ISSN: 2583-9888
DOI: doi.org/10.51219/JAIMLD/tulasiram-yadavalli/525

URF PUBLISHERS
connect with research world

Journal of Artificial Intelligence, Machine Learning and Data Science

https://urfpublishers.com/journal/artificial-intelligence

Vol: 2 & Iss: 1

Research Article

Axway MFT vs. IBM MFT: A Comparative Study with Insights into other Leading Managed File Transfer Solutions

Tulasiram Yadavalli*

Citation: Yadavalli T. Axway MFT vs. IBM MFT: A Comparative Study with Insights into other Leading Managed File Transfer Solutions. *J Artif Intell Mach Learn & Data Sci 2024*, 2(1), 2442-2446. DOI: doi.org/10.51219/JAIMLD/tulasiram-yadavalli/525

Received: 02 March, 2024; **Accepted:** 18 March, 2024; **Published:** 20 March, 2024

***Corresponding author:** Tulasiram Yadavalli, USA, E-mail: ytr.hdp@gmail.com

Copyright: © 2024 Yadavalli T., This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

ABSTRACT

This article compares Axway MFT and IBM MFT. Both solutions provide secure, automated file transfers for enterprises. Axway MFT offers robust security, flexible deployment options and a user-friendly administration console. IBM MFT focuses on extensive integration, advanced monitoring and high-throughput processing. Both platforms support multiple transfer protocols, enforce end-to-end encryption and meet regulatory requirements. Furthermore, each solution boosts operational efficiency with automation and API-driven workflows. In addition, the article briefly reviews other leading managed file transfer solutions. Overall, the study highlights strengths, weaknesses and market impact while addressing challenges such as data security and compliance.

Keywords: Axway MFT, IBM MFT, Managed File Transfer, Secure File Transfer, Encryption, Compliance, Automation, Integration, File Transfer Protocols, Enterprise Data Exchange

1. Introduction

Managed file transfer (MFT) solutions evolved to replace legacy FTP systems. They secure file movement and enforce compliance. MFT platforms help companies transfer large data volumes safely. They also eliminate the need for custom scripts.

Axway MFT and IBM MFT have made significant strides. Axway MFT uses a standardized three-tier architecture. It deploys in cloud, hybrid or on-premise environments. It uses container orchestration and microservices for horizontal scaling. Moreover, it integrates real-time alerting and predictive analytics through its Sentinel module. It supports multiple secure protocols such as SFTP, FTPS and AS2. Axway also offers extensive API support and script automation using languages like Python and shell scripting.

IBM MFT, on the other hand, emphasizes deep integration with enterprise middleware. It supports advanced protocol conversion and data transformation. IBM MFT uses a layered architecture that integrates with IBM's z/OS and other legacy systems. It provides high-throughput transfers with encryption algorithms such as AES-256. Furthermore, IBM MFT offers robust monitoring and comprehensive reporting tools. It also supports RESTful APIs for automation and smooth integration with ERP, CRM and other business systems.

This shows that MFT solutions now cover security, scalability and automation. They help organizations meet stringent compliance standards such as GDPR, HIPAA and PCI DSS. Both Axway and IBM have used advanced technologies to address today's file transfer challenges. Their solutions combine technical rigor with ease of integration to serve diverse enterprise needs.

2. Literature Review

The literature on managed file transfer (MFT) highlights a clear evolution from basic, insecure file exchange methods to sophisticated, secure and automated systems. Paudel and

Schindler[1] note that MFT has grown from simple FTP solutions into comprehensive platforms that ensure security, compliance and automation in business-to-business environments. Axway MFT is portrayed as a leading solution in this space; its standardized three-tier architecture, detailed in Axway's documentation[4] and illustrated through its GitHub playbooks[2], emphasizes scalability, centralized control and robust protocol support. Pro2col's industry overview[3] further reinforces Axway's capability to meet stringent regulatory requirements, making it ideal for complex, high-volume transfers.

In contrast, IBM's MFT, as described in the IBM MQ documentation[5,7] and technical conference materials[6], focuses on deep integration with legacy systems and advanced data transformation. IBM MFT's layered design and comprehensive workflow orchestration support multi-protocol transfers and complex data processes. The Medium article by M. A.-C. I. Architect[8] distinguishes traditional SFTP from full-fledged MFT solutions by underscoring the additional benefits of auditability and automation. Overall, the literature suggests that while both Axway and IBM offer robust, secure file transfer capabilities, Axway MFT excels in flexibility and centralized management for dynamic enterprise environments, whereas IBM MFT is particularly suited for organizations requiring deep legacy integration and extensive data transformation capabilities.

3. Axway Managed File Transfer

Axway Managed File Transfer (MFT) is an enterprise-grade solution that securely automates and controls the movement of data across diverse environments. At its core, Axway MFT employs a standardized three-tier architecture that separates the system into a public subnet (typically acting as a reverse proxy and entry point), a private subnet that hosts the processing core and a backend layer responsible for database and file storage management[1].

This separation ensures that each component is isolated for security and scalability. The system supports multiple secure protocols such as SFTP, FTPS, AS2 and HTTPS. It ensures data is encrypted in transit and at rest using industry-standard algorithms like AES-256. Axway MFT provides a centralized administration console that allows administrators to configure file transfer rules, define automated workflows and monitor file movements in real-time.

The most prevalent element that it boasts is that it integrates seamlessly with various business applications through RESTful APIs and supports custom script automation in languages such as Python or shell scripting. The solution also incorporates predictive monitoring and alerting capabilities through modules such as Sentinel, which offers real-time diagnostics and performance metrics. Axway MFT is engineered to support high-volume transfers and horizontal scaling via container orchestration[2].

It enables enterprises to consolidate file transfer processes, enforce compliance (meeting standards such as GDPR, HIPAA and PCI DSS) and provide audit trails and non-repudiation through extensive logging and reporting. However, the solution does have limitations.

For instance, while it offers extensive configuration options, these can add to system complexity during deployment and customization. Integration with non-Axway applications may require additional middleware or scripting and the learning curve can be steep for organizations without dedicated MFT expertise. The solution is best suited for enterprises that require centralized control over B2B file exchanges, internal system-to-system transfers and those needing robust automation with high levels of compliance and security[3].

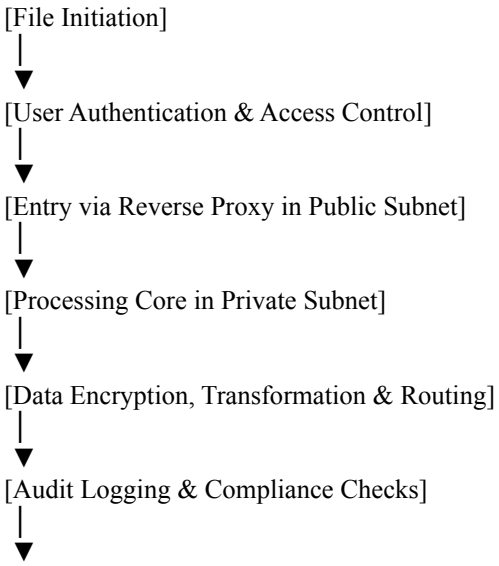

Figure 1: How Axway MFT Works.

Figure 1 shows that in Axway-managed file transfer protocols, the process begins when a user or system initiates a file transfer. The request passes through a reverse proxy that sits on the public subnet, which performs initial validation and routing.

Once authenticated, the file is transferred to the processing core located in the private subnet. Here, the file undergoes encryption and any necessary transformations (such as compression or format conversion) before a routing decision is made based on predefined policies[4].

Throughout this process, audit logs capture every event, ensuring compliance and traceability. Finally, the file is delivered to the intended destination using the appropriate protocol. This structured flow ensures that all file transfers are secure, monitored and compliant with enterprise policies.

4. IBM Managed File Transfer

IBM Managed File Transfer (MFT), often represented within the IBM Sterling suite, is designed to handle complex, high-volume file transfers across heterogeneous IT architectures. IBM MFT utilizes a layered architecture that integrates tightly with legacy systems and modern cloud environments[1].

The system is built to support reliable protocol conversion, enabling the seamless transfer of data between disparate systems using protocols such as SFTP, FTPS, AS2 and traditional FTP over secure channels. IBM MFT incorporates advanced data transformation engines that convert and standardize data formats, ensuring compatibility between systems such as ERP, CRM and mainframe applications[5].

The solution places a strong emphasis on security and compliance by enforcing encryption at both the network and file levels and by supporting granular access controls that integrate with corporate directories like LDAP and Active Directory. IBM MFT includes comprehensive monitoring, audit logging

and reporting tools that provide a detailed view of file transfer operations. It features a centralized administration interface that consolidates configuration, performance monitoring and troubleshooting into a single pane of glass.

The system also offers RESTful APIs for integration and supports automated workflow orchestration that can trigger subsequent business processes upon the completion of a transfer. IBM MFT is engineered to be fault tolerant and is deployed with high availability configurations, often using IBM's proprietary middleware for enhanced scalability and reliability[6].

Despite its strengths, IBM MFT has some limitations. The most important thing users should note is that the initial setup and configuration can be complex and may require significant technical expertise. Its deep integration with IBM's ecosystem means that organizations not already invested in IBM technologies might face challenges when interfacing with non-IBM systems.

Additionally, the system's extensive feature set can lead to a steeper learning curve. IBM MFT is ideally used in scenarios where enterprises have complex, multi-protocol environments, require tight integration with legacy systems and must adhere to strict regulatory standards typical of highly regulated industries such as finance and healthcare.

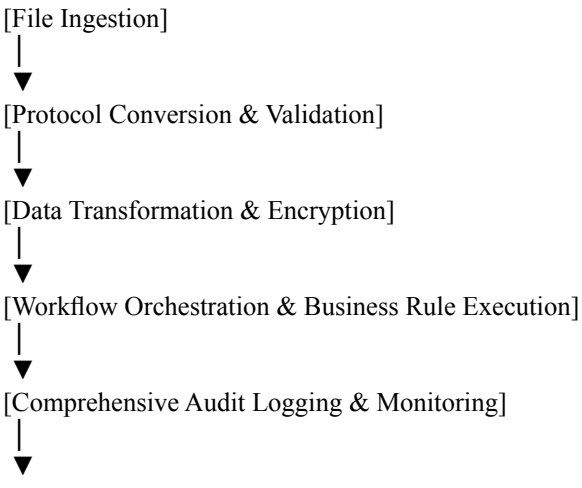

Figure 2: How IBM MFT Works.

Figure 2 shows that in the IBM-managed file transfer (MFT) sequence, the process begins when a file is ingested into the IBM MFT system. The file undergoes protocol conversion and validation to ensure it meets the required format and security standards. Next, the system performs data transformation and applies encryption as needed[7,5].

This is followed by workflow orchestration, where business rules and automated processes are executed to determine how the file should be processed further. Throughout these stages, the system continuously logs events and monitors performance for audit and compliance purposes.

Ultimately, the file is delivered to its destination via the configured secure endpoints. This workflow ensures that IBM MFT transfers files securely and also integrates deeply with enterprise processes and compliance requirements.

5. Axway MFT vs. IBM MFT: A Quick Comparison

(Table 1) below shows a detailed comparison of the IBM and Axway MFT protocols[3,5,7,8].

Table 1: Axway vs. IBM MFT comparison.

Aspect	Axway MFT	IBM MFT
Architecture	Utilizes a standardized three-tier architecture with clear separation between the public entry point, processing core and backend storage layers.	Employs a layered architecture that integrates with legacy and modern systems, often using IBM middleware for enhanced fault tolerance and scalability.
Security & Compliance	Provides end-to-end encryption (AES-256), extensive audit trails and centralized access control. Designed to meet GDPR, HIPAA, PCI DSS, etc.	Enforces encryption at both network and file levels, supports granular access controls via LDAP/AD integration and offers comprehensive compliance logging.
Automation & Integration	Features a centralized administration console with API-driven automation and real-time predictive monitoring. Supports container orchestration and microservices.	Offers advanced workflow orchestration, robust protocol conversion and data transformation engines. Integrates with ERP, CRM and legacy systems via REST APIs.
Scalability & Availability	Scales horizontally using container orchestration. Provides high availability with multi-AZ deployment and fault tolerance via a resilient three-tier design.	Designed for high-volume, enterprise-level transfers with high availability configurations and fault tolerance through IBM's proprietary middleware.
Ease of Deployment	Deployment is streamlined through standardized modules and can be deployed on-premise, hybrid or in the cloud. However, customization may add complexity.	Deployment requires significant technical expertise. Deep integration with IBM ecosystems may complicate setups in non-IBM environments.
Best Use Scenarios	Ideal for organizations needing centralized, secure file transfer with strong automation and predictive monitoring. Suited for B2B exchanges and hybrid environments.	Best suited for enterprises with complex, multi-protocol environments that demand deep integration with legacy systems and require strict compliance adherence.
Limitations	Complex to customize for non-standard integrations. The learning curve is steep without dedicated expertise.	Initial setup and configuration are complex. The system may be challenging for organizations that are not already using IBM technologies.

6. Comparison With Other MFT Models

Let's compare Axway MFT and IBM MFT with MuleSoft, GoAnywhere, MOVEit and Oracle MFT[8].

6.1. Axway MFT and IBM MFT vs. MuleSoft

MuleSoft's Anypoint Platform is primarily an integration and API management solution that enables connectivity across diverse applications and data sources. In a file transfer context, MuleSoft provides API-led connectivity and can orchestrate data movement across cloud and on-premise systems.

However, MuleSoft is not designed from the ground up as a managed file transfer solution. Its technical architecture excels in

integrating complex data flows, performing transformation and exposing services via APIs. In contrast, both Axway MFT and IBM MFT are purpose-built to handle secure, high-volume file transfers with native support for multiple file transfer protocols, robust encryption at transit and at rest and detailed audit trails.

Enterprises that choose MuleSoft for file transfer tasks may need to build additional layers of custom coding or utilize third-party connectors to achieve the same level of file-level security and compliance that Axway or IBM deliver out-of-the-box. MuleSoft's strength lies in its flexibility and broad integration capabilities, which are highly valued in organizations with diverse application environments; its weakness in the MFT arena is that it lacks the deep file transfer management, performance optimizations and regulatory compliance assurances that specialized MFT solutions offer.

Adoption trends indicate that companies with a heavy focus on API-led integration sometimes extend MuleSoft's capabilities to include file transfer, but they often supplement it with dedicated MFT tools when security and scalability become paramount.

6.2. Axway MFT and IBM MFT vs. GoAnywhere

GoAnywhere MFT is an established managed file transfer solution known for its ease of deployment, robust workflow automation and secure file exchange capabilities. Technically, GoAnywhere provides end-to-end encryption, supports multiple secure protocols and includes built-in features for compliance reporting and audit trails.

When compared to Axway MFT, which features a resilient three-tier architecture that separates entry, processing and backend storage and IBM MFT, which integrates deeply with legacy systems and offers advanced data transformation capabilities, GoAnywhere tends to focus on streamlined simplicity and rapid implementation.

GoAnywhere's strengths are seen in mid-market and enterprise environments where file transfers are frequent and security is non-negotiable. However, its architecture may not scale as flexibly for extremely high-volume transfers or complex integration scenarios as Axway's containerized, horizontally scalable framework or IBM's extensive integration middleware.

Adoption trends in industries such as healthcare and financial services have seen GoAnywhere MFT deployed successfully for secure and compliant file transfers, yet larger enterprises with intricate IT ecosystems often favor Axway or IBM due to their broader protocol support and advanced automation features.

6.3. Axway MFT and IBM MFT versus MOVEit

MOVEit, developed by Progress Software, is widely adopted in sectors with strict regulatory requirements, including healthcare, finance and government. Technically, MOVEit offers comprehensive security features with strong encryption, robust automation for file workflows and extensive reporting capabilities.

MOVEit's architecture is engineered for high availability and fault tolerance, similar to IBM MFT's emphasis on reliability. However, MOVEit has faced challenges related to complex configurations and, more recently, security breaches that have affected its market perception.

In contrast, Axway MFT's modular three-tier design provides a clear separation of duties between public access, processing and storage and IBM MFT's layered integration approach makes it particularly strong for environments that require seamless interfacing with legacy systems. MOVEit's technical strength is its strong compliance framework and user-friendly interface, but its limitations include a steeper learning curve during deployment and potential integration challenges when interfacing with non-native enterprise systems.

Adoption trends show that while MOVEit remains popular in regulated industries, some large enterprises are evaluating alternatives like Axway MFT and IBM MFT for their broader integration and scalability advantages.

6.4. Axway MFT and IBM MFT vs. Oracle MFT

Oracle MFT is designed to integrate tightly with Oracle's extensive suite of enterprise applications and middleware. Its technical architecture uses native integration with Oracle databases and ERP systems, providing deep scalability and strong performance in environments already dominated by Oracle technologies. Oracle MFT excels in scenarios where interoperability with Oracle Cloud Infrastructure is required and it offers a robust framework for handling secure file exchanges in highly regulated industries.

However, compared to Axway MFT, which offers a flexible deployment model (on-premise, hybrid or cloud) and containerized scalability and IBM MFT, which provides advanced protocol conversion and legacy system integration oracle MFT may have limitations in environments that require broader third-party integration or where non-Oracle systems predominate.

Its strength lies in its optimized performance for Oracle-centric operations, yet its complexity and less flexible integration framework can be drawbacks for organizations that operate heterogeneous IT architectures. Enterprise adoption trends indicate that Oracle MFT is often chosen by organizations heavily invested in Oracle ecosystems, whereas companies seeking a more vendor-agnostic approach lean toward Axway MFT or IBM MFT for their ability to interface with a wider array of systems.

7. Conclusion

Both Axway MFT and IBM MFT deliver enterprise-grade solutions that address the complexities of modern file transfer environments. Each system is designed with robust architectures that ensure security, scalability and compliance while supporting a wide range of protocols and integration capabilities. Axway MFT stands out with its modular three-tier design, containerized scalability and predictive monitoring features that offer a centralized view and ease of management. This solution is ideal for organizations seeking flexible deployment options across on-premise, hybrid or cloud environments, particularly when there is a need for seamless B2B and internal file exchanges. On the other hand, IBM MFT excels in environments that demand deep integration with legacy systems and high-throughput data transformation. Its layered architecture and advanced workflow orchestration make it particularly suitable for highly regulated industries that require meticulous data handling and auditability.

When compared with other MFT solutions like MuleSoft, GoAnywhere, MOVEit and Oracle MFT, it becomes clear that each platform has its own technical strengths and limitations.

MuleSoft offers exceptional API-led integration but falls short in dedicated file transfer management. GoAnywhere and MOVEit serve well in mid-market and regulated sectors with a focus on simplicity and compliance, while Oracle MFT performs best in Oracle-centric environments. Both Axway and IBM, however, provide comprehensive and scalable file transfer solutions that support enterprise-wide adoption across diverse and complex IT architectures.

8. References

1. Paudel SP, Schindler F. Evolution of Managed File Transfer in Business to Business. Information Technology Applications, 2020;9: 35-42.
2. https://github.com/Axway/MFT-ST-Automation-Ansible
3. https://pro2col.com/axway-mft
4. https://docs.axway.com/bundle/TransferCFT_310_allOS_en_HTML5/page/axway_mft_architecture.html
5. https://www.ibm.com/docs/en/ibm-mq/9.2?topic=transfer-how-does-mft-work-mq
6. https://www.mqtechconference.com/sessions_v2017/MQTC_2017_IBM_MQFT-An_Overview_and_Usage.pdf
7. https://www.ibm.com/docs/en/ibm-mq/9.2?topic=transfer-how-does-mft-work-mq
8. https://medium.com/@madhu.anthati/demystifying-managed-file-transfer-mft-vs-sftp-understanding-the-differences-and-making-the-right-9e59756a1bb0