

WHITE PAPER

Managed File Transfer as a Strategic Technology

Consolidate, Control, Comply, and Enable

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Introduction: Managed File Transfer as a Strategic Technology

In 2010 an IDC research report (“The Digital Universe Decade – Are You Ready?”)¹ John Gantz and David Reinsel concluded that data volumes will increase by an average of 45% for the next 10 years.

At the same time, privacy and corporate oversight regulations will continue to emerge and businesses will continue to be challenged by increasing costs of compliance.

In this kind of environment, selecting a managed file transfer solution that evolves with and adapts to the changes in your business and your partner relationships is essential. The right strategic solution will promote growth with a secure and scalable deployment that allows you to flexibly consolidate multiple legacy point solutions. This approach saves you time and money while improving control and compliance. Ultimately, it also allows you to leverage enhanced community management technology to ease the burden of enablement with individual trading partners and customers.

This white paper discusses the most common requirements for managed file transfer and why they are applicable to today’s technology decisions. It also examines how these criteria apply to Cleo MFT solutions.

Synopsis

Managed File Transfer requirements have evolved from tactical administration and security concerns to strategic concerns about governance, compliance, and authentication.

To address these concerns, a new class of strategic managed file transfer (MFT) solutions has emerged. These solutions integrate with enterprise applications while supporting cost-saving consolidation and enablement initiatives.

This white paper offers an in-depth view of the relevant requirements and then provides an overview of Cleo MFT solutions.

Elements of a Strategic Solution

A quick Google search for file transfer or FTP leads to a bewildering variety of single-purpose file transfer utilities. Each competes with dozens of similar utilities to address a single file transfer issue.

These single-purpose utilities create problems for enterprises that need to comply with security regulations in a cost-efficient and streamlined manner. Instead, enterprises desire a unified managed file transfer solution that can replace these disconnected single-purpose utilities with technology that provides a centralized point of command, standardized processes, total security compliance, and opportunities to realize operational efficiencies.

The Problem with Single-Purpose Utilities

The temptation to use single-purpose utilities persists because the initial outlay for these utilities is low. However, enterprises that scatter these point solutions throughout their infrastructure quickly discover that the “spend cheaply, pay dearly” proverb applies here.

Expensive to Maintain

Transfers through single-purpose utilities are single hop, or point-to-point. This means that additional code, scripts, or events must be created to send notifications, clean up files, and process incoming data. Over time, these supplemented customizations require a massive effort to build and maintain, particularly if many different utilities are in use or turnover of the individuals who developed them is a concern.

If any of these utilities are ever used in high-profile transfers, they also become subject to typical enterprise change control

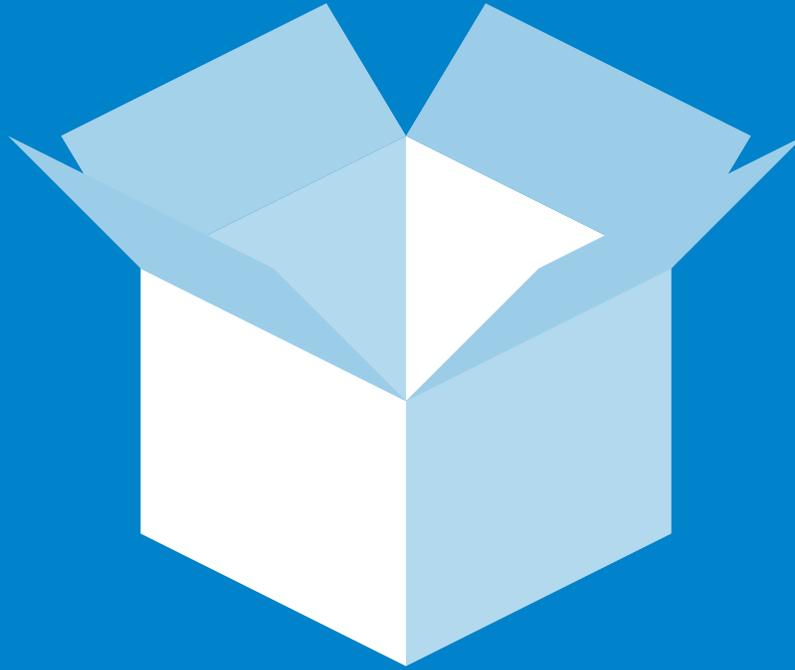
and security procedures. This means check-in/check-out through a third-party change control system, plus the use of third-party disk encryption and possibly, additional access controls through yet more third-party software. Together, the cost of learning, developing, maintaining, versioning, and securing scripts and configurations throughout the enterprise can mount quickly when an array of single-purpose utilities are used. Also lost is the opportunity for cost savings and efficiencies that result from centralized operations.

Limited Security

All single-purpose utilities move files from point A to point B and many even use point-to-point transport technologies such as SSL/TLS or SSH. However, transport-level encryption is rarely enough to provide the level of assurance required to comply with regulations, industry expectations, or internal company policies.

One of the missing capabilities in single-purpose utilities is protection of data at rest. Without the ability to encrypt files, critical data may be at risk in transit and at rest whenever single-purpose utilities transfer files using insecure protocols such as FTP.

Another missing capability is guaranteed file delivery. Many single-purpose utilities claim to provide this capability through point-to-point integrity checks, but they are missing two crucial elements to prove recipients received their data. One is a system of strongly authenticated acknowledgments, such as cryptographically signed receipts. The other is a universal logging system that preserves events as coherent chains of custody.



Managed File Transfer Products

From the beginning, managed file transfer products not only provided the capabilities of multiple single-purpose utilities but also a centralized command and control interface. They also had audit and reporting features that tracked files as they were manipulated or moved through systems. Together, these capabilities let enterprises govern the complete information life cycle around file-based data with managed file transfer products.

Today, managed file transfer products offer many new capabilities developed specifically for the enterprise. These include advanced protocols for enterprise transmissions, integration points for enterprise applications, support for high availability, and the flexibility to onboard and migrate partners to their preferred protocols quickly without disrupting normal operations. These new capabilities also include provisioning and import/export models that conform to enterprise change control and availability requirements.

Even more, new capabilities include tailored roles and levels of access to provide each individual accessing the system the

right information at the right time. One of the significant trends in managed file transfer is community management through a consolidated solution — bringing together the traditional MFT approach of internal file transfers and the external trading partner management.

Advanced Protocols for Enterprise Transmissions

Managed file transfer products typically support multiple advanced protocols in addition to basic open protocols such as FTPs, SSH FTP, and HTTPs. Advantages provided by advanced protocols include enhanced message integrity, strong authentication, ease of routing, industry standard compliance, and a high degree of interoperability.

When message integrity and strong authentication are coupled with cryptographically signed digital signatures, you have the ability to prove — in court if necessary — that the intended receiver actually received an exact copy of your information. This case is called non-repudiation and is a common reason why advanced protocols are often used instead of basic protocols that only offer integrity checks.

Supporting many advanced protocols on a single platform is by itself an advantage afforded by certain managed file transfer solutions. A product offering a broad protocol set allows an enterprise to quickly consolidate any single-purpose utilities previously in use — a project with a similarly quick ROI. Some of the most common advanced protocols that should be considered in any product selection are listed below:

- **AS2 (Applicability Statement 2):** AS2 is a fast and firewall-friendly protocol (uses HTTP or HTTPS) with built-in non-repudiation capabilities. Adopted as the global standard for transmissions by Walmart in 2002, AS2 has become very common in the retail and consumer packaged goods industries.

AS2 is also common in automotive, pharmaceutical, logistics, and supply chain management applications and certified for interoperability by Drummond Group independent laboratories. Modern editions of AS2 support multiple file transmissions, large file transfers, and check-pointed restarts. Server-side functionality is required to send and receive AS2 files.

- **AS3:** Similar to AS2 in structure, AS3 is implemented using FTP or HTTPS to handle individual transmissions with files on an FTP server instead of HTTP or HTTPS. AS3 does not support AS2's fast asynchronous mode but can be implemented entirely in client software because no dedicated AS3 server is required.
- **ebMS (eBXML Messaging Service):** ebMS is a fast, XML-based protocol with built-in non-repudiation capabilities. ebMS is common in automotive and aerospace industries. This protocol is also certified for interoperability by Drummond Group independent laboratories. ebMS requires a specialized ebMS server to receive transmissions.
- **OFTP (Odette File Transfer Protocol):** OFTP is a fast, XML-based protocol with built-in non-repudiation

capabilities. Most popular in the European automotive industry, OFTP is also commonly used in many European point-to-point connections. The use of OFTP requires specialized hardware and an ISDN connection for good security.

- **OFTP2:** A significant improvement over OFTP, OFTP2 adds checkpoint restart, strong authentication, strong encryption and transmission over SSL/TLS-secured channels. OFTP2 adoption is heaviest in the automotive industry and was driven by 2010 mandates by Volvo and Volkswagen. The adoption of OFTP2 in government is also emerging.

Integration Points for Enterprise Applications

From an architectural point of view, managed file transfer software is a middleware technology that handles bulk data transfers exceptionally well. Flexibility is key in all middleware products because each deployment is unique and no two companies connect the same systems in exactly the same way. In their middleware role, managed file transfer products provide the necessary flexibility with extensibility hooks, APIs, and participation in enterprise architecture.

Extensibility hooks are used within managed file transfer products to provide custom branding, support custom transfer commands, implement custom reports, or otherwise tweak the behavior of the managed file transfer system. Scripting is an additional example of an extensibility hook. APIs permit third-party applications to drive managed file transfer activities. The most common uses of APIs are provisioning (usually of users, folders, permissions, or workflows), workflow initiation and/or status queries (usually of user attributes or workflows).

Integration with enterprise architecture is typically achieved through a variety of interface options, the three most popular being eb services, Java APIs and IBM® WebSphere® MQ. By supporting these common enterprise interfaces, managed file transfer products can fully participate in service oriented architecture (SOA) deployments.

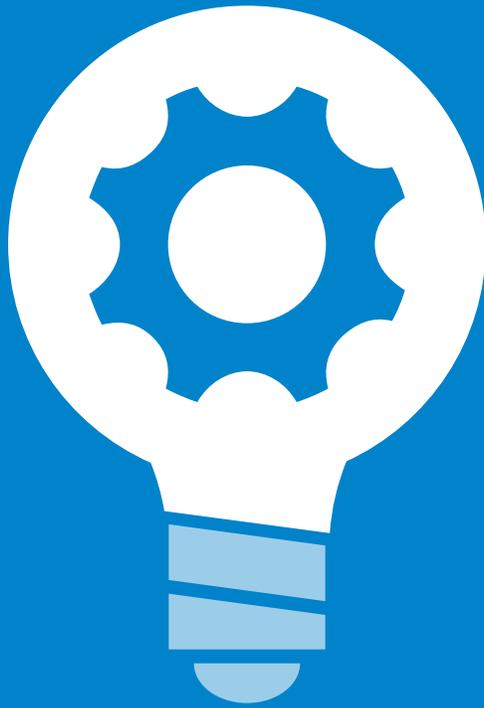
Provisioning Models for Enterprise Change Control and Availability

There are three additional requirements that enterprise software must meet to avoid unexpected downtime. One is the ability to scale up or down to meet peak or seasonal transfer and volume demands. The second is the ability to shift load between machines to handle unforeseen outages. The third is the ability to test out new configurations and processes before promoting them into production.

The first two requirements are typically handled by a modular architecture that permits machines with various roles to be added and removed as needed. The third requirement is typically handled by passing export files through an enterprise's existing versioning systems.

Vendor Commitment

The relationship with the vendor behind a product is almost as important as the product itself when selecting a strategic product for an enterprise. Enterprise IT wants software to be self-reliant — something you can deploy and manage — but also wants a responsive support team. Having a track record of industry success and a product development team who works with you to implement key functionality are also critical components of vendor qualification.



Cleo's Strategic Managed File Transfer Solutions

Cleo Managed File Transfer Solutions are currently used by more than 15,000 installations worldwide. Cleo MFT Solutions manage many types of data formats, including flat files, EDI, and XML documents, while moving sensitive data including financial, healthcare, employee, and other data that requires a high level of security. And all of this is achieved via software that is easy to deploy and maintain, while also providing the security and compliance required by the business.

The remainder of this paper evaluates Cleo MFT solutions as managed file transfer and strategic solutions using the criteria discussed in the previous sections.

Replace Multiple Single-Purpose Products

The first characteristic of a managed file transfer product is its ability to replace multiple single-purpose products, and Cleo MFT solutions pass this test with flying colors.

Cleo MFT solutions have the ability to both initiate and receive connections using common file transfer protocols, such as FTPs, SSH FTP, and HTTPs, plus many advanced B2B protocols. Cleo MFT solutions also allow administrators to create scripts and complex events to send notifications, clean up sent files, process the contents of incoming files, and perform PGP encryption or decryption operations without additional third-party applications.

When people are manually transferring files, Cleo MFT solutions provide a user-friendly web interface accessible from most major browsers. Built-in encryption capabilities protect files at rest along with user authentication data. A customizable web portal makes it easy for high- or low-tech partners to do business with you through links to relevant instructions, customized forms, partner transfer reports, and complete audit trails.

Boast Robust, Unified Management Layer

The second characteristic of a managed file transfer product is the robust management layer that monitors all file operations and transfer history. Cleo MFT solutions provide this layer through a unified web-based administration console that eliminates the need to support multiple single-purpose products. By logically ordering FTP servers with a unique system of role-based access management and providing total visibility to server clusters, Cleo MFT solutions provide an easy way to consolidate previously fragmented systems.

One highlight of the unified interface is Cleo's certificate manager. This capability allows administrators to centrally manage security credentials such as encryption keys or certificates that may be used across a wide variety of protocols or encryption schemes, including a quick snapshot of certificate status and usage.

Another highlight of the unified interface is Cleo's approach to transfer scripting. By using a common language for transfer commands, Cleo eliminates the need to understand and maintain scripts specific to different protocols and makes it easy to migrate workflows from one server/protocol to another.

Support Advanced Protocols for Enterprise Transmissions

Cleo MFT solutions support an expansive set of advanced file transfer protocols, including AS2, AS3, ebMS, FTP, FTPs, SSH FTP, HTTP, HTTPS, MLLP, OFTP, OFTP2, RNIF, SMTP, SMTPs, and web services. Cleo MFT solutions also support proprietary protocols including fasp™ and IBM® WebSphere® MQ.

As an acknowledged leader in the development and support of the advanced AS2 protocol, Cleo has ensured that Cleo MFT solutions have successfully passed Drummond Certification testing on all available AS2 features in every test since 2002.

Cleo also demonstrates its leadership in advanced protocols by publishing the Cleo Protocol Comparison Chart & Guide. This widely read guide tracks deployment and capabilities of Cleo's supported advanced protocols (e.g.,

supports non-repudiation, supports integrity, etc.) to provide users a comprehensive overview of protocols Cleo offers to best direct the selection of a standard protocol for customer use.

Support Integration Points for Enterprise Applications

Cleo MFT solutions support all the necessary integration points to actively participate in modern enterprise architectures. Cleo MFT solutions' extensibility hooks permit customization of web portals and backend reporting. Using the APIs enables third-party applications to drive managed file transfers, including user provisioning and workflow initiation. A rich set of web service and IBM WebSphere MQ interface options also allow seamless integration of Cleo MFT solutions services into service-oriented architectures (SOAs).

Support Models for Enterprise Change Control and Availability

Specifying a strategic solution to meet current volumes is a losing proposition. Instead, enterprises must be ready to accommodate expanding trading partner communities, new acquisitions, and additional regulations. Fortunately, Cleo MFT solutions provide a scalable architecture that makes it easy to provision nodes and re-balance critical workflows without any downtime.

Exhibit Vendor Commitment

Growth for Cleo MFT solutions has increased nearly 150% and in just the past year includes many notable enterprise customers on a global scale. While the company has grown with its enterprise customers to become an industry leader in managed file transfer, Cleo's origins are in pre-TCP enterprise data communications. Cleo's record respects the ongoing role of legacy technology, lengthy technology refresh cycles, and expectations for stability, all of which are supported by Cleo's products and services today.

With multiple enhancements always in development, Cleo remains committed to excellence in managed file transfer and backs its commitment with a history of customer-driven, collaborative development, all performed at its U.S.-based headquarters.

Demonstrate Industry Leadership

In addition to meeting or exceeding expectations in all aspects of a strategic managed file transfer solution, Cleo has led the industry with several important advances in rapid enablement, emerging technology such as IPv6 and complete AS2 interoperability and Drummond Certification. Some examples of industry leadership are listed below:

▪ **Rapid Enablement for Community**

Management: Enablement is the ability to set up partners and remains one of the most labor-intensive processes in managed file transfer operations today. Some estimates peg per-partner enablement costs around \$3,000 and internal lead times to set up partner connections can stretch up to 12 weeks.

To drastically cut costs, Cleo MFT Solutions allow administrators to use an extensive and growing library of preconfigured connection profiles for popular trading partners. Downloading and installing a connection from this collection allows companies to quickly do business with their trading partners while bypassing the most difficult steps of certificate and key exchange.

Today, Cleo publishes more than 800 trading partner connection profiles, including Fortune 500 stalwarts such as Walmart, Target, FedEx, Bank of America, Chrysler, and international giants such as ASDA UK, Volkswagen AG, and ThyssenKrupp AG. The breadth of this collection spans basic protocols, such as SSH FTP, FTPs, FTP, and HTTPs, and advanced managed file transfer protocols, such as AS2, MQ, and OFTP.

▪ **Advanced Options to Support Service Level**

Agreements: Since the data that passes through your managed file transfer system is some of the most critical your organization handles, it is common to incur financial penalties if that data is not delivered complete and on time. With that in mind, Cleo MFT solutions provide a number of advanced options to prevent surprises and alert you to potential issues before they arise.

Cleo MFT solutions' "check" command can be used to verify that inbound and outbound transfers occurred in a specific timeframe, that a file or folder was recently transferred or touched, and that files are where they are expected to be.

For real-time monitoring, automatic alerts and email notifications let operations and administrators know about problems or confirm critical transfers. Additional information, including end-to-end transfer validation is available through an extensive reporting system.

- **Support for IPv6:** Cleo often leads the managed file transfer industry in adoption of new technology. A classic example is Cleo's early and complete adoption of IPv6, a capability still missing from most managed file transfer suites today.
- **Complete AS2 Compatibility:** AS2 is an open protocol, but there are enough variations in the implementation of specific AS2 features (AS2 profiles) that wide variations between AS2-supporting products continue to exist.

While all the AS2 profiles are technically optional, it is rare that a datacenter has no use for the AS2 profiles that handle large files, send multiple files in a single transmission, or provide the original names of files.

Datacenters that process purchase orders, paychecks, and other data sensitive to double-posts also frequently count on AS2's Reliability Profile to standardize checkpoint restart, transmission IDs, and related metadata handling.

Today, the vendor-independent laboratories of the Drummond Group confirm that Cleo is one of only two AS2 vendors that have certified interoperability with all available AS2 profiles. Furthermore, Cleo is the only vendor that recertifies every AS2 profile test against Cleo MFT solutions on the Cleo platform every time Drummond runs a round of tests.



Summary

Today's expectations demand an easy-to-use, consolidated solution that excels as both a managed file transfer solution and a strategic contributor to enterprise IT.

Cleo MFT solutions meet all the following requirements and more:

- The ability to replace multiple single-purpose utilities
- Support for multiple advanced file transfer protocols
- Complete compliance with regulations and policies
- Integration points into enterprise architecture
- High level of security options to enforce enterprise requirements
- Advanced options that can be exercised to meet SLAs
- Provisioning models that fit your change control and high-availability needs
- Rapid enablement of new partners and easy migration of existing partners
- Strong vendor track record and commitment to future development and market-leading enhancements

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