



Scalable Mid-Range Storage Solution

HIGHLIGHTS

- **Hardware-accelerated Network Storage with up to 2.5 Gbps throughput and up to 50,000 IOPs**
- **Dynamically scalable storage up to 128 TB in a single namespace, with file systems up to 64 TB**
- **Two node high availability clustering**
- **Dynamic read caching for scalable read intensive workloads**
- **Supports over 4 million files per directory**
- **Unified NAS & SAN**
- **Cluster namespace for unified directory structure**
- **Intelligent tiered storage across FC and SATA**
- **Virtual volumes and servers**
- **Integrated WORM file system**
- **Policy-based management & transparent data migration**
- **Advanced data protection and disaster recovery**

Titan 1100

End-to-End Enterprise Scalability

The BlueArc Titan 1100 model is a mid-range storage product providing end-to-end enterprise scalability. Titan 1100 offers new value and performance to smaller and mid-size businesses, including extended value with both remote and branch office capabilities. The Titan 1100 enables a cohesive, end-to-end enterprise storage infrastructure strategy when combined with the rest of the Titan family of products. Titan 1100 provides a lower market acquisition point that leverages the same extensible architecture of the Titan series, allowing seamless growth over time.

Titan 1100 addresses three significant customer needs:

- A lower customer acquisition entry point for mid-range storage solutions
- Support for high-growth, dynamic business environments, including the ability to satisfy the needs of remote and branch offices in addition to different workgroups and locations
- Extension of the Titan product family to allow for a more comprehensive, end-to-end enterprise storage strategy that extends out well beyond the corporate data center

Addressing specific market needs for capacity, performance, and high availability clustering, Titan 1100 provides exceptional value to small and mid-sized businesses that need a high-performing storage solution that can flexibly and cost-effectively scale over time. The Titan 1100 offers an extensive array of core enterprise software features, data management, and virtualization capabilities that provides a foundation for superior performance and scalability to support the demands of a growing business.

Titan 1100

TITAN 1100	
System Class	Entry Level to Mid-Range
Aggregate Throughput	2.5 Gbps
IOPS Performance	<ul style="list-style-type: none"> • 50,000 Single Node • 100,000 Two Node Cluster
Mirrored NVRAM	• 2 GB NVRAM

TITAN 1100 SERIES HARDWARE SPECIFICATIONS

Number of slots	4-slot chassis
Chassis backplane bandwidth	40 Gbps (full-duplex)
Titan modules	<ul style="list-style-type: none"> • Network Interface Module • File System Module A (FSA) • File System Module B (FSB) • Storage Interface Module (SIM)
Power supplies (PSU)	Dual, load-sharing, hot-swappable power supplies
Server diagnostics	Server status and power LEDs
PSU diagnostics	AC and Battery Status LEDs
Cooling	Hot-swappable N+1 fan assembly

CLUSTERING

Cluster interfaces	10 Gigabit Ethernet
N-Way High Availability	True 2-Way Active-Active Clustering
Number of ports	Dual ports, XFP connectors
Optional licenses	<ul style="list-style-type: none"> • High Availability Active-Active Clustering • Cluster Namespace • Dynamic Read Caching

MANAGEMENT INTERFACE

Ethernet interface	Server status and power LEDs
Serial interface	AC and Battery Status LEDs
Ethernet port diagnostics	<ul style="list-style-type: none"> • Port Status LEDs • Port Activity LEDs

DIMENSIONS

Height	4U (7 inches)
Width	19" IEC Rack-compliant (48.3mm)
Depth	25" (63.5cm)
Weight	78 lbs (52Kg)

MTBF

TITAN system	500,000 hours
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THERMAL RATING

Titan System BTU/h	<ul style="list-style-type: none"> • 1535 BTU/h (Maximum @ 450W) • 1119 BTU/h (Typical @ 328W)
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POWER ATTRIBUTES

AC power option	<ul style="list-style-type: none"> • 4.1A (max.) @ 110 VAC, 450W Optional • 2.2A (max.) @ 208 VAC, 450W • 2.0A (max.) @ 230 VAC, 450W
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REGULATORY COMPLIANCE

CSA 60950-00, UL 60950, EN 60950
 FCC Part 15 Class A, EN 55022 Class A, EN 55024
 89/336/EEC Electromagnetic Compatibility Directive
 72/23/EEC Low Voltage Directive
 98/68/EEC CE Marking Directive

Titan Module and Storage Specifications



NETWORK INTERFACE MODULE (NIM MODULE)

User interface type	<ul style="list-style-type: none"> Gigabit Ethernet, IEEE 802.3z 10 Gbit/s Ethernet, IEEE 802.3ae Full-duplex support, IEEE 802.3x Link aggregation (LAG), IEEE 802.3ad Jumbo frame support (up to 9,180 bytes) VLAN Tagging IEEE 802.1Q
Number of ports	Four Gigabit Ethernet ports
Data interfaces	<ul style="list-style-type: none"> 1000BASE-SX, SFP 1000BASE-TX, SFP
Port configuration	<ul style="list-style-type: none"> Port independent configuration Multiple IP addresses per interface (up to 32 total)
Module diagnostics	Module Status LEDs
Port diagnostics	<ul style="list-style-type: none"> Port Status LEDs Port Activity LEDs

STORAGE INTERFACE MODULE (SIM MODULE)

User interface type	Fibre Channel, SFP connectors
Number of ports	<ul style="list-style-type: none"> Quad FC ports Dual 10 GbE Cluster Ports
FC port interfaces	1, 2, or 4 Gbps, Switched or Point-to-Point
Port configuration	Port independent configuration
Module diagnostics	Module Status LEDs
Port diagnostics	<ul style="list-style-type: none"> Port Status LEDs Port Activity LEDs

DISK STORAGE SUB-SYSTEM ATTRIBUTES

Hard disk drive types supported	<ul style="list-style-type: none"> Tiered Storage Supported with Mixed Fibre Channel (FC) and Serial ATA (SATA) Disks
BlueArc Storage Arrays	<ul style="list-style-type: none"> RC16TB (Engenio Integrated RAID controller and 16-drive shelf, FC and or SATA) RC16SA (Engenio Integrated RAID controller and 16-drive shelf, SATA only) DS16EXP (Engenio 16 drive expansion shelf, FC or SATA) SA-48 (4Ux48 drive SATA only) HDS WMS 100 HDS AMS 200, 500, 1000 HDS USP, USP-V, USP-VM HDS NSC55



FILE SYSTEM MODULES

FSA General Purpose File System Module (Top Module)

FSB File System NVRAM Module (Bottom Module)

Titan Software Specifications



Web based graphical user interface

PROTOCOLS SUPPORTED

Network protocol support	<ul style="list-style-type: none"> • Common Internet File System (CIFS) • Network File System (NFS) v2, v3, and v4 • NDMP v2, v3, and v4 • File Transfer Protocol (FTP) • iSCSI
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Management protocols	HTTP, SSL, SSH, SNMP v1 and v2c, NIS, DNS, WINS, NTP, Email Alerts
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FILE SYSTEM ATTRIBUTES

File system	<ul style="list-style-type: none"> • BlueArc File System • Hardware-based file system
Multi-protocol support	Simultaneous CIFS and NFS
Maximum file system size	64 TB, dynamically scalable
Maximum storage supported	128 TB
Maximum files per directory	Up to 16 Million or more files
RAID striping	Automated Parallel RAID Striping and Multi-Pathing

NDMP BACKUP ATTRIBUTES

NDMP support	NDMP v2, v3 and v4
Tape library system	Support for SAN and LAN Connectivity
NDMP features	<ul style="list-style-type: none"> • Direct Access Recovery (DAR) • 3-Way Backup and Restore

SYSTEM MANAGEMENT ATTRIBUTES

Integrated storage system management	<ul style="list-style-type: none"> • Titan Storage Server(s) • RAID controller management • Disk sub-system management - Enclosures and disks • FC Switch management
Standard management features	<ul style="list-style-type: none"> • Manage up to 8 Titans/Clusters • Replication management • Automated system configuration and backup • Enhanced system monitoring • Anti-virus support • Out-of-band Ethernet management network • Role-based management
Management interfaces	<ul style="list-style-type: none"> • GUI based: HTTP, HTTPS • CLI-based: Telnet, Serial • Scripting: SiCtrl
Secure management access	<ul style="list-style-type: none"> • SSL • SSH
Management access control	<ul style="list-style-type: none"> • User/Password authentication • Management port definition • Management access method • Access Control Lists (ACL's) • NIS, Active Directory, and LDAP
SNMP support	<ul style="list-style-type: none"> • SNMP v1 and v2c • SNMP Traps

SUPPORTED FEATURES

Standard Features:	<ul style="list-style-type: none"> • Centralized Management • Snapshots & Quick Restore • Virtual Volumes (ViVols) • Virtual Servers • Quotas - volume, group or user • NDMP (LAN-free backup) • Anti-Virus Support • Storage Pools
Optional Features:	<ul style="list-style-type: none"> • NFS • CIFS • iSCSI with Multipath (MPIO) • Replication Suite • Data Migrator • Active-Active Clustering • Cluster Namespace • Synchronous Volume Mirroring • WORM file system • Dynamic Read Caching • Secure Virtual Servers • Virtual Server Migration



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