

Mitigating the impact of extreme weather.

How Zhejiang Meteorological Service uses Lenovo ThinkSystem solutions to enable more efficient distribution of forecasts and weather services.

Lenovo Infrastructure Solutions
for The Data-Centered

Lenovo

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Background

Zhejiang Meteorological Service (ZMS) is one of five official Chinese meteorological bureaus, and one of the pilot units for the establishment of a public meteorological service organization. ZMS is responsible for meteorological disaster prevention and mitigations, public meteorological services, ecological and climate security, and climate change research.

The Network Center at ZMS is responsible for the implementation and management of cloud computing, a big data platform, and various meteorological business application systems deployed by the China Meteorological Administration. These technologies enable ZMS to prepare comprehensive weather forecasts and predictions, and smart weather services.

Zhejiang Province is situated in the monsoon climate region. It is one of the regions in China most severely affected by tornadoes, typhoons, gales, heavy rainstorms, and other extreme weather. With the relatively frequent occurrence of extreme weather, ZMS plays an increasingly important role in supporting the economic and social development of Zhejiang Province. Improving the accuracy of meteorological observations and forecasting, and improving data sharing is therefore crucial.

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Challenge

ZMS is always looking for innovative ways to distribute weather information quickly and efficiently. Previously, ZMS ran many key applications, including the government's China Integrated Meteorological Information Service System (CIMISS 2.0) system, on three cloud clusters, supported by a heterogenous virtual server and storage environment. This complex, multi-vendor infrastructure led to siloed applications and data, which wasted resources and monopolized the time of the IT team. As the server infrastructure aged, operational costs crept up and there was an increasing the risk of unplanned downtime.

Pressure was also mounting on the storage environment, as ZMS received growing amounts of radar data from the central government's China Integrated Meteorological Information Service System (CIMISS) system and from locations across Zhejiang. Using the existing storage platform to manage the numerous small files and large amounts of unstructured data presented tough technical challenges, and heightened the risk of bottlenecks.



Why Lenovo? Exceptional performance and strong previous engagements.

To transform its infrastructure, ZMS selected Lenovo ThinkSystem SR860 and Lenovo ThinkSystem SN550 servers, with VMware virtualization licenses. Alongside this, ZMS chose Lenovo ThinkSystem DM5000H Unified Hybrid Storage Arrays with 3.6 PB total capacity.

ZMS recognized that the Lenovo solutions offered advantages in terms of performance, stability, and interoperability over other vendors. Chen Yefeng, Director of Network Center at ZMS, recalls: “We were impressed with the functionality provided by Lenovo hybrid storage, particularly the data management features.”

ZMS also appreciated the quality of service provided by Lenovo during previous engagements, and its expertise during the solution design phase for the new project, as well as the pre-sales technical support and after-sales service.

Implementing a resilient, consolidated architecture.

The Lenovo solutions will allow ZMS to consolidate the three existing clusters into one centralized pool of infrastructure resources. This simplified architecture will support 50 physical and hundreds of virtual machines. ZMS was able to sort, classify, and redeploy the previously distributed applications to the new infrastructure.

Lenovo engineers worked on site to develop a proof of concept before moving the new infrastructure into production, and are now assisting ZMS with the data and application migration phase. Moving forward, ZMS will use ongoing support from Lenovo to keep the solutions in peak condition.



“With the unified architecture from Lenovo, we have realized the partition and domain deployment of applications, significantly increasing performance, stability, and capacity for our key applications, and ensuring better business continuity,”

Chen Yefeng

Director of Network Center, ZMS

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Results

Once fully implemented, the Lenovo solutions will help ZMS to distribute weather services faster and more efficiently, mitigating the impact of extreme weather events on the social and economic fabric of Zhejiang Province. The consolidated architecture will strengthen disaster recovery planning, and reduce management complexity and costs, liberating ZMS's IT team to focus on more strategic tasks.

The new storage will provide the scalability to manage and protect massive amounts of radar data efficiently. The integrated infrastructure will help to optimize operational agility, allowing ZMS to respond quickly to requests for resources from development teams.



Supports more efficient distribution of weather information



Consolidates three clusters into one centralized pool of resources, increasing agility



Delivers scalability to manage and protect massive amounts of radar data



Simplifies infrastructure management tasks, freeing IT team to focus on strategic tasks



“Working with Lenovo is helping us to optimize our infrastructure, and will contribute to more accurate, timely insights into weather conditions that assist citizens and businesses.”

Chen Yefeng
Director of Network Center, ZMS

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