



Press contacts:

Oleg Gorbachev

Senior Director,
Corporate Communications and Integrated Marketing,
RSC Group
Mobile: +7 (967) 052-50-85
Email: oleg.gorbachov@rscgroup.ru

Press Release

**RSC supercomputers lead among all Russians
by Top50 and IO500 ratings**

Moscow, October 2, 2020 — New [33rd edition](#) of [Top50](#) list of the most powerful supercomputers in Russia and CIS region now includes 12 systems deployed by RSC Group, the leading developer and integrator of innovative ultrahigh-density and energy-efficient solutions for HPC, data centers and data storage-on-demand. RSC's representation in the rating has increased to 24% (from 22% with 11 systems half a year ago). It means that every fourth Russian supercomputer in Top50 has been developed and deployed by RSC. Three RSC supercomputers are in the top 10 of the list (4th, 6th and 10th places). The total peak performance of RSC systems from Top50 rating exceeds 4.63 Petaflops at the moment.

Russian systems in worldwide IO500 list

Earlier this year two RSC systems became the only representatives of Russia in [IO500](#), a new worldwide list of supercomputers with the best performing HPC level data storage. Govorun supercomputer (deployed at Joint Institute for Nuclear Research, JINR, in Dubna, Moscow region) got the 17th position and 'Polytechnic – RSC Tornado' system (deployed at St. Petersburg State Polytechnic University named after Peter the Great, SPbSPU) holds the 22nd place. These excellent results were achieved by using unique distributed and composable on demand RSC Data Storage-on-Demand systems based on Intel® SSDs and Intel® Optane SSDs with NVMe interfaces. When Govorun supercomputer was installed and launched at JINR in June 2018, it immediately took very high 9th position in the global IO500 rating.

'Polytechnic – RSC Tornado' supercomputer at SPbSPU

St. Petersburg Polytechnic State University named after Peter the Great started creating one of the most powerful and innovative supercomputer centers (SCC) in Russia with peak performance over 1.1 Petaflops back in 2014, and 'Polytechnic' SCC has been successfully commissioned in 2015.

SPbSPU's supercomputer center is focused on solving inter-disciplinary natural science research tasks and design of complex technical systems for hi-tech segments of local industries and science. Two cluster systems created and deployed by RSC at 'Polytechnic' SCC hold 4th and 19th places in the latest edition of Top50 list. Overall peak performance of SPbSPU's supercomputers has been increased by 23% in 2020 and currently amounts 1.6 Petaflops.

After scheduled upgrade of 'Polytechnic - RSC Tornado' supercomputer in 2020 it rose to the 4th position in Top50 rating (from the 5th place half a year ago). Its peak performance has increased by 29% to 1.309 Petaflops. Its maximum LINPACK performance has been raised to 910.31 Teraflops.

This computing power increase resulted from installation of a new segment of 64 computing nodes based on Intel® Xeon® Scalable 2nd Generation server processors (Intel® Xeon® Platinum 8268, Intel® Xeon® Gold 6248R), Intel® S2600BPB Server Board, Intel® SSD and Intel® Optane SSD. 'Polytechnic - RSC Tornado' supercomputer is based on an universal ultrahigh-density and energy-efficient RSC Tornado solution with 100% 'hot water' liquid cooling developed by RSC Group.

MVS-10P OP2 supercomputer at JSCC RAS

The Joint Supercomputer Center of the Russian Academy of Sciences (JSCC RAS) is one of the powerful Russian supercomputing centers in the field of science and high education. JSCC staff includes qualified scientists, programmers and engineers. Over 150 research groups use HPC resources for solving fundamental and applied tasks.

Total peak performance of JSCC RAS systems deployed by RSC based on ultrahigh-density and energy-efficient RSC Tornado and RSC PetaStream solutions with 100% 'hot water' liquid cooling is currently 1.7 Petaflops. The four RSC cluster systems at JSCC RAS currently hold 6th, 10th, 22nd and 36th positions in the local Top50 list.

MVS-10P OP2 supercomputer at JSCC RAS has undergone another scheduled upgrade in 2020. So its position has been raised to 6th place in Top50 list (from 12th spot half a year ago). Its peak performance has been increased by almost two times by 93% and is currently 823.91 Teraflops. Maximum LINPACK performance of this JSCC RAS supercomputer is now 572.19 Teraflops.

This computing power increase resulted from installation of a new segment of 86 computing nodes based on Intel® Xeon® Scalable 2nd Generation server processors (Intel® Xeon® Gold 6248R), Intel® Server S2600BPB Board and Intel® SSD. Intel® Omni-Path interconnect technology enables high-speed data transfer between the computing nodes. MVS-10P OP2 supercomputer is also based on comprehensive ultrahigh-density and energy-efficient RSC Tornado solution with 100% 'hot water' liquid cooling.

New RSC microDC system at Ioffe PTI RAS

This September RSC's specialists have deployed a new ultra-compact supercomputer based on RSC microDC solution at the Physical and Technical Institute named after Abram Ioffe of the Russian Academy of Sciences (Ioffe PTI RAS, St. Petersburg). This system immediately appeared on the 46th place in Top50 rating. Its peak performance is 92.16 Teraflops with maximum Linpack performance of 66.13 Teraflops.

RSC microDC is a quite new and popular ultra-compact and energy-efficient turn-key data center in one rack that can be installed in any premises without almost any preparation work. This data center includes RSC Tornado computing nodes with 100% liquid cooling, some possible air-cooled components and all cooling infrastructure in one cabinet. This solution can be scaled from a few to 32 or 51 nodes running under integrated RSC BasIS cluster management and monitoring software stack.

RSC microDC at PTI RAS is based on 20 computing nodes with high-performance Intel® Xeon® Scalable 2nd Generation server processors (Intel® Xeon® Gold 6248R), Intel® S2600BPB Server Board and Intel® SSD. Intel® Omni-Path interconnect technology enables high-speed data transfer between the computing nodes.

Other RSC supercomputers in local Top50 list

Key RSC customers are leading Russian universities and scientific institutes, research centers, labs and R&D centers. The current Top50 rating features other RSC's projects including Govorun, the first hyper-converged supercomputer in the world, deployed at the Joint Institute for Nuclear Research (11th place), two RSC systems at South Urals State University (13th and 31st positions), 'RSC Tornado – MIPT' supercomputer at the Moscow Institute of Physics and Technology (44th place) and NKS-1P system of the Siberian Supercomputer Center at the Institute of Computational Mathematics and Mathematical Geophysics Siberian Branch of Russian Academy of Sciences (50th position).

About RSC Group

RSC Group is the leading Russian developer and integrator of full cycle innovative, ultra-high-density, scalable, energy-efficient and hyper-converged solutions for high-performance computing (HPC), data centers and intelligent data storage on-demand based on Intel architecture, innovative RSC liquid cooling technology and a number of its own know-hows. Since 2018, RSC participates in 'National Champions' priority project implemented by the Ministry of Economic Development of Russian Federation.

RSC has the potential to create the most energy efficient solutions with record-breaking power usage effectiveness (PUE), the highest computing density in the industry with standard x86-based processors, to use fully green design, provide the highest solution reliability, noise-free operation of computing modules, 100% compatibility and guaranteed scalability with unmatched low cost of ownership and low power consumption. RSC specialists also have the experience of developing and implementing an integrated software stack of solutions to improve work efficiency and application of supercomputer systems from system software to vertically oriented platforms based on cloud computing technologies.

RSC is a Platinum member of Intel® Technology Provider Program, has Intel® Select Solution for Simulation and Modeling, Intel® Select Solution for Professional Visualization certifications, participates in Intel® Fabric Builders Program, has Intel® HPC Data Center Specialist status and Intel® Solutions for Lustre Reseller Elite status. Performance and scalability of RSC Tornado based solutions are proved by Intel® Cluster Ready certification.

For more information see our corporate website www.rscgroup.ru.

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