

ZX SERIES SERVERS

Rugged rack mounted workstations + servers for deployed applications



Space-Saving Low Profile
Optimized for Rugged Conditions
Processor Upgradeable
Dual Redundant Power Supplies
Front Accessible Controls

THE ZX SERIES Servers with a Mission

The ZX Series Servers were designed from the ground up to meet the stringent tactical, logistical, and operational demands of deployed applications. These rugged, rack mounted systems offer solutions for mission-critical applications on the battlefield, aboard aircrafts, ground-based vehicles, and ships. The ZX Series delivers leading-edge commercial-off-the-shelf (COTS) technology and innovative engineering that strives to keep our military power the strongest and most technologically advanced in the world.

State Of The Art Designs

Designed to incorporate the latest COTS motherboards, the ZX Series brings high performance, energy efficient multi-core processor technology in a cost-effective solution. With the ability to upgrade to latest Intel and AMD processors, these servers avoid "vanishing vendor" pitfalls and promise long-term serviceability. Z Microsystems engineers are experts at adapting COTS technology to the challenging environments presented by military applications. We build our servers with best-of-breed components that have been carefully selected, tested, and qualified for high performance, reliable operation, and long product availability.



HIGHLIGHTS

- Supports latest Intel Multi-Core Xeon & AMD Multi-Core Opteron processors
- 650W dual redundant power supplies
- 19" rack mountable, 20" deep (ZX1 23.85")
- Slim height (1U-1.72", 2U-3.45", 3U-5.20")
- Lightweight, durable aluminum packaging
- Universal PCI card brackets secure cards in all three axes (X/Y/Z)
- Up to 6 PCI expansion slots
- Up to 12 rugged removable SATA or SAS TranzPak2 HDDs
- Slim DVD-RW and front accessible USB ports
- Environmental control board with status display
- Build to order options for special environmental and color requirements
- Optional EMI filtered power supplies with Mil-Circular connectors and locking security panel

Superior Performance, Features, and Reliability

Over the years we have developed innovative ways to handle extended temperature operation, high shock and vibration, dust, salt, fog, fibers, etc., that otherwise would pose a threat to COTS equipment. For example, our motherboards are conformally coated to protect against moisture, dust, chemicals, and temperature extremes. For storage, the ZX Series uses removable disk drives that are protected by a lightweight, machined aluminum body with anti-corrosive nickel plating. These drives have a sturdy cam action insertion/extraction lever to provide solid protection for deployed media. The ZX Series uses standard SATA or SAS 2.5" hard drives, or for the most demanding environments uses solid state drives.

Engineered to Perform in Harsh Environments

The ZX Series chassis includes many features that further protect the system. For instance, excellent thermal performance is achieved using five fans that pull heat away from hot spots. A network of sensors monitors temperature around the chassis and controls the fans to provide adaptive airflow. This is important to accommodate high power processors and the rugged environments where these systems are installed. At normal operating temperatures fan speeds are reduced to limit noise while maintaining proper cooling. A filtered dust door on the front panel protects sensitive electronic components from airborne contaminants. EMI requirements, found in defense standards such as MIL-461, are addressed through special filtering of input power and by shielding of the enclosure and I/O cables. Additionally, the PCI expansion slots include universal hold-down card brackets that can accommodate multiple styles of add-in cards, and that secure cards in all three axes (X/Y/Z).

Seamless Component Upgrades and Technology Refreshes

The ZX Series is a true family of servers that shares common and interchangeable components, and allows customers to configure systems to fit their needs. A common architecture and shared components greatly ease logistical issues during system deployment, maintenance, and upgrades. Procedures for configuration and maintenance, documentation and training, and spare parts are consistent across the product line.

Rugged, Scaleable, Versatile Servers and Workstations

The ZX Series offers maximum configuration flexibility based on customer specific applications. The ZX1 offers a space-saving low profile. The ZX2 offers room for additional disk storage. The ZX3 offers greater expandability, including up to 12 disk drives that can be configured as a RAID subsystem. Dual redundant hot-swappable 650W power supplies ensure support for all multi-core processors and high-end PCI Express graphics cards. Both AC and 28V DC power supplies are supported. Add up to six PCI expansion slots and two front accessible USB ports, and it is clear this rugged, rack mount family of servers offers a versatile and robust solution for demanding applications.

Unbeatable in Mission-Ready Applications

Z Microsystems' rugged computing systems combine electronic, environmental and mechanical technology with the industry's latest computing technology to produce products for the military environment. These computers are configured and designed to meet and exceed the most stringent military specifications. They have the legacy of performance in mission-critical applications and outperform their commercial counterparts.





Specifications

Physical

ZX Station	ZX1	ZX2	ZX3
Dimensions*	1.72" H x 17.00" W x 23.85" D (inside rack)	3.45" H x 17.14" W x 20.00" D (inside rack)	5.20" H x 17.15" W x 20.00" D (inside rack)
Weight	Approximately 22 lbs.	Approximately 29 lbs.	Approximately 33 lbs.
Storage Options	SATA or SAS		

Power Supply: Dual Redundant Configuration

Total Output Power	650 W		
AC Input Range	90-132/180-264 VAC		
Input-Frequency	47-63Hz/400 Hz		
PCI Slots	2	3	6

Environmental

Operating Temp	0° to + 50°C Extended operating temperatures are achievable with sold state drives		
Non-Op Temp	-40° to + 70°C		
Operating Humidity	Up to 95% Non-Condensing, 40°C 48 hours Optional conformal coating to meet full MIL-STD-810F compliance to Method 507.5, 10 days		
Non-Op Altitude	Up to 40,000 ft.		
Operating Altitude	Up to 10,000 ft.		
Vibration	MIL-STD-167 up to 25 Hz. Above 25 Hz throughput will degrade with spinning HDDs Extended vibration environments (DO-160 Section 8, Curve B) are achievable with solid state drives		
Shock	40 g's, Saw-tooth, 11ms		
Fungus	Non-Nutrients/Contaminants		

Reliability

Operating Life	10 years		
Maintainability	<20minutes @ Line-Replaceable Unit (LRU) Level		

Regulatory

Safety	CE Compliant, IEC 60950 (used as a guideline)		
EMI	Options may require Mil-Spec Power Supplies RE101, RE102 (shipboard levels), RS101, RS103 (up to 60 v/m) CE102, CS101, CS114, CS115, CS116		

Quality/Workmanship

IPC / ISO 9001:2008 and applicable section of MIL-HDBK-454			
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MIL-SPEC

Additional extended range environmental military specifications can be met with optional enhancements. Contact Z Microsystems for details.			
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* AC and DC configurations may alter dimensions

