VOYAGER|VM 4.0

VoyagerVM 4.0 is a secure and rugged compute module powered by the latest Intel 10th Gen Xeon D processor. It provides a compact, low power platform that delivers highly reliable compute and networking capabilities in extreme environments.

Providing unrivalled networking flexibility and throughput from 1 Gbps up to 105 Gbps aggregated, it supports up to four NVMe-based storage devices for high speed read/write operations.

VoyagerVM 4.0 gives the flexibility to support different software architectures at the edge.

Additional NVMe storage and GPU expansion modules can be attached to the VoyagerVM4.0 via its high-speed PCIe Gen 4 expansion interface located on the base of the compute module.

KEY FEATURES

- Intel 10th Gen Xeon D processor with 128 GB RAM
- Enhanced security features, including:

  - Secure Boot
  - Intel Boot Guard
  - Intel TXT (Trusted Execution Technology)
  - Intel TME (Total Memory Encryption)
  - Intel SGX (Software Guard Extensions)
  - Hardware controlled tamper switch

- Dual removable E1.S NVMe self encrypted (SED) SSDs
- VIK+ SED removable NVMe device for boot or write cache operations
- NVMe SED internal boot device with 256 GB capacity (optional)

- Aggregated networking capability of 105 Gbps
- 110 W power consumption compatible with Voyager 1+, Voyager 2+, Voyager 2 Slim, Voyager 4, Voyager 4 Slim, Voyager 6, Voyager 8 QP, and Voyager 8+
- High-speed PCIe Gen 4 expansion interface to extend the base compute module with GPU or NVMe storage capabilities
- Klas maintained OpenBMC embedded firmware for secure management

SECURE   **PORTABLE**   **RUGGED**

KLAS

VOYAGER|VM 4.0

Specifications

PHYSICAL SPECIFICATIONS

- 7.4" W x 6.3" L x 2" H (188 x 160 x 52mm)
- 3.3 lb / 1.5 Kg (without SSDs)
- 3.8 lb / 1.7 kg (with SSDs)

ELECTRICAL SPECIFICATIONS

DC input (power):
- 9 - 36 VDC (110 W)

CONSTRUCTION

- Aluminum chassis with integrated active cooling

TEMPERATURE RANGE

- Operating temp: -26°F to 122°F (-32°C to 50°C)
- Storage temp: -40°F to 185°F (-40°C to 85°C)

EXPANSION INTERFACE

- PCIe Gen 4 expansion interface

CPU

Intel 10th Gen Xeon D-1746TER processor
- **Frequency:** 2.0 GHz
- **Max Cores**: 10
- **Max Threads:** 20
- **RAM:** 128 GB
- **TDP:** 67 W

STORAGE

- 2 x E1.S 9.5mm NVMe SED SSDs
- 1 x VIK+ NVMe boot or write-cache device
- 1 x 256 GB NVMe internal boot device (optional)

NETWORKING

- 105 Gbps aggregate:
  - 4 x 25 Gbps SFP28 interfaces
  - 2 x 2.5 Gbps RJ45 Ethernet ports
  - 1 x RJ45 Ethernet for management
- RDMA over Converged Ethernet (RoCE) support

SECURITY

- Secure Boot
- Intel Boot Guard
- Intel TXT (Trusted Execution Technology)
- Intel TME (Total Memory Encryption)
- Intel SGX (Software Guard Extensions)
- Hardware controlled tamper switch

MANAGEMENT

- Klas maintained OpenBMC
- BIOS & hypervisor CLI over console

ORDERING INFORMATION

Product No: KLAS-VOY-VM4-A

COMPLIANCE

- MIL-STD-810
- MIL-STD-461
- FCC Part 15 B
- CE
- RoHS, REACH

Management Overview

KLAS MAINTAINED OPENBMC

As a headless server, VoyagerVM 4.0 is managed via a separate Baseboard Management Controller system on chip, providing remote, out-of-band administrative access via a 1 GbE management interface using Klas maintained OpenBMC firmware.

Klas maintained OpenBMC supports common IT use cases, including Keyboard, Video, and Monitor (KVM) access, hardware configuration, and OS installation

Klas continuously monitors for the latest reported Common Vulnerability and Exposures (CVEs), ensuring the fastest turnaround of patch updates.

KLAS
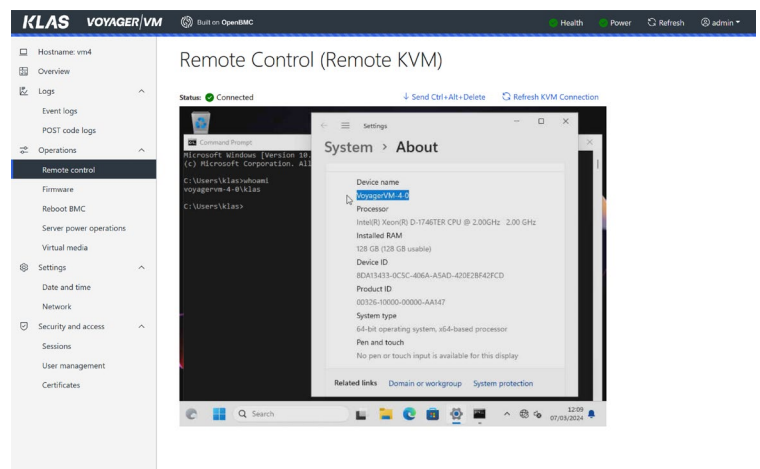
VOYAGER/VM 4.0

Expansion Modules

VoyagerVM 4.0 has a PCIe Generation 4 expansion interface in the base of the module. You can easily add a GPU or storage expansion module by simply snapping it on to the interface.

VoyagerVM 4.0 expansion modules are:

- Designed to the same physical, electrical, and compliance specifications as VoyagerVM 4.0
- Compatible with the Voyager 6, 8+, or 8 QP chassis (requires two chassis slots when paired)

GPU EXPANSION MODULE

NVIDIA-based GPU for AI and cognitive services or to serve multi-display setups.

- NVIDIA Ampere A4500 (16 GB GDDR6 memory)
- 4 x DisplayPort (up to 4K resolution)
- Power consumption: 110 W
- Operation indicator LEDs
- 7.4" W x 6.3" L x 2.4" H (188 x 160 x 61mm)

ORDERING INFORMATION
- Product No: KLAS-EXP-GPU-A

VoyagerVM 4.0 and GPU Expansion Module

STORAGE EXPANSION MODULE

NVMe-based storage for NAS applications or increased storage capacity for sensed data.

- 4 x removable E1.S NVMe (up to 7.68 TB each)
- Power consumption: 110 W
- Operation indicator LEDs
- 7.4" W x 6.3" L x 2.4" H (188 x 160 x 61mm)

ORDERING INFORMATION
- Product No: KLAS-EXP-STOR-A

VoyagerVM 4.0 and Storage Expansion Module

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VOYAGER/VM 4.0

Expansion Systems

VoyagerGPU 4.0

Accelerating data and memory-intensive applications of AI/ML and simulation with powerful graphics at the edge.

- NVIDIA Ampere A4500 (16 GB GDDR6 memory)
- 4 x DisplayPort (up to 4K resolution)
- 2 x removable E1.S NVMe (up to 7.68 TB each)

- Intel Xeon D processor with 128 GB RAM
- 105 Gbps aggregated network throughput
- 256 GB NVMe internal boot device (optional)
- 1 x VIK+ NVMe boot device
- 1 x 1 GbE management port
- Total power consumption: 220 W
- 7.4" W x 6.3" L x 4.2" H (188 x 160 x 107mm)

ORDERING INFORMATION

- Product No: KLAS-VOY-GPU4-A

COMPLIANCE

Voyager expansion modules and systems are designed to meet:

- MIL-STD-810
- MIL-STD-461
- FCC Part 15 B
- CE
- RoHS, REACH

VoyagerNAS 4.0

100 GbE NAS with NVME-based SSDs to support intensive file access and tasks for large files at the edge.

- 6 x removable E1.S NVMe (up to 7.68 TB each)

- Intel Xeon D processor with 128 GB RAM
- 105 Gbps aggregated network throughput
- 256 GB NVMe internal boot device (optional)
- 1 x VIK+ NVMe boot device
- 1 x 1 GbE management port
- Total power consumption: 220 W
- 7.4" W x 6.3" L x 4.2" H (188 x 160 x 107mm)

ORDERING INFORMATION

- Product No: KLAS-VOY-NAS4-10X-A

SAMPLE CONFIGURATION

The configuration shown here features a Voyager 8+ chassis with a VoyagerGPU 4.0, VoyagerSW12GG, VoyagerNAS 4.0, and VoyagerSW26G installed.
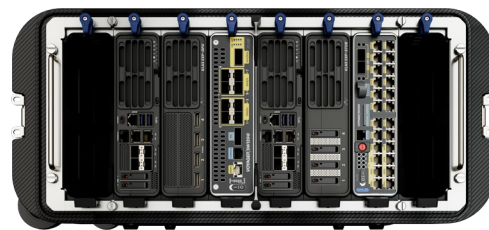
Voyager 8+ With VoyagerGPU 4.0 and VoyagerNAS 4.0