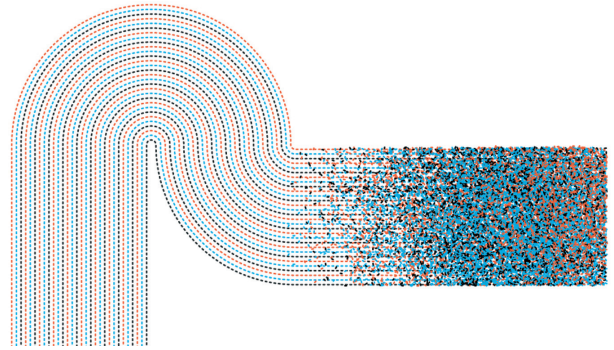# Lower business risk and increase IT productivity with a managed file transfer solution for SOA

SOA and WebSphere MQ File Transfer Edition

Today's dynamic business environments and economic uncertainty mean organizations must work smarter to remain competitive, eliminate costly redundancies and promote reuse of existing services while ensuring the services are secure, reliable and of high quality. IBM® WebSphere® provides a Smart SOA™ approach to untangling the costly and debilitating IT complexities associated with point-to-point connectivity and complex integration, while maintaining the highest levels of transaction and message reliability. IBM has gone a step further to create a manageable and trustworthy file transfer solution that leverages the current proven message-oriented middleware technology of WebSphere to unify data movement and maximize existing IT investment.

Despite a plethora of new technologies that includes Web services, Web 2.0 and many robust existing technologies such as enterprise messaging, file transfer remains a very common method for integrating business systems. Files are the simplest unit of data to exchange and often represent the lowest common denominator to connect disparate systems within an enterprise infrastructure.

Although the exchange of files between systems is conceptually simple, the tracking, securing and managing of file transfers still remains a challenge for most enterprises. Ensuring the auditability, reliability, manageability and overall file integrity is critical for any organization seeking to guarantee file security as a file moves from its origin to its final destination. By introducing a managed file transfer system to manage, track and secure all transfers, IT systems can gain a tremendous amount of file integrity and eliminate the loss of data, file corruption or security breaches.

This IBM white paper publication provides an introduction to the managed file transfer topic and IBM WebSphere MQ File Transfer Edition, the newest member of the WebSphere MQ family. WebSphere MQ File Transfer Edition is designed to address the needs of organizations that rely on the transfer of files as well as organizations that want more control, manageability and auditability.

Consider this: 20 percent of all transfers made with File Transfer Protocol (FTP) fail

File transfer has a long history and there are many existing tools that support it in some form. The simplest and best known tool for file transfer is the File Transfer Protocol (FTP), which was first made available in UNIX® systems in the 1970s. Today, the broad availability of FTP on almost all platforms makes it an easy choice when the need to exchange files arises. However, FTP cannot provide a reliable, secure or cost efficient manner to manage, track and secure mission-critical file transfers such as inventory reports or confidential patient data, or to prepare files for audit compliance, for example. FTP has limits for how well files can be managed by any organization, resulting in:

- Limited Reliability
  - FTP-based designs do not generally handle network or other errors well. Large file transfers that are interrupted often cannot be resumed. Further complicating transfer reliability is that FTP is not transactional, so sending a set of files in an all-or-nothing way is not efficient and is difficult to manage.
  - FTP is a manual process for managing file transfers. It cannot track or secure transfers; it can only move files from one point to another.
- Limited Security
  - FTP has limited access to file security and cannot provide permission-based access to file transfers to ensure data security or specify security based on job role.
  - FTP-based transfers cannot be tracked from a single log for auditability, and the user cannot report when a file was created, moved or opened.
- Higher Cost of Ownership
  - Hard-coded integration solutions take two to four times the time and effort to build and maintain; an integration solution using managed file transfer costs two to four times less.
  - While FTP is a free protocol, using it creates multiple file transfer points that cannot be managed from a single location and increases the associated cost of file integration and maintenance.

While basic FTP can manage simple point-to-point file transfers, users looking to handle the mission-critical transfer of files can only receive this functionality from FTP up to a point. Those organizations seeking additional flexibility need to move to a Managed File Transfer solution.

A 2009 Software Strategies study found that custom-built, in-house, hard-coded integration solutions often take two to four times the time and effort to build and require a similar multiple of ongoing maintenance and support effort. IBM application integration costs two to four times less and provides a full managed file transfer solution. The full report can be downloaded here: **ibm.com**/webspheremq.

A managed file transfer solution for SOA, IBM WebSphere MQ File Transfer Edition

To eliminate the limitations of FTP, organizations need to move to a managed file transfer solution that provides reliability and security, and decreases the cost of maintenance. A Managed File Transfer solution for SOA will increase file transfer flexibility and create a successful file movement process, eliminating all point-to-point connectivity to transport mission-critical files reliably, no matter the size. IBM has built their managed file transfer solution on top of their proven ESB messaging transport to unify the movement of files and messages. For the past 15 years, 10,000 customers worldwide have moved mission-critical data on WebSphere MQ, IBM's proven ESB messaging transport, which supports virtually any commercial IT systems with secure and reliable messaging.

WebSphere MQ File Transfer Edition exploits the proven reliability and connectivity of WebSphere MQ to transfer files across a wide range of platforms and networks. WebSphere MQ File Transfer Edition provides an enterprise-ready managed file transfer solution that is both robust and easy to use. WebSphere MQ File Transfer Edition takes advantage of

existing WebSphere MQ networks that can be integrated easily with existing file transfer systems. WebSphere MQ with WebSphere MQ File Transfer Edition creates a foundation for a single message and file infrastructure that lets users manage and secure their file transfers reliably by:

- Tracking and reporting on end-to-end file movement with Web-based business-level reporting.
- Including legacy applications, regardless of file transfer protocol, in an SOA environment.
- Laying the foundation for building ESB enrichment with WebSphere Message Broker to handle the routing and transforming of files.

IBM WebSphere MQ File Transfer Edition is the newest member of the WebSphere MQ family, building on the WebSphere MQ heritage of proven reliability and wide connectivity, by leveraging the existing network of enterprise-grade queue managers to address many IT challenges associated with file transfer.

- Provides Extreme Reliability
  - Delivers file reliability for managed file transfer
    ○ Tracks file movements
    ○ Eliminates file corruption
    ○ Demonstrates transaction integrity by monitoring the file from source to target
    ○ Automates transfers by setting recurring events without human intervention
    ○ FTP can only manually transfer files; automation is unavailable
  - Assured integrity of file contents
    ○ WebSphere MQ File Transfer Edition uses a strong message digest algorithm to verify that each file is delivered completely and correctly
    ○ FTP cannot manage, track or secure transfers; it can only move files from one point to another

- Secure Mission-critical Documents
  - Provides secure and reliable file transfers
    - Provides secure file transfers using SSL encryption
    - Provides permission-based access to file transfers
    - Ensures compliance for audits
    - FTP can't provide file security, specify access by job role or report when a file was created, moved or opened
- Reduced Integration Costs
  - Consolidate and reuse existing WebSphere MQ infrastructure
    - Consolidates files and messages into a single transport
    - Because WebSphere MQ File Transfer Edition uses and relies on WebSphere MQ for file transfer; a new network or other infrastructure is often not required
    - WebSphere MQ File Transfer Edition can be configured with or without a local WebSphere MQ queue manager
    - FTP creates multiple file transfer points that cannot be managed from a single location

Unlike File Transfer Protocol (FTP), which only offers a low-cost technology for point-to-point file transfer, IBM WebSphere delivers a complete managed file transfer solution that provides reliable file movement, eliminates the threat of data loss and increases transfer visibility to lower IT operating costs. WebSphere MQ File Transfer Edition can be deployed in concert with a new or existing SOA infrastructure to address file transfer needs for any business scenario.

Banking
SEC regulatory and corporate compliance rules require banks to carefully manage and track all file transfers. In these scenarios where FTP cannot meet requirements, WebSphere MQ File Transfer Edition offers a robust managed file transfer solution to ensure compliance by providing secure, auditable and reliable file transport of critical business data, and helps eliminate business uncertainty and risks. Additionally, WebSphere Transformation Extender could be used for FIX, NACHA, SWIFTNet, SEPA data transformation and compliance.

Healthcare
A long wait for patient test data is common in the healthcare field, as results move slowly between offices. Providers must also maintain file audit trails to meet FDA and HIPAA compliance obligations. FTP cannot provide a reliable, secure and auditable method of file transfer to meet these requirements. A managed file transfer solution based on WebSphere MQ File Transfer Edition enables reliable and secure transfer of patient data and provides an audit trail that prevents unauthorized access of files in transit. Receiving patient files in a timely and secure manner means that clinics reduce the wait time for test results, help doctors move to diagnosis quickly and provide higher quality care while meeting regulatory mandates.

Insurance
Insurance companies cannot afford inefficient health claims processing systems. Most insurers require that claims be complete within a 24-hour period to avoid backlogs and keep up with the increasing number of new, incoming claims. Using file transfer technologies like FTP prevents the timely processing of claims due to file transmission delays with lost or incomplete files. WebSphere MQ File Transfer Edition provides an automated managed file transfer solution for reliable transport, reduces claim processing times and helps insurance companies increase operational efficiencies and improve customer satisfaction.

Retail
Retailers need to transfer POS data into inventory management systems as part of daily store operations that track and analyze buying behavior and organize efficient restocking. The current use of overnight batch file transfers by way of

FTP is error-prone, labor-intensive and costly because transfers are not automated or batch transfers fail, creating backlogs that require maintenance. A managed file transfer solution like WebSphere MQ File Transfer Edition provides real-time, automated and reliable file transfer that eliminates backlogs and reports transmission failures. This enables a continuous transfer, as opposed to overnight batches, and helps retailers keep an up-to-the-minute view of demand and stock.

Benefits of using WebSphere MQ File Transfer Edition as a managed file transfer solution for SOA

IBM WebSphere MQ File Transfer Edition delivers an SOA-ready managed file transfer solution that can replace home-grown and FTP-based approaches to file movement. It delivers a managed file transfer solution for moving files—regardless of size—with reliability, security and auditability, WebSphere MQ File Transfer Edition, the newest member of the WebSphere MQ family of messaging products, is available both for distributed platforms and for IBM z/OS® on the IBM System z® platform.

- Improve reliability of data exchange between IT systems, and eliminate sources of error.
- Preserve integrity of data and secure it—especially when moving it between IT systems.
- Accelerate new development by avoiding duplication of function.
- Consolidate and reuse IT infrastructure across the enterprise.
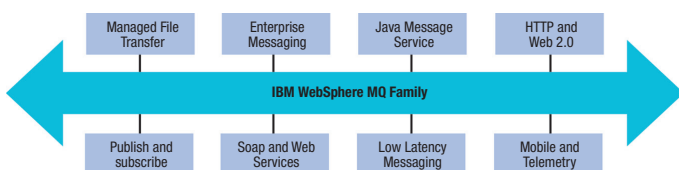
WebSphere MQ File Transfer Edition offers a reliable, secure and low-cost way to transfer files. Built off WebSphere MQ, messages and files can be bridged to move across a reliable transport. With WebSphere MQ File Transfer Edition, businesses gain the additional benefit of:

1. Complete File Reliability

WebSphere MQ File Transfer Edition uses the proven WebSphere MQ transport to ensure files arrive at their destination. Queue managers ensure the MQ network does not become overloaded with file data at a faster rate than it can arrive. Unlike FTP transfers, where partially transferred files appear—and are left behind if a transfer fails—WebSphere MQ File Transfer Edition places the file into the queue and, once the entire file has been transferred, ensures it is completed and recorded in the transfer audit log. This helps eliminate disruption caused to downstream processes that use partial or incomplete files. This level of reliability helps create a managed file transfer for SOA using WebSphere MQ as the transport foundation.
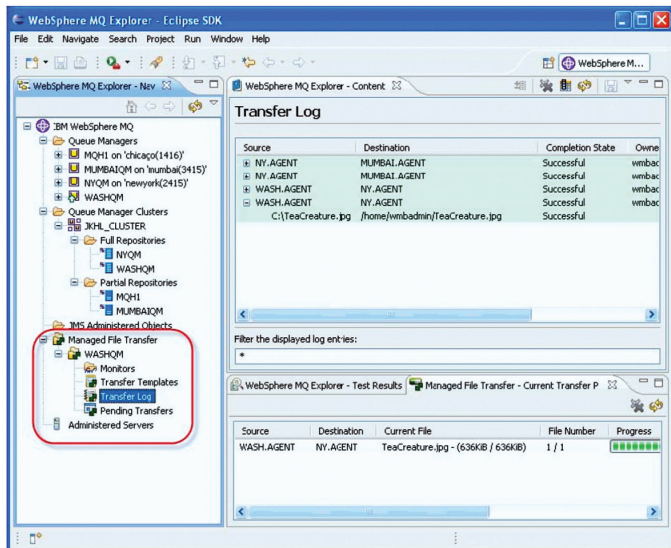
2. Fine-grained File Security

In WebSphere MQ File Transfer Edition, you control access to files using file system permissions. You can protect file transfers using SSL encryption and authentication. It enhances security with a more granular access control for users and groups. This provides the ability to easily configure fine-grained access control to agent resources, delivering user- and group-based control of who can transfer files to or from a particular agent, and perform operational and administrative agent functions.
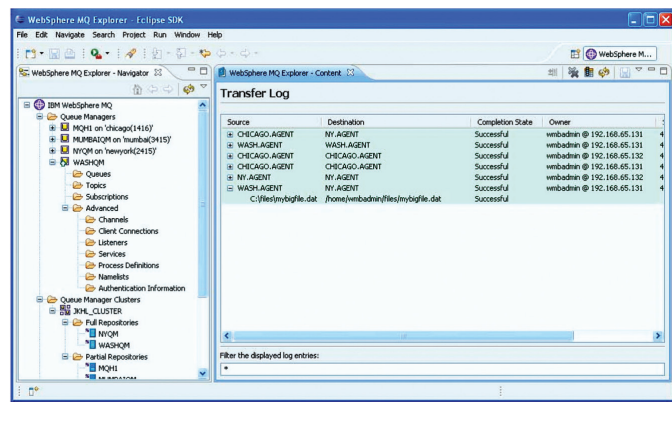
3. Reduction in Integration Costs

WebSphere MQ File Transfer Edition leverages proven messaging technology and can help reduce costs by consolidating the transport for both files and messages. Addressing the high cost in building and maintaining dual infrastructures to move business data, WebSphere MQ File Transfer Edition let's you reuse your current messaging investment. It helps your business save on operational cost by simplifying administration into one tool that manages the whole solution and reduces the cost of learning new skills required to maintain an entirely new file transfer system.

IBM WebSphere MQ File Transfer Edition is available on over 80 platforms and environments, and works with WebSphere MQ version 6 or later on the following platforms:

- Linux® on X86 Intel®
- Linux for IBM System z
- Microsoft® Windows®
- IBM AIX®
- IBM z/OS
- Sun™ Solaris™
- Hewlett Packard HP/UX

The WebSphere MQ File Transfer Edition coordination queue manager must be using WebSphere MQ version 7 or later.

Summary

This white paper provided an overview of WebSphere MQ File Transfer Edition, its relationship to WebSphere MQ, and how it addresses the business requirements for robust managed file transfer. IBM WebSphere MQ File Transfer Edition helps you build a customized, scalable and automated solution, enabling you to manage, trust and secure file transfers while eliminating costly redundancies, lowering maintenance costs and maximizing your existing IT investments. For additional information on IBM WebSphere MQ File Transfer Edition or the IBM WebSphere MQ family of products, visit: **ibm.com**/software/integration/wmqfamily/

Additional products that support WebSphere MQ File Transfer Edition include:

* WebSphere MQ File Transfer Edition Client
  WebSphere MQ File Transfer Edition Client is used when there is no local WebSphere MQ queue manager. The WebSphere MQ File Transfer Edition Client can connect to a remote WebSphere MQ. It allows you to establish client transport mode connections to the WebSphere MQ network.

* WebSphere MQ File Transfer Edition for z/OS
  WebSphere MQ File Transfer Edition for z/OS can be used with a local z/OS queue manager and brings managed file transfer to the z/OS platform.
* WebSphere MQ File Transfer Edition Server
  WebSphere MQ File Transfer Edition Server installs a file transfer agent and includes WebSphere MQ version 7.0 CDs. It can be used with local or remote queue managers.
* WebSphere MQ File Transfer Edition Remote Tools and Documentation
  WebSphere MQ File Transfer Edition Remote Tools and Documentation contains a complete set of documentation along with the WebSphere MQ Explorer graphical configuration tool, the WebSphere MQ File Transfer Edition remote commands, the Ant scripting tool, the database logger, and message schemas.

For information about supported platforms and environments, refer to **ibm.com**/webspheremq/filetransfer/requirements

For a technical overview of WebSphere MQ File Transfer Edition refer to IBM WebSphere MQ File Transfer Edition Solution Overview, REDP-453232.

For guidance about implementing WebSphere MQ File Transfer Edition solutions, including step-by-step instructions and a sample scenario, refer to Getting Started with IBM WebSphere MQ File Transfer Edition V7, SG24-7760.
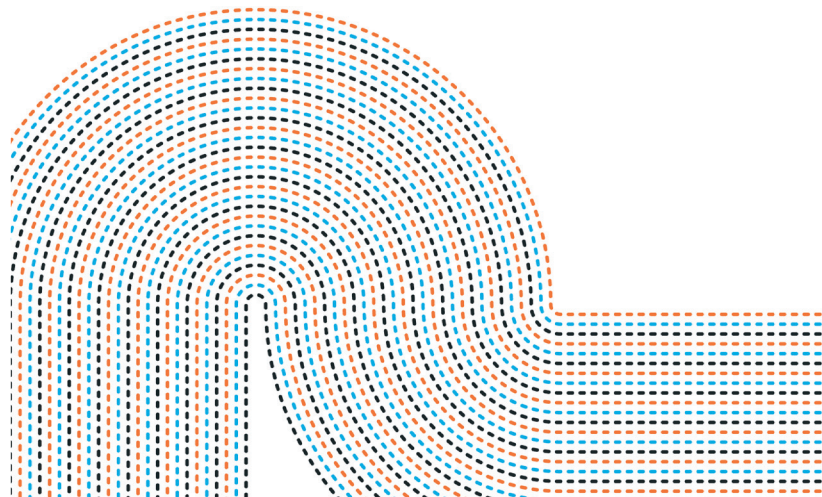
For More Information

To learn more about the managed file transfer solution for SOA, please contact your IBM marketing representative or IBM Business Partner, or visit the following Web sites:

- **ibm.com**/webspheremq
- **ibm.com**/software/integration/wmqfamily/
- **ibm.com**/webspheremq/filetransfer/requirements