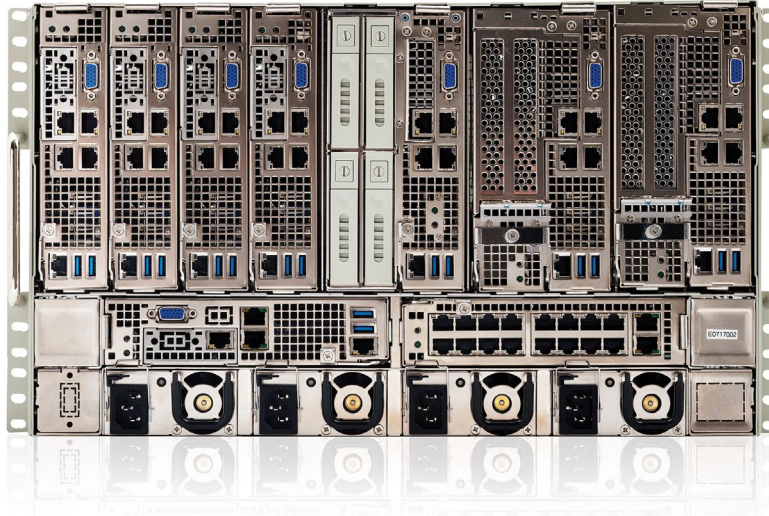


HDversa

10 INCH DEPTH, 6U HIGH SERVER INFRASTRUCTURE



COMMON COMPOSABLE SOLUTION

Designed for applications that require minimum size, weight, and power—the Themis HDversa features a **power backplane with twelve module bays** for standardized compute, storage, PCIe expansion, networking, and management modules.

Achieve optimum performance and precise functionality for a multitude of applications by mixing over **five module types**. Each module shares common attributes—allowing users to simply **plug and pull** modules according to specific system needs.

With hundreds of configuration possibilities, the HDversa simplifies upgrades, reduces costs, and accelerates workloads—all while operating at the tactical edge.

LOW POWER, HIGH PERFORMANCE

Only **10” deep** and **6U tall**, the HDversa is a lightweight, low power, high density computing platform—requiring **50-100W** of power for each module.

Advanced thermal and mechanical design features provide **superior resiliency** to shock, vibration, and temperature extremes.

RELY ON US

Trusted worldwide, Themis has a **30-year track record** of providing enhanced-reliability computing platforms for mission-critical applications. Our robust product lines are known for their high-performance, **long life cycles**, **thermal resiliency**, compatibility with industry standards, and SWaP optimization. We work closely with our customers to design computing solutions that are easy to integrate, inexpensive to own and operate, and reliable for years to come.

SYSTEM

- ▶ Up to (12) Intel® Xeon® D Processors with eight or sixteen cores
- ▶ Up to 1.5TB DDR4 ECC
- ▶ Up to 160TB of SATA Storage

MANAGEMENT AND OPERATING SYSTEMS

- ▶ Windows®, Linux®, VMWARE® application support
- ▶ IPMI v2.0, Redfish option available

ENVIRONMENTAL RESILIENCY

- ▶ Operating temperature range: 0°C to 50°C
- ▶ Operating shock: 3 axis, 35g, 25ms
- ▶ Operating vibration: 4.76 Grms, 8Hz to 2000Hz (SSD)
- ▶ Operating humidity: 8% to 95% non-condensing*
- ▶ MIL-STD-810G

MECHANICAL

- ▶ 19” Rack Mountable
- ▶ Height: 6U or 10.5 inches (266.7 mm)
- ▶ Width: 17.06 inches (433.3 mm)
- ▶ Depth: 10 inches (254 mm)
- ▶ Maximum Weight (fully loaded): 60 pounds (27.2 kg)

MODULAR MAINTAINABILITY

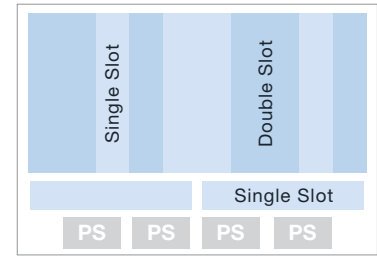
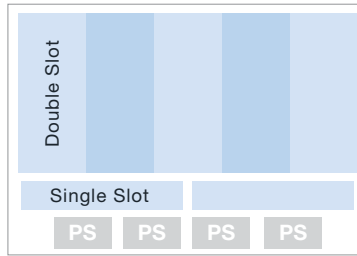
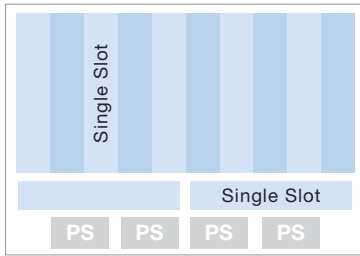
- ▶ Module Bays: 12
- ▶ Module Types: 5
- ▶ Redundant Power
- ▶ Removable disk drives: Up to 20

* Themis designs all products to meet or exceed listed data sheet specifications. Some specifications are configuration dependent.
** Extended temperature range is dependent on system configuration, components, and application thermal profile. Please contact Themis for information specific to your desired configuration requirements.



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10 INCH DEPTH, 6U HIGH SERVER INFRASTRUCTURE



Figures 1-3: Twelve Module bays can accommodate between seven to twelve modules in any combination.

WITH HDVERSA, THE PERFECT SOLUTION IS ONLY A MODULE AWAY

The Themis HDversa is a low power, lightweight server which features twelve bays that hold between seven to twelve single or double slot modules. Each module is designed for a special purpose—compute, storage, PCIe expansion, networking, or management—and can be plugged into the chassis in any combination. This configuration flexibility allows users the ability to design a solution best suited for their application.

MINIMUM SIZE, WEIGHT, AND POWER

Each compute (HDC), storage (HDS4), and PCIe expansion (HDP) module contains an Intel Xeon D processor with eight or sixteen cores and up to 128TB DDR4 ECC memory. A configured HDversa system can contain up to twelve Intel Xeon D processors with 1.5TB memory or up to 160TB SATA storage with seven Intel Xeon D Processors and 1.5TB memory.

Each module embeds the latest commercial off the shelf (COTS) technology components while requiring just 50-100 watts of power. The entire system is only 10" deep and can be mounted in place of a VME sub rack in a standard 19" rack.

SIMPLIFY UPGRADES, CUT COSTS

As technology moves forward and application needs change, upgrading is as simple as replacing a single module. Modules can be repurposed between multiple HDversa systems, minimizing the need for spares, while reducing costs associated with technology insertion.

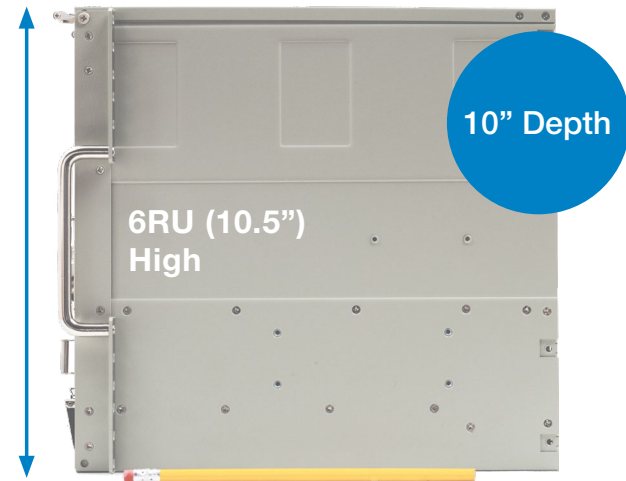


Figure 4. HDversa height and shallow depth

HDversa Modules

HIGH DENSITY COMPUTE (HDC)



Height: 7", Width: 1 slot (1.75"), Depth: 9.8" (249mm), 3.2lbs (1.45kg)

SYSTEM

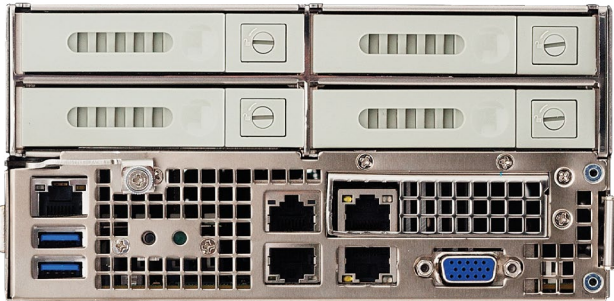
Parameter	Qty	Description
Processor	1	Intel® Xeon® D with 8 or 16 cores, 32 threads
Memory		Up to 128GB DDR4 ECC 2133MHz
Disk on Module	2	Up to 128GB per DOM
Internal Drives	1	M.2 SATA

I/O

Parameter	Qty	Access
USB 3.0 Ports	2	Front
VGA	1	Front
Ethernet Ports (RJ45)	4	Front. Dual 1GbE + Dual 10GbE
IPMI 2.0	1	Front

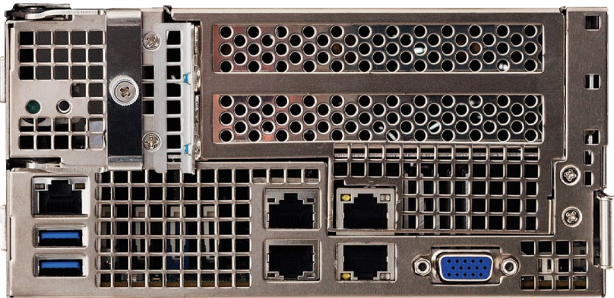
HDversa Modules

HIGH DENSITY STORAGE (HDS4)



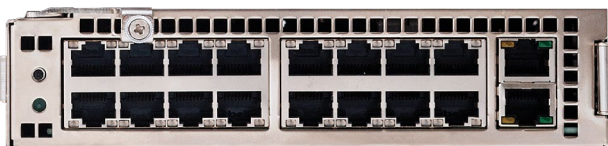
Height: 7", Width: 2 slot (3.5"), Depth: 9.8" (249mm), 6.4lbs (2.9kg)

HIGH DENSITY PCIE EXPANSION (HDP)



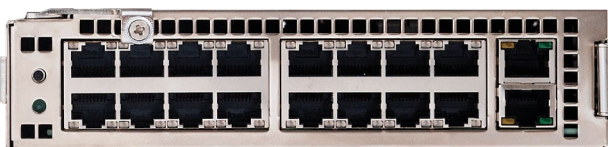
Height: 7", Width: 2 slot (3.5"), Depth: 9.8" (249mm), 6.4lbs (2.9kg)

MANAGED SWITCH



Height: 7", Width: 1 slot (1.75"), Depth: 9.8" (249mm), 3.2lbs (1.45kg)

RESOURCE MANAGEMENT



Height: 7", Width: 1 slot (1.75"), Depth: 9.8" (249mm), 3.2lbs (1.45kg)

SYSTEM

Parameter	Qty	Description
Processor	1	Intel® Xeon® D with 8 or 16 cores, 32 threads
Memory		Up to 128GB DDR4 ECC 2133MHz
Front Access Drives	4	Up to 32TB SATA Storage
Disk on Module	2	Up to 128GB per DOM
Internal Drives	1	M.2 SATA

I/O

Parameter	Qty	Access
USB 3.0 Ports	2	Front
VGA	1	Front
Ethernet Ports (RJ45)	4	Front. Dual 1GbE + Dual 10GbE
IPMI 2.0	1	Front

SYSTEM

Parameter	Qty	Description
Processor	1	Intel® Xeon® D with 8 or 16 cores, 32 threads
Memory		Up to 128GB DDR4 ECC 2133MHz
Expansion Slots	2	Up to (2) PCIe 3.0 x 8 or (1) PCIe 3.0 x16 Full height, half length
Disk on Module	2	Up to 128GB per DOM
Internal Drives	1	M.2 SATA

I/O

Parameter	Qty	Access
USB 3.0 Ports	2	Front
VGA	1	Front
Ethernet Ports (RJ45)	4	Front. Dual 1GbE + Dual 10GbE
IPMI 2.0	1	Front

SWITCH

Parameter	Qty	Description
Switched Ethernet Ports	16	1GbE (RJ45)
Other Ports (RJ45)	2	(1) Serial (1) Ethernet Management
Network		Layer 2/3 Marvell Prestera®-DX PonCat3
Processor	1	Intel® i5-5300U vPro Processor

FEATURES

Parameter	Description
Routing	IPv4/IPv6: IP Multicast, VLANs, IETF, IEEE, DSL Forum
Quality of Service (QoS) Management	IEEE 802.1p priority tagging, DSCP, traffic queues Ethernet (http, telnet, SNMP) and RS232 (CLI)

SYSTEM

Parameter	Qty	Description
Server Management		IPMI 2.0, Zabbix, Web Based Interface
Managed IPMI Ports	14	1GbE (RJ45)
Management Ports	2	(1) Management Console (1) External Network
Other Ports	2	(1) Serial (1) SBC Interface
Processor	1	Intel® i5-5300U vPro Processor

2X
Compute
Density

5+
Module
Types

1/2
the Rack
Space

100%
Scalable &
Flexible



SYSTEM

Parameter	Quantity	Description
Processor	12	Up to twelve Intel® Xeon® D Processors with eight or sixteen cores per socket, 32 threads
Memory		Up to 1.5TB DDR4 ECC 2133MHz
Removable 2.5" SATA disk drives	20	Front access HDD (up to 2TB) or SSD drives (up to 8TB each)
Disk on Module	2	Up to 128GB per DOM
Network	2	1GbaseT Ethernet (or optional 10GbaseT Ethernet)
RAID Controller	1	On board. Additional RAID features available through PCIe.
Power Supplies	4	Up to 1350W Redundant (3+1) Power

ENVIRONMENTAL*

Parameter	Non-operating	operating
Temperature range	-40°C to 70°C	0°C to 50°C
Humidity (non-condensing)	5% to 95%	8% to 95%
Shock	3 axis, 35g at 25 ms	3 axis, 35g at 25 ms
Vibration (10-2000 Hz)	4.76 Grms, 5Hz to 2000Hz (SSD)	4.76 Grms, 8Hz to 2000Hz (SSD)
Altitude (above sea level)	0 to 40,000 feet	0 to 10,000 feet

MECHANICAL

Parameter	Description
Dimensions	Height: 6U or 10.5 inches (266.7 mm), Width: 17.06 inches (433.3 mm), Depth: 10 inches (254 mm)
Maximum Weight, Note 3	60 lbs (27.2 kg)
Chassis features	Coated aluminum for light weight and corrosion resistance, stainless steel in selected areas to add strength and stiffness, modular design for easy upgrade and service, optional rack-mount slides and shock pins, and front to rear airflow.

***Notes**

1. Themis designs all products to meet or exceed listed data sheet specifications. Some specifications are configuration dependent. I/O options are configuration dependent
2. Extended temperature range is dependent on system configuration, components, and application thermal profile. Contact Themis for information specific to your configuration requirements.
3. Weights are provided for typical configurations. Weight may vary depending on configuration. Contact your Themis sales representatives for more information.

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