BullSequana Edge

Powering Intelligence in your IoT

The exponential growth of intelligent sensors and devices is generating an unprecedent amount of data. This is reshaping IT architectures, as increasingly powerful processing and machine learning inference capabilities are required at the Edge of the networks to enable next generation, transformative AI and IoT applications. BullSequana Edge has been designed to meet these challenges, delivering powerful AI inference and streaming analytics capabilities while ensuring that all data remains safe and secure.

Designed to operate outside of the datacenter

In order to reduce latency and to optimize network bandwidth, Edge servers often need to be placed in close proximity of IOT devices such as cameras, sensors or production robots. BullSequana Edge is capable to function in weather protected locations which are only partially temperature controlled and can therefore operate in a variety of locations such as airports, shop or factory floors. Moreover, BullSequana Edge offers very flexible installment choices such as desktop, wall or rack mount options.

Hyperconverged infrastructure for accelerated Edge Data Analytics

Industry 4.0 applications require Edge Analytics with the lowest possible latency as well as rock solid data persistence. BullSequana Edge has therefore been designed to enable open source based hyperconverged infrastructure solutions which enable flexible resource sharing between nodes, centralized management and security hardening.

Streaming analytics solutions such as Spark and Kafka can flexibly be deployed on this stack. Through its powerful GPUs BullSequana Edge also supports accelerated machine learning algorithms enabled by RAPIDS and similar frameworks.

High end AI and machine learning performance

BullSequana Edge has been designed to provide leading AI acceleration capabilities for resources hungry Video streaming analytics. The server can host up to two powerful Nvidia Tesla T4 GPUs or optional FPGA's. This enables the inference of complex AI models right at the edge with lowest possible latency. Together with its powerful 16 core Intel® Xeon® processor, BullSequana Edge provides an outstanding compute power-pack for the implementation of most demanding machine learning applications.

IoT Gateway and remote deployment capabilities

Thanks to its WIFI, GSM and Lora radio capabilities, BullSequana Edge can also act as an IOT Gateway. The radios capabilities make the server independent form traditional network connectivity and allow deployment in remote locations which are not equipped for hosting IT infrastructure.

Security and Data protection

When living outside of a datacenter, the risk of physical intrusion increases substantially. BullSequana Edge has therefore been equipped with an Intrusion Sensor which disables the machine in case of physical attacks. A secure boot process can be put in place including signed firmware, bootloader and the OS, protected by a FIPS 140-2 certified TPM and encrypted disks.

BullSequana Edge Key benefits

- **Responsiveness:** addresses IoT latency issues, with real-time response based on computation close to data sources.
- **Security and privacy:** data in motion and at rest and physical server all protected with advanced security.
- **Autonomy:** reduced dependence on Cloud and Datacenter availability and connectivity.
- **Interactivity:** enables the real-time analysis of multi-source and multi-format data.

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Technical specifications

Processor

CPU	1 socket 16 cores / 32 threads
Type	Intel® Xeon® D 2187NT
Vector Extension	AVX-512 up to 1 FMA

Architecture

Chipset	System On Chip (SOC)

Memory

Memory Slots	4
Min / max	Up to 512 GB
Type	RDIMM & LR-DIMM 2666MT/s

Embedded I/O ports

Network Interface Controller (NIC)	2 x 10Gb/s SFP+ (optional) 2 x 1Gb/s RJ45
OpenBMC Management	• 1Gb/s RJ45 • BMC WIFI adapter (optional) • RedFish support through OpenBMC
USB ports	2 x USB 3.0

Security

Security features	• Intrusion detection switch • TPM 2.0 (FIPS 140-2, EL4+) • Secure boot (optional) • Disk encryption (optional) • Intel QAT (IPSEC acceleration)

I/O

I/O	PCI slots: • 2 x PCIe Gen3 16 • 2x mPCI 2 SATA disks (SSD or HDD)
Accelerators (optional)	GPU • Up to 2x NVIDIA T4 FPGA • Up to 2x FPGA 75W • Up to 1x FPGA 150W
Radios	mPCI adapters • WIFI dual band (2.4GHz – 5 GHz) • LoRaWAN • 3G/4G GSM

Installation options

OpenBMC Management	• Stand alone • 19" 2U Rack mount kit (optional) • DIN rail install kit (optional)
Dimensions	430 x 290 x 86 mm (L/W/H)
Operating Temperature	5C to 45C
Power	100 - 240V 500W max
Ecosystem software	OS: Linux Microsoft Azure certified for IoT

For more information: atos.net/BullSequanaEdge