

PILLAR AXIOM 600

APPLICATION-AWARE STORAGE

KEY FEATURES

- Differentiated storage services based on application priority
- Support for Oracle Database hybrid columnar compression
- Simple, graphical management console for policy-based provisioning
- Enterprise-class capabilities with redundant storage controllers with dual active/active control units, fans, power, and mirrored cache
- Modular storage system with three main building blocks: policy controller, storage controller, and storage enclosure

KEY BENEFITS

- More-efficient consolidation of storage in SAN deployments
- Predictable performance for mission-critical applications in consolidated storage environments
- Industry-leading storage efficiency in Oracle Database environments
- Easy, linear scaling of performance and capacity as the organization's storage needs change
- Simplified management through reduced complexity of provisioning tiered storage
- Greater achieved performance and storage capacity per watt of energy used

As an application-aware storage solution, Oracle's Pillar Axiom 600 storage system enables you to optimize performance based on application I/O needs. The Pillar Axiom 600 facilitates policy-based sharing of storage resources, CPU, capacity, and cache to best meet your applications' I/O requirements. With its innovative quality of service (QoS) software, you can also differentiate between drive types in the storage pool by selecting the optimal price/performance ratio to best meet the requirements of your business applications. The Pillar Axiom 600 also supports Oracle Database hybrid columnar compression to deliver industry-leading storage efficiency and performance for SAN solutions deployed in Oracle environments.



Flexible, Easy-to-Manage Storage

The Pillar Axiom 600 is the ideal solution for Oracle Database, Microsoft Exchange, storage consolidation initiatives, virtualized infrastructure projects, and more. It provides industry-leading capacity utilization without sacrificing performance. With its ability to dynamically provision data and applications, you can consolidate all your storage onto a single system—all while maintaining the performance levels your business needs.

Because of its industry-leading storage utilization rates, the Pillar Axiom 600 delivers more performance and storage capacity per watt of system power than similar products from other “green” storage vendors. The result is more storage for less cost.

- **Scale flexibly and easily.** With explosive data growth and changing application requirements, companies are being forced to re-evaluate their storage infrastructure to keep pace with these changes—all while maintaining continuous data availability. The Pillar Axiom 600's modular architecture provides the flexibility to change application priorities, increase capacity, and improve performance as your business needs change and grow—all without disruption or difficult migrations.
- **Simplify management.** With its key technology innovations and the industry's most intuitive storage management user interface, you can deploy, provision, manage, and maintain the Pillar Axiom 600 easily without special training. No other storage vendor has eliminated the complexity of provisioning tiered storage with varying service levels in a single, integrated system.
- **Maximize efficiency.** The Pillar Axiom 600 supports hybrid columnar compression for Oracle Database. This capability, originally pioneered on the Oracle Exadata and unique to the Pillar Axiom 600 for SAN deployments, delivers an average of 3-5X efficiency advantage in the Pillar Axiom 600. These compression rates enable you to support your business with less physical storage, simplifying your environment and saving money.
- **Utilize capacity.** Pillar Axiom 600 storage systems are the basis of one of the most flexible storage systems in the industry, combining SAN and NAS in a single unified platform with a common storage pool using solid-state drives (SSDs) and/or Fibre Channel (FC) or serial ATA (SATA) drives.

A Modular Approach to Enterprise Storage

The Pillar Axiom 600 packs leading-edge technologies into an affordable storage system to meet your mission-critical business needs, maintain your disaster recovery and business continuance, and scale as your business grows. The Pillar Axiom 600 platform consists of three main building blocks, each designed for high availability and reliability.

Pillar Axiom Pilot

The Pillar Axiom Pilot policy controller is the management interface for the system. Its simple graphical management console and Pillar Axiom 600 software enables policy-based provisioning with dynamic performance prioritization, fault management, capacity planning, and guided maintenance.

Pillar Axiom Slammer

Pillar Axiom Slammer storage controllers are completely redundant with dual active/active control units, fans, power, and mirrored cache—everything you'd expect in an enterprise storage system. One Pillar Axiom 600 can support as many as four Pillar Axiom Slammers, enabling you to add storage processing power without purchasing another system. The Pillar Axiom 600 grows with you as your storage needs increase, without introducing additional management points, extra software licenses, or costly downtime for replacing the system. You can flexibly mix and match Pillar Axiom Slammers to provide additional capabilities that match your business needs and grow as your needs change.

- **Pillar Axiom Fibre Channel SAN Slammer.** Offers high-performance block-level storage connectivity with four external I/O connections.
- **Pillar Axiom iSCSI SAN Slammer.** Provides cost-effective SAN connectivity over an Ethernet network at full wire speed, enabling customers to leverage existing Ethernet network resources and expertise. Supports all Pillar Axiom configuration and dynamic provisioning features in addition to Internet Storage Name Service (iSNS) and iSCSI Network Boot Protocol (iNBP).
- **Pillar Axiom NAS Slammer.** Provides multinode file services and supports the most-

popular host operating systems employing CIFS and NFS file protocols as well as value-added features such as link aggregation; automatic recovery options; and user authentication such as NIS/NIS+, Windows PDC, Active Directory and native locking schemes, and cross-protocol lock enforcement.

- **Combination of Pillar Axiom Fibre Channel SAN Slammer and Pillar Axiom iSCSI SAN Slammer.** Supports four FC ports and four iSCSI ports, or eight iSCSI ports for dedicated iSCSI applications. An iSCSI field upgrade kit is also available for converting an existing SAN Slammer into an FC/iSCSI combination slammer.

Pillar Axiom Brick Storage Enclosures

Oracle offers Pillar Axiom Brick storage enclosures for the Pillar Axiom 600, with a range of drive types to support your business needs. Storage enclosures are available with SATA, FC, and SSD, enabling multiple types to be used in the Pillar Axiom 600 to meet your budget and performance demands. In the Pillar Axiom 600, the RAID controllers are moved out of the storage processor and into the Pillar Axiom Brick—eliminating performance bottlenecks. Each Pillar Axiom Brick contains two RAID controllers, so as you add more storage enclosures to expand your capacity, the additional RAID controllers you need will automatically be added, further improving overall performance.

- **Pillar Axiom FC Brick.** Delivers highly available high-performance storage. Two RAID controllers manage 12 drives with an integrated hot spare and support RAID 50 and RAID 10.
- **Pillar Axiom SSD Brick.** Provides the highest drive performance for I/O-intensive applications. Two RAID controllers manage 12 drives, with the 13th drive being a shared hot spare that can be accessed by either controller in case of failure. Supports RAID 50 and RAID 10.
- **Pillar Axiom SATA Brick.** Provides highly available storage with two RAID controllers to manage 12 user data drives. The 13th drive is a shared hot spare that can be accessed by either controller in case of failure. Supports RAID 50 and RAID 10.

Warranty

The Pillar Axiom 600 comes with a one-year warranty. Visit oracle.com/goto/sun/warranty for more information about Oracle's hardware warranty.

Support

With Oracle Premier Support, our customers get complete, integrated support to maximize the return on their Oracle investment—from software updates and operational best practices to proactive support tools and rapid problem resolution. For more information, visit oracle.com/support.

Pillar Axiom Brick Specifications			
	Pillar Axiom SATA Brick	Pillar Axiom Fibre Channel Brick	Pillar Axiom SSD Brick
Storage Enclosure			
	<ul style="list-style-type: none"> Interface to Pillar Axiom Slammer or Cascaded Bricks Four FC interfaces per controller 	<ul style="list-style-type: none"> Interface to Pillar Axiom Slammer or Cascaded Bricks Four FC interfaces per controller 	<ul style="list-style-type: none"> Interface to Pillar Axiom Slammer or Cascaded Bricks Four FC interfaces per controller
Features and Specifications			
Features	<ul style="list-style-type: none"> Automatic, transparent failover Two RAID 5 (5+P arrays) Pooled RAID 10 	<ul style="list-style-type: none"> Automatic, transparent failover One RAID 5 (10+P+S array) Pooled RAID 10 	<ul style="list-style-type: none"> Automatic, transparent failover Two RAID 5 (5+P arrays) Pooled RAID 10
Redundant and hot-swappable components	<ul style="list-style-type: none"> 13 drives (one hot spare) Two RAID controllers (active/active) Two load-balancing power supplies Enclosure Services Module 	<ul style="list-style-type: none"> 12 drives (one hot spare) Two RAID controllers (active/active) Two load-balancing power supplies Enclosure Services Module 	<ul style="list-style-type: none"> 13 drives (one hot spare) Two RAID controllers (active/active) Two load-balancing power supplies Enclosure Services Module
Dimensions			
Height	3.5 in. (8.89 cm), 2U	3.5 in. (8.9 cm), 2U	3.5 in. (8.9 cm), 2U
Width	17.7 in. (45 cm)	17.7 in. (45 cm)	17.7 in. (45 cm)
Depth	22 in. (55.5 cm)	22 in. (55.5 cm)	22 in. (55.5 cm)
Weight	59 lb. (26 kg)	70 lb. (32 kg)	51 lb. (23.13 kg)
Drive Information			
Capacity	1 TB, 2 TB	300 GB, 600 GB	50 GB, 200 GB
Standard	SATA II	FC	SSD
Velocity	7,200 rpm	15,000 rpm	N/A
Power Requirements			
Frequency	50 Hz – 60 Hz	50 Hz – 60 Hz	50 Hz – 60 Hz
AC voltage	90 VAC – 264 VAC	90 VAC – 264 VAC	90 VAC – 264 VAC
Max consumption	296 VA	372 VA	251 VA RMS
Max heat	1,010 BTU/hr	1,270 BTU/hr	856 BTU/hr
AC plug type	Two IEC 320 C13 connections	Two IEC 320 C13 connections	Two IEC 320 C13 connections
Operating Conditions			
Temperature	5°C – 40°C		
Temperature gradient	20°C/hr		
Relative humidity	10% – 85% noncondensing		
Humidity gradient	10%/hr noncondensing		
Nonoperating Conditions			
Temperature	–40°C – 70°C		
Temperature gradient	30°C /hr		
Relative humidity	5% – 95% noncondensing		
Humidity gradient	10%/hr noncondensing		

Pillar Axiom Slammer and Pillar Axiom Pilot Interfaces and Components		
Interfaces	Pillar Axiom Slammer	Pillar Axiom Pilot
External interfaces	<p>Pillar Axiom SAN Slammer</p> <ul style="list-style-type: none"> • Four 4 Gbps or 8 Gbps FC interfaces <p>Pillar Axiom iSCSI Slammer</p> <ul style="list-style-type: none"> • Four 1 GbE interfaces for iSCSI host attachments <p>Pillar Axiom NAS Slammer</p> <ul style="list-style-type: none"> • Eight 1 Gb or four 10 GbE interfaces for client network connectivity • Optional FC card for tape connectivity <p>Pillar Axiom iSCSI Combo Slammer</p> <ul style="list-style-type: none"> • Four 1 GbE interfaces • Four 4 Gbps or 8 Gbps FC interfaces 	<ul style="list-style-type: none"> • Four 10/100Base-T Ethernet private management interfaces (PMIs) • Two 10/100Base-T Ethernet interfaces for management LAN connectivity
Internal interfaces	<ul style="list-style-type: none"> • Six 10/100Base-T Ethernet interfaces for Pillar Axiom Slammer/Pilot connectivity • Twenty-six 2 Gb or 4 Gb FC interfaces for Pillar Axiom Brick/Slammer connectivity 	
Components		
Storage controller components (redundant)	Quad-core processors, 48 GB cache	
Components	<ul style="list-style-type: none"> • Two power supplies and fans per control unit • Two active/active storage controllers per Pillar Axiom Slammer 	<ul style="list-style-type: none"> • Two policy controllers per Pillar Axiom Pilot with active/standby failover Intel Celeron processor per storage controller • 2 GB or 4 GB RAM per control unit
Supported protocols	<p>SAN</p> <ul style="list-style-type: none"> • FC protocol, fabric-attached and direct-attached • iSCSI protocol, network-attached or direct-attached <p>NAS</p> <ul style="list-style-type: none"> • NFS V2/V3 over UDP or TCP, CIFS, NDMP 	<ul style="list-style-type: none"> • FTP • HTTP • NDMP • NTP • SNMP • SMTP • SSH

Pillar Axiom Slammer and Pillar Axiom Pilot Dimensions, Power, and Environmental Specifications		
Enclosure Dimensions	Pillar Axiom Slammer	Pillar Axiom Pilot
Height	7 in. (17.78 cm), 4U	3.5 in. (8.89 cm), 2U
Width	17.7 in. (45 cm)	17.7 in. (45 cm)
Depth	26 in. (66 cm)	26 in. max (66 cm)
Weight	91 lb. (41 kg)	40 lb. (18.2 kg)
Power Specifications		
Frequency	50 Hz – 60 Hz	50 Hz – 60 Hz
AC voltage	90 VAC – 264 VAC	90 VAC – 264 VAC
Max power consumption	685 VA	128 VA
Max heat dissipation	2,020 BTU/hr	372 BTU/hr
AC plug type	IEC 320 C13 connections	IEC 320 C13 connections
Environmental Specifications: Operating		
Temperature	5°C – 40°C	
Temperature gradient	20°C/hr	
Relative humidity	10% – 85% noncondensing	
Humidity gradient	10%/hr noncondensing	
Environmental Specifications: Nonoperating		
Temperature	–40°C – 70°C	
Temperature gradient	30°C/hr	
Relative humidity	5% – 95% noncondensing	
Humidity gradient	10%/hr noncondensing	

Contact Us

For more information about the Pillar Axiom 600, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.



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Hardware and Software, Engineered to Work Together