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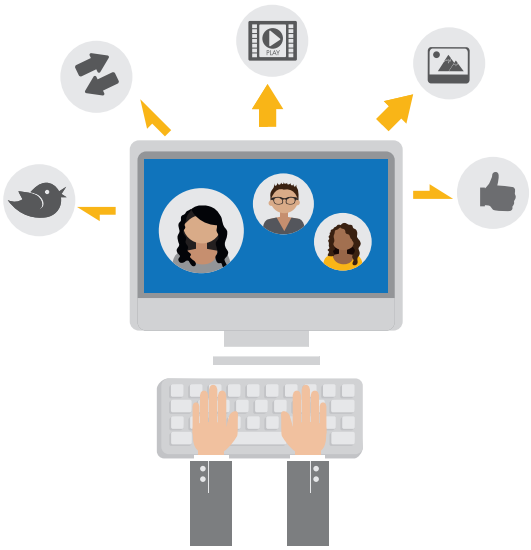
UNITY
HYPER-UNIFIED STORAGE

Your data storage demands are not only growing larger, they're getting more complicated too. You need file-based storage for documents, photos, videos, and other unstructured data – and you've also got to have block-based SAN storage for virtual machines, VDI, application servers, and databases. On top of that, users are now demanding mobile, remote, and offline access to all of this data, to make it easy to share among workgroups and geographically-distributed teams. And let's not forget – lots of organizations also need a hardened archive for long-term preservation of a big chunk of their critical corporate data. All while adhering to corporate compliance and security policies.

UNIFIED STORAGE PLUS…
FILE SYNC & SHARE, ARCHIVE, SECURITY & COMPLIANCE

(Rev. 11/22/16)



That's a tall order.

We all know that data is expanding like crazy; IDC says it's doubling every two years, and project it will top 44 Zettabytes by 2020. To keep up with this growth—while giving users fast and secure 24/7 access to information from anywhere in the world on any device—many organizations are putting their data in siloed storage, data management, file sync and share and security solutions.

And that's the problem: solutions that use separate and distinct silos are typically cobbled together in costly, inefficient and unreliable ways.

Nexsan has a better way. Nexsan Unity is a single solution that delivers against all of these requirements. It starts with unified storage offering both high performance block and file storage. But while most offerings stop there, Unity offers more. Enterprise class file sync & share that includes multi-site peer-to-peer replication at the file level for collaboration at LAN speed, as well as mobile access for the modern workforce. Next Unity adds a hardened archive designed to preserve the organization's long-term data safely and securely, all wrapped in adherence to corporate compliance directives. Bottom line: one solution solving multiple needs in a simple turnkey system.

SHARING AND COLLABORATING THE OLD-SCHOOL WAY

For decades the go-to sharing technology has been e-mail. You know the routine—drafts of documents are sent around via ad hoc sharing groups, until ultimately a final version is circulated. Even if the final document faithfully captures all the email input, the whole process takes up a lot of people's time and slows down your e-mail servers too; statistics show an average of 5,000 e-mail attachments per user per year clogging a typical system.**

EMAIL AND THE LARGE FILE PROBLEM

And the unsuitability of e-mail for collaboration and sharing has gotten even worse lately thanks to the rapidly-increasing file sizes created by the smartphone generation. An ordinary snapshot often runs 5MB today, and of course most people take a dozen or more photos in any setting. With e-mail limits commonly set to 10-20MB, attaching more than a few photos to an e-mail means most recipients simply won't get it. Video clips are even worse—just a brief clip can use hundreds of megabytes because today's smartphones default to 1080p or 4K resolution. So using e-mail for video is clearly not an option for most people.

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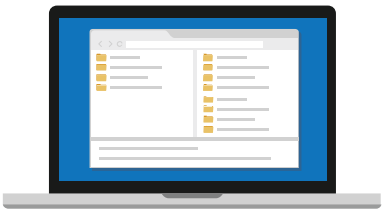

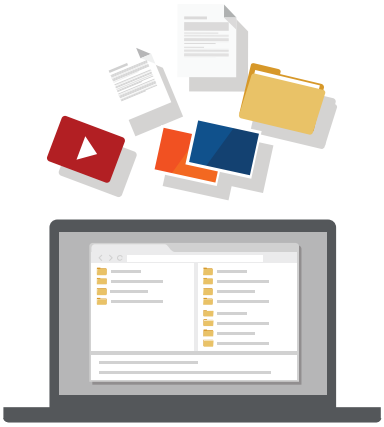

Other types of data—such as PACS radiology studies, seismic data for oil exploration, and scientific sensor measurements—are typically much too large for e-mail, too. So here's the situation: the modern enterprise and its mobile workforce makes great use of these rich new sources of information—and any IT department that enables their convenient use will be seen as a hero as well as helping to avoid adoption of unapproved and risky public cloud options.

WAN INEFFICIENT FTP

It's getting increasingly obvious that more modern approaches are needed. FTP servers are still used by some organizations to move big files around, though this 1970's era technology is finally starting to disappear. FTP is an inefficient WAN user, tends to follow an inflexible many-to-one instead of many-to-many model, and in general is a unidirectional system. A growing number of users don't even know what FTP is, let alone how hard it is to use, and it has minimal built-in support for modern mobile devices. FTP is still used in the Media and Entertainment space, but even there it's quickly being replaced by pricey "Managed File Transfer" appliances that handle the movement of large collections of files from facility to facility.

SHARED FOLDERS LACKING REMOTE ACCESS

Another common way to share your files—especially when they're big or you've got lots of them—is to create shared folders on a filer or other NAS-capable server. This gives good performance for those connected via LAN, but can be very inconvenient for remote users because VPN infrastructure must be installed for them to access the shared folders. VPN configuration and maintenance is notoriously time-consuming, both for the IT managers as well as the remote users. Even worse, it often provides an excessive amount of privileged access to the internal corporate network, which can then be hit by viruses and ransomware. Another drawback—data in centralized shared folders can be unavailable to remote workers who don't have a fast, reliable Internet connection.

FTP and shared NAS folders are established, managed, and controlled by a central IT management authority. While there are clear benefits to this approach, the advent of public cloud sharing services such as Box, Dropbox, and Google Drive have enabled millions of users to bypass the IT department and create a "serve yourself" system for file sharing and collaboration. Users love using these services because they think they're more flexible and responsive than their company's in-house system. And they don't see why that could be a big problem...

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PUBLIC CLOUDS ARE RISKY

A recent survey found that 43% of employees at large companies are using these public cloud services to move company data around, without the blessing or involvement of their corporate IT department (and often against specific prohibitions on such conduct).*** The inflexibility of legacy on-premises storage solutions has driven a huge number of employees into such uncontrolled and unnecessarily risky practices, creating a "shadow IT" effect that exists apart from—and out of the control of—the approved IT infrastructure.

There's a long list of good reasons why the use of public cloud services is restricted or prohibited by organizations. Some of the most commonly cited ones are:

- Legal restrictions on geographic location of data.
- Concern about who at the cloud provider might have access to data.
- Concern about snooping by hostile or "friendly" governments.
- Regulatory requirements on chain of custody of data, especially evidentiary data.
- HIPAA, SEC17a-2, SOX, or Dodd-Frank requirements for data integrity.
- Well-publicized security breaches and hacks of cloud providers.
- Uptime and availability requirements not met by cloud.
- Lack of security, accountability, and audits, and the requirement to use expensive and complex "bolt-on" security products from third parties to achieve security objectives.
- Uncertain or failing business models of cloud providers leading to loss of data.
- Lack of integration with corporate user authentication.
- Potential damage to corporate brand or reputation in the event of security breach or loss of data.

Of course, there are also some people who just use thumb drives to "sneaker-net" files around from place to place. Apart from their obvious risks of loss or theft, these devices are clunky and slow. More to the point, they are essentially useless for promptly sending information to distributed teams

The obvious takeaway is that old-school ways of storing information and making it accessible simply haven't kept pace with the changing needs of today's organizations. A newer, more modern approach is clearly required...

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OUR UNITY VISION

Nexsan is committed to creating the **most complete midrange primary storage system for the "modern enterprise**." Simply put, a modern enterprise has a mobile workforce that uses the latest mobile devices such as Mac and Windows laptops, Android and iOS smartphones and tablets; and it makes productive use of 100s or 1000s of terabytes of rich content. That workforce will expect GB/sec performance when in the office, and remote performance that's only limited by the size of local file cache—or the available Internet bandwidth if the desired file is not in cache. No excuses accepted...this workforce wants speed and access, period.

Easy sharing of files, whether it's among individuals or groups defined by the user, will also be expected—regardless of file sizes involved. These demands are in addition to the expected Unified Storage needs of NAS (NFS, CIFS/SMB) and SAN (Fibre Channel, iSCSI) protocol use, and the high performance boost made possible by the selective use of solid state storage (flash, DRAM) technologies.

GOING BEYOND UNIFIED STORAGE

Unified Storage is a single storage system that creates a unified resource pool of physical storage devices, which are then logically partitioned into LUNs presented via Fibre Channel or iSCSI, and File Systems presented via NFS or CIFS/SMB.

A well designed Unified Storage solution will not only support all of these protocols simultaneously, but will also accelerate performance with powerful caching techniques using DRAM and Flash solid state memory. They should provide highly flexible expansion, so you can scale out your storage as needs dictate without disrupting your operations. And for midrange or higher applications, Unified Storage solutions are also expected to be fault-tolerant, with redundant components throughout, and should support snapshots, compression, and replication. Nexsan Unity is all of these and more.

Unity builds on these capabilities to give you Hyper-unified Storage, unified storage plus additional technologies which you previously couldn't get unless you stitched together a patchwork of expensive and complex third-party products:

- Syncing any number of folders or file systems with any number of connected Unity installations ("Enterprise Multi-Site Sync").
- WAN optimization technologies embedded in the networking stack to enhance performance without requiring a separate WAN accelerator device.

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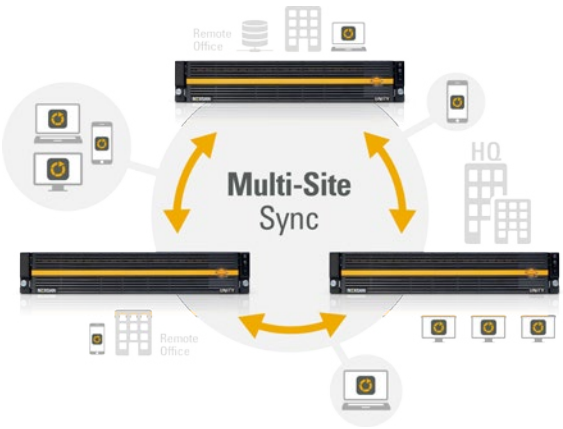

- Mobile clients which give convenient access to files from authorized laptops, tablets, and smartphones.
- File sync capabilities which keep up-to-date local file copies on all the user's devices
- Self-serve file sharing allows a single file to be sent to others, or entire folders can be shared with groups of users, giving others read-only or read-write privileges as desired.
- File versioning which keeps many prior revisions of files available for recovery if necessary.
- Object-based hardened archive storage which prevents accidental or deliberate attempts to modify data, and which can be configured to be compliant with all major data retention rules.
- Adherence to corporate security and compliance requirements to ensure data integrity, protection, and preservation.

UNITY ENTERPRISE N-WAY SYNC

The first and only unified storage solution with with n-Way, multi-site sync, Unity lets users keep any or all folders' content synchronized among any number of Unity systems. The systems may be connected over a LAN—in which case changed files are synced at extremely high speeds—or they may be connected over a WAN, where sync speeds depend upon available bandwidth. To make the most of available WAN performance, Unity uses caching, compression, and a reliable transfer protocol that delivers data over UDP instead of the more common TCP (the optimizations employed by most WAN-accelerator appliances).

To ensure privacy and security, the Unity systems perform a peer-to-peer key exchange and then use AES-256 encryption to protect WAN traffic. This encryption is fully automatic, without any need for key management activities by your administrator. What's more, at no time does Nexsan have the keys or any access into data stored on Unity. Your data is transferred directly between Unity sites and never traverses any third party store-and-forward devices. And you can even encrypt your data at rest for additional protection.

These benefits are available to you regardless of the scale of your deployment. UNITY site may be as small as a few tens of terabytes, as large as five petabytes, or anywhere in between. There's no need for your systems in a Multi-site Sync relationship to be the same size, so a common use case is to install large Unity systems at major corporate facilities, and smaller Unity systems at regional locations. The smaller systems can sync virtually all of their folders with the large systems, and if desired, they can sync with each other too.

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Your users will easily adapt to multi-site sync, seeing it as something like a global file system, with a comfortable and familiar view into trees of folders. But they will be surprised and pleased to know that files stored into Unity will also be available in corresponding folders that are visible to their remote co-workers.

Your organization will derive a wide variety of benefits from n-Way, multi-site Sync:

- Business continuity is provided by having key files at multiple locations.
- Filer-on-LAN performance to users inside the office (potentially gigabytes per second).
- Multi-site collaboration on any size of file or any quantity of files.
- Easily store data local to where it is accessed.
- Maintain possession of data within the organization.
- Security and privacy to protect corporate IT and meet compliance.
- Remove incentive to use unauthorized public cloud services.
- Eliminate need for dedicated file transfer or WAN optimization products.
- Assure locality of data.
- Access controlled by corporate Active Directory infrastructure.

Unity also supports the block storage protocols iSCSI and Fibre Channel, though these do not utilize multi-site sync as it is not applicable to this type of storage. However, block storage volumes can be snapshotted and replicated to a partner Unity system to provide disaster recovery.

All protocols—including NAS and SAN—are accelerated by our FASTier technology. FASTier uses mirrored and battery-protected NVDIMM as L0 write cache, where random write transactions are coalesced into large buffers and written sequentially to a log structured file system on spinning media. NVDIMM is also used as a L0 read cache. Note that you also have the option to add Flash memory modules in order to provide L1 read cache. All transactions, including metadata, are protected by end-to-end CRC in addition to the industry-standard ECC data protection afforded by the data path.

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UNITY MOBILE AND WEB ACCESS

Unity supports mobile apps for iOS and Android, as well as web apps for laptops and desktops to allow remote users access to files without the need for a VPN. Using the Unity mobile and web apps, users can quickly create and send secure links via email to files stored on Unity. This eliminates the need to send large email files and provides access to information from anywhere. Using a private cloud infrastructure, the apps insure both privacy and security, using Active Directory permissions and credentials, while delivering seamless access without a VPN.

Key features of the Unity mobile and web apps include:

- Browse files from user folders stored on the organization's Unity system(s)
- Upload, download and share files between iOS and Android devices and computers
- Access shared folders as read only or read-write, depending on user permissions
- Easily find needed files with an easy search function
- Quickly create and send secure links via email to files stored on Unity, even to people outside the organization

UNITY REMOTE SYNC

Unity supports mobile apps for iOS and Android, as well as web apps for laptops and desktops to allow remote users access to files without the need for a VPN. Using the Unity mobile and web apps, users can quickly create and send secure links via email to files stored on Unity. This eliminates the need to send large email.

UNITY ARCHIVE

Unity Archive, an ultra-high integrity object store, optimizes primary storage, meets regulatory and corporate compliance and ensures that your files are secure for a lifetime. The secure archive is a tamper-proof storage utilizing a unique serial number and timestamps, automated serialization audits, and fingerprints to guarantee that the file has never been altered in any way. Unity Archive meets regulations such as HIPAA, SOX, SEC-17, chain of custody and so many more. This technology is field-proven to protect information from numerous deliberate or unauthorized attempts to change or destroy it, including by viruses, silent data corruption, ransomware, or administrator error.

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UNITY SUMMARY

So what does all this mean for you and your organization? Nexsan Unity is the first unified storage solution that can securely and seamlessly connect your mobile workforce to files stored within your corporate data center. Unity synchronizes files across multiple sites, giving you built-in disaster recovery and business continuity while enabling team collaboration and sharing. And by using patented technology to deliver public-cloud-like features for accessing and sharing information, we call Unity a Hyper-unified storage platform that combines high-performance enterprise-class storage with integrated file sync and share features.

Organizations with multiple sites and a remote or mobile workforce need to share and collaborate—with easy access to data—without compromising that data's security and privacy. Nexsan Unity delivers all the features you would expect from an enterprise-class unified storage system, but with the unrivaled addition of enterprise site-to-site synchronization and enterprise file sync and share (EFSS).

Unity eliminates the difficulties you can have remotely accessing large files by deploying a secure, on-premises private cloud to share your information between multiple locations. Unity also keeps remote users connected, giving them instant access to the data they need—from any device—without compromising your compliance or privacy policies. And Unity synchronizes the files on your users' mobile devices and laptops, providing endpoint backup for those files and devices.

Now for the first time, your organization can get all of the modern enterprise-class storage capabilities you need in a single system. No other storage system provides high performance unified) storage plus integrated enterprise file sync and share, archive, and security and compliance in a single solution.

ABOUT NEXSAN

Nexsan is a global leader in storage, back up and data management solutions that are focused on seamlessly and securely enabling a connected workforce. Its broad solution portfolio empowers enterprises to securely store, protect and manage valuable business data – allowing users to sync, share and access files from any device, anywhere, anytime. www.nexsan.com

* IDC Digital Universe

** Info-Tech Research Group

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