Xiotech®

Emprise™ 5000

High-performance, compact, virtual storage system

Today's Applications Demand

a storage foundation that can keep up with their growing appetite for performance. However, most available storage options suffer from common processing limitations. Controllers become bottlenecks as they are forced to manage cache, RAID, drive rebuilds, and more. They also must contend with diverse, complex code across various brands and generations of drives and enclosures.

Xiotech Corporation eliminates these performance barriers with game-changing technology that delivers unbeatable performance, extreme reliability, and terabytes of easy-to-manage storage—all in an affordable, compact solution.

The Solution: Emprise 5000

Xiotech's Emprise 5000 system is a revolutionary concept in data storage. It is built on Intelligent Storage Element (ISE) technology—a perfectly balanced building block of performance, reliability, and scalability.

The ISE is a tightly integrated storage environment, purpose-built to maximize performance and reliability. Each ISE supports one or two sealed DataPacs (capacity modules) and dual Managed Reliability Controllers, which locally manage cache, data recording processes, and more.

Built on the ISE foundation, Emprise 5000 is a complete, self-enclosed virtualized storage solution, which you can configure to meet your specific needs. In just 3U of rack space, you can have up to 16 terabytes of capacity or a high-performance storage powerhouse for your transactional applications.

Emprise 5000 is easy to attach to your servers—either directly or via a Fibre Channel switch. And it requires minimal configuration or administration, so it is perfect for departmental or branch office deployment.

Emprise 5000 Highlights

- **Record-Breaking Performance**: Local cache and data processing, combined with simple, clean code, deliver unbeatable performance—and the fastest available *anywhere* for the price. Storage Performance Council (SPC) tests prove it.
  - » World Record SPC Benchmark 1™: Lowest cost per SPC-1 IOPS[1]
  - » World Record SPC Benchmark 2™: Lowest cost per SPC-2 MBps[1]
- **Flexible Configuration**: DataPac options enable you to customize Emprise 5000 to meet your specific needs—from high capacity to unmatched performance, or somewhere in between. When you want more capacity (and performance), you can simply add Emprise 5000 systems to your environment. You can even convert your system into an Emprise 7000 storage area network (SAN) solution. That's true investment protection.
- **Unmatched Reliability**: Patented diagnostics and self-healing capabilities extend reliability far beyond that of a single disk—by 100 times or more. With such reliability, Emprise 5000:
  - » Eliminates the time and risk of replacing failed disk drives.
  - » Provides significant cost savings with an unprecedented five-year hardware warranty.

Emprise 5000 in More Detail

Maximum Performance

Emprise 5000, with its underlying ISE technology, delivers performance that no other storage solution can match. **SPC testing proves that Emprise 5000 is the #1 disk array in the world for lowest IOPS and MBps cost**[1].

Performance innovations include:

- Clean, integrated, and consistent software for efficient processing.
- High-performance, grid-based RAID to protect data while delivering fast access.
- Dual active-active controllers that harness all available processing power.
- Linear scaling of performance each time you add an Emprise 5000 system—for 2x, 3x, 4x, or more the performance of a single system.

Flexible Configuration

You may choose from Emprise 5000 systems optimized for performance, capacity, or other requirements. Here are a few of the ways you might deploy this flexible system:

- **Transactional Applications**: For high-performance applications, such as Microsoft SQL Server, Emprise 5000 delivers impressive, proven performance, which can be optimized for small-block IOPS (random access), small-block sequential writes (e.g., for log files), and prefetch cache.
- **Multimedia Applications**: With prefetch cache and industry-leading performance that is optimized for large-block streaming reads and writes, Emprise 5000 is an excellent choice for multimedia applications.
- **Archive & Backup Storage**: The high-availability architecture and large capacity of Emprise 5000 make it an affordable, efficient repository for long-term storage.
- **Branch Office/Departmental Deployment**: With its large capacity, small size, and simplified deployment and management, Emprise 5000 is perfect for remote offices or departments.

Scalability from DAS to SAN

You can use your Emprise 5000 system(s) as the foundation for an Emprise 7000 SAN solution. This gives you the option to grow without ever losing your storage investment.

With Emprise 7000, you can benefit from features such as:

- Easy, centralized management of up to a petabyte of data.
- Even greater availability with Xiotech's distributed storage cluster architecture.
- Comprehensive data protection, with local and remote replication, snapshot, continuous data protection (CDP), and online backup options.

Unmatched Reliability

The ISE's patented technology provides more than 100 times the reliability of regular disk drives. With no drives to replace, you save valuable time and eliminate the risk of associated data loss. You also save considerable money, as disk replacements comprise a large portion of most vendors' maintenance agreements.

The ISE's heal-in-place technologies include:

- Preventive measures to **avoid** potential failures:
  - » Reduced heat and vibration significantly extend the life of each DataPac.
  - » Regular reconditioning and error-detection processes locate and fix potential problems before failure occurs.
  - » Redundant, hot-swappable components ensure continued availability.
- Additional measures to enable the DataPac to **recover**, rather than needing to be replaced:
  - » Self-healing processes enable the DataPac to recover from most localized failures.
  - » Spare-in-place technology automatically rebuilds data to another area within the DataPac if needed.
  - » The ability to recover data in smaller increments than an entire disk yields faster rebuilds.

[1] *Best disk array price/performance for SPC-1 I/Os per Second (IOPS) and SPC-2 Megabytes per Second (MBps)—composite mirroring and large file mirroring—as of April 8, 2008. Audited reports are available at: www.storageperformance.org/results/benchmark_results_spc1#a00064 and www.storageperformance.org/results/benchmark_results_spc2#b00031.*

Emprise 5000 Specifications

System Highlights

Description	Details
Storage Capacity (max)	16TB
DataPac Modules	Single or dual
RAID Levels	5, 10
Host Interfaces	2 Fibre Channel (4 Gbps); direct- or switch-attached
Server Connections (max)	64
Storage Volumes (max)	128
Cache	1GB – Safe, mirrored, write-back and read-ahead Battery-backed, 96-hour hold time
Operating System Support[2]	Microsoft® Windows®, VMware® ESX Server, Red Hat® Enterprise Linux®, SUSE® Linux Enterprise Server, Mac® OS X
Microsoft Storage Services Support	Virtual Disk Service (VDS), Multipath I/O (MPIO)

DataPac Modules

DataPac Types	Capacity	Weight (lb / kg)
Performance Tier DataPac	1.1TB	19.65 / 8.9
Balanced Tier DataPacs	2.4TB	19.65 / 8.9
Capacity Tier DataPac	8.0TB	20.35 / 9.3

Reliability, Availability, and Management

Parameter	Description
Self-Healing Technology	Patented diagnostic and reconditioning processes prevent issues and repair components in place, avoiding most service events
Hot-Swappable Components	Controllers (dual active-active), DataPacs, power supplies, cooling fans, batteries
Management	Web-based interface, SNMP, CLI
Data Replication	Snapshot
Data Integrity	T10-DIF support (end-to-end data integrity feature)

ExpertCare Support

	Hardware (Parts, Labor)	Software	Response
Basic Warranty	Five years	90 days	• 24x7, four-hour on-site support and shipment of replacement parts[3] • 24x7 toll-free phone support • Same business day email response
Optional Upgrades	Warranty and maintenance extensions		

[2] *Some restrictions apply. Consult your Xiotech account representative for details.*
[3] *Support Zone 1 only.*

Physical Specifications (3U Rack Mount)

Component	Depth (in/cm)	Width (in/cm)	Height (in/cm)	Weight without Datapac (lb/kg)
Emprise 5000 System	28.5 / 72.39	17.5 / 44.45	5.2 / 13.2	99.0 / 44.9

System Power Specifications

Component	Voltage	Current (max)	Power (typical)	Heat Dissipation
Emprise 5000 System	100 / 240 V	6.0 A	600 W	2,050 btu/hr

Environmental Specifications

Component	Operating Temperature	Operating Humidity	Maximum Altitude
Emprise 5000 System	50–95° F / 10–35° C	20–80% (noncondensing)	10,000 ft / 3,048 m

Regulatory Approvals

Safety	UL 60950-1:2003, CAN/CSA-C22.2 No. 60950-1-03, IEC 60950-1
Electromagnetic Compatibility	EN61000, EN55022 (Class B), EN55024, FCC (CFR 47, Part 15, CISPR 22), CSA C108.8-M1983 (CISPR 22), EC Directive 89/336/EEC, EMC Directive

Specifications subject to change without notice. Visit www.xiotech.com for the most up-to-date information.

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