

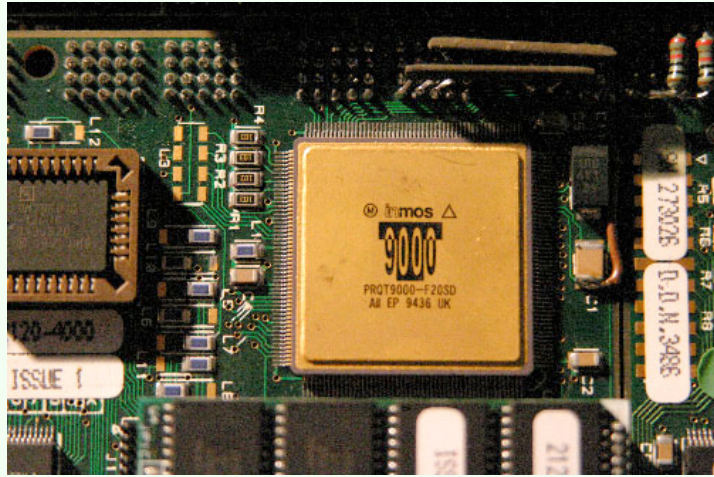
A Super Brief Introduction in EuroHPC

Ad Emmen
Primeur Magazine
Genias Benelux



Nineties

Chip



Computer



Ranking

1000

JUNE 1996

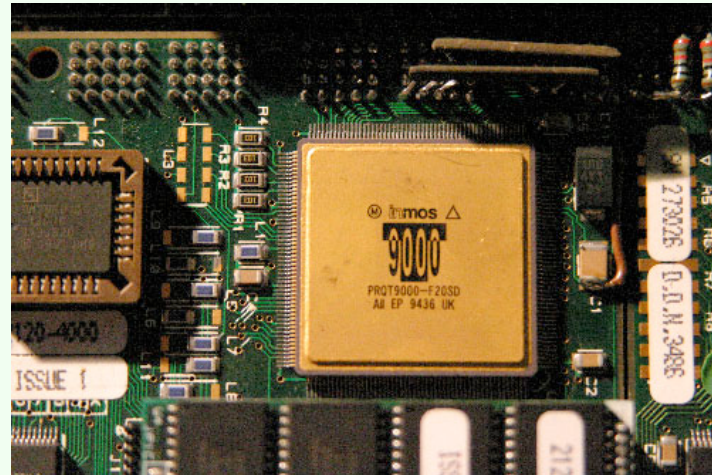
TOP 10 Sites for June 1996

For more information about the sites and updates to the list, click on the links on the right.

Rank	Website	Views	Page Views	Page Size	Page Load
1	http://www.earthlink.net	100	100	100	100
2	http://www.earthlink.net	100	100	100	100
3	http://www.earthlink.net	100	100	100	100
4	http://www.earthlink.net	100	100	100	100
5	http://www.earthlink.net	100	100	100	100
6	http://www.earthlink.net	100	100	100	100
7	http://www.earthlink.net	100	100	100	100
8	http://www.earthlink.net	100	100	100	100
9	http://www.earthlink.net	100	100	100	100
10	http://www.earthlink.net	100	100	100	100

Source: 1000 Sites, 1000 Sites, 1000 Sites

Chip



Computer



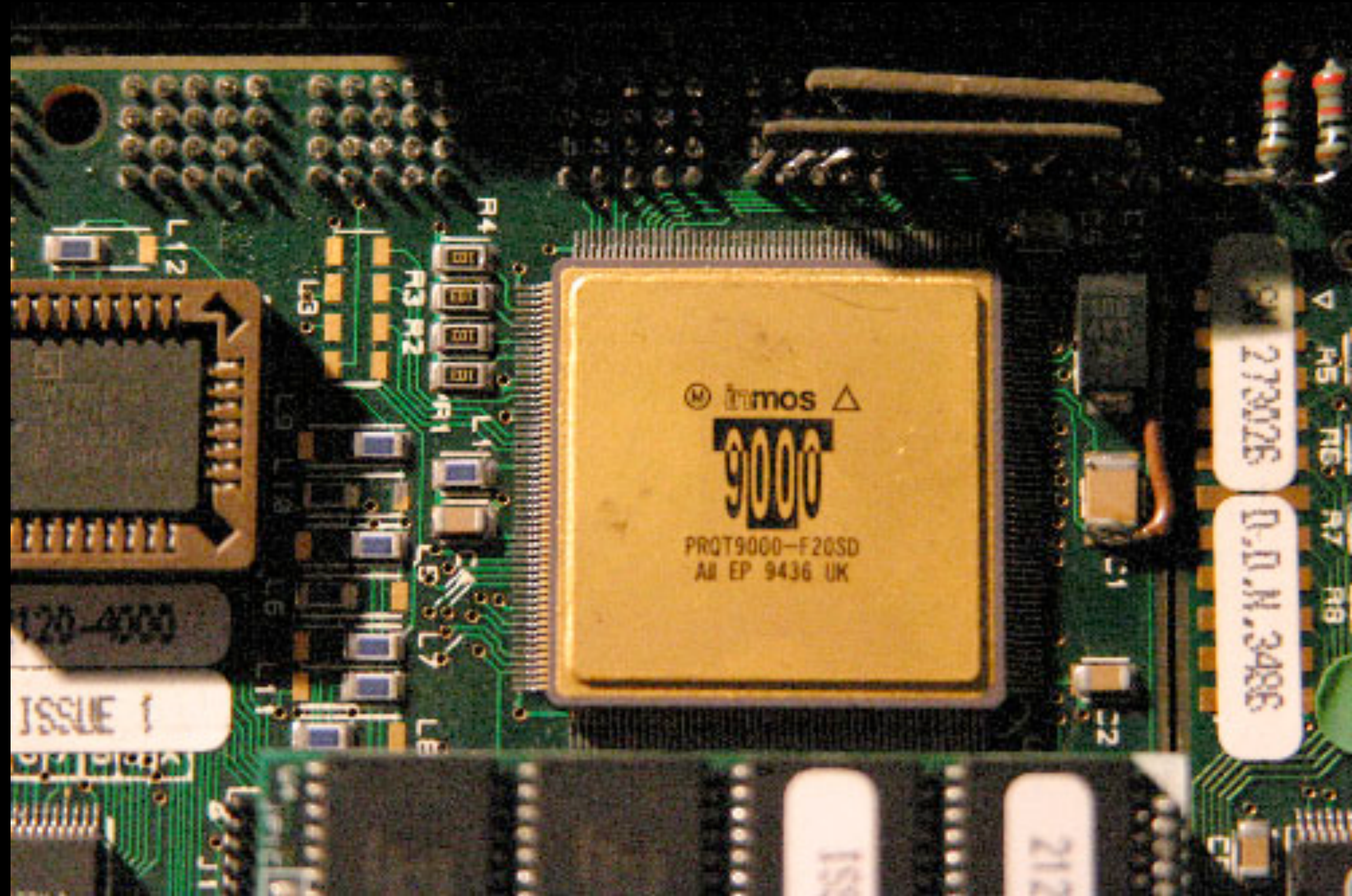
Ranking

JUNE 1996

TOP 10 Sites for June 1996

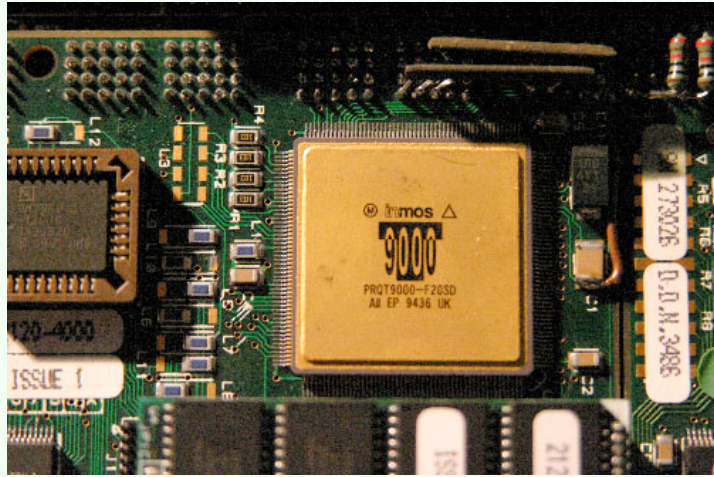
The table lists the top 10 sites for June 1996, ranked by the number of hits. The table includes columns for Rank, Domain, Hits, and Pages.

Rank	Domain	Hits	Pages
1	www.earthlink.net	1,000,000	1,000,000
2	www.earthlink.net	1,000,000	1,000,000
3	www.earthlink.net	1,000,000	1,000,000
4	www.earthlink.net	1,000,000	1,000,000
5	www.earthlink.net	1,000,000	1,000,000
6	www.earthlink.net	1,000,000	1,000,000
7	www.earthlink.net	1,000,000	1,000,000
8	www.earthlink.net	1,000,000	1,000,000
9	www.earthlink.net	1,000,000	1,000,000
10	www.earthlink.net	1,000,000	1,000,000



Transputer

Chip



Computer

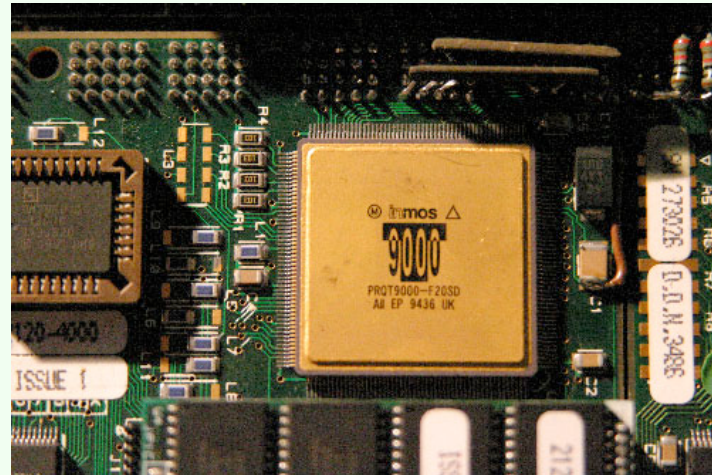


Ranking

TOP 10 Sites for June 1996

Rank	Domain	Score	Page Weight	Page Weight	Page Size
1	www.4mat.com	100	100	100	100
2	www.4mat.com	100	100	100	100
3	www.4mat.com	100	100	100	100
4	www.4mat.com	100	100	100	100
5	www.4mat.com	100	100	100	100
6	www.4mat.com	100	100	100	100
7	www.4mat.com	100	100	100	100
8	www.4mat.com	100	100	100	100
9	www.4mat.com	100	100	100	100
10	www.4mat.com	100	100	100	100

Chip



Computer



Ranking

JUNE 1996

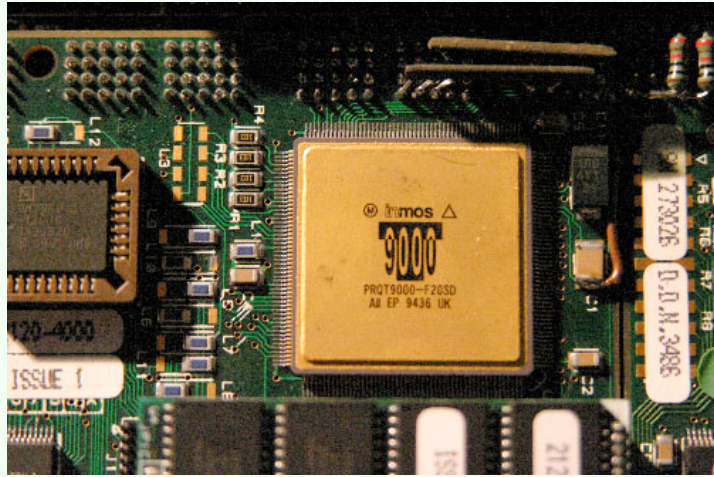
TOP 10 Sites for June 1996

Rank	Domain	Score	Page Weight	Page Speed	Page Size
1	www.mozilla.org	100	100	100	100
2	www.mozilla.org	100	100	100	100
3	www.mozilla.org	100	100	100	100
4	www.mozilla.org	100	100	100	100
5	www.mozilla.org	100	100	100	100
6	www.mozilla.org	100	100	100	100
7	www.mozilla.org	100	100	100	100
8	www.mozilla.org	100	100	100	100
9	www.mozilla.org	100	100	100	100
10	www.mozilla.org	100	100	100	100



Parsytec (here already in the computer museum)

Chip



Computer



Ranking

1000

JUNE 1996

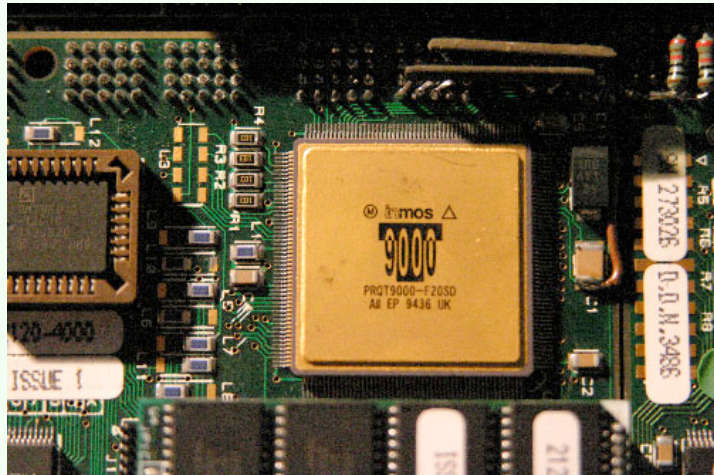
TOP 10 Sites for June 1996

For more information about the sites and updates to the list, click on the links on the right.

Rank	Website	Visits	Page Views	Pages Per Visit	Pages Per Day
1	www.1000.com	1000	1000	1.00	1000
2	www.1000.com	1000	1000	1.00	1000
3	www.1000.com	1000	1000	1.00	1000
4	www.1000.com	1000	1000	1.00	1000
5	www.1000.com	1000	1000	1.00	1000
6	www.1000.com	1000	1000	1.00	1000
7	www.1000.com	1000	1000	1.00	1000
8	www.1000.com	1000	1000	1.00	1000
9	www.1000.com	1000	1000	1.00	1000
10	www.1000.com	1000	1000	1.00	1000

Source: 1000.com, 1000.com, 1000.com

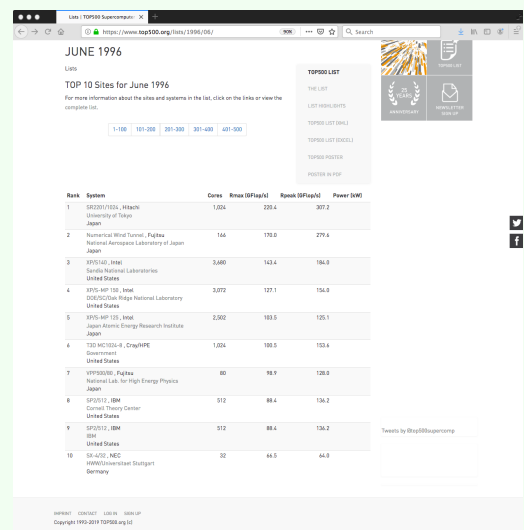
Chip



Computer



Ranking



Lists | TOP500 Supercomputer

https://www.top500.org/lists/1996/06/

90%

Search

JUNE 1996

Lists

TOP 10 Sites for June 1996

For more information about the sites and systems in the list, click on the links or view the complete list.

[1-100](#)[101-200](#)[201-300](#)[301-400](#)[401-500](#)

TOP500 LIST

- THE LIST
- LIST HIGHLIGHTS
- TOP500 LIST (XML)
- TOP500 LIST (EXCEL)
- TOP500 POSTER
- POSTER IN PDF

Rank	System	Cores	Rmax (GFlop/s)	Rpeak (GFlop/s)	Power (kW)
1	SR2201/1024 , Hitachi University of Tokyo Japan	1,024	220.4	307.2	
2	Numerical Wind Tunnel , Fujitsu National Aerospace Laboratory of Japan Japan	166	170.0	279.6	
3	XP/S140 , Intel Sandia National Laboratories United States	3,680	143.4	184.0	
4	XP/S-MP 150 , Intel DOE/SC/Oak Ridge National Laboratory United States	3,072	127.1	154.0	
5	XP/S-MP 125 , Intel Japan Atomic Energy Research Institute Japan	2,502	103.5	125.1	
6	T3D MC1024-8 , Cray/HPE Government United States	1,024	100.5	153.6	
7	VPP500/80 , Fujitsu National Lab. for High Energy Physics Japan	80	98.9	128.0	
8	SP2/512 , IBM Cornell Theory Center United States	512	88.4	136.2	
9	SP2/512 , IBM IBM United States	512	88.4	136.2	
10	SX-4/32 , NEC HWW/Universitaet Stuttgart Germany	32	66.5	64.0	

Tweets by @top500supercomp

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2010

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Ranking

[illegible]

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Ranking

[illegible]

No HPC chip

Chip

Computer



Ranking

TOP 10 Sites for November 2015

For more information about the data and methods for this table, click on the links or visit the complete list.

Rank	Site Name	Visits	Visits per User
1	Google - 14,922,711,400 (14,922,711,400)	14,922,711,400	6.575
2	Facebook - 14,922,711,400 (14,922,711,400)	14,922,711,400	6.575
3	Amazon - 14,922,711,400 (14,922,711,400)	14,922,711,400	6.575
4	Twitter - 14,922,711,400 (14,922,711,400)	14,922,711,400	6.575
5	LinkedIn - 14,922,711,400 (14,922,711,400)	14,922,711,400	6.575
6	YouTube - 14,922,711,400 (14,922,711,400)	14,922,711,400	6.575
7	Instagram - 14,922,711,400 (14,922,711,400)	14,922,711,400	6.575
8	Spotify - 14,922,711,400 (14,922,711,400)	14,922,711,400	6.575
9	Netflix - 14,922,711,400 (14,922,711,400)	14,922,711,400	6.575
10	Apple - 14,922,711,400 (14,922,711,400)	14,922,711,400	6.575

Source: [Statista.com](#)

Chip

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Ranking

[illegible]

Several European manufactured supercomputers

Chip

Computer



Ranking

[illegible]

Chip

Computer



Ranking

TOP 10 Sites for November 2010					
Rank	System	Cores	Rmax (TFlop/s)	Rpeak (TFlop/s)	Power (kW)
1	Tianhe-1A - NUDT TH MPP, X5670 2.93Ghz 6C, NVIDIA GPU, FT-1000 8C , NUDT National Supercomputing Center in Tianjin China	186,368	2,566.0	4,701.0	4,040
2	Jaguar - Cray XT5-HE Opteron 6-core 2.6 GHz , Cray/HPE DOE/SC/Oak Ridge National Laboratory United States	224,162	1,759.0	2,331.0	6,950
3	Nebulae - Dawning TC3600 Blade, Intel X5650, NVidia Tesla C2050 GPU , Sugon National Supercomputing Centre in Shenzhen (NSCS) China	120,640	1,271.0	2,984.3	2,580
4	TSUBAME 2.0 - HP ProLiant SL390s G7 Xeon 6C X5670, Nvidia GPU, Linux/Windows , NEC/HPE GSIC Center, Tokyo Institute of Technology Japan	73,278	1,192.0	2,287.6	1,399
5	Hopper - Cray XE6 12-core 2.1 GHz , Cray/HPE DOE/SC/LBNL/NERSC United States	153,408	1,054.0	1,288.6	2,910
6	Tera-100 - Bull bullx super-node S6010/S6030 , Atos Commissariat a l'Energie Atomique (CEA) France	138,368	1,050.0	1,254.5	4,590
7	Roadrunner - BladeCenter QS22/LS21 Cluster, PowerXCell 8i 3.2 Ghz / Opteron DC 1.8 GHz, Voltaire Infiniband , IBM DOE/NNSA/LANL United States	122,400	1,042.0	1,375.8	2,345
8	Kraken XT5 - Cray XT5-HE Opteron 6-core 2.6 GHz , Cray/HPE National Institute for Computational Sciences/University of Tennessee United States	98,928	831.7	1,028.9	3,090
9	JUGENE - Blue Gene/P Solution , IBM Forschungszentrum Juelich (FZJ) Germany	294,912	825.5	1,002.7	2,268
10	Cielo - Cray XE6 8-core 2.4 GHz , Cray/HPE DOE/NNSA/LANL/SNL United States	107,152	816.6	1,028.7	2,950

TOP 10 Sites for November 2010

For more information about the sites and systems in the list, click on the links or view the complete list.

1-100	101-200	201-300	301-400	401-500
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Rank	System	Cores	Rmax (TFlop/s)	Rpeak (TFlop/s)	Power (kW)
1	Tianhe-1A - NUDT TH MPP, X5670 2.93Ghz 6C, NVIDIA GPU, FT-1000 8C , NUDT National Supercomputing Center in Tianjin China	186,368	2,566.0	4,701.0	4,040
2	Jaguar - Cray XT5-HE Opteron 6-core 2.6 GHz , Cray/HPE DOE/SC/Oak Ridge National Laboratory United States	224,162	1,759.0	2,331.0	6,950
3	Nebulae - Dawning TC3600 Blade, Intel X5650, NVidia Tesla C2050 GPU , Sugon National Supercomputing Centre in Shenzhen (NSCS) China	120,640	1,271.0	2,984.3	2,580
4	TSUBAME 2.0 - HP ProLiant SL390s G7 Xeon 6C X5670, Nvidia GPU, Linux/Windows , NEC/HPE GSIC Center, Tokyo Institute of Technology Japan	73,278	1,192.0	2,287.6	1,399
5	Hopper - Cray XE6 12-core 2.1 GHz , Cray/HPE DOE/SC/LBNL/NERSC United States	153,408	1,054.0	1,288.6	2,910
6	Tera-100 - Bull bullx super-node S6010/S6030 , Atos Commissariat a l'Energie Atomique (CEA) France	138,368	1,050.0	1,254.5	4,590
7	Roadrunner - BladeCenter QS22/LS21 Cluster, PowerXCell 8i 3.2 Ghz / Opteron DC 1.8 GHz, Voltaire Infiniband , IBM DOE/NNSA/LANL United States	122,400	1,042.0	1,375.8	2,345
8	Kraken XT5 - Cray XT5-HE Opteron 6-core 2.6 GHz , Cray/HPE National Institute for Computational Sciences/University of Tennessee United States	98,928	831.7	1,028.9	3,090
9	JUGENE - Blue Gene/P Solution , IBM Forschungszentrum Juelich (FZJ) Germany	294,912	825.5	1,002.7	2,268
10	Cielo - Cray XE6 8-core 2.4 GHz , Cray/HPE DOE/NNSA/LANL/SNL United States	107,152	816.6	1,028.7	2,950

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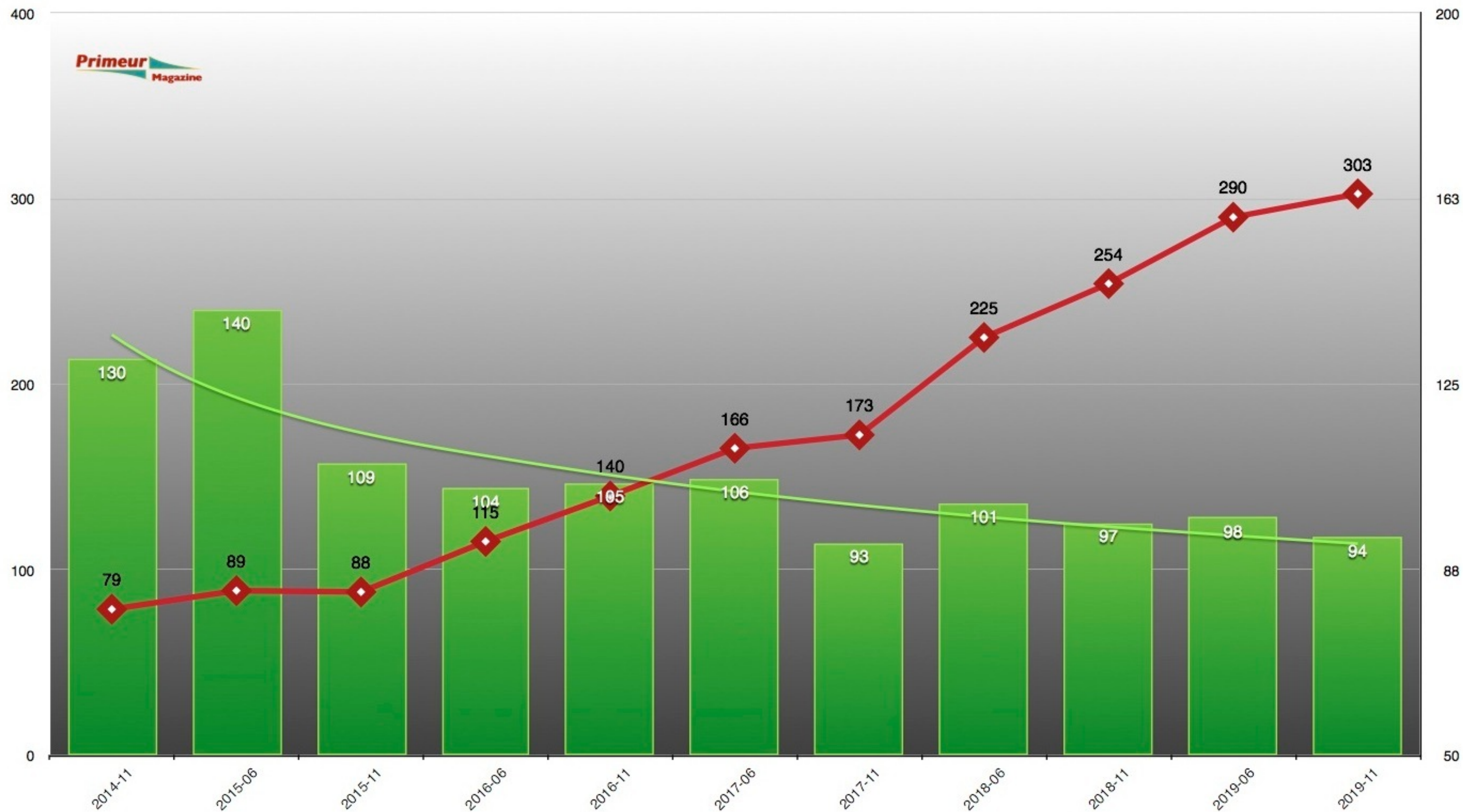


Tweets by @top500supercomp



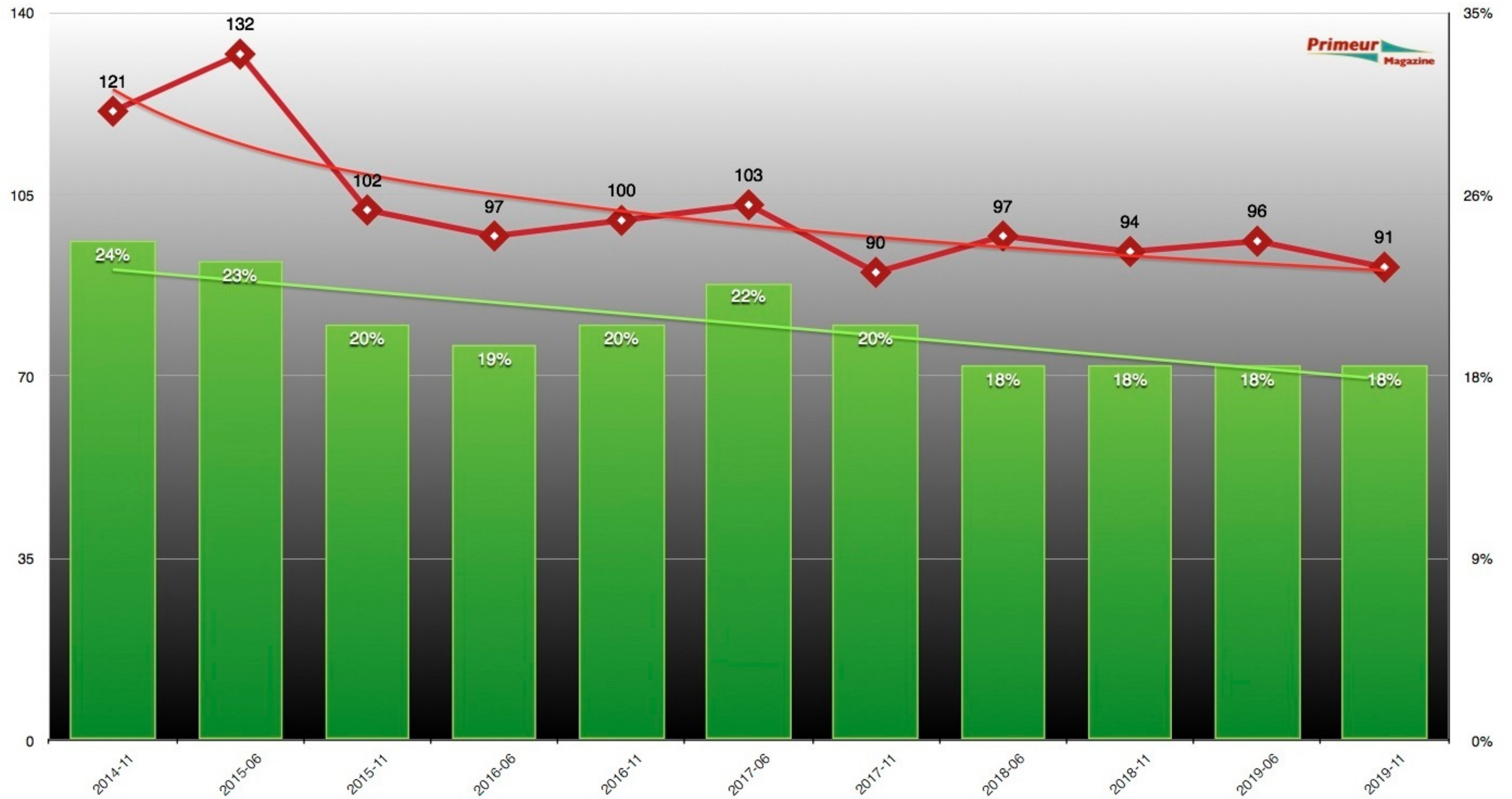
European Rmax (Petaflop/s)

Number systems in Europe in Top500



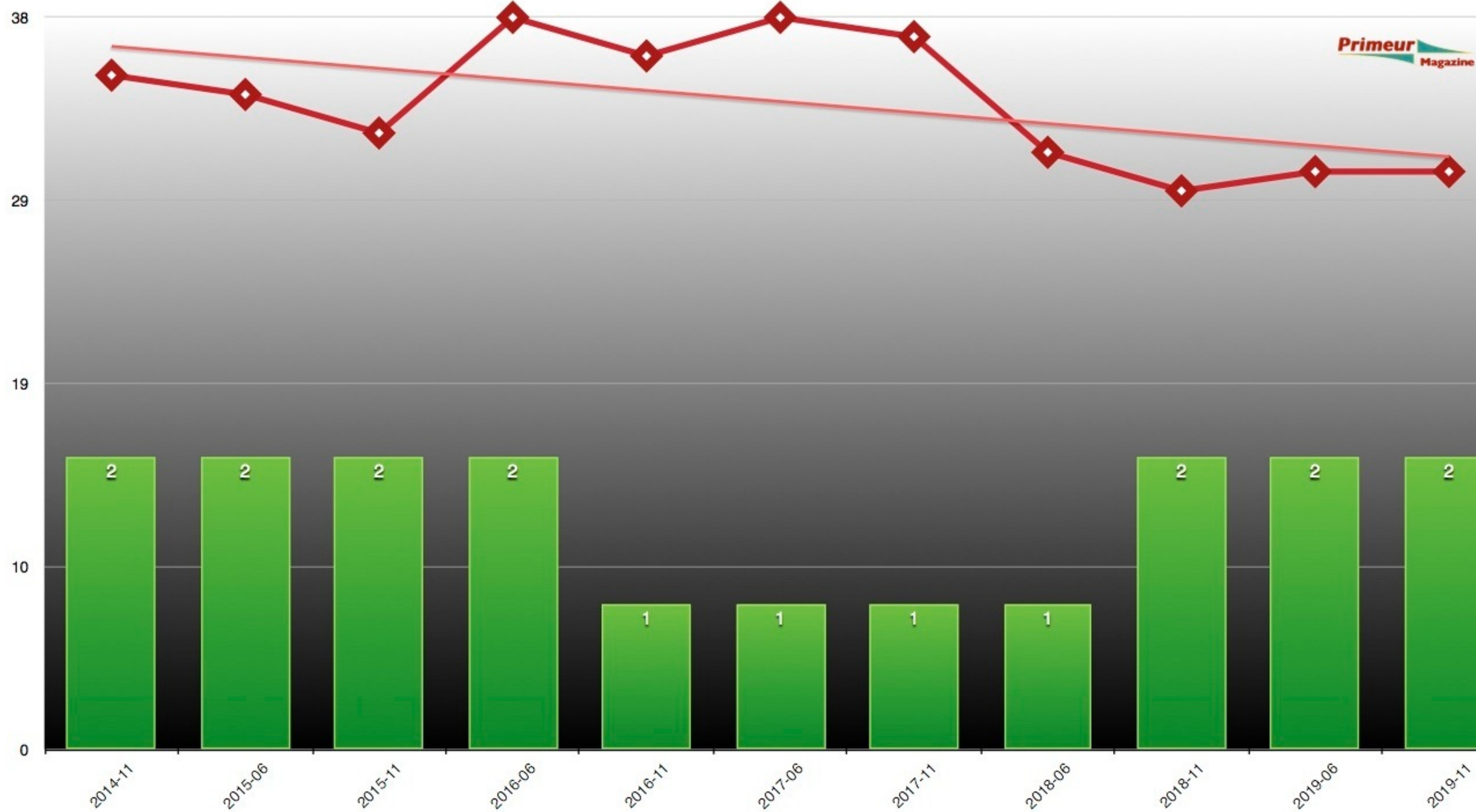
◆ Number systems in EuroHPC Countries in Top500

■ Performance percentage of EuroHPC



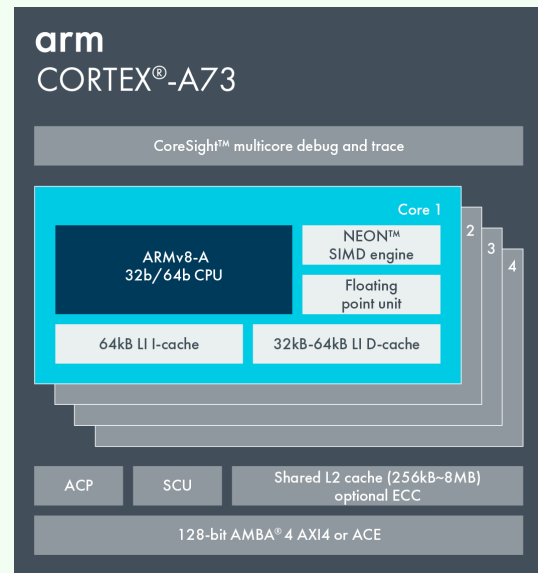
◆ Number systems in EuroHPC Countries in Top100

■ Number systems in EuroHPC Countries in Top10

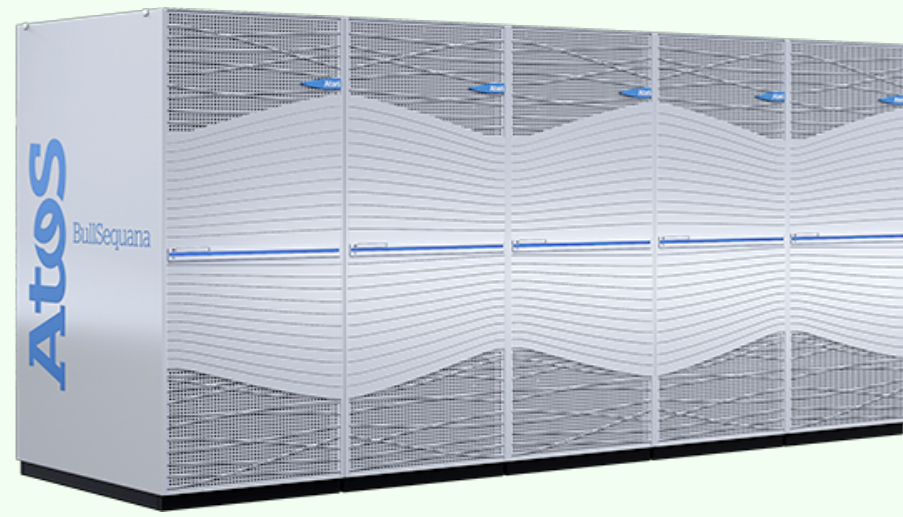


< 2019 >

Chip



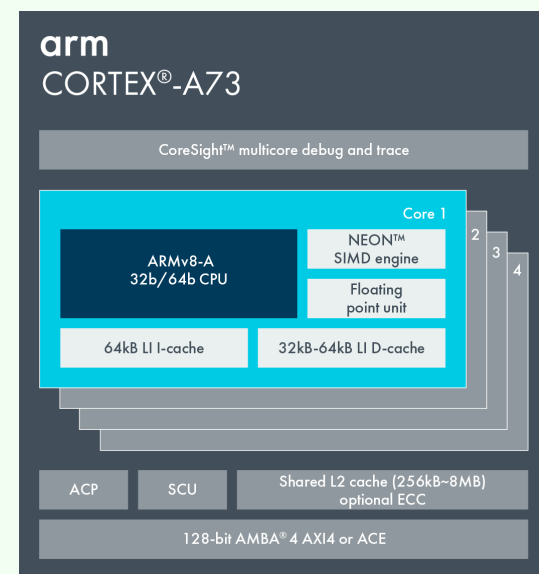
Computer



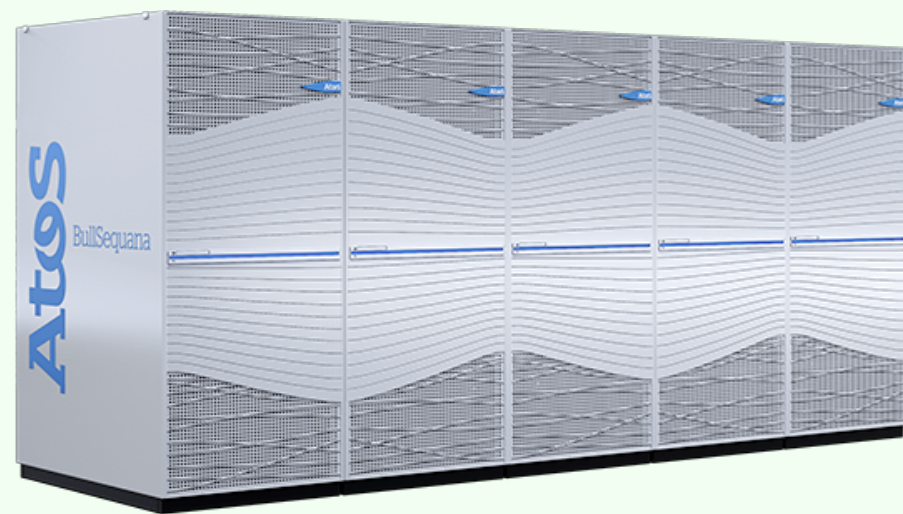
Ranking

Rank	System	Score	Price	Power
1	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache, Shared L2 cache (256kB-8MB) optional ECC, 128-bit AMBA® 4 AXI4 or ACE	1000000	\$1000000	1000W
2	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache, Shared L2 cache (256kB-8MB) optional ECC, 128-bit AMBA® 4 AXI4 or ACE	999999	\$999999	999W
3	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache, Shared L2 cache (256kB-8MB) optional ECC, 128-bit AMBA® 4 AXI4 or ACE	999998	\$999998	999W
4	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache, Shared L2 cache (256kB-8MB) optional ECC, 128-bit AMBA® 4 AXI4 or ACE	999997	\$999997	999W
5	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache, Shared L2 cache (256kB-8MB) optional ECC, 128-bit AMBA® 4 AXI4 or ACE	999996	\$999996	999W
6	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache, Shared L2 cache (256kB-8MB) optional ECC, 128-bit AMBA® 4 AXI4 or ACE	999995	\$999995	999W
7	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache, Shared L2 cache (256kB-8MB) optional ECC, 128-bit AMBA® 4 AXI4 or ACE	999994	\$999994	999W
8	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache, Shared L2 cache (256kB-8MB) optional ECC, 128-bit AMBA® 4 AXI4 or ACE	999993	\$999993	999W
9	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache, Shared L2 cache (256kB-8MB) optional ECC, 128-bit AMBA® 4 AXI4 or ACE	999992	\$999992	999W
10	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache, Shared L2 cache (256kB-8MB) optional ECC, 128-bit AMBA® 4 AXI4 or ACE	999991	\$999991	999W

Chip



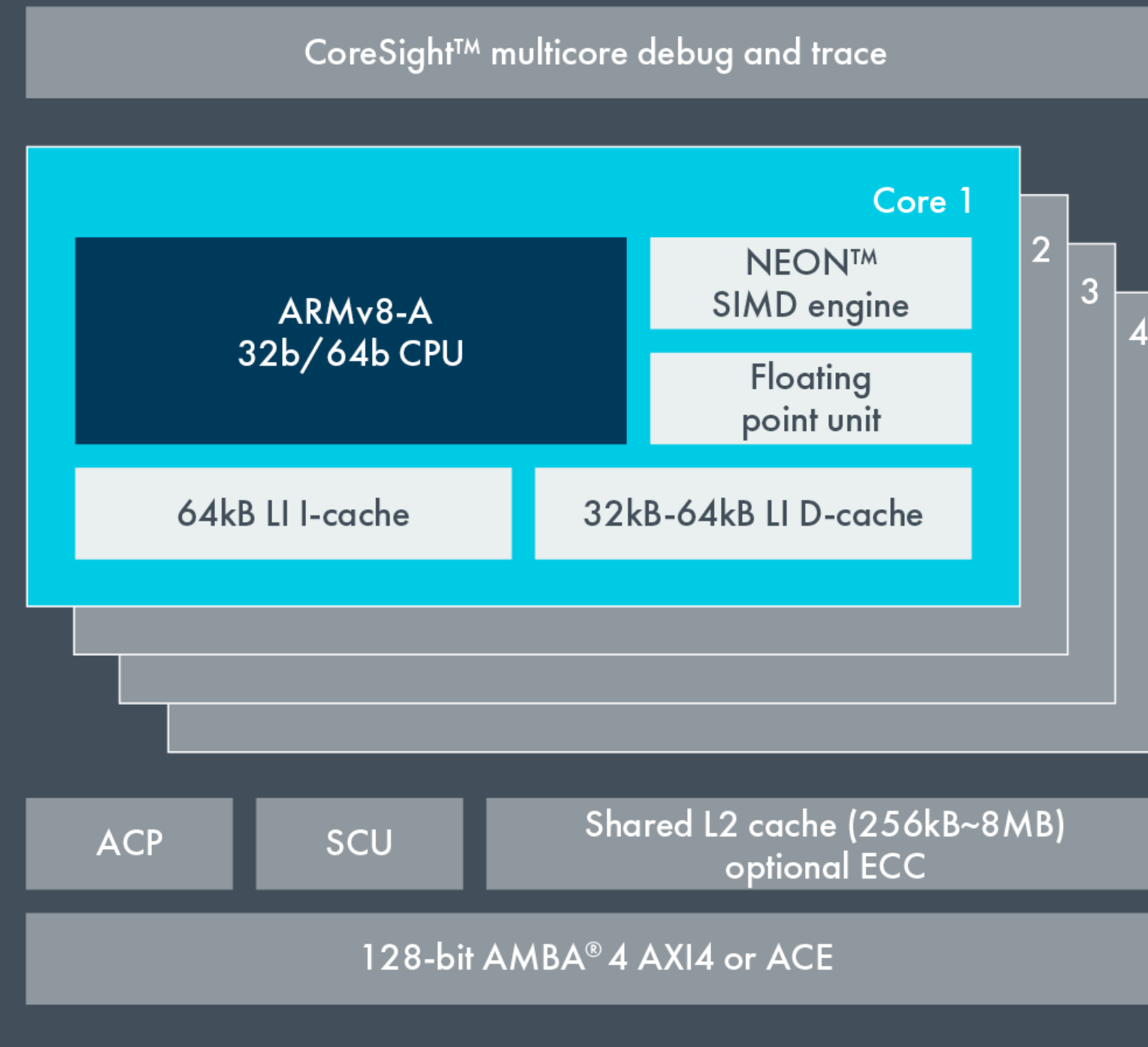
Computer



Ranking

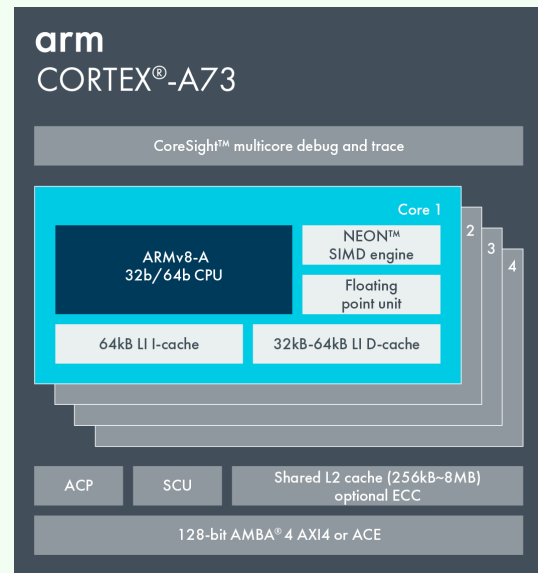
A screenshot of a ranking table, likely from a benchmarking website, showing various system configurations and their performance metrics. The table has columns for Rank, System, Date, Price, Power, and Score. The data is sorted by Rank, with the top entry being a system with a score of 100,000.

arm CORTEX®-A73

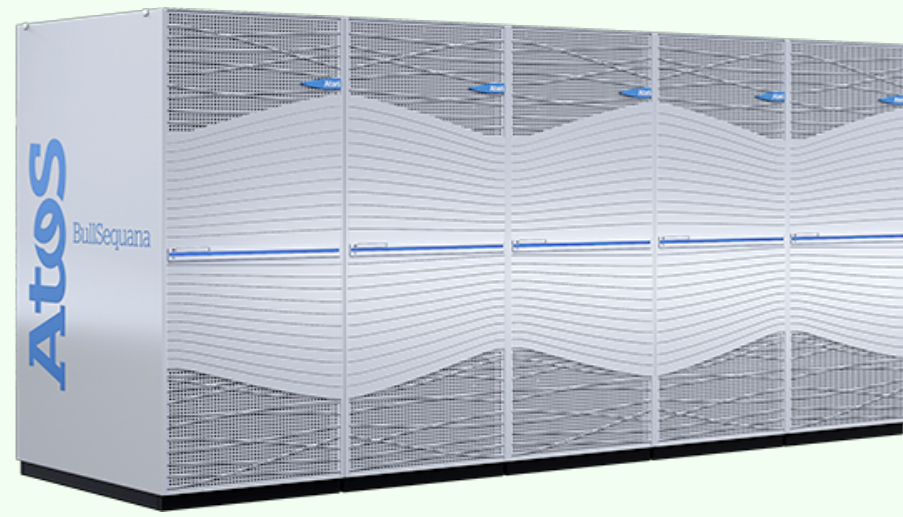


ARM based chips – ARM
itself is just IP

Chip



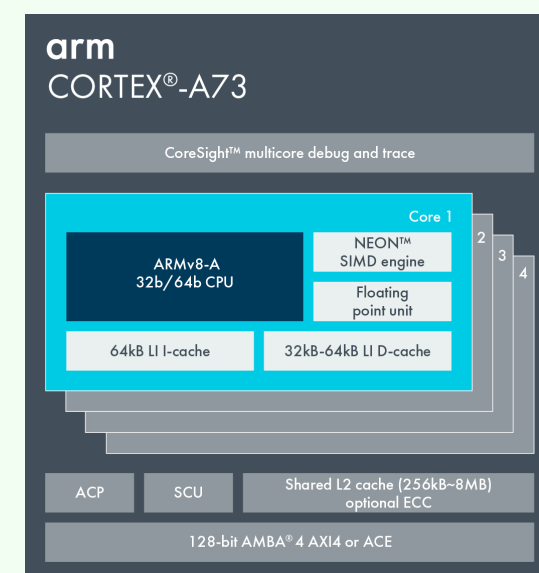
Computer



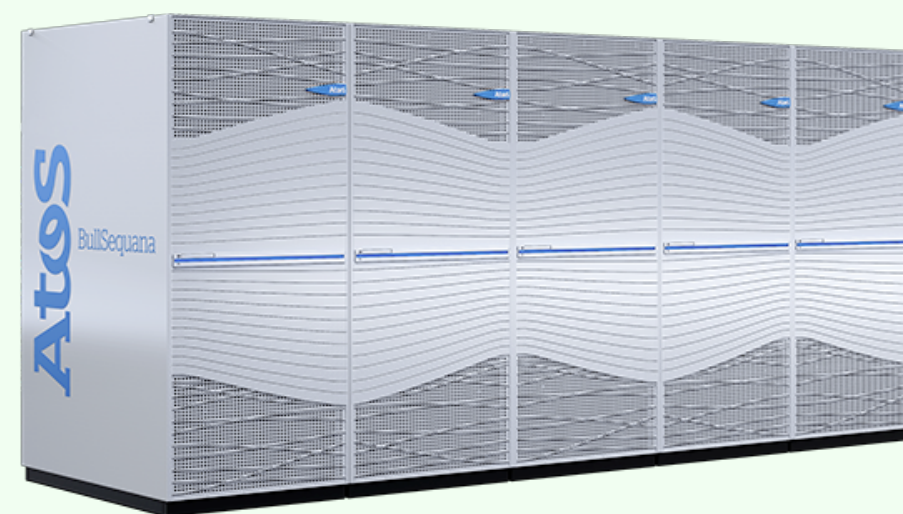
Ranking

Rank	System	Score	Price	Power
1	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache	1000000	1000000	1000000
2	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache	1000000	1000000	1000000
3	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache	1000000	1000000	1000000
4	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache	1000000	1000000	1000000
5	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache	1000000	1000000	1000000
6	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache	1000000	1000000	1000000
7	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache	1000000	1000000	1000000
8	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache	1000000	1000000	1000000
9	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache	1000000	1000000	1000000
10	ARMv8-A 32b/64b CPU, NEON™ SIMD engine, Floating point unit, 64kB L1 I-cache, 32kB-64kB L1 D-cache	1000000	1000000	1000000

Chip



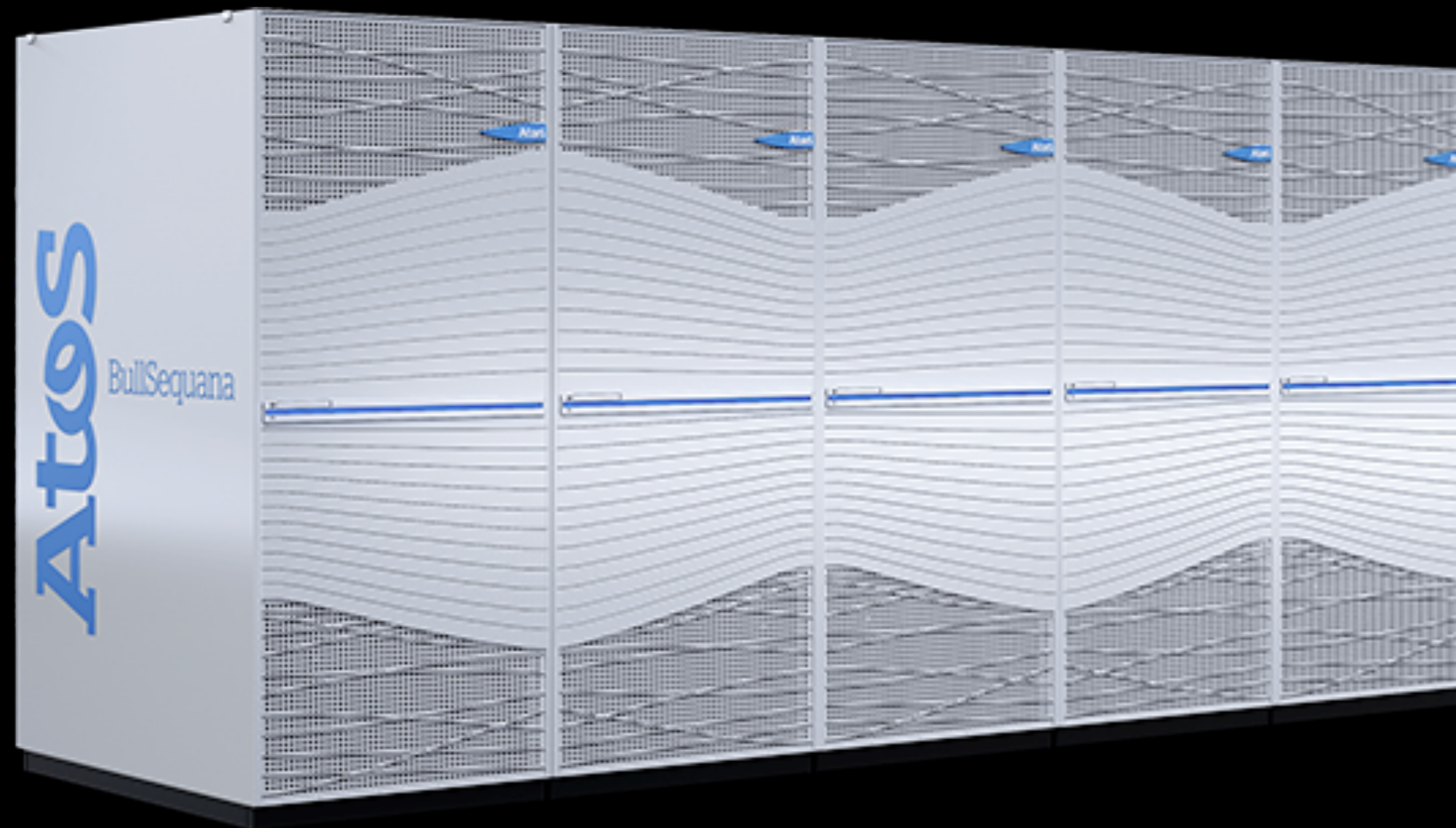
Computer



Ranking

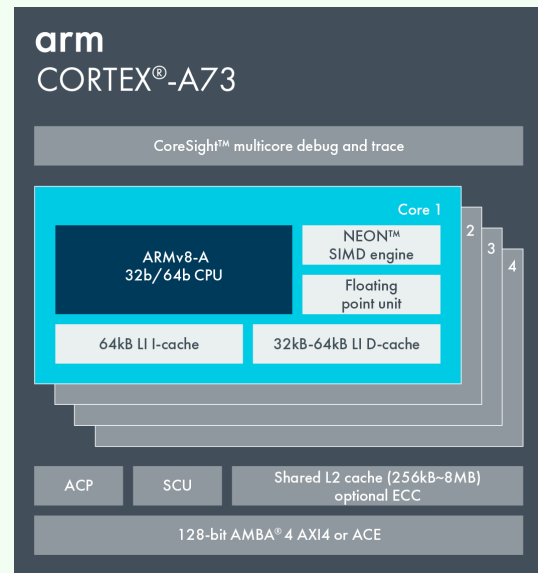
A screenshot of a web browser displaying a table of supercomputer rankings. The table lists various supercomputers, their manufacturers, and their performance metrics. The table is organized into columns for Rank, System, Date, Peak, Power, and Type. The data is sorted by Rank, with the highest performing systems at the top.

Rank	System	Date	Peak	Power	Type
1	Summit	2020-06-01	146.1 PF	30.0 MW	AI
2	Sunway TaihuLight	2019-12-01	110.6 PF	25.3 MW	AI
3	Frontier	2020-06-01	100.0 PF	25.0 MW	AI
4	El Capitan	2020-06-01	93.0 PF	25.0 MW	AI
5	Perlmutter	2020-06-01	85.1 PF	25.0 MW	AI
6	Knights Landing	2019-12-01	80.1 PF	25.0 MW	AI
7	Knights Landing	2019-12-01	79.0 PF	25.0 MW	AI
8	Knights Landing	2019-12-01	78.0 PF	25.0 MW	AI
9	Knights Landing	2019-12-01	77.0 PF	25.0 MW	AI
10	Knights Landing	2019-12-01	76.0 PF	25.0 MW	AI

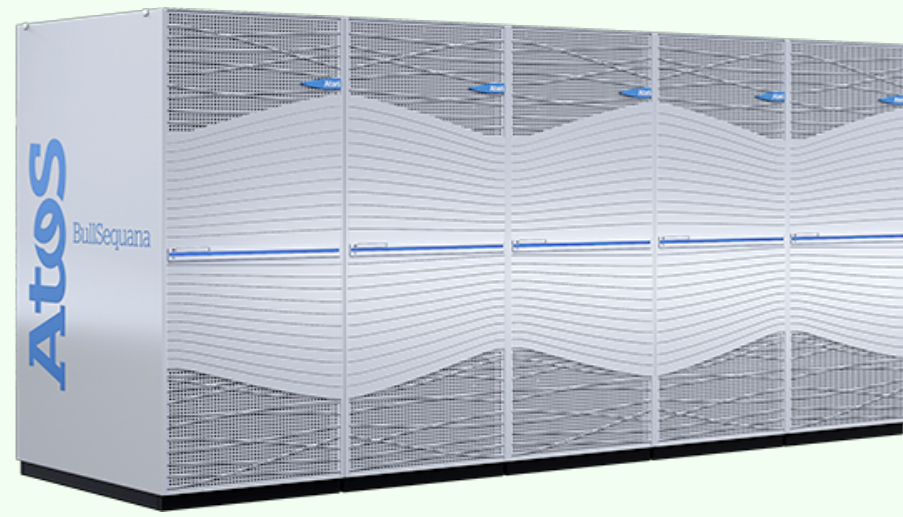


Several European
supercomputer
manufactures, Atos, E4,
Megware,...

Chip



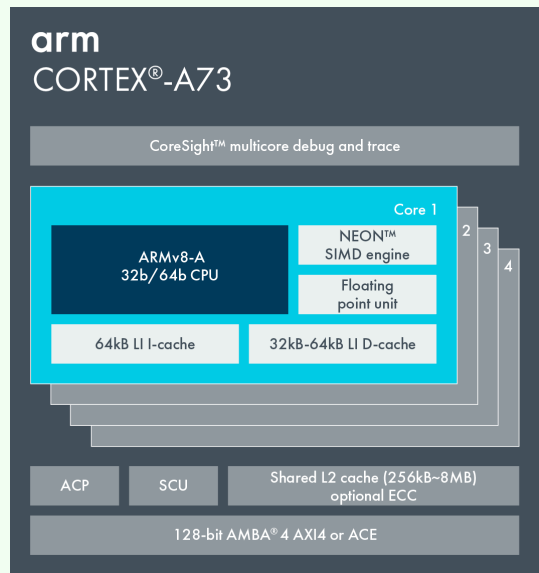
Computer



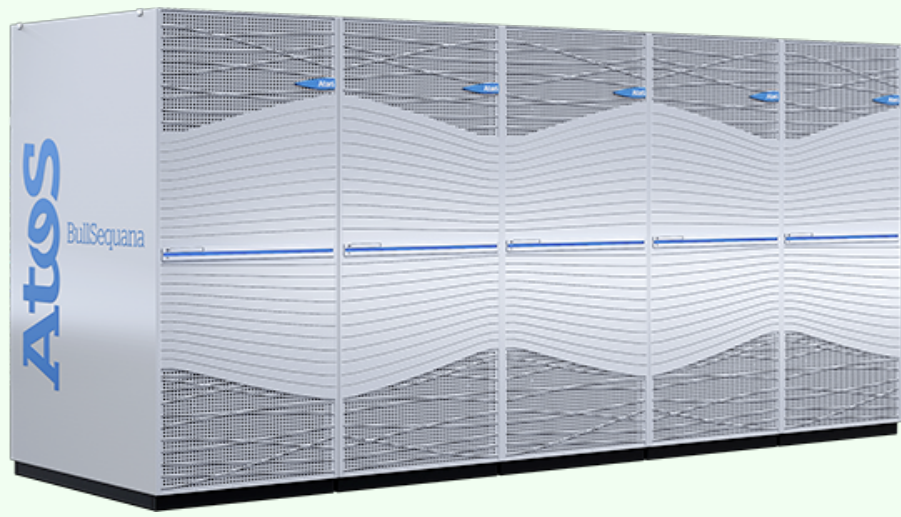
Ranking

Rank	System	Score	Price	Power
1	ARMv8-A 32b/64b CPU	1000000	1000000	1000000
2	ARMv8-A 32b/64b CPU	1000000	1000000	1000000
3	ARMv8-A 32b/64b CPU	1000000	1000000	1000000
4	ARMv8-A 32b/64b CPU	1000000	1000000	1000000
5	ARMv8-A 32b/64b CPU	1000000	1000000	1000000
6	ARMv8-A 32b/64b CPU	1000000	1000000	1000000
7	ARMv8-A 32b/64b CPU	1000000	1000000	1000000
8	ARMv8-A 32b/64b CPU	1000000	1000000	1000000
9	ARMv8-A 32b/64b CPU	1000000	1000000	1000000
10	ARMv8-A 32b/64b CPU	1000000	1000000	1000000

Chip



Computer



Ranking

The screenshot shows the TOP500 website's ranking list for November 2019. The table lists the top 10 supercomputers, including their rank, system name, location, cores, Rmax (TFlop/s), Rpeak (TFlop/s), and power (kW). The top system is Summit at IBM Power System AC922, followed by Sierra and Sunway TaihuLight.

Rank	System	Location	Cores	Rmax (TFlop/s)	Rpeak (TFlop/s)	Power (kW)
1	Summit - IBM Power System AC922, IBM POWER9 22C 3.07GHz, NVIDIA Volta GV100, Dual-rail Mellanox EDR Infiniband , IBM DOE/SC/Oak Ridge National Laboratory United States	United States	2,414,592	148,600.0	200,794.9	10,096
2	Sierra - IBM Power System AC922, IBM POWER9 22C 3.1GHz, NVIDIA Volta GV100, Dual-rail Mellanox EDR Infiniband , IBM / NVIDIA / Mellanox DOE/NNSA/LLNL United States	United States	1,572,480	94,640.0	125,712.0	7,438
3	Sunway TaihuLight - Sunway MPP, Sunway SW26010 260C 1.45GHz, Sunway , NRCPC National Supercomputing Center in Wuxi China	China	10,649,600	93,014.6	125,435.9	15,371
4	Tianhe-2A - TH-IVB-FEP Cluster, Intel Xeon E5-2692v2 12C 2.2GHz, TH Express-2, Matrix-2000 , NUDT National Super Computer Center in Guangzhou China	China	4,981,760	61,444.5	100,678.7	18,482
5	Frontera - Dell C6420, Xeon Platinum 8280 28C 2.7GHz, Mellanox InfiniBand HDR , Dell EMC Texas Advanced Computing Center/Univ. of Texas United States	United States	448,448	23,516.4	38,745.9	
6	Piz Daint - Cray XC50, Xeon E5-2690v3 12C 2.6GHz, Aries interconnect , NVIDIA Tesla P100 , Cray/HPE Swiss National Supercomputing Centre (CSCS) Switzerland	Switzerland	387,872	21,230.0	27,154.3	2,384
7	Trinity - Cray XC40, Xeon E5-2698v3 16C 2.3GHz, Intel Xeon Phi 7250 68C 1.4GHz, Aries interconnect , Cray/HPE DOE/NNSA/LANL/SNL United States	United States	979,072	20,158.7	41,461.2	7,578
8	AI Bridging Cloud Infrastructure (ABCI) - PRIMERGY CX2570 M4, Xeon Gold 6148 20C 2.4GHz, NVIDIA Tesla V100 SXM2, Infiniband EDR , Fujitsu National Institute of Advanced Industrial Science and Technology (AIST) Japan	Japan	391,680	19,880.0	32,576.6	1,649
9	SuperMUC-NG - ThinkSystem SD650, Xeon Platinum 8174 24C 3.1GHz, Intel Omni-Path , Lenovo Leibniz Rechenzentrum Germany	Germany	305,856	19,476.6	26,873.9	
10	Lassen - IBM Power System AC922, IBM POWER9 22C 3.1GHz, Dual-rail Mellanox EDR Infiniband, NVIDIA Tesla V100 , IBM / NVIDIA / Mellanox DOE/NNSA/LLNL United States	United States	288,288	18,200.0	23,047.2	

November 2019 | TOP500 Supercomputing List

TOP 10 SITES FOR NOVEMBER 2019

For more information about the sites and systems in the list, click on the links or view the complete list.

1-100101-200201-300301-400401-500

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Birth of EuroHPC JU

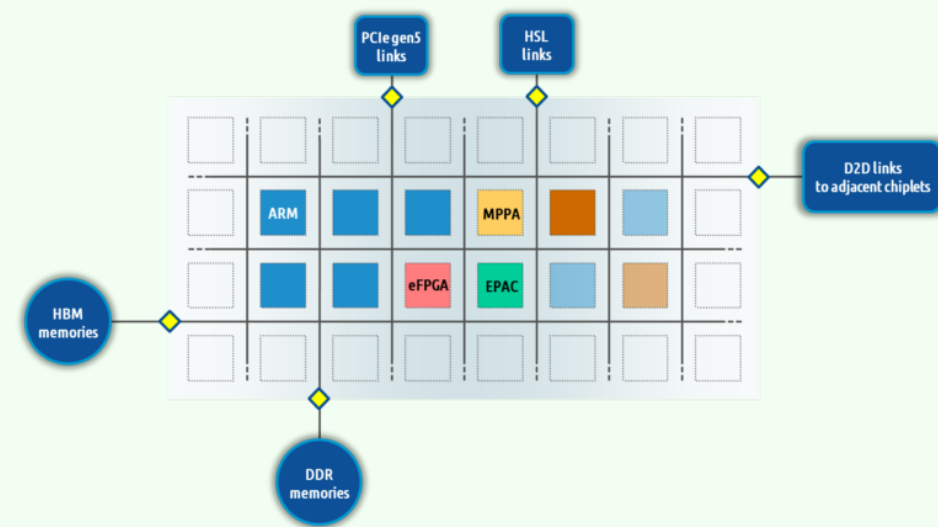
- First effort: IPCEI
- Second effort: EuroHPC
- Culminated in EuroHPC declaration
March 23 2017
- Political goal
- “Agree to work towards the establishment of a cooperation framework – EuroHPC – for acquiring and deploying an integrated exascale supercomputing infrastructure that will be available across the EU for scientific as well as public and private partner, no matter where supercomputers are
- IPCEI was not officially abandoned but went into oblivion
- Developing European HPC technology was later incorporated in EuroHPC goals
- EuroHPC could have been an ERIC, or indeed an IPCEI but in the end a Joint Undertaking was chosen
- EuroHPC established end 2018

EuroHPC JU kickstart

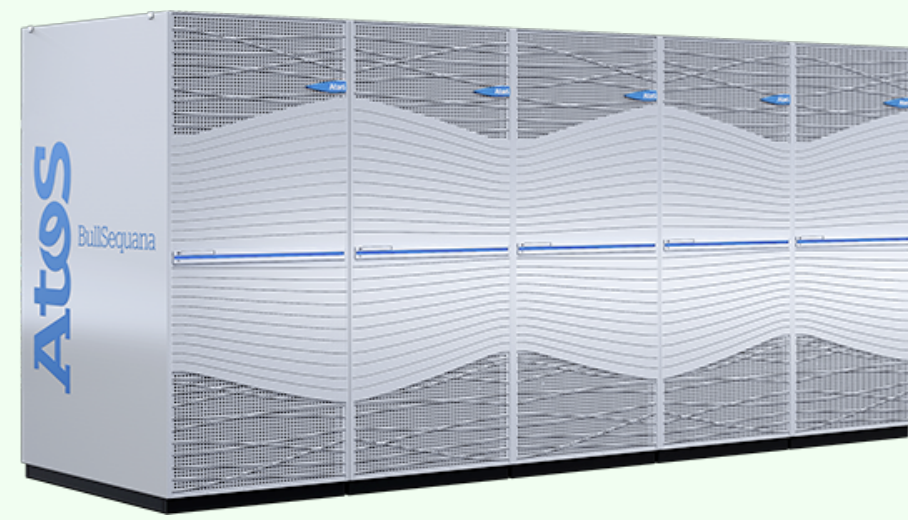
- Basic idea: transfer money from H2020 and other programmes to EuroHPC JU
- Countries add the same amount
- There are additional investments from industry
- Jointly buy “big” supercomputers, expand the ecosystem with R&I and “small supercomputers”
- Did not quit workout for the Research & Innovations in all EuroHPC countries

Future

Chip



Computer



Ranking

Rank	System	Score	Time	Power
1	Atos BullSequana (2019-2020)	1000000	1000000	1000000
2	Atos BullSequana (2019-2020)	1000000	1000000	1000000
3	Atos BullSequana (2019-2020)	1000000	1000000	1000000
4	Atos BullSequana (2019-2020)	1000000	1000000	1000000
5	Atos BullSequana (2019-2020)	1000000	1000000	1000000
6	Atos BullSequana (2019-2020)	1000000	1000000	1000000
7	Atos BullSequana (2019-2020)	1000000	1000000	1000000
8	Atos BullSequana (2019-2020)	1000000	1000000	1000000
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Exascale era 2023

- Acquisition of one (yes only one) exascale system in the 2021/2022 Digital Europe Programme
- Realistic seems deployment in 2023
- It will be crowded in 2023 in the exascale range:
 - 3 US systems (Aurora 2021, Frontier 2021, El Captain 2022)
 - 2 or 3 Chinese systems
 - 1 Japanese system (Fugaku 2021, almost exascale)
 - 1 system in the UK
- So only 2 places left in the TOP 10 for EuroHPC
- Seems Europe is back where we started
- 2 systems in the TOP10 before EuroHPC, 2 systems in the exascale era

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Everything about HPC in Europe



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