

# SFA14KX / SFA14KXE

High Performance Block Storage (SFA14KX) with Embedded Application Option (SFA14KXE)

## GAME CHANGING NEXT-GENERATION STORAGE FOR DATA INTENSIVE ENVIRONMENTS

At 6 million IOPs and 60GB/sec from a single 4U appliance, the SFA14KX<sup>®</sup> is the fastest storage solution in the industry today, and is able to drive an unmatched number of SSDs and spinning drives in the least amount of space, making it also the most dense storage solution on the market. This extreme level of density makes the SFA14KX ideal for data centers with limited space, or any high-performance environment wanting to be able to expand capacity without adding the complexity of many appliances to manage and the cost of powering and cooling a large number of controllers.

### DATA GROWTH IS A CHALLENGE AND A STRATEGIC OPPORTUNITY

The data intensive Enterprise and HPC communities recognize that one of the biggest challenges we face is the ability to manage and take advantage of huge data growth. Compute performance grows at a much faster rate than storage media performance, and data is growing faster than compute, so it is no surprise that the majority of users agree that performance is the number one storage and Big Data challenge, and that storage has become the most strategic part of the high performance data center.

### FASTER DRIVES AND INTERCONNECTS ALONE DO NOT SOLVE THE PROBLEM

There are several technologies that will each help in at least one dimension of the problem: access, performance or growth. New flash products raise the performance of an individual drive. Private, public and hybrid cloud can give some cost and capacity relief to certain classes of data. Higher performance networks will drive data into and out of compute faster. New technologies like burst buffers will speed applications. But each of these alleviates only one part of the problem.

## REVOLUTIONARY HYPER-CONVERGED PLATFORM ACCELERATES AND BALANCES NEW TECHNOLOGY

The revolutionary DDN SFA14KX is the highest performance block storage and hyper-converged platform in the industry today with an architecture that harnesses the power of the latest technologies, accelerates them with DDN high-performance software features and balances them to deliver the fastest performance with the lowest latency.



### SFA14KX

By Far the Industry's Fastest and Most Scalable Storage Solution

## HIGHEST PERFORMANCE

**World's fastest hyper-converged architecture** – Delivers more than 6 million IOPS, 60GB/s in 4U

**One platform for both Flash and spinning media** – Serves small file and high throughput; no need to buy flash arrays to front your spinning disk

**Highly Optimized Internal PCIe fabric and 12Gb back-end SAS fabrics** – ensure fast, low latency data access

**The Latest Networking Connectivity Options** - InfiniBand, Omni-Path, FC, Ethernet for current environment support and futureproofing

**Embedded Applications** – Unique embedded applications for ease of management and lower latency

## HIGHEST DENSITY

**Unprecedented Density per U, per System and Per Rack** – >9PB in a single rack

## GREATEST PROTECTION

**Delivers superior rebuild times, and higher data availability and protection** for new large format drives with scalable declustered RAID.

## SIMPLEST AT SCALE

**Converged hardware significantly reduces costs and complexity** –

Lower number of ports, cables and network devices lowers acquisition, and administrative costs by up to 70%

**Industry's largest building blocks scale up or out** – start small and scale up or out with your choice of building block

## DECLUSTERED RAID

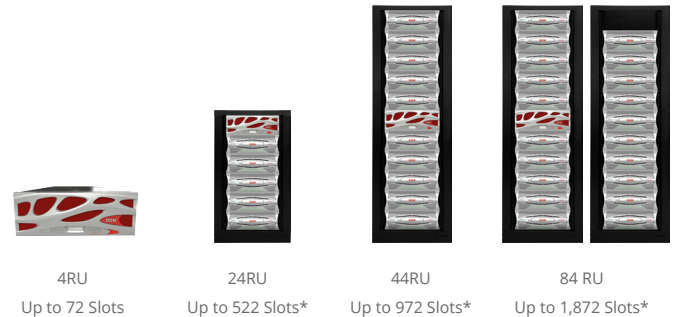
As disk and solid state drive densities continue to grow, limitations in the flexibility of traditional RAID configurations become apparent. Constantly increasing drives sizes mean that drive rebuild times are increasing as well, and since traditional RAID is fixed to a certain limited number of drives users are encountering long drive rebuild times due to a small number of drive devices writing to a single spare drive. SFA Declustered RAID (DCR) significantly improves rebuild performance. DCR allows for the striping of data across a much larger set of physical disks than was previously available in traditional RAID and greatly increasing the parallelism of drive rebuilds. It is these parallel rebuilds that enable rebuilds to run much faster than traditional RAID. In addition to decreasing rebuild times, DCR can also result in increased storage efficiency and higher IOPs performance.

## SFA14KX/SFA14KXE CONFIGURATIONS START SMALL AND SCALE ON DEMAND

SFA14KX building blocks start in the 100s of TB and scale to over 17PB. Select the building block size best suits your requirements profile across IOPs, streaming bandwidth, capacity and number of devices under management.

The extreme performance and capacity one SFA14KX can drive means a lower overall controller : drive ratio in your data center – significantly reducing the cost/TB of powering and cooling your data storage.

A smaller number of controllers needed also means fewer devices to manage which reduces administrative cost and complexity.



### TECHNICAL SPECIFICATIONS

#### SFA14KX

#### SFA14KXE

##### SYSTEM FEATURES

Active-Active Storage Controller in Single 4RU enclosure; Supported Drives: Up to 1,872\*; Max Capacity: drive and enclosure dependent (currently 21.7PB); 2 Compute Controllers: 4 x 18-core Intel CPUs, 512GB DDR4 memory; 72 x 12Gb/s SAS 2.5" slots; 4 x 480GB SSD System Drives; 4 x 480GB SSD Virtual Machine Drives (SFA14KXE); Redundant Power

##### HOST, STORAGE FABRIC AND NETWORK PORTS

12x InfiniBand™ EDR/FDR; 24x Fibre Channel (FC16) Ports

8x InfiniBand™ EDR/FDR/Ethernet, 40/100GbE Ethernet, 4x on Intel® Omni-Path

##### SYSTEM FABRIC AND EXPANSION PORTS

24x SAS 12Gb/s (4 Lane Mini-SAS HD)

##### SOFTWARE FEATURES

SFX®, LUN Mapping and Masking, Intelligent Write Striping, Read QoS, Port Zoning Detection, Data-At-Rest Encryption, DirectProtect Data Integrity Check/Correction, Python Space API, CLUI and Web GUI, SNMP Notification

##### DRIVE ENCLOSURE MODELS

SS8462: 4U, 84 Drive Enclosure  
SS9012: 4U, 90 Drive Enclosure

##### SUPPORTED RAID LEVELS AND DCR CONFIGURATIONS

RAID 6: 8+2, 4+2; RAID 5: 8+1, 4+1; RAID 1: 1+1

\* Using SS9012 Enclosures

**FOR MORE INFORMATION VISIT:** [ddn.com/products/converged-storage-platform-sfa14kx/](http://ddn.com/products/converged-storage-platform-sfa14kx/)

## ABOUT DDN®

DataDirect Networks (DDN) is the world's leading big data storage supplier to data-intensive, global organizations. For 20 years, DDN has designed, developed, deployed and optimized systems, software and solutions that enable enterprises, service providers, universities and government agencies to generate more value and to accelerate time to insight from their data and information, on premise and in the cloud. Organizations leverage the power of DDN technology and the deep technical expertise of its team to capture, store, process, analyze, collaborate and distribute data, information and content at largest scale in the most efficient, reliable and cost effective manner. DDN customers include many of the world's leading financial services firms and banks, healthcare and life science organizations, manufacturing and energy companies, government and research facilities, and web and cloud service providers. For more information, visit our website [www.ddn.com](http://www.ddn.com) or call 1-800-837-2298.