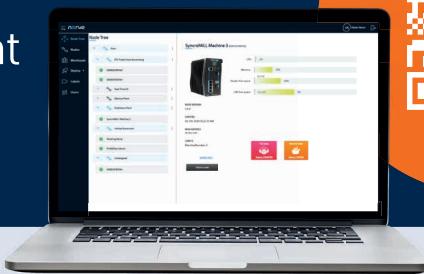


# Nerve Blue

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 for a free 30-day trial of Nerve Blue

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



## 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 Nerve Blue on your Supermicro devices

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

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

## Data Services

<b>Database</b>	Timescale Time-Series Database (optional InfluxDB)
<b>Data Ingestion</b>	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
<b>Input Protocols</b>	MQTT / JSON, OPC UA Client/Server, OPC UA PubSub
<b>Output Protocols</b>	MQTT / JSON, OPC UA Client/Server, OPC UA PubSub, Timescale DB (SQL), InfluxDB
<b>Data Visualization</b>	Grafana locally on Nerve Device and remotely in Management System
<b>Analytics</b>	Python SDK and toolchain for analytics container creation Analytics support built with Intel MKL and DAAL libraries

## Management System

<b>Hosting</b>	Hosted on Azure cloud or on-premises
<b>Management System</b>	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
<b>Workload Management</b>	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)
<b>Database</b>	Timescale Time-Series Database
<b>Data Visualization</b>	Grafana via Data Services
<b>Permission Management</b>	Fine grained role-based access control to Management System LDAP support, OAuth 2.0
<b>Remote Access</b>	Remote service access (VNC, RDP, Shell), remote port tunneling (e.g. for FTP)
<b>Logging and Monitoring</b>	Centralized logging support (Elasticsearch/Kibana)
<b>Alarms</b>	Alarms created through Grafana (RAM, CPU, temp. status & certificate expiry warning)