





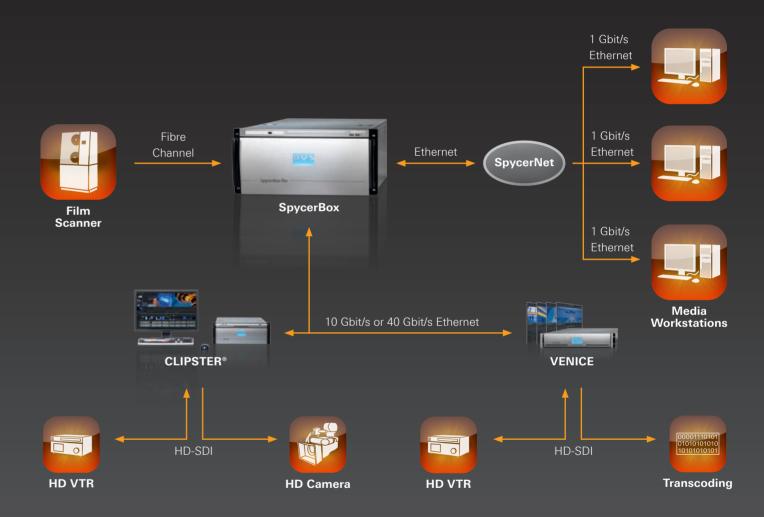
SPYCERBOX THE PERFECT HUB FOR YOUR MEDIA

- Use SpycerBox as a fast and reliable online or near-line storage
- Multiple interface options are available to integrate SpycerBox in any environment
- Excellent performance in heterogeneous networks with Windows®, Mac OS®, and Linux® clients
- Combine multiple SpycerBoxes to create a dynamic media storage infrastructure
- Up to 72 TB of storage with RAID-5 protection in one SpycerBox

- Automated proxy clip generation for almost any content
- · Benefit from DVS's high-speed copying
- Optimize and de-scatter image sequences for drop-free playout
- Automatically generate backups or archives with the built-in schedule manager
- Utilize the feature-rich Spycer® data management software

NAS SOLUTION

Looking for an effective, reliable and reasonably priced NAS solution? even the most demanding tasks; Store uncompressed image mate-Meet SpycerBox, which offers up to 72 TB of storage in a single rial at film resolution, provide high-resolution clips to editing suites, unit. Integrate SpycerBox as a versatile and scalable NAS solution and supply compressed proxy clips from transcoding engines. into any network and benefit from its large capacity and RAID-5 Benefit from the wide variety of connectivity options and utilize the protection. SpycerBox is equipped with enough bandwidth to fulfill SpycerBox as a dependable NAS bridge to your existing SAN.



BENEFITS

- NAS component with up to 72 TB of storage with RAID-5 protection
- In a NAS environment, SpycerBox NAS acts as a high-performance bridge between different networks
- Use SpycerBox as a fast and reliable file server
- Comprehensive content control with Spycer® software
- Copy data at high speed with Spycer[®] software and SpycerLink connections
- Automatically generate backups with the built-in scheduler
- Use the complete feature set of the Spycer® data management software with support of new codecs typically used in broadcast environments and even RAW files

SPYCERBOX THE PERFECT HUB FOR YOUR MEDIA



SAN SOLUTION

Looking for a cost-effective and straightforward SAN solution? The • SAN storage, metadata server, and file server all in one SpycerBox "SAN in a box" is a comprehensive SAN solution with extremely fast block level access to the SAN volumes. User data • SNFS clients have block level access to the storage storage, metadata storage, metadata server and file server are via multi-port Fibre Channel seamlessly incorporated into a single 5U chassis. Choose between • Connects real-time and near-line workflows with each other Fibre Channel and Ethernet options. Use SpycerBox to copy data at • Comprehensive content control with Spycer® software maximum speeds. The integrated defragmentation tool optimizes • Supports Final Cut Pro® clients with Xsan® software playout.

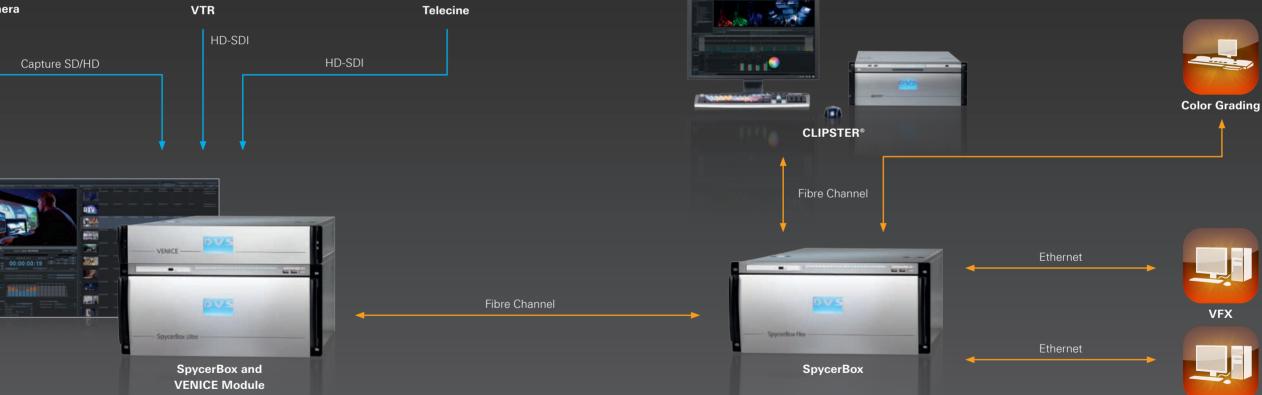
BENEFITS

SPYCERBOX AS A TIERED STORAGE SOLUTION

Design a completely new, highly customized workflow with the high bandwidth to enable real-time applications, while the SATA SpycerBox as a SAN solution. The cluster - consisting of at least model offers high capacity. Combine the two models to confidently two SpycerBox systems – is readily scalable with additional cluster satisfy all of your VFX, editing and versioning needs. nodes. Two or more SpycerBox systems connected via Fibre Channel

Looking for a storage solution that easily grows with your needs? network provide ultra-fast file transfers. The SAS model provides





SPYCERBOX AND VENICE TEAM UP

or uncompressed formats over 2 HD-SDI/SDI channels. Video can storage. be captured into XDCAM®, DVCPRO®, DNxHD®, AVC-Ultra or other

Do you digitize lots of HD-SDI or SDI signals directly into data to typically used compressed formats. Offering ingest, playout and provide content for NLE systems? Now, VENICE is capable of part- transcoding modes, the VENICE module can also be controlled nering with SpycerBox as a directly connected module. The VENICE from applications via RS-422, VDCP or SOAP. This state-of-the-art module enables capture or playout of video content in compressed collaboration yields a two-channel video server with up to 72 TB of









FEATURES

- Local and SpycerNet browsing/searching
- Automated metadata extraction from SpycerBox content
- Remote control Spycer® on SpycerBox via SpycerNet
- Remote control other Spycer® applications via SpycerNet
- Renaming of image sequences on SpycerBox
- Editing of metadata and DPX header information on SpycerBox content
- DVS's high-speed copying
- Built-in defragmenter and de-scatterer for file sequences on SpycerBox
- Search function with various metadata parameters (e.g. keycode)
- Generation of preview proxy clips
- Integrated media player
- Peer-to-peer copying via SpycerNet
- File format converter
- Job scheduler for timed tasks

CONNECTIVITY OPTIONS

DVS offers a plethora of connection options for SpycerBox:

- Gigabit quad-port interface, which complements
- Fibre Channel quad-port 8 Gbit/s interface
- 10 or 40 Gbit Ethernet (single- or dual-port) interface. Ideal when using powerful switches or high-speed point-to-point connection
- eSATA
- FireWire®
- USB 2.0 or USB 3.0

SPECIFICATIONS

- 19" chassis 5U server
- Two high-performance multi-core processors
- Internal RAID-5 storage with capacities up to 72 TB per single unit
- Linux® operating system
- Easy-to-use GUI
- Remote access capability with Spycer®
- Hardware-based KVM (Keyboard Video Mouse) over dedicated Ethernet
- Comprehensive SNMP (Simple Network Management Protocol) monitoring capabilities

DVS-SAN THE TAILORED STORAGE SOLUTION



"We opted for the DVS solution because it delivers excellent performance in a customized, vendor-independent workflow. DVS has been a supportive and competent partner right from the outset. The service capability of DVS was a key factor in our decision-making. As a result, we have been able to launch a completely new era of post production at Cinecittà."

Fabio Filoni, Head of Digital Services Cinecittà Digital Factory



DVS-SAN

THE TAILORED STORAGE SOLUTION

CG data. The innovative Spycer® data manager helps you organize flow needs. and move large volumes of data with ease.

CUSTOMIZED AND MODULAR

The DVS-SAN is the ultimate high-end storage solution for post As the need for storage increases over time, DVS's custom storage production workflows. Post production facilities generate enormous solutions are designed to scale to your requirements. DVS offers amounts of data daily, with hundreds of terabytes and even peta- powerful entry level, mid-size and enterprise class storage solutions bytes being stored. The DVS-SAN handles hundreds of connected to meet a wide variety of requirements, while providing the moduclients effortlessly, and can provide data to a wide variety of pro- larity to adapt to each and every infrastructure present. Benefit cessing systems within the infrastructure. Use the DVS-SAN as a from our years of SAN expertise and let us help you configure a reliable, extremely fast storage system for your critical film, video, and cutting-edge storage system specifically tailored to your work-







YEARS OF SAN EXPERTISE

Digital film and video post production and broadcasting present different requirements for storage than general use in the IT industry. DVS has years of experience handling both uncompressed and compressed high-resolution video material. DVS-SANs are high-performance storage solutions that exceed the demanding requirements of today's media industry workflows, and are designed to meet future challenges head-on. Future-proof, the DVS-SAN provides a long-term solution for your unique requirements.

DATA RATES AND FORMATS

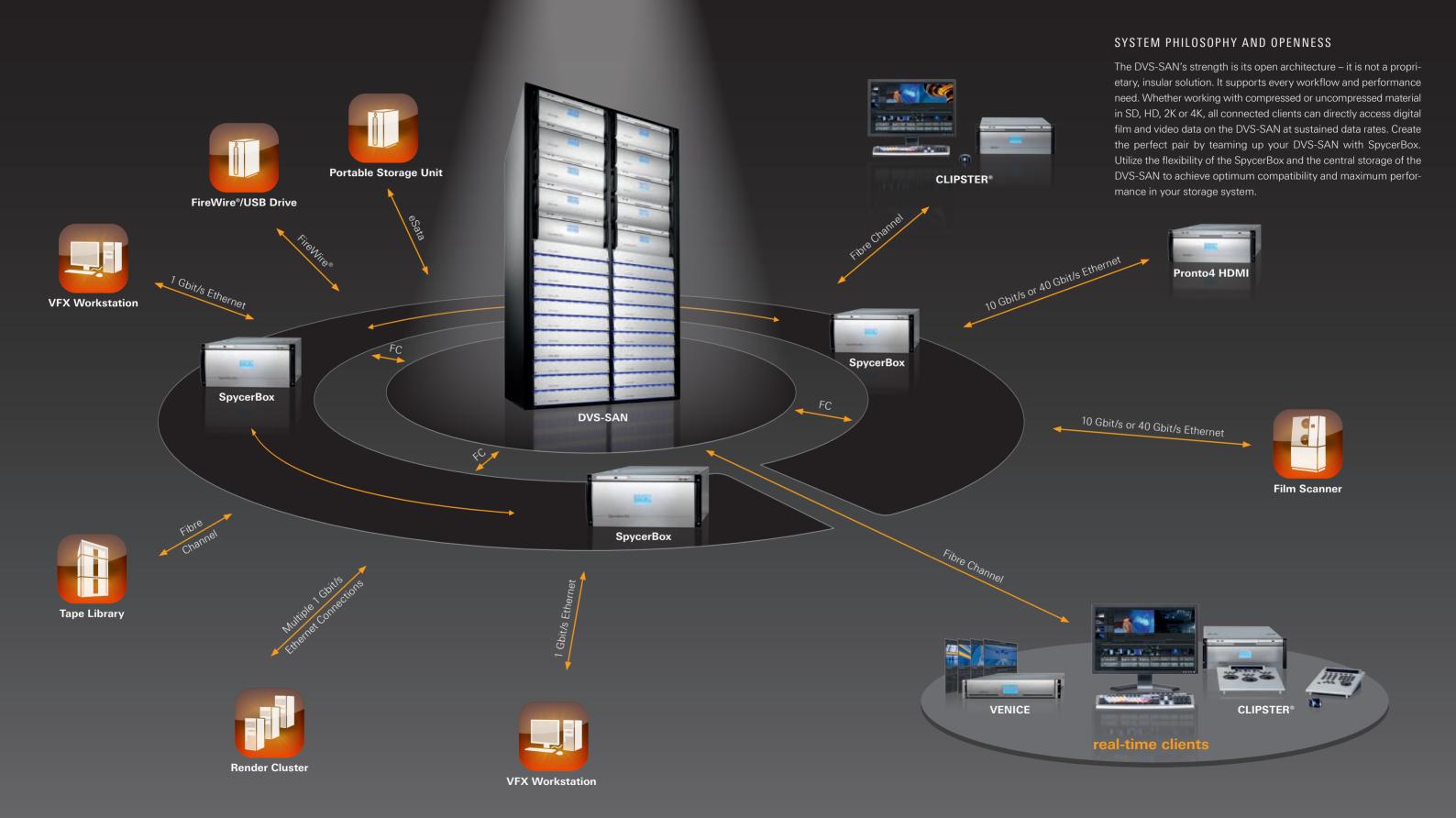
No matter which format, the DVS-SAN can handle it: DPX, TIFF, Cineon®, QuickTime®, JP2, JPC, MXF, MPEG-1, MPEG-2, MPEG-4, R3D, WAV, etc. The DVS-SAN supports a wide variety of data rates: Work in real time with several uncompressed 4K streams in 10/12/16 bit parallel RGB 4:4:4 in levels scalable from 600 MB/s to 10 GB/s. The DVS-SAN's modular architecture enables the addition of storage clusters to yield even higher data rates and a larger number of parallel video streams. Our storage systems are built to sustain these data rates continuously, not just in short peaks.

| | | Frame Rate | Color | | Data Rate | Size GB* | Size GB* | |
|----|-----------|------------|-----------|--------------|-----------|------------|-------------|--------------|
| | | (fps) | Mode | Quantization | MB/s | for 90 min | for 120 min | |
| SD | 720x486 | 30 | RGB 4:4:4 | 10 bit | 42 | 227 | 302 | |
| | 720x576 | 25 | RGB 4:4:4 | 10 bit | 42 | 227 | 302 | |
| | | | | | | | | |
| HD | 1920x1080 | 24 | RGB 4:4:4 | 10 bit | 199 | 1075 | 1433 | |
| | 1920x1080 | 25 | RGB 4:4:4 | 10 bit | 207 | 1118 | 1490 | |
| | 1920×1080 | 25 | YUV 4:2:2 | 10 bit | 138 | 745 | 994 | |
| | 1920×1080 | 30 | RGB 4:4:4 | 10 bit | 249 | 1345 | 1793 | |
| | 1920×1080 | 30 | YUV 4:2:2 | 10 bit | 166 | 896 | 1195 | |
| | | | | | | | | |
| 2K | 2048×1080 | 24 | RGB 4:4:4 | 10 bit | 212 | 1145 | 1526 | |
| | 2048×1080 | 48 | RGB 4:4:4 | 10 bit | 425 | 2295 | 3060 | Stereoscopic |
| | 2048×1080 | 48 | YUV 4:2:2 | 10 bit | 283 | 1528 | 2038 | Stereoscopic |
| | 2048x1080 | 24 | RGB 4:4:4 | 16 bit | 319 | 1723 | 2297 | DCDM |
| | 2048x1556 | 24 | RGB 4:4:4 | 10 bit | 306 | 1652 | 2203 | |
| | | | | | | | | |
| 4K | 4096x2160 | 24 | RGB 4:4:4 | 10 bit | 850 | 4590 | 6120 | |
| | 4096x3112 | 24 | RGB 4:4:4 | 10 bit | 1224 | 6610 | 8813 | |

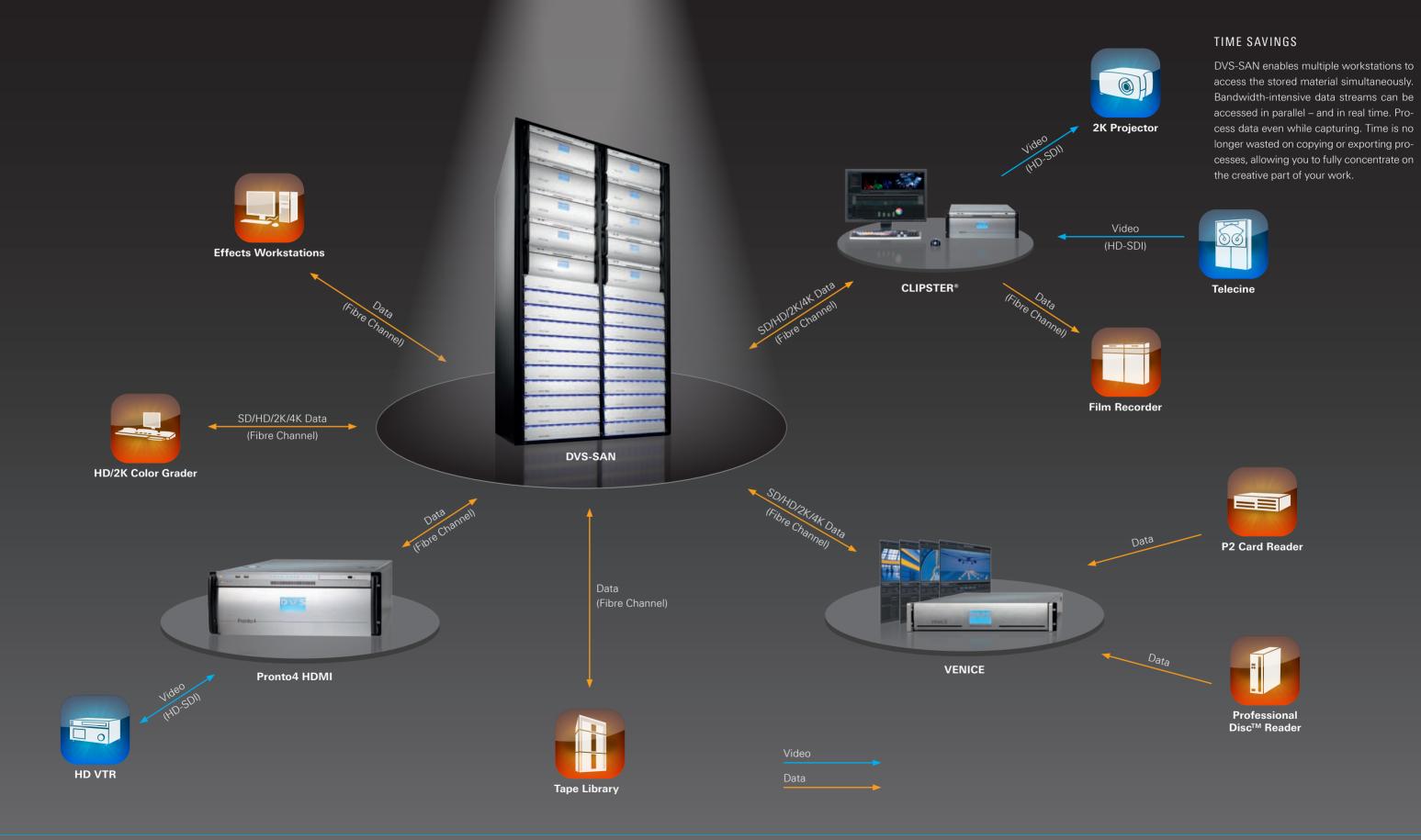
Results based on DPX, RGB 4:4:4, 10 bit, except as noted otherwise.

* 1 GB = 10⁹ Byt









DVS-SAN THE TAILORED STORAGE SOLUTION



HIGH AVAILABILTY WITH STORAGE SYNCHRONIZATION

With its 24/7 high availability option, SpycerBox ensures uninterbox at any given time. Benefit from instant failover in mission-critical rupted operation offering extreme reliability through its failover workflows, specifically suited for 24/7 broadcast. Other fields of functionality. SpycerBox's operational infrastructure eliminates single point-of-failure by safeguarding fault tolerance and granting synchronous/asynchronous data replicas. Even WAN-connectivity continuous operation. This also makes SpycerBox the ideal solution is possible. SpycerBox provides an integrated solution that is easy to be included by companies into their disaster-recovery strategies to manage, easy to maintain, and robust enough to act as the core to ensure business continuity. Low latency instant synchronization of your workflow. ensures that the data is identical on both primary and secondary

VENICE

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application include archive environments at multiple locations or

VENICE

Synchronization High-speed link SpycerBox **SpycerBox GigE Switch** Fibre Channel Automation System

SUPPORT

We not only provide your team with comprehensive support during the planning and installation phases, but we also make sure that your DVS-SAN continues to perform training personnel and highly qualified support engineering team ensure the maximum performance of DVS-SAN systems worldthat is best for your environment, from week coverage. DVS service also includes management tools integrate seamlessly resort to command-line tools. with your existing monitoring systems.

SPYCER® CONTENT CONTROL

need to organize, edit, save, and manage storage solution that precisely fits your millions of frame sequences, projects, and metadata, turn to Spycer® for data manageoptimally after installation. Our certified ment. With Spycer's high-speed copying mance, since they are built to your specs. and defragmentation utility, developed Film studios and renowned post houses of all specifically for working with video, film, sizes in the US, Europe, Middle East and Asia and CG material, the DVS-SAN effortlessly wide. You can choose the support option exceeds industry-standard performance. Our advanced technology not only offers limits. In conjunction with Spycer®, the maximum data rates, but also integrates standard coverage during normal business DVS-SAN provides optimum use of equiphours to high-availability 24 hour/7 days a ment resources and presents an organized view of all storage contents and clients in advanced performance and remote diagnos- the SpycerNet. Access your DVS-SAN via tics tools as well as system monitoring. Our a user-friendly interface, without having to

MAXIMUM VALUE

When projects increase in size, and you DVS is available to help you to design a needs, today and in the future. DVS storage solutions maximize your workflow perfor-Pacific are full of praise for the DVS-SAN. seamlessly into existing workflows.



DVS-SAN THE TAILORED STORAGE SOLUTION



THREE-TIERED STORAGE: ONLINE, NEAR-LINE, OFFLINE

high-performance real-time solution for your production environment, archival.

MORE STORAGE, LESS SPACE

Is your server room too crowded? The DVS-SAN offers more storage capacity per unit space. Save 25% of valuable room space while growing your existing storage at the same time. The DVS-SAN is a Need to archive? Implement a tape library. The exchange between powerful solution providing enormous storage performance with- the DVS-SAN and your tape library provides you with an ideal storage out wasting space.

MORE POWER, LESS CONSUMPTION

The DVS-SAN guarantees the highest performance and a unique, The DVS-SAN is a highly flexible, tiered storage solution. Create a powerful workflow. In today's world of exploding energy costs, DVS takes a step forward from other storage providers. We have consida near-line storage for processed projects, and an offline library for erably decreased the power consumption of our leading storage system, saving you more than 30% on energy costs compared to similar storage systems. The DVS-SAN powers your workflow and reduces your energy costs.

TAPE LIBRARY

network, ranging from online and offline storage to tape archiving.



We offer the DVS-SAN as a three-tiered staging solution. The is available for processed projects. For completed projects, offline DVS-SAN excels as a highly flexible, high-performance online storage functions as a reliable library in your environment. storage system in your production environment. Near-line storage

KEY FEATURES

FEATURES

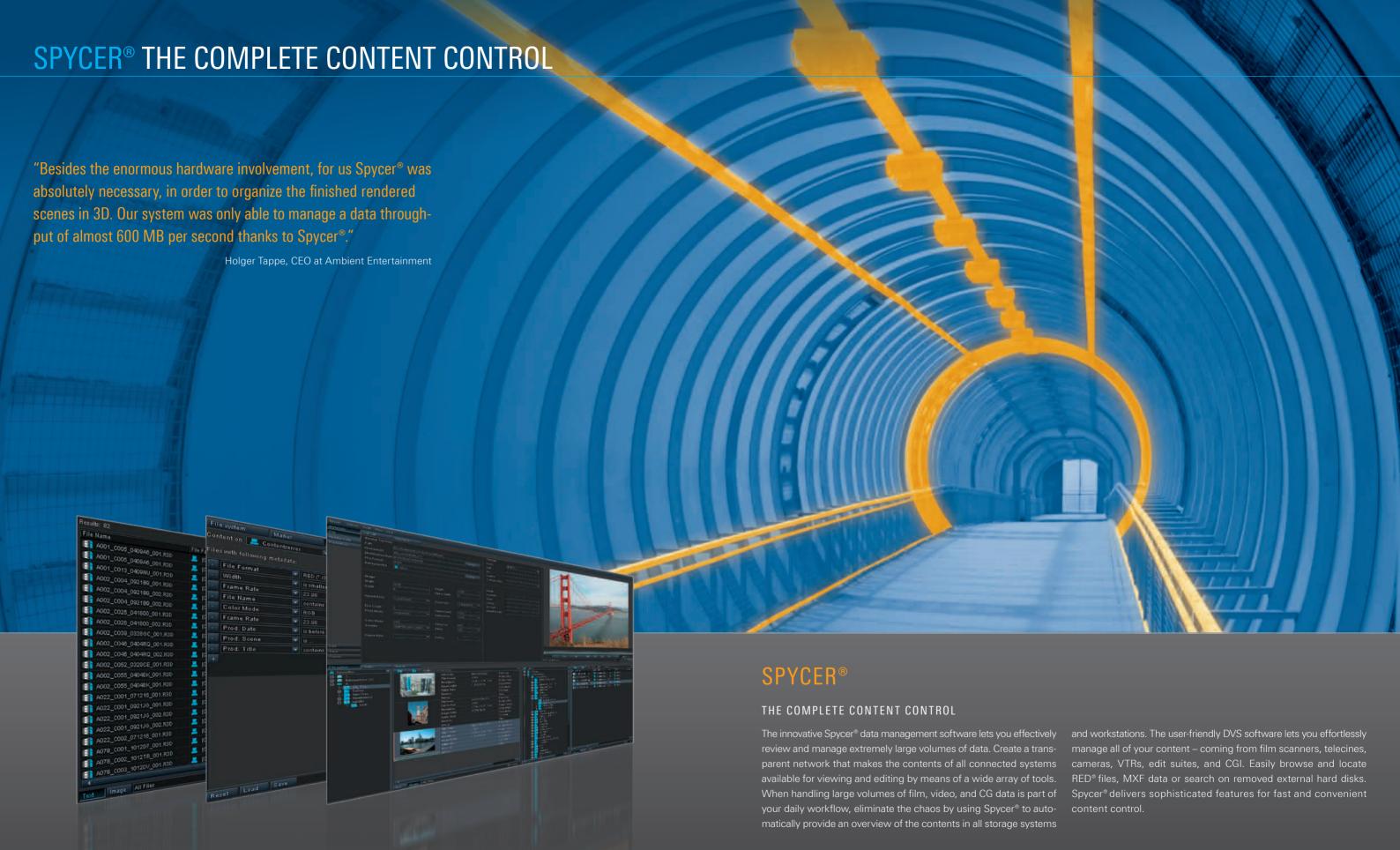
- Custom-tailored storage solution
- Spycer® for DVS-SAN provides optimum data management
- RAID-5 or RAID-6 for data protection
- Hot spare disks
- Redundant RAID controllers and power supplies
- Modular storage enclosures
- Easy to scale storage grows with your requirements
- Connectivity with Fibre Channel and Ethernet technology
- Ready for heterogeneous infrastructures
- Primary and secondary metadata servers with active failover for high-availability scenarios
- Replication and de-duplication
- DVS file servers for bridging to different topologies
- Durable 19" rack components
- Windows®, Linux®, IRIX®/Unix® and Mac OS® operating systems
- DVS installation ensures your equipment is running perfectly from day one
- Multiple support levels available, including high-availability 24/7 coverage

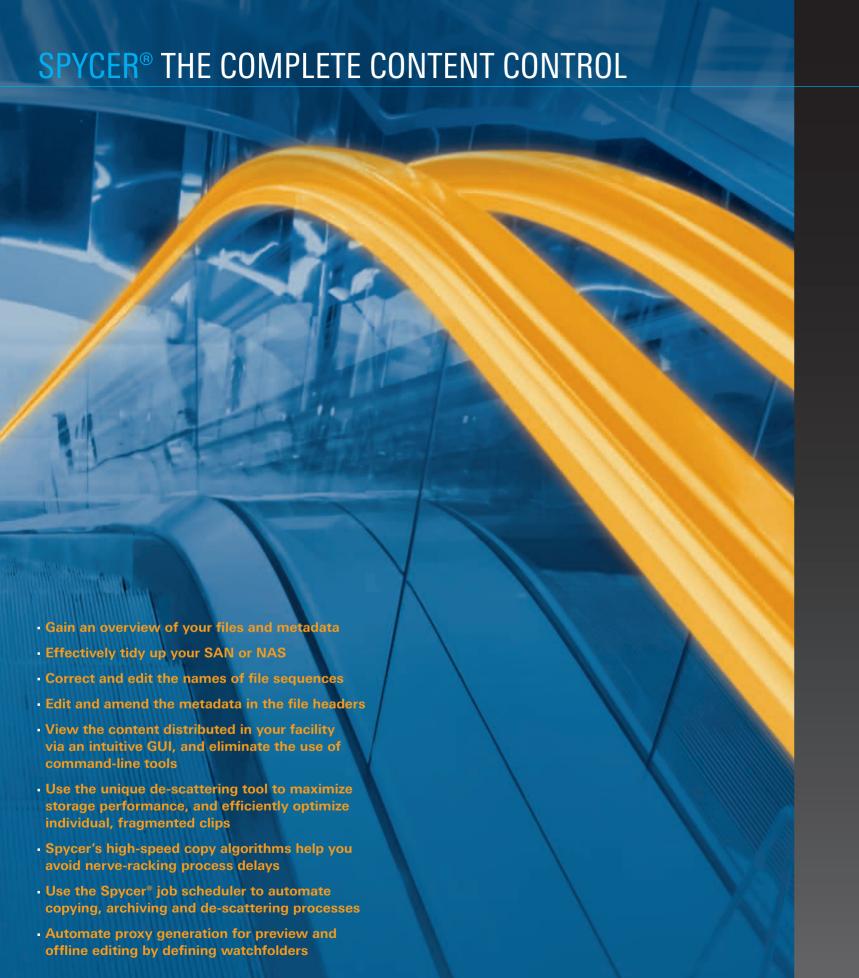
DATA RATES AND FORMATS

- Flawless hard real-time playback and recording of any media
- Guaranteed continuous data rates from 600 MB/s up to more
- From SD to 4K, from YUV 4:2:2 to RGB 4:4:4 to X'Y'Z' 4:4:4
- Video in 8/10/12/16 bit
- Video and audio data can be stored in any file format your application supports, e.g. DPX, TIFF, R3D, JP2, JPC, QuickTime®, WMV, MXF, AIFF, WAV and others

AREAS OF APPLICATION

- DI workflow in 2K, 4K
- SD. HD. 2K or 4K for post production
- SD and HD broadcast for the TV arena
- Archive workflows



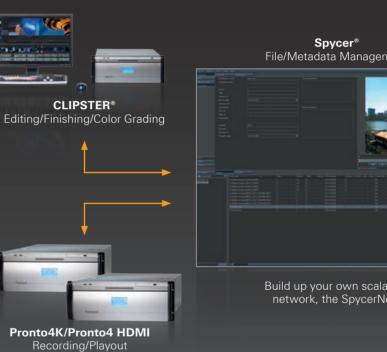




MANAGE AND DISTRIBUTE

Spycer® enables you to effortlessly manage Let Spycer® automatically convert highlarge data volumes and edit the metadata of individual files or entire image sequences. Edit or correct keycode entries in the DPX for viewing your hi-res data from anywhere in header, or modify timecode information in the network. Use the benefits of distributed a simple and straightforward way. In the processing, and conveniently access conbrowser, Spycer® bundles individual images tents in the entire SpycerNet from your into a clip, which may be converted to a single-file container format for easy viewing.

resolution clips in the background, and use them for offline editing, or as preview proxies computer.









SPYCERNET

Simply link up your PCs, workstations, and database to achieve this connectivity -

other insular storage devices into a single, simply integrate the data management softefficient network - the SpycerNet. This ware into your existing IT infrastructure. Each scalable network enables trouble-free Spycer® generates a database for the autobrowsing, viewing, editing, and sharing of matic entry of local storage contents. This film, video, and audio files. Spycer® does not information is available for access and editing require a central storage system or central from any workstation in the SpycerNet.



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SPYCER® THE COMPLETE CONTENT CONTROL



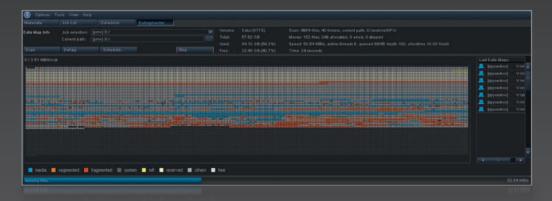
BROWSING AND VIEWING

Spycer® removes the uncertainty of finding data in complex networks. An extensive set of search parameters helps you find image data, video and audio clips, and metadata with confidence. Search external drives even when they are disconnected. The intelligent DVS data manager gives you a complete overview of all storage components in your SpycerNet. Spycer® supports multiple MXF variants typically used in broadcast workflows with codecs like DVCPRO®, XDCAM® and DNxHD®.

Spycer® even lets you process RAW files quickly and efficiently. DVS's data manager can easily find, view, convert, and edit data shot with e.g. RED®, ARRI, Sony, Phantom or the Silicon Imaging camera. Spycer® may also be used to visualize 3D LUTs, represented as a color cube in the media player. Gain a complete overview of your data while at the same time organizing your post production clips.

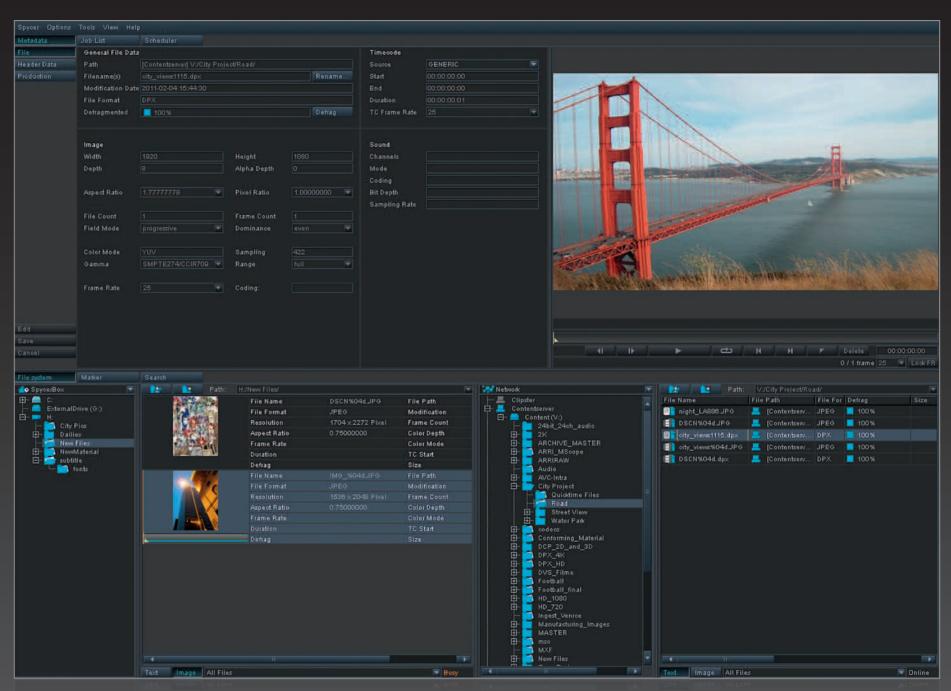
COPYING AND CHECKING

Quickly and safely copy data directly between the workstations connected to the SpycerNet with an easy-to-manage peer-to-peer system. Spycer's special algorithms speed up the copying process over Ethernet or 10GigE. Save precious time by using DVS's lightning fast high-speed copying. For drop-free playout of image sequences, the copying process retains the order of files in the storage device. Typically, post production environments include workstations with various operating systems. Since the Spycer® tools work independently of file-sharing mechanisms integrated in the operating systems, Spycer® provides trouble-free copying of data between workstations, regardless of platform type.



DEFRAGMENTATION AND DE-SCATTERING

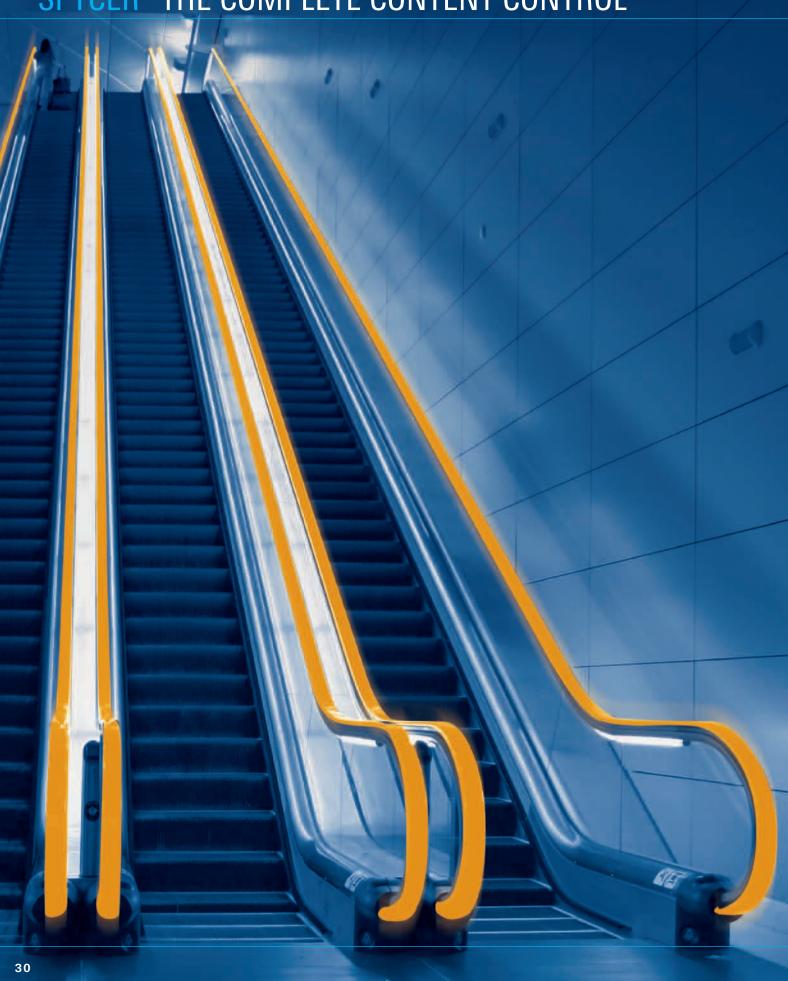
The Spycer® defragmentation tool is capable of processing not only individual files, but also entire image sequences. This method of defragmentation has been developed specifically for the needs of high-resolution image sequences, and allows the positioning of image sequences and clips in optimal locations on the storage system after defragmenting. Remote-controlled defragmentation and de-scattering are possible in the entire SpycerNet. Mephisto, the stand-alone defragmentation tool, automatically carries this out in the background of your DVS-SAN.



Browsing, viewing, copying, checking, defragmentation and de-scattering with Spycer®



Spycer® Spycer® Integrated Spycer® for



SPYCER® BASIC

Easy data searches are only a download This variant of Spycer® is integrated in the Implement Spycer® on your DVS-SAN to Linux[®], or Mac OS[®] platform.

SPYCER®

Use all Spycer® features for perfect content browsing, viewing and editing. Effortlessly handle extremely large data volumes with the award-winning data management software.

Overview of the software structure

INTEGRATED SPYCER®

entire family of DVS solutions.

SPYCER® FOR DVS-SAN

away. Download the Spycer® Basic version DVS software running on a DVS video effectively manage hundreds of terabytes free of charge to experience the basic func- system (e.g. CLIPSTER®). As the standard and even petabytes of stored data. Spycer® tions of the DVS software on a Windows[®], flavor of Spycer[®] it provides the complete for DVS-SAN supports the Quantum feature set and works seamlessly with the StorNext File System (SNFS) that is used with the DVS-SAN. Spycer® for DVS-SAN is also capable of defragmenting and de-scattering the SNFS file system.

Client **Client: File Server** Spycer® for DVS-SAN Spycer[®] user interface user interface DVS-SAN Client: CLIPSTER® Client Integrated Spycer® Spycer® user interface user interface

KEY FEATURES

Browsing local disks and the SpycerNet Searching local watch folders and the SpycerNet Controlling other Spycers remotely via SpycerNet Renaming feature for file sequences Renaming file sequences on the DVS-SAN Metadata and header editing Metadata and header editing on the DVS-SAN DVS's high-speed copying Defragmenting, de-scattering file sequences, drives and files Defragmenting and de-scattering DVS-SAN systems Automatic metadata generation for clips in watch folders Automatic metadata generation for clips in watch folders on the DVS-SAN Search function with several parameters Finding file sequences via keycode Support of more than 100 graphic formats 3D LUT and 1D LUT display as a color cube Generating preview proxies Integrated media player Direct copying via SpycerNet Simple file conversion Time-controlled job scheduler

- The freely scalable SpycerNet connects individual Visualization of 3D LUTs in a color cube workstations to build a distributed content control system • Job scheduler to automate copying, de-scattering
- High-speed copying processes for accelerated Ethernet or indexing and 10GigE copying
- Identical GUIs to simplify file sharing for Windows®, Linux® and Mac OS®
- Browsing and display of single-frame sequences (e.g. JPEG2000, DPX, TIFF, BMP, TGA, CIN, OpenEXR) with the built-in media player
- Browsing and display of container formats (e.g. QuickTime®, AVI, MXF, R3D) and more than 100 video and image formats

- Automatic metadata extraction for watch folder content
- Saveable searches with metadata parameters (keycode, timecode, resolution, comments, project names, etc.)
- Editing of file headers for correcting embedded metadata (timecode, creator, etc.) for single files or whole sequences
- Defragmentation and de-scattering of clips and image



SERVICE

TRAINING

Offering superior service for our entire product portfolio is integral to the DVS philosophy. The DVS support and service team is comprised of engineers who consider first-class, professional customer service their first priority.

DVS offers optimum support and service, with service packages tailored to clients' specific needs. Our service team can assist onsite or perform services quickly and reliably via remote control. DVS also has a service website, complete with detailed technical documentation to provide current updates, upgrades, and relevant information.

Our services reflect the quality of our products: Our clients benefit from individualized support and reliable service.

Our service team is available to you at service.dvs@rohde-schwarz.com

Learn in-depth about your new DVS product! With our comprehensive training program, we offer the opportunity to become completely at home with your DVS equipment. We're also happy to support you with the implementation and setup of your system.

The authorized DVS Education Center offers individual training programs onsite and is ready to assist you with relevant information on each workflow. We'd also be happy to welcome you at the DVS headquarters for a hands-on training session with your new equipment. You will receive concise training courses for various product updates, allowing you to immediately familiarize yourself with new developments.

Our friendly and professional training courses provide you with the detailed knowledge to make the most of your equipment.

Ask about our training packages at training.dvs@rohde-schwarz.com



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