

National high-speed internet and Jisuanzhongxin: build new supercomputer system - Fujitsu Taiwan

National high-speed internet and Jisuanzhongxin: build a new supercomputer system

Construction of Taiwan's highest performance of the new system

Fujitsu Taiwan Limited

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中華電信
Chunghwa Telecom



NAR Labs 國家實驗研究院
國家高速網路與計算中心
National Center for High-performance Computing

Fujitsu Limited (hereinafter referred to as Fujitsu, [note 3](#)), Taiwan, Fujitsu Limited (hereinafter referred to as Taiwan Fujitsu, [Note 4](#)), Chunghwa Telecom Co., Ltd. ([Note 2](#)) and the national high-speed internet and Jisuanzhongxin National Applied Research Laboratories (hereinafter referred to as the national network Center, [Note 1](#)) will work to construct a new super computer for maximum performance in Taiwan. The new supercomputer will be studied as Taiwan's new core development foundation to promote Taiwan's overall industrial and economic development, the new operating system scheduled official in May 2018.

The new system is based on Fujitsu's enterprise standard server "FUJITSU Server PRIMERGY" (hereinafter referred to as PRIMERGY) of the next-generation model, PC cluster system composed of a total of 715 sets of servers, using the Intel Corporation applicable to the new server CPU and NVIDIA Corporation currently the fastest GPU, etc., assembled the most advanced high-performance computing (HPC) technology. The actual CPU performance (Rmax) of a petaflops 1.158 ([5 note](#) above), the actual performance of the GPU (Rmax) of more than 0.684 PFLOPS, the actual overall system performance (Rmax) is expected to reach more than 1.73PFLOPS.

[New Super Computer Systems introduced the background]

State Grid Center was established in 1991, is part of the National Foundation Research Laboratories, is Taiwan's only national supercomputer center, is committed to enhancing Taiwan's high-speed computing and network infrastructure, energy, planning and implementation of pilot high-speed computing, cloud computing, calculation methods and applications of big data, professional

and technical platform services industry, government and all walks of life science research, promote the upgrading of Taiwan's technological capabilities of science and innovation.

The new system provides sufficient CPU computing resources to enhance innovation and upgrading of domestic industries, but new research in the field of artificial intelligence (artificial intelligence) and big data (big data), also provides a basis for a corresponding study of.

[New Super Computer System Outline

The new supercomputer system is based on Fujitsu's enterprise standard server "FUJITSU Server PRIMERGY" (hereinafter referred to as PRIMERGY) of the next-generation model, PC cluster systems altogether 715 sets of servers posed. Compute nodes using Intel Corporation applicable to the new server CPU "Intel Xeon Processor", to achieve the performance Rmax of more than 1.158 PFLOPS. Accelerator Node (accelerator node) using NVIDIA's current fastest GPU "NVIDIA® Tesla® P100.", Rmax performance up to 0.648 PFLOPS. Among compute nodes equipped with the latest high-speed Internet technology road ([Note 6](#)) The "Intel® Omni-Path Architecture" to connect, can achieve high performance series calculus.

In addition, more using the most advanced cooling technology warm water ([Note 7](#)), high efficiency cooling and power savings.

Is proud to be the case at the same time and Computing Bright ([Note 8](#)) cooperation, Bright's VP Lee Carter to comment, said: "We are very proud to be involved in this project, such cooperation also highlights the efforts of the Asian region in the field of supercomputers, as well as creating a more multi-anticipated value. "

[Trademarks]

The record of product names and other proper nouns, the Department of each company's trademark or registered trademark.

[annotation]

(Note 1) National Laboratory National Institute of high-speed internet and Jisuanzhongxin: Location Hsinchu City, the main Renxie Xi Kun.

(Note 2) Chunghwa Telecom: Chunghwa Telecom is the largest integrated domestic carriers, the main business covers fixed-line communications, mobile communications and broadband Internet access and, in addition also provides customer-owned enterprise communication services, and the development of cloud service. For more information, see www.cht.com.tw.

(Note 3) Fujitsu Limited: Tokyo Head Office Minato-ku, general manager Tatsuya Tanaka.

(Note 4) Fujitsu Ltd Taiwan: Tainpei head office general manager Masaki Kaiivama

(Note 1) Fujitsu Ltd. Taiwan Taipei Head Office, general manager Masami Kajiyama.

(Note 5) petaflop: PFLOPS (Peta Floating-point Operations Per Second). Peta is 1000 trillion (10^{15}), indicate the number of floating point operations per second 1000 trillion times.

(Note 6) Road Internet: In a high speed network connection between computing nodes.

(Note 7) heated cooling technology: use of a slightly higher temperature than usual water cooling technique. It reduces the burden of generating the cold water cooling device, but also a higher temperature of the cooling water after the exhaust heat to be reused, it can be expected to enhance the energy efficiency of the entire system.

(Note 8) Bright Computing: Bright cluster management software and services to provide well-known in the international arena, while also providing large data management software, OpenStack, etc., general manager of Lee Carter.

* Actual performance (Rmax) and theoretical performance (Rpeak):

Actual performance (Rmax of) the actual test for the super computer can reach the maximum execution performance, theoretical performance (Rpeak) is deduced from the theoretical performance. The construction of the super computer, CPU actual performance of more than 1.158 PFLOPS, GPU real-world performance of more than 0.684 PFLOPS, the actual performance of the system as a whole is expected to reach more than 1.73PFLOPS. The theoretical performance of the CPU is more than 2.13 PFLOPS, theoretical performance of the GPU more than 1.35 PFLOPS, the overall performance of the system theory expected to reach more than 3.48 PFLOPS.

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On the Taiwan Fujitsu (Fujitsu Taiwan)

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