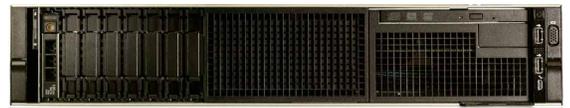## Reliable, Proven 2U FPGA Server

We've integrated one of the most popular 2U data center servers from Dell EMC with our full lineup of Achronix-, Intel-, and Xilinx-based FPGA cards. BittWare's TeraBox 2000D combines a high-powered dual-CPU (Intel Xeon Scalable) host with high-density FPGA resources.

Configurations include three of BittWare's large double-width cards using Achronix Speedster 7t, Intel Stratix 10, or Xilinx Virtex UltraScale+ FPGAs. Users seeking maximum logic/memory density can choose the XUP-VV4 for 11M logic cells and 1.5TB FPGA-attached DDR4 memory.

Up to six low-profile cards* can also be configured, such as the XUP-PL4 with UltraScale+ FPGA. No matter which configuration you choose, you're getting BittWare's installation and support, plus options for Dell server support.

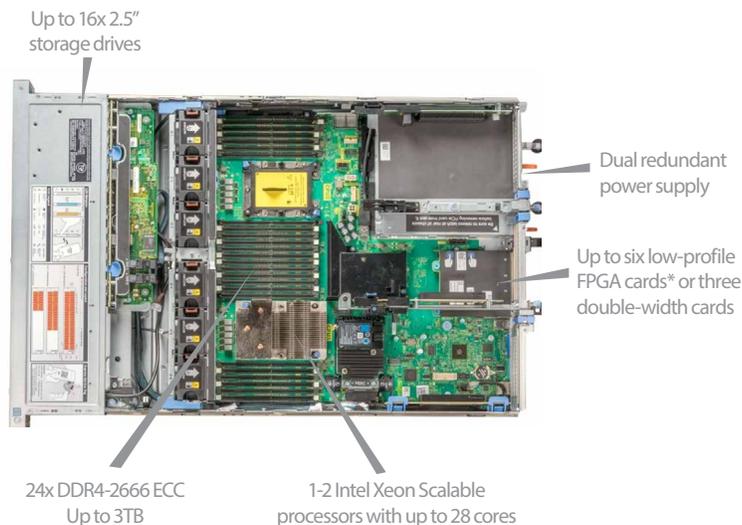Up to **three** double-wide FPGA cards can be configured or **six** low-profile cards

key features

Up to **12 QSFPs** for 24x 100G or 96x 10/25G	FPGA Resouces: Up to **11M** logic cells (Xilinx), and 1.5TB DDR4	7X Low-Profile* / 3X Double-Wide FPGA cards — Support for BittWare's full range of FPGA cards

Up to 16x 2.5" storage drives

Dual redundant power supply

Up to six low-profile FPGA cards* or three double-width cards

24x DDR4-2666 ECC Up to 3TB

1-2 Intel Xeon Scalable processors with up to 28 cores

chassis key specs

2U, depth 28.2 in (715.5mm)

Processor: 1-2 Intel® Xeon® Scalable processors

Chipset: Intel C620

Memory: 24x ECC DDR4-2666 DIMMs

Slots: (3) DW/FH/FL Gen 3 x16 PCIe slots, (2) SW/FH/FL Gen 3 x8 PCIe slots, (1) SW/FH/HL Gen 3 x8 PCIe slot

Storage: up to 16x 2.5" or 8x 3.5"

Power supply: Platinum up to 2000W, redundant (1+1)

* In a system with six low-profile cards, four would have x16 slots, and two would have x8.

The TeraBox 2000D is a 2U FPGA server based on the Dell PowerEdge R740 chassis. This server offers single or dual Intel Xeon Scalable CPUs along with high PCIe slot density. With configurations of up to six low-profile cards or three of BittWare's large double-width cards, this server is an excellent premium option for the 2U form factor. Dell ProSupport options are also available.

System Management

For system management, BittWare's FPGA cards are equipped with a Board Management Controller (BMC), which accepts IPMI 2.0 commands. Use it along with BittWare's BittWorks II Toolkit to program the FPGA over USB, monitor card power and temperature, and re-program the onboard clocks. You'll also be able to set points to shut down the card when it gets too hot, access JTAG, or access the software tools remotely.

The TeraBox Advantage

Choosing a TeraBox FPGA server means knowing you are getting a pre-configured and tested solution. This includes setup and installation of your FPGA cards and associated hardware, your choice of operating system, and development tools. Your TeraBox arrives ready for use— giving your team more time for development and deployment.

Example System Configuration

The TeraBox 2000D supports many of BittWare's Achronix, Intel, or Xilinx FPGA-based PCIe cards. The table below lists system totals when populated with three double-wide or six low-profile cards*:

	FPGA	Cards in Server	Memory	I/O	Processing
S7t-VG6	Speedster7t	3	• 24 banks GDDR6 (up to 24 GBytes)	• 1.8 Terabit/sec • 18x 100/50/40/25/10 GbE	• 2 million 6-input lookup tables (LUTs) • 567 Mb embedded RAM
520N-MX	Stratix 10 MX	3	• 6 banks DDR4 (up to 768 GBytes) • 12 banks QDRII+ (up to 3.4 Gbits)	• 1.2 Terabit/sec • 12x 100/50/40/25/10 GbE	• 6.3 million system logic elements • 48 GBytes HBM2
XUP-VV8	UltraScale+ VU13P	3	• 12 banks DDR4 (up to 1.5 Terabytes) • 24 banks QDRII+ (up to 6.9 Gbits)	• 2.4 Terabits/sec • 24x 100/50/40/25/10 GbE	• 11.4 million system logic cells • Up to 36,864 DSP slices

* Contact BittWare for additional FPGA card options.

Server Configurations

Low
• (2) Intel Xeon Bronze 3106 Processors (1.7GHz, 8C/8T)
• 48GB DDR4
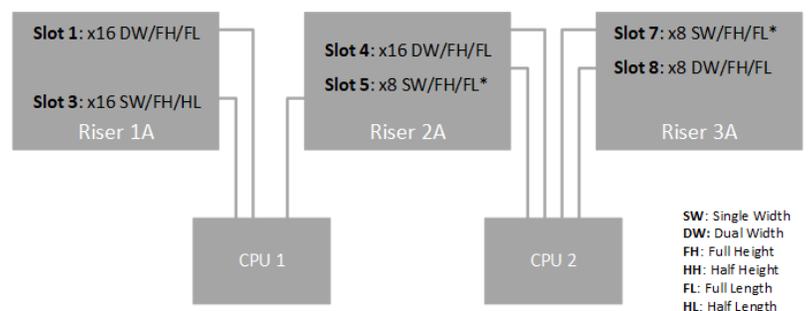• (2) 1.6TB SSD SAS
• (1+1) 1600W Power Supplies

Medium
• (2) Intel Xeon Silver 4114 Processors (2.2GHz, 10C/20T)
• 96GB DDR4
• (2) 1.6TB SSD SAS
• (1+1) 1600W Power Supplies

High
• (2) Intel Gold 6132 Processors (2.6GHz, 14C/28T)
• 192GB DDR4
• (2) 1.6TB SSD SAS
• (1+1) 1600W Power Supplies

Ultra
• (2) Intel Xeon Platinum 8180 Processors (2.5GHz, 28C/56T)
• 768GB DDR4
• (2) 1.6TB SSD SAS
• (1+1) 2000W Power Supplies

Slot 1: x16 DW/FH/FL
Slot 3: x16 SW/FH/HL
Riser 1A

Slot 4: x16 DW/FH/FL
Slot 5: x8 SW/FH/FL*
Riser 2A

Slot 7: x8 SW/FH/FL*
Slot 8: x8 DW/FH/FL
Riser 3A

CPU 1
CPU 2

SW: Single Width
DW: Dual Width
FH: Full Height
HH: Half Height
FL: Full Length
HL: Half Length

* Slot 5 and 7 can't be used when a DW board is installed in slots 4 and 8

To learn more, visit **www.BittWare.com**

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a **molex** company