# ModernFi

# ModernFi SFTP Inbound/Outbound Integration Guide

## Overview

This guide helps financial institutions securely establish Secure File Transfer Protocol (SFTP) connections with ModernFi to automate daily data exchanges as part of the ModernFi deposit network program. These exchanges include sending account, depositor, and transaction data to ModernFi (**Inbound**) and receiving account balances and withdrawal data from ModernFi (**Outbound**). By following these steps, you'll streamline the data sharing processes, eliminating the need for manual report generation and uploads through ModernFi's Admin Portal.

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## 1. General Requirements and Security

### What We Need from You

- Your institution's external IP address for firewall whitelisting.
- Confirmation of your preferred automation process.
- For outbound files, your SFTP server details if you want files pushed to your system.

### What ModernFi Will Provide

- SFTP connection details: host, port, username.
- Private key for authentication, sent securely via SendSafely.
- SSH public key (for outbound file delivery to your server).
- Standardized CSV file templates with required and optional fields.

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## Security Best Practices

- Use key-based authentication exclusively.
- Never share private keys via email or insecure channels.
- Request and whitelist ModernFi's IP address for outbound connections.
- Use SendSafely for secure key delivery.
- Monitor transfers and automate alerts for failures.
- Ensure compliance with internal and regulatory data security policies.

# 2. SFTP Inbound: Sending Data to ModernFi

**Purpose:** Automate daily upload of account, depositor, and transaction data to ModernFi.

## Key Points

- Files are uploaded to ModernFi's SFTP server: sftp.prod.modernfi.com.
- Use key-based authentication with the private key provided via SendSafely.
- Upload designated files to their respective folders:
    - /accounts/
    - /depositors/
    - /transactions/
- **File naming conventions and formats must be strictly followed.**
- **Frequency:** ModernFi runs its network allocation each day the Federal Reserve Bank of New York is open at 2pm ET. We will need one file per allocation day capturing all data since the previous allocation.
- **Timing:** Inbound SFTP files must be delivered by 1pm ET on allocation days.

# 3. SFTP Outbound: Receiving Data from ModernFi

**Purpose:** Automate daily receipt of account balances and withdrawal files.

## Delivery Options

- **Option 1:** ModernFi pushes files to your SFTP server.
    - Provide your server host, username, and whitelist ModernFi's IP.
    - ModernFi sends files after processing:
        - Balances at 7:15pm ET daily (/balances/ folder).

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- - Withdrawals after allocation (~4pm ET, /withdrawals/ folder).
  - **Option 2:** You pull files from ModernFi's SFTP server.
    - Access /balances/ and /withdrawals/ folders on ModernFi's server.
    - Download files after scheduled times.

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## 4. File Format Specifications

### Inbound Files (To ModernFi)

| File Type | Folder | Naming Convention | Frequency | Description |
|---|---|---|---|---|
| Accounts | /accounts/ | ACCOUNTS_YYYY-MM-DD.csv | Daily (24-hour) | Account details |
| Depositors | /depositors/ | DEPOSITORS_YYYY-MM-DD.csv | Daily (24-hour) | Depositor details |
| Transactions | /transactions/ | TRANSACTIONS_YYYY-MM-DD.csv | Daily (24-hour) | Transaction records |

### Accounts File Fields

| Field Name | Required | Description |
|---|---|---|
| institution_account_id | Yes | FI internal unique account ID |
| signer_primary | Yes | Primary signer's name |
| account_title | Yes | Account title |
| insurance_limit | Yes | Deposit insurance limit (numeric) per TIN |
| interest_rate | Yes | Interest rate as numeric (e.g., 4.0 for 4%) |
| account_type | Yes | Account type: "DDA" or "MMDA" |
| signer_secondary | No | Secondary signer's name |
| beneficiary_name | No | Beneficiary's name |
| beneficiary_tin | No | Beneficiary's Tax ID |
| institution_branch_id | No | Branch identifier |
| closed_at | No | UTC ISO 8601 close date/time |
| signer_primary_tin | No | Primary signer's Tax ID |

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## Depositors File Fields

| Field Name | Required | Description |
| --- | --- | --- |
| institution_account_id | Yes | Account ID linked to depositor |
| institution_depositor_id | Yes | Unique depositor ID |
| tin | Yes | Depositor's Tax ID |
| entity_name | Yes | Organization name or NULL |
| street | Yes | Street address |
| city | Yes | City |
| state | Yes | State/province |
| zip | Yes | Postal/ZIP code |
| country_code | Yes | 2-letter country code (e.g., "US") |
| phone_number | Yes | Phone number |
| is_primary_phone_number | Yes | TRUE/FALSE: primary phone? |
| email_address | Yes | Email address |
| is_primary_email | Yes | TRUE/FALSE: primary email? |
| first_name | No | Depositor's first name |
| last_name | No | Depositor's last name |
| closed_at | No | UTC ISO 8601 close date/time |

## Transactions File Fields

| Field Name | Required | Description |
| --- | --- | --- |
| institution_account_id | Yes | Account ID |
| amount | Yes | Positive for deposits, negative for withdrawals |
| transacted_at | Yes | UTC ISO 8601 transaction timestamp |
| institution_transaction_id | Yes | Unique transaction ID |
| description | No | Optional free-text transaction details |

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## Outbound Files (From ModernFi)

| File Type | Folder | Naming Convention | Frequency | Description |
| --- | --- | --- | --- | --- |
| Balances | /balances/ | BALANCES_YYYY-MM-DD.csv | Daily at 7:15pm ET | Account balances |
| Withdrawals | /withdrawals/ | WITHDRAWALS_YYYY-MM-DD.csv | Daily ~4pm ET | Withdrawal transactions |

## Balances File Fields

| Field Name | Required | Description |
| --- | --- | --- |
| institution_account_id | Yes | Unique account ID |
| balance | Yes | Current account balance (numeric) |
| timestamp | Yes | UTC ISO 8601 timestamp |
| description | Yes | Description of balance entry |
| mtd_balance | Yes | Month-to-date balance (numeric) |
| interest_accrued_today | Yes | Interest accrued today (numeric) |
| interest_accrued_mtd | Yes | Interest accrued month-to-date (numeric) |
| agg_monthly_apy | Yes | Aggregate monthly APY (percentage) |

## Withdrawals File Fields

| Field Name | Required | Description |
| --- | --- | --- |
| institution_account_id | Yes | Unique account ID |
| amount | Yes | Positive for deposits, negative for withdrawals |
| transacted_at | Yes | UTC ISO 8601 timestamp |
| modernfi_transaction_id | Yes | ModernFi transaction ID |
| description | No | Optional free-text withdrawal details |

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## 5. Setup and Configuration

### Receiving Credentials and Keys

- Private keys for SFTP authentication will be sent securely via SendSafely.
- You will receive your username and the SFTP host address (sftp.prod.modernfi.com).

### Configuring Your SFTP Client

- Use your preferred SFTP client (FileZilla, WinSCP, command-line).
- Configure connection with:
  - Host: sftp.prod.modernfi.com
  - Port: 22
  - Username: Provided by ModernFi
  - Authentication: Use the private key from SendSafely

### Testing and Automation

- Test connectivity by uploading/downloading test files to/from each folder.
- Automate daily file generation and transfer according to the specified schedules and naming conventions.

# 6. Troubleshooting

- Ensure private key permissions are set correctly:

```bash
1. bash
2. chmod 600 private_key.pem
```

- Command-line connection example:

```bash
1. bash
2. sftp -i {{YourInstitutionName}}_private_key.pem
3. sftp-user-{{YourInstitutionName}}@sftp.prod.modernfi.com
```

- For connection or file issues, verify IP whitelisting and firewall settings.

# 7. Support

If you encounter any issues during the setup process or have questions, please contact ModernFi's support team (support@modernfi.com) or your dedicated Account Manager for assistance.