Jumpstart your IoT Projects Faster and More Efficiently with Lenovo and SAP
Solution Brief

Empowering analytics at the Edge

IoT technology, coupled with 5G and Edge server capabilities will give customers and partners an opportunity to effectively process volumes of data from the edge and garner insights.

To help customers deploy their IoT projects with ease and agility, Lenovo partnered with SAP to validate and certify the ThinkEdge SE450 for SAP IoT Gateway Edge.

Benefits

The certification demonstrates the ability of the ThinkEdge SE450 to communicate with the IoT Edge platform and directly to the SAP IoT platform. It provides a platform for collecting data from sensors, making local decisions and sending data to the SAP Cloud Platform for further processing, analysis and to trigger business transactions.

Figure 1. Lenovo ThinkEdge SE450

Sensors can now generate tens of thousands of data points per second. The ThinkEdge SE450 preprocesses the data locally at the edge before sending it on to the cloud. Since the data is aggregated, summarized and tactically analyzed at the edge, it minimizes the volume of data that needs to be forwarded on to the cloud, which can have a big impact on response times and network transmission costs.

Another benefit of an IoT gateway is that it can provide additional security for the IoT network and the data it transports. Because the gateway manages information moving in both directions, it can protect data moving to the cloud from leaks and IoT devices from being compromised by malicious outside attacks with features such as tamper detection, encryption, hardware random number generators and crypto engines.

Internet of Things Gateway enables communication between devices and SAP Internet of Things platform. The IoT Gateway Cloud and the IoT Edge Platform are the two SAP Internet of Things gateways. Both collect data from and send commands to them and provide adapters for the communication with various protocols. The ThinkEdge SE450 acts as a virtual gateway that brings previously offline devices and assets online, managing the connectivity with devices according to the specific communication protocol that the devices implement.

Engineered for the Edge

Today, you need computing resources, and therefore servers, almost everywhere — not just in the data center, but remotely as well. However, for performance reasons, your remote data-generating devices must be close to computing and storage resources.

This is why the Lenovo ThinkEdge SE450 Edge server was created. Compact, ruggedized and power efficient, it also demonstrates the compute power to process multiple AI workloads at various Edge locations.

This 1S Intel® Xeon Scalable 3rd-generation processor-based server has a 2U height and short depth case that can go anywhere. Mount it on a wall, stack it on a shelf or install it in a rack. It can handle anything from 5-45°C as well as high performance in high dust and vibration environments.

As one of the first NVIDIA-Certified Edge systems, Lenovo's ThinkEdge SE450 leverages NVIDIA GPUs for enterprise and industrial AI at the edge applications, providing maximum accelerated performance.

Specifications

The following table lists the specifications of the ThinkEdge SE450 server.

Table 1. Specifications

Components	Specification
Form Factor	2U rack server 300mm (11.8in) depth with 4x FHHL adapters; or 2U rack server 360mm (14.2in) depth with 4x FHFL adapters
Processor	1x 3rd Gen Intel® Xeon® Platinum processor, up to 36 cores, up to 225W TDP
Drive Bays	Up to 6x 2.5-inch 7mm drives; Up to 6x NVMe drives supported; 2x M.2 boot drives (RAID 1)
Memory	10x DDR4 memory slots; Maximum 1TB using 8x 128GB 3DS RDIMMs; Supports up to 4x Intel® Optane™ Persistent Memory 200 Series modules (PMem)
Expansion Slots	Up to 4x PCIe 4.0 slots, 1x OCP 3.0 slot
GPUs	Up to 4x single-width GPUs or 2x double-width GPUs
Network Interface	LOM adapter installed in the OCP 3.0 slot; PCIe adapters
Ports	Front: 1x Power Button, 1x system locator, health with LED, 1x VGA, 2x USB 3.1, 1x Serial Port (optional), 1x RJ-45 1Gb for dedicated management, 1x system locator LED; Optional Wi-Fi (management)
HBA/RAID Support	SW RAID standard; optional HW RAID with or without cache, or SAS HBAs
Power	Dual redundant power supplies AC (up to 1100W Platinum) or Dual redundant power supplies -48V DC 1100W
Systems Management	Lenovo XClarity Controller
OS Support	Microsoft, Red Hat,Ubuntu, CentOS, VMware. Visit lenovopress.com/osig for details.
Limited Warranty	3-year customer replaceable unit and onsite service, next business day 9x5; optional service upgrades

To learn more about the SE450, view the ThinkEdge SE450 datasheet.

Why Lenovo for Edge?

Lenovo has the expertise to help you define your IoT Edge Strategy, evaluate your Analytics & AI requirements, and run proofs of concept needed to get started fast.

Lenovo AI innovation centers offer an environment to conduct edge POCs, leverage ready-to-use tools, and access to our experts in AI and edge computing. We offer workshops to help you get started, in-depth strategy engagements, and managed services.

When you are ready to deploy, we have built high-performance AI inference capability into space-efficient servers and automation of deployment and management via Lenovo Open Cloud Automation.

Wherever your edge may be, only Lenovo offers a breadth of purpose-built edge IT solutions that brings industry-leading compute performance, security, and manageability, right where you need it for real-time analytics and AI.

For more information

To learn more about Lenovo for CoSP solutions and validated partner configurations, contact your Lenovo Business Partner or visit: https://www.lenovo.com/us/en/servers-storage/solutions/edge-computing/

Notices

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