1 System - 486 Benchmark Results

Most Popular Test Results

 (/saved)

☐ [Ryzen 9 5900X Linux 5.11 \(/result/2012231-HA-RYZEN959070\)](/result/2012231-HA-RYZEN959070)

Featured Kernel Comparison

AMD Ryzen 9 5900X 12-Core - ASUS ROG CROSSHAIR VIII HERO - AMD Starship

Ubuntu 20.10 - 5.10.0-051000daily20201222-generic - GNOME Shell 3.38.1

☐ [Core i9 10980XE Kernel Benchmarks \(/result/2004177-PTS-COREI91071\)](/result/2004177-PTS-COREI91071)

Featured Kernel Comparison

Intel Core i9-10980XE - ASRock X299 Steel Legend - Intel Sky Lake-E DMI3 Registers

Ubuntu 20.04 - 5.5.0-050500-generic - GNOME Shell 3.36.1

☐ [Kernel LLVM \(/result/2105191-HA-2105120HA73\)](/result/2105191-HA-2105120HA73)

6 Systems - 146 Benchmark Results

AMD Phenom II X4 965 - MSI 890FXA-GD70 - AMD RD890 PCI-e GFX Hydra part

ManjaroLinux 21.0.4 - 5.12.2-153-tkg-pds-llvm - KDE Plasma 5.21.4

☐ [cstate \(/result/2008016-NE-CSTATE61243\)](/result/2008016-NE-CSTATE61243)

2 Systems - 1766 Benchmark Results

Intel Core i5-6500 - MSI Z170-A PRO - Intel Xeon E3-1200 v5

ManjaroLinux 20.0.3 - 5.4.52-1-MANJARO - GNOME Shell 3.36.4

☐ [app1-7702p \(/result/2012112-FI-2011276FI43\)](/result/2012112-FI-2011276FI43)

2 Systems - 59 Benchmark Results

16 x AMD EPYC 7702P 64-Core - Intel 440BX - Intel 440BX

CentOS Linux 8 - 5.9.11-1.el8.elrepo.x86_64 - GCC 8.3.1 20191121

☐ [app1-7702p \(/result/2012118-FI-2011276FI57\)](/result/2012118-FI-2011276FI57)

2 Systems - 59 Benchmark Results

AMD EPYC 7702P 64-Core - Dell 0R4CNN - 8 x 64 GB DDR4-3200MT

CentOS Linux 8 - 5.9.12-1.el8.elrepo.x86_64 - GCC 8.3.1 20191121

☐ [ptskernel-7702p \(/result/2011254-FI-PTSKERNEL00\)](/result/2011254-FI-PTSKERNEL00)

Featured Processor Comparison

16 x AMD EPYC 7702P 64-Core - Intel 440BX - Intel 440BX

CentOS Linux 8 - 5.9.2-1.el8.elrepo.x86_64 - GCC 8.3.1 20191121

☐ [AMD Ryzen 7 3700X \(/result/2008120-NE-2008091NE81\)](/result/2008120-NE-2008091NE81)

3 Systems - 92 Benchmark Results

Intel Xeon E5-1680 v2 - ASRock X79 Extreme9 - Intel Xeon E7 v2

Gentoo - 5.4.2-gentoo - X Server 1.20.8

☐ [2023-01-16-2136 \(/result/2301215-NE-MERGE967543\)](/result/2301215-NE-MERGE967543)

128 Systems - 1156 Benchmark Results

2 x Intel Xeon E5-2680 v2 - Supermicro X9DR3-F v0123456789 - Intel Xeon E7 v2

Arch Linux - 6.1.6-arch1-1 - GCC 12.2.0

☐ [AMD Ryzen 7 PRO 4750G \(/result/2009142-NE-2008097NE83\)](/result/2009142-NE-2008097NE83)

3 Systems - 92 Benchmark Results

AMD Ryzen 5 2400G - MSI B450M MORTAR - AMD Raven

Ubuntu 20.04 - 5.4.0-47-generic - GNOME Shell 3.36.4

☐ [cstate \(/result/2008026-NE-CSTATE77768\)](/result/2008026-NE-CSTATE77768)

3 Systems - 1862 Benchmark Results

Intel Core i5-6500 - MSI Z170-A PRO - Intel Xeon E3-1200 v5

ManjaroLinux 20.0.3 - 5.4.52-1-MANJARO - GNOME Shell 3.36.4

☐ [compiler-march-flags \(/result/2111252-HYDR-COMPIL29\)](/result/2111252-HYDR-COMPIL29)

Featured Kernel Comparison

Intel Xeon E3-1230 v6 - QEMU Standard PC - Intel 82G33

Ubuntu 20.04 - 5.4.0-90-generic - 1.0.2

☐ [1 \(/result/2006271-NI-18154133951\)](/result/2006271-NI-18154133951)

3 Systems - 83 Benchmark Results

Unknown - Huawei BC82AMDD - Huawei HiSilicon

Red Hat Enterprise Linux Server 7.6 - 4.14.0-115.el7a.aarch64 - GNOME Shell 3.28.3

☐ [Core i9 9900KS Intel Linux \(/result/2003110-PTS-COREI99942\)](/result/2003110-PTS-COREI99942)

2 Systems - 204 Benchmark Results

Intel Core i9-9900KS - ASUS PRIME Z390-A - Intel Cannon Lake PCH

Ubuntu 20.04 - 5.4.0-14-generic - GNOME Shell 3.34.3

☐ [1 \(/result/2006287-NI-11673933951\)](/result/2006287-NI-11673933951)

4 Systems - 91 Benchmark Results

Unknown - Huawei BC82AMDD - Huawei HiSilicon

Red Hat Enterprise Linux Server 7.6 - 4.14.0-115.el7a.aarch64 - GNOME Shell 3.28.3

Find More Test Results (/test/pts/ipc-benchmark&search)

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