

Hitachi Freedom Storage™

Lightning 9900™ V Series

HITACHI
DATA SYSTEMS

The second generation:
Exploiting the power of intelligent storage to simplify management.

Introducing our second-generation intelligent storage systems with first-rate benefits: Simplified infrastructure and management. Protection for your critical information. Optimized resource utilization. A reduced total cost of ownership (TCO) and a more rapid return on investment (ROI).

The world's economy presents all of us with previously unimagined opportunities—and challenges. Both are often accompanied by an abundance of data—billions of transactions and enormous amounts of text, video, graphical, and audio data that are stored, accessed, and transferred every day, and growing rapidly. But the data itself is just the beginning. Exploiting data for a competitive advantage is what really matters.

Data. Collect, analyze, and transform it into information so that you can make knowledgeable business decisions at lightning speed. Use it to streamline business processes, to more accurately forecast inventory, to better service customers, and move products to market faster—that's when it becomes the enabler for success.

SIMPLIFY

Massive Consolidation, Flexibility, and Cost Savings

Traditional bus-based storage systems constrain capacity growth. As capacity is added, buses become a bottleneck, and performance degenerates. With the Hi-Star™ architecture and bandwidth-rich Lightning 9900 V Series storage systems, you can consolidate your current enterprise storage systems into one footprint while acquiring unmatched capacity and performance scalability. The savings are significant. You not only reduce your initial purchase costs, but you also lower your TCO over the lifetime of your system. By simplifying your information infrastructure and management efforts, you save on operating and resource expenditures.

Hi-Star Architecture Jumpstarts Your Competitive Performance

This massive consolidation is made possible by the latest version of our unique Hi-Star switched architecture, which powers the second-generation Lightning 9980V and Lightning 9970V systems. Hi-Star delivers *bottleneck-free performance in both systems, while allowing capacity in the Lightning 9980V model to increase at twice the bandwidth and twice the cache of the first-generation Lightning 9900 Series systems.* The Lightning 9900 V Series can support the information management demands of dynamic enterprises—no matter how big your data warehouse or how high your transaction rates.

The Lightning 9900 V Series supports both open systems and S/390® servers simultaneously in direct attached or networked configurations, allowing you to choose the optimal server for your applications.

Two Industry-best Storage Systems

The Lightning 9900 V Series is available in two models: the Lightning 9970V and the Lightning 9980V. The single-cabinet Lightning 9970V system is the best response to your storage requirements, featuring all the Lightning 9900 V Series architecture advantages and scalable up to 9TB of raw capacity. This highly cost-effective system is ideal for strategic deployment in a smaller footprint. It offers a scalable capacity designed to support specific mission-critical applications and consolidation, along with all the speed, reliability, and advanced software functions that only the Lightning 9900 V Series can provide. On the other hand, the performance and scalability of the multi-cabinet Lightning 9980V system enable you to consolidate vast amounts of storage across open systems and main-frame servers. You can replace your current enterprise storage systems with just one Lightning 9980V system, dramatically lowering your IT costs and extending your capital investment by consolidating storage resources and sharing information across disparate platforms.

Virtualization-enabled for Reduced Management Complexity

We anticipated your information management needs and industry trends with two enterprise-class, virtualization-enabled storage systems built specifically to support far-reaching business and IT objectives. The new Lightning 9900 V Series systems offer a *virtualization assist layer* to ease storage management and better utilize resources. Host Storage Domains allow host pooling at the Logical Unit level, optimizing connectivity and reducing network infrastructure. Priority Access guarantees that your most critical applications get the highest level of service, while Hitachi SANTinel™ assures authorized access.

This strategic combination—Host Storage Domains, Priority Access, and SANTinel—form the basis for a new virtualization assist layer within the Lightning 9900 V Series systems, clearing the way for simplified management and massive consolidation. The Lightning 9980V and Lightning 9970V systems are open to dynamic resource and performance management, truly massive consolidation, plus *compatibility with Hitachi and other vendor virtualization strategies.*

Manage It All with the HiCommand™ Management Framework

HiCommand™ software is the storage management framework that provides open and intuitive tools for streamlined storage management. Designed to fully meet stringent open standards, the HiCommand Management Framework allows storage administrators to manage, monitor, and tune vast numbers of disparate storage systems across the enterprise—via a single graphical user interface (GUI). This option for superb simplification and control applies easily to Lightning 9900 V and Lightning 9900 Series, Hitachi Freedom Storage™ Thunder 9200™, and Sun™ StorEdge™ storage systems. Through the industry-standard, open APIs supported by the HiCommand Management Framework, software modules from independent vendors can plug into the HiCommand Management Framework, enabling customers to choose the best management options for their environments.

HiCommand Management Framework :

- > Shortens the storage administration staff training ramp and enables faster response to change
- > Lowers your TCO by simplifying storage management, streamlining processes, and increasing productivity
- > Delivers real freedom of choice—the HiCommand Management Framework seamlessly integrates with a variety of independent software vendor products

Hitachi Freedom Storage™

Lightning 9900 V Series

Hitachi TrueNorth™

How do you manage and protect this valuable business asset while optimizing your resources? How do you ensure that it's available 24/7 even when it's quickly outstripping your infrastructure and your administrators' ability to keep up? Does your information infrastructure allow you to deploy new strategic applications easily?

Just adding more storage is not the answer. Now is the time to take a long-term look at your information infrastructure. You can start with a storage platform that combines power and intelligence to simplify, protect, and optimize—putting you in control, instead of at the mercy of a reluctant information infrastructure.

The second-generation Hitachi Freedom Storage™ Lightning 9900™ V Series is the foundation for Hitachi TrueNorth™ vision and strategic direction. Hitachi TrueNorth views the future storage infrastructure as a synergistic combination of comprehensive management software and powerful, intelligent storage systems. Together, they will deliver set-and-forget management, complemented by flexible capacity, performance, and connectivity.

The Lightning 9900 V Series, with built-in virtualization assist functions, is designed specifically to serve as the foundation for your information infrastructure. These unique systems are made for intelligent pooling of storage resources and breakthrough simplification of complex infrastructures. Their broad capabilities allow for massive consolidation, on-demand capacity, extreme bandwidth, and native connectivity/protocol options—while actually reducing your TCO and delivering a more rapid ROI.

PROTECT

Protect Your Business-critical Information

Fourth-generation, 100% Data Availability—Guaranteed

With no single point of failure, both second-generation Lightning 9900 V Series systems provide business continuity capabilities that ensure seamless backup and rapid recovery, while reducing management complexity and costs. The resilient internal switched-fabric architecture combined with redundant, online replaceable active components and mirrored cache set the stage for non-disruptive service and 24/7/forever data protection. Building on this solid platform, our unique advanced copy software tools—Hitachi TrueCopy, Hitachi ShadowImage™, and NanoCopy™—plus proven support for GDPS™, further ensure that your Lightning 9900 V Series system will keep your business running. Bottom line—we are so confident about the reliability of the Lightning 9900 V Series systems that we actually put our money on it.

Data Protection Services for Special Projects, Including Migration and Massive Consolidation

Our Data Protection Services team is trained in architectural analysis, configuration planning, and enterprise assessment. We work with structured methodologies that promote consistent results. Our industry-leading software—Hitachi TrueCopy and ShadowImage, based on high-performance Lightning 9900 V Series platforms—allows us to implement essential copy solutions. We perform data relocation and migration tasks for massive consolidation projects. And we establish rock-solid backup and disaster recovery copy facilities that will keep your business up and running. By supporting your special project activities, we help you quickly address these storage management challenges while preserving critical business continuity.

OPTIMIZE

Optimize Resource Utilization

Maintain Your Competitive Edge with Powerful Software to Automate High Performance

Adapt—or else. These days, it's particularly important to anticipate surges in customer requests and to adjust to sudden increases in user demand. Supported by the bottleneck-free architecture of the Lightning 9900 V Series, Hitachi CruiseControl™ provides automatic self-tuning, eliminates “hot spots” through load balancing, and maintains predetermined performance levels. Hitachi FlashAccess™ brings lightning-fast speed to the Lightning 9900 V Series systems by “locking” (and unlocking) data into cache in real time with read and write functions performed at cache speeds without disk access delays. Hitachi Dynamic Link Manager™ takes high performance out to the paths by providing dynamic load balancing. These, coupled with the virtualization assist layer of the Lightning 9900 V Series systems, ensure maintenance-free performance for seamless scalability.

With the addition of Sun StorEdge Resource Management Suite software, you can also access centralized control, reporting, and analysis for storage management across the enterprise. The Sun StorEdge Suite automates the discovery, monitoring, alerting, collecting, and reporting of hundreds of key storage statistics. Reports include information on distributed logical resources, such as file systems and directories, and physical resources, such as disks, SAN interconnects, and computers within open systems environments. With this information, you can optimize storage utilization and better manage capacity upgrades, saving money in the process.



Absolutely Bottleneck-free: the Experience Your Customers Demand

Customers, partners, and employees have learned to expect instantaneous information access. With the Lightning 9900 V Series systems, you can give them what they want as you increase productivity, shorten time to market, and mitigate risk. The Lightning 9900 V Series systems, powered by the revolutionary Hi-Star architecture, are the world's first truly bottleneck-free carrier-class storage systems that support a “no wait” experience.

Our second-generation Hi-Star architecture lets you scale infinitely—without slowing down. As the need for capacity increases, both Lightning 9900 V Series systems leverage your initial investment and scale up seamlessly without disrupting mission-critical business applications. Capitalizing on the original Lightning 9900 Series design for exceptional speed, the Lightning 9900 V Series incorporates Hi-Star internal switched-fabric architecture to let you add capacity without affecting performance. This means faster information access and faster conversion of information to knowledge that you can act on. And, more time for you to make decisions.

Cost of Risk and ROI Analysis: the Reality Check Managers Appreciate

Our Professional Services consultants can work with your business continuity planners to fully exploit the capabilities of the Lightning 9980V and Lightning 9970V storage systems. Our Cost of Risk Analysis and ROI methodology can help to identify the cost, benefit, ROI, and TCO in your information technology infrastructure. This allows you to reduce outage windows and their impact on your business, while you fine-tune your operations strategy. Our recommendations are aligned with your business objectives and presented in terms that you can take to your executive team.

Experience a unique peace of mind with Hitachi Data Systems at your side. After installing your Lightning 9900 V Series system, we monitor it from our support center and handle routine system maintenance to keep it running at maximum efficiency. And you will continue to have rapid access to our time-honored service and support team throughout the life of your Hitachi Freedom Storage investment.

Future Proof: Ready for SAN, NAS, ESCON®, and FICON™

These days, a number of storage network protocols and connectivity methods are available to match application requirements. Whether Fibre Channel SANs, or gigabit Ethernet NAS for open systems and SAN interconnect, or ESCON and FICON for z/OS™ and S/390 mainframes, the Lightning 9980V will support them all natively.

Backed by the Hi-Star architecture, end-to-end Fibre, and high-performance disks, the second-generation Lightning 9900 V Series systems will be able to easily handle simultaneous information access through multiple protocols and connections.



TRANSFORM

Superlative Service and Support—Ranked Number One

When you partner with Hitachi Data Systems, we're with you every step of the way. Our service and support teams provide expert consultation—backed by comprehensive assessment, planning, and implementation services—to help you develop your enterprise information strategies and deploy your systems. In fact, respondents to a recent survey by FIND/SVP placed Hitachi Data Systems *number one in overall service and support as well as technical performance.*

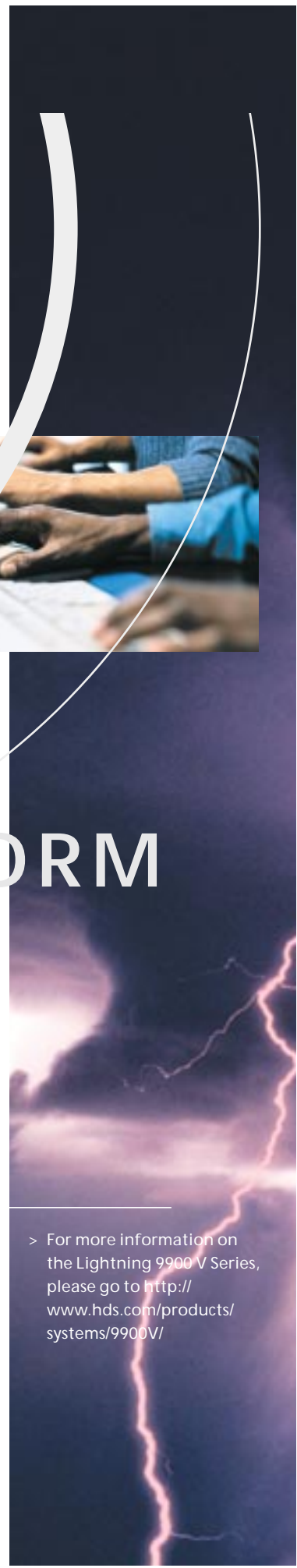
Hitachi TrueNorth™—the Direction You Can Trust

Information and knowledge are fundamental determinants for success in the global economy. Thus, the standards for storage infrastructure availability, performance, scalability, and manageability continue to rise. Hitachi TrueNorth™ is our response to the ensuing demand, allowing you to simplify, protect, and optimize your information infrastructure, reducing total cost of ownership and ensuring a more rapid return on investment.

The Hitachi TrueNorth vision and strategic direction, along with an associated product road map, anticipate customer needs. We view the future storage infrastructure as a synergistic combination of management software and powerful, intelligent storage systems that will deliver set-and-forget management, complemented by flexible capacity, performance, and connectivity.

Prepare for the future with Hitachi. As we move forward, we offer you an open and collaborative storage management framework, policy-based automation tools, virtualization capabilities, and the world's finest storage systems.

> For more information on the Lightning 9900 V Series, please go to <http://www.hds.com/products/systems/9900V/>



Unylogix Technologies Inc

Tel: (514) 253-5200

email: info@unylogix.com web: www.unylogix.com

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