9900

Lightning 9900

Technical Specifications

System Capacity

Number of disk drives (with spares)	5 to 512
Hot spares (maximum)	16
Capacity (GB)	
3.0 inch form factor	18, 47, 73 (10,025 RPM)
Total raw capacity per subsystem	37.3TB
Maximum usable capacity for RAID-5	
Open Systems	27.5TB
S/390-compatible	25.7TB
Maximum usable capacity for RAID-1+	
Open Systems	18.4TB
S/390-compatible	17.2TB

Cache

Minimum	2GB
Maximum	32GB
Increments	2GB

Client-Host Interface Processors (CHIP)

Number of CHIP pairs	Up to 4
Simultaneous data transfers per CHIP pair	4 or 8
Physical interfaces per CHIP pair	4 or 8

Physical Interfaces per Subsystem

Maximum	32
Fibre Channel (fiber-optic cable)	0, 4, 8, 12, 16, 24, or 32
Extended Serial Adapters™†	0, 4, 8, 12, 16, 24, or 32

Logical Device Support

	Up to 4,096

Array Control Processor (ACP)

Number of ACP pairs per subsystem	Up to 4
Physical array paths per ACP pair	8
Physical array paths per subsystem	32
Simultaneous transfers per ACP pair	
To cache	8
To disk array	16
Transfer rate	
Per disk array path	Up to 100MB/sec
Per ACP pair (to cache)	Up to 800MB/sec
Hi-Star architecture	
maximum bandwidth	6.4GB/sec

Physical Specifications

Control Frame

Height	1,790mm (70.5 in.)
Width (with two side panels)	750mm (29.5 in.)
Depth	800mm (31.5 in.)
Weight*	451kg (992 lbs)
Heat*	1.5kW
Power*	1.6kVA

Array Frame (one to six)

Height	1,790mm (70.5 in.)
Width (with two side panels)	600mm (23.6 in.)
Depth	800mm (31.5 in.)
Weight**	469kg (1,031 lbs)
Heat**	3.4kW
Power**	3.7kVA

* One controller, 16GB cache, 2 ACP pairs, 16 Fibre ports.
** One disk array frame, 96 disk drives, 4,530GB raw capacity using 47GB hard disk drives.
† Extended Serial Adapters are compatible with ESCON protocol.

Hitachi Freedom Storage™
Lightning 9900™

Taking the New Economy by Storm

HITACHI
DATA SYSTEMS

Hitachi Data Systems—Built for fast times™

Lightning 9900—
The first of a new generation
of intelligent storage systems
designed for

E-business

The competition is only a click
away. Keep your customers with:
- 24x7 availability
- Industry-leading performance
  driven by a switched fabric
  architecture
- Non-disruptive scalability
  to over 37TB
- Concurrent UNIX®, Microsoft®
  Windows NT®/2000, Linux®,
  Novell® NetWare® and S/390®
  connectivity
- The highest ranked service
  for over a decade.

Business Intelligence

Get to know your customers with:
- Instant, point-in-time copies
- Real-time analysis
  of customer behavior
- Power to resolve complex
  queries
- Non-disruptive scalability
  to over 37TB
- No impact on production
  systems.

Business Continuity

You can recover quickly
from disasters, thanks to:
- Copy-based, disaster-tolerant
  solutions
- Off-site redundancy
  with complete data integrity
- "MIP-less" any-to-any
  copies—anywhere, anytime
- Tapeless data vaulting
- User-defined point-in-time
  copies
- No impact to critical
  applications.

Industry-leading Performance

- High-speed switched
  fabric architecture
- 32 concurrent data transfers
- Fully addressable 32GB cache
- Optional FlashAccess™ locks
  LUNs or LVIs into cache
- Fast cache algorithms
- Flexible LUN support
- Self-tuning performance
  optimizer
- Separate, redundant data and
  command paths
- High-performance 10K RPM
  drives.

Extensive Connectivity

- Fibre Channel
- ESCON®
- Storage Area Network (SAN)

Instant Access to Data Around the Clock

- No single point of failure
- Highly resilient switched
  fabric architecture
- Redundant, hot-swappable
  components
- Global dynamic hot sparing
- Mirrored write cache with
  battery backup
- ECC memory
- Hi-Track® "call home"
  maintenance service
- Host failover and alternate
  path support
- Non-disruptive microcode
  upgrades
- RAID-1+ and RAID-5
  support
- Industry-leading point-in-time
  and remote copy software for
  data backup and rapid recovery
- Proven GDPS™ support
- Professional Services enable
  rapid deployment of multi-site,
  multi-platform High Availability
  solutions

CARE Software Solutions

Copy Suite

- Enables real-time data movement
  over virtually unlimited distances
- Provides continuous or
  point-in-time updates at a
  secondary site, local or remote
- Supports disaster recovery, on-
  line data migration, tapeless data
  vaulting, application testing, and
  data warehousing/data mining

Availability Suite

- Provides alternate path and
  clustering support
- Allows sophisticated and scalable
  backup/restore functions
- Ensures non-stop access
  to information

Resource Management Suite

- Provides event, performance, and
  configuration management
- Enables Freedom Storage
  management from any location

Exchange Suite

- Allows heterogeneous data
  sharing with high performance
  and high reliability
- Supports data exchange among
  UNIX, Windows NT and
  Windows 2000, Linux, and
  S/390 platforms
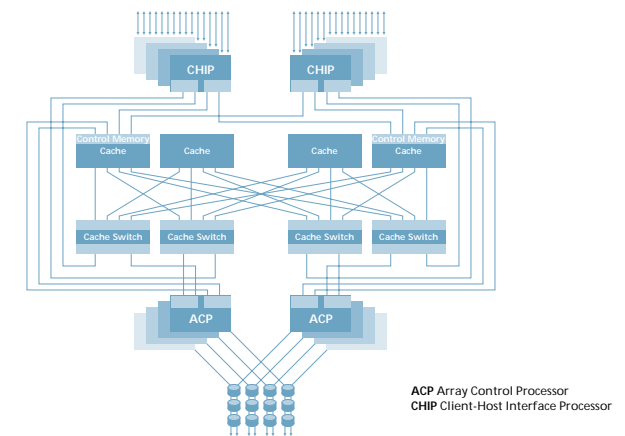
Major Platforms Supported

Open System

- SUN™ Solaris™
- Microsoft Windows NT
- Microsoft Windows 2000
- IBM® AIX®
- HP-UX®
- Sequent® DYNIX/ptx®
- SGI™ IRIX®
- Novell NetWare
- Compaq® Tru64™ UNIX
- Red Hat® Linux

Mainframe

- OS/390®
- MVS/ESA™
- MVS/XA™
- TPF/MPLF
- VM/ESA®
- VM/XA
- VM/HPO
- VSE/ESA™
- VSE/SP(4.1)

Hitachi Freedom Storage Lightning 9900
Hi-Star™ Architecture

ACP Array Control Processor
CHIP Client-Host Interface Processor

Storage—No Limits

In today's fast-paced e-world, access to any
data from any computer, anywhere, anytime
is vital to your enterprise's success. By capital-
izing on advances in storage area networks,
servers, storage systems, interconnection
devices, network protocols, and network con-
figurations, Hitachi Data Systems has created
a solutions-based architecture for realizing
our "Storage—No Limits" vision. We call this
architecture Hitachi Freedom Data Networks™,
because it gives you complete freedom of
choice in establishing the enterprise informa-
tion network that best fits your particular
environment.

The Hitachi Freedom Storage Lightning 9900
is the cornerstone of this architecture.