kontron

» SYMKLOUD MS2910 «

Massively Scalable SDN/NFV-enabled Converged Cloud Infrastructure Platform with 10G Switching

Achieve highly efficient virtualized application workloads for Video/Content Delivery, Big Data/IoT, Mobile/Telco, and Cloud services

» Compact and modular High Availability (HA) platform design

» Features high density modular servers and redundant 10G switching and shelf management

» Supports OpenFlow for Software Defined Networks (SDN) deployments

» Seamless OpenStack integration to provision highly scalable instances

» Intel-based, mix-and-match processors with dedicated memory and storage for versatile operation of multiple concurrent applications

» PCIe module expansion via new Modular Server (MSP8030) for additional storage, security, SDI video acquistion, and other hardware accelerated applications

» External storage (SAN) support via FCoE and iSCSI

» Monitor server/system-level health via simplified web-based dashboard

» Available for application evals and/or developments via SYMLAB remote access

openstack FOUNDATION SPONSOR

intel Intelligent Systems Alliance Premier

SYMLAB

Hardware Designed for a Software-Defined World

The service providers of the telecom, cable, and enterprise world are converging towards using cloud infrastructure as a means to reduce costs and increase service elasticity and, consequently, revenues.

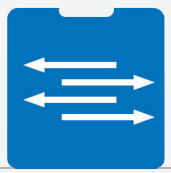
Since traditional approaches to networking in a cloud environment have become increasingly complex, the recent movement for Network Functions Virtualization (NFV) and Software Defined Networks (SDN) have become official concepts created by a consortium of service providers to virtualize various network functions (applications). The goal is to achieve greater service agility and leverage the cost efficiencies of commercial off the shelf (COTS) hardware, virtualization and open source software. Likewise, the idea is to design a network that can be virtualized, and therefore, elastic rather than fixed, and that the components and devices that comprise the typical network, can all be configured as virtual machines that run more efficiently by processors.

The design of the SYMKLOUD Platform Series is a significant step in supporting this direction, and is intended to support any number of software-defined and virtualized cloud-based workloads.

The Kontron Symkloud MS2910 combines the best characteristics of carrier grade COTS hardware with the flexibility of high density, microserver cloud computing architectures, all in a compact, low-power footprint.

- Ideal for **Bare Metal** Hypervisor implementations;
- **Traffic Shaping** via integrated 10G **redundant**, hot-swappable switches
- **Physical separation of Data Plane and Control Plane** per Modular Server to enhance performance
- Elegant web-based **System Manager** with 1-click updates
- **Flexible configurations** with expanding portfolio of **Hot-Swappable** mix-and-match processor Modular Servers

Technical Information

Hardware Platform	**Ruggedized Modular Platform design:** 2RU height, 21 inches deep; Up to 9 hot-swappable modular servers; Single or redundant hot-swappable 10G switches and Shelf Manager; Single or redundant management ports; Hot swap, redundant fans; front to back cooling; Dual redundant 1300W AC Hot Swap Power Supplies; 80 PLUS® Silver or better efficiency; Intelligent Power Management
Switching Infrastructure: 	Up to 2x MSH8910 hot-swap, fully managed L3 10GbE switches: Active-Active or Active-Standby; 640Gbs non-blocking internal switching capacity; Up to 240 GbE high uplink/stacking capacity: **Front:** 2x 40GbE QSFP+ (support for optical or passive CR4 modules/cables) 8x 10GbE Uplinks SFP+ (support for optical module only) Two management 10/100/1000 Base-T RJ45 ports **Rear System Uplinks:** up to 2x 40GbE QSFP+ (support for optical or passive CR4 modules/cables) Supports OpenFlow 1.3; and FASTPATH® 7.3
Shelf Management	Monitor Server and system-level health status with simplified web-based "System Monitor" dashboard; Integrated BMC (iBMC) with advanced options; Support for SNMP and IPMI 2.0
Software	**OS, Hypervisors and Middleware Support Per Server:** Various options available as part of integration services
Support	Product life cycle support (5-7 years)
Compliance / Regulatory	Designed to meet the following environmental, safety and EMC requirements: EN 300 019; Telcordia GR-63; Telcordia SR-3580 level 3; Telcordia GR-1089; EN 300 386; EN / CSA 60950-1; FCC PART 15

Technical Information

Modular **Servers**

MSP8001
Intel® Xeon® E3-1275v2 processor
Dual 10GbE Data Plane; Dual 1GbE Control Plane
Up to 32GB DDR3 memory on 4 DIMM per CPU
Dual 2.5in HDD or SDD; up to 2TB capacity
Ubuntu Server Edition
Red Hat Enterprise Linux Server
Windows Server 2008

MSP8000
Intel® Xeon® E3-1275v2 processor
Dual 1GbE Data/Control Plane
Up to 32GB DDR3 memory on 4 DIMM per CPU
Dual 2.5in HDD or SDD; up to 2TB capacity
Ubuntu Server Edition
Red Hat Enterprise Linux Server
Windows Server 2008

MSP8020
Dual (2x) Intel® i7-4860EQ GT3e Iris Pro processor
16GB of DDR3 memory on 2 DIMM per CPU
Dual 1GbE Data Plane / Dual 1GbE Control Plane
Up to 480GB M.2 SSD storage per CPU
Ubuntu Server Edition
CentOS Linux
Windows 7

MSP8021
Dual (2x) Intel® i7-4700EQ processor
16GB of DDR3 memory on 2 DIMM per CPU
Dual 1GbE Data Plane / Dual 1GbE Control Plane
Up to 480GB M.2 SSD storage per CPU
Ubuntu Server Edition
CentOS Linux
Windows 7

MSP8030
Intel® i7-4860EQ GT3e Iris Pro processor
PCIe-x8 Gen 3 Expansion Slot* for half-length PCIe hardware acceleration modules
(***Note:** any new modules need to complete Kontron internal validation process)
Dual 10GbE Data Plane; Dual 1GbE Control Plane
32GB of DDR3 on 2 DIMM memory;
up to 480GB M.2 SSD storage
CentOS Linux; Windows 7; Ubuntu Server Edition

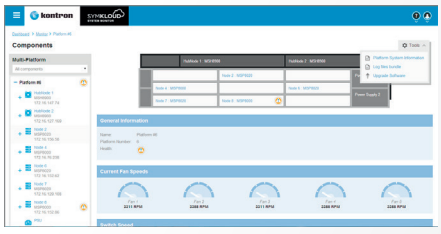
MSP8031
Intel® i7-4700EQ processor
PCIe-x8 Gen 3 Expansion Slot* for half-length PCIe hardware acceleration modules
(***Note:** any new modules need to complete Kontron internal validation process)
Dual 10GbE Data Plane; Dual 1GbE Control Plane
32GB of DDR3 on 2 DIMM memory;
up to 480GB M.2 SSD storage
CentOS Linux; Windows 7; Ubuntu Server Edition

MSP8030 BD
Intel® i7-4860EQ GT3e Iris Pro processor
High speed 2TB Storage SDD PCIe Expansion module (Intel P3600 and P3700); Total system capacity of 18TB
Dual 10GbE Data Plane; Dual 1GbE Control Plane
32GB of DDR3 memory on 2 DIMM; additional M.2 SSD storage, up to 480GB
CentOS Linux; Windows 7; Ubuntu Server Edition

MSP8030-VA
Intel® i7-4860EQ GT3e Iris Pro processor
PCIe Expansion module for SDI Video Acquistion (Matrox X.mio3 LP): eight reconfigurable SDI I/Os from SD to 4K; multi-channel hardware processing accelerates compute-intensive operations including motion-adaptive de-interlacing, up/down/cross scaling and mixing/compositing for all resolutions including 4K Eight.
Dual 10GbE Data Plane; Dual 1GbE Control Plane
32GB of DDR3 on 2 DIMM memory; additional M.2 SSD storage, up to 480GB
CentOS Linux; Windows 7; Ubuntu Server Edition

Technical Information

Web-based System Manager 2.0

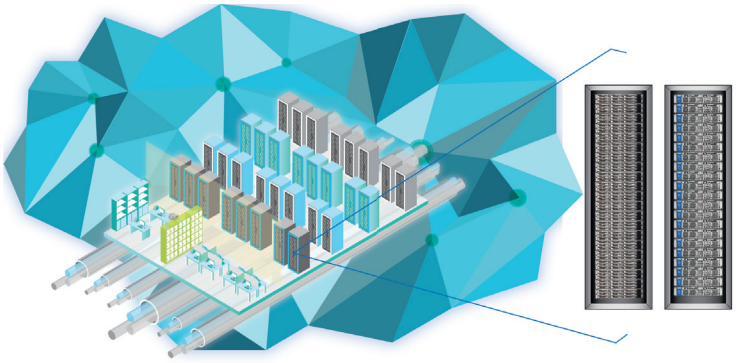


Monitor and manage Symkloud platforms individually or collectively with consolidated web-based System Manager 2.0 Console

Monitor:	Power consumption, fan speeds, switch and modular servers
Manage:	OneClick upgrade of switch and servers; Firmware IPMI, BIOS, FPGA, BMC
Power Profiling:	Peak and average consumption
Interfaces:	JSON RESTful API for complete custom GUI; Support for SNMP Trap alarm reporting

Build Your Solutions

What you can do with SYMKLOUD



High Performance Cloud Computing

Cloud infrastructure is increasingly the solution for service providers across all industries to efficiently and flexibly manage and deliver services. Consequently, this trend has enforced the industry to rethink hardware server designs that squeeze the highest compute densities with other key functionalities – such as L3 switching with Traffic Shaping plus a separated Data Plane and Control Plane per server– into a more compact, rack-friendly size. Add to the mix intelligent power management, tooless hot-swappable FRUs, plus redundancy options for switch and compute resources, and you have the most complete cloud computing hardware solution on the market. Symkloud is designed from the ground, up, to efficiently tackle any massively scaled application deployed in data centers for the telecom, cable, broadcast, and private/public cloud providers.

OpenStack

Build and control your cloud with Symkloud platforms using OpenStack, the open source cloud OS. Thanks to the Symkloud modular design it is seamless to manage massive clusters of Kontron Symkloud compute (Icehouse), block storage (Cinder) and networking (neutron) resources. Moreover, Symkloud is ideal for supporting Bare Metal provisioning in the management of separate physical instances.

Big Data / Hadoop

Big Data tools such as the open-source Hadoop software-based framework enables users to store an increasingly voluminous number of files and quickly and efficiently process the vast amount of data those files hold. A cluster of SYMKLOUD platforms integrated with open source OpenStack cloud provisioning software and Hadoop can achieve significant performance gains in half the footprint that it would take standard hardware servers to perform the same amount of data analytics.

Media Transcoding / CDN

Kontron and Intel are turning the video delivery industry on its head. Symkloud supports the 4th generation Intel Core i7 Series processor featuring the integrated Iris™ Pro Graphics that is perfectly designed to do all the heavy lifting when it comes to video workloads, such as transcoding. With a single 2RU Symkloud, ISVs can achieve a channel density of up to 180 live 1080p HD video streams or up to 10x real-time VoD HD offline transcoding per file. And with the growing popularity of 4K television, one Symkloud also delivers up to 2x 4K / HEVC @60p live streams.

OTT Cloud/ nPVR Solution

As the video and television viewing habits are changing rapidly for CSPs, Cable Operators and Boradcasters, so too is the network infrastructure that supports the acqusition, collecting, storing and deliverying of video to any device at any time. With a move to all-IP cloud based infrastrucure, the Kontron Symkloud Series is the ideal platform for SDI/4K content ingestion, caching with extremely fast, high capacity 2TB SSD storage modules (up to 18TB per 2RU Kontron) for end-user cloud-based Personal Video Recorders (nPVR) for on-demand and live linear feeds.

Carrier Grade NFV/SDN

Communication Service Providers (CSPs) with carrier cloud data center deployments need the highest service levels with "Always On" applications. As CSPs move from purpose built systems to standard commercial-off-the-shelf (COTS) server hardware as their underlying NFV/SDN infrastructure, the challenge to maintain up to six-nines reliability remains. The Kontron Symkloud platform is hardware specifically designed for software defined networks that run virtualized network functions. Kontron is working with key ecosystem partners and ISVs to help ensure CSPs have the full breadth of options to make Symkloud fully enabled for their NFV and SDN deployments.

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