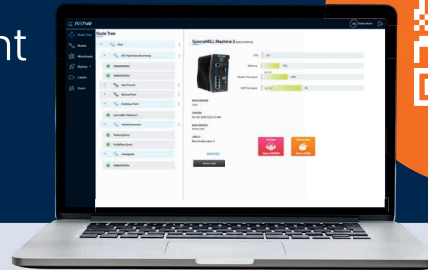


Nerve Blue

Remote software management
for your Supermicro devices



Nerve Blue software brings powerful edge computing capabilities to Supermicro hardware.

- ✓ Centrally manage software for your fleet of Supermicro devices
- ✓ Consolidate multiple software applications (Docker and VM) on one virtualized infrastructure
- ✓ Remotely deploy and update software applications from any vendor

Three easy steps to get started with Nerve Blue:

Register
1

Register for a free 30-day trial of Nerve Blue

Go to: www.tttech-industrial.com/try-nerve
to learn more about Nerve Blue and register for free

Log in
2

Log in and start using Nerve Blue online

Receive your personalized login credentials for your trial account. Log in to the online demo and immediately start working with hands-on tutorials.

Use
3

Use Nerve Blue on your Supermicro devices

Contact us (trynerve@tttech-industrial.com) to access to the full evaluation system and start managing your device software and applications remotely.

Base System

10.20

Base System	Debian 10 (Linux Kernel 4.19.0)
Hardware Support	SuperServer E100-9AP-IA, SuperServer 1019D-16C-FHN13TP
Hypervisor	Xen 4.11
OS Support	Linux and Windows (as virtual machine)
Soft PLC	CODESYS 3.5 (PROFINET Master/Slave, EtherCAT, Modbus TCP/IP), Cycle time down to 1 ms Hosted in a real-time virtual machine to ensure isolation
Workload Management	Local UI for workload management Resource management to ensure application performance
Extensible Architecture	Open for integration of 3rd party software firewalls (e.g. CISCO vASA)
Updates	Over-the-air updates, security patching and bug fixes for Base System
Communication Security	Encrypted Transport Layer Security (TLS 1.2) based communication Firewall friendly - communication to the Management System uses port 443
Application Sandboxing	Applications are hosted as virtual machines and containers to maintain system separation
Network Segmentation	Configurable networking for separation of workload networks

Data Services

Database	Timescale Time-Series Database (optional InfluxDB)
Data Ingestion	OPC UA with authentication support High speed data ingestion: 100,000 data points per second Time stamp support in data-stream and at ingestion point
Input Protocols	MQTT / JSON, OPC UA Client/Server, OPC UA PubSub
Output Protocols	MQTT / JSON, OPC UA Client/Server, OPC UA PubSub, Timescale DB (SQL), InfluxDB
Data Visualization	Grafana locally on Nerve Device and remotely in Management System
Analytics	Python SDK and toolchain for analytics container creation Analytics support built with Intel MKL and DAAL libraries

Management System

Hosting	Hosted on Azure cloud or on-premises
Management System	Deployable as Linux Docker with browser-based GUI View status of connected Nerve Devices, secure onboarding of new Nerve Devices Supports low bandwidth and intermittent connections to Nerve Devices
Workload Management	Workload management (deployment and updates) remotely via Management System Selective application deployment to mitigate user error Workloads accessible from the external network Support for local repositories (service PC or server)
Database	Timescale Time-Series Database
Data Visualization	Grafana via Data Services
Permission Management	Fine grained role-based access control to Management System LDAP support, OAuth 2.0
Remote Access	Remote service access (VNC, RDP, Shell), remote port tunneling (e.g. for FTP)
Logging and Monitoring	Centralized logging support (Elasticsearch/Kibana)
Alarms	Alarms created through Grafana (RAM, CPU, temp. status & certificate expiry warning)