



SUPERMICRO AND NEUTROON DELIVER PRIVATE 5G/LTE NETWORK CLOUD PLATFORM

Supermicro and Neutron collaborate to simplify the deployment of multi-vendor Private 5G and edge computing applications



Supermicro Telecoms Edge Infrastructure Solutions

Executive Summary

The combination of Supermicro's pioneering edge computing solutions with Neutron's robust Private 5G/LTE network cloud platform enables enterprises to excel in the age of data-driven connectivity. While Supermicro's edge servers are tailored to optimize energy consumption and enhance scalability, resilience, and efficiency, Neutron's Cloud Platform, an open-API, multi-site, multi-tenant, multi-vendor orchestration solution, unifies advanced connectivity (Private 5G, Wi-Fi 6) and edge computing for enterprise IT customers that simplifies the connectivity of IoT devices to business-critical apps.

TABLE OF CONTENTS

| | |
|---|---|
| Executive Summary | 1 |
| Neutron's Private Network Solution | 1 |
| Supermicro's Edge Computing Solutions | 2 |
| Neutron Architecture | 3 |
| How is Edge Computing Related to Private Networks | 3 |
| Conclusion/Summary | 4 |
| References | 4 |

Neutron's Private Network Solution

Neutron aims to enable businesses to understand and embrace the power of private networks and edge computing by providing innovative connectivity between IoT devices and apps in the most efficient, reliable, and affordable way.

The platform provides a single, easy-to-use, and cost-effective management solution for all your private networks independently from the location, the extension, the heterogeneity of technologies and vendors, or the complexity of the deployment. We can boost productivity and lower TCOs by reducing CapEx thanks to the disaggregated nature of the solution that enables the optimization of HW/SW vendor/technology and reduces OpEx due to the simplification of the O&M of the network.



The solution transforms pure connectivity into smart connectivity through the Neutron Hyperslicing™ and an integrated marketplace of edge apps that can be easily deployed on systems like the Supermicro SYS-211SE-31A 2U 3Node short depth server. This system was chosen due to its flexibility. It can be used in the core, edge, or RAN. A customer could start with a single node populated for Private 5G, then add edge workloads on additional sled-based nodes. Rack space at the edge is optimized with three nodes in 2U. The SYS-211SE is a short depth chassis for edge located cabinets with all front access I/O and extended operating temperature range, often required at the edge.

Supermicro's Edge Computing Solution

Supermicro SYS-211SE-31A



Figure 1 - Supermicro Edge System – 2U 3 Node Front Access Short Depth Server

Key Features:

- Single Socket E (LGA-4677) 4th Gen Intel® Xeon® Scalable processor (per node)
- 8 DIMMs; Up to 2TB 3DS ECC DDR5-4800: RDIMM/LRDIMM (per node)
- 2 PCIe Gen5 x16 FHHL slot and 1 PCIe Gen5 x16 HHHL slot (per node)
- 2 NVMe M.2 2280/22110 (per node)
- 430mm deep (fits in 600mm cabinet)
- Carrier grade NEBS level 3 compliance

For smaller scale Private 5G/LTE networks, the Supermicro SYS-110D Compact 1U system based on Intel's Ice Lake D platform was selected. This system offers 20 CPU cores and a wide range of integrated on-board network connectivity in a compact short depth 1U chassis at a competitive price point, making it ideal for smaller networks.

Supermicro SYS-110D-20C-FRAN8TP

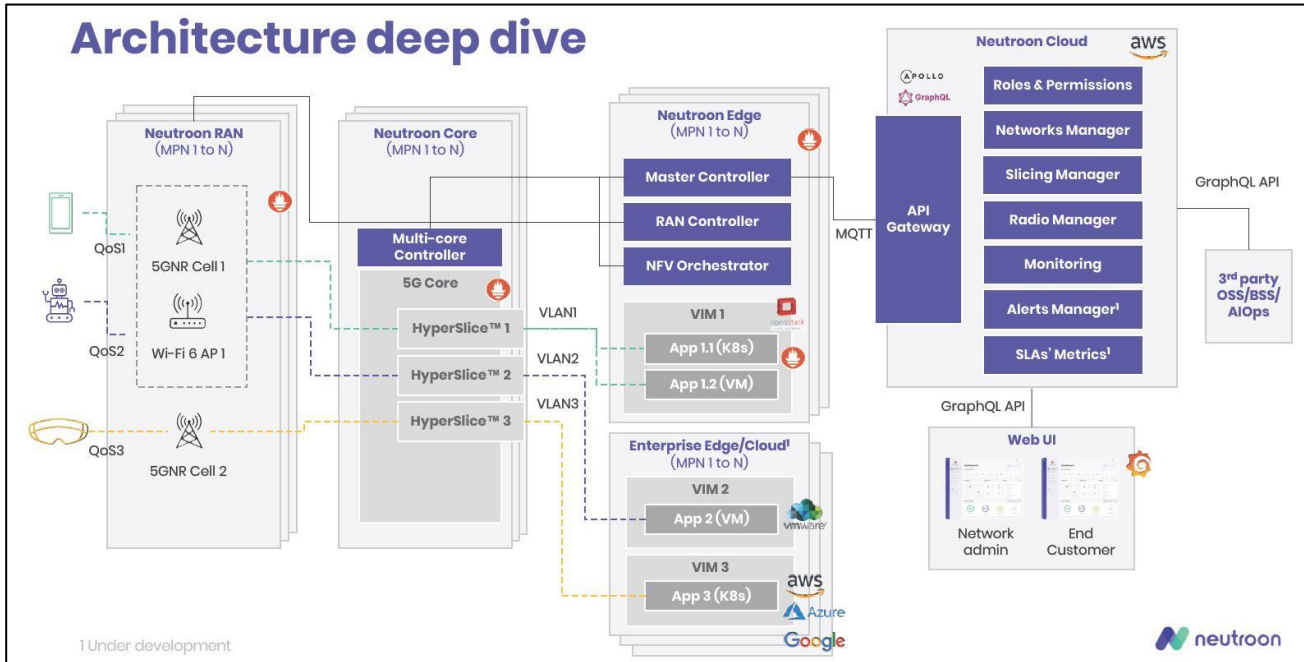


Figure 2 - Supermicro Edge Server - Intel(R) Xeon Processor D-2796NT Embedded System

Key Features:

- Intel® Xeon® Processor D-2796NT
- Up to 512GB LRDIMM
- 2x Internal 2.5" drive bays (2x PCIe 4.0 NVMe x8 SlimSAS and 1x OCuLink options)
- 4x GbE, 2x 25G SFP28 and 2x 10G Base-T
- 1x M.2 M-Key 2242/2280 (SATA/PCIe 3.0 x4)
- Redundant 800 W PSU

Neutron Architecture



How is edge computing related to private networks?

Increased resilience

The private network becomes more robust to disruptions by distributing computing power and tasks among multiple edge devices. In case of a problem when an edge device is facing an error, the workload may be smoothly transferred to another edge device, maintaining continued operations and minimizing network downtime. Edge computing's redundancy gives an extra layer of stability to Private 5G/LTE networks, increasing system availability.

Enhanced scalability and flexibility

Supermicro's advanced edge computing capabilities enable effective scalability of the private network managed through the Neutron Cloud Platform when the number of connected RAN devices increases. Enterprises may quickly deploy more edge devices to manage the increasing computing load, assuring maximum performance and responsiveness. Additionally, Supermicro allows for greater flexibility in deploying new edge applications to serve multiple use cases of the clients, as edge devices may process data locally without requiring significant modifications to the cloud-based architecture. These new use cases can be tested thanks to the unification of edge computing and private 5G/LTE since unparalleled flexibility is achieved by minimizing connectivity firewalls and bottlenecks.

Improved data privacy and security

In the case of Private 5G/LTE networks, Supermicro's edge computing solutions optimize data privacy and security. By maintaining data processing and storage at the network edge, sensitive information is positioned inside a localized enterprise environment, diminishing the risk of data breaches during its transmission to the cloud and allowing businesses to gain more control over their data while maintaining compliance with privacy requirements. Edge computing enables Mobile Private

Network Operators (MPNOs) to adopt more complex security measures tailored to their needs, improving data protection and network integrity.

Bandwidth optimization

Edge computing boosts bandwidth usage in Private 5G/LTE networks as the data is processed locally at the network edge. Only necessary and compressed data is sent to the cloud, minimizing the amount of data that travels through the network. This turn-key advantage reduces network congestion and increases overall network performance.

Conclusion/Summary

Supermicro and Neutron together are creating an easy-to-use solution to combine Private 5G and Wi-Fi 6 connectivity with an edge computing platform. The winning combination of the Neutron NaaS Cloud Platform running on Supermicros' highly flexible range of telecoms edge systems allows customers to scale their network deployment while efficiently optimizing CapEx and OpEx.

References

1. Neutrons NaaS Cloud Platform <https://www.neutron.com/#platform>
2. Supermicro SYS-211SE-31D <https://www.supermicro.com/en/products/system/iot/2u/sys-211se-31d>
3. Supermicro SYS-110D-20C-FRAN8TP <https://www.supermicro.com/en/products/system/iot/1u/sys-110d-20c-fran8tp>

SUPERMICRO

As a global leader in high performance, high efficiency server technology and innovation, we develop and provide end-to-end green computing solutions to the data center, cloud computing, enterprise IT, big data, HPC, and embedded markets. Our Building Block Solutions® approach allows us to provide a broad range of SKUs, and enables us to build and deliver application-optimized solutions based upon your requirements.

Visit www.supermicro.com

NEUTROON

Neutron is a SaaS cloud platform making Private 5G plus edge computing easy, flexible, and affordable for industries and smart cities of all sizes. Neutron users can control multiple vendor-agnostic Private 5G plus edge computing networks from a single UI in the cloud, and deploy edge apps like robotics/drone controllers, AR/VR, or AI analytics inside with literally just a few clicks. Its Hyperslicing™ technology allows to segment each on-premise network in an end-to-end fashion, from radio to edge/cloud application, improving isolation, observability, and SLA-adherence.

For more information email: info@neutron.com or visit www.neutron.com
