



## New NTP Software Controls the Floods — Today, Tomorrow, and the Next Day

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### Management Summary

It happens every spring – *flooding!* Just as the winter snow pack starts to melt with the warming weather, we are inundated with spring rains that overwhelm our rivers and streams often causing downstream chaos in low-lying areas. These problems can be exacerbated by still-frozen soil that does not allow the runoff water to be absorbed into the ground. Instead, the water seeks its own level wherever the topography allows. Add to this scenario yet another factor – it is often too early in the growing season for plant vegetation to play its natural role in the absorption of water into grasses, leaves, branches, and tree trunks.

Because they have seen this scenario repeated year after year, officials have taken preventative steps to control the inevitable on-rushing floods. Engineers have designed and built levee systems to channel the water further downstream while protecting property behind these artificial walls. Some such systems may include high capacity pumps to push the water back into the channel should the levee be breached or else the land will be over-washed by exceptionally heavy rains. They have dug deeper channels to increase the capacity of rivers and streams. They have built standby diversionary channels and holding ponds. Areas repeatedly hard hit now have dams to hold back the water for controlled release as it is needed later in the year. In the most extreme cases, zoning authorities have declared certain areas as “no build” zones and permanent wetlands to hold water in abeyance.

Chief Information Officers, IT departments, and external IT service providers have their own special floods to manage and their challenges arguably are worse. The forecast says it is going to be a very tough next few years for them because their floods will be relentless as well as bigger and bigger – with no reprieves on the horizon. Each of the following could be considered a flood in its own right.

- **Explosive data growth**, both structured and unstructured
- **New applications**, often designed to be run by computer novices
- **New devices** (tablets, smart phones, mobile everything)
- **Bring Your Own Device (BYOD)** phenomenon wherein users bring their own personal favorite devices to use as workstations and endpoints often mixing personal and corporate apps and data. This sounds somewhat like water seeking its own level.
- **More and more users** (some sophisticated, most not)
- **Big data and analytics**
- **Higher demands for faster service**, in terms of quicker response times
- **Governance mandates**, standards, and increasing oversight
- **Pressure, pressure, pressure** from the business, from regulators, and from the boss

Take pity on IT providers facing this lineup. Facing these floods is clearly worrisome to CIOs, IT departments, and external infrastructure providers, but it is nonetheless real. To date, their answer has been to make do with currently-available products and tools, which solved some of the problems. They have had no alternatives – until now – with the arrival of NTP Software’s new product suites.

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Read on to determine how NTP solutions might be appropriate for your year-round flooding.

## NTP Software, the Company

NTP Software is no newbie to this industry. It brings 20 years of experience, wisdom, products, support, and, most importantly, insights. NTP Software has been recognized independently as a global technology leader. They have been chosen by a majority of the largest enterprises and by thousands of customers in private and public sectors for providing leadership through excellent solutions, professional services, a battle-hardened support infrastructure, and trusted advice in virtually every industry across multiple venues. This heritage avoids short-term thinking and dead-end architectures because of hard-learned lessons. If there is one thread tying all of NTP's products together, it is all about planning and control. For example, the majority of this paper describes how to leverage the Internet in the midst of ever-expanding device types and still retain control over corporate information. With multiple floods on the horizon, these two characteristics of planning and control are essential for today's IT challenges.

### ***Internet Ubiquity, Connectivity, Bandwidth, and Access - Yes; Internet Repositories - No***

In almost everything that we do, the Internet is taken as a "given." Its fluidity is the universal lubricant to much of what we do, both in business and personally. However, data does not have to sit in a public cloud on the Internet to be fluidly available. This is where NTP Software draws its firm line in the sand.

Too much can go awry – lost or stolen endpoints holding secret or proprietary data, inconsistency of data when there are multiple copies being saved and quite-likely being out of sync in short order, lurking data predators with multitudes of malware tools, and the insufficiency of the necessary patchwork of security add-ons. NTP Software's answer is "take a best of both worlds" data approach by using the Internet for its strengths while avoiding its pitfalls. Repositories of valuable data should be ***attached*** to the Internet but ***located*** behind enterprise firewalls and corporate security shields. If data is always encrypted and always behind the firewall, it is safe and available when you need it.

## NTP Software Products

Historically, NTP Software has delivered several noteworthy file management products, including *File Assessment*, *File Auditor*, *File Reporter*,

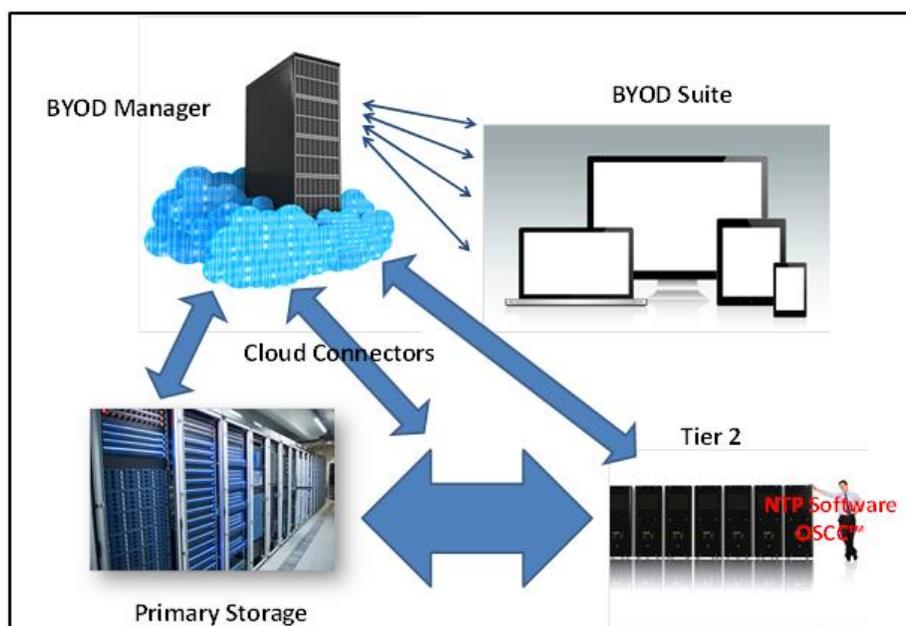
### **Exhibit 1 — The Benefits of Tiering**

Tiering of data (by segmenting it according to use or needs) can be an excellent way to deal operationally with the huge volumes of data. Tiering can be used to accelerate storage and retrieval of important data by placing it on devices with faster access times, somewhat analogous to positioning world class runners at the front of a marathon race and amateur joggers further back in the pack for the shotgun start of the event. Less important data can be located on storage devices where the mechanics of loading and unloading data is less quick but still adequate for the requirements. This technique can pay off handsomely, in terms of speeding response time where operational data is placed on high-speed storage devices (such as Solid State Disks or SSDs) with quick response times leaving less-urgently needed data on slower-speed devices, like large-capacity, slower spinning disks.

The most fundamental tiering decision is the segregation of operational data from archival data. Archival data can be placed on slower speed disks or magnetic tape because the need for it is less urgent and the user can wait a "little bit" for their delivery. Many vendors offer even finer grain segmentation of tiers, in their attempt to align data urgency with the technologies available to store and deliver them. Data tiering usually has a corollary benefit. It can be a cost saver. With tiered solutions, there is a reduced need to put all data on fast, large, and expensive disk subsystems.

and *QFS*. Today's bulletin strictly focuses on those products enabling corporate data security in the world of BYOD (Bring Your Own Device to work with you). NTP Software's innovation for our industry addresses, for the first time, the security of corporate data in the world of BYOD, beyond (well beyond) the secure firewalls of enterprise IT. Below is a summary of NTP Software products that focus on the issues of tiering, protecting, managing, and securing corporate data in the new Internet-based world of far-flung devices, files, and people. These products have been designed with the Internet as the transmission medium yet enabling usage of traditional and new endpoint devices, such as PCs, tablets, and smart phones all while protecting valuable corporate data, all while conforming to NTP Software's design standards for what is appropriate for the Internet and what is not.

### Exhibit 2 — Elements of NTP Software UFA



Source: NTP Software

### NTP Software's Precision Tiering

*Precision Tiering* from NTP Software includes an important money-saving wrinkle to delivering a tiered-storage solution, as discussed in Exhibit 1 on the previous page. In addition to supporting multiple tiers of hard drives and SSDs, it also supports magnetic tape via *LTFS (Linear Tape File System)*<sup>1</sup>. LTFS allows files stored on tape to be accessed and used just like files on hard drives and SSDs. This is important because file data now can be stored on the least expensive media around – magnetic tape.<sup>2</sup>

Magnetic tape has longevity, meaning that data on tape cartridges can be accessed for a very long time, certainly longer than hard drives and SSDs that need to be replaced after three-to-five years. Magnetic tape is passive, meaning cartridges do not consume any power when they are sitting in a library slot waiting to be accessed. While the energy savings can be significant<sup>3</sup>, it is the long life of tape (both drives and cartridges) that makes tape

much more economical<sup>4</sup>, especially when compared to the need to replace disks every three or so years.

Additionally, there are important evolutions occurring in the long-term tape space. The reasons and benefits of passive archiving of data for historical or legal purposes are obvious. However, active archiving extensions are being built upon LTFS, so that data can be retrieved quickly based on self-describing parameters on the media itself. Today, there are even more reasons to use magnetic tape, not less. LTFS is the secret ingredient to lowering the TCO for preserving and accessing historical data at a very low cost per TB. NTP Precision Tiering's common handling of files on SSDs, hard drives, and tape makes this a must-have solution.

Another use of Precision Tiering is to migrate data from tier to tier. Using a feature of Precision Tiering called *On-Demand Data Movement*, users can place data on less expensive media without requiring repeated scans of the entire file system, as occurs in some solutions. Instead, this feature is event driven. Actual data movement is triggered by site-specific policies, by users, or by a combination of the two.

<sup>1</sup> For more on LTFS, see [The Clipper Group Navigator](http://www.clipper.com/research/TCG2010031.pdf) dated June 28, 2010, entitled *Dealing with Cool and Cold Data - and Getting It "Just Right"*, which is available at <http://www.clipper.com/research/TCG2010031.pdf>.

<sup>2</sup> For more on the TCO of tape and disk for archiving, see [The Clipper Group Calculator](http://www.clipper.com/research/TCG2013009.pdf) dated May 10, 2013, entitled *Revisiting the Search for Long-Term Storage*, available at <http://www.clipper.com/research/TCG2013009.pdf>.

<sup>3</sup> *Ibid.* In this study, the total cost of ownership for tape (for everything included in the study model) over a nine-year period was less than the cost of energy (alone) needed to power and cool the spinning disks.

<sup>4</sup> In most situations on a TCO basis, it is less expensive per terabyte stored for disk solutions to be replaced after three or four years than to pay to maintain them out-of-warranty. See the study referenced in footnote #2 for a further discussion on this topic.

### *NTP Software Universal File Access*

Universal File Access (UFA) is the latest new product from NTP Software. In many ways, it epitomizes NTP's approach to coping with the proliferation of mobile devices while safeguarding valuable intellectual property (e.g., corporate data) from misuse, abuse, and data loss. It is a single, integrated solution, not a patchwork quilt. Understanding this is important. It has been designed carefully and integrated to work together seamlessly with installed user access control software, such as *Active Directory* from Microsoft, as well as with various security and orchestration products from third-party suppliers. Unlike consumer-oriented "sync and share" products that currently are available, NTP's UFA is an end-to-end enterprise solution that provides corporate end users with the ability to enjoy the freedom of creating their solutions/applications without concern for the safety and security of their data – even when accessed by Internet-connected devices, whether fixed or mobile. This ensures that any documents or files created or generated remotely are fully secured and treated the same – whether they originated in the office, at home, or on the road. (See Exhibit 2, at the top of the next page, for a pictorial view.)

NTP Software's architecture is respectful of prior storage buying decisions in that it allows users to add UFA rather than remove and replace previously purchased hardware or software. In the hardware world this removal process is called "sweeping the floor" of older technology products. In the software world, this is called "decommissioning" (i.e., replacing prior applications). However, UFA is different in that it supplements and enhances the existing hardware and software. Key components of UFA include the following.

- ***BYOD Suite*** – The UFA client software is appropriate for today's most common endpoint devices and operating systems. The BYOD Suite provides end users with the ability to access, upload, and delete file data – safely – behind the firewall. It also allows for lost or stolen devices to be shut down and wiped of business-critical information before damage is incurred, once they are reported missing or deemed compromised.
- ***BYOD Manager*** – This is the UFA administrative module that provides services that handle connections to end-user devices. It provides flexible caching options, proxies Active Directory security, and aggregates communications to limit excessive transmissions of small amounts of data.

- ***Cloud Connector*** – UFA administrative module that maintains a connection between internal storage hosts and the BYOD Manager. It integrates with Windows Active Directory and provides control over limits on size, quantity, and type of file data.

### *NTP Software SafeFile*

NTP Software and Bethesda, Maryland-based KoolSpan Inc. jointly have developed *SafeFile*, a product providing data encryption, all the time, across traditional as well as endpoint devices. *SafeFile* is patented technology and is part of NTP's Precision Tiering and Universal File Access products. By integrating KoolSpan's patented FIPS 140-2 *TrustChip & TrustGroup* technology, NTP Software *SafeFile* allows secure file viewing and sharing between two people or a defined group of people. *TrustGroup*'s private key encryption technology enables security between any set of users or devices. Users with the same *TrustGroup* in common are able to establish a secure connection, mutually authenticated and encrypted.

With *SafeFile*, files are secure at every point of existence, including when stored in the data center (at rest) or in transit endpoints. With the *SafeFile* application, NTP Software extends secure file management from the data center and desktop to smart phones and tablets. The solution is based on KoolSpan Inc.'s *TrustChip*, a micro SD chip with secure digital technology.

The *SafeFile* solution is scalable and all-inclusive and keeps file data safe from hackers, misdeeds, malware, and accidents. As such, *SafeFile* represents a data governance improvement as well as a convenience factor for NTP Software users.

### *NTP Software Object Store and Cloud Connector*

Also within Precision Tiering and UFA is a module called NTP Software *Object Store and Cloud Connector (OSCC)*. This software serves as the bridge between existing storage servers (arrays) and the cloud and Object Stores, such as NetApp's *StorageGRID*. NTP defines an "Object Store" as "a system or device that stores files (objects) independent of a file system." Object stores rely on one or more companion applications to provide the connection between the object store and end-users." *OSCC* enables administrators, end-users (with permissions), and automation policies to move files seamlessly from existing storage hosts to Object Stores or the cloud – all while maintaining or improving the safety and security of file data. Think about *OSCC* as infrastructure software that enables other NTP modules.

### *The Secret Sauce that Enables All*

NTP Software's technology treats all file repositories – including *CIFS* (Windows), *NFS* (Linux), Object Stores, and tape (LTFS) as equal participants in the NTP architecture. Files can move from any to any and even one to many. NTP integrates the file data and provides end-user access while preserving the organization's Windows Active Directory security and file management policies across all these platforms and hosts. This approach of adding functionality rather than wholesale replacing of technology is the key to integrating into already established (and working) applications. There is no need to sweep the floor and start over, if you can increment functionality instead.

NTP Software has added extensions in the operating systems and file systems of Windows, and the storage architectures of NetApp, EMC, and HDS. Additionally, NTP's support of the LTFS standard means that users can treat all LTFS-based file repositories as part of an integrated file system, so long as the underlying tape library supports LTFS.

When it comes to deciding which features to add to their products, NTP carefully weighs the inputs of their customers. User views and preferences are given priority by NTP product managers, planners, and engineers, to set properly the priorities of product improvement suggestions on the R&D calendar.

### *Pricing*

Data center managers always want to know how a product is priced. There is good news for the finance department in that NTP's software charges are based only for the primary (or source) data (i.e., in the data center). Secondary and tertiary copies (regardless of where they are located) do not incur a software charge. You could consider the Precision Tiering pricing model as charging for original TBs under management but not its copies regardless of the reason for the copy (backups, archives, snapshots, geographically optimized mirrors for widespread processing locations, etc.) Each source TB is charged for only once.

UFA is priced differently. The data center is charged a base license fee for the underlying infrastructure. As additional endpoint devices are added, there is an uplift charge per device but the base fee remains constant. This methodology of pricing smoothes out the cost curve for users and helps them plan for growth without unwanted stair step cost increases back at the data center.

### **Conclusion**

Most CIOs, internal corporate IT providers, and external IT infrastructure providers genuinely want to “do the right thing”. Above all, they do not want to impede the new and changing ways that their users want to access enterprise data and get their work done. Today's users want access from home, from the train, and even from the beach. They want to use whatever tools will help them get their jobs done, including the traditional (PCs) and, now, mobile endpoints that they personally are providing under BYOD.

As such, IT providers need to be responsive to evolving use cases. They understand that the world is fast changing and so are the expectations of their workers, partners, customers, etc. Still IT professionals providing infrastructure support internally or externally as a service do not want to undo the years of work they have invested in protecting corporate data security. Is it a dilemma? Yesterday: “Yes.” Today (after adding products like those from NTP Software): “Not so much.” Now, they can answer the challenges of protecting enterprise data, improving governance compliance, and meeting the growth challenges of structured and unstructured data and access from both near and far. *So, what is the responsive IT provider supposed to do in the face of so many changes?* Here is the answer.

- Embrace the changes.
- Anticipate the floods and then go with the flow.
- Invest in products and services that have longevity built in.
- Select solutions that integrate without wholesale replacement.

NTP Software is an example of the kind of vendor who will allow you to leave a legacy while accommodating inevitable change.

Precision Tiering, Universal File Access, SafeFile, and Object Store/Cloud Connector are products from NTP Software that should be on your data center *bucket list* – located somewhere near the top. This high ranking means they should be analyzed for fit in your storage strategy as soon as possible to see what contributions they can make for your organization. Start now. It is starting to rain (and flood) again.



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