BittWare
a molex company

TeraBox 2000D
2U FPGA Server

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 Intel- and Xilinx-based FPGA boards. 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 boards using Xilinx Virtex UltraScale+ or Intel Stratix 10 FPGAs. Users seeking maximum logic/memory density can choose the XUPVV4 for 11M logic cells and 1.5TB FPGA-attached DDR4 memory.

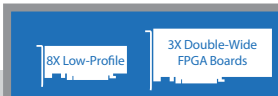
Up to eight low-profile boards can also be configured, such as the A10SA4 with Intel Arria 10 GX FPGA. No matter which configuration you choose, you're getting BittWare's installation and support, plus options for Dell server support.

Up to **three** double-wide FPGA boards can be configured or **eight** low-profile boards

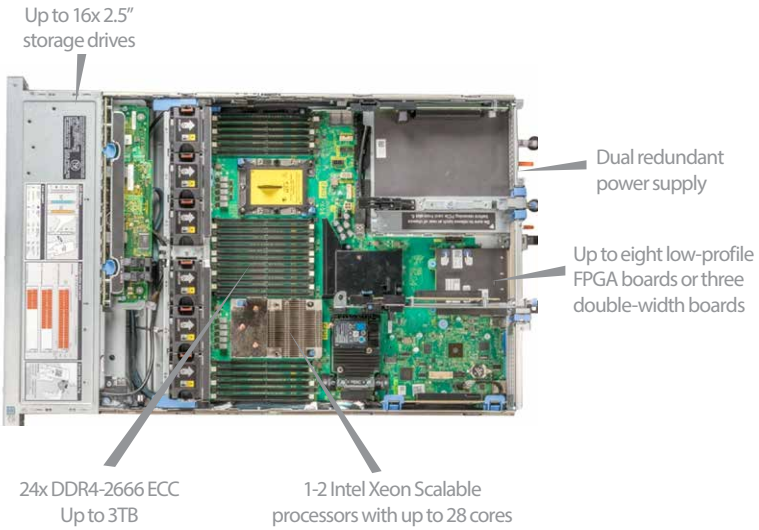
key features

Up to **24 QSFPs** for 24x 100G or 96x 10/25G

FPGA Resouces: Up to **11M** logic cells (Xilinx), and 1.5TB DDR4



Support for BittWare's full range of FPGA boards



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: 8x PCIe Gen3 x8, up to 3x PCIe Gen3 x16

Storage: 16x 2.5" or 8x 3.5"

Power supply: Titanium 750W, Platinum up to 2000W, redundant (1+1)

TeraBox 2000D

2U FPGA Server

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 eight low-profile boards or three of BittWare's large double-width boards, 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 boards 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 board power and temperature, and re-program the onboard clocks. You'll also be able to set points to shut down the board when it gets too hot, access JTAG, or access the software tools remotely.

Coming soon: BittWare support for PLDM and Dell's iDRAC management.

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 boards 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.

FPGA Resouces Chart

Each row is a separate configuration option and is intended to show total FPGA resouces in the server populated using that particular board type.

Maximum number varies based on several factors—contact Sky Blue or Zerif for specific configuration details.

Board Name	Qty.	FPGA Family	PCIe Gen3 Slots: Lanes	100/40G QSFPs	25/10G Breakouts [1]	FPGAs	FPGA Logic	DSP Slices	DDR4	HBM2	Total	QDR [4]	
XUPPL4	8	Xilinx Virtex UltraScale+	3: x16, 5: x8	16	64	8x VU3P	6,896 KLC	18,240	16x 16 GB		256 GB		XUPPL4
XUPSVH				16 or 30 [2]	64 or 120 [2]	8x VU35P	15,256 KLC	47,616		8x 8 GB	64 GB		XUPSVH
XUSP3S	6	Virtex UltraScale	3: x16, 3: x8	24	96	6x VU095	7,056 KLC	4,608	24x 16 GB		384 GB	24x 288 Mb	XUSP3S
XUPP3R	3	Xilinx Virtex UltraScale+	3: x16	12 or 24 [3]	48 or 96 [3]	3x VU9P	7,758 KLC	20,520	12x 128 GB		1,536 GB		XUPP3R
XUPVV4				12	48	3x VU13P	11,340 KLC	36,864					XUPVV4
XUPVVH						3x VU37P	8,556 KLC	27,072	6x 128 GB	3x 8 GB	792 GB	12x 288 Mb	XUPVVH
A10PL4	8	Intel Arria 10 GX	8: x8	16 (40G)	64 (10G)	8x A10 GX 1150	9,200 KLE	12,144	16x 16 GB		256 GB		A10PL4
A10SA4				8 (40G)	32 (10G)				16x 8 GB		128 GB		A10SA4
A10P3S	6		3: x8x8 [5], 3: x8	24 (40G)	96 (10G)	6x A10 GX 1150	6,900 KLE	9,108	12x 16 GB 6x 8GB		240 GB		A10P3S
A10PED	3		3: x8x8 [5]		12 (10G)	6x A10 GX 660	3,960 KLE	10,128	12x 8 GB	(6)	96 GB		A10PED
S10VM4		Stratix 10 MX	3: x16	12	48	3x S10 MX 210	6,219 KLE	11,880	6x 8 GB	3x 16 GB	96 GB	6x 576 Mb	S10VM4

[1] May require QSFP breakout cables [2] Using full-height option and 2x QSFP-DD on 7 slots, remaining slot is low profile for 1x QSFP-DD [3] Using SEP-to-QSFP accessory [4] Some boards share DDR4/QDR available slots
[5] Using bifurcated PCIe [6] A10PED has 2GB Hybrid Memory Cube (HMC)

Server Specifications

Dell PowerEdge R740 2U rackmount chassis

- 750W Redundant (1+1) Titanium Power Supply, Platinum up to 2000W
- Optional LCD or Security bezel
- Up to 6 hot-plug fans for system cooling

Motherboard

- CPU with 1-2 Intel® Xeon® Scalable processors, each with up to 28 cores
- Intel C620 chipset
- DDR4 DIMMs at up to 2666; 24 DIMM slots: 3TB max
- I/O: 16 2.5" or 8 3.5" SATA (12Gbps) ports, 2 USB 2.0, 4 USB 3.0, VGA, serial ports, front and rear dedicated iDRAC network ports
- Embedded management: iDRAC9, OpenManage, integrations for VMware, vSphere, Microsoft System Center, and Nagios

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