A Better Alternative for Mainframe File Transfer

There are many Managed File Transfer (MFT) options that layer on top of Transmission Control Protocol/Internet Protocol (TCP/IP). As a result, all of these solutions have the same underlying problem: they are not designed for modern mainframe environments. This means that data centers relying on these TCP/IP-layered applications are exposing their most valuable data assets to unnecessary security threats, productivity losses and MIPS charges.

In contrast, the SecureTransfer Profile for Luminex MDI (MDI:ST™) leverages native FICON channels for fast, efficient and secure data transfer. Data is transferred to and from the mainframe via a FICON-attached MDI off-host processing platform which manages encryption and optional EBCDIC-to-ASCII conversion… all without using CPU cycles on the mainframe.

Modern, Secure Mainframe File Transfer over FICON

- **Secure:** Minimize risk by eliminating unsecure ports/FTP
- **Savings:** Offload mainframe encryption and data conversion processing
- **Performance:** High speed, reliable file transfers; large files are no longer an issue
- **Easy to Implement:** JCL Conversion options and no digital certificates required

MFT over TCP/IP | **MDI:ST over FICON**

MDI SecureTransfer leverages native FICON channels, rather than mainframe TCP/IP, to improve the security and performance of data sharing while reducing mainframe CPU usage.

Security

TCP/IP can represent a significant risk to mainframe security. For example, open IP ports provide potential network attack targets, while applications, such as FTP, send passwords and data as unencrypted clear text. And, due to the nature of TCP/IP on the mainframe, the process of implementing more secure TCP/IP-layered applications presents challenges that can make setup difficult and time consuming.
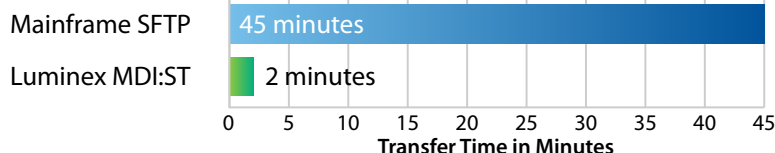
MDI SecureTransfer shifts data transfers from unsecured mainframe IP ports to secure FICON channels, shielding the mainframe from direct IP traffic, while managing and enforcing data encryption, including AES-256.

Performance and Efficiency

File transfer performance on the mainframe is often characterized by slow transfer speeds and unreliable large file transfers. The drawbacks are compounded by the cost of mainframe CPU cycles for running TCP/IP services and mainframe-based encryption. To avoid MIPS costs, data centers may restrict file transfer activities to off-peak hours, losing opportunities for flexible, on-demand data sharing or "data dexterity."

Leveraging fast and efficient FICON I/O channels rather than TCP/IP, MDI SecureTransfer **increases data transfer speeds up to 90%+**. MDI:ST also **reduces CPU utilization up to 90%+** by offloading TCP/IP and encryption, enabling more frequent access to the enterprise's most valuable data.

Benefits

- Improved Security
  - Reduce or eliminate unsecured mainframe TCP/IP ports
  - Encrypt file transfers
  - Integrates with SAF
- Improved Performance and Reliability
  - Transfers data off mainframe via FICON
  - Multiple, simultaneous transfers
  - Large file transfers? No problem!
- Offload Mainframe CPU Cycles
  - Encryption
  - EBCDIC to ASCII conversion
  - TCP/IP processing
- Easy to Implement
  - No digital certificates required
  - Basic JCL deployment

Features

- High speed FICON interface
- Redundant data paths
- JCL Conversion Utility and Services

Customer Example: Move 10 GB of Data Off the Mainframe

Mainframe SFTP	45 minutes
Luminex MDI:ST	2 minutes

0   5   10   15   20   25   30   35   40   45
Transfer Time in Minutes

More MDI Platform Use Cases

The Luminex MDI Platform enables limitless data integration, transfer and off-host processing capabilities via task-specific Profiles. Use cases include:

- **MDI SAS Language Processor**
  Designed to off-load mainframe processing of SMF records to our MDI Platform where the Performance Database (PDB) is created and the desired MXG reports are sent back to the mainframe for report distribution.

- **BigData Transfer**
  Integrate mainframe Big Value Data with Big Data Analytics and Data Lakes using more efficient FICON I/O channels. Greater efficiency and faster data movement enables more frequent access to data for better business intelligence, decision-making and competitive advantage.

- **Cross-Platform Data Sharing**
  Provide integration with other computing platforms and grids by transferring mainframe data to the platform/grid and, when processing is complete, transferring the data back to the mainframe, triggering downstream batch processing.

About Luminex

Luminex serves as a trusted advocate helping enterprise customers protect, manage, and leverage corporate data assets by developing and delivering high quality, innovative technology solutions.

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Ease of Implementation

With MDI SecureTransfer, transferring data to or from the mainframe is as easy as executing an ICEGENER. Data is transferred in an easy two step batch job. To transfer data off the mainframe, the first step copies the data to an MDI:ST output file which sends the data down the FICON channel to MDI. The second step communicates down the FICON channel to MDI to encrypt the data and transfer it to the final destination. When sending data to the mainframe, a simple batch job communicates with MDI to "pull" the file to the mainframe and catalog it.

Converting hundreds or thousands of JCL streams from your current MFT solution to MDI:ST is also easy. As part of a Professional Services Engagement, Luminex can convert your batch JCL using our proprietary JCL Conversion Utility. Our utility can convert FTP, SFTP, Connect:Direct and other MFT product's JCL to MDI:ST compatible JCL statements.

With MDI SecureTransfer, transferring data from the mainframe has never been easier–no complicated setup, no digital certificates (see below), easy JCL conversion and a faster transfer rate than mainframe TCP/IP.

No Digital Certificates Required

To securely share data, mainframes using the SFTP or FTPS features of the z/OS Communications Server are required to exchange digital certificates between a client and the server. This requires creating a Certificate Authority, followed by the creation of a digital certificate by the client sharing data with the server. The digital certificate is then exported by the client and installed in the server's certificate store. While this process has been simplified here for brevity, it can take weeks or months to coordinate the various responsible parties and finalize the process.

Since MDI SecureTransfer does not use the z/OS Communication Server's FTPS, digital certificates are not required to secure data transfers. Instead, data is transferred between the mainframe and MDI via a secure FICON channel. MDI offloads the mainframe's client/server duties (and MIPS) for data transfer, including encryption, via Secure Shell (SSH) File Transfer Protocol or SFTP. SFTP uses SSH keys for identity authentication. These are automatically generated and exchanged, and are typically generated once and never expire.

Luminex MDI: Mainframe Data Integration Platform

The MDI Platform provides the secure interchange of data between mainframes and distributed systems, via FICON channels, and off-host processing. MDI enables mainframe integration with enterprise-wide business applications and systems such as Big Data applications, computing grids, low-cost NFS, SAN or object storage. The platform consists of a core transport system, based on Luminex's heritage of mainframe connectivity technologies, and employs extensible "Profiles" which direct bidirectional workflows for data sharing, transformation and movement wherever mainframes and distributed systems need to securely and efficiently exchange data.
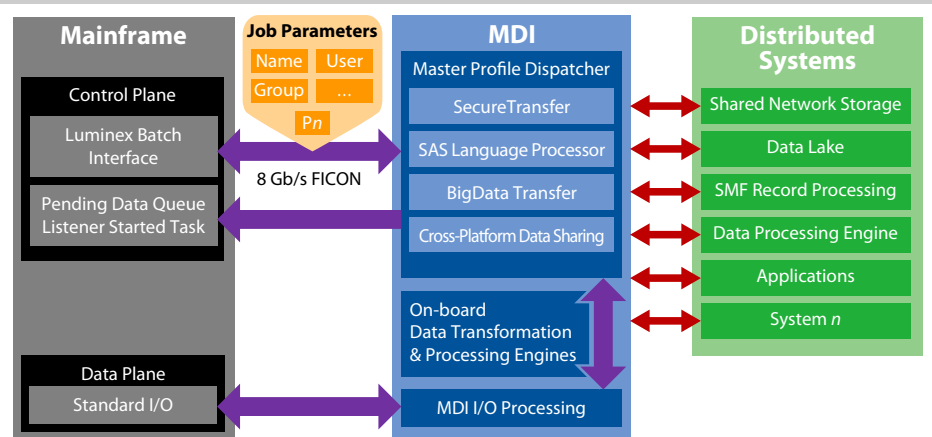
MDI uses a modular, highly customizable profile architecture allowing new data sharing workflows to be quickly implemented for each data center's unique requirements.

Now, enterprises can take full advantage of all of the data that is stored in mainframes and non-mainframe environments for competitive advantage.