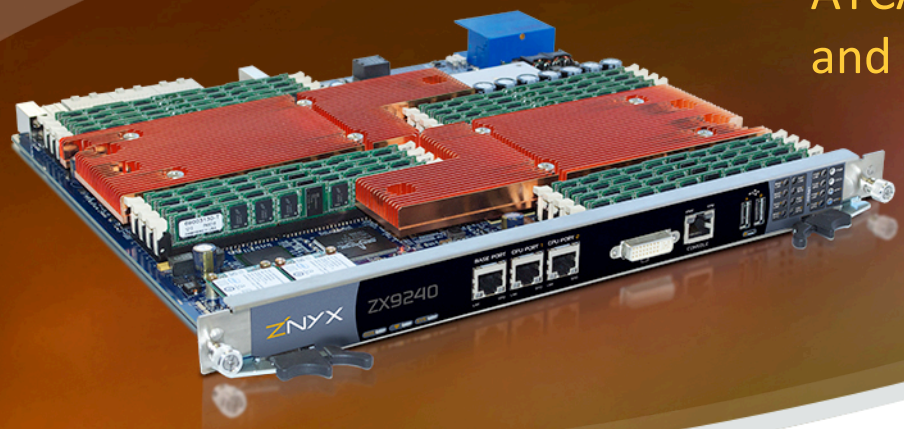
ZX9200 Series

ATCA Dual Intel® Xeon® 10G and 40G Compute Blades



OVERVIEW

With network data rates increasing and virtualization becoming a key requirement, today's applications require high density and high performance technologies. The ZNYX ZX9200 Series AdvancedTCA® (ATCA) compute blades offer a completely integrated solution that helps customers save on costs, while reducing time to market using the latest Intel® Xeon® processors.

Applications demand reliable virtualization support in order to reduce system infrastructure costs, and improve efficiency and scaling. Within the ZX9200 Series, the ZX9210 ATCA compute blade offers 10G Fabric Dual Star connections; while the ZX9240 supports Dual Star, as well as Dual Dual Star connections, with 40G interfaces on Fabric Channels 1, 2, 3 and 4.

A single ZX9200 blade can host up to 40 virtual machines (VMs) with dedicated hardware threads to facilitate highly scalable virtual environments. With the largest memory footprint available in an ATCA compute blade, the ZX9200 blade family offers ample memory to the individual VMs operating within the blade. The resulting high performance VMs can very effectively handle line rate packet delivery without introducing processing bottlenecks.

Bundled with the ZNYX OpenArchitect® 4 (OA4) embedded operating system, the ZX9200 Series ATCA compute blades provide unmatched "out-of-box" experience with the KVM (kernel-based virtual machine) hypervisor included for VM support. When used with ZNYX packet vectoring technology, the ZX9200 Series delivers line rate load allocation of the workload, generated by a large ingress stream, across multiple VMs. Network technicians can easily configure packet vectoring subsystems that eliminate the need for expensive external load balancing or network processing systems.

BENEFITS

- High density and line rate performance to VMs
- Highest compute performance in an ATCA form factor
- Largest memory footprint in an ATCA compute blade
- Large persistent storage footprint without need for RTM
- Integrated support for security acceleration

FEATURES

- Dual socket high performance Intel® Xeon® processor E5-2600 v1 and v2
- OpenArchitect®4 Optimized Linux Distribution with KVM
- 16 DDR3 memory sockets at 1600 MHz for up to 512GB total memory
- Advanced RAS-support, including channel mirroring and rank-level sparing
- Dual mSATA SSD sockets
- PICMG® 3.0 R3 and 3.1 R2 compliant

APPLICATIONS

- Military and aerospace devices
- Telecommunications
- Virtual machine engine

THE SOLUTION

Designed with equipment manufacturers, application providers and systems integrators in mind, the ZX9200 Series compute blades feature the highest performance Intel® Xeon® E5-2600 v1 and v2 product families paired with Intel® Communications Chipset 89xx series. With the largest memory footprint available in an ATCA compute blade, the ZX9200 Series facilitates highly scalable virtual environments for improved efficiency and lower infrastructure costs.

The ZX9200 Series offers a high-speed 1600MHz memory bus with support for up to 512GB of memory, and 20C/40T processing for high performance computing and server applications. PCIe busses and 6GT/s bandwidth for memory improves throughput and overall system performance. Dual Intel® QuickPath Interconnect (QPI) between processors ensures low latency for processor to processor communication.

Both the ZX9210 and the ZX9240 offer 16 DDR3 memory sockets, providing the highest number of sockets on any ATCA blade. While this feature allows for an impressive 512GB of total memory, the ZX9200 Series also delivers cost-effective configurations for applications with lower memory requirements versus blades with fewer sockets. This is achieved by utilizing lower cost, lower capacity DIMMs, and taking advantage of the additional sockets on the ZX9200 Series blades.

Dual USB 2.0 ports and a DVI video port are conveniently located on the front panel. Dual mSATA SSD sites on the mainboard enable RTM-less operation with up to 1TB of local storage. The ZX9200 Series supports the Oracle® RTM specification, ensuring compatibility with a wide-range of RTMs available from multiple vendors.

Integrated dual QuickAssist silicon, Intel® Communications Chipset 89xx, represents the maximum offload capacity for encryption and compression. ZNYX high performance ZX9200 Series blades accelerate time to market by delivering workload consolidation of applications, control and packet processing all in one platform.

ZX9240 Dual Intel Xeon 40G ATCA Compute Blade

The ZX9240 is a dual-socket compute blade that supports the complete Intel Xeon E5-2600 product family. From a single Intel Xeon processor E5-2618L (6C/12T) at 2.0 GHz for an entry-level cost-effective solution, up to dual Intel Xeon processor E5-2658 (10C/20T) 2.4 GHz processors for high-end con-figurations, the ZX9240 is the ideal solution for a variety of demanding environments.

With four 40G ports that all face the backplane, the ZX9240 is able to support Dual Dual Star with two redundant switches, or Full Mesh in up to 5 slot chassis configurations. Up to 30MB L3 Cache per processor, as well as Intel® VT technology including VT-x and VT-d, help to accelerate VM performance.

ZX9210 Dual Intel Xeon 10G ATCA Compute Blade

A dual-socket compute blade, the ZX9210 can be configured with a single Intel Xeon processor E5-2620 (6C/12T) for an entry-level cost-effective solution, up to a dual Intel Xeon processor E5-2648L or E5-2658 (8C/16T) for high-end configurations.

The ZX9210 offers two 10G ports for Dual Star connections assuring redundancy. It also accelerates VM performance with 20MB L3 Cache per processor, and VT technology including VT-x and VT-d.

Virtualization Ready

Next generation applications require virtualization support in order to reduce system infrastructure costs, and improve efficiency and scaling. The ZX9210 and ZX9240 are able to host up to 40 VMs in a single compute blade, each with a dedicated thread to facilitate highly scalable virtual environments.

With the largest memory footprint in the industry, the ZX9200 Series produces impressive line rate packet delivery to VMs. Designed to handle a large number of VMs, the ZX9200 Series includes several hardware-based virtualization technologies to improve VM performance. Flexible port partitioning efficiently divides physical Ethernet ports into multiple virtual devices, improving QoS (quality of service).

Both the 40G Ethernet interface of the ZX9240 and the 10G Ethernet interface of the ZX9210 support SR- IOV, packet filtering, packet switching, and packet shaping. These features enable the throughput and efficient packet handling necessary to provide line rate performance to the VM. SR-IOV (Single-Root I/O Virtualization) allows the sharing of a single I/O resource between multiple VMs. Data Direct I/O (Intel DDIO) Technology relieves congestion on the memory sub-system, and frees bandwidth for additional power savings.

Simple, Flexible Management

Bundled at no additional fee, OpenArchitect® 4 (OA4) is a finely tuned Linux® distribution based on Ubuntu® server and KVM. The proven OA4 embedded operating system offers flexible configurations, and works with packet vectoring and network high availability.

OA4 provides customers a fully supported, pre-integrated and tested distribution that has been fine-tuned for hosting large numbers of VMs. State-of-the-art OA4 features include enhanced packet delivery performance to VMs, packet vectoring load allocation, and massive VM support. Driver level tuning with the latest Intel® technology achieves a new benchmark in packet to VM performance.

The ZNYX packet vectoring technology delivers line rate load allocation of the workload, generated by a large ingress stream, across multiple VMs and compute blades. With very little learning curve, network technicians can configure packet vectoring subsystems that eliminate the need for expensive external load balancing or network processing systems.

Advanced RAS-support, including channel mirroring and rank-level sparing, delivers exceptional data integrity and resilience for mission critical computing environments. Complexity is further reduced by having the same switch management technology for the embedded Ethernet routing within the chassis, as well as the fan-out routing to the local devices. ZNYX offers long-term support of OA4 bug fixes and security patches.

Critical to telecommunications deployments and demanded by military and aerospace device manufacturers, OA4 provides up to five years of stability by focusing code base changes on security patches. With finite changes affecting the software, the need to re-qualify a release is avoided, ultimately saving time and money.

ZX9200 SERIES SPECIFICATIONS

PHYSICAL

DIMENSIONS
- 8U x 6HP x 280mm, Single Slot ATCA

STANDARDS

PICMG COMPLIANCE
- PICMG 3.0 Revision 3.0
- PICMG 3.1 Revision 2.0

PROCESSOR SUBSYSTEM

CPU
- Dual LGA2011 sockets, supporting
- Intel Xeon E5-2600 v1/v2 Series

CHIPSET
- Intel DH8920 PCH
- Optional 2nd DH8920 for additional QuickAssist

MEMORY

TECHNOLOGY
- Registered DDR3 with ECC

MODULE TYPE
- 240-pin VLP RDIMM

CHANNELS
- 4 memory channels per CPU

SPEED
- Up to 1600MHz

SOCKETS
- 8 sockets per CPU, total of 16

CAPACITY
- Up to 512GB total, using 32GB RDIMMs

FABRIC INTERFACE

PICMG 3.1R2
- 40G interfaces supported on Fabric Channels 1, 2, 3 and 4 with 40GBASE-KR4 on ZX9240
- ZX9240 can also operate at 10G with 10GBASE-KR, 10GBASE-KX4
- 10G interfaces supported on Fabric Channels 1 and 2 with 10GBASE-KX4 on ZX9210

CONTROLLERS
- Two Dual Mellanox ConnectX-3 EN controllers on ZX9240
- Two Dual Intel 82599 10G controllers on ZX9210 (2 additional 10G interfaces are routed to RTM)

BASE INTERFACE

PICMG 3.0R3
- Dual 10/100/1000BASE-T

CONTROLLER
- Intel 82580 Dual Gb Ethernet controller

ONBOARD STORAGE

TYPE
- Two mSATA SSD, SATA II

CAPACITY
- Up to 1TB total by using two 512GB mSATA modules

FRONT PANEL

I/O
- Three GbE RJ45 interfaces
- One serial port
- Two USB 2.0
- One DVI-I connector, support digital and analog video

LEDS
- Standard ATCA LEDs
- Link and activity indicators for Ethernet interfaces

MECHANICAL
- Ejector handle
- Reset button

RTM SUPPORT

COMPATIBILITY
- Compatible with Oracle/Sun industry standard RTM
- Support for PICMG IRTM

SOFTWARE

OPERATING SYSTEM
- ZNYX OpenArchitect (OA4) and other Linux OS
- Windows Server platforms

POWER

BASEBOARD
- 180-350W max, depending on board configuration

ENVIRONMENTAL

TEMPERATURE (OPERATING)
- 5° C to 40° C continuous
- -5° C to 55° C short-term (NEBS compliant)

TEMPERATURE (STORAGE)
- -40° C to 70° C

RELATIVE HUMIDITY (OPERATING)
- 5% to 85% RH, non-condensing, continuous

RELATIVE HUMIDITY (STORAGE)
- 5% to 90% RH, non-condensing, continuous

REGULATORY

EMC
- FCC Part 15, Class A; EN 550022 Class A

SAFETY
- UL/EN/IEC 60950

ORDERING INFORMATION

INTEL XEON E5-2600 PRODUCT FAMILY (SKU NAME/NUMBER)
- Intel Xeon processor E5-2658 v2 (10 core, 2.4 GHz, 95W TDP)
- Intel Xeon processor E5-2648L v2 (10 core, 1.9 GHz, 70W TDP)
- Intel Xeon processor E5-2628L v2 (8 core, 1.9 GHz, 70W TDP)
- Intel Xeon processor E5-2618L v2 (6 core, 2.0 GHz, 50W TDP)
- Intel Xeon processor E5-2620 v1 (6 core, 2 GHz, 95W TDP)
- Intel Xeon processor E5-2658 v1 (8 core, 2.1 GHz, 95W TDP)
- Intel Xeon processor E5-2648L v1 (8 core, 1.8 GHz, 70W TDP)

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