



Success Story

Government

Beijing Computing Center

To meet increasing demand for high-performance computing, Beijing Computing Center has substantially expanded its supercomputing environment. It is using SUSE® Linux Enterprise Server to maintain the high-performance and efficiency needed to power mission-critical workloads.



Overview

Established in 1973, Beijing Computing Center is a leading computing technology research and development agency. The center has strong ties with both the public and private sectors, and has played a key role in the adoption and development of computing solutions in China.

Challenge

In the last decade, China has made dramatic progress in the supercomputing arena. Today it boasts 61 out of the top 500 supercomputing sites in the world.

This growing push for high-performance computing capabilities has had a strong impact on agencies such as the Beijing Computing Center, which experiences significant growth year-on-year.

“Our operations practically double in size every year and we regularly expand our

“We have reduced administration effort by almost 50 percent, thanks to the easy manageability of SUSE Linux Enterprise Server. Staff productivity has also increased by 20 percent.”

YONG PAN

Deputy Manager of Operations and Maintenance
Beijing Computing Center

scale, bringing in roughly four or five hundred new servers annually,” said Yong Pan, Deputy Manager of Operations and Maintenance at Beijing Computing Center.

“Keeping up with such frequent and rapid change was a real challenge, and we wanted to improve both the performance and flexibility of our infrastructure, so that we could continue to meet the growing requirements of our customers.”

Solution

Beijing Computing Center embarked on an ambitious project to substantially increase both the performance and scalability of its existing supercomputing environment, based on Dawning TC3600 Blade systems with Intel Xeon X5650 processors and Nvidia Tesla C2050 GPUs.

The organization recognized that it required a high-performance server operating system to support its expanded supercomputing infrastructure. Working with service provider Sugon, Beijing Computing Center identified SUSE Linux Enterprise Server as the ideal option for maximizing the efficiency and value of its supercomputing platform.

With features such as advanced memory management and I/O support for multi-threaded file systems, SUSE Linux Enterprise Server is a perfect match for the demands of high-performance computing.

Beijing Computing Center at a glance:

One of China's leading centers for supercomputing

■ Industry and Location

Government, China

■ Products and Services

SUSE Linux Enterprise Server

■ Results

- + Reduced administration effort by approximately 50 percent, and boosted productivity by 20 percent
- + Simplified subscription pricing helps to keep licensing costs low
- + Delivered a stable, versatile foundation that maximizes the value and efficiency of the supercomputing environment

“SUSE Linux Enterprise Server provides the stable foundation that we need to ensure optimal performance from our IT infrastructure, and one that will support us as we continue to expand our high-performance computing capabilities.”

YONG PAN

*Deputy Manager of Operations and Maintenance
Beijing Computing Center*

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Beijing Computing Center introduced SUSE Linux Enterprise Server to its data center environment in late 2009. It has activated approximately three to four hundred operating system instances across its supercomputing cluster, which comprises around 1,000 servers and 10,000 processor cores.

SUSE Linux Enterprise Server is highly versatile, with support for a wide variety of hardware platforms and third-party software. The solution is also designed for interoperability with Windows and other operating platforms. This flexibility makes it an ideal fit for Beijing Computing Center's heterogeneous IT environment.

The organization uses the new supercomputing infrastructure to support a range of scientific research projects, such as weather modeling, molecular research and biomedical simulations. The system also serves as a platform for cloud computing initiatives, such as the Beijing Industrial Cloud, and other research and development projects for the private sector. For example, automobile firm BYD uses the solution to run crash simulations.

Results

The new supercomputing environment at Beijing Computing Center provides the speed and capacity needed to efficiently support the large-scale, high-performance computing needs of modern research projects.

“We have seen a number of performance improvements since upgrading our supercomputing platform,” said Yong Pan. “For

one project the calculations used to take around six hours to complete. We have now cut that time to just a few minutes.”

As SUSE Linux Enterprise Server is offered with simplified subscription pricing, Beijing Computing Center has been able to save on licensing costs for its operating system environment.

SUSE Linux Enterprise Server makes it easy to manage the organization's extensive range of workloads and systems, offering a number of tools that help to simplify and automate system installation and workload configuration.

“We have reduced administration effort by almost 50 percent, thanks to the easy manageability of SUSE Linux Enterprise Server,” said Yong Pan. “Staff productivity has also increased by 20 percent, as our IT team can now dedicate less effort to support and maintenance, and focus more on delivering new capabilities.”

With its new supercomputing platform, supported by SUSE Linux Enterprise Server, Beijing Computing Center is helping to meet the growing demand from both the scientific community and private sector for more powerful computing capabilities.

“We consider SUSE technologies to be ideally suited to our requirements,” said Yong Pan. “SUSE Linux Enterprise Server provides the stable foundation that we need to ensure optimal performance from our IT infrastructure, and one that will support us as we continue to expand our high-performance computing capabilities.”



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