

Product Brief

DT4CS Storage Server Platform

Based on Dual T4240 Processor Datacenter Appliance
(Leaders in Networking Solutions)



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DT4CS Storage Server Platform

T4240 Multi-Function Storage Server Platform

Overview

A Dual T4240 based Data center Storage appliance, offering a powerful unified communication solution with up to 80G of external network connectivity, SRIO inter-chip connectivity and multiple SAS HDD's and PCIe based SSD's. The storage appliance is designed to provide features that include data compression, de-duplication and encryption. The use case is Storage Virtualization as a Software Defined Storage (SDS) appliance.

The DT4CP2U Storage Server supports two PCI Express® slots, as well as an SD/MMC card slot and two USB 2.0 ports. These components, integrated with the T4 family, makes it ideal platform for target applications. The DT4CP2U memory supports max 12 GB of DDR3 at 1866 MHz, 128 MB of NOR flash, and a 512 Kbit I2C EEPROM.

The DT4CP2U Storage Server is pre-loaded with the Embedded Linux® Essentials for QorIQ processors with data path acceleration software development kit. This kit includes a 64-bit SMP Linux kernel, hugetlbfs for applications with a large memory footprint, user space Data Path Acceleration Architecture (DPAA) for high-performance packet handling, u-boot, the GCC tool chain and virtualization support, among many other features. This board is also available from VVDN Technologies in production volumes. For more information, visit www.theopenservers.com

The T4240 processor contains the e6500 core, built on Power Architecture® technology, offering speeds of 1500–1800 MHz. It has a three-level cache

hierarchy with 32 KB of instruction and data cache per core, 6 MB L2 cache clustered in banks of four cores allowing efficient sharing of code and data within a multicore cluster, and a 1.5 MB CoreNet platform cache. I/O includes 32 SerDes lanes running at up to 10 GHz, multiplexed across four PCI Express controllers (up to two at Gen3), up to 10x8 Gigabit Ethernet interfaces (XFI, XAUI, 10Gbase or HiGig), up to 1x8 Gigabit Ethernet interfaces (SGMII), two Serial RapidIO® 2.0 controllers and 16 multiple I/O SAS HDD and PCIe NVMe SSD's interfaces.

The T4240 processor supports three 64-bit DDR3 and DDR3L (low power) SDRAM memory controllers with ECC support running at up to 1867 MHz data rate. It includes two USB 2.0 interfaces (including PHY), an SD/MMC interface. It also includes the accelerator blocks collectively known as the DPAA that offload various tasks from the core, including routine packet handling, security algorithm calculations, compression, decompression and pattern matching. In addition, each e6500 core implements the Freescale AltiVec technology SIMD engine, which achieves DSP-like performance for math-intensive applications.

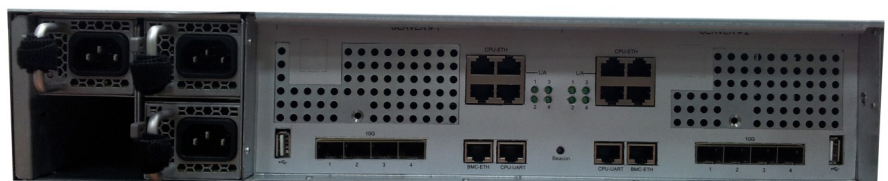
Target Applications

- Secure access point
- Enterprise Switching
- Secure network attached storage
- Datacenter bridging
- Network Virtualization
- SSL, IPSec
- SAN
- Enterprise NAS

Top View



Rear View



Front View



DT4CP2U Storage Server Key Features

Processor

- Freescale Dual T4240 QorIQ multicore processor dual-threaded e6500 Power Architecture®

Operating System

- Linux Operating System

Memory

- Up to three 64-bit DDR3SDRAM memory controllers per T4240
- ECC and interleaving support with 1.867 GT/s data transfer rate
- 6 DIMM slots, DDR3 memory
 - ⇒ Architecture: Up to 1866 MT/s, DDR3 DIMMs
 - ⇒ Maximum RAM: Up to 48GB (in Total)
 - ⇒ Available RAM Size : 4GB/6GB/12GB/24GB/48GB

PCI Express®

- PCIe x4 Gen3
 - ⇒ Configured in x4 mode using SerDes configuration
 - ⇒ Can support up to Gen3
 - ⇒ x4 PCIe NVMe

Embedded Hypervisor (Optional)

- Power Management
- Openstack icehouse included

Storage

- SAS HDD /SAS SSD
 - ⇒ (2.5 Inch) – hot-plug SAS HDD
- PowerEdge Express Flash NVMe PCIe SSD
 - ⇒ (2.5 Inch) – up to 400GB hot-plug PCIe NVMe SSD

Drive Bays

- Internal hard drive bay and hot-plug backplane
- Eight 2.5 inch – hot-plug SAS HDD /SAS SSD
- Eight 2.5 inch – hot-plug PCIe NVMe SSD

Network Controller

- Eight 1Gb in Copper Port
- Eight 10Gb in SFP+ Fiber port

Inter-processor Communications

- Two SRIOx4 ports for inter processor communication with baud rate of 3.125G

Raid Controller

- LSI 9206 (SW raid)
- LSI syncro cs 9271 8i (HW raid)
- 8 SAS drive connectivity

Power

- Universal AC input ,1000W

Availability

- ECC memory
- Hot-plug drives
- Hot-plug redundant input power supplies
- Single Device Data Correction (SDDC)
- Support for high availability clustering and virtualization
- Proactive systems management alerts

Others

- LEDs for power and Ethernet link and active
- JTAG for debugging
- I2C- Serial EEPROM

Chassis

- Form Factor: 2U
- Width - 482mm, Height - 89mm , Depth-630mm

Ready-to-Use Design

The DT4CP2U Storage Platform can be ordered from www.theopenservers.com which is powered by VVDN Technologies. The kit includes a fully tested QorIQ main processor module, Quick Start Guide, User Manual, power cord and connector cables. VVDN also makes available the complete board design files including schematics, bill of materials and GERBER files at no charge.

