Great Value for HPC and Server Consolidation

Jointly developed with Intel, the F45 is powered by the Intel's next generation Xeon® Processor 7500 series for the expandable server segment. Designed specifically for high performance computing environments such as datacenters and large enterprises, the rack mounted F45 features significant benefits including expandability with up to 4 processors with 32 independent processor cores, 1/2 Terabyte system memory via 64 memory DIMMs, 10 PCIe expansion slots, and as much as 4TB of internal storage.

Unsurpassed Computing Power

F45 delivers unmatched flexibility with its 4U form-factor, built in support for up to 32 processor cores, and increased processor cache with the Intel® Xeon® Processor 7500 series. The F45 architecture gives the IT manager the extra headroom to run simultaneous processes, greater flexibility to deploy server virtualization/consolidation, and large enterprise level capabilities to run business critical applications.

High Memory Capacity – up to 512GB!

F45 overcomes the space limitation of the 4U form factor and can accommodate up to eight hot-swappable 8-DIMM memory riser boards. With 512 GB of system memory, this is double the capacity of the previous generation in this category. From a business planning perspective, this system offers future proof capability to host virtual machines and memory-intensive HPC applications, such as engineering design automation, geophysical modeling, seismic applications, etc. From a memory-budget perspective, the system supports lower cost 4 GB DDR3 registered (with ECC) DIMMs for a total of up to 256 GB.

Or alternately, F45 supports memory DIMMs of newer DRAM technology and of larger DIMM capacity (at higher cost), such as 8GB and 16GB DDR3 registered DIMMs.

Reliable Internal Storage

F45 supports up to eight 2.5-inch hot-swappable SAS/SATA hard drives, delivering up to 4TB of internal storage for demanding data needs. This is the ideal solution for datacenter applications, enterprise database, data warehousing analysis, streaming media, messaging platforms, etc.

I/O Riser Board and PCI Express

The F45 I/O riser board houses the integrated Baseboard Management Controller (iBMC). It also extends server versatility by adding additional I/O capacity without using valuable PCIe slots. The system provides additional quad Gb NIC ports, one video connector, one DB9 serial port connector and support for Intel® Remote Management Module 3. In addition, F45 supports up to 10 PCIe devices (including 4 hot-swappable), reducing server downtime, minimizing data I/O bottlenecks, and providing high bandwidth and scalability.

Redundant Cooling and Power Supply

F45 provides high-scale system reliability and availability by redundant power supply (3+1 or 2+2) and redundant cooling (7+1) designs. The F45 power supply units (PSU) and system fans are designed with hot-swap capabilities.

With F45 server systems, datacenters and large enterprises can gain competitive advantage with increased IT productivity, flexibility, and systems manageability. It is an ideal solution that datacenters and large enterprises can count on now and in the future.

Key Applications:

Server virtualization/ consolidation
Desktop consolidation
Large database and data analysis
Business-critical applications (ERP, CRM…etc.)
High performance computing applications

Enterprise

Peak Performance for Enterprise Computing and Complex Transactions Out of the Box

Standard Build:

a. Support for up to four 8-core Intel® Xeon® Processors 7500 series

b. Support for up to 64 registered DIMM sockets DDR3 800/978/1066 MHz via Intel® 7500 scalable Memory Buffer; support for memory sparing and mirroring (Default configuration: 4 memory boards)

c. Support for hot swap/non hot swap PCI Express (PCIe) Gen2/Gen1 plus 11 total PCIe slots:

1). 10 PCIe slots:

- Slot 1-2 & 6-7: PCIe Gen2x8, 3/4 length, hot swap capable, x8 connector
- Slot 3-4: PCIe Gen2x4, 1/2 length, non hot swap, x8 connector
- Slot 5: PCIe Gen2x16, 3/4 length, non hot swap, x16 connector
- Slot 8: PCIe Gen2x4, 3/4 length, non hot swap, x8 connector
- Slot 9-10: PCI Gen1x4, 1/2 length, non hot swap, x8 connector

2). 1 dedicated SAS riser slot:

- SAS Riser Slot: PCIe Gen2x8, 1/2 length, non hot swap, x8 connector

d. Up to 8 hard drive bays supporting 2.5-inch SAS/SATA hard drives with the SAS Riser Board installed

e. I/O Riser Board (for rear IO and provides support for Intel® RMM3 LAN Management Module)

f. Quad Onboard Gigabit (Gb) Ethernet ports

g. Eight 80mm hot-swap variable-speed fan modules with 7+1 redundant cooling

h. Four 110V/220V power supply modules with 2+2 or 3+1 redundancy

i. 5.25-inch peripheral bay for internal back-up and archive

j. DVD-RW for removable media

k. SAS Riser Board (6G) for support of up to 8 hot-swap 2.5-inch SAS hard disk drives with hardware RAID support (Extra Item)

Optional Accessories:

1. Support for up to eight 8-RDIMM memory boards
2. Processor Heat-sinks
3. iBBU07 Remote Converter Kit (including one BBU cable and one converter module)
4. Rack-rails
5. Rack cable management arm
6. Intel® Remote Management Module 3 Kit

Processors Supported

Up to four 8-core Intel ® Xeon ® Processor 7500 series

System Memory

Capacity	Support for up to eight 8-DIMM memory boards Up to 512 GB of system memory via 64 DIMM sockets (16GB DIMMs x 32 or 8GB DIMM x 64)
Memory Support Type	DDR3-1066 and DDR3-1333 Registered DIMMs (with ECC) running at 800, 978 and 1066MHz
DIMM Support Sizes	2GB, 4GB, 8GB & 16GB

Integrated Onboard Modules

Chipset	Intel ® 7500 Chipset
Graphics	IBMC (Pilot II) with supported VGA resolution to be 1600x1200
Integrated network	Two Intel ® 82576 Dual Gigabit Ethernet connections

Input/Output

PCI Expansion	10 PCI Express slots: - Four hot-swap PCIe Gen2 x8 slots (Slot 1- 2 & Slot 6 - 7) - Three PCIe Gen2 x4 slots (Slot 3 - 4 & 8) - One PCIe Gen2 x16 slot (Slot 5) - Two PCIe Gen1 x4 slots (Slot 9 - 10) 1 dedicated SAS riser slot: - One designated PCIe Gen-2 x8 slot for SAS riser board
USB	Five USB 2.0 connectors (three front, two rear access)
Serial Port	One rear DB9 connector
Video Port	One front 1280 x 1024 standard video connector One rear 1600 x 1200 standard video connector
LAN Port	Four Gigabyte Ethernet Ports

Dimensions

Form Factor	4U Rack
Height	6.84 inches (173.8mm)
Width	16.7 inches (424mm)
Depth	27.7 inches (704mm)

Storage, Cooling and Power

	Enterprise SKU
Supported Hard Drives	Up to 8 hot-swap 2.5" SAS/SATA HDDs
Peripheral Drives	One 5.25" half height device bay
Default Memory Board	Four 8-DIMM memory boards
SAS/SATA Controller	6Gb SAS RAID riser card (extra item)
RAID Function Support	SAS/SATA RAID 0,1,10,5
System Fan	Eight hot-swap variable-speed fan modules with 7+1 redundant cooling
Power Supply	Four 850W high efficiency power supplies with 2+2 or 3+1 redundancy

Server Management

Intelligent Platform Management	Intelligent Platform Management Interface (IPMI) 2.0
Remote Management	Intel® Remote Management Module 3 (optional)

Server Management

Ambient Temperature	Operating: 10°C to 35°C (50°F to 95°F) Non-operating: -40°C to 70°C (-40°F to 1 58°F)
Acoustic	Sound power: < 7.0 dBA at ambient temperature < 23° C measured using the Dome Method
Electrostatic discharge	Tested to ESD levels up to 15 kilovolts (kV) air discharge and up to 8 kV contact discharge without physical damage

Supported Operating Systems

Supported Operating Systems are outlined in the AVL which could be downlaoded at www.ioncomputer.com

THE ION ADVANTAGE

- ION Computer Systems®, Inc. has a track record of building and supporting high-quality custom servers since 1992.
- All ION systems are built, tested and supported from ION's headquarters in Long Island, NY, USA.
- ION is an Intel® Channel Partner Premier Member for 2010 and has been a member of this exclusive program since 1998 when ION became the first company in the world to qualify. ION engineers have been certified by Intel, Microsoft®, Cisco®, VMware®, Red Hat® and other industry leaders.
- Each system is thoroughly documented with component serial numbers, revision numbers and firmware versions recorded by both bar-code scanning and electronic read back of FRU data from the finished system. Records of each system are retained by ION for ongoing support of that system by ION engineers, ION field engineers, our customers' engineers and end-user support staff.
- All of the components used by ION are chosen from tested compatibility lists to assure that all parts of a server work together. For example, memory modules are chosen from the Intel Tested Memory List for the Intel ServerBoard selected.
- All specified components are then purchased directly from the manufacturer or an authorized distributor. No components are purchased on the so-called "gray market" where the cost of saving a few dollars zis questionable handling practices, improper stor age or lack of warranty coverage.
- System serial numbers and packaging may be provided by ION or by the customer at the customer's discretion. Either way, serial numbers are programmed into the system's FRU and DMI tables.
- Support of ION servers is facilitated through ION's orion program, an ION exclusive data collection program that gathers and assembles DMI, IPMI, FRU, Sensor, System Event Log, RAID state and log, and other configuration information, and transfers the data to ION's secure website for coordinating diagnosis and repair between customers, ION engineers and ION field engineers.
- All ION servers ship with ION's unique "scorpion device". Scorpion includes diagnostic tests, the orion program, and the files and tools needed to restore the firmware versions applied to the system when it was manufactured. This bootable USB Flash device enables all of this support despite the operating system, tools installed, or state of the boot drive in the system.
- Worldwide field service is available. Service terms of up to 5 years are available. 7-day x 24-hour on-site service contracts with a 4-hour response are available. Service contracts including on-site diagnosis and repair are available.
- Complete or partial spare parts kits are available for all ION servers
- All ION servers undergo extended full-system diagnostic testing. Test results are retained for each system.
- Each ION system is thoroughly documented. Examples of documentation can be viewed at: http://www.ioncomputer.com/ion/body/ion_advantage.html

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