

IBM Financial Transaction Manager for Automated Clearing House Services

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Information Management



International Technical Support Organization

**IBM Financial Transaction Manager for Automated
Clearing House Services**

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Note: Before using this information and the product it supports, read the information in “Notices” on page vii.

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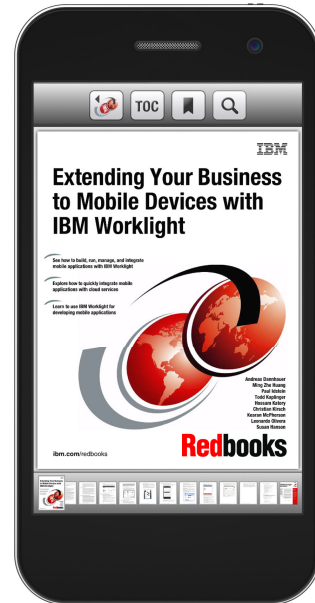
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Preface

Automated Clearing House (ACH) payment volume is increasing every year. NACHA estimates that ACH payments crossed 21 billion several years ago. Financial institutions are re-evaluating their current payment platforms. Financial Transaction Manager is a single interface that can handle ACH needs that cross various platforms. IBM® Financial Transaction Manager for ACH Services provides pre-built support for processing all ACH transactions that flow through financial systems. This includes ingestion, validation, transaction management, and distribution. The robust rules-based environment handles payment routing and exception management, and an automated import and export facility handles ACH processing rules. Further functions include administration, process management, data warehousing, and reporting and extracts.

This IBM Redbooks® publication is written for the business analyst (banker), and the computer administrators responsible for configuration of the system. A business analyst can use this book to see what process within Financial Transaction Manager are associated with their banking terms. A bridge is built from banking terms to configuration terms. A system administrator can look into this publication to see exactly how to configure Financial Transaction Manager for ACH to the needs of their financial institution. By creating reference points for both the business analyst and the system administrator, communication and understanding is enhanced as both teams understand each other's terminology and how to use Financial Transaction Manager for ACH.

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Introduction

This chapter provides an overview of Financial Transaction Manager for ACH and explains the key components of the product. It also provides a feature comparison between Financial Transaction Manager for ACH, Corporate Payment Services, and Check for a quick reference.

The chapter starts with an overview of Financial Transaction Manager for ACH, then explains the technical components of the product including the operational user interface. It provides an overview of end-to-end processing of a payments file in Financial Transaction Manager for ACH. It describes how to import and export system configuration using the data setup utility (DSU) supplied with the product.

This chapter includes the following sections:

- ▶ Overview of Financial Transaction Manager for ACH
- ▶ High-level architecture and key components
- ▶ End-to-end processing overview
- ▶ Overview of the operational user interface
- ▶ Importing and exporting system configuration
- ▶ Feature comparison of Financial Transaction Manager between ACH, Check Services, and Corporate Payment Services

1.1 Overview of Financial Transaction Manager for ACH

Automated Clearing House (ACH) payment volume is increasing every year. NACHA, the electronic payments organization, estimates that ACH payments exceeded 21 billion in 2012. There are more than 10,000 financial institutions that support NACHA that generate these billions of transactions every year. This transactions volume has dramatically changed the requirements of ACH processing. As result, financial institutions are re-evaluating their current payment platforms.

Virtually all financial institutions have multiple systems to process payment, trade, and securities messages. These systems have evolved over years or even decades, and were implemented to be efficient at processing the needs of a particular department, function, or customer set. The evolution at different times and paces created duplicate functionality across the systems. This duplication hampers the client relationship due to the difference in the processes across business functions. Additionally, these monolithic applications and the complex integration between them results in higher operating cost than the revenue that they generate. The situation creates strong pressure to reduce costs because the increasing transactional volume might be unable to compensate for the revenue/cost differential.

With the dawn of new consumer channels such as online, mobile, and social, customers are demanding improved information access to their payments. This situation creates new requirements in the payments infrastructure that never existed before such as near real-time payment status visibility, automated exception handling, and same-day processing. Along with higher customer expectations, financial firms are being tasked with reducing costs and offering new services to create more revenue. At the same time, they must reduce financial risk and ensure compliance with regulatory standards. With multiple types of payments flowing through multiple channels, a single view of all types of customer payments can help them address these issues.

The IT operations in the ACH processing are facing significant challenges too. They need to address the following key questions, among others:

- ▶ How do I gain value from existing assets that are part of complex and unconnected transactional systems?
- ▶ How do I meet the business requirements in the quickest manner with aging systems built on a legacy platform that is costly to maintain and upgrade?
- ▶ How do I build the support for new transaction types on these legacy systems?
- ▶ How do I manage skill attrition and the retiring of staff that support these systems?

IBM Financial Transaction Manager for ACH Services provides pre-built support for processing all ACH transactions that flow through your system, including ingestion, validation, transaction management, and distribution. A robust rules-based environment handles payment routing and exception management, and an automated import and export facility handles ACH processing rules. Other key functions include administration, process management, data warehousing, and reporting and extracts.

Implementing Financial Transaction Manager for ACH Services has the following benefits:

- ▶ Is agile in reaction to change
- ▶ Provides visibility of payments processes at design time and run time
- ▶ Integrates existing service components that are built, bought, or both
- ▶ Facilitates renovations by wiring together reusable service components
- ▶ Reduces the cost and impact of change
- ▶ Reduces the cost of testing additional applications with external networks
- ▶ Enhances liquidity management monitoring and control

- ▶ Reduces cost by enabling payment efficiencies and reducing system duplication
- ▶ Improves customer satisfaction with faster time to market

1.2 High-level architecture and key components

Financial Transaction Manager for ACH consists of multiple functional and technical components that are pre-integrated to form the complete solution. Figure 1-1 shows key components of Financial Transaction Manager for ACH.

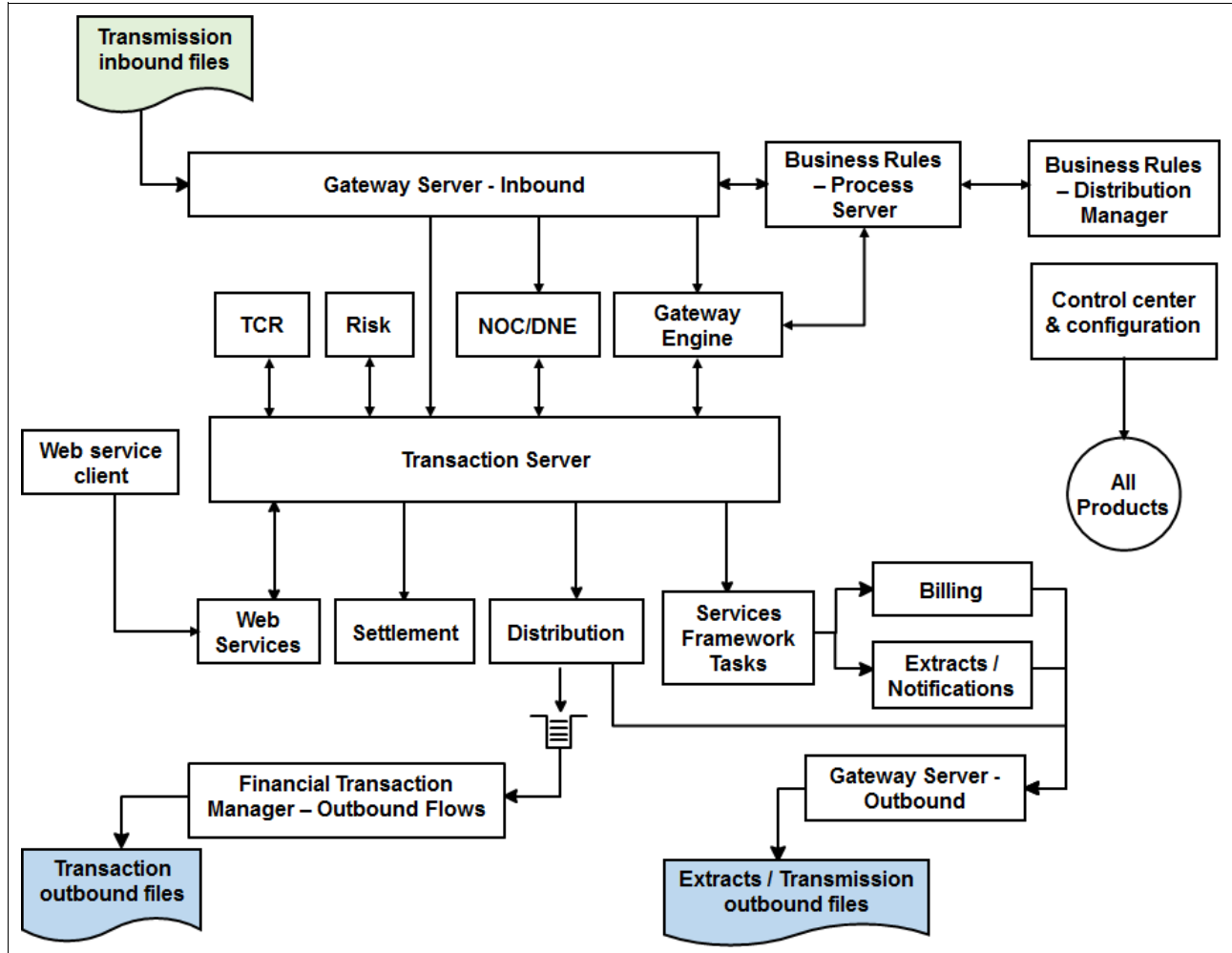


Figure 1-1 High-level architecture overview of Financial Transaction Manager for ACH

The inbound gateway receives a file from a sending point and accepts it for processing. The gateway server then parses the file and performs high-level validations. It starts the business rules process server for additional validation and enrichment that might be needed. It then notifies the transaction server to continue processing.

The transaction server orchestrates a series of invocations to various auxiliary and remediation components that include Transaction Correction and Reconciliation (TCR), Risk, and NOC engine for processing. After the processing is complete, it notifies the distribution engine that the transactions are ready to be sent to the receiving point. The distribution engine picks up these transactions and creates outbound batches based on rules configured in the system. It then translates these outbound batches into outbound transmissions, which

are physical files to be sent out. It notifies the outbound gateway server to send these files to the appropriate receiving points.

Outbound gateway server sends these files to receiving points and optionally sends acknowledgment back to the distribution engine. The following sections provide an overview of these components and capabilities they offer.

1.2.1 Gateway server

The gateway server is responsible for processing inbound transmission files for the transaction server. It is also responsible for delivering the transmission files that are generated by the distribution component to the receiving points.

Inbound processing

The gateway server provides an inbound interface for Financial Transaction Manager for ACH to process inbound files. The gateway listens for any inbound files in a predefined and configurable directory on the file system. When the file arrives in the directory, the gateway server performs the following tasks:

- ▶ Consumes the inbound transmission and assigns the clearing date (also known as *business day*) and product to the file processing. The gateway server uses business rules workflow to determine the business day for processing this file along with the product to be used. For more information about configuring the workflow, see Chapter 4, “Product and clearing date selection workflow” on page 75.
- ▶ Performs high-level validations driven by the configuration data. For more validation, it uses the business rules workflow as defined in the configuration. For more information about configuring the validation rules, see Chapter 3, “Validating, enriching, and routing of payments” on page 53.
- ▶ If configured, performs the *Control Total Verification* for the inbound transmission.
- ▶ Matches each return transaction to the corresponding forward transaction.
- ▶ If configured, and depending on transaction type, starts the Notification of Change (NOC) and Death Notification Entry (DNE) components.
- ▶ Saves the resulting transactions to the database and sends a message to the transaction server for processing further.

Outbound processing

The gateway server on the outbound side provides distribution capabilities to send the files to receiving points. On the outbound side, it performs the following tasks:

- ▶ Sends files to receiving points using File copy, FTP, email, User Exit, FTM Workflow, and Connect:Direct®.
- ▶ Sends a group of files consisting of one or more actual payments file, route file, and EOF file.
- ▶ If configured, sends a notification back to the distribution indicating that the transmission has been sent.

See Chapter 7, “Delivery of payments to receiving points” on page 179 for details of outbound gateway server configuration.

Tip: See the Financial Transaction Manager for ACH information center at **Financial Transaction Manager for Multiplatforms 3.0.0 → Payment Feature Services → Gateway Server User's Guide** for a detailed user guide.

1.2.2 Gateway engine

The gateway engine revalidates and might add additional information to transactions that were consumed using a business date that is in the future. Even though some of these transactions are assigned business dates that are days or weeks into the future, the transactions are validated when they are consumed. When the business day is activated, the transactions that were previously consumed might need to be revalidated. For example, if the business day is being activated at a different time of day than when it was originally consumed, the endpoint that was previously assigned by business rules might need to be changed. The exchange (FX) rates used to calculate the system and outbound amounts might have also changed since the transaction was originally consumed.

When an open business day is activated, an activated message is sent to the gateway engine. When the gateway engine receives the message, it processes all of the batches for the business day that are in the *captured* but not *loaded* state. If the gateway is configured to use business rules, and a business rules workflow was used during ingestion, the gateway calls business rules with the same workflow to revalidate each transaction in the batch. Because an updated transaction is saved to the database, the current exchange (FX) rates are applied to the system and outbound currency.

After the gateway engine processes all of the transactions for a batch, the batch is set to the loaded state. Any events in the transaction server scheduler that require the loaded state start further processing for the batch.

If the gateway engine encounters a configuration problem while processing the activated message, the error can be corrected and the request resent to the gateway engine. After the error has been corrected, re-send the request by closing the business day and then reactivating it. Any batch that is not in the loaded state is processed by the activated message.

Tip: For more information about gateway engine, see the Financial Transaction Manager for ACH information center at **Financial Transaction Manager for Multiplatforms 3.0.0** → **Payment Feature Services** → **Gateway Server User's Guide** → **Gateway Engine**.

1.2.3 Business rules process server

The business rules process server allows configuration and execution of advanced business rules for payments processing. These rules determine business day and product identification, advanced validation rules, routing rules, and processing rules.

Business rules are configured as workflows that consist of a series of nodes and tasks that are represented as XML documents. You can create these by using the Control Center or the DSU. Figure 1-2 depicts the relationship between these nodes and tasks.

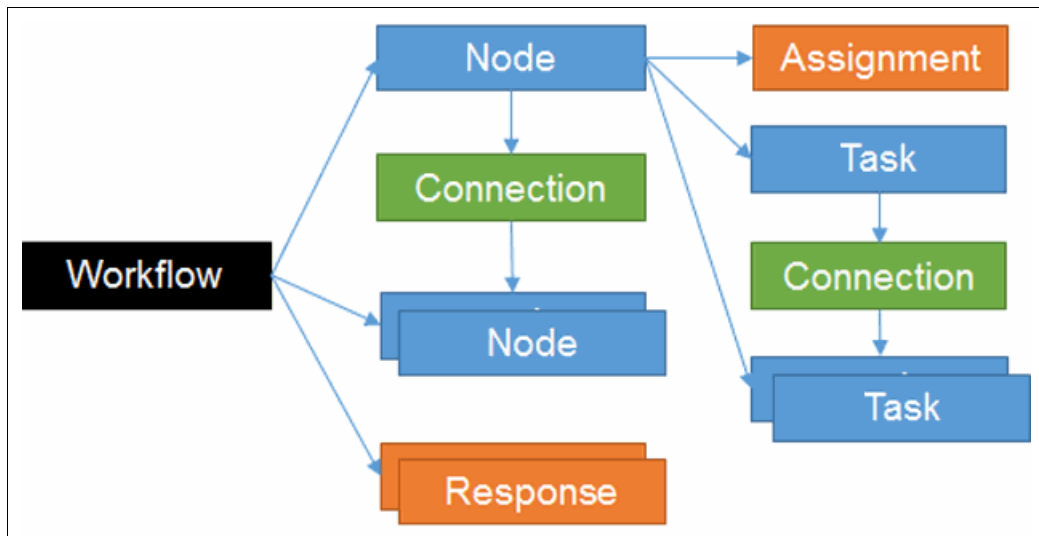


Figure 1-2 Structure of workflow components

The relationship between the nodes and tasks of the workflow components has these characteristics:

- ▶ A workflow consists of a series of nodes that are connected to each using connections.
- ▶ It also consists of response nodes that determine what response is returned to the caller.
- ▶ A node consists of a series of tasks connected by using connections.
- ▶ It consists of assignments for initializing certain variables for task execution.

After the workflows are created, business rules distribution manager compiles them into tables and rows to be distributed to all the business rules server instances in the system.

When an operator activates a release that consists of one or more business rule workflows, the Control Center notifies the distribution manager component. The distribution manager extracts the rules data from the database by using database views and compiles the extracted data. These exacted rules are validated for correctness and any errors are reported back to the operator through the Control Center. If the validation succeeds, it then notifies all the instances of business rules process server of new rules using the IBM WebSphere® MQ publish-subscribe mechanism.

The business rules process server uses these pre-compiled rules for execution based on the rules configuration. These pre-compiled rules are cached in memory for optimal performance.

See Chapter 3, “Validating, enriching, and routing of payments” on page 53 for details about rules configuration.

1.2.4 Notification of Change (NOC) and Death Notification Entry (DNE)

NOC and DNE are used by the Receiving Depository Financial Institution (RDFI) and Originating Depository Financial Institution (ODFI). On the RDFI side, the registered partner's details might change over time. Thus, it is important to inform the ODFI about this change. The changed details might include the following terms:

- ▶ Account number
- ▶ Routing number
- ▶ Account name

The NOC is a mechanism to manage these changed details between RDFI and ODFI. The component also processes DNE. DNE indicates that the recipient of a government benefit payment has died. These entries are generated only by government agencies. Thus, the product does not allow creation of NOC entries.

NOC on the ODFI side

The ODFI is responsible for following processing related to NOC.

Receiving NOC records

An RDFI sends an NOC batch to the ODFI indicating various changed records for their partners. Financial Transaction Manager for ACH validates each transaction in this batch. If the validation passes, the NOC records are stored in the Financial Transaction Manager for ACH database. If validation fails, the product generates NOC refusal to RDFI.

NOC on the RDFI side

The RDFI is responsible for generating the NOC records. The NOC component of the product provides a user interface to generate transactions to be sent to the ODFI through the ACH provider.

The component is also responsible for accepting NOC refusals from ODFI. These refusals are displayed in the Control Center for operator to action. After it is corrected, the product allows resending these NOC transactions to ODFI.

DNE on the RDFI side

When DNE batches are received, they are sent to the Notification of Change and Death Notification Entry components for processing. The data in a DNE transaction affects the processing of government benefit payment transactions received by the RDFI on behalf of its partners. When an RDFI receives a DNE, it can use the DNE data to start an investigation and initiate stop payment activity if necessary.

Financial Transaction Manager for ACH provides a page in the Control Center that allows the user to view and add comments to DNE records. However, as described earlier, there is no capability to add or change these records.

1.2.5 Transaction server

The transaction server is the orchestration engine of Financial Transaction Manager for ACH. It is responsible for processing these transactions according to the defined workflow. Financial Transaction Manager for ACH provides an XML-based workflow engine to define various steps in the processing. As a transaction moves through various states, the transaction server raises events to start additional steps in the transactions. These steps can include sending the transactions to risk processing, billing, settlement, distribution, and notifications. Chapter 5, "Remediation and auxiliary processing workflow" on page 83

describes how these workflows are created and managed in Financial Transaction Manager for ACH.

1.2.6 Risk management

Risk Management provides real-time financial exposure limit management. It monitors incoming batches and transactions to ensure that they do not exceed specified limits for an originating partner. There are different types of risk management capabilities provided by the product depending on the role that a financial institution is playing (ODFI or RDFI). These overall capabilities are offered by the risk management component:

- ▶ Configuration of risk management parameters during partner onboarding
- ▶ Dynamic, real-time configuration
- ▶ Runtime processing of incoming work
- ▶ User interface to review, override, and cancel batches and transactions that failed risk review

ODFI side

The risk management on the ODFI side consists of reversible, stateful, and re-entrant workflow steps. The engine implements multiple checks and monitors to ensure limit compliance. As the batch or transaction moves through these steps, the monitors keep incrementing the counters for processed value of transaction. If a batch or a transaction is rejected by risk management, these steps are run in reverse order to compensate for the changes made to the counters and attributes. This process reverses the effect of risk management. There are six checks in risk management on the ODFI side:

- ▶ Batch limit check
- ▶ Prefunded batch check
- ▶ Batch monitor check
- ▶ Transaction limit check
- ▶ Prefunded account check
- ▶ Transaction monitor check

RDFI side

The risk management on the RDFI side provides advanced payment authorization capabilities to manage inbound batches and transactions. Each payment passes through a series of checks to ensure compliance. These checks are as follows:

- ▶ Payment authorization
- ▶ Positive Pay
- ▶ Stop Payment
- ▶ Payment Filtering

See Chapter 5, “Remediation and auxiliary processing workflow” on page 83 to understand these ODFI and RDFI-related steps in detail.

1.2.7 Distribution

The distribution component creates outbound transmissions to be sent out and sends them over to the outbound gateway server for processing. The transaction server triggers the distribution engine based on the steps that are configured in the workflow. The distribution engine picks up all the eligible transactions in the database for processing. Eligible transactions are those that pass validation and are not waiting for any remediation processing.

After the eligible transactions are picked up, the component groups them together based on definitions of banks, partners, endpoints, transmission definitions, and building options to create outbound batches and transmissions. These transmissions are then scheduled for transmission to the gateway server based on transmission delivery scheduling configuration.

The distribution component also manages these transmissions at run time such as overriding scheduled transmission delivery to deliver transmissions that are not automatically scheduled.

See Chapter 7, “Delivery of payments to receiving points” on page 179 for configuration details of the distribution component.

1.2.8 Settlement

Settlement tracks and maintains the real-time financial state of all electronic transactions being imported and completed by the payment system within the Financial Transaction Manager for ACH infrastructure. Settlement tracks inbound transaction totals and outbound transaction totals for work that comes into and goes out of Financial Transaction Manager for ACH, including:

- ▶ Incoming batches from external originators and bank branches that come into Transaction Server and adjustments to those batches.
- ▶ Outgoing on-us transactions from Transaction Server or outgoing transit transactions from distribution

The benefit of settlement is not only in tracking transactions, but in allowing the customer to know which transactions are not in a settled state (out of balance).

The settlement options in the Control Center provide this data:

- ▶ A summary total for inbound accepted batches and outbound work
- ▶ Totals for inbound batches by individual originators
- ▶ Totals for outbound work that were sent or are waiting to be sent, for transit transactions by endpoint
- ▶ Totals for outbound work that were sent or are waiting to be sent, for on-us work by endpoint
- ▶ Pending totals for work that are expected to be sent, but have not yet been accounted for in the outbound transit or on-us work

1.2.9 Services framework

Service framework provides a capability to run specific tasks in Financial Transaction Manager for ACH. It supports both business tasks, such as activating a business day, creating billing extracts, and importing FX rates, and technical tasks such as log purging, email notifications, alert notifications, and activity purges. However, the tasks can be created for any task that are needed in the payment processing.

The services framework consists of these components:

- ▶ Engine
- ▶ User interface
- ▶ Software development kit (SDK)

The tasks are created as Java programs for which Financial Transaction Manager for ACH provides a framework and SDK. After they are created, these tasks can be added to the system configuration by using the Control Center.

Financial Transaction Manager for ACH provides a number of predefined tasks across various components described earlier in this chapter that can be configured according to requirements.

Note: Services Framework SDK is provided as Java libraries.

1.2.10 Web services

Web services enables a financial institution to integrate various aspects of Financial Transaction Manager for ACH into their applications and interfaces, such as the following:

- ▶ Client facing user interface
- ▶ Internal user interface
- ▶ Distributed applications
- ▶ Legacy applications

For example, financial institutions can provide the status of the work submitted and can submit control totals through an existing portal that they already use. This allows a seamless end customer experience.

Note: Web services are provided only to integrate limited features of the product into the financial institution's existing system. The product does not provide a web service for every function that it offers.

Additionally, the web services component provides a sample web services client that provides a web-based interface to start any web service that is provided by Financial Transaction Manager for ACH. The component provides the following services:

- ▶ List Inbound Transmissions
- ▶ List Inbound Batches
- ▶ List Inbound Transactions
- ▶ List Validation Results
- ▶ List Outbound Transmissions
- ▶ List Transmission Types
- ▶ List Batch Types
- ▶ List Payment Record Types
- ▶ List Message Standards
- ▶ List Message Types
- ▶ List Inbound Products
- ▶ List Business Days
- ▶ List Physical Transmissions
- ▶ TCR Lock
- ▶ TCR List Active Work
- ▶ TCR List Transactions
- ▶ TCR Discard Active Work
- ▶ TCR Complete Active Work
- ▶ TCR Approve Active Work
- ▶ TCR Unlock Active Work
- ▶ TCR Delete Transactions
- ▶ TCR Validate Transaction
- ▶ TCR Transaction Details

- ▶ TCR Update Transaction
- ▶ TCR Unlock
- ▶ TCR Get Pending Updates For Transaction
- ▶ TCR Undelete Transactions
- ▶ TCR Insert Transaction
- ▶ TCR Undo Transactions
- ▶ TCR Reload Active Work
- ▶ User Entitlements
- ▶ Add Control Total
- ▶ Decision Pending Batches

1.2.11 Component interaction

Although the gateway server interacts with the business rules process server by using socket communication and with the gateway engine using Internet Inter-ORB Protocol (IIOP), most of the communications between the components use IBM WebSphere MQ. Figure 1-3 depicts the major component interaction that uses WebSphere MQ queues. The product provides detailed instructions for creating the WebSphere MQ configuration. See the Financial Transaction Manager for ACH information center section **Financial Transaction Manager for Multiplatforms 3.0.0** → **Payment Feature Services** → **Installation** → **Setting up WebSphere MQ for Payment Feature Services** for details.

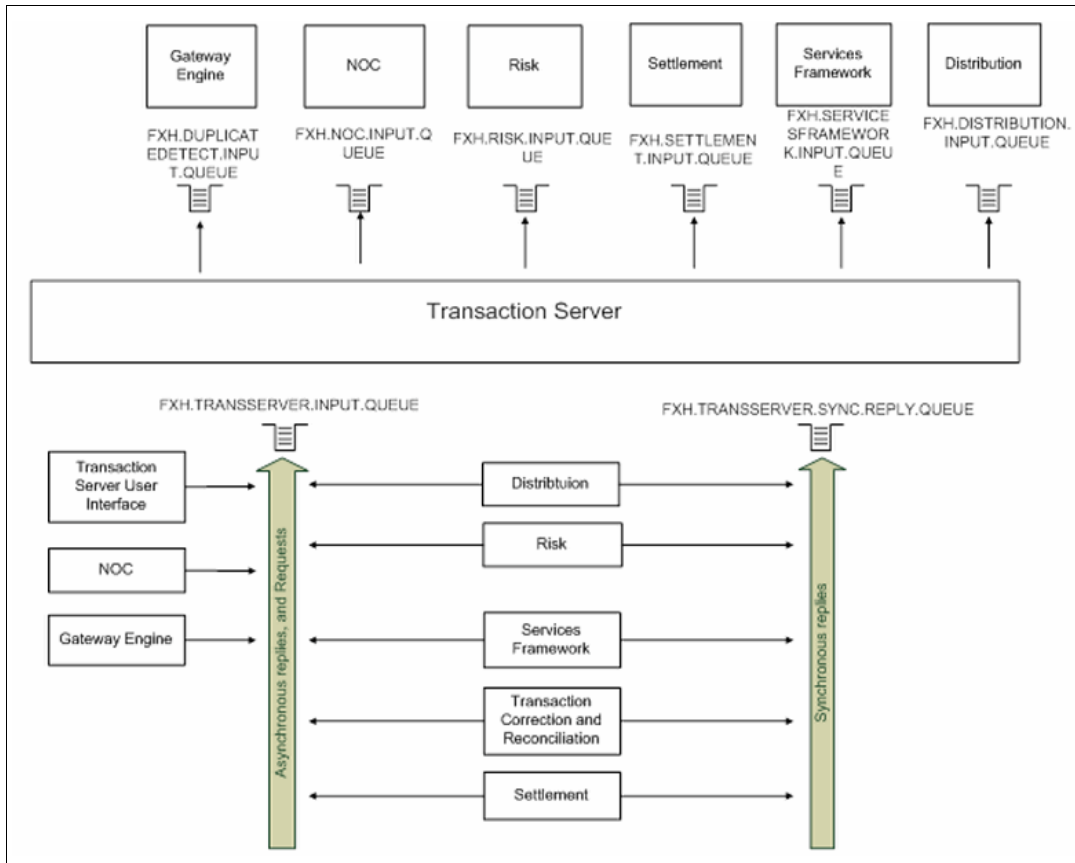


Figure 1-3 Component interaction

1.3 End-to-end processing overview

This section provides a typical workflow of a payments file from ingestion to distribution inside Financial Transaction Manager for ACH and various components that it passes through. It does not describe how to add the processing configuration for this process. The section also introduces various product-specific terminologies that are used in remainder of the book. Additionally, it provides a list of critical tasks that need to be completed from the product configuration perspective to successfully process a payments file. Figure 1-4 depicts the possible processing path of an inbound NACHA file from a sending point.

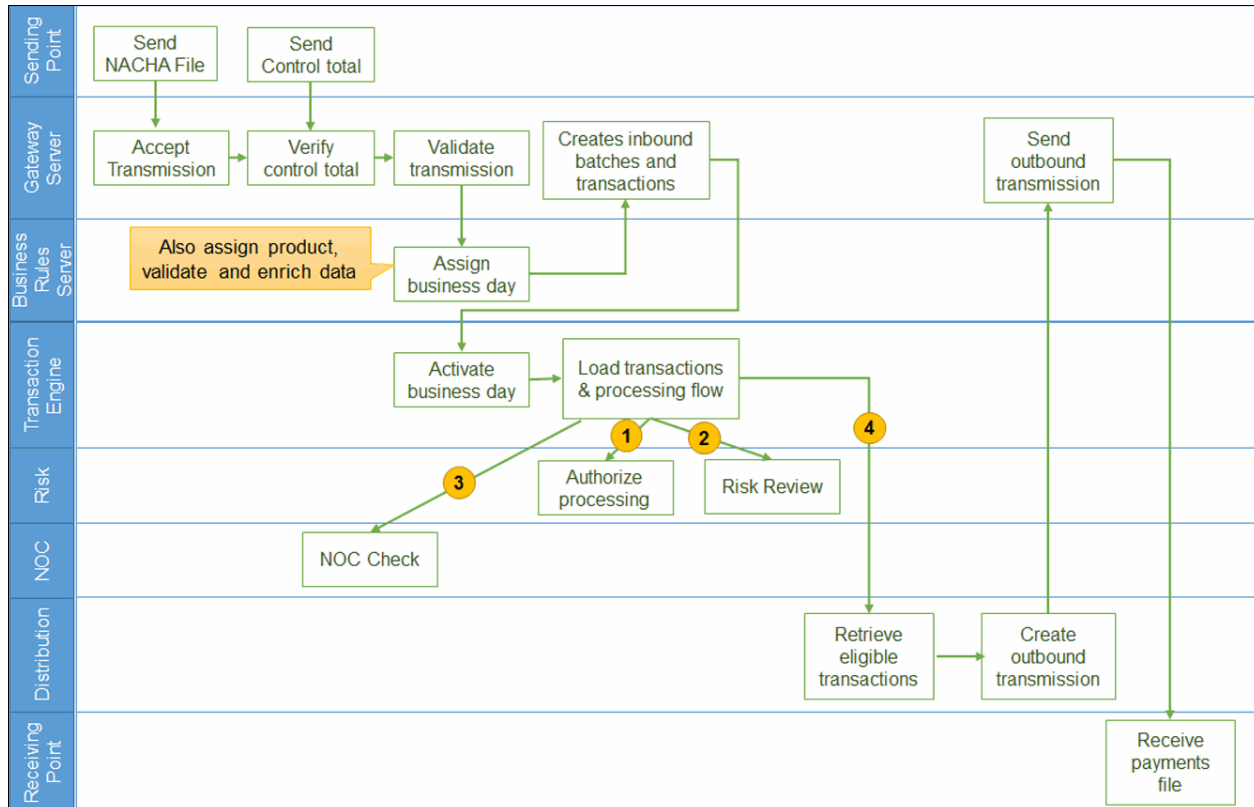


Figure 1-4 End-to-end processing overview

Note: Financial Transaction Manager for ACH supports many other complex scenarios that are not depicted in this section.

1.3.1 Ingestion

The sending point collects all the payments from all the originators and creates a file with multiple batches to be sent to the ODFI. The batches in the file are in NACHA format. The file is transferred to Financial Transaction Manager for ACH landing zone along with an EOF file that designates that the file is ready to be picked up by the gateway server.

The configuration might specify validating the file against control total information that is sent by the sending point. The control total ensures that the transmission sent by sending point is not altered during the transit.

Financial Transaction Manager for ACH verifies the control total against the file received. If the validation fails, the file is rejected. If it succeeds, the processing performs high-level validations on the file to ensure that it complies with NACHA standards.

The gateway then starts the business rules component to assign a business day/processing day to the file and the product to be used for processing the file. This business rules server also performs extra validation and enrichment of the message based on configuration. See Chapter 4, “Product and clearing date selection workflow” on page 75 for details of configuring this flow.

The gateway server then creates inbound batches and transactions based on the information in the transmission and sends a control message to the transaction server for processing these transactions.

If the processing day for these transactions is current and active, the processing continues. If the business day is not current or not active, the transactions and batches are stored in the warehouse to be processed later.

When the business day is activated, either through the Control Center or through a scheduler, the gateway engine is notified. The gateway engine checks the warehouse for the transactions that are marked to be processed for the current business day. These transactions are revalidated and then sent to the transaction server for processing.

Before a file can be imported by Financial Transaction Manager for ACH, the following activities must be completed from the product configuration perspective:

- ▶ **Create products and services:** See Chapter 2, “Streamline customer onboarding using products and services” on page 27 for details.
- ▶ **Create product selection workflow:** See Chapter 4, “Product and clearing date selection workflow” on page 75 for details.
- ▶ **Configure validation and enrichment rules:** See Chapter 3, “Validating, enriching, and routing of payments” on page 53 for details.
- ▶ **Onboard partner(s):** See Chapter 6, “Onboarding a partner” on page 111 for details.

1.3.2 Remediation and auxiliary processing

The transaction server is responsible for orchestrating various remediation and auxiliary processing steps. The transaction server uses a *scheduler xml configuration*, which describes various steps and orchestration rules for transaction processing. In the workflow shown in Figure 1-4 on page 12, there are four steps that are considered for transaction processing. However, these steps along with their sequence can change based on the financial institution’s requirements. The four steps are as follows:

- ▶ **Step 1**

The transactions can be configured to be authorized by the sending point. In such cases, the transactions are put into the *suspended* state until authorized. The authorization can either be provided by using the Control Center or by using web service invocation.

- ▶ **Step 2**

After being authorized, the transactions are sent to the risk management component for risk review. If the risk review fails, the transactions are put in the suspended state until an operator takes an action. Additionally, risk monitors can be configured to reject the batch in case of risk review failure.

- ▶ Step 3

Additionally, if configured, the gateway server calls the Notification of Change and Death Notification Entry components to check whether any accounts in any transactions need to be updated based on records in these components.

- ▶ Step 4

The transactions are then sent to the distribution engine for delivery to receiving points.

Remediation and auxiliary processing requires the following configuration to be done.

- ▶ Create a processing workflow: See Chapter 3, “Validating, enriching, and routing of payments” on page 53 for details.
- ▶ Configure financial exposure risk monitors: See Chapter 5, “Remediation and auxiliary processing workflow” on page 83 for details.

1.3.3 Distribution to receiving point

The distribution engine picks up all the eligible transactions in the database. Eligible transactions are those that have passed validation and are not waiting for remediation operations.

Based on receiving destination (endpoint) configuration, distribution engine creates *outbound batches* of transactions. Outbound batches consist of groups of transaction that are put into an outbound transmission file.

Note: All of the outbound batches in an outbound transmission file must be going to the same receiving endpoint

The outbound batch can contain all the transactions from the inbound batch that have the same processing date. For example, consider an inbound processing batch that consists of five debit transactions and four credit transactions that need to be sent to the ACH operator to be processed on the 15th of September that need to be sent to the same endpoint. According to ACH rules, debit transactions are sent one business day in advance of the actual settlement date (September 14) and credit transactions will be sent two days in advance of actual settlement dates (September 13). Thus, the outbound batch on September 13 consists of only four credit transactions from this batch and the outbound batch on September 14 consists of five debit transactions from this batch. Thus, *one inbound batch* is split into *two outbound batches* to ensure compliance with ACH rules.

After the outbound batches are created, the distribution engine uses endpoint information to schedule these batches automatically (either at specific time or at end of day) or leave them in unscheduled status to be processed manually by an operator.

When the outbound batch is ready to be sent to the receiving point, the distribution engine creates the physical transmission file along with EOF file. It then sends these files to the outbound gateway server to be sent to the receiving point based on the configuration.

For distribution of file to receiving points, Financial Transaction Manager for ACH requires the following configuration to be completed:

- ▶ Create outbound channels
- ▶ Create transmission definition
- ▶ Configure endpoints
- ▶ Schedule transmission delivery

See Chapter 7, “Delivery of payments to receiving points” on page 179 for details of each configuration step

1.4 Overview of the operational user interface

The operational user interface is used to configure, monitor, and control the operation of payments flowing through the system. The operational user interface is secured with authorization framework in Financial Transaction Manager for ACH that provides different menu options to different groups of people based on their role in payment lifecycle. This section describes various operational user interface menus based on the logical roles (groups) that the person needs to perform. Each implementation of Financial Transaction Manager for ACH should create these roles with the appropriate permissions.

Note: If a user does not have permissions to either a user interface window or action on that window, then that window or action will not be visible to the user.

1.4.1 Control Center

Control Center is the portal for configuring, monitoring, and managing payment transactions that are processed in Financial Transaction Manager for ACH. Figure 1-5 shows the main window of the Control Center. The key sections of the main window are numbered and described below.

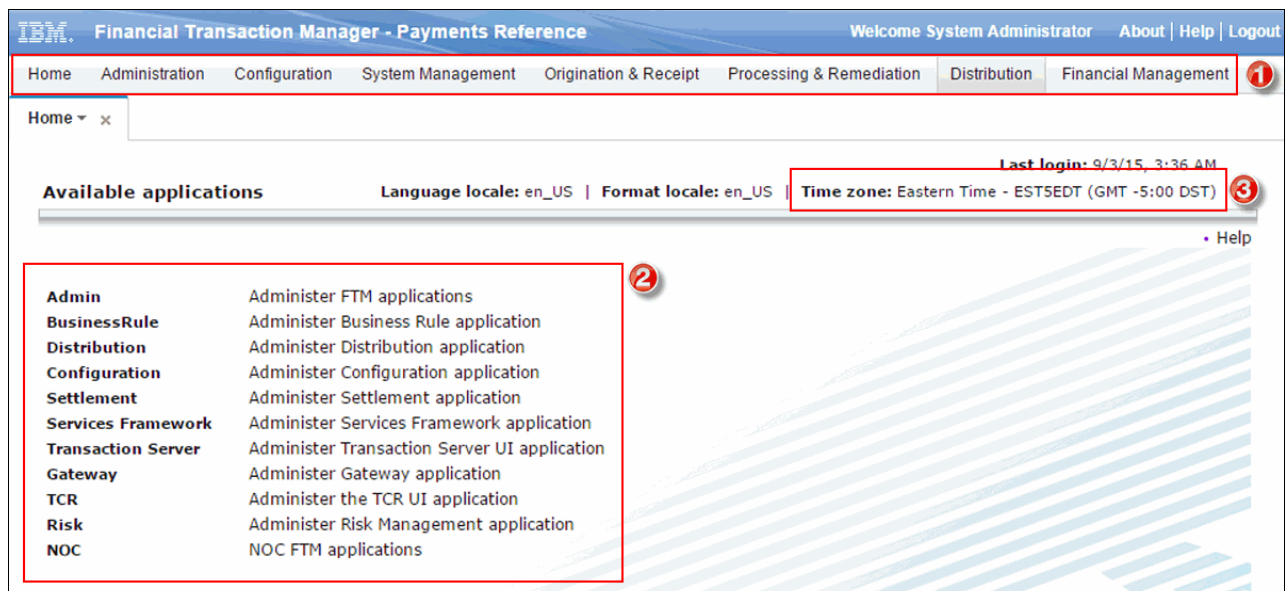


Figure 1-5 Control Center overview

1. Menu bar

The menu bar provides various role-based options. There are several different menu options:

- Administration
- Configuration
- System Management
- Origination & Receipt

- Processing & Remediation
- Distribution
- Financial Management

This section describes these menu options in the context of a specific role. Although this book provides typical user-role-based information of Control Center, users might have access or a role to play with multiple menu options (as required by the customer).

Note: This chapter does not describe each menu option in detail. It does provide pointers to the information center section for the appropriate menu option.

2. Available applications

This section of the window provides a quick overview of the components that are installed in the system and which the user has access to.

3. Timezone

The timezone section provides the current configured time zone for the current logged in user. Control Center uses this to format time values for display. Other users see those values formatted in their own timezones.

1.4.2 Technical support team

The technical support team works mainly with the **Administration** menu of the Control Center as shown in Figure 1-6.

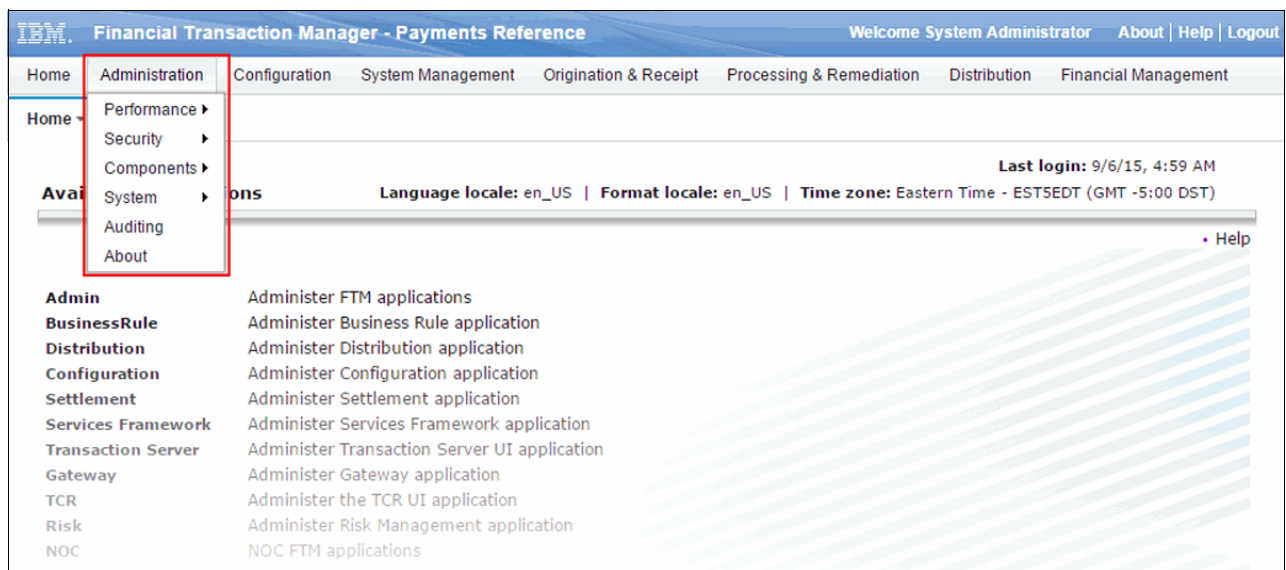


Figure 1-6 Administration menu

The **Administration** menu consists of menu options that allow technical support team and system administrators to manage system performance and security, configure properties of various components, and manage custom attributes. See the Financial Transaction Manager for ACH information center at **Financial Transaction Manager for Multiplatforms 3.0.0** → **Payment Feature Services** → **Control Center User's Guide** → **Control Center User Interface** for more details about each menu option.

1.4.3 Business analyst

The business analysts are responsible for functional configuration of the system that includes configuring products, services, onboarding partners, transmission, and business rules. In the Control Center, the business analysts mainly work with the **Configuration** menu options as shown in Figure 1-7.

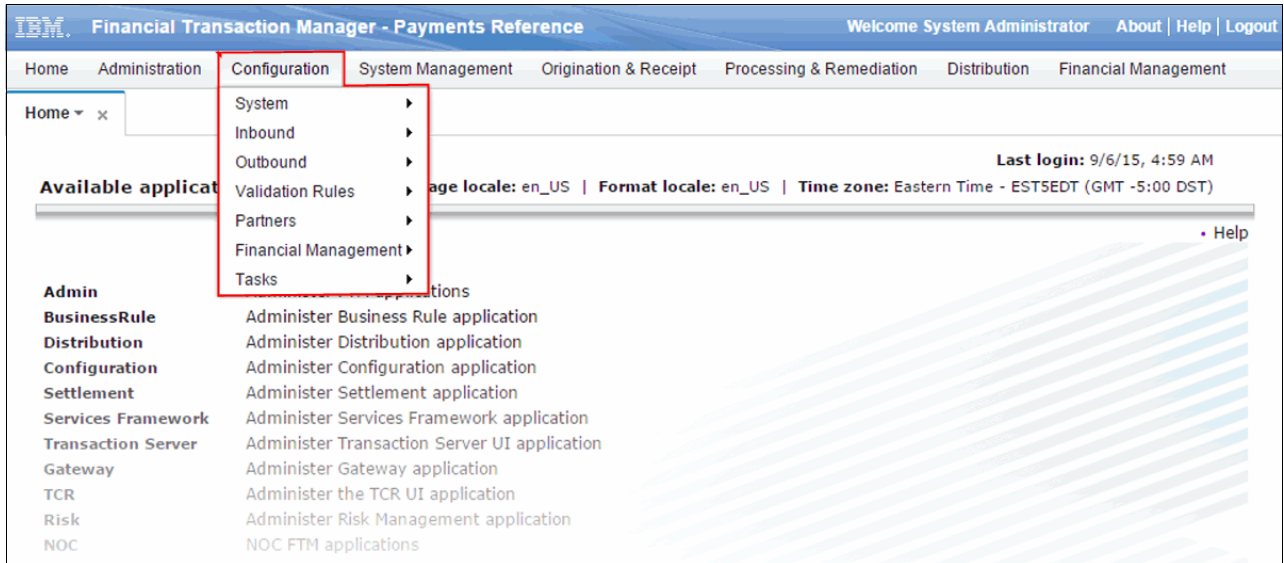


Figure 1-7 Configuration menu

With the options in the configuration menu, the business analysts are able to configure the properties of the inbound and outbound transmission, and various validation and business rules. Additionally, the business analysts can onboard a partner, and configure settlement monitors and various services tasks using the services framework.

1.4.4 Operations team

The operations team is responsible for managing the day to day operations of payment processing. Financial Transaction Manager for ACH provides three different menus for the operations team to work with. Figure 1-8 shows these menu options.

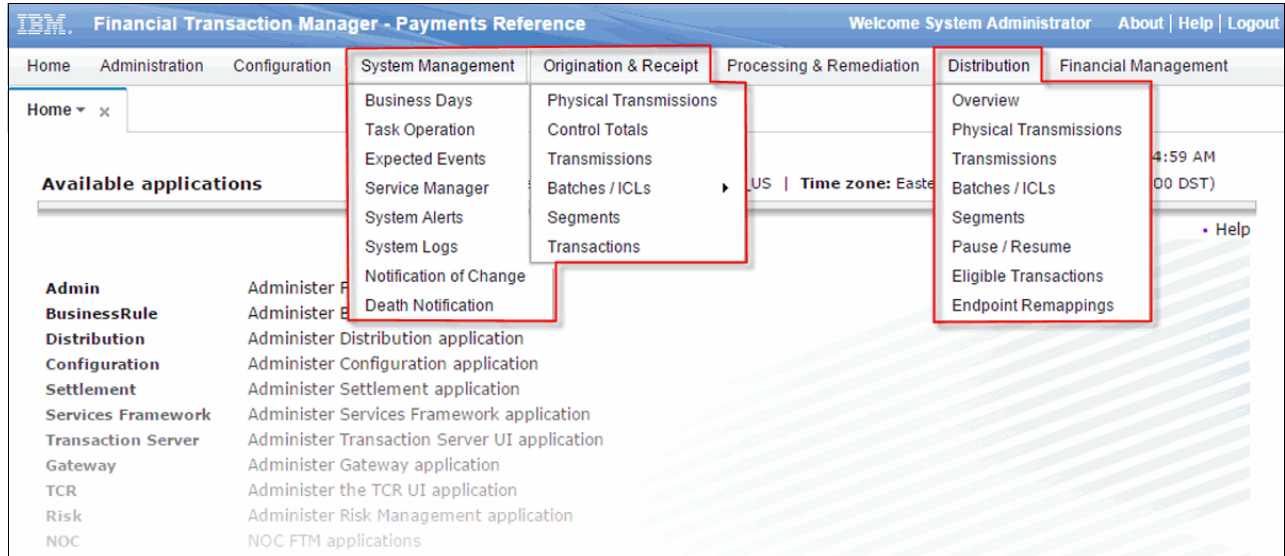


Figure 1-8 Menu options for business analyst

The menu options are as follows:

► **System Management**

The **System Management** menu is primarily for operations supervisor to perform tasks such as managing business days, managing various system alerts and notifications, and viewing notification of change and death notification records. The menu option also allows the supervisor to run tasks that are created using the services framework.

► **Origination & Receipt**

This menu option allows the operations team to manage the inbound physical transmissions, control totals, and transactions in a transmission. It also allows working with transmissions to override control total verification.

► **Distribution**

This menu option allows the operations team to manage outbound transmissions to perform tasks, such as scheduling transmissions, managing schedules of transmission, and overriding transmission of files if required. It allows remapping endpoints in case of operational issues without affecting the master configuration.

1.4.5 Exception management team

The Control Center allows the exception management team to perform remedial operations on the processed payments from the financial risk perspective. These actions include monitoring the task activity and monitoring exposure limits. The Control Center provides **Processing & Remediation** menu as shown in Figure 1-9.

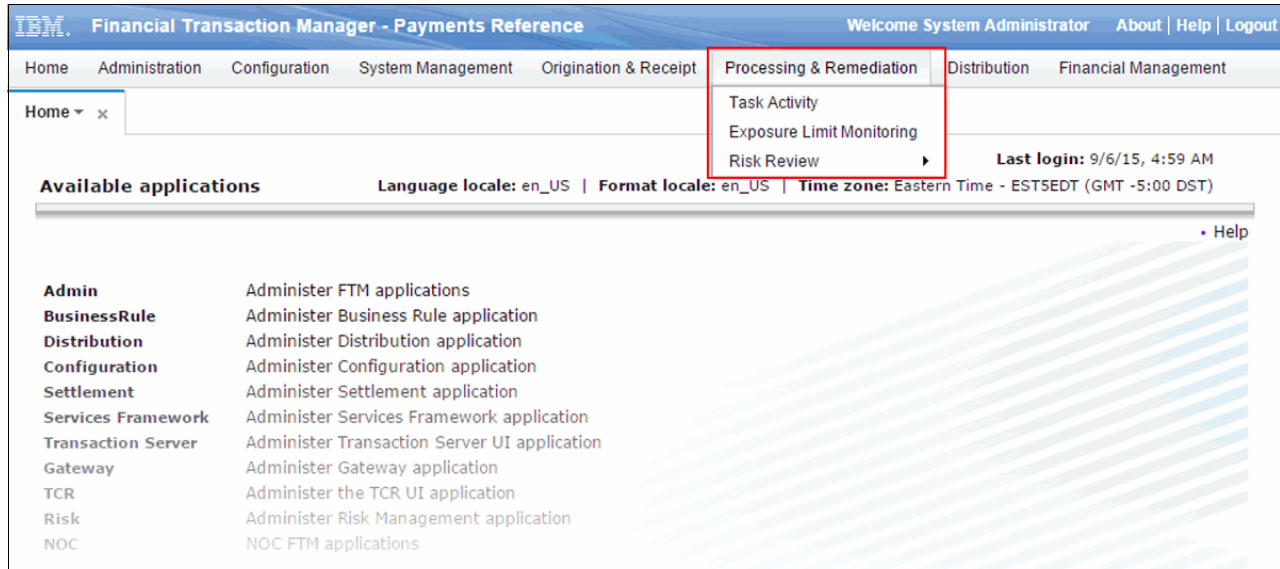


Figure 1-9 Processing & Remediation menu

1.4.6 Finance team

Although the transactions flow through the system, Financial Transaction Manager for ACH monitors the position of each partner against the transaction and provides a consolidated view to the finance team to determine the intraday position of the financial institution and of a partner. The Control Center provides the **Financial Management** menu option to perform these tasks shown in the Figure 1-10.

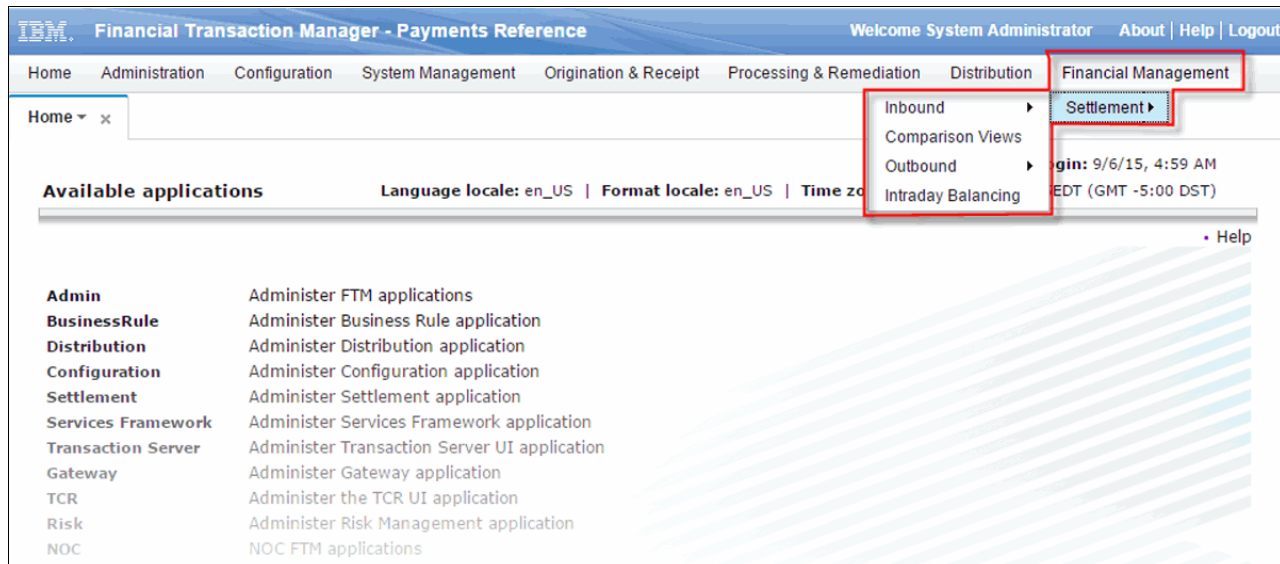


Figure 1-10 Financial Management menu

1.5 Importing and exporting system configuration

Although the Control Center allows configuration of the entire system, Financial Transaction Manager for ACH provides a DSU to manage the configuration data within Financial Transaction Manager for ACH. The DSU minimizes the amount of time that is required to initialize and configure a new installation of the Financial Transaction Manager for ACH database. The DSU allows the user to consolidate the configuration data into spreadsheets instead of having to navigate through multiple user interface windows to configure manually. The DSU enables the user to do the following activities:

- ▶ Initialize and configure a new installation of the Financial Transaction Manager for ACH.
- ▶ Migrate configuration data between instances of Financial Transaction Manager for ACH, such as from quality assurance environment to production environment.
- ▶ Remove configuration data from the Financial Transaction Manager for ACH database that is no longer needed.
- ▶ Validate configuration data before loading into the Financial Transaction Manager for ACH database to ensure data consistency.

DSU has three key components that are described further in this section:

- ▶ Microsoft Excel workbooks
- ▶ Property files
- ▶ Command line tools

1.5.1 Microsoft Excel workbooks

The configuration data for Financial Transaction Manager for ACH is captured in a set of three Microsoft Excel workbooks.

Configuration Data workbook

This workbook contains the actual configuration data that needs to be imported or the data that is exported from Financial Transaction Manager for ACH. Each worksheet in this workbook corresponds to exactly one table in FTM configuration. The worksheet names do not need to be actual table names. However, they need to be unique. These names are mapped to actual table names in the cross referencing workbook. Each worksheet consists of number of columns corresponding to database columns. However, these column names do not need to be actual column names in the database. The mapping between column names in this worksheet and actual column name is maintained the map workbook that is described in the following section.

Tip: The configuration workbook file names usually end with the word *Configuration*. Example name of workbook is SampleBusinessRulesBaseConfiguration.xls

Map workbook

This workbook maps the user friendly column names in configuration data workbook to actual table column names in the database. For each sheet in the configuration data worksheet, there must be a worksheet within the map workbook. It is a preferred practice to keep worksheet names the same in both the workbooks to avoid confusion. In the samples provided with Financial Transaction Manager for ACH, note that some of the column names are shaded with a color. These shaded columns indicate which columns are part of the primary key for that table.

Tip: The map workbook file names usually end with the word *Map*. An example name for a workbook is `BusinessRulesBaseMap.xls`

Cross Reference workbook

This workbook governs which worksheets in the map and configuration data workbooks are used during the DSU execution. It also maps the user friendly table name (worksheet names) to the actual table names in the database.

The workbook consists of a four worksheets that correspond to each action of the DSU.

The import worksheet has six columns:

- ▶ **Import sheet name**

Name of the worksheet from the configuration data worksheet that needs to be acted on.

- ▶ **Import**

Flag to indicate whether this sheet should be imported into Financial Transaction Manager for ACH or not.

- ▶ **Mode**

Indicates what to do with the existing data. Either insert or update the data, or drop the existing data and insert new data.

- ▶ **Map sheet name**

Name of the worksheet from the map worksheet corresponding to this configuration worksheet.

- ▶ **Database Table Name**

Actual name of the database table from Financial Transaction Manager for ACH database.

- ▶ **Update Key**

The comma-separated list of column names that are used as the primary key to update the data in this database.

Figure 1-11 shows a sample Import worksheet.

	A	B	C	D	E	F
1	Import sheet name	Import	Mode	Map sheet name	Database Table Name	Update Key
2	Core properties	Y	InsertUpdate	Core Properties	core_properties	key,
3	Electronic Format	Y	InsertUpdate	Electronic Format	elec_format	format,
4	Transmission Definition	Y	InsertUpdate	Transmission Definition	file_def	file_def_name,
5	Transmission Def - Custom attr	Y	InsertUpdate	Transmission Def - Custom attr	cust_filedef_xref	custom_attr_name,file_def_id,
6	Global Transmission Definition	Y	InsertUpdate	Global Transmission Definition	globals_file_def	glb_file_def_id,
7	Record Validation Error Codes	Y	InsertUpdate	Error codes	error_codes	error_code,
8	Inbound Transmission Rules	Y	InsertUpdate	Inbound Transmission Rules	inbound_file_rules	rule_name,
9	Inbound Batch Rules	Y	InsertUpdate	Inbound Batch Rules	inbound_deposit_rules	rule_name,
10	Transmission Types	Y	InsertUpdate	Transmission Types	file_type	file_type_id,
11	File Suffix	Y	InsertUpdate	File Suffix	file_suffix	file_ext,
12	Collection Type	Y	InsertUpdate	Collection Type	Collection_Type	collection_id,
13	Inbound Products	Y	InsertUpdate	Inbound Products	deposit_Products	code,
14	Originator Transmission Rules	Y	InsertUpdate	Originator Transmission Rules	originator_file_rules	pid,file_type_id,
15	Depositor subscribed products	Y	InsertUpdate	Depositor subscribed products	depositor_sub_products	depositor_product_code,
16	Inbound Services	Y	InsertUpdate	Inbound Services	deposit_services	service_code,
17	Inbound Service Options	Y	InsertUpdate	Inbound Service Options	deposit_service_options	service_code,option_name,
18	Inbound Services By Product	Y	InsertUpdate	Inbound Services By Product	deposit_product_Services	product_code,service_code
19	Inbound Services By Msg Std	Y	InsertUpdate	Inbound Services By Msg Std	msg_std_inbound_service	standard_type_id,service_code
20	Partner Subscribed Services	Y	InsertUpdate	Partner Subscribed Services	partner_sub_msgstd_svc	pid,standard_type_id,service_code
21	Depositor Subscribed Services	Y	InsertUpdate	Depositor Subscribed Services	depositor_sub_services	depositor_product_code,service_code,
22	Building Options	Y	InsertUpdate	Building Options	building_opts	name,
23	Outbound Products	Y	InsertUpdate	Outbound Products	presentment_products	code,

Figure 1-11 Import worksheet example

The export worksheet has five columns:

- ▶ **Export sheet name**
Name of the sheet to create for exporting the data for this table
- ▶ **Export**
Flag to indicate whether to include this table in the export
- ▶ **Map sheet name**
Name of the sheet to create in the map worksheet
- ▶ **Valid Release**
Indicates the release number to be used for the exported data
- ▶ **Query SQL**
The actual query to run on the Financial Transaction Manager for ACH database to export the data.

Figure 1-12 shows a sample export worksheet.

	A	B	C	D	E
1	Export sheet name	Export	Map sheet name	Valid Release	Query SQL
2	Environment	Y	Environment	IPD 1.7.12.0	select * from &schemaid.environment
3	Bus Rules Tables	Y	Bus Rules Tables	IPD 1.7.12.0	select * from &schemaid.br_tables
4	Range Config	Y	Range Config	IPD 1.7.12.0	select * from &schemaid.range_config
5	Bus Rules XML View	Y	Bus Rules XML View	IPD 1.7.12.0	select * from &schemaid.br_xml_view

Figure 1-12 Export worksheet example

The delete worksheet has two columns

- ▶ **Delete**
Indicates whether data from this table should be deleted.
- ▶ **Database table name**
The table name from the Financial Transaction Manager for ACH database for data deletion.

Figure 1-13 shows a sample delete worksheet

	A	B
1	Delete	Database Table Name
2	Y	deadline
3		

Figure 1-13 Delete worksheet example

The validate worksheet has three columns:

- ▶ **Validate sheet name**
Name of the sheet from the configuration data workbook to validate.
- ▶ **Validate**
Flag to indicate whether to validate this table or not.
- ▶ **Map sheet name**
Name of the sheet to validate in the map worksheet.

Figure 1-14 shows a sample validate worksheet.

	A	B	C
1	Validate sheet name	Validate	Map sheet name
2	Field Validation Meta	Y	Field Validation Meta
3	Field Validation Rules	Y	Field Validation Rules
4	Message Standards	Y	Message Standards
5	Message Types	Y	Message Types
6	Message Standards-Types Xref	Y	Message Standards-Types Xref
7	Transaction Codes Category	Y	Transaction Codes Category
8	Transaction Codes	Y	Transaction Codes

Figure 1-14 Validate sheet example

Tip: The cross-reference workbook file names usually end with the word *XREF*. An example name of a workbook is *BusinessRulesBaseXREF.xls*.

Financial Transaction Manager for ACH is distributed with a sample set of configuration data workbooks. This sample configuration data might be applicable to all financial institutions. It is the responsibility of the financial institution to ensure that the configuration data in the sample configuration data workbooks meets their requirements.

Tip: Additional information about the DSU is available in the IBM Knowledge Center at **Financial Transaction Manager for Multiplatforms 3.0.0 → Payment Feature Services → Installation → Data Setup Utility**.

1.5.2 Property files

DSU properties files are used to specify the workbooks used for each DSU operation. The properties files also contains general information that the DSU needs to run. The most important of these keys are as follows:

- ▶ Path to three workbook file names as described in 1.5.1, “Microsoft Excel workbooks” on page 20.
- ▶ Environment configuration values and logging properties.

1.5.3 Command line tool

DSU is a command line tool. Financial Transaction Manager for ACH provides these tools for all the supported platforms. This command line tool provides a number of operations controlled by the parameters passed to the tool. The DSU command syntax looks similar to Example 1-1.

Example 1-1 DSU command syntax

For 32bit systems: *DSU operation propertiesfile*
For 64bit systems: *DSU64 operation propertiesfile*

The operation parameters have these possible values:

- ▶ `import`: Imports data to the database
- ▶ `export`: Exports data from the database
- ▶ `delete`: Deletes data from the database
- ▶ `validate`: Validates data before importing to the database

The `propertiesfile` parameter specified the location of the property files, which describes the various spreadsheets that are involved in this action. Example 1-2 shows sample DSU commands.

Example 1-2 DSU sample commands

```
DSU import BaseImport.properties
DSU export BaseExport.properties
```

1.6 Feature comparison of Financial Transaction Manager between ACH, Check Services, and Corporate Payment Services

Financial Transaction Manager for ACH is part of the Financial Transaction Manager family that consists of two extra key products and more. These two additional key products are Financial Transaction Manager for Corporate Payment Services and Financial Transaction Manager for Check Services. These products are part of the Financial Transaction Manager subfamily called payment feature services. They share a set of common components. Refer to the information center at **Financial Transaction Manager for Multiplatforms 3.0.0** → **Payment Feature Services** for details of these common components. This section compares Financial Transaction Manager for ACH features with various features offered by these products.

1.6.1 Financial Transaction Manager for Corporate Payment Services

Financial Transaction Manager for Corporate Payment Services is designed to work with corporate payable and receivables. It provides payment services for the following entities:

- ▶ Corporate clients
- ▶ Internal bank applications
- ▶ Work received from other financial institutions

Financial Transaction Manager for ACH provides payment services to work with partner and ACH operators to process NACHA files.

Financial Transaction Manager for Corporate Payment Services provides a reference flow to work with Electronic Data Interchange (EDI) files and Financial Transaction Manager for ACH natively supports NACHA files.

Financial Transaction Manager for ACH uses gateway server for ingestion, validation, and enrichment. Financial Transaction Manager for Corporate Payment Services uses gateway server for business day assignment, product, and data enrichment.

Financial Transaction Manager for Corporate Payment Services relies heavily on the Financial Transaction Manager Base product for ingestion and extraction along with processing. Financial Transaction Manager for ACH uses the FTM base product only for control total verification and custom extracts.

Refer to the information center at **Financial Transaction Manager for Multiplatforms 3.0.0** → **Financial Transaction Manager for Corporate Payment Services** for more details about Financial Transaction Manager for Corporate Payment Services.

1.6.2 Financial Transaction Manager for Check

Financial Transaction Manager for Check Services is designed mainly to work with check processing part of the payments. It provides the following services:

- ▶ The ability to repair payments
- ▶ Quality control for incoming check images
- ▶ Capture and storage management for incoming check images

Most of the components are common between Financial Transaction Manager for ACH and Financial Transaction Manager for Check Services, with a few differences:

- ▶ Financial Transaction Manager for Check Services is designed to work with X.9 format, whereas Financial Transaction Manager for ACH is designed for NACHA format.
- ▶ Financial Transaction Manager for Check Services does not have the Notification of Change management component that is provided with Financial Transaction Manager for ACH.
- ▶ Financial Transaction Manager for Check Services has additional components, such as payment repair and image-processing components that are included in Financial Transaction Manager for ACH. Click **Financial Transaction Manager for Multiplatforms 3.0.0** → **Financial Transaction Manager for Check Services** for more information about the components that are provided with Financial Transaction Manager for Check Services only.



Streamline customer onboarding using products and services

This chapter describes the concepts of products and services within Financial Transaction Manager for ACH and how to define them.

This chapter begins with an overview of Financial Transaction Manager for ACH products and services. It then explains how the products and services tie into the billing services. Lastly it provides a tutorial on defining both inbound and outbound products and services.

This chapter includes the following sections:

- ▶ Products and services overview
- ▶ Incorporating billing for products and services
- ▶ Creating an inbound product
- ▶ Creating an inbound service
- ▶ Adding inbound services to an inbound product
- ▶ Creating an outbound product
- ▶ Creating an Outbound Service
- ▶ Adding outbound services to an outbound product

2.1 Products and services overview

Products within Financial Transaction Manager for ACH are sets of processing capabilities that an Originating Depository Financial Institution (ODFI), Receiving Depository Financial Institution (RDFI), or Central Bank offer to their customers. For example, an Inbound ACH product solution processes ACH transmissions from the customer to a clearing house. A product defines sets of business rules and workflows that identify the features and rules to be applied during transmission processing. As each transmission is imported into Financial Transaction Manager for ACH, it is assigned a product. The configuration settings of the product determine the handing of the transmission. Products can contain extra configurations for processing each batch within the transmission. In addition, a product can be associated with supplementary services that the customer chooses.

Services within Financial Transaction Manager for ACH are add-on functions that can be included in normal batch processing. Inbound Services can be subscribed to directly for originators and included within an Inbound product definition for sending points. Outbound products and services are subscribed to by receiving points.

By default, products are assigned to batches based on the message standard and if defined a unique identifier. However, a user exit is available for more sophisticated logic to make product assignments.

Products and services include the ability to generate billing data. The billing aspect enables a financial institution to create products that generate revenue. The service can be billed as part of the product or separately as an additional revenue stream.

Financial Transaction Manager for ACH provides the ability for financial institutions to extend the number of products with each having its own business rules, workflows, and add-on services. This versatility allows financial institutions to customize offerings to their customer base. New customers or partners, can be added with minimal configuration settings by subscribing them to the appropriate product and services.

2.2 Incorporating billing for products and services

Financial Transaction Manager for ACH includes a set of tasks that enable Financial Institutions to associate billing codes with each product. Services associated with a product can also have additional associated billing codes. Financial Transaction Manager for ACH billing tasks generates a billing report that summarizes the usage of each billing code over time. The billing report is in XML format and can be integrated into a financial institution's back office billing systems for customer invoicing.

Billing is built as a set of tasks within the Services Framework. The purpose is to generate billing entries for received transactions (inbound billing) and transactions that are sent (outbound billing). The billing tasks insert entries in the Billing table, which can be exported for external use by the financial institution.

Billing can be associated with inbound and outbound products and services. Services are extra options available in a product and can have extra billing codes associated with them. For example, inbound transactions can have add-on financial institution defined services of types such as creating balancing entries, payment authorization, and settle when requested. The financial institution can define outbound services of the types cutoff and delivery. Currently, Financial Transaction Manager for ACH provides processing functions for many of the inbound service types, but outbound service types exist for billing purposes only. The

outbound service types provide user exits, so that processing logic can be extended by the financial institution.

Billing components can consist of fixed or variable fees. Fixed fees can be charged at the daily, transmission or file, and batch levels. Variable fees are charged at the item level. Variable fees can have a set billing code or be tiered so that different items have different billing codes. Each transaction is assigned a four-digit billing service area code and one or more five-digit level billing codes. The billing codes are based on collection type, work type, billing tier, method of presentment, and, depending on the inbound product, transaction dollar amount.

Billing records contain transaction volumes and unit volumes. Transaction volumes refer to the number of fixed entities, whereas unit volume refers to the number of variable entities. Fixed billing records have transaction volumes with a unit volume of zero and the variable billing records have a unit volume with a transaction volume of zero.

2.2.1 Service area and billing tiers

A service area code is a way to categorize associated billing codes within the billing extract.

Entries in the billing table are created whenever a defined product or service processes an item at the associated billing tier. Billing tiers are noted in the following list:

- ▶ Daily billing

At the start of each business day, a billing entry is added to the billing table for the product or service. Customers subscribed to the product or service are billed the daily rate regardless of whether the product or service is used on that business day.

- ▶ Transmission or file billing

Upon acceptance of each file transmission, the billing table is updated with an entry for that product or service.

- ▶ Batch/ICL billing

For each batch within the file, a new billing entry is included in the billing table for the product or service.

- ▶ Item billing

Each credit or debit item in the batch generates a billing table entry for the product or service.

A product or service can define any number of the billing tiers. Each billing tier is independent of the other tiers.

2.3 Creating an inbound product

This section contains instructions on creating inbound products using either the Control Center console (2.5.1, “Using the Control Center” on page 39) or the data setup utility (2.5.2, “Using the data setup utility (DSU)” on page 41).

2.3.1 Using the Control Center

To create a new inbound product, log in to the Control Center and select the following menu options: **Configuration** → **Inbound** → **Products** → **Add Product**.

The Add Product (inbound) dialog box is shown in Figure 2-1.

Add Product

Step 1 of 2 (Inbound Product information)

Code: *

Description: *

Identifier:

Configure General

Batch / ICL Validation Rule: --choose a batch / ICL validation rule--

Business Rules Workflow Name:

Holdover Work Type: --choose a holdover type--

Balance Rule: None

Move Restriction: Current Batch / ICL

Settlement Type: Check

Approval Required: No

Adjustment Required: Yes

Billing Related

Enable Billing: Yes No

Service Area:

Daily Billing Code:

File Billing Code:

Batch / ICL Billing Code:

Item Billing Code:

Enable Tiered Product Billing: Yes No

Default Billing Tier:

Next Save Cancel

Figure 2-1 Add inbound product

To create the inbound product, complete the following actions:

- ▶ Code or Product Code {REQUIRED}
User defined maximum four alphanumeric product code. This code is used within Financial Transaction Manager for ACH as a way to reference the product within the system.
- ▶ Description {REQUIRED}
A maximum 80 character descriptive name for the product.
- ▶ Identifier {OPTIONAL}
The identifier is a unique maximum four character alphanumeric string that can be used as an identifier within the incoming data to determine the product association within Financial Transaction Manager for ACH.
- ▶ Configure General Box {OPTIONAL}
 - Batch/ICL Validation Rule or Batch Rule Name
A drop-down box of the available validation rule sets. A selection of a valid rule set forces that rule set to be applied on transactions assigned to this product. Leaving the value as --choose a batch/ICL validation rule-- applies the rule set defined by the transmission type definition. This setting allows the financial institutions to create products with specific customized rule sets, which can be different than their default

rule set. Selecting a *Batch/ICL Validation Rule* overrides the rule set defined for the transmission type.

– Business Rules Workflow Name

The name of the Business Rules workflow to be used instead of the workflow defined by the transmission type definition. This category gives the Financial Institution the ability to create their own custom workflows applicable to specific products. Setting Business Workflow Name overrides the workflow rules defined for the transmission type.

– Holdover Work Type or Holdover Work Type

Identifies the work type that is used for any transactions that are *held over*. The transactions can either be set to Forward or Return.

– Balance Rule or Balance Type

This drop-down list selects which balance rule is used when determining the balance state set for the batch associated with the inbound product. The balance rules have the following valid choices:

- None {DEFAULT}
- Control
- Transaction
- Use Adjustment General Property

– Move Restriction

This is the move restriction that is associated with the product. *Current Batch/ICL* is the default setting, and changing it overrides the settings at the default file definition. If the move restriction is set to *All Batches*, the transaction association can be moved beyond the batch/ICL. Unless required, this is NOT a preferred practice.

– Settlement Type

This field sets the accounting type that is associated with the product. The *Check* accounting can exclude some exceptions from the prime load, whereas *ACH* accounting includes exceptions in the prime load.

– Approval Required or Approval Indicator

This switch indicates whether the transactions that are associated with this inbound product are put into a pending state after ingestion. Batches in pending states must be released or *approved* before any further processing. By default, approval is NOT required.

– Adjustment Required

A switch that indicates whether the transactions associated with this product are required to select adjustment codes when a total control record adjustment is performed. By default, an adjustment code must be selected.

► Billing Related Box {OPTIONAL}

– Enable Billing or Billing Indicator

The *Yes/No* buttons determine whether billing entries should be generated for the product. Billing-related fields cannot be edited if the default value of *No* is selected. If *Yes* is selected, a billing coded can be defined in the billing tiers. In addition, a Service Area code is required when enabling billing at the product level.

– Service Area {REQUIRED if Enable Billing = Yes}

This four digit user-defined billing category code is required to define billing entries for a product.

- Daily Billing Code {OPTIONAL}
Five digit user-defined code for fixed fee daily billing of the service.
- File Billing Code {OPTIONAL}
Five digit user-defined code for fixed fee transmission billing of the service
- Batch/ICL Billing Code {OPTIONAL}
Five digit user-defined code for fixed fee batch billing of the service
- Item Billing Code {OPTIONAL}
Five digit user-defined code for fixed fee item billing of the service
- Enable Tiered Product Billing or Tiered Product Indicator
No {DEFAULT}
The Yes/No radio buttons indicate whether this product uses tier-based billing. If Yes is selected, a default billing tier code must be provided.
- Default Billing Tier {REQUIRED if Enable Tiered Product Billing = Yes}
Billing code to be applied in a tiered billing structure when no other applicable code is found.

After all the fields on this page are complete, clicking **Save** completes the addition of the product. Clicking **Next** continues to the next stage, where inbound services can be added to the product. This procedure is explained in 2.5, “Adding inbound services to an inbound product” on page 39.

Figure 2-2 provides an example of the definition of the inbound product ACHI, which uses the transmission batch/ICL validation rule set and business rules workflow. It forwards any holdover work, has no balance rule, and can only move items within the batch. Approvals and adjustments are required. The product sets up billing on a daily and transmission or file level. There is no tiered billing for this product.

Step 1 of 2 (Inbound Product information)

Code: *

Description: *

Identifier:

Configure General

Batch / ICL Validation Rule:

Business Rules Workflow Name:

Holdover Work Type:

Balance Rule:

Move Restriction:

Settlement Type:

Approval Required:

Adjustment Required:

Billing Related

Enable Billing: Yes No

Service Area: *

Daily Billing Code:

File Billing Code:

Batch / ICL Billing Code:

Item Billing Code:

Enable Tiered Product Billing: Yes No

Default Billing Tier:

Figure 2-2 Inbound Product definition in Control Center

2.3.2 Using the data setup utility (DSU)

Creating an inbound product using the DSU requires validation and updates in several files distributed with Financial Transaction Manager for ACH. The default names of the files to be validated or updated are in the following list:

- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/cmd/AchSharedImport.properties
- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/xls/SharedMap.xls
- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/xls/SharedXREF.xls
- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/xls/SampleAchConfiguration.xls

Where *install_directory* is the directory specified when Financial Transaction Manager for ACH was installed.

Table 2-1 shows the correlation from the Control Center command links to the workbook tabs.

Table 2-1 Inbound product Control Center command to workbook tab

Control Center link	Workbook - tab
Configuration → Inbound → Products → Add Product	SampleAchConfiguration.xls – Inbound Products

AchSharedImport.properties

In the properties file, validate that the workbook reference tags have the correct file names for the Cross Reference, Map, and Configuration Data workbooks. If the workbook names are different from the defaults, update the designated files according to the instructions under the default name. The specific tags to be validated are shown in Example 2-1.

Example 2-1 Workbook reference tags

```
mapFileName      = ../xls//SharedMap.xls
XREFFileName    = ../xls//SharedXREF.xls
inRulesFileName = ../xls//SampleAchConfiguration.xls
```

SharedMap.xls

In the Map workbook, validate that the *Inbound Products* tab has the correct mapping of column names to database table columns. It is unlikely that this file will need to be modified or updated.

SharedXREF.xls

In the Cross Reference workbook, on the Import tab, ensure that the row defining **Inbound Products** contains the value **Y** in the Import column is and the Mode column is set to **InsertUpdate** for the row with the Import sheet name column whose value is **Inbound Products**.

SampleAchConfiguration.xls

In the Configuration Data worksheet, on the Inbound Products tab in a single row, enter the data necessary to define the new product. The column names will match the parameters that are used in the Control Center. See 2.5.1, “Using the Control Center” on page 39 for more information about each field. Figure 2-3 illustrates the same example shown in Figure 2-2 on page 32 for the definition of the Inbound Product ACHI.

A	B	C	D	E	F	G	H	I	J	K	L
Product Code	Identifier	Description	Business Rules Workflow Name	Batch Rule Name	Holdover Worktype	Availability Indicator	Fixed Availability	Availability Threshold	Billing Indicator	Service Area	Daily Billing Code
ACHI	09	ACH Inbound			Forward				Y	5678	10000
		M	N	O	P	Q	R	S	T	U	V
		File Billing Code	Deposit Billing Code	Tiered Product Indicator	Default Billing Tier	Non Tiered Billing Code	Approval Indicator	Balance Type	Move Restriction	Settlement Type	Adjustment Required
		01000		N			Y			A	Y

Figure 2-3 Inbound product definition in the Control Center

After all the services the you want have been added into the Configuration Data workbook, import the data using the DSU tool import command. The execution of the DSU tool should be done from the *install_directory/shared/v300/pfs/DSU/importexport/cmd*. For larger workbooks, use the 64-bit version from *install_directory/shared/v300/pfs/DSU/importexport/cmd64* using the following commands:

dsu import AchSharedImport.properties or **dsu64 import AchSharedImport.properties**

The DSU tool logs the results of the command to a log file for later inspection. The log file is in *install_directory/shared/v300/pfs/DSU/importexport/cmd* or wherever the properties file specifies in the *logFileLocation* tag.

Additional information about the Data Setup Utility can be found in 1.5, “Importing and exporting system configuration” on page 20.

2.4 Creating an inbound service

This section provides a tutorial for creating an inbound service using either the Control Center console (2.4.1, “Using the Control Center” on page 34) or the DSU (2.4.2, “Using the data setup utility (DSU)” on page 37).

2.4.1 Using the Control Center

To create an inbound service, log in to the Control Center and click **Configuration** → **Inbound** → **Services** → **Add Inbound Service**.

The Add Inbound Service window is shown in Figure 2-4.

Figure 2-4 Add Inbound Service

A Send Notification check box will appear after the drop-down box, when a service that supports that capability is selected. Currently, only the Control Total Verification service supports this option.

Each inbound service is associated with a processing level. The processing level determines when the service functionality are applied within the workflow. The processing levels are predefined within Financial Transaction Manager for ACH and cannot be modified by the financial institution. Inbound services with a transmission level set to **YES** are applied to each transmission. Inbound services with **YES** for the product level are applied to each batch within the transmission. If both the transmission level and product level for an inbound service are set to **YES**, then the service is applied at both levels. One such example is the create balancing entries service.

To create the inbound service, complete the following settings:

► Inbound Service Code or Service Code {REQUIRED}

The internal code that is used to reference the service is a unique alphanumeric string with a maximum of four characters.

► Service Type {REQUIRED}

The type of the service being defined. Service types that are predefined by the product are listed in the drop-down list.

Select a service type from the menu. The following services are available:

- Archive

Transmission Level = **"No"** Product Level = **"Yes"**

This service type enables long-term storage of codeline and image data.

- Control Total Verification

Transmission Level = **"Yes"** Product Level = **"No"**

The service enables control total verification on transmissions. When enabled, the gateway verifies the inbound transmission and matches the sending points control total file before processing the transmission. The transmission is not processed until a matching control total is received.

- Create balancing entries
Transmission Level = “Yes” Product Level = “Yes”

This service has the Settlement module create balancing entries for out of balance batches.
- Create return item posting
Transmission Level = “No” Product Level = “Yes”

This service directs the Settlement module to post return items to the originator’s account.
- Extended RAID
Transmission Level = “No” Product Level = “Yes”

This service type enables high priority long-term storage of codeline and image data. It is similar to the Archive service.
- General Service Type 1 - General Service Type 5
Transmission Level = “No” Product Level = “Yes”

These generic service types are provided to enable the financial institution to create custom services.
- Payment Authorization
Transmission Level = “No” Product Level = “Yes”

This service enables a billing code to be associated with any payment authorizations against an account.
- Same day settlement
Transmission Level = “No” Product Level = “Yes”

This service allows the Originator to receive distribution settlement on the same day as the transaction’s business day for eligible items.
- Settle when requested
Transmission Level = “Yes” Product Level = “Yes”

This service allows the Originator to request when settlement occurs, even if the request is before the distribution settlement date.

Note: The service types Retrieval and Return Repair are valid only in Financial Transaction Manager for Check and are excluded from the previous list. Some options specific to these service types are also excluded, unless specified within the workbook used by the DSU.

- ▶ Send Notification or Notify {OPTIONAL; Service Type Dependent}
A check box is available to indicate whether notifications are sent to the subscriber if the service results in an error. Only services of type Control Total Verification have this option.
- ▶ Image Archive Selector Code {OPTIONAL; Service Type Dependent}
This setting is not applicable for any service types that are defined in Financial Transaction Manager for ACH. It only appears for service types that are supported by Financial Transaction Manager for Check.

- ▶ **Description {REQUIRED}**
A descriptive name for the service that is limited to eighty characters. This value is not used within Financial Transaction Manager for ACH. It only displays within the Control Center as a means to provide additional information about the service.
- ▶ **Daily Billing Code {OPTIONAL}**
Five digit user-defined code for fixed fee daily billing of the service
- ▶ **Transmission Billing Code or File Billing Code {OPTIONAL}**
Five digit user-defined code for fixed fee transmission billing of the service
- ▶ **Batch/ICL Billing Code or Batch Billing Code {OPTIONAL; Service Type Dependent}**
Five digit user-defined code for fixed fee batch billing of the service
- ▶ **Item Billing Code or TX Billing Code {OPTIONAL; Service Type Dependent}**
Five digit user-defined code for fixed fee item billing of the service
- ▶ **Service Area {OPTIONAL}**
Four digit user-defined billing category code

Figure 2-5 illustrates example settings for adding a control total verification service for billing each transmission.

Figure 2-5 Control Total Verification Service definition in the Control Center

Note: Service Type: Control Total Verification does not have Batch/ICL or Item Billing code options, and is the only service that can send notifications.

2.4.2 Using the data setup utility (DSU)

Creating an inbound service using the DSU requires validation and updates in several files that are distributed with Financial Transaction Manager for ACH. The default names of the files to be validated and updated are as follows:

- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/cmd/AchSharedImport.properties
- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/xls/SharedMap.xls
- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/xls/SharedXREF.xls
- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/xls/SampleAchConfiguration.xls

Where *install_directory* is the directory that was specified when installing Financial Transaction Manager for ACH.

Table 2-2 shows the correlation of the Control Center command links to the workbook tabs.

Table 2-2 Inbound Service Control Center command to workbook tab

Control Center Link	Workbook - Tab
Configuration → Inbound → Services → Add Inbound Service	SampleAchConfiguration.xls – Inbound Services

AchSharedImport.properties

In the properties file, validate that the workbook reference tags have the correct file names for the Cross Reference, Map, and Configuration Data workbooks. If the workbook names are different from the defaults, update the designated files according to the instructions under the default name. The specific tags to be validated are shown in Example 2-2.

Example 2-2 Workbook reference tags

```
mapFileName      = ../xls//SharedMap.xls
XREFFileName    = ../xls//SharedXREF.xls
inRulesFileName = ../xls//SampleAchConfiguration.xls
```

SharedMap.xls

The Map workbook should not require any modifications unless tab names or column names were modified in either the Cross Reference or Configuration Data workbooks. The names of the tabs and columns must match between the Map and the Configuration Data workbooks.

SharedXREF.xls

In the Cross Reference workbook, on the Import tab, ensure that the value in the Import column is **Y** and the Mode column is **InsertUpdate** for the row where the Import sheet name value is **Inbound Services**.

SampleAchConfiguration.xls

In the Configuration Data worksheet, on the Inbound Services tab, enter a single row of data completing all the fields necessary to define the new service. The column names on the worksheet match the input boxes that are used in the Control Center. See 2.4.1, “Using the Control Center” on page 34 for more information about each field. Figure 2-6 illustrates an example of adding a Control Total Verification service to be billed for each transmission.

Service Code	Description	Service Type	Daily Billing Code	File Billing Code	Batch Billing Code	TX Billing Code	Image Archive Selector Code	Notify	Service Area
CTV1	CTV - Trans Billing	Control Total Verification		12345				Y	

Figure 2-6 Control Total Verification definition in the workbook

After all the services that you want have been added into the Configuration Data workbook, import the data by using the DSU tool import command. The execution of the DSU tool should be done from the `install_directory/shared/v300/pfs/DSU/importexport/cmd` or for larger workbooks use the 64-bit version from

`install_directory/shared/v300/pfs/DSU/importexport/cmd64` using the command:

```
dsu import AchSharedImport.properties or dsu64 import AchSharedImport.properties
```

The DSU tool logs the results of the command to a log file for later inspection. The log file is in *install_directory/shared/v300/pfs/DSU/importexport/cmd* or wherever the properties file specifies in the `logFileLocation` tag.

Additional information about the data setup utility can be found in 1.5, “Importing and exporting system configuration” on page 20.

2.5 Adding inbound services to an inbound product

To bundle optional Services with a product, the services must be added to the product. Only product level services can be bundled to a product. Transmission level services are added through partner subscriptions and not associated with a specific product.

To add an inbound service to an inbound product, proceed to Step 2 of Add Product (2.3, “Creating an inbound product” on page 29) by selecting **Next** instead of **Save**. If the services already exist, proceed to Step 2 of the Product Details View in edit mode as shown in 2.5.1, “Using the Control Center” on page 39. The service must exist and be in the list of available services to be added to a product.

This section provides a tutorial for adding an inbound service to an inbound product using either the Control Center console (2.5.1, “Using the Control Center” on page 39) or the DSU (2.5.2, “Using the data setup utility (DSU)” on page 41).

2.5.1 Using the Control Center

To add an inbound service to an existing inbound product, log into the Control Center and open the Manage Inbound Products view by clicking **Configuration** → **Inbound** → **Products**.

Select the **(view details)** button for the product to which the services are to be added. When in the Inbound Product Details view, Select **Next** to continue on to Step 2. Select the **(edit mode)** button to enable selection of services between the Available List and the Selected List.

Figure 2-7 illustrates Step 2 of the window to add inbound services to inbound products.

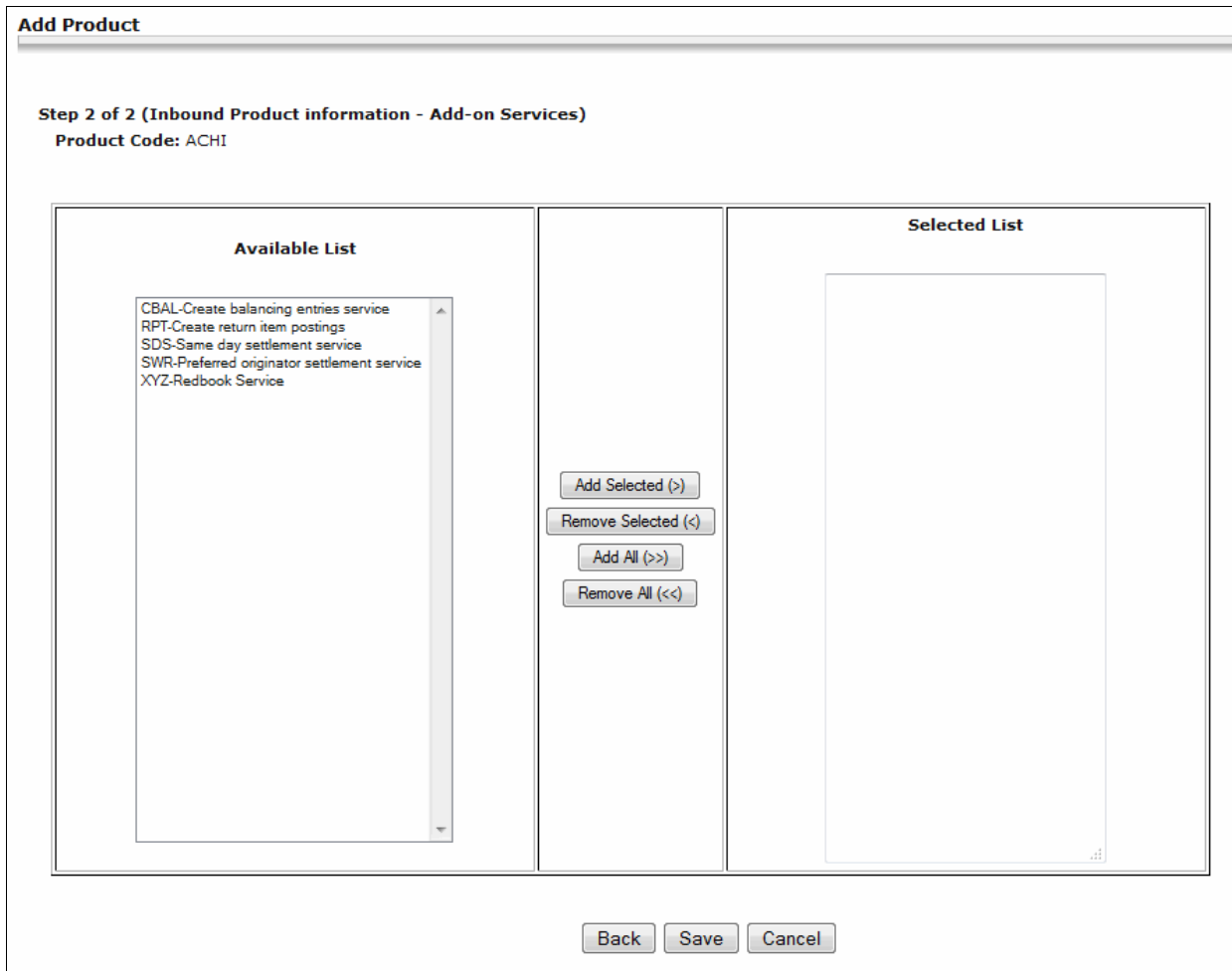


Figure 2-7 Add inbound services to inbound product

Select the services that you want from the Available List and click **Add Selected** to include the services as part of the product. Multiple services can be selected by using the Ctrl key when you select the available services.

Figure 2-8 shows the Create Balancing Entries service added to the ACHI inbound product.

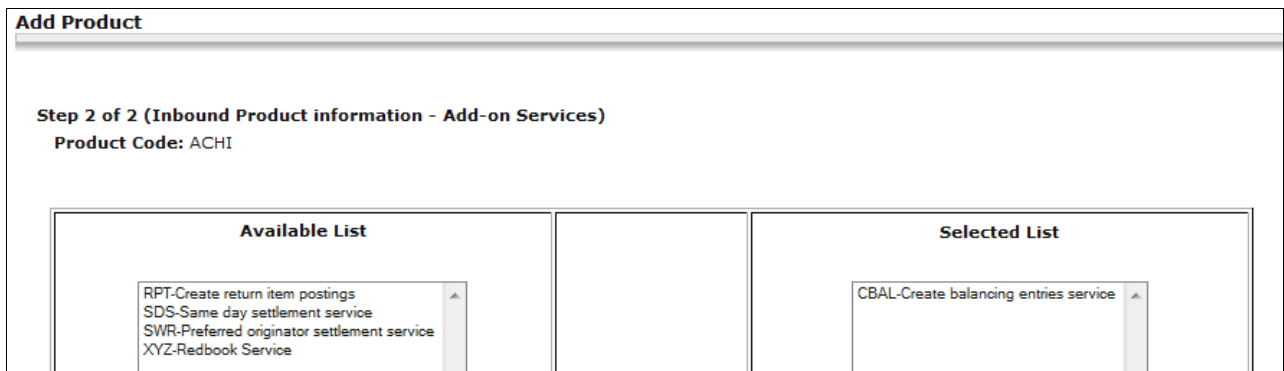


Figure 2-8 Inbound services by inbound product definition in the Control Center

2.5.2 Using the data setup utility (DSU)

Adding an inbound service to an inbound product by using the DSU requires validation and updates in several files that are distributed with Financial Transaction Manager for ACH. The default names of the files to be validated or updated are as follows:

- ▶ `install_directory/shared/v300/pfs/DSU/importexport/cmd/AchSharedImport.properties`
- ▶ `install_directory/shared/v300/pfs/DSU/importexport/xls/SharedMap.xls`
- ▶ `install_directory/shared/v300/pfs/DSU/importexport/xls/SharedXREF.xls`
- ▶ `install_directory/shared/v300/pfs/DSU/importexport/xls/SampleAchConfiguration.xls`

Where `install_directory` is the directory that is specified when Financial Transaction Manager for ACH was installed.

Table 2-3 shows the correlation with the Control Center command links to the workbook tabs.

Table 2-3 Inbound product Control Center command to workbook tab

Control Center Link	Workbook - Tab
Configuration → Inbound → Products → (view details) → Next → (edit mode)	SampleAchConfiguration.xls – Inbound Services by products

AchSharedImport.properties

In the properties file, validate that the workbook reference tags have the correct file names for the Cross Reference, Map, and Configuration Data workbooks. If the workbook names are different from the defaults, update the designated files according to the instructions under the default name. The specific tags to be validated are shown in Example 2-3.

Example 2-3 Workbook reference tags

```
mapFileName      = ../xls//SharedMap.xls
XREFFileName    = ../xls//SharedXREF.xls
inRulesFileName = ../xls//SampleAchConfiguration.xls
```

SharedMap.xls

In the Map workbook, validate that the Inbound Products tab has the correct mapping of column names to database table columns. It is unlikely that this file will need to be modified or updated.

SharedXREF.xls

Verify the Import tab in the Cross Reference workbook, has the Import column set to **Y** and the Mode column set to **InsertUpdate** for the row where the Import sheet name is **Inbound Services by Product**.

SampleAchConfiguration.xls

To associate a service with a product, an entry needs to be added to the Inbound Services by Product tab in the Configuration Data workbook. Enter the product code and service code into a single row of the worksheet. Figure 2-9 illustrates an example of adding the create balancing entries to the ACHI product.

Product Code	Service Code
ACHI	CBAL

Figure 2-9 Inbound service by inbound product in the workbook

After all services are added to all products, run the DSU tool on the set of updated files by running the following command:

```
dsu import AchSharedImport.properties or dsu64 import AchSharedImport.properties
```

2.6 Creating an outbound product

This section contains instructions on creating outbound products using either the Control Center console (2.7.1, “Using the Control Center” on page 46) or the DSU (2.8.2, “Using the data setup utility (DSU)” on page 51).

2.6.1 Using the Control Center

To create a new outbound product, log in to the Control Center and select the following menu options: **Configuration** → **Outbound** → **Products** → **Distribution** → **Add Product**.

The Add Outbound Product window is shown in Figure 2-10.

Add Outbound Product

Step 1 of 2 (Outbound Product information)

Product Code: *

Description: *

Configure General

Collection Type: --Please Select-- ▾

Work Type:

Building Option: --choose a building option-- ▾

Billing Related

Service Area:

Enable Billing: Yes No

Daily Billing Code:

File Billing Code:

Distribution Billing Code:

Tiered Product Indicator: Yes No

Non Tiered Billing Code:

Figure 2-10 Add Outbound Product

To create the Outbound Product, complete the following items:

- ▶ **Product Code {REQUIRED}**

User defined alphanumeric product code with a maximum of four characters. This code is used within Financial Transaction Manager for ACH as a way to reference the product within the system.

- ▶ **Description {REQUIRED}**

A descriptive name for the service that is limited to 80 characters. This value is not used within Financial Transaction Manager for ACH. It only displays within the Control Center as a means to provide additional information about the service.

- ▶ Configure General Box {OPTIONAL}
 - Collection Type

A drop-down list for the selection of a collection type. This setting is specific to Financial Transaction Manager for Check.
 - Work Type or Fed Work Type

A two character normalized Federal Reserve work type. This setting is specific to Financial Transaction Manager for Check.
 - Building Option or Building Options Name

A drop-down list that contains the defined build options. The building options are used by Distribution to determine the criteria in generating outbound transmission characteristics. For Financial Transaction Manager for ACH, the building option must have the Batch To Batch = **Yes**. The detailed building options can be found on the Building Options Details window. From the Manage Build Options window (**Configuration** → **Outbound** → **Distribution** → **Building Options**), select the building option to view the details.

Note: Settings and selections in the General Box override the setting of the item from the endpoint definition settings.

- ▶ Billing Related Box {OPTIONAL}
 - Enable Billing or Billing Indicator

The **Yes/No** buttons determine whether billing entries should be generated for the product. Billing-related fields cannot be edited if the default value of **No** is selected. If **Yes** is selected, a billing code can be defined in the billing tiers. In addition, a Service Area code is required when enabling billing at the product level.
 - Service Area {REQUIRED if Enable Billing = Yes}

Four digit user-defined billing category code. This code is required to define billing entries for a product.
 - Daily Billing Code {OPTIONAL}

Five digit user-defined code for fixed fee daily billing of the service.
 - File Billing Code {OPTIONAL}

Five digit user-defined code for fixed fee transmission billing of the service.
 - Distribution Billing Code or Presentment Billing Code {OPTIONAL}

Five digit user-defined code for fixed fee batch billing of the service.
 - Tiered Product Indicator

The **Yes/No** buttons indicate whether this product uses tier-based billing. If **No** is selected, a non-tiered billing tier code must be provided.
 - Non Tiered Billing Code {REQUIRED if 'Tiered Product Indicator' = No}

Five digit user-defined code to be applied for all transactions. This billing code is applied only once per day.

After all the fields on the Add Outbound Product window are complete, clicking **Save** completes the addition of the product. Clicking **Next** moves you to where Outbound Services can be added to the product. This procedure is explained in 2.8, “Adding outbound services to an outbound product” on page 49.

Figure 2-11 contains an example of an Outbound Product ACHO using the NACHA building option rules and enabling billing at the file and batch levels.

Figure 2-11 Outbound product definition in the Control Center

2.6.2 Using the data setup utility (DSU)

Creating an Outbound Product using the DSU requires validation and updates in several files that are distributed with Financial Transaction Manager for ACH. The default names of the files to be validated or updated are as follows:

- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/cmd/AchSharedImport.properties
- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/xls/SharedMap.xls
- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/xls/SharedXREF.xls
- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/xls/SampleAchConfiguration.xls

Where *install_directory* is the directory that is specified during the installation of Financial Transaction Manager for ACH.

Table 2-4 shows the correlation of the Control Center command links to the workbook tabs.

Table 2-4 Outbound service Control Center command to workbook tab

Control Center Link	Workbook - Tab
Configuration → Outbound → Products → Distribution → Add Product	SampleAchConfiguration.xls – Outbound Products

AchSharedImport.properties

In the properties file, validate that the workbook reference tags have the correct file names for the Cross Reference, Map, and Configuration Data workbooks. If the workbook names are different than the defaults, update the designated files according to the instructions under the default name. The specific tags to be validated are shown in Example 2-4.

Example 2-4 Workbook reference tags

```
mapFileName      = ../xls//SharedMap.xls
XREFFileName    = ../xls//SharedXREF.xls
inRulesFileName = ../xls//SampleAchConfiguration.xls
```

SharedMap.xls

In the Map workbook, validate that the Outbound Products tab has the correct mapping of column names to database table columns. It is unlikely that this file will need to be modified or updated.

SharedXREF.xls

In the Cross Reference workbook, on the *Import* tab, ensure that the row defining **Outbound Products** contains the value **Y** in the Import column is and the Mode column is set to **InsertUpdate** in the row where Import sheet name is equal to **Outbound Products**.

SampleAchConfiguration.xls

In the Configuration Data worksheet, on the Outbound Products tab in a single row enter the data necessary to define the new product. For more information about the meanings of the columns in the workbook tab, see 2.7.1, “Using the Control Center” on page 46. Fields in the workbook but not included in 2.7.1, “Using the Control Center” on page 46 are for Financial Transaction Manager for Check only.

Figure 2-12 illustrates the same example as Figure 2-11 on page 44 used for the Control Center for adding the ACHO Outbound Product with transmission and batch level billing.

Product Code	Description	Collection Type	Fed Work Type	Building Options Name	Billing Indicator	Service Area	Daily Billing Code	File Billing Code	Presentment Billing Code	Tiered Product Indicator	Non Tiered Billing Code
ACHO	ACH Outbound			NACHA	Y	5678		02000	00200	Y	

Figure 2-12 Outbound product definition in the workbook

After all the services have been added into the Configuration Data workbook, import the data by using the DSU tool import command. The execution of the DSU tool should be done from *install_directory/shared/v300/pfs/DSU/importexport/cmd*. Larger workbooks use the 64-bit version from *install_directory/shared/v300/pfs/DSU/importexport/cmd64* using the following commands:

```
dsu import AchSharedImport.properties or dsu64 import AchSharedImport.properties
```

The DSU tool logs the results of the command to a log file for later inspection. The log file is in *install_directory/shared/v300/pfs/DSU/importexport/cmd* or wherever the properties file specifies in the *logFileLocation* tag.

Additional information about the DSU can be found in 1.5, “Importing and exporting system configuration” on page 20 of this document.

2.7 Creating an Outbound Service

Outbound Services can be created by a user with the proper privileges by using either the Control Center console (2.7.1, “Using the Control Center” on page 46) or the DSU (2.7.2, “Using the data setup utility (DSU)” on page 48).

2.7.1 Using the Control Center

To create an outbound service, log in to the Control Center and select the following menu options: **Configuration** → **Outbound** → **Distribution** → **Services** → **Add Service**.

The Add Outbound Service window is shown in Figure 2-13.

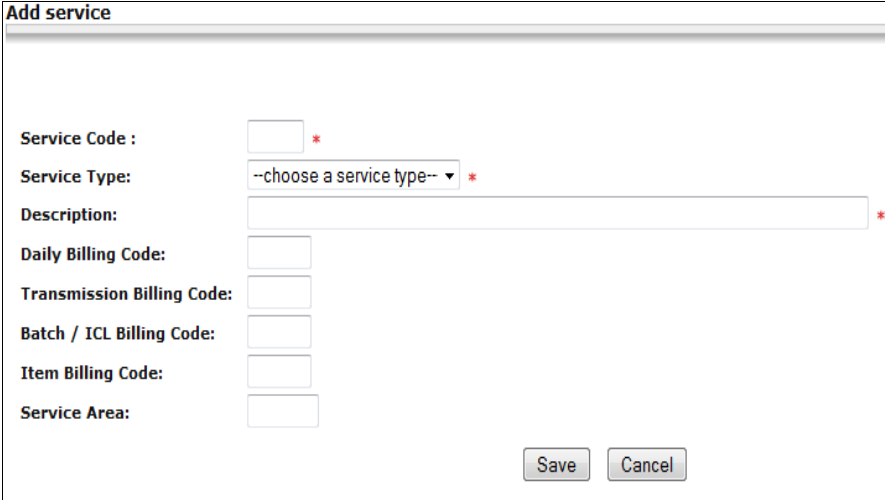


Figure 2-13 Add outbound service

To create the outbound service, complete the following items:

► **Service Code {REQUIRED}**

The internal code that is used to reference the service is a unique alphanumeric string that has a maximum of four characters.

► **Service Type {REQUIRED}**

Select a service type from the menu. The menu includes these available services:

– **Archive**

This service enables long-term storage of codeline and image data.

– **Cutoff**

This service provides extra methods to associate billing codes with outbound transmissions when you are varying the normal delivery cutoff times.

– **Delivery**

This service enables premium or expedited delivery of outbound transmissions.

– **Discount**

This service provides extra methods to associate billing codes with outbound transmissions for the receiving point partners.

– **Extended RAID**

This service enables long-term storage of transmission similar to the Archive service but with a higher priority.

– **File**

This service provides extra methods to associate billing codes with outbound transmissions for the receiving point partners.

- General Service Type 1 - General Service Type 5
These are generic service types that can be used for custom services defined by the financial institution.
- Retired
This service provides extra methods to associate billing codes with outbound transmissions for the receiving point partners.

Note: Service types such as Forward Repair, Outsort, Reclear, and SDS Service are available in Financial Transaction Manager for Check only. Options specific to these service types are also excluded.

- ▶ Description {REQUIRED}
A descriptive name for the service limited to 80 characters. This value is not used within Financial Transaction Manager for ACH. It only displays within the Control Center as a means to provide additional information about the service.
- ▶ Daily Billing Code {OPTIONAL}
Five digit user-defined code for fixed fee daily billing of the service.
- ▶ Transmission Billing Code or File Billing Code {OPTIONAL}
Five digit user-defined code for fixed fee transmission billing of the service.
- ▶ Batch/ICL Billing Code or Batch Billing Code {OPTIONAL; Service Type Dependent}
Five digit user-defined code for fixed fee batch billing of the service.
- ▶ Item Billing Code or Primary Billing Code {OPTIONAL; Service Type Dependent}
Five digit user-defined code for fixed fee item billing of the service.
- ▶ Service Area {OPTIONAL}
Four digit user-defined billing category code.
- ▶ Image Archive Selector Code {OPTIONAL; Service Type Dependent}
This setting is not applicable for any service types that are defined in Financial Transaction Manager for ACH. It only appears for service types that are supported by Financial Transaction Manager for Check.

Figure 2-14 illustrates example settings for adding a same day settlement service to be billed for each batch.

Service Code :	<input type="text" value="CUT1"/> *
Service Type:	<input type="text" value="Cutoff"/> *
Description:	<input type="text" value="Cutoff Service"/> *
Daily Billing Code:	<input type="text"/>
Transmission Billing Code:	<input type="text"/>
Batch / ICL Billing Code:	<input type="text" value="00200"/>
Item Billing Code:	<input type="text"/>
Service Area:	<input type="text"/>

Figure 2-14 Cutoff service definition in Control Center

Note: Service Type: Reclear does not have Transmission or Batch/ICL Billing code options.

2.7.2 Using the data setup utility (DSU)

Creating an Outbound Service using the DSU requires validation and updates in several files that are distributed with Financial Transaction Manager for ACH. The default names of the files to be validated or updated are as follows:

- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/cmd/AchSharedImport.properties
- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/xls/SharedMap.xls
- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/xls/SharedXREF.xls
- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/xls/SampleAchConfiguration.xls

Where *install_directory* is the installation directory for Financial Transaction Manager for ACH.

Table 2-5 shows the correlation of the Control Center command links to the workbook tabs.

Table 2-5 Outbound service Control Center command to workbook tab

Control Center Link	Workbook - Tab
Configuration → Outbound → Distribution → Services → Add Service	SampleAchConfiguration.xls – Outbound Services

AchSharedImport.properties

In the properties file, validate that the workbook reference tags have the correct file names for the Cross Reference, Map, and Configuration Data workbooks. If the workbook names are different from the defaults, update the designated files according to the instructions under the default name. The specific tags to be validated are shown in Example 2-5.

Example 2-5 Workbook reference tags

```
mapFileName      = ../xls//SharedMap.xls
XREFFileName     = ../xls//SharedXREF.xls
inRulesFileName  = ../xls//SampleAchConfiguration.xls
```

SharedMap.xls

In the Map workbook, validate that the Outbound Services tab has the correct mapping of column names to database table columns. It is unlikely that this file needs to be modified or updated.

SharedXREF.xls

In the Cross Reference workbook, on the Import tab, ensure that the row defining **Outbound Services** contains the value **Y** in the Import column is and the Mode column is set to **InsertUpdate** in the row where Import sheet name is equal to **Outbound Services**.

SampleAchConfiguration.xls

In the Configuration Data worksheet, on the Outbound Services tab in a single row enter the data necessary to define the new service. The column names are matched up with the fields defined in the Control Center windows. For more information about those fields, see 2.7.1, “Using the Control Center” on page 46. Figure 2-15 illustrates same example as used in the Control Center for adding a cutoff service with batch level billing.

Service Code	Service Type	Service Area	Description	Primary Billing Code	Daily Billing Code	File Billing Code	Batch Billing Code	Image Archive Selector Code
CUT1	Cutoff		Cutoff Service				00200	

Figure 2-15 Adding a cutoff service with batch level billing

After all the services have been added into the Configuration Data workbook, import the data using the DSU tool import command. The execution of the DSU tool should be done from *install_directory/shared/v300/pfs/DSU/importexport/cmd*. For larger workbooks, use the 64-bit version from *install_directory/shared/v300/pfs/DSU/importexport/cmd64* using the following commands:

```
dsu import AchSharedImport.properties or dsu64 import AchSharedImport.properties
```

The DSU tool logs the results of the command to a log file for later inspection. The log file is in *install_directory/shared/v300/pfs/DSU/importexport/cmd* or wherever the properties file specifies in the `logFileLocation` tag.

Additional information about the data setup utility can be found in 1.5, “Importing and exporting system configuration” on page 20.

2.8 Adding outbound services to an outbound product

Bundling Services with a Product requires that those services be added to the product. Only product level services can be bundled to a product.

To add an outbound service to an outbound product, proceed to Step 2 of Add Outbound Product (2.6, “Creating an outbound product” on page 42) by selecting **Next** instead of **Save**. If the services already exist, proceed to Step 2 of the Product Details View in edit mode as shown in 2.8.1, “Using Control Center” on page 49. The service must exist and be in the list of available services to be added to a product.

2.8.1 Using Control Center

To add an outbound service to an existing outbound product, log in to the Control Center and open the Manage Outbound Products view by clicking **Configuration** → **Outbound** → **Distribution** → **Products**.

Select the **(view details)** button for the product to which the services are to be added. When in the Outbound Product Details view, select **Next** to continue. Select the **(edit mode)** button to enable selection of services between the Available List and the Selected List.

Figure 2-16 illustrates the Step 2 window for adding a service to a product.

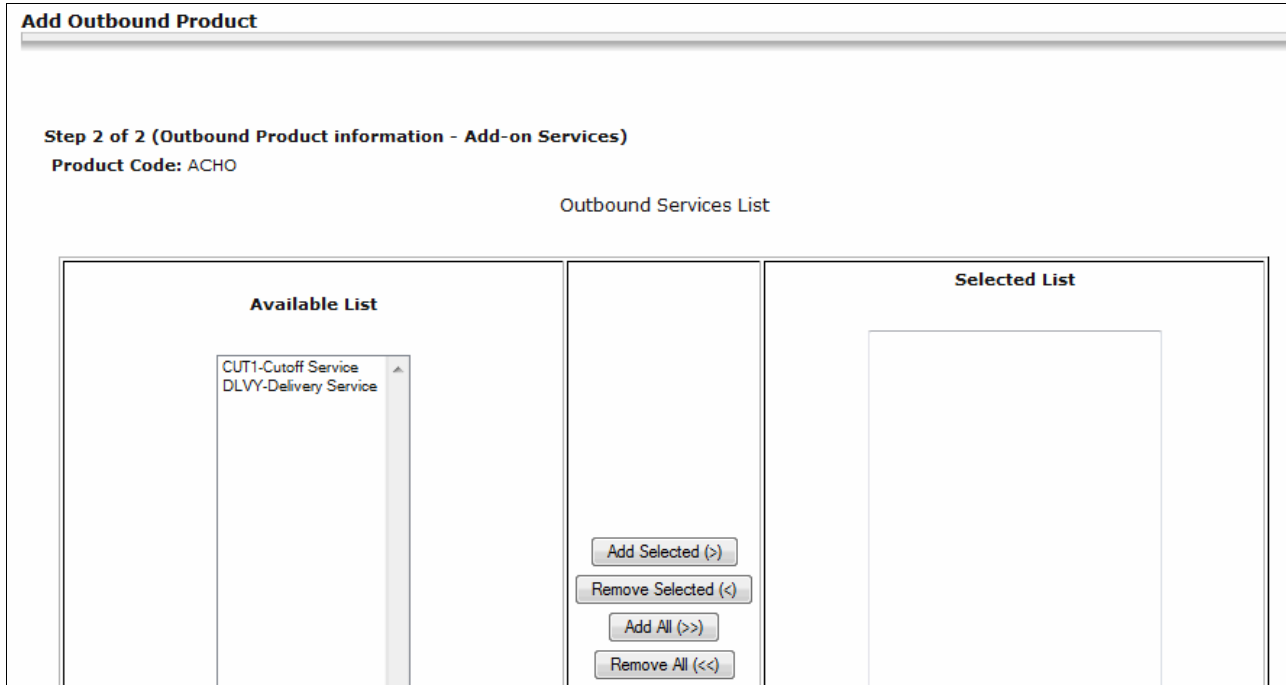


Figure 2-16 Add Outbound Service to Outbound Product

Select the services from the Available Services and click **Add Selected** to include the services as part of the product. Multiple services can be selected by holding the Ctrl key when you select the available services.

Figure 2-17 shows the cutoff service added to the ACHO Outbound product.

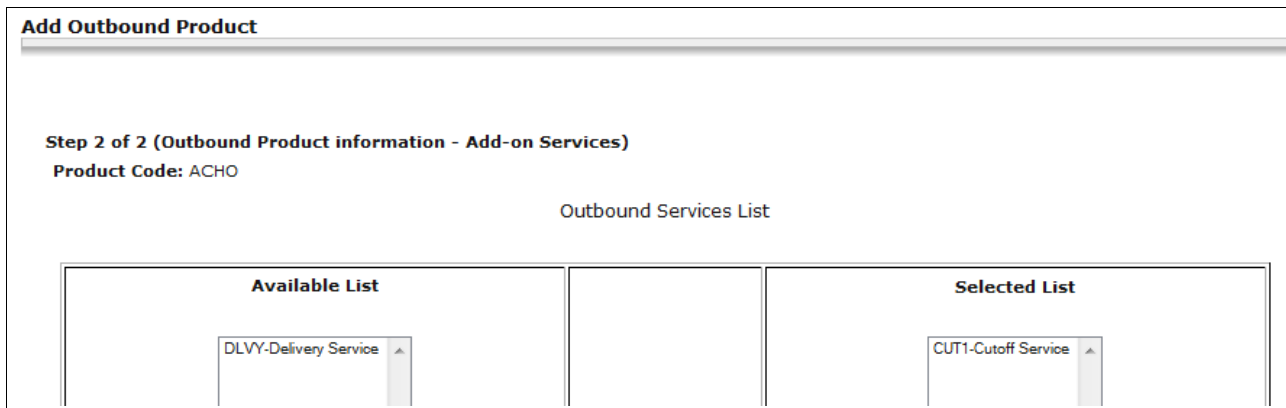


Figure 2-17 Outbound services by outbound product definition in the Control Center

2.8.2 Using the data setup utility (DSU)

Adding an outbound service to an outbound product using the DSU requires validation and updates in several files that are distributed with Financial Transaction Manager for ACH. The default names of the files to be validated or updated are as follows:

- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/cmd/AchSharedImport.properties
- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/xls/SharedMap.xls
- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/xls/SharedXREF.xls
- ▶ *install_directory*/shared/v300/pfs/DSU/importexport/xls/SampleAchConfiguration.xls

Where *install_directory* is the directory that is specified during the installation of Financial Transaction Manager for ACH.

Table 2-6 shows the correlation of the Control Center command links to the workbook tabs.

Table 2-6 Outbound service Control Center command to workbook tab

Control Center Link	Workbook - Tab
Configuration → Outbound → Distribution → Products → (view details) → Next → (edit mode)	SampleAchConfiguration.xls – Outbound Services by Products

AchSharedImport.properties

In the properties file, validate that the workbook reference tags have the correct file names for the Cross Reference, Map, and Configuration Data workbooks. If the workbook names are different from the defaults, update the designated files according to the instructions under the default name. The specific tags to be validated are shown in Example 2-6.

Example 2-6 Workbook reference tags

```
mapFileName      = ../xls//SharedMap.xls
XREFFileName    = ../xls//SharedXREF.xls
inRulesFileName = ../xls//SampleAchConfiguration.xls
```

SharedMap.xls

In the Map workbook, validate that the Outbound Products tab has the correct mapping of column names to database table columns. It is unlikely that this file needs to be modified or updated.

SharedXREF.xls

Verify the Import tab in the Cross Reference workbook, has the Import column set to **Y** and the Mode column set to **InsertUpdate** for the row whose Import Sheet name value is **Outbound Services by Product**.

SampleAchConfiguration.xls

To associate a service with a product, an entry needs to be added to the Outbound Services by Product tab in the Configuration Data workbook. Enter the product code and service code into a single row of the worksheet.

Figure 2-18 illustrates an example of adding the same day settlement service to the ACHO outbound product.

Product Code	Service Code
ACHO	CUT1

Figure 2-18 Outbound services by product definition in the workbook

After all services are added to all products, run the DSU tool on the set of updated files by running the following command:

```
dsu import AchSharedImport.properties or dsu64 import AchSharedImport.properties
```



Validating, enriching, and routing of payments

When a payment enters the Financial Transaction Manager for ACH System, it goes through a process of validation, enriching, and routing to its final destination. This payment process is described in this chapter.

The gateway server performs validation by using internal code and by calling business rules process server to perform other validation. When items are pulled from the warehouse, the gateway engine performs validation and enrichment by calling the business rules process server again.

As part of the enrichment, additional information is assigned to the batch and items that includes the clearing date, inbound product, billing information, banking codes, and settlement accumulators.

The routing ensures that the payment is sent to the appropriate destination, which is referred to as the receiving point in Financial Transaction Manager for ACH. This receiving point can be a back-office system, an ACH operator, another financial institution, or an authorized third party.

Those steps and their configuration are explained in detail in this chapter.

This chapter includes the following sections:

- ▶ Validation configuration
- ▶ Enrichment
- ▶ Routing and Endpoints assignment
- ▶ Troubleshooting

3.1 Validation configuration

This chapter provides an overview of gateway validation and data validation and how both are configured in the Control Center and by using the data setup utility (DSU).

The validation of payments consists of two parts:

- ▶ Gateway validation
- ▶ Data validation

In the first step, the Gateway Server checks whether the incoming transmissions and batches are valid.

In the second step, the data is validated against the NACHA standard validation rules.

3.1.1 Gateway validation

The gateway validation criteria can be configured by a user with the appropriate administrative privileges either in the Control Center or the DSU. The validation is configurable on two levels: The transmission level and the batch level.

Transmission rule set configuration in Control Center

To change the configuration of the gateway validation, enter the Control Center and click **Configuration** → **Validation Rules** → **Rule Sets**.

You are now able to select the rule sets either on the transmission level or the batch level.

For the transmission level, Figure 3-1 shows the details that can be configured.

Configuration Item	Value	Error Code
Name	NACHA	
Transmission Threshold Level	Batch / ICL	
Transmission Error Threshold: Minimum Percentage	50	IMA0009
Transmission Error Threshold: Minimum Number		
Maximum Transmission Size	2000 MB	IMA0001
Format Check	None	IMA0002
Transmission Duplicate Detect	Do Not Check	IMA0008
Transmission Out of Balance	Do Not Check	IMA0010
Sending Point is Defined	Perform Check	IMA0003
Sending Point is Authorized for Originator	Perform Check	IMA0005
Originator is Defined	Perform Check	IMA0004
Product is Defined	Perform Check	IMA0006
Originator is Authorized for Product	Perform Check	IMA0007
Originator is Authorized for Destination	Perform Check	IMA0025

Figure 3-1 Edit transmission rule set window

On the transmission level, the gateway performs validations in the following ways:

- ▶ **Transmission Threshold Level**
Defines on which level the transmission threshold is applied. Possible selections are **None**, **Batch**, and **Transaction**
- ▶ **Transmission Error Threshold**
Sets the minimum percentage or number of errors in the defined threshold level for the transmission to be rejected. The batch or the transaction can be rejected for any reason, such as content validation, context validation, duplicate, or being out of balance. If both a minimum number and percentage have a value input, then both conditions must be met to reject the transmission. No input in either of the two fields means that this rule is not used.
- ▶ **Maximum Transmission Size**
This field defines the maximum transmission size (including the configured value) in MB.
- ▶ **Format check**
The administrator can chose to validate that each transmission has one of the supported formats: EBCDIC or ASCII.
- ▶ **Transmission Duplicate Detect**
This option enables checking for a duplicate transmission.
- ▶ **Transmission Out of Balance**
Performs a check whether the sum of the Batches trailing records equals the Transmission trailing record total. The totals are compared to the values in the File Control Record (record type 9).
- ▶ **Sending point is defined**
Checks whether the sending point is defined and authorized to send in the transmission. The sending point is defined in the File Header (record type code 1 -> Immediate Origin, field 4).
- ▶ **Sending Point is Authorized for Originator**
Checks whether the sending point is authorized to send in batches for this Originator (ODFI).
- ▶ **Originator is defined**
Whether to check if the Originator (ODFI) is defined and authorized to send in the transmission.
- ▶ **Product is defined**
Whether the inbound product is defined. The inbound product identifier is defined by the customer per a gateway user exit.
- ▶ **Originator is Authorized for Product**
Whether the Originator (ODFI) is authorized to have a batch for that inbound product.
- ▶ **Originator is Authorized for Destination**
Whether the Originator (ODFI) is authorized to have a batch for that destination, which is defined in File Header (record type code 1) > Immediate Destination (field 3).

Transmission rule set configuration with data setup utility

Configuring the Transmission Rule Set with the DSU requires validation and updates in several files that are distributed with Financial Transaction Manager for ACH. The following list notes the default names of the files to be validated and updated:

- ▶ *installDir/shared/v300/pfs/DSU/importexport/cmd/AchSharedImport.properties*
- ▶ *installDir/shared/v300/pfs/DSU/importexport/xls/SharedMap.xls*
- ▶ *installDir/shared/v300/pfs/DSU/importexport/xls/SharedXREF.xls*
- ▶ *installDir/shared/v300/pfs/DSU/importexport/xls/SampleAchConfiguration.xls*

Verify that the workbook reference tags in the properties file (*AchSharedImport.properties*) have the correct file names for the Cross Reference, Map, and Configuration Data workbooks. If the workbook names are different than the defaults, update the designated files according to the instructions under the default name.

In the Map workbook (default *SharedMap.xls*), validate that the Transmission Rule Set tab has the correct mapping of column names to database table columns. It is unlikely that this file will need to be modified or updated.

In the Cross Reference workbook (default *SharedXREF.xls*), on the Import tab, ensure that the row defining Inbound Transmission Rules contains the value **Y** in the Import column and the Mode column is set to **InsertUpdate**.

In the Configuration Data workbook (default *SampleAchConfiguration.xls*), open the Inbound Transmission Rules tab and add or edit an entry in the spreadsheet. The columns are named as the fields in the Control Center in most cases. See the explanations above for each of the columns.

After everything has been configured as wanted, import the new configuration using the DSU import command in *installDir/shared/v300/pfs/DSU/importexport/cmd* or *installDir/shared/v300/pfs/DSU/importexport/cmd64*:

```
dsu import AchSharedImport.properties
```

or

```
dsu64 import AchSharedImport.properties
```

The DSU tool will log the results of the command to a log file for later inspection. The log file is in *installDir/shared/v300/pfs/DSU/importexport/cmd* or wherever the properties file specifies in the *logFileLocation* tag.

Additional information about the Data Setup Utility can be found in 1.5, "Importing and exporting system configuration" on page 20.

Batch Rule Set Configuration in Control Center

On the batch level, select the following parameters as shown in Figure 3-2.

The screenshot shows the 'Edit Batch / ICL Rule' window for 'ACH Operator'. The configuration is as follows:

- Batch / ICL Threshold Level:** Segment
- Batch / ICL error threshold:** Minimum Percentage: [], Minimum Number: [], Error Code: []
- Batch / ICL duplicate detect:** Perform Check, Do not check, Error Code: IMA0011, Minimum Count: [], Minimum Amount: []
- Batch / ICL out of balance:** Perform Check, Do not check, Error Code: []
- Segment error threshold:** Minimum Percentage: [], Minimum Number: [], Error Code: []
- Segment duplicate detect:** Perform Check, Do not check, Error Code: IMA0012, Minimum Count: [], Minimum Amount: []
- Segment out of balance:** Perform Check, Do not check, Error Code: []
- Future Date:** Perform Check, Do not check, Error Code: FUT001, Days Allowed in the Future: 60
- Past Date:** Perform Check, Do not check, Error Code: FUT002, Days Allowed in the Past: 5
- Transaction type:** Mixed Work, Error Code: IMA0027
- Message Type Validation:** Perform Check, Do not check, Error Code: IMA0028
- Return Window Validation:** Perform Check, Do not check, Error Code: IMA0029
- Image rule set name:** None

Figure 3-2 Edit Batch/ICL Rule window

- ▶ **Batch (ICL) Threshold Level**

Defines on which level the batch threshold is applied. Possible selections are **None**, **Segment**, and **Transaction**. Note that Segment does not apply for Financial Transaction Manager for ACH.

- ▶ **Batch (ICL) error threshold**

Sets the minimum percentage or number of errors in the defined threshold level for the batch to be rejected. The batch or the transaction can be rejected for any reason, such as content validation, context validation, duplicate, or being out of balance. If both a minimum number and percentage have a value inputted, then both conditions must be met to reject the transmission. No input in either of the two fields means that this rule will not be used.

The following list notes scenarios about how this setting can be used:

- ▶ If the customer only wants a batch rejected when there is a minimum number of items rejected, regardless of the batch size, then only configure the minimum number. For example, if the minimum number is set to five, then a four item batch with four rejected transactions is not rejected. However, a five item batch with five rejected items is rejected, and a hundred item batch with five rejected transactions is rejected even though five is a small percentage of the total number of transactions.
- ▶ If the customer only wants a batch rejected based on a percentage, then only configure the percentage number. This can prevent batches with a larger number of transactions from being rejected if only a few of the transactions are rejected. For example, if the percentage is set to 50 percent, then a hundred item batch with five rejected transactions is not rejected, but if there are 50 or more rejected transactions the batch is rejected. A two item batch is rejected if one transaction is rejected.
- ▶ The reason you would want to configure both numbers is to prevent batches with a few transactions from being rejected when the minimum percentage is configured. For example, if the percentage is set to 50 percent, then to prevent a two item batch that only has one rejected transaction from being rejected, set the minimum number to two.

- ▶ **Batch (ICL) Duplicate Detect**

This option enables the check for a duplicate batch.

The check is performed if the number of transactions in the Batch equals or exceeds the Batch minimum count if Batch duplicate detection is enabled.

The check is also performed if the total dollar amount of the Batch equals or exceeds the Batch minimum amount if Batch duplicate detection is enabled.

- ▶ **Batch (ICL) Out of Balance**

Performs a check whether the sum of the transactions trailing record total equals the Batch trailing record total.

- ▶ **Segment Error Threshold**

This does not apply to Financial Transaction Manager for ACH. It sets the minimum percentage or number of errors in the segment for the batch to be rejected. If both a minimum number and percentage have a value input, then both conditions must be met to reject the transmission. No input in either of the two fields means that this rule is not used.

- ▶ **Segment Duplicate Detect**

This does not apply to Financial Transaction Manager for ACH. This checks whether there are any duplicate segments.

- ▶ **Segment Out of Balance**

This does not apply to Financial Transaction Manager for ACH. Check whether the sum of the transaction records equals the segment trailing record total.

- ▶ **Future Date**

Determines whether transactions are dated too far in the future and allows you to specify the number of days in the future allowed. This is defined in the Batch Header (record type code 5) -> Effective Entry Date (field 9).

- ▶ **Past Date**
Determines whether transactions are dated too far in the past and allows you to specify the number of days in the past allowed. This is defined in the Batch Header (record type code 5) -> Effective Entry Date (field 9).
- ▶ **Transaction Type**
Determines whether the transaction types that are associated with the batches are defined.
- ▶ **Message Type**
Determines whether the originator (ODFI) is authorized the Message type, which is configured in **Partner** → **Authorized Message Type**.
- ▶ **Return Window**
Determines whether returned transactions are beyond the service level agreement (SLA) return window.
- ▶ **Image Rule Set Name**
This does not apply to Financial Transaction Manager for ACH. This is the name of a rule set that contains the image validation attribute configurations. This rule set name is passed to the Image Compliance product for validating the image.

Note: Some of the batch validation rules do not apply to ACH. For example, Image and Segment rules are only used with Check, not with ACH. If a Segment or Image rule is configured for ACH, this rule is ignored.

Batch Rule set configuration with data setup utility

Configuring the Batch Rule Set with the DSU requires validation and updates in several files that are distributed with Financial Transaction Manager for ACH. The following list notes the default names of the files to be validated and updated:

- ▶ *installDir/shared/v300/pfs/DSU/importexport/cmd/AchSharedImport.properties*
- ▶ *installDir/shared/v300/pfs/DSU/importexport/xls/SharedMap.xls*
- ▶ *installDir/shared/v300/pfs/DSU/importexport/xls/SharedXREF.xls*
- ▶ *installDir/shared/v300/pfs/DSU/importexport/xls/SampleAchConfiguration.xls*

Verify that the workbook reference tags in the properties file (*AchSharedImport.properties*) have the correct file names for the Cross Reference, Map, and Configuration Data workbooks. If the workbook names are different from the defaults, update the designated files per the instructions under the default name.

In the Map workbook (default *SharedMap.xls*), validate that the Inbound Products tab has the correct mapping of column names to database table columns. It is unlikely that this file needs to be modified or updated.

In the Cross Reference workbook (default *SharedXREF.xls*), on the Import tab, ensure that the row defining Inbound Transmission Rules contains the value **Y** in the Import column and the Mode column is set to **InsertUpdate**.

In the Configuration Data workbook (default *SampleAchConfiguration.xls*), open the Inbound Batch Rules tab and add or edit an entry in the spreadsheet. The columns are named as the fields in the Control Center in most cases. See the list in “Batch Rule Set Configuration in Control Center” on page 57 for information about each of the columns

After everything has been configured, import the new configuration by using the DSU import command in *installDir/shared/v300/pfs/DSU/importexport/cmd* or *installDir/shared/v300/pfs/DSU/importexport/cmd64*:

```
dsu import AchSharedImport.properties
```

or

```
dsu64 import AchSharedImport.properties
```

The DSU tool logs the results of the command to a log file for later inspection. The log file is in *installDir/shared/v300/pfs/DSU/importexport/cmd* or wherever the properties file specifies in the *logFileLocation* tag.

Additional information about the Data Setup Utility can be found in 1.5, “Importing and exporting system configuration” on page 20.

Error Code Configuration

For all the performed validations, an error code can be assigned to be able to determine the failing checks. For those error codes, the administrator can either use the defaults or create new specific error codes. To do this, click **Configuration** → **Rule Sets** → **Error Codes**.

Figure 3-3 shows the menu icons in the Error Code tab. Click the **Plus icon** to add an error code.

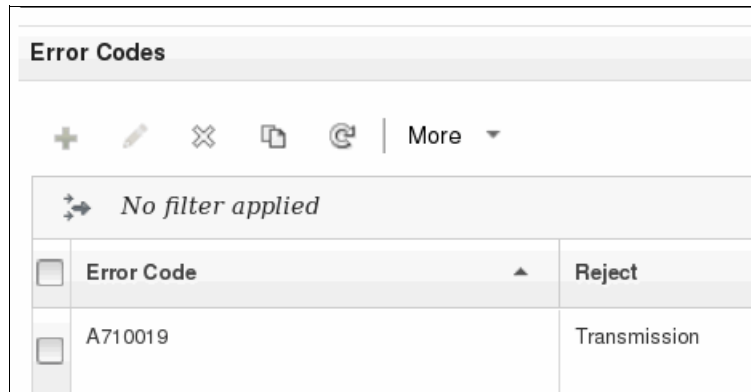


Figure 3-3 Error Codes window

The new window that opens is shown in Figure 3-4. The Error Code should be unique in the system and can be any alphanumeric value that is no longer than 24 characters.

The screenshot shows a window titled "Add Error Code" with a "Help" link in the top right corner. The form contains the following fields:

- * Error Code:** A text input field containing "MyErrorCode1".
- * Description:** An empty text input field.
- * Reject Level:** A dropdown menu with "Select One" selected.
- Override:** A question mark icon.
- Acknowledgment:** A question mark icon.
- * Category Name:** A dropdown menu with "Select One" selected.

At the bottom right of the window are "Save" and "Cancel" buttons.

Figure 3-4 Add Error Code window

The **Description** is provided in feedback messages, and should contain useful information about the error code.

The **Reject** level allows you to select what level should be rejected in case of an error. The possible values are as follows:

► **Transaction**

This selection indicates that the rejection is at the Transaction level.

► **Segment**

This entry does not apply for Financial Transaction Manager for ACH.

This selection indicates that the rejection is at the Bundle/Segment level.

► **Batch**

This selection indicates that the rejection is at the Batch level.

► **Transmission**

This selection indicates that the rejection is at the Transmission level.

► **Warning**

This selection indicates that there is no rejection. Instead, a warning is assigned to the error code.

► **Informational**

This selection indicates that there is no rejection. Instead, some information is assigned to the error code.

The **Override** button indicates whether this error can be overridden.

The **Acknowledgment** option indicates whether to include this error number in acknowledgment messages.

The **Error** category defines to which category this error is assigned. Categories are defined in Add Error Categories window.

3.1.2 Data Validation

In the second part of the validation, the data is checked using the file standard validation rules.

File Standard Validation Rules

Business Rules can be used to validate the content and structure of batches imported by Gateway. This functionality is provided as a set of Business Rules nodes that are called from the Business Rules workflow. The validation node types are as follows:

- ▶ Content

Content validation verifies that the fields in a record contain valid values. It checks the values for type, format, justification, and for specific content. Content validation also checks that required fields are present and verifies that two fields from different records have the same value.

- ▶ Context

Context and envelope context validation work together to check the structure of the incoming transmission.

- Context

Context validation verifies that records are in the correct order by analyzing the current and previous record types to determine whether the pairings of these record types are valid.

- Envelope Context

Envelope context validation verifies that the record type pairs that contain, or envelop, some number of other records appear properly. For example, File Header Record (record type code 1) and Batch Header Record (record type 5) are followed by their respective trailer records: File Control Record (record type code 9) and Batch Control Record (record type code 8).

- ▶ Collectors

Collectors validation uses a value that is calculated from the preceding records to verify the value of a specific field. As a file is processed, records are counted and field values are summed. These accumulated values are then used to validate the specified fields. For example, batch records (type 5) can be counted and compared with the batch count found in field 2 of the type 9 record.

This node also checks for unique values. For example, the batch number (field 13 of the type 5 record) field in each record in the file must have a unique value.

As for the gateway validation, error codes can be assigned to each of the validation types.

Business rules provides sample rule sets for several file standards. The validation rule sets are unique for each standard. Each level in a standard has its own set of tables. Some predefined rule sets are:

- ▶ NACHA - 2014
- ▶ NACHA - 2015

The rule sets can be edited by using the Business Rules User Interface Editor.

Configuration with the Control Center

Two levels are used to define the Data Validation. For the first, open the Control Center and click **Configuration** → **Inbound** → **Transmission Types**.

The Manage Transmission Types window appears, as shown in Figure 3-5.

Name	Business Rule Workflow Name	Transmission Validation Rule	Batch / ICL Rule Set	Provider	Total Rows: 1
NACHA	AchWorkflow	NACHA	NACHA Batch	Product	

Legend

- Where Used
- View details
- Delete Transmission Type

Figure 3-5 Manage Transmission Types window

This window shows all defined transmission types and the rules used by them. Click **Where Used** to configure where this specific transmission type is used.

Click **View details** to see the transmission type and get to the editing menu that is shown in Figure 3-6.

Edit Transmission Type

Name: NACHA

Transmission Type ID: 10

Provider: Product

Transmission Validation Rule: NACHA

Batch / ICL Rule Set: NACHA Batch

Business Rule Workflow Name: AchWorkflow

Send Acknowledgment: Yes No

Acknowledgment Type: Transmission Acknowledgment

Figure 3-6 Edit Transmission Type window

When editing or creating a Transmission type, the following fields must be completed:

- ▶ **Transmission Validation Rules**

Contains the name of the transmission validation rule that is assigned to the particular transmission type. The configuration of these transmission validation rules is described in 3.1.1, “Gateway validation” on page 54.

- ▶ **Batch / ICL Rule Set**

This contains the name of the batch validation rule assigned to the particular transmission type. The configuration of these batch validation rules is described in 3.1.1, “Gateway validation” on page 54.

- ▶ **Business Rule Workflow Name**

The name of the workflow that is assigned to the particular transmission type.

► Send Acknowledgment

This setting allows you to configure whether an acknowledgment that the transmission was received and validated successfully or not is sent to the sender of the transmission.

► Acknowledgment Type

Defines what kind of acknowledgment is sent back to the sender.

Those settings can be overridden for each batch at the product level by clicking **Configuration** → **Inbound** → **Products**, as shown in Figure 3-7.

The screenshot shows the 'Edit Product' window with the following details:

- Step 1 of 2 (Inbound Product information)**
- Code:** ACH
- Description:** NACHA Origination *
- Identifier:** 09A
- Configure General** section:
 - Batch / ICL Validation Rule:** --choose a batch / ICL validation rule---
 - Business Rules Workflow Name:** (empty text box)
 - Holdover Work Type:** Forward
 - Balance Rule:** Use Adjustment General Property
 - Move Restriction:** Current Batch / ICL
 - Settlement Type:** ACH
 - Approval Required:** Yes
 - Adjustment Required:** Yes

Figure 3-7 Edit Product window

If a Batch/ICL Validation Rule is selected, it overrides the selection in **Configuration** → **Inbound** → **Transmission Types** for this product.

Configuration with the data setup utility

Configuring the Transmission Types with the DSU requires validation and updates in several files that are distributed with Financial Transaction Manager for ACH. The default names of the files to be validated or updated are:

- *installDir\shared\v300\pfs\DSU\importexport\cmd\AchSharedImport.properties*
- *installDir\shared\v300\pfs\DSU\importexport\xls\SharedMap.xls*
- *installDir\shared\v300\pfs\DSU\importexport\xls\SharedXREF.xls*
- *installDir\shared\v300\pfs\DSU\importexport\xls\SampleAchConfiguration.xls*

Verify that the workbook reference tags in the properties file (*AchSharedImport.properties*) have the correct file names for the Cross Reference, Map, and Configuration Data workbooks. If the workbook names are different from the defaults, update the designated files according to the instructions under the default name.

In the Map workbook (default SharedMap.xls), validate that the Transmission Types tab has the correct mapping of column names to database table columns. It is unlikely that this file will need to be modified or updated.

In the Cross Reference workbook (default SharedXREF.xls), on the Import tab, ensure that the row defining Transmission Types contains the value **Y** in the Import column and the Mode column is set to **InsertUpdate**.

In the Configuration Data workbook (default SampleAchConfiguration.xls), open the tab Transmission Types and add or edit an entry in the spreadsheet. The columns are named as the fields in the Control Center in most cases. For more information about the columns, see “Configuration with the Control Center” on page 63.

After everything has been configured, import the new configuration using the **dsu import** command in *installDir/shared/v300/pfs/DSU/importexport/cmd* or *installDir/shared/v300/pfs/DSU/importexport/cmd64*:

```
dsu import AchSharedImport.properties
```

or

```
dsu64 import AchSharedImport.properties
```

The DSU tool logs the results of the command to a log file for later inspection. The log file is in *installDir/shared/v300/pfs/DSU/importexport/cmd* or wherever the properties file specifies in the logFileLocation tag.

Additional information about the Data Setup Utility can be found in 1.5, “Importing and exporting system configuration” on page 20.

3.2 Enrichment

During Enrichment, the following values can be added to payments in these nodes:

- ▶ **PaymentMethodOutNode**
Determines:
 - Payment standard and message type out values
 - Item's endpoint
 - Same day endpoint for transit items
 - Whether the item is on-us or not
- ▶ **BusinessDayItemNode**
Determines the date that the item will settle
Determines the business day of the item
- ▶ **CurrencyOutNode**
Determines the outgoing currency code
- ▶ **SettlementAccumulatorsNode**
Determines three settlement accumulators:
 - OffsetSettleId
 - AccumId
 - AccumId2

- ▶ BillingNode
Sets the item's deposit billing code

The configuration of Enrichment is explained in this book with the example of Settlement.

3.2.1 Same Day Settlement

The implementation of Same Day Settlement is accomplished in two nodes:

- ▶ PaymentMethodOutNode
This node determines the endpoint that is assigned to an item. As part of that process, it also determines whether an item is eligible for same day settlement. For details about the endpoint assignment part of the flow, see 3.3, "Routing and Endpoints assignment" on page 70.
- ▶ BusinessDayItemNode
This node uses the batch entry date to determine the distribution and the settlement dates for an item.

PaymentMethodOutNode

The determination of whether an item is eligible for same day settlement is accomplished by using a series of four lookup tables:

- ▶ SameDayOriginatorTable
This table contains the keys Partner and Product ID.
Business Rules builds the lookup table with the view shown in Example 3-1. Other tables have similar type views. The keys are the table columns whose values are used to look up a match. If a match is found, the other columns are the payload values that are assigned to the payload variables. These payload variables are what are returned, and can then be used as keys for subsequent table look ups.

Example 3-1 Viewing rules

```

CREATE
  VIEW RULES.Same_Day_Originator_V(
    relid ,
    ibmValDepositorId ,
    ibmValProductId
  ) AS SELECT
    R.RELID ,
    DSS.DEPOSITOR ,
    DSS.PRODUCT_CODE
FROM
  DEPOSITOR_SUB_SERVICES DSS ,
  RELEASE R
WHERE
  DSS.SERVICE_TYPE = 'Same day settlement'

```

- ▶ SameDayAchSecCodeTable
This table contains the key AchSecCode.
- ▶ SameDayRoutingTransitTable
This table contains the key RoutingTransit.

► `SameDayDeadlineTable`

This table contains the keys `Forward Return Indicator` and `File Arrival Time`. It is used to confine eligibility to a time of day range.

Only the `SameDayDeadlineTable` has a payload that is associated with it: the `Same Day Endpoint`. The `Same Day Endpoint` is read into an internal data field: `ibmIntSameDayEndpoint`.

The same day process picks up in the `BusinessDayItemNode`, which determines whether the item has been received in time or is late. If received in time, the endpoint (`ibmNprEndpoint`) is updated with the same day endpoint.

BusinessDayItemNode

This node uses the batch entry date to determine the distribution and the settlement dates for an item. This is the date that the originator is requesting this item to be settled with the RDFI. For ACH, this is the `Effective Entry Date` field in the batch record.

In more detail, the `Effective Entry Date` (`ibmEntryDate`) is used by the `BusinessDayItemNode` to determine the distribution date (`ibmNprBdDate`) and the settlement date (`ibmNprDateDistSettles`).

This node also sets the date that the originator would like to settle (`ibmIntNormalizedRequestedDate`), which is used exclusively downstream in `SettlementAccumulatorsNode`. The `ibmIntNormalizedRequestedDate` is set to the `Entry Date`, unless it is late. In that case, it is set to the distribution date.

Additionally, the `Endpoint` is changed to the `Same Day Endpoint` (if established in the `PaymentMethodOutNode`) given that it is on time.

The business date as determined in the `Business Day Workflow` (`FtmBusinessDayWorkflow`) and as called for each batch, can be adjusted by this node. This is done by first running it through a deadline table. `BusinessDayItemNode` calls the item deadline table (`DepositProductDeadlineItemTask`), this time including the endpoint as part of the key to the lookup (in addition to the `Product Id` and `File Arrival Time`). Therefore, this node must run after the endpoint has been established (`PaymentMethodOutNode` in the `Financial Transaction Manager for ACH Sample`).

After setting the distribution date, the `Distribution Day Offset` is looked up. This is used to calculate the settlement date. There are three tables in the sample reference implementation that is used to configure this input: `SttlCutoffEndpointTable`, `SttlCutoffMsgTypeTable`, and `SttlCutoffMsgStandardTable`. They are called in turn until one of them has a successful lookup. The payloads are the same for each: The `Preferred Distribution Day Offset`, the `Latest Distribution Day Offset`, and the `Error Code` to assign should the item be late. The keys are noted in the following list along with the elements they contain:

► `SttlCutoffEndpointTable`:

- `Endpoint`
- `Msg Standard Out`
- `Msg Type Out`
- `Credit Flag`

► `SttlCutoffMsgTypeTable`:

- `Msg Standard Out`
- `Msg Type Out`
- `Credit Flag`

- ▶ Stt1CutoffMsgStandardTable:
 - Msg Standard Out
 - Credit Flag

A detailed example of this flow can be found in 3.4, “Troubleshooting” on page 73.

3.2.2 SettlementAccumulatorsNode

This node sets the date to settle with the originator (`ibmNprDateOriginatorSettles`) and assigns settlement accumulators (`ibmNprAccumId`, `ibmNprAccumId2`, and `ibmNprAccumOffsetSettleId`).

Originator Settlement

The date to settle with the originator is normally the same as the entry date, which has been normalized to a valid date in `BusinessDayItemNode` (`ibmNprDateDistSettles`). However, this can be changed for preferred partners. By setting the Service Type to `Settle` when requested, the selected partners are eligible to receive settlement on an earlier date. In this example, information is in Partner Subscribed Services in `SampleAchConfiguration.xls` (typically in `installDir/shared/v300/pfs/DSU/importexport/xls`) as shown in Figure 3-8.

	A	B	C	D	E
1	Partner Id	Standard Type Id	Service Code	Service Type	Billing Indicator
2	011000028	2	CTV	Control Total Verification	Y
3	041000014	2	CBAL	Create balancing entries	Y
4	041000014	2	SWR	Settle when requested	Y
5	123456780	2	CBAL	Create balancing entries	Y
6	123456780	2	SWR	Settle when requested	Y
7	123456780	2	SDS	Same day settlement	Y
8	987654320	2	SDS	Same day settlement	Y
9					

Figure 3-8 Partner Subscribed Services

Business Rules builds the lookup table with the view shown in Example 3-2.

Example 3-2 Build lookup table

```

CREATE
  VIEW RULES.Stt1_Sub_When_Requested_V(
    relid ,
    ibmValDepositorId ,
    ibmValProductId
  ) AS SELECT
    R.RELID ,
    DSS.DEPOSITOR ,
    DSS.PRODUCT_CODE
  FROM
    DEPOSITOR_SUB_SERVICES DSS ,
    RELEASE R
  WHERE
    DSS.SERVICE_TYPE = 'Settle when requested'

```

If the partner qualifies, `ibmNprDateOriginatorSettles` is set to `ibmIntNormalizedRequestedDate` (which is determined by `BusinessDayItemNode`). The setting of `ibmNprDateOriginatorSettles` is accomplished through a combination of assignment

statements in the task descriptor and a lookup in the Stt1SubWhenRequestedTable, as shown in Example 3-3.

Example 3-3 Setting ibmNprDateOriginatorSettles

```
<?xml version="1.0" ?>
<taskDescriptor name="Stt1SubWhenRequestedTask" type="TABLE">
  <assignments>
    <assignment field="ibmNprDateOriginatorSettles" type="field"
value="ibmNprDateDistSettles" executionPoint="onEntry"/>
    <assignment field="ibmNprDateOriginatorSettles" type="field"
value="ibmIntNormalizedRequestedDate" executionPoint="onExit" results="SUCCESS"/>
  </assignments>
  <dataName>Stt1SubWhenRequestedTable</dataName>
</taskDescriptor>
```

The other task of the SettlementAccumulatorsNode is to assign the settlement accumulators. Therefore, there are two basic types of accumulators: Accumulators and Offset Accumulators.

The offset accumulator types are Ingest offset G/L (General Ledger) (ibmNprAccumId2) and Offset settle (ibmNprAccumOffsetSettleId). The settings for both are also done in the SampleAchConfiguration.xls in the Partner Subscribed Services tab, as shown in Figure 3-9.

	A	B	C	D	E
1	Partner Id	Standard Type Id	Service Code	Service Type	Billing Indicator
2	011000028	2	CTV	Control Total Verification	Y
3	041000014	2	CBAL	Create balancing entries	Y
4	041000014	2	SWR	Settle when requested	Y
5	123456780	2	CBAL	Create balancing entries	Y
6	123456780	2	SWR	Settle when requested	Y
7	123456780	2	SDS	Same day settlement	Y
8	987654320	2	SDS	Same day settlement	Y
9					
10					

Figure 3-9 Partner Subscribed Services 2

Two Business Rules tables determine the accumulators: Stt1SubCreateBalOriginatorTable and Stt1SubCreateBalSendPointTable. They are built in the same way as Stt1SubWhenRequestedTable as shown in Example 3-3. A hit in either table enables the offset accumulators to be set. A miss in both results in the offset accumulators not being set. The keys are noted in the following list:

- ▶ Stt1SubCreateBalOriginatorTablePartner
 - Product Id
- ▶ Stt1SubCreateBalSendPointTable
 - Sending Point, Msg Standard Out

Tables are used to do the actual accumulator assignment: Stt1AccumOffsetOriginatorTask, Stt1AccumOffsetSendPointTask, and Stt1AccumOffsetProductTask. The first one that has a successful hit is used. The following keys are available:

- ▶ Stt1AccumOffsetOriginatorTable
 - Partner
- ▶ Stt1AccumOffsetSendPointTable
 - Immediate Destination Routing Transit, Sending Point

- ▶ Stt1AccumOffsetProductTable
 - Product Code

The standard accumulator type is Ingest G/L (ibmNprAccumId). There is no Partner Subscribe Service requirement to do this assignment.

There are two tables: Stt1AccumDistAccountTask and Stt1AccumDistEndpointTask. The first one that has a successful hit is used.

The keys are for these tables are as noted in the following list:

- ▶ Stt1AccumDistAccountTable
 - Endpoint, RT, and Account
- ▶ Stt1AccumDistEndpointTable
 - Endpoint

3.3 Routing and Endpoints assignment

The routing of payments in Financial Transaction Manager for ACH is configured by using Endpoints. An endpoint defines how work being exchanged between two trading partners is financially settled. Endpoints specify the receiving point of the work. For example, a bank can send a single file to Bank A, but the file can contain work for multiple banks.

The creation of an Endpoint is described in 7.3, “Configuring an endpoint” on page 191.

In Partner Profiles, when an endpoint is defined, it is always associated with the partner to which it belongs. Multiple endpoints can be defined for the same partner. Transmission definitions and building options must be created before endpoints can be created.

To manage endpoints in the Control Center, click **Configuration** → **Partners** → **Endpoints**. The resulting window shows all the available endpoint records in the system as shown in Figure 3-10.

Endpoint ID	Receiving Point	Transmission Definition	Product Code	Collection Type	Building Options	Replication Endpoint
ACHPAY	INTERNALACH	FedACH			NACHA	N
DIRECT0001	123456780	NACHA 0001			NACHA	N
DIRECT0002	987654320	NACHA 0002			NACHA	N
EPNACH	021001208	Electronic Payments Network			NACHA	N
FED2SNB	987654320	DFI Distribution			NACHA	N
FEDACH	041000014	FedACH			NACHA	N
FEDACHTNB	041000014	DFI Origination			NACHA	N
FEDRINT001	123456780	DFI Distribution			NACHA	N
FEDRINT002	987654320	DFI Distribution			NACHA	N
FEDSAMEDAY	041000014	FedACH Same Day			NACHA	N
FEDSDRTN	041000014	FedACH Same Day Rtn from SNB			NACHA	N
HARDPOST	123456780	Hard Post for FGB			POSTING	--
HARDPOST02	987654320	Hard Post for SNB			POSTING	--
MEMOPOST	123456780	Memo Post for FGB			POSTING	HARDPOST
MEMOPOST02	987654320	Memo Post for SNB			POSTING	HARDPOST02
RETURN001	041000014	DFI Returns from SNB			NACHA	N
RETURN002	041000014	DFI Returns from FGB			NACHA	N

Figure 3-10 Manage Endpoints window

The columns can be filtered by these criteria:

- ▶ Endpoint ID
- ▶ Receiving point
- ▶ Transmission definition
- ▶ Product code
- ▶ Collection type
- ▶ Building options
- ▶ Replication endpoint

At this window, Endpoints can be added or edited, as described in 7.3, “Configuring an endpoint” on page 191.

In the Business Rules component, the endpoint is assigned by the Payment Method Out Node. This node also determines the Message Standard and Message Type Out values and the On-Us flag. It consists of a series of lookup tables that determine the endpoint based on different key field combinations. They are called in a hierarchical process until a successful lookup is reached, at which time it moves to the Same Day Settlement section. Same Day Settlement can then override the endpoint in when all criteria are met.

The Payment Method Out Node is described in Figure 3-11.

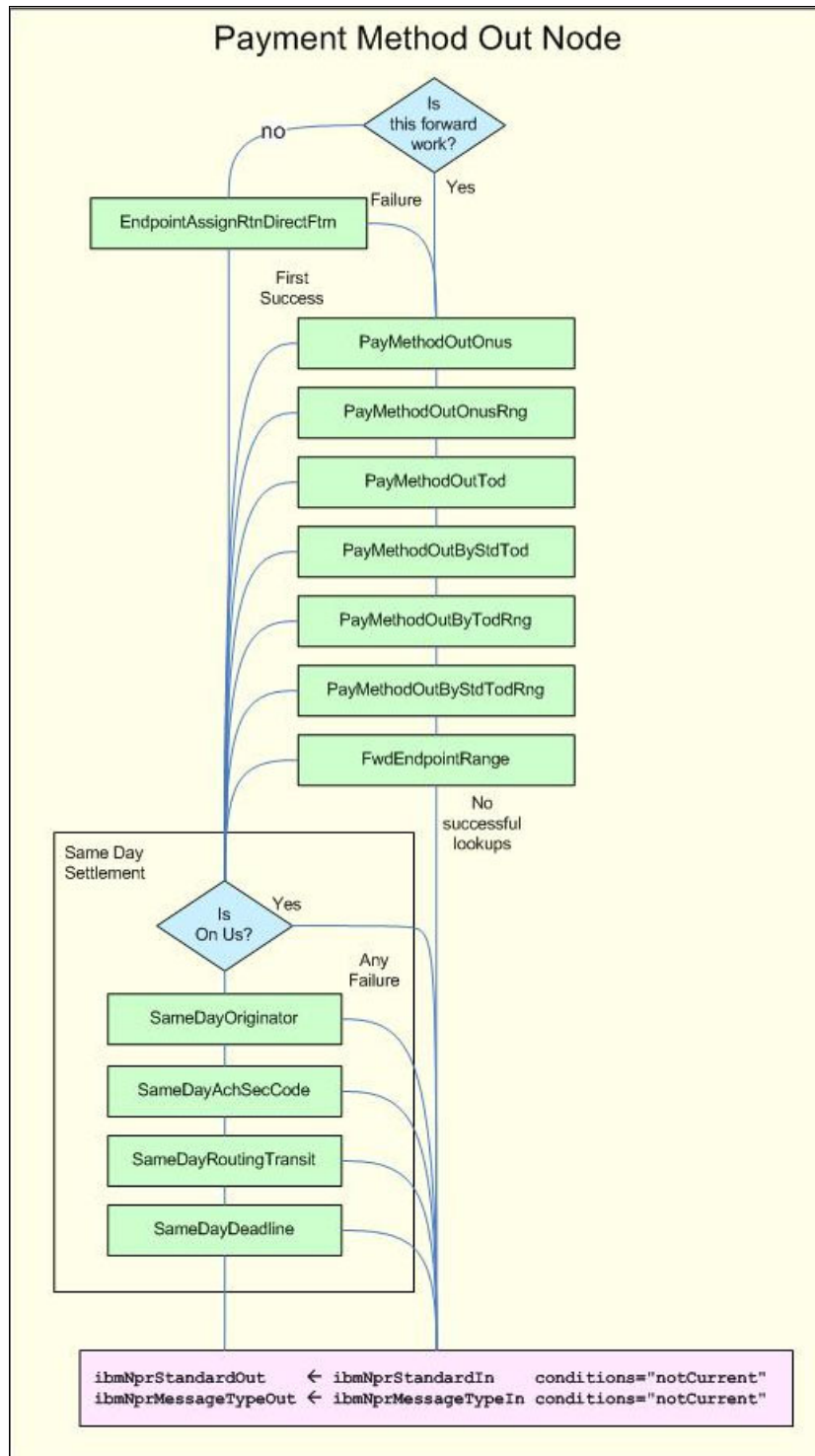


Figure 3-11 Payment Method Out Node

If all criteria are met, the green boxes represent the table lookups. The pink box shows that the Standard Out and Message Type Out take on the values of their incoming counterparts if the node failed to set them.

To see one of the tables in the UI, click **Configuration** → **Validation Rules** → **Releases**. Scroll down the list and select `PayMethodOutOnusTable` (Component Type is **Data**). This window shows the first forward table.

Note: The Distribution feature is required for this function.

3.4 Troubleshooting

To locate the cause of errors or problems with Financial Manager for ACH, the component traces are the first place to look.

As described in previous chapters, the Business Rules component is used during ingestion for data validation, assigning data enrichment values, and for endpoint assignment. When a warehoused processing batch is being processed, Business Rules are used again in case anything has changed, for example the endpoint assignment. If you receive error codes resulting from Business Rules processing, or data enrichment values are not correct, which affect subsequent processing, first inspect the Business Rules trace to determine what is causing the problem. To turn on tracing in Business Rules, use these commands:

- ▶ Use `trace all` from the console for validation issues
- ▶ Use `trace detail` from the console for any other problems during configuration

The Business Rules trace is informative and straightforward. The output of the `trace all` command is extensive, so use it only for validation problems.

The following example of the Business Rules trace in Figure 3-12 shows the Settlement flow described in 3.2.1, “Same Day Settlement” on page 66. In the trace example, the current date is 4/23/2015 and the entry date is 4/24/2015. Red text marks points of interest. Gray numbers mark the annotations.

```
Conn(8): Node 'PaymentMethodOutNode' branching to node 'BusinessDayItemNode' - Reason: Always
Node: 'BusinessDayItemNode' (type = BusinessDayItemNode)
Calling deadline task 'DepositProductDeadlineItemTask'
Joining DOW '4' with FileTime '0555' for range key lookup
Set ibmIntDeadlineLow to "40555"
Attempting lookup... <Record '4' found> Key is ibmValProductId=" ACH" ibmNprEndpoint=" FEDACTNB" ibmIntDeadlineLow="40555"
Set ibmIntBusinessDay to "4"
Set ibmIntBusinessDayPrefix to XXX - NOT set because 'ibmInt' field is 'blank'
Set ibmIntBusinessDayPrefixCurrHol to XXX - NOT set because 'ibmInt' field is 'blank'
Set ibmIntBusinessDayPrefixPrevHol to XXX - NOT set because 'ibmInt' field is 'blank'
Notable dates 'Date-DOW': File date '20150423-4'; Normal business date '20150423-4'; Actual business date '20150423-4'
Neither Current or Previous day to 'Normal Business' date is a holiday; leaving Prefixes as is
The Business Date has been established
Set ibmNprBdDate to "20150423"1
EntryDate '20150424' is a normal business date2 for endpoint 'FEDACTNB' - partner '041000014'
Calling cutoff task 'SttlCutoffEndpointTask'
Attempting lookup... <Lookup failed '100'> Key is ibmNprEndpoint=" FEDACTNB" ibmNprStandardOut=x'0002' ibmNprMessageTypeOut=x'01FC' ibmNprCredit="Y"
Calling cutoff task 'SttlCutoffMsgTypeTask'
Attempting lookup... <Record '18' found> Key is ibmNprStandardOut=x'0002' ibmNprMessageTypeOut=x'01FC' ibmNprCredit="Y"
Set ibmIntPreferDistributeDay to 2
Set ibmIntLatestDistributeDay to 23
Set ibmIntDelayedSttlAvailDayError to "SCD0001"
Setting ErrorCode 'SCD0001' because Entry date '20150424' was late by '1' business day(s)4
Set ibmNprBdDate to "20150423"5
Set ibmNprDateDistSettles to "20150427"6
Set ibmIntNormalizedRequestedDate to "20150424"
Set ibmNprDelayedSttlAvailDays to 1
```

Figure 3-12 Trace example

Annotations:

1. This date is effectively the same as that determined in the Business Day Workflow in most cases.
2. This part says that the selected day is a normal business date. If it had been a holiday or weekend, the trace would say that the date was adjusted to a valid business date.

3. The minimum cutoff offset is two.
4. This part informs you that the item was late, which has consequences for the settlement day.
5. Because the item is late, it must be processed the same day. If the entry date had, for example, been 4/27/2015, the `ibmNprBdDate` would still be 4/23/2015.
6. This value is set to two business days in the future.

If the error cannot be found in the Business Rules traces, inspect the ITS and Gateway trace.

To prevent issues during Configuration or to help find issues quickly, consider the following tips:

- ▶ Delay running the JSE apps (ITS, Gateway, Business Rules) as services until late in the development stage. As soon as these apps begin running as services, customers handicap themselves in diagnosing repeatable issues by having to use the UI to look at and parse console messages.
- ▶ Use small test files. Generally all the information is contained on the console. Larger files tend have information that scrolls off the window.
- ▶ Configure `consoleLevel = all` in the config files so that when the trace is turned on, it is displayed on the console (by default the `consoleLevel` is set to `info`).
- ▶ Configure all JSE apps to obtain snapshots. This streamlines pulling the necessary information together for IBM Level 2.

Note: The measures identified in this section are helpful if the problem occurs within Financial Transaction Manager for ACH. Make sure that the problem does not lie in one of the prerequisite programs. For example, database unavailability can cause errors in Financial Transaction Manager for ACH. For information about troubleshooting the prerequisite products, see their respective documentation. For IBM prerequisite products, see the IBM Knowledge Center.



Product and clearing date selection workflow

When Financial Transaction Manager for ACH receives a transmission from the sending point, you need to assign a product code to each batch in the file and assign a clearing date for processing this batch. Although Financial Transaction Manager for ACH provides a default configuration for this purpose, this chapter describes how to configure these workflows and explains the significance of each step.

This chapter includes the following sections:

- ▶ Processing overview
- ▶ Creating the workflow
- ▶ Configuring the gateway

4.1 Processing overview

When Financial Transaction Manager for ACH ingests work from sending point, it can contain one or more batches that need to be processed. To process these batches, some of the clearing attributes need to be assigned to these batches before any further processing can happen. These attributes include those in the following list:

- ▶ Identify processing bank
- ▶ Product code
- ▶ Clearing date

4.1.1 Identify processing bank

The first action in the clearing attributes assignment is to identify the processing bank for each batch. A financial institution can process work on the behalf of other financial institutions. The Financial Transaction Manager for ACH solution allows you to identify the financial institution for whom you are processing the work at the batch level. The reference sample included with the product assigns the bank based on the immediate destination that is specified in the ACH file header record.

Note: See Chapter 6, “Onboarding a partner” on page 111 for details about configuring banks.

The workflow uses this information to segregate work if processing work for multiple financial institutions.

4.1.2 Product code

Chapter 2, “Streamline customer onboarding using products and services” on page 27 describes concept of products and services and their importance in payments processing. The reference workflow goes through a series of rules that are described in this section to determine the product code for the originator. These steps are provided as part of the reference application and should be changed according to requirements. The change might include addition or deletion of rules, changing parameters of the rules, or defining a different rule set.

Check specific processing

The first step looks for check specific attributes that are not applicable for ACH processing.

Message type and customer type

The first check is done by using a combination of customer type and message type. This step assigns product for type of partners and the type of message they send. For example, for partner type Corporate Client and message type PPD, the product configured might be ACH.

See Chapter 6, “Onboarding a partner” on page 111 for details about configuring customer types.

Message types can be configured using the Control Center by clicking **Configuration** → **System** → **Message Types**. However, NACHA message types come preconfigured using the *Message Standards* worksheet in *ProductConfiguration.xls* workbook as part of the data setup utility (DSU).

Message Type

If combination of customer type and message type does not result in any product code, the workflow tries to look for a product code using only message type as the key.

Message Standard and Customer Type

If message type based lookup doesn't provide a product code, the workflow uses a combination of customer type and message standard. Examples of message standards are NACHA, ISO20022, and SWIFT. Message standards can be configured by using the Control Center by clicking **Configuration** → **System** → **Message Standards**, but the NACHA message standards come pre-configured with the DSU worksheet Message Standards in the ProductConfiguration.xls workbook.

4.1.3 Clearing date for this batch

The purpose of these steps is to determine the business date on which the inbound batch is processed. It uses the date and time of the incoming file and adjusts it to the actual processing business date based on either a day of the week or a time of day lookup in the deadline table. This adjustment accounts for holidays.

The Gateway server provides the business day workflow with the date and time when the file was received. This information comes to the Business Rules Server in separate data fields called `ibmFileDateReceived` and `ibmFileTimeReceived`. They are converted into a single data field that is the day of week joined with the time. The week is converted to a single digit number: Monday is 1, Tuesday is 2, and so on to Sunday, which is 7. The time is converted to 24-hour representation such that *10:00pm* is converted to *2200*. So *10:00 Friday morning* is represented as *5 1000* for performing the lookup and *6:00 Saturday evening* is represented as *6 1800*.

This date field is used with the product code identified in the earlier step to look up the business day of week in the `DepositProductDeadline` table. For example, consider the data in `DepositProductDeadline` table as shown in Table 4-1.

Table 4-1 Sample data in `DepositProductDeadline` table

Row	Product code	Starting day	Starting time	Ending day	Ending time	Normal business day
1	ACH	1	0000	2	0130	1
2	ACH	2	0131	3	0130	2
3	ACH	3	0131	4	0130	3
4	ACH	4	0131	5	0130	4
5	ACH	5	0131	6	0130	5
6	ACH	6	0131	7	2359	1

Considering the file is received at *10:00 Friday morning*, the equivalent lookup code for this time of the day is *5 1000*. When the lookup is performed, Financial Transaction Manager for ACH combines the day and time column in the table (starting day + starting time and ending day + ending time) to check which window that this file received time belongs to. In this case, the lookup returns row number 5, which indicates that the file is processed on day 5, which is equivalent to Friday. Therefore, the file is processed on the same day as it is received.

Now, consider another example. If a file is received at *2:00 Saturday morning*, Financial Transaction Manager for ACH translates this time to the code *6 0200*. When a lookup is

performed using this code, it returns row number 6, which indicates the business day is 1, which is equivalent to Monday. Thus, the received file's clearing date is moved to Monday.

After the business day is determined, it is used to adjust the file date to an actual working business date. It does this by moving the date forward (or backward) if necessary.

Note: The date can be moved backward by as much as two business days.

It then uses this date along with the partner information for the processing bank identified in 4.1.1, "Identify processing bank" on page 76 to determine whether it is a holiday. If so, it moves forward to the next business date.

This final date is used as the clearing date for the batch. This step sets the business day category using the file type.

4.2 Creating the workflow

The business rules workflow can either be created using Control Center or using DSU. As described in 1.2.3, "Business rules process server" on page 5, business rule configuration is split into a number of XML fragments in the database. Now look at the example configuration of this workflow for the steps mentioned in 4.1, "Processing overview" on page 76. More information of this configuration can be found in Financial Transaction Manager for ACH information center at **Financial Transaction Manager for Multiplatforms 3.0.0** → **Payment Feature Services** → **Business Rules User's Guide** → **Business Day Workflow**.

4.2.1 Workflow XML descriptor

The workflow XML fragment identifies various steps in the workflow and their connections. Example 4-1 shows the default business day workflow configuration that is supplied with Financial Transaction Manager for ACH.

Example 4-1 Sample workflow XML configuration

```
<?xml version="1.0" ?>
<workflowDescriptor name="FtmBusinessDayWorkflow" >
  <nodes>
    <node name="BankAssignmentFtmNode"/>
    <node name="DepositProductLookupFtmNode"/>
    <node name="BusinessDayBatchNode"/>
    <node name="BusinessDayCategoryFtmNode"/>
    <node name="AcknowledgmentEndpointsNode"/> <!-- Not used in Financial
Transaction manager for ACH -->
  </nodes>
  <connections>
    <connection srcName="BankAssignmentFtmNode"
dstName="DepositProductLookupFtmNode"/>
    <connection srcName="DepositProductLookupFtmNode"
dstName="BusinessDayBatchNode"/>
    <connection srcName="BusinessDayBatchNode"
dstName="BusinessDayCategoryFtmNode"/>
    <connection srcName="BusinessDayCategoryFtmNode"
dstName="AcknowledgmentEndpointsNode"/>
  </connections>
```

```

<responses>
  <response>
    <responseFields>
      <responseField name="ibmValDepositPriority" message="decision"/>
    </responseFields>
  </response>
</responses>
</workflowDescriptor>

```

- ▶ The attribute name of the root element named `workflowDescriptor` indicates the name of the workflow that is configured in the Gateway server to start this rule set.
- ▶ Various *node* elements indicate steps that are involved in this workflow. These names are used in subsequent XML fragments, described later in the following sections.
- ▶ Various *connection* elements indicate connection between nodes to provide a sequence in which the nodes identified by node elements are run.

Note: The node identified by the first *node* under the *nodes* element is always run first.

- ▶ The *responses* node indicates the response to be sent back to the Gateway server on completion of the execution of the entire workflow.

4.2.2 Node XML descriptor

The node XML describes the processing that happens in a particular task. The processing is in the form of sequence of tasks that are connected to each other returning a result. The scope of this chapter is to describe one node of the business rules workflow. See the Node XML Descriptor worksheet in `SampleBusinessRulesBaseConfiguration.xls` in your `install/shared/v300/pfs/DSU/importexport/xls` directory for all the nodes.

Example 4-2 shows the node for identifying destination bank.

Example 4-2 Identify destination bank XML

```

<?xml version="1.0"?>
<nodeDescriptor name="BankAssignmentFtmNode" type="ESORT">
  <assignments>
    <assignment field="ibmBank" value="1" type="decimal" executionPoint="onEntry"
conditions="notCurrent"/>
  </assignments>
  <tasks>
    <task name="BankAssignmentTask"/>
    <task name="BankAssignByOriginTask"/>
  </tasks>
  <connections>
    <connection srcName="BankAssignmentTask" dstName="BankAssignByOriginTask">
      <paymentCheck field="ibmNprStandardIn" operator="EQ" value="100"/> <!--
Internal -->
    </connection>
  </connections>
</nodeDescriptor>

```

- ▶ The name attribute of the nodeDescriptor is the same as the one configured in the workflow XML.
- ▶ The type attribute indicates the type of this task. The type ESORT indicates that this is a table lookup task.
- ▶ The assignment node indicates a default assignment of a value to variable. In this case, a default bank code 1 is assigned to variable `ibmBank` at the entry point in case none of the lookups return a value.
- ▶ The task node indicates a series of tasks that are run in this node. The name of the task is exactly same as the one in task xml described in 4.2.3, “Task XML descriptor”.
- ▶ Various connection elements indicate connections between tasks to provide a sequence in which the tasks identified by *task* elements are run.

Note: The task that is identified by the first *task* under *tasks* element is always run first.

4.2.3 Task XML descriptor

The task XML provides the link to data XML task. This chapter describes one task of the business rules workflow. See the Task XML Descriptor worksheet in `SampleBusinessRulesBaseConfiguration.xls` in your `install/shared/v300/pfs/DSU/importexport/xls` directory for all the tasks.

Example 4-3 shows a task XML for the BankAssignmentTask task

Example 4-3 BankAssignmentTask for business rules workflow

```
<?xml version="1.0"?>
<taskDescriptor name="BankAssignmentTask" type="TABLE">
  <dataName>BankAssignmentTable</dataName>
</taskDescriptor>
```

- ▶ The *name* attribute of the taskDescriptor is exactly the same as the one configured in the Node XML.
- ▶ The *type* attribute indicates the type of task this is. The type *TABLE* indicates that this is a table lookup task.
- ▶ The *dataName* element indicates which data XML is used for querying the table. This name must be exactly same as the one provided in the Data XML in 4.2.4, “Data XML descriptor”.

4.2.4 Data XML descriptor

The data XML descriptor defines the exact table name and columns to be queries and results to be returned from the lookup. This chapter describes one data descriptor of the business rules workflow. See Data XML Descriptor worksheet in `SampleBusinessRulesBaseConfiguration.xls` in your `install/shared/v300/pfs/DSU/importexport/xls` directory for all the data descriptors.

Example 4-4 shows the data descriptor for the BankAssignmentTable data name

Example 4-4 BankAssignment data name example

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<dataDescriptor name="BankAssignmentTable" type="TABLE">
```



```
<viewName>Bank_Assignment_V</viewName>
<fileName>BankAssignmentTable.tbl</fileName>
<record>
  <field datatype="char" length="20" name="ibmValClDestinationRT" type="key"/>
  <field datatype="byte" length="4" name="ibmBank" type="payload"/>
</record>
</dataDescriptor>
```

- ▶ The name attribute of the dataDescriptor is exactly same as the one configured in the Task XML.
- ▶ The type attribute indicates the type of task that this is. The type TABLE indicates that this is a table lookup task.
- ▶ The viewName element indicates the view in the database that is queried.
- ▶ The fileName element describes the file name to which the rules data is compiled for the business rules process server.
- ▶ The record element indicate various fields in the queries with their data type, length, and name of the column. Additionally, the type attribute indicates whether a field should be included in the where clause (input) or selected column list clause (output) of the selected query.

4.3 Configuring the gateway

After the business rules workflow is created, it needs to be configured in the gateway server for it to be used. This can be done by setting the ClearingAttributesBusinessRulesWorkflow property of the gateway properties file to the name of the rule set as specified in the workflow xml. A sample property is in your *install/shared/v300/pfs/Gateway/properties* directory. Example 4-5 shows the sample configuration for the sample covered in 4.2, “Creating the workflow” on page 78.

Example 4-5 Sample gateway configuration

```
#Business Rules is configured by default to provide clearing attributes.
ClearingAttributesBusinessRulesWorkflow = FtmBusinessDayWorkflow
```



Remediation and auxiliary processing workflow

This chapter describes the workflow of remediation and auxiliary processing included in Financial Transaction Manager for ACH Services. The workflow consists of several components, which are grouped in separate stages to mark them as parallel running processes.

The chapter starts with an overview of the components and a general description of related configuration files and their structure. After that, it describes each component from a business perspective and provides information about how to configure and use them to create the wanted system behavior.

This chapter includes the following sections:

- ▶ Workflow overview and common configuration tasks
- ▶ Transmission acknowledgment
- ▶ Risk Management
- ▶ Risk authorization
- ▶ Settlement
- ▶ Inbound billing
- ▶ Distribution
- ▶ Outbound billing

5.1 Workflow overview and common configuration tasks

Financial Transaction Manager for ACH follows a processing workflow that consists of the following stages, described in Figure 5-1.

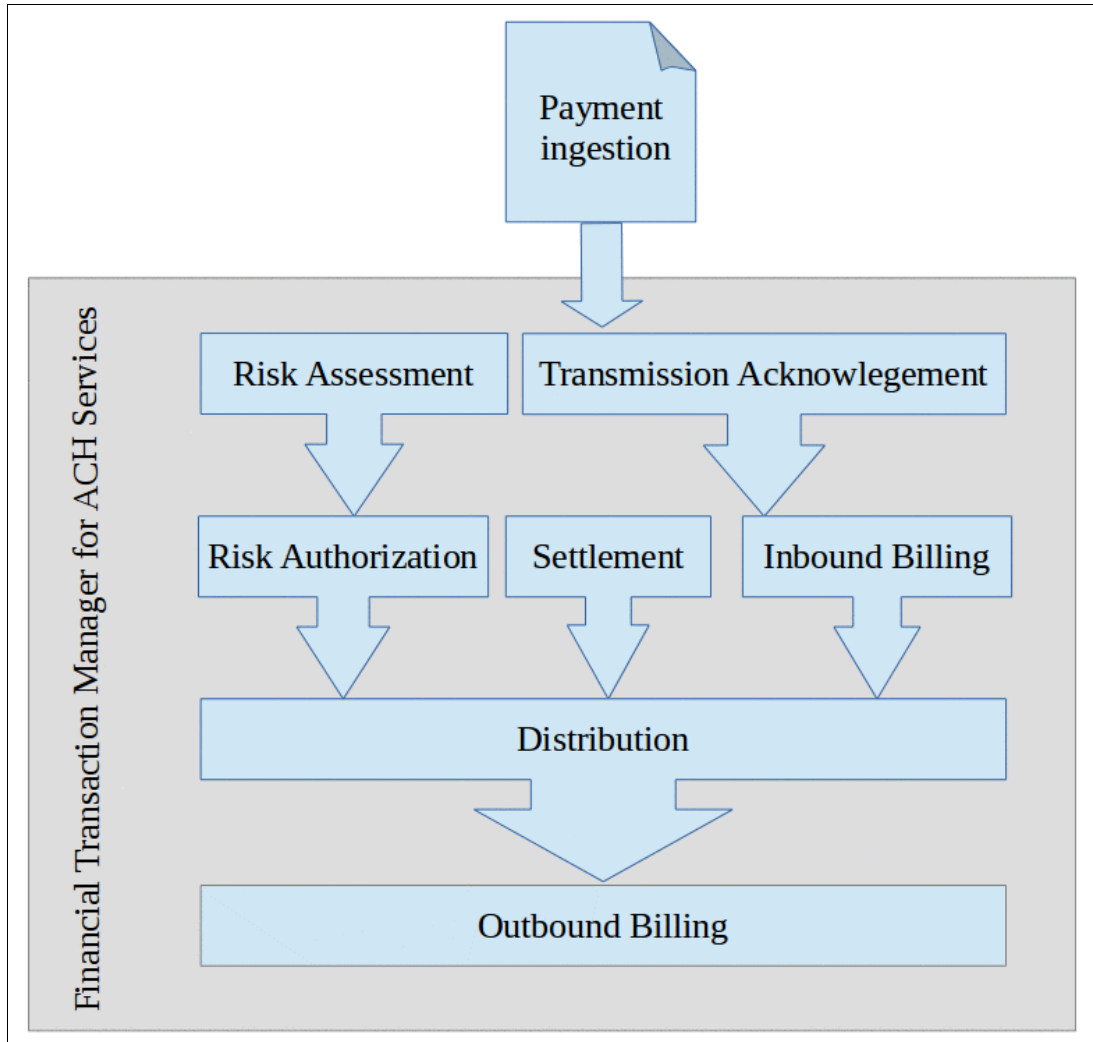


Figure 5-1 Processing Workflow overview

For several of these items, the Transaction Server Task Scheduler must be configured. This configuration can be done by a custom Scheduler XML file that is referenced in a `config.properties` file in `installDir/shared/v300/pfs/ITS/profiles`. An example file named `config_sample_windows.properties` is included with the product in the same directory and can be modified for the product configuration. In the `config.properties` file, the section that is shown in Example 5-1 should point to the Scheduler XML file.

Example 5-1 Section within the `config.properties` file pointing to the Scheduler XML file

```
#  
# Scheduler configuration  
# =====  
#
```

```
# schedulerConfigXml = ../xml/Scheduler.xml
# End to End reference event scheduler
schedulerConfigXml = ../xml/SchedulerReference.xml
```

The SchedulerReference.xml file is in *installDir/shared/v300/pfs/ITS/xml*, and can be modified by the administrator of the system. On application start, the *config.properties* file is passed to the *installDir/shared/v300/pfs/ITS/cmd/txstart.bat* file as a parameter. This process validates the Scheduler XML against the *installDir/shared/v300/pfs/ITS/xml/Scheduler.xsd* XML schema to ensure that the product receives a valid scheduler XML format and load up the XML afterward.

The Transaction Server reference scheduler XML holds the IBM Financial Transaction Manager Payment Feature Services Configuration for the reference end-to-end flows.

The IBM Financial Transaction Manager Payment Feature Services includes Financial Transaction Manager for Check, Financial Transaction manager for Corporate Payment Services (CPS), and Financial Transaction Manager for ACH Services.

Each major component section in that file indicates if the events are used for ACH, Check, or CPS. This chapter focuses on ACH.

A valid Scheduler XML file can have the structure shown in Example 5-2.

Example 5-2 Example Scheduler XML structure

```
<?xml version="1.0" encoding="UTF-8"?>
<SCHEDULER>
  <INCLUDE>KEYX</INCLUDE>
  <PARAMETERSET>
</PARAMETERSET>
  <TASK>
</TASK>
  <EVENT>
</EVENT>
  <TASK background="yes">
</TASK>
  <SECTION include="KEYX" name="Section Name">
    <TASK>
</TASK>
    <EVENT>
</EVENT>
    <SECTION include="KEYZ,KEYW" name="Inner Section Name">
</SECTION>
  </SECTION>
  <SECTION include="KEYY" name="Another Section Name">
</SECTION>
</SCHEDULER>
```

The tags that are used in the XML files are explained in Table 5-1.

Table 5-1 XML Tags used in the Scheduler

Tag	Description
<?xml...>	This tag specifies that this file is an XML document
SCHEDULER	This is the wrapper tag which includes the complete Scheduler configuration
INCLUDE	Specifies SECTIONS to INCLUDE (one keyword per INCLUDE). These keyword values need to match the SECTION include attribute value or the PARAMETER include attribute value for that section or parameter to be read during the Transaction Server start. Tasks and events that are not inside of a section tag set are not affected by the include tag.
PARAMETERSET	Parameter sets can be referenced in any event stanza by using the PARAMETERREF tag. Multiple PARAMETERREF tags are allowed in a single event stanza. Parameter sets can be useful if parameters are required in multiple event tags and code should not be duplicated.
TASK	<p>Scheduler tasks are defined using this tag set. In Example 5-2 on page 85, the second task specification uses the background="yes" attribute setting. This is what causes the task to run in the background. The default operation is foreground, unless otherwise specified.</p> <p>A task has a NAME tag and an optional INFO tag.</p> <p>The EXEC tag contains the Java class that is run when the task is started. The Java classes are included in the <i>installDir/shared/v300/pfs/ITS/lib/txsvr.jar</i> JAR file.</p> <p>One or more PARAMETER tags can be defined optional to the EXEC tag. TIMER can be set to "manual" or to "repeating". Manual does not require any other tags. If it set to repeating, an INTERVAL and a STARTING tag can be defined.</p> <p>INTERVAL is able to use millisecs, secs, mins, hrs, days, or businessdays as the dimension.</p> <p>STARTING is optional and can include a date in standard three-segment format MM/DD/YY. In addition to the date, you can specify an optional time stamp in 12-hour mode (with AM or PM included).</p> <pre><TASK background="yes"> <NAME>Daily Business Day Pre-Allocation</NAME> <EXEC> com.ibm.icpcs.transactionserver.scheduler.PreAllocateBusinessDayTask </EXEC> <PARAMETER name="preAllocationCount">7</PARAMETER> <TIMER type="repeating"> <STARTING>9:50 am</STARTING> <INTERVAL>1 bday</INTERVAL> </TIMER> </TASK></pre>
EVENT	Scheduler events are defined by using this tag set. See Table 5-2 on page 87 for TAGS that can be included in the EVENT tag.
SECTION	<p>The section tag set is used to conditionally include one or more tasks, events, or sections in the scheduler XML that is loaded. This tag set has the following attributes:</p> <ul style="list-style-type: none"> ▶ include: Defines the value that can be used in the INCLUDE tag (noted previously in this table) to activate this section in the scheduler when the XML is loaded. ▶ name: The name can be used to identify this section in traces. Using a unique name for each section helps with any problem determination.

The tags that can be included into the EVENT tag are shown in Table 5-2.

Table 5-2 Event tags

Tag	Required	Description
NAME	Yes	The name is a user-specified string that is used to identify the event in traces. Each event should be given a unique name value for debugging purposes. This tag can appear only once for an event.
TYPE	Yes	Event type specification. The valid event types are listed in the IBM Knowledge Center: Financial Transaction Manager for Multiplatforms 3.0.0 → Payment Feature Services → Transaction Server User's Guide → Events and Communication with External Applications , at: http://www.ibm.com/support/knowledgecenter/SSRH46_3.0.0/gp_yizgdevt.html Multiple event types can be specified for a single event.
EXEC	Yes	Class name of the event handler called when one of the event types occur. It must handle the event types specified in the type tag and be a predefined event handler. This tag can appear only once for an event.
INFO	No	This tag is provided for consistency with the task XML specification.
PARAMETER	No	Configuration property values for the specific event handler. The parameter tag has the following attributes: <ul style="list-style-type: none"> ▶ name The name of the event handler parameter that is associated with this parameter tag. ▶ include Restrict the event PARAMETER with the include attribute. The parameters within the event are not read during Transaction Server start unless the value in the "include" attribute matches an INCLUDE stanza. Note: This tag is not available for all of the event handlers.
PARAMETERSET	No	A group of one or more parameter tags that is given a name so it can be referenced by event tag sets. This is useful when multiple events need to use the same parameters and their values.
PARAMETERREF	No	This tag is used to specify a named PARAMETERSET for the event. The PARAMETERSET must be one that is specified in the Scheduler XML file. Multiple PARAMETERREF tags can be used for a single event. Note: This tag is not available for event handlers that do not have PARAMETER tags.

The usage of these tags is shown in the Example 5-3.

Example 5-3 Tag usage

```
<EVENT>
  <NAME>Risk Profile - Canceled Batch</NAME>
  <TYPE>PresentmentColumnChange</TYPE>
  <EXEC>
    com.ibm.paydir.ima.txsvr.event.appbridge.PresentmentStatesEventHandler
  </EXEC>
  <PARAMETER name="msgType">performAuthorizationCheck</PARAMETER>
  <PARAMETER name="condition">accepted</PARAMETER>
```

```
<PARAMETERREF>schedulerReferenceProperties</PARAMETERREF>
<PARAMETERREF>sendToRiskManagement</PARAMETERREF>
</EVENT>
```

Instead of using PARAMETERREF, it is possible to use:

```
<PARAMETER name="parmFileName">DistributionProfile.properties</PARAMETER>
```

Example 5-4 shows the DistributionProfile.properties file and the properties necessary for sending messages to Distribution.

Example 5-4 Properties necessary for sending messages to distribution

```
jmsQmgrHostname = localhost
jmsQmgrChannel  = SYSTEM.DEF.SVRCONN
jmsQmgrPort     = 1414
jmsClient       = true
jmsQmgrName     = FTM.QMANAGER
jmsSendQueue    = FXH.DISTRIBUTION.INPUT.QUEUE
jmsReplyQueue   = FXH.TRANSSEVER.SYNC.REPLY.QUEUE
jmsReplyTimeout = 2500
destinationID   = Distribution
```

The notation that is shown in Example 5-4 is still supported, but generally use PARAMETERREF.

The following sections give more details about the business background of each component and how it is configured.

5.2 Transmission acknowledgment

After payment ingestion, Financial Transaction Manager for ACH has the option to handle transmission acknowledgment as a task of the Gateway server.

The transmission acknowledgment task automates reporting the status of financial batches between institutions. The financial information arrives in the form of electronic deposit files that are transmitted by financial institutions. An electronic deposit file represents a transmission that contains batches.

A widely used configuration is to create the Transmission acknowledgment file after the inbound Gateway has ingested and loaded the electronic deposit file (LOADED state). This Transmission acknowledgment file is placed into the outbound Gateway source folder and delivered by the outbound Gateway afterward.

There are more options for transmission acknowledgment. For example, if the quality of the financial information is checked, processing options are determined, and the information is saved in a database and managed as it makes its way through the financial accounting system. The transmission acknowledgment task can send reports to the financial institution that sent the electronic transmission. Reports can be sent as the transmission reaches various stages of processing and as errors are corrected. The reports acknowledge to the financial institution that its electronic transmission has been received and is being processed.

The Gateway Server and Transaction Server load the incoming electronic transmission and save the financial information in a database. The Transaction Server can use its Messaging API message protocol to notify external applications when events that pertain to the

transmission occur. Transaction Server event handlers can create event messages that are sent to other components, such as the Distribution, Settlement, and Services Framework. The PresentmentGroupEventHandler can be configured to send Messaging API messages as transmissions are loaded into the system, and when their status is modified.

When Services Framework receives a transmission acknowledgment message from Transaction Server on its message queue, it searches its tasks for one that matches the receiving point ID in the message. The transmission acknowledgment task must be configured in the Services Framework before it can be used. For more information, see the IBM Knowledge Center at:

http://www.ibm.com/support/knowledgecenter/SSRH46_3.0.0/gpyiybctskssampits.html

Transmission acknowledgment uses the unique transmission ID to retrieve information about the batches from the database and construct a normalized transmission acknowledgment XML file. The XML file, some routing information, and a signal file are placed into an output directory to indicate that the acknowledgment files are ready to be sent. This file can be converted from the normalized transmission acknowledgment XML into another format by using Extensible Stylesheet Language Transformation (XSLT).

By default, transmission acknowledgment uses Gateway Server to send the acknowledgment, which places the files in the Gateway outgoing directory. When the transmission acknowledgment file set appears in its directory, Gateway Server uses the Transmission Acknowledgment configuration property “Transmission Definition” to deliver the file.

For configuration of the Transmission Acknowledgment, log in to the Control Center and click **Administration** → **System** → **Properties**. Then click **Edit** and ensure that **Bank Name** and **Instance Name** are set as shown in Figure 5-2.

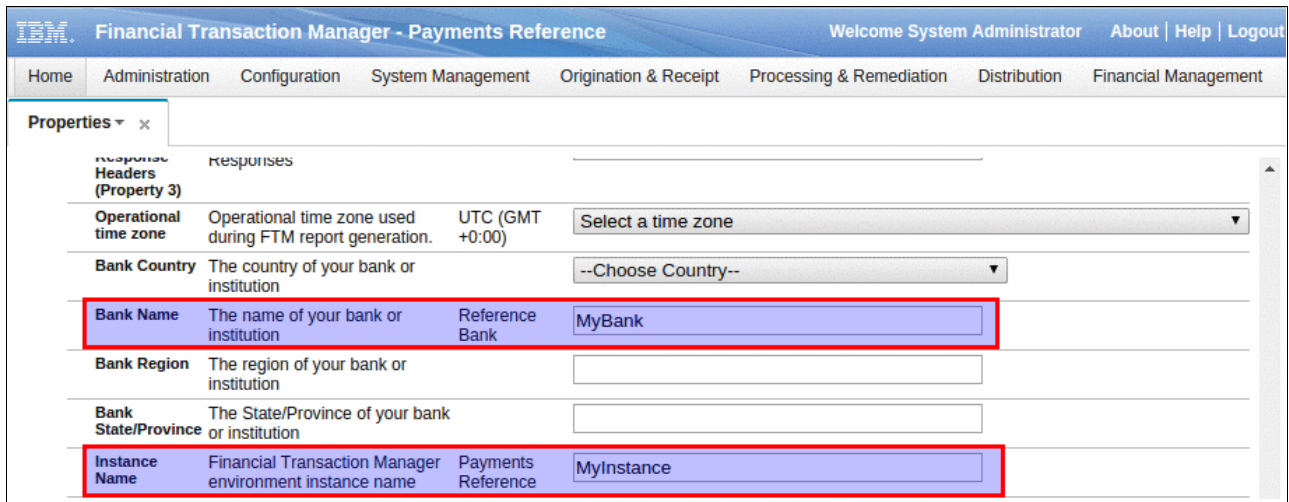


Figure 5-2 System Properties window

Afterward, click **Configuration** → **Inbound** → **Transmission Types** and create or edit a transmission type, so that **Send Acknowledgment** is set to **Yes** and **Acknowledgment Type** is set to **Transmission Acknowledgment** as shown in Figure 5-3.

Figure 5-3 Edit Transmission Type window

Now, configure the Transaction Server Event Handler by editing the Scheduler.xml file, which is typically in `installDir/shared/v300/pfs/ITS/xml/Scheduler.xml`. In the SchedulerReference.xml file that is included with the product, there is the event Transmission Acknowledgment, which is not included in any section and is commented out. This event is used for Event Handler Configuration. To use it, it must be included and the comment must be removed, as shown in Example 5-5.

Example 5-5 Using the Transmission Acknowledgment event

```
<EVENT>
  <NAME>Transmission Acknowledgment</NAME>
  <TYPE>PresentmentGroupStateChange</TYPE>
  <TYPE>PresentmentGroupColumnChange</TYPE>
  <EXEC>
    com.ibm.paydir.ima.txsvr.event.appbridge.PresentmentGroupEventHandler
  </EXEC>
  <PARAMETER name="msgType">TaskInitiation</PARAMETER>
  <PARAMETER name="states">LOADED,!NOTIF_SENT</PARAMETER>
  <PARAMETER name="condition">ACCEPTED,REJECTED</PARAMETER>
  <PARAMETER name="notifRequest">TRANSACK</PARAMETER>
  <PARAMETERREF>schedulerReferenceProperties</PARAMETERREF>
  <PARAMETERREF>sendToAccountingInbound</PARAMETERREF>
</EVENT>
```

The event is started by the specific event types Presentment group loaded and Presentment group column change. The event handler relays the events to the target queue by using a messaging API message:

```
com.ibm.paydir.ima.txsvr.event.appbridge.PresentmentGroupEventHandler
```

The remaining parameters are used to send a message to a specified message queue on which Services Framework is listening.

More details about the parameters can be found in IBM Knowledge Center at:

http://www.ibm.com/support/knowledgecenter/SSRH46_3.0.0/gpyizxdinacktskcfgevthd1.html

If a format like XHTML, non-XML, or special XML other than the default XML is required, it can be generated by using XSLT. Transmission acknowledgment provides a sample XSLT file, typically at this address:

`installDir/shared/v300/pfs/Gateway/tasks/transmissionacknowledgment/xml/SampleTransmissionAcknowledgment.xsl`

More information about configuration details can be found in the IBM Knowledge Center at:

http://www.ibm.com/support/knowledgecenter/SSRH46_3.0.0/gpyizxdinacktsk.html

5.3 Risk Management

Risk Management provides real-time financial limit management. It monitors incoming batches and transactions to ensure that they do not exceed specified limits for an originating partner. The following types of limits/monitors can be set up for each originator and the subpartners of the originator:

► Batch limit check:

This action checks that the limit for credit, debit, or both amounts for a single batch of transactions is not exceeded. If this check fails, the batch can be rejected or put into a suspended state based on the configuration of the batch limit.

► Prefunded batch check:

This action checks whether the complete amount of the batch is covered by the specific account at the time of processing. If this check fails, the batch is rejected.

► Batch monitor check:

When Risk Management receives a message indicating that a batch is ready to be processed, it searches all of the monitors defined for the partner. Only the limits for monitors that match the attributes of the batch, such as the inbound message standard or inbound message type, and fall within the effective dates defined by the monitor are checked. If a limit for one of the monitors is exceeded, the error code that is defined by that monitor is used to determine the action to be taken. If limits for multiple monitors are exceeded, each failure is recorded and each error is assigned to the failing batch. If a failing monitor limit does not have an error code defined, the system error code property for the limit exceeded is used. If no default error code property has been defined, a system warning alert is generated.

This action checks the monitors that are defined on a batch level.

► Transaction limit check:

This action checks that the limit of the maximum credit, debit, or both amounts for a single transaction is not exceeded. If this check fails, the transaction can be rejected and marked as overridable based on the configuration of the transaction limit.

► Prefunded account check:

This action checks whether the originating account is marked as prefunded. When generating a transaction for a prefunded account, the funds must be reserved before the transaction is sent. In comparison to prefunded batch check, this happens at the transaction level. If the check fails, the transaction can be rejected.

► Transaction monitor check:

The monitoring is working similar to the batch monitor check. This action checks the monitors defined at a transaction level.

Before a user can configure Risk Management of Financial Transaction Manager for ACH, authorization must be configured.

The Financial Transaction Manager authorization model has groups, users, and permissions. Groups contain users and are granted permissions. When applications are added to the Control Center, they define their own application-specific groups. Table 5-3 shows the groups for Risk Management.

Table 5-3 Risk Management user groups

Group	Description
Risk Management Administrators	Has access to all of the Risk Management user interface functions. This includes access to the Properties tab for configuring the basic runtime parameters for the Risk Management engine.
Risk Management Supervisors	Contains permissions for managing the daily operations of risk. It includes all actions in the system, such as building transmissions or processing eligible transactions. By default, supervisors do not have the ability to see or manipulate the properties of risk.
Risk Management Users	A read-only group that allows users to view the work processed by risk.

A full list of the operations/windows available for each group and permission can be found in the IBM Knowledge Center at:

http://www.ibm.com/support/knowledgecenter/SSRH46_3.0.0/gpyriskgrpauthperms.html

To view and edit risk properties, the user must be in the Risk Management administrator group. The properties can be changed by clicking **Administration** → **Components** → **Risk** → **General** and is shown in Figure 5-4.

Property	Description	Default	Custom
Exposure Limit Monitor Credit Error Code	The default value of the exposure limit monitor credit error code.		RSK0001
Exposure Limit Monitor Debit Error Code	The default value of the exposure limit monitor debit error code.		RSK0002
Batch / ICL limit Credit Error Code	The default value of the Batch / ICL limit credit error code.		RSK0003
Batch / ICL limit Debit Error Code	The default value of the Batch / ICL limit debit error code.		RSK0004
Transaction limit Credit Error Code	The default value of the transaction limit credit error code.		RSK0005
Transaction limit Debit Error Code	The default value of the transaction limit debit error code.		RSK0006
Purge period	Purge of Risk tables data	30	
Business Day Close Action	End of Day Action for exposure limit monitor, Batch / ICL limit and transaction limit.	No Action	
Prefunded User Exit	The fully qualified name of the prefunded user exit class. If a monitor is designated as prefunded, the class specified here is called. For example: com.ibm.paydir.risk.userexit.samples.SamplePrefundedAccount		com.ibm.paydir.risk.userexit.samples.SamplePrefundedAccount
Blocking Filter Error Code	System level error code to use when a transaction matches a blocking filter.		RSK0010
Authorization Filter Error Code	System level error code to use if no match is found among the defined authorization filters.		RSK0011
Positive Pay Error Code	System level error code to use if no match is found among the defined positive pay records.		RSK0012
Stop Payment error Code	System level error code to use when a transaction matches a stop payment record.		RSK0013
Batch / ICL Exposure Limit Monitor Credit Error Code	The default value of the batch / ICL exposure limit monitor credit error code.		RSK0014
Batch / ICL Exposure Limit Monitor Debit Error Code	The default value of the batch / ICL exposure limit monitor debit error code.		RSK0015
Batch / ICL Prefunded Monitor Credit Error Code	The default value of the batch / ICL prefunded monitor credit error code.		RSK0016
Batch / ICL Prefunded Monitor Debit Error Code	The default value of the batch / ICL prefunded monitor debit error code.		RSK0017

Figure 5-4 Risk General Properties window

The properties that are required by the Risk Management run time are automatically assigned with a default value. Each default value can be changed by assigning a custom value. The custom value always takes precedence over the default value. Some properties might require validation to ensure that any custom values are entered correctly. Validation is performed when changes are saved. If a property is determined to be invalid, the user interface identifies the property that is invalid by placing a red X beside the Custom Entry field. It also displays an error message that identifies why the custom value is in error at the top of the window.

The general properties window is used for configuring the Risk Management engine. Custom error codes for several error events, the number of days to keep risk monitoring data, the business day close action, and the Java class called if a monitor is designated as prefunded can be configured in that view.

The user interface properties view (click **Administration** → **Components** → **Risk** → **User Interface**) allows you to define the records per page.

After adjusting general properties, limits and checks for partners can be configured. The view is available by clicking **Configuration** → **Partners** → as shown in Figure 5-5.

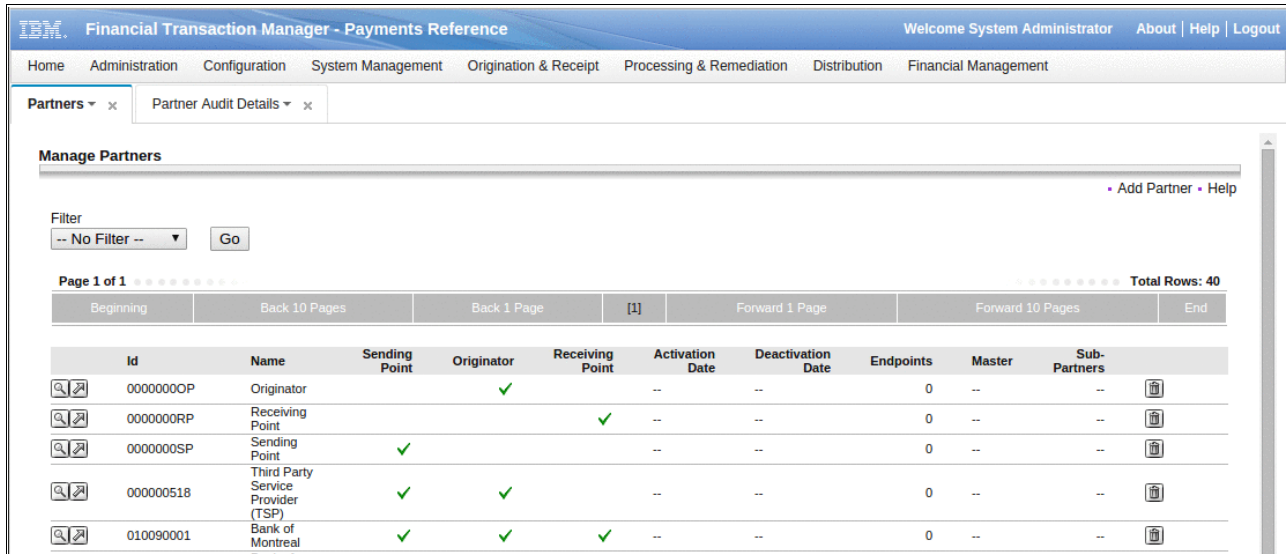


Figure 5-5 Manage Partners window

The window shows a list of partners and links to the partner details and the audit history. The detail view for each partner is available by clicking the magnifying glass as shown in Figure 5-6.

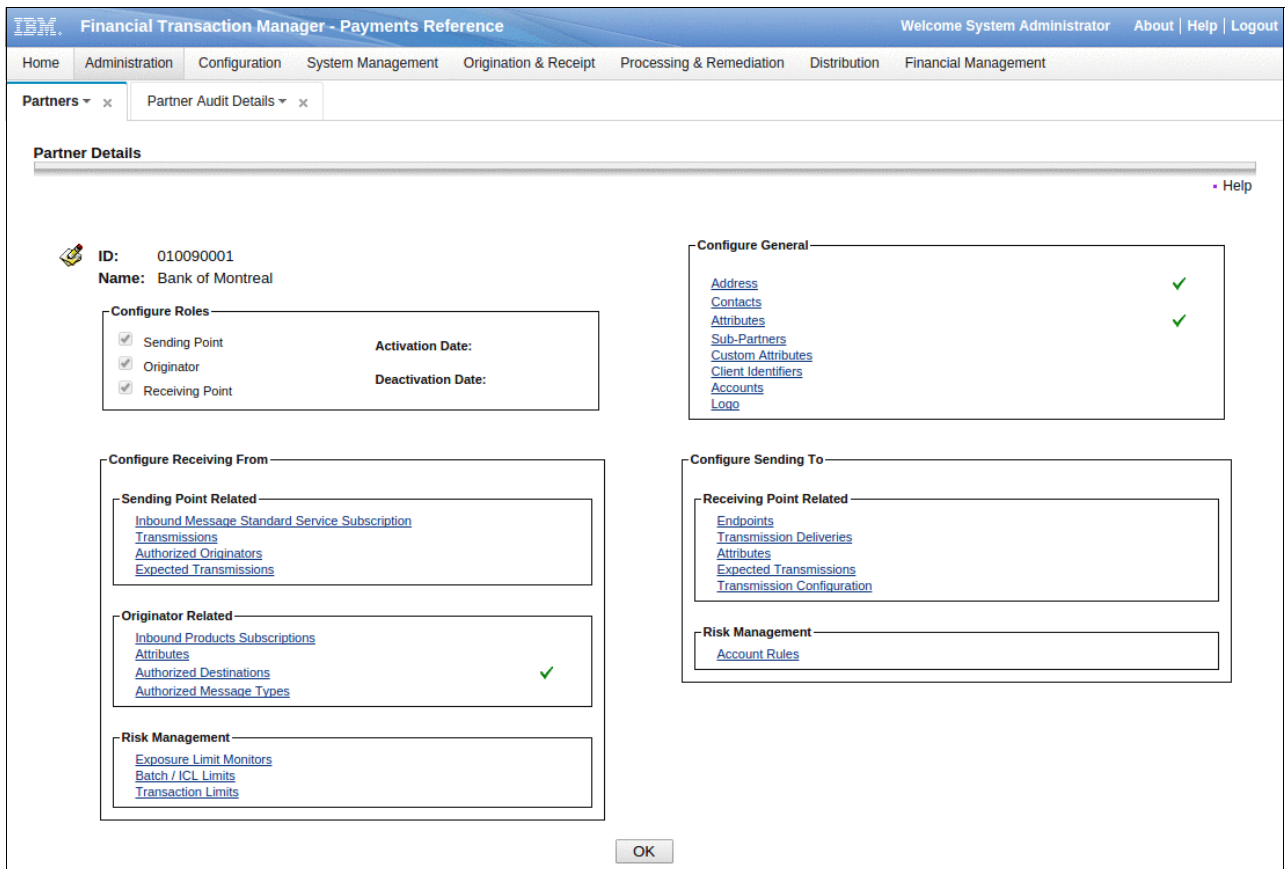


Figure 5-6 Partner Details window

The configuration of Batch Limits is available in the bottom left corner after clicking **Risk Management** → **Batch / ICL Limits** if the partner is marked as originator. A debit, credit, or both batch limit can be set up for multiple inbound message standards, message types, and products. A date range can be specified to allow different limits at different times of the year. For example, you might want a larger limit between December 1 and January 15 for a retail originator over the holidays.

The form includes the fields that are shown in Table 5-4.

Note: Required fields are indicated with an asterisk.

Table 5-4 Batch Limits fields

Field	Description
ID	The partner identifier from the partner details window. This is a read-only field.
Name	The name of the partner from the Partner Details window. This is a read-only field.
Monitor Type*	Monitors are defined based on the inbound message standard, message type, or product. Select the type for this monitor.
Message Standard*	(Only available if Monitor Type is Inbound Message Standard) List of the message standards defined in the system. Select a message standard from the list. To select all message standards, choose All from the list. This field is required when the monitor type is message standard.
Message Type*	(Only available if Monitor Type is Inbound Message Standard) List of the message standards that are defined in the system. Select a message standard from the list. To select all message standards, choose All from the list. This field is required when the monitor type is message standard.
Product Subscription*	(Only available if Monitor Type is Inbound Product) List of the subscribed products for this partner. Select an inbound product from this list. This field is required when the monitor type is inbound product.
Credit Limit	The maximum credit amount that this partner can receive. This field is required if the debit limit is not specified.
Credit Error Code	The reject level of this error code determines the action that is performed when a batch exceeds the credit limit. If no error code is specified in this field, the value in the batch limit credit error property is used. An error message is displayed on the user interface if the error code entered for this field is not valid for Risk Management.
Debit Limit	The maximum debit amount that this partner can receive. This field is required if the credit limit is not specified.
Debit Error Code	The reject level of this error code determines the action that is performed when a batch exceeds the debit limit. If no error code is specified in this field, the value in the batch limit debit error code property is used. An error message is displayed on the user interface if the error code entered for this field is not valid for Risk Management.

Field	Description
Effective Begin Date (mm/dd)	The first date of the date range to which this batch limit applies.
Effective End Date (mm/dd)	The last date of the date range to which this batch limit applies.

To set a transaction limit, there is a separate view on the Partners Details window that you can reach by clicking **Risk Management** → **Transaction Limits**. A single debit, credit, or both transaction limit can be set up for outbound message standards and message types. A date range can be specified to allow different limits at different times of the year. For example, you might want a larger limit between December 1 and January 15 for a retail originator over the holidays.

The Transaction Limit view has the same form fields. The only difference is that the Monitor Type can only be set to **Outbound Message Standard** or **Outbound Message Type** and, depending on what is selected, **Standard** or **Type** must be specified from a drop-down list.

In addition to Batch Limits and Transaction Limits, Exposure Limit Monitors can also be configured from the Partner Details window. They can be defined by clicking **Risk Management** → **Exposure Limit Monitors**.

5.4 Risk authorization

Risk Management provides real-time authorization services for originated transmissions and batches of transactions. These services are used to protect the Receiving Depository Financial Institution (RDFI) from the outside world. The following types of authorization services are supported:

- ▶ Authorization filters

Authorization filters are used to accept only those transactions that match the criteria specified in the filter. Authorization filters are defined for a partner and a specific account. Filters can specify the transaction type, such as debit or credit, the message type, company ID or name, and amount. When a transaction for an account that requires authorization checking is received and a matching filter is not found, the transaction is rejected and, based on the configuration, marked as reviewable.

- ▶ Blocking filters

Blocking filters are used to reject certain types of transactions. Blocking filters are defined for a partner and a specific account. Filters can specify the transaction type, such as debit or credit, the message type, company ID or name, and amount. If a transaction matches a blocking filter, it is rejected and cannot be reviewed.

- ▶ Positive pay records

Positive pay records are used to accept only transactions that match the positive pay record. Positive pay records are defined for a partner and specific accounts. These records can specify the transaction type, such as debit or credit, the company ID or name, and amount. These records can also be specified as recurring. Recurring payments are accepted multiple times, whereas a nonrecurring payment is only accepted once. When a transaction for an account that requires positive pay checking is received and a matching positive pay record is not found, the transaction is rejected and, based on the configuration, marked reviewable.

- ▶ Stop pay records

Stop pay records are used to reject a particular transaction. Stop pay records are defined for a partner and specific accounts. These records can specify the transaction type, such as debit or credit, the company ID or name, payable to, serial number, and amount. Stop pay records can also be marked as recurring. If a transaction matches a stop pay record, it is rejected and cannot be reviewed.

As work is ingested into the Financial Transaction Manager database, Transaction Server events notify the Risk Management engine of incoming batches that need to be monitored or checked by the authorization services. Transactions and batches that are rejected and overridable or reviewable, are held or suspended until an operator reviews them and either accepts, rejects, or retries them with higher limits or additional funds available. The Risk Management user interface allows operators to perform this review and modify limits.

After risk settings are defined, the progress of processing and remediation can be viewed in the Control Center. Basically there are three views for doing that:

- ▶ **Processing & Remediation → Exposure Limit Monitoring**

The Exposure Limit Monitor window allows you to view a list of exposure limit monitor records for an originator.

- ▶ **Processing & Remediation → Risk Review → Suspended**

The Suspended Work window allows you to review transactions and batches that exceeded their limits or activity monitors. The UI shows all batches with suspended work that have been activity monitored but have not been risk reviewed, and all transactions that have a risk error associated with them and are still risk reviewable.

- ▶ **Processing & Remediation → Risk Review → Authorization**

This window allows you to review transactions that fail the authorization filter. You can view the transaction details and perform appropriate actions on selected transactions.

5.5 Settlement

Settlement tracks and maintains the real-time financial state of all electronic transactions being ingested and completed by the payment system within the Payment Feature Services infrastructure. Settlement tracks inbound transaction and outbound transaction totals for work that comes into and goes out of Payment Feature Services. This includes incoming batches (from external originators and bank branches that come into Transaction Server and adjustments to those batches) and outgoing transit transactions from Distribution.

The benefit of Settlement is not only in tracking transactions, but in allowing the customer to know which transactions are not in a settled state (out of balance).

Settlement is installed in a Payment Feature Services infrastructure and provides these features:

- ▶ A summary total for inbound accepted batches and outbound work
- ▶ Totals for inbound batches by individual originators
- ▶ Totals for outbound work that was sent or is waiting to be sent, for transit transactions by endpoint
- ▶ Totals for outbound work that was sent or is waiting to be sent, for on-us work by endpoint

- ▶ Pending totals for work that is expected to be sent, but has not yet been accounted for in the outbound transit or on-us work
- ▶ A web-based console user interface for administration, and for querying and providing the Settlement total details

A Settlement console component installs into the Control Center. The console provides views of the data on the accumulators and their positions for Transaction Server and Distribution.

For tracking purposes, accumulators are used for representing the source or target of the transactions. Inbound accumulators represent the source of the transactions. They are a branch or partner. Outbound accumulators represent where the transactions are being sent. They are either a partner's endpoint for transit transactions or an internal endpoint for on-us transactions.

An accumulator has transaction totals for several positions that represent one or more aspects of the transactions for that accumulator. In all cases, totals are segregated by processing bank and business day. An inbound accumulator has positions for these aspects:

- ▶ Inbound accepted: Totals for inbound batches that have been received
- ▶ Inbound adjustments: Totals for adjustments to the inbound batches in the inbound accepted position
- ▶ Inbound total: Totals for the inbound accepted batches with the inbound batch adjustments applied

Outbound accumulators have positions for these aspects:

- ▶ Outbound sent: Totals for what was sent for either on-us transactions or transit transactions
- ▶ Outbound ready to be sent: Transit transactions that have been mapped to batches by Distribution, but have not yet been sent
- ▶ Outbound held over: Totals for transmissions that did not make the final deadline
- ▶ Outbound pending: Totals for the difference between the inbound batch's position and the sent position plus held over position and ready to be sent position

Before the Settlement feature can be used, the Transaction Server must be configured.

5.5.1 Register Events in Scheduler.xml

As described earlier, the Scheduler.xml file is used to configure the Transaction Server task scheduler. The Settlement feature requires you to add new events to that XML file. First, make sure that the parameter sets schedulerReferenceProperties and sendToSettlement are available in that file. They should be by default.

After that, several events can be registered:

- ▶ To receive the balanced feed from Transaction Server, the event Settlement – Adjustment is used. It is active in the SchedulerReference.xml file by default.
- ▶ To receive the cancel batch feed from Transaction Server, the event Settlement Profile - Canceled Batch is used. It is active in the SchedulerReference.xml file by default.
- ▶ To perform the Settlement end of day check, the event Business Day End of Day Check contains the sendToSettlement parameter. It is active in SchedulerReference.xml file by default.

- ▶ To receive outbound transmission events from the Transaction Server, the Settlement Distribution - Outbound Presentment Group and Settlement Distribution - Outbound Presentment Group Rerouted events are used. They are active in SchedulerReference.xml by default.
- ▶ To receive the prime feed from Transaction Server for Corporate Payment Services and ACH Services, the event Settlement - Prime - ACH, CPS is used. It is active in SchedulerReference.xml by default, but ensure that the <INCLUDE>SETTLEMENT</INCLUDE> tag is set. Otherwise it will be ignored (see 5.1, “Workflow overview and common configuration tasks” on page 84).

More details about how to change the XML configuration can be found in the IBM Knowledge Center at:

http://www.ibm.com/support/knowledgecenter/SSRH46_3.0.0/gpyizrbcfgits.html

Some configuration must be done from the Control Center:

- ▶ Click **Administration** → **Components** → **Settlement** → **Properties** to set general Settlement properties. These properties are paging size (number of records to be displayed on each page), End of Day Balancing Level (indicates whether Settlement should be balanced at the entry or batch level at the end of the day), and End of Day States, which are required for Settlement inbound batches. Possible states are SETTLEMENT_PRIME, SETTLEMENT_REPAIR, and BALANCED.
- ▶ In the **Configuration** → **Financial Management** → **Settlement** → **Accumulator Group** which, which is shown in Figure 5-7, accumulation groups within Settlement can be defined. Each accumulator group can contain numerous accumulators, and a single accumulator can be assigned to more than one group. Accumulator groups contain a unique ID and name. They have a yes/no flag for Extract to indicate whether they should be selected by the extract process and a Comparison Supported flag that indicates whether it supports comparison operations and should participate in the comparison operations in the end of day process. Moreover there is an Is Intraday flag to show whether the accumulator group participates in the intraday process, a summary type, and a sequence order for the intraday summary.

Id	Name	Extract	Comparison Supported?	Is Intraday?	Summary Type	Sequence Order
Cthouse	Clearinghouse	No	No	Yes	Outbound	12.0
DirectSend	Direct send	No	No	Yes	Outbound	10.0
DistSettle	Distribution settlement	No	No	No		0.0
InTransitInsert	Begin in transit	No	No	No		0.0

Figure 5-7 Manage Accumulator Groups window

- ▶ The manage accumulator windows, which can be accessed in **Configuration** → **Financial Management** → **Settlement** → **Accumulator**, are used to configure the individual accumulators within Settlement. Only one accumulator can be assigned to each item loaded to the Transaction Server. An accumulator contains a unique ID and name, a type (either regular or offset), an Extract flag like in accumulation groups and a Post flag that indicates whether this accumulator supports the creation of posting transmissions.

- ▶ Click **Configuration** → **Financial Management** → **Settlement** → **Custom Attributes** to display and create custom attributes. Only attributes that are visible at the accumulator level are available. A custom attribute consists of a name, a description, and the type (Group or Accumulator).
- ▶ The comparison views windows, available at **Configuration** → **Financial Management** → **Settlement** → **Comparison Views**, are used to define and manage the comparison views that allow the user to report end-to-end balancing across accumulator groups in Settlement. To define a comparison view, select whether the view should report only the differences that occur when the end-to-end balancing is performed or if all comparisons should be reported even if they balance. One or more accumulator groups must be selected to complete the definition of a comparison view.

After configuring the Settlement Feature, there are several views for using it:

- ▶ Clicking **Financial Management** → **Settlement** → **Inbound** → **Bank** shows the bank view window, which shows the inbound transactions for each bank. Navigate to the accumulator group, batch, and accumulator page for each bank by clicking the drop-down menu on the left of each record in the list. The initial display shows all banks that are available in Settlement. Based on the default settings in the filter, only those banks whose credit total or debit total is not equal to zero are shown. The list can be refined by using the filtering section.
- ▶ By clicking **Financial Management** → **Settlement** → **Inbound** → **Batch / ICL**, you can view the inbound transactions for each batch by a combination of bank and batch ID. Navigate to the accumulator group and accumulator pages for each batch ID by clicking the drop-down menu on the left of each batch record in the list. The initial display shows all of the batches that are available in Settlement by bank and batch ID. Based on the default filter settings, only those batches whose credit total or debit total is not equal to zero are shown. The list can be refined by using the filtering section.
- ▶ **Financial Management** → **Settlement** → **Inbound** → **Originator** shows the inbound transactions for each originator by a combination of bank and originator. Navigate to the batch / ICL, accumulator group, and accumulator window for each originator by clicking the drop-down menu on the left of each originator record in the list.
- ▶ The accumulator group view window at **Financial Management** → **Settlement** → **Inbound** → **Accumulator Group** shows the inbound transactions for each accumulator group by a combination of bank and accumulator group. The main purpose of an accumulator is to allow individual transactions to be grouped for system balancing, monitoring, reporting, and extracting. An accumulator group has one or more accumulators assigned to it.
- ▶ The accumulator view window at **Financial Management** → **Settlement** → **Inbound** → **Accumulator** shows the inbound transactions for each accumulator by a combination of bank and accumulator. The main purpose of an accumulator is to allow individual transactions to be grouped for system balancing, monitoring, reporting, and extracting. Each accumulator contains a dollar total and a transaction count.
- ▶ In **Financial Management** → **Settlement** → **Comparison Views**, the comparison windows that were created in **Configuration** → **Financial Management** → **Settlement** → **Comparison Views** are displayed.
- ▶ The distribution management window available at **Financial Management** → **Settlement** → **Outbound** → **Distribution Management** is used to process any outbound distribution transmissions that were not processed automatically by the events and event handlers. This page displays a list, by business day, of all outbound distribution transmissions that were not processed by Settlement.

- ▶ The intraday balancing user interface window in **Financial Management** → **Settlement** → **Intraday Balancing** provides the user with a configurable real-time view of how work is being processed by the Financial Transaction Manager system. Grouping accumulator totals allows the aggregation of accumulators to provide summary information that is meaningful to the way that a financial institution chooses to manage its work.

More information about the user interface for Settlement can be found in the IBM Knowledge Center at:

http://www.ibm.com/support/knowledgecenter/SSRH46_3.0.0/gpyizrbgui.html

5.6 Inbound billing

Inbound billing generates billing records for the batches received. As the batches are processed by Gateway, the Business Rules workflow execute node assigns the inbound product code to the batch and assigns a batch billing code to each transaction in the batch. When the transmission is accepted by Gateway, the Transaction Server initiates an event that sends a message to the Services Framework. This message tells Services Framework to run the inbound billing task for the processed batch.

Inbound billing determines whether the batch was already processed. If it was, it is not processed again. If the batch has not been billed, inbound billing accesses the inbound product associated with the batch and determines whether billing is active for the product. If billing is active and the product has billing codes defined, inbound billing generates transmission and batch billing records. It also generates a summary transaction billing record for each transaction billing code in the batch. Multiple transaction billing records can be generated for a batch because each transaction in the batch is assigned a billing code.

At the start of each new business day, inbound billing is called. At that time, inbound billing looks for all customers that subscribe to an inbound product that has a daily billing code. It generates a billing record for each subscribed customer with the inbound product found. This process is repeated for all subscription services in a product.

Inbound billing can be run manually. When it runs manually, it looks for all inbound batches that are not yet processed and submits a request to Services Framework to process them. For more information about running inbound billing manually, see the Services Framework User's Guide in the IBM Knowledge Center at:

http://www.ibm.com/support/knowledgecenter/SSRH46_3.0.0/gpy_servframeug.html%23gpy_servframeug

Inbound billing can also participate in end of day processing. When inbound billing is called by Services Framework as part of an end of day query, it checks that inbound billing for the business day has been completed for batches whose state matches the prerequisite state defined within the task configuration, and whose associated product has billing enabled. If one or more batches have not been processed, inbound billing reports to Services Framework that it is not ready for end of day processing and lists the batch IDs it has not processed. The operator can run inbound billing manually to process the missed batches.

Inbound billing also logs a message that indicates whether the end of day check passed or failed.

If a batch that has been received into the system is being sent back, inbound billing attempts to remove all records for that batch from the billing table. If the record has already been

extracted, it is not removed from the table. Inbound billing informs the Transaction Server of all records that cannot be removed.

For inbound billing to be notified of a cancel batch request, the Transaction Server must be configured to use Services Framework to send a message to the inbound billing task when a batch needs to be canceled. There is an example event defined in the Transaction Server SchedulerReference.xml file that shows a typical configuration to set up event reporting called Billing Inbound – Canceled Batch. It should be active by default as shown in Example 5-6.

Example 5-6 Example event

```
<EVENT>
  <NAME>Billing Inbound - Canceled Batch</NAME>
  <TYPE>PresentmentColumnChange</TYPE>
  <EXEC>
    com.ibm.paydir.ima.txsvr.event.appbridge.PresentmentStatesEventHandler
  </EXEC>
  <PARAMETER name="msgType">cancelBatch</PARAMETER>
  <PARAMETER name="condition">canceled</PARAMETER>
  <PARAMETERREF>schedulerReferenceProperties</PARAMETERREF>
  <PARAMETERREF>sendToBillingInbound</PARAMETERREF>
</EVENT>
```

To automate inbound billing processing as batches enter the system, the Transaction Server can be configured to alert the inbound billing task of specific batch events. Example 5-7 shows a typical configuration using the Transaction Server SchedulerReference.xml file to set up the requisite event reporting.

Example 5-7 Example for requisite event reporting

```
<EVENT>
  <NAME>Inbound Billing</NAME>
  <TYPE>PresentmentStateChange</TYPE>
  <EXEC>
    com.ibm.paydir.ima.txsvr.event.appbridge.PresentmentStatesEventHandler
  </EXEC>
  <PARAMETER name="msgType">TaskInitiation</PARAMETER>
  <PARAMETER name="presStates1">REVIEWED</PARAMETER>
  <PARAMETER name="condition">ACCEPTED</PARAMETER>
  <PARAMETER name="jmsUserId">pduser</PARAMETER>
  <PARAMETER name="jmsPassword">pduser10</PARAMETER>
  <PARAMETERREF>schedulerReferenceProperties</PARAMETERREF>
  <PARAMETERREF>sendToBillingInbound</PARAMETERREF>
</EVENT>
```

More details about configuring the inbound billing event can be found in the IBM Knowledge Center at:

http://www.ibm.com/support/knowledgecenter/SSRH46_3.0.0/gpybilcincbfgitsevthd1.html

5.7 Distribution

Distribution is one of the Payment Feature Services components that allow you to create outbound transmissions from data in the Financial Transaction Manager database. Distribution uses the definitions of banks, partners, endpoints, transmission definitions, and building options to control the contents and the type of transmission that is built. Transactions are assigned to transmissions based on the business day, bank, and endpoint that were assigned to the payment at ingestion.

The Distribution engine's purpose is to build transmissions with batches for sending to receiving points. During ingestion, the receiving point endpoint is assigned to each transaction. The Transmission Definition and Building Option that are part of the receiving point endpoint configuration determine how Distribution builds the transmission file and what transactions are included in the batches. The Distribution engine builds the physical outbound ACH file and copies it to the Gateway's outbound source folder. The Gateway routes the outbound file based on the channel definition.

For memo posts for on-us transactions to internal applications, use the Financial Transaction Manager to create and deliver the memo post files. The Distribution engine creates the logical data structure for multiple types of transmissions. Distribution then sends a WebSphere MQ message to Financial Transaction Manager for it to map the outbound structure to a physical file. The broker workflow and the subtype of the transmission definition determine which outbound mapper is called to build the physical transmission and route it to the appropriate channel (this is not the channel that is used by the outbound Gateway).

See Chapter 7, "Delivery of payments to receiving points" on page 179 for information about creating the artifacts necessary for proper transmission creation.

Users must be given access to Distribution and its functions. The following groups can be used to grant different permissions in the **Control Center** → **Administration** → **Security** → **Groups**:

- ▶ Distribution administrators

Contains access to all of the Distribution user interface functions. This includes access to the Properties tab for configuring the basic runtime parameters for the Distribution engine.

- ▶ Distribution supervisors

Contains permissions for managing the daily operations of Distribution. It includes all actions in the system, such as building transmissions or processing eligible transactions. By default, supervisors cannot see or manipulate the properties of Distribution.

- ▶ Distribution users

A read-only group that allows users to view the work processed by Distribution

The primary (and default) user ID for the Distribution user interface is created at installation time. The primary user ID, `iz1admin` by default, is assigned to the Distribution Administrators group during installation. More details about which views and options are visible to every group are available in the IBM Knowledge Center → at:

http://www.ibm.com/support/knowledgecenter/SSRH46_3.0.0/gpyiz1cgrpauthperms.html

To integrate Distribution in Payment Feature Services, communication with the Transaction Server must be set up. The Transaction Server can be configured, using its `Scheduler.xml` file, to send several types of messages to the Distribution engine.

The event types that are used by distribution are noted in the following list:

- ▶ PresentmentStateChange
- ▶ PresentmentColumnChange
- ▶ PresentmentGroupColumnChange
- ▶ PaymentExceptionChange
- ▶ EndOfDayCheck
- ▶ BusinessDayPurgeEvent
- ▶ BusinessDayStatusChange
- ▶ HoldoverBusinessDayEvent
- ▶ SendEndOfDayFilesEvent

5.7.1 PresentmentStateChange

The PresentmentStateChange event occurs when the state of an inbound batch changes. For example, when a batch finishes loading in the Transaction Server, the state of the batch changes to loaded and a PresentmentStateChange event occurs. The following message types can be configured for a presentment state change event:

- ▶ presStatesReached

Configure the event in the scheduler XML file so the class is called when the event occurs. The class name is:

```
paydir.ima.txsvr.event.appbridge.PresentmentReadyEventHandler
```

The PresentmentReadyEventHandler class creates the presStatesReached message to be sent to the Distribution engine. When the Distribution engine receives the presStatesReached message, it looks for all eligible transactions in the specified batch that are ready to be mapped to an outbound bundle. The msgType parameter defines the type of message to send, presStatesReached. The parmFileName parameter defines the properties necessary for sending a message to the Distribution engine. See the Distribution Parameter File for more information about using parameter files. Each presStates parameter defines the presentment states that must be met for the message to be sent. Example 5-8 shows a sample definition of a PresentmentStateChange event.

Example 5-8 Sample definition

```
<EVENT>
  <NAME>Distribution - Batch</NAME>
  <TYPE>PresentmentStateChange</TYPE>
  <TYPE>PresentmentColumnChange</TYPE>
  <TYPE>PresentmentGroupColumnChange</TYPE>
  <EXEC>
    com.ibm.paydir.ima.txsvr.event.appbridge.PresentmentReadyEventHandler
  </EXEC>
  <PARAMETER name="workType">Present</PARAMETER>
  <PARAMETER name="msgType">presStatesReached</PARAMETER>
  <PARAMETER name="presStates1">LOADED,AUTH_CHECKED</PARAMETER>
  <PARAMETER name="presStates2">BALANCED</PARAMETER>
  <PARAMETER name="group.condition">ACCEPTED</PARAMETER>
  <PARAMETER name="condition">ACCEPTED</PARAMETER>
  <PARAMETER name="pending">N</PARAMETER>
  <PARAMETER name="presLevel">PROC</PARAMETER>
  <PARAMETERREF>schedulerReferenceProperties</PARAMETERREF>
  <PARAMETERREF>sendToDistribution</PARAMETERREF>
</EVENT>
```

► fileToFileCheck

Configure the event in the scheduler XML file so the class is called when the event occurs. The class name is:

```
com.ibm.paydir.ima.txsvr.event.appbridge.PresentmentGroupEventHandler
```

The `PresentmentGroupEventHandler` class creates the `fileToFileCheck` message to be sent to the Distribution engine. When the Distribution engine receives the `fileToFileCheck` message, it determines whether any outbound transmissions are configured for file to file delivery and associated with the corresponding inbound transmission. If so, distribution ensures that all of the eligible transactions from the inbound transmission are mapped. After all of the inbound transactions are mapped, distribution builds and releases the corresponding outbound transmissions that have transactions that were delivered in the inbound transmission.

The `msgType` parameter defines the type of message to send, `fileToFileCheck`. The `parmFileName` parameter defines the properties necessary for sending a message to the Distribution engine. A sample definition of a `PresentmentGroupStateChange` event for `fileToFileCheck` can be found in the `SchedulerReference.xml` file.

5.7.2 PaymentExceptionChange

A transaction exception change event is sent when a transaction in the FTM database is updated from being an exception to not being an exception. The exception column in the transaction table changes from 1 to 0. Configure the Transaction Server to send the Distribution engine a `transactionReady` message when a transaction is updated by configuring a `PaymentExceptionChange` event in the `Scheduler.xml` file.

Configure the event in the scheduler XML file so the class is called when the event occurs. The class name is:

```
com.ibm.paydir.ima.txsvr.event.appbridge.PaymentReadyEventHandler
```

A sample definition of a `PaymentExceptionChange` event can be found in the `SchedulerReference.xml` file.

The `PaymentReadyEventHandler` class creates the `transactionReady` message to be sent to the Distribution engine. When the Distribution engine receives a `transactionReady` message, it maps the transaction to an outbound bundle if the transaction is eligible. The `msgType` parameter should be set to `transactionReady`. The `parmFileName` parameter defines the properties necessary for sending a message to the Distribution engine. It is also possible to use the Distribution Parameter File. The `minPresStates` parameter defines the state that the transaction's batch must be in before a message is sent to the Distribution engine. If a transaction is updated before its batch is balanced, a message is not sent. If the transaction is updated and its batch is balanced, a message is sent to Distribution.

5.7.3 EndOfDayCheck

Configure the Transaction Server to send the Distribution engine an end of day message when it is running end of day for a business day by configuring an `EndOfDayCheck` event in the `Scheduler.xml` file.

Configure the event in the scheduler XML file so the class is called when the event occurs. The class name is:

```
com.ibm.paydir.ima.txsvr.event.appbridge.EndOfDayCheckEventHandler
```

A sample definition of a `EndOfDayCheck` event can be found in `SchedulerReference.xml`.

The `EndOfDayCheckEventHandler` class creates the `endOfDayCheck` message that is sent to the Distribution engine. The `msgType` parameter must be set to `endOfDayCheck`. The `parmFileName` parameter defines the properties necessary for sending a message to the Distribution engine.

5.7.4 BusinessDayPurgeEvent

Configure the Transaction Server to send the Distribution engine a purge message when the Transaction Server is purging a business day by configuring an event with the `BusinessDayPurgeEvent` parameter in the `Scheduler.xml` file.

Configure the event in the scheduler XML file so that the class is called when the event occurs. The class name is:

```
com.ibm.paydir.ima.txsvr.event.appbridge.PurgeEventHandler
```

A sample definition of a `BusinessDayPurgeEvent` event can be found in the `SchedulerReference.xml` file.

The `PurgeEventHandler` class is responsible for building the purge business day message that is sent to the Distribution engine. The `msgType` parameter must be set to `purgeBusinessDay`. The `parmFileName` parameter defines the properties necessary for sending a message to the Distribution engine.

5.7.5 BusinessDayStatusChange

Configure the Transaction Server to send the Distribution engine a `BDayActive` message when activating a business day by using the `BusinessDayStatusChange` event in the `Scheduler.xml` file.

Configure the event in the scheduler XML file so the class is called when the event occurs. The class name is:

```
com.ibm.paydir.ima.txsvr.event.appbridge.BusinessDayStateEventHandler
```

A sample definition of a `BusinessDayStatusChange` event can be found in the `SchedulerReference.xml` file.

The `BusinessDayStateEventHandler` class creates the business day status change message sent to the Distribution engine when the business day status changes to one defined in the state parameter. The state parameter must be set to `active`. The message type parameter must be set to `BDayActive`. The parameter file name defines the properties required to send a message to the Distribution engine.

5.7.6 HoldoverBusinessDayEvent

Configure the Transaction Server to send the Distribution engine a `BusinessDayHoldover` message when initiating holdover for business day using the `HoldoverBusinessDayEvent` event in the `Scheduler.xml` file.

Configure the event in the scheduler XML file so the class is called when the event occurs. The class name is:

```
com.ibm.paydir.ima.txsvr.event.appbridge.HoldoverBusinessDayEventHandler
```

A sample definition of a `HoldoverBusinessDayEvent` event can be found in the `SchedulerReference.xml` file.

The `HoldoverBusinessDayEventHandler` class creates the holdover message sent to the Distribution engine when the business day holdover process is requested. The message type parameter must be set to `BDayHoldoverEvent`. The parameter file name defines the properties that are required to send a message to the Distribution engine.

5.7.7 SendEndOfDayFilesEvent

The user can request that any files scheduled for end of day delivery be sent by Distribution. This option is available on the business day management window in the Transaction Server.

Configure the Transaction Server to send the Distribution engine a send end of day files message when requested for the business day by using the send end of day files event in the `Scheduler.xml` file.

Configure the event in the scheduler XML file so the class is called when the event occurs. The class name is:

```
com.ibm.paydir.ima.txsvr.event.appbridge.SendEndOfDayFilesEventHandler
```

A sample definition of a `SendEndOfDayFilesEvent` event can be found in the `SchedulerReference.xml` file.

The send end of day files event handler class creates the send end of day message sent to the Distribution engine when the user requests the transmissions be sent. The message type parameter must be set to `sendEODFiles`. The parameter file name defines the properties that are required to send a message to the Distribution engine.

When Distribution receives this message, any transmissions that are scheduled for end of day delivery for that business day that have not been delivered are built and released.

Further information about these events can be found in the IBM Knowledge Center at:

http://www.ibm.com/support/knowledgecenter/SSRH46_3.0.0/gpyizgdevt.html

5.8 Outbound billing

Outbound billing generates billing records for batches that are sent. As batches are processed by Distribution, the assigned endpoint is associated with a customer and outbound product code. When the transmission is sent by Gateway (outbound), the Transaction Server initiates an event that sends a message to Services Framework. This message tells Services Framework to run the outbound billing task for the processed batch.

Outbound billing determines whether the batch was already processed. If it was, it is not processed again. If the batch has not been billed, outbound billing accesses the outbound product associated with the endpoint and determines if billing is active for the product. If billing is active and the product has billing codes defined, outbound billing generates transmission and batch billing records. It also generates a summary transaction billing record for each transaction billing code in the batch. Multiple transaction billing records can be generated for a batch because each transaction in the batch is assigned a batch billing code.

Outbound billing determines whether the outbound product has any services defined. If it does and receiving customers are subscribed to the service, outbound billing generates

transmission, batch, and transaction level billing records for the services to which the customers are subscribed. The type of outbound service affects how the transaction billing records are generated:

- ▶ Delivery (with a cutoff time specified):
All transactions are included in the transaction billing record if the delivery time of the batch is before the cutoff time
- ▶ Delivery (without a cutoff time specified):
Transactions in the batch are included in the batch billing record

When outbound billing processing completes, it sets the state of the batch to billed.

At the start of each new business day, outbound billing is called. At that time, it looks for all endpoints that subscribe to an outbound product that has a daily billing code. It generates a billing record for each subscribed endpoint with the outbound product found. This process is repeated for all subscription services in a product.

Outbound billing can be run manually. When it runs manually, it looks for all inbound transmissions that are not yet processed and submits a request to Services Framework to process them. For more information about running outbound billing manually, see the Services Framework User's Guide in the IBM Knowledge Center at:

http://www.ibm.com/support/knowledgecenter/SSRH46_3.0.0/gpy_servframeug.html%23gpy_servframeug

Outbound billing does not participate when an inbound transmission is unloaded because the transactions are already transmitted before it is called. The operational staff need to manually adjust the billing records for transmitted transactions.

Outbound billing can participate in end of day processing. When outbound billing is called by Services Framework as part of an end of day query, it checks that outbound billing has been completed for batches whose state matches the prerequisite state defined in the task configuration, and whose associated product has billing enabled. If one or more batches have not been processed, outbound billing reports to Services Framework that it is not ready for end of day processing and lists the batch IDs that it has not processed. The operator can run outbound billing manually to process the missed batches.

To automate outbound billing processing as batches are sent from the system, configure the Transaction Server to alert the outbound billing task of specific events. Example 5-9 shows a typical configuration that uses the Transaction Server Scheduler.xml file to set up the event reporting. For more information, see the IBM Knowledge Center at:

http://www.ibm.com/support/knowledgecenter/SSRH46_3.0.0/gpybilcoutbcfgitsevthd1.html

Example 5-9 Typical configuration for even reporting

```
<EVENT>
  <NAME>Outbound Billing</NAME>
  <TYPE>OutPresentmentGroupState</TYPE>
  <EXEC>
    com.ibm.paydir.ima.txsvr.event.appbridge.OutPresentmentGroupStatesEventHandler
  </EXEC>
  <PARAMETER name="msgType">TaskInitiation</PARAMETER>
  <PARAMETER name="presStates1">SENT</PARAMETER>
  <PARAMETER name="jmsUserId">pduser</PARAMETER>
  <PARAMETER name="jmsPassword">pduser10</PARAMETER>
  <PARAMETERREF>schedulerReferenceProperties</PARAMETERREF>
```

```
<PARAMETERREF>sendToBillingOutbound</PARAMETERREF>  
</EVENT>
```

The event configuration is given the name `Outbound Billing`. Any unique event name can be used. The event is started by specific event types, such as `Outbound presentment group state`.

The executed event handler relays the events to the target queue by using a Messaging API message:

```
com.ibm.paydir.ima.txsvr.event.appbridge.PresentmentGroupStatesEventHandler
```

The remaining parameters are used to send a message to a specified message queue on which Services Framework is listening. For more information about the parameters, see the IBM Knowledge Center at:

http://www.ibm.com/support/knowledgecenter/SSRH46_3.0.0/gpybilcinbcfgitsevthdl.html%23gpybilcinbcfgitsevthdl__tseventconfigparmstable



Onboarding a partner

After Financial Transaction Manager has been set up to process payments, the final step in the deployment is to onboard a partner and begin receiving and sending payment transmissions. A partner is any entity that interacts by sending and receiving transmissions from Financial Transaction Manager for ACH.

Onboarding a partner can be as simple as defining the partner unique identification and name. A partner with only these minimal settings will use the business rules and workflows as configured by the message standard. A simple yet slightly more sophisticated partner onboarding would include subscriptions to the existing products and services. This method enables the financial institution to process the partner's transmission using the configuration settings that are defined by the subscribed product or service. The subscribed elements also enable the billing functionality. In addition to the product and service subscriptions, the most complex partner configuration can include setting risk and transaction limits, and delivery schedules.

Defining a partner also allows the financial institution to fine-tune the transmission process by allowing it to override business rules and workflows configurations from the product/service level and or message standard level to the partner level. An example of this would be assigning customized individual business rules for a partner that can be more or less restrictive than the rules defined at the product or message standard level.

This chapter provides an overview and instruction for customizing the available settings for onboarding a partner in Financial Transaction Manager for ACH.

This chapter includes the following topics:

- ▶ Defining a partner
- ▶ Configuring general properties
- ▶ Configuring a sending point
- ▶ Configuring an originator
- ▶ Configuring a receiving point

6.1 Defining a partner

Within Financial Transaction Manager for ACH, all partners are defined with a minimum of a unique identifier and a name. If a transmission is received and no matching partner can be found, the transmission is rejected and not processed by Financial Transaction Manager for ACH.

Every partner must select at least one of the three partner types. The types identify how Financial Transaction Manager for ACH interacts with the partner. These types are:

- ▶ Sending Point

A sending point is an entity that sends transmissions to the financial institution to be processed by Financial Transaction Manager for ACH. The sending point can send payments on behalf of themselves or an originator.

- ▶ Originator

An originator is the entity that initiates the payment to be processed with Financial Transaction Manager for ACH. An originator's payments must be received through a valid Sending Point Partner.

- ▶ Receiving Point

The receiving point is the entity that is getting processed payment transmissions from Financial Transaction Manager for ACH.

A partner can be any combination of the three partner types. Specific configuration settings are associated with each partner type. After a partner is created, the partner type configuration settings are available for configuration from the view details page of the individual partner. In addition to defining the partner-type-specific configurations, all partners have a set of general properties that can be defined. Many of the general properties do not provide any additional functions, but simply additional information about the partner.

Note: In previous versions of Financial Transaction Manager for ACH, the Sending Point was referred to as *Originator*, the Originator was previously called *Depositor* and the Receiving Point is named *Receiver*. Not all references have been updated in all workbooks, so any workbook column names referencing depositor, originator, and receiver should be interpreted as referring to the Originator, Sending Point, and Receiving Point.

The following section illustrates the procedure for defining a partner. Subsequent sections cover the setting within the general properties of a partner, and the specific configuration values for each partner type.

6.1.1 Using the Control Center

To define a new Partner, log in to the Control Center and click **Configuration** → **Partners** → **Partners** → **Add Partner**.

The Add Partner window is displayed in Figure 6-1.

The screenshot shows the 'Add Partner' window. It features a title bar at the top. Below the title bar, there are two input fields: 'ID:' and 'Name:', both with red asterisks indicating they are required. To the right of these fields is a 'Configure General' section containing a list of options: Address, Contacts, Attributes, Sub-Partners, Custom Attributes, Client Identifiers, Accounts, and Logo. Below the input fields is a 'Configure Roles' section with three checkboxes: 'Sending Point', 'Originator', and 'Receiving Point'.

Figure 6-1 Add Partner

To define the new Partner requires the user to complete, configure these properties:

► ID {REQUIRED}

A unique code that is a maximum of 10 character alphanumeric string. This code is typically a financial institutions routing number or a corporation's federal tax identification, but it does have to be. It can be a unique number that is assigned by the financial institution to its partners. This number is the first identifier checked when identifying a partner.

► Name {REQUIRED}

A 50 character descriptive name for the partner.

► Configure Roles

- Sending Point
- Originator
- Receiving Point

If the Partner is either a Sending Point or an Originator, the following fields are displayed:

– Activation Date {OPTIONAL}

A date can be entered directly in the text box or selected from the calendar widget associated with the text box. The Partner will be unable to run any operations or access any services until after the activation date. If the date is left blank, the Partner is active from the moment that it is saved.

– Deactivation Date {OPTIONAL}

A date can be entered directly in the text box or selected from the calendar widget that is associated with the text box. The Partner will not be able to run any operations or access any services after the deactivation date. Partners cannot subscribe or unsubscribe to Products or Services if in a deactivated state. If the date is left blank, the Partner is active forever.

Although not marked as mandatory, each Partner should be associated with at least one role. If the Partner is saved without selecting a role, a role can be set by putting the Partner Details window into edit mode.

Figure 6-2 illustrates defining a partner with all three roles and no activation or deactivation dates.

The screenshot shows a web form titled "Add Partner". At the top left, there are two input fields: "ID:" with the value "000999000" and "Name:" with the value "Bank, Corp. Clearing". Both fields have a red asterisk to their right. Below these is a section titled "Configure Roles" containing three checked checkboxes: "Sending Point", "Originator", and "Receiving Point". To the right of each checkbox are two empty text boxes labeled "Activation Date:" and "Deactivation Date:", each with a small calendar icon. To the right of the "Configure Roles" section is a larger box titled "Configure General" containing a list of configuration options: "Address", "Contacts", "Attributes", "Sub-Partners", "Custom Attributes", "Client Identifiers", "Accounts", and "Logo". At the bottom center of the form are two buttons: "Save" and "Cancel".

Figure 6-2 Partner definition in the Control Center

Click **Save** to add the partner.

After the partner is added, the display will refresh from *Add Partner* to *Partner Details*. All partner configuration settings are available from the Partner Details view. All partners include a Configure General section to configure properties common to all partner types. A sending point partner has the Configure Receiving From section that includes the Sending Point Related properties. An Originator partner also has the Configure Receiving From section, but has the sub property sections of Originator Related and Risk Management. A Receiving Point partner has the Configure Sending To section that includes the Receiving Point Related properties and Risk Management properties sections.

Figure 6-3 illustrates the Partner Details view of a partner that is a Sending Point, an Originator, and a Receiving Point, and thus shows all available partner property configuration links. For more information about configuring the specific properties, see 6.2, “Configuring general properties” on page 118, 6.3, “Configuring a sending point” on page 134, 6.4, “Configuring an originator” on page 144, and 6.5, “Configuring a receiving point” on page 162.

Partner Details

Help

Partner added successfully

ID: 000999000
Name: Bank, Corp, Clearing

Configure Roles

Sending Point **Activation Date:**
 Originator **Deactivation Date:**
 Receiving Point

1 Configure General

[Address](#)
[Contacts](#)
[Attributes](#)
[Sub-Partners](#)
[Custom Attributes](#)
[Client Identifiers](#)
[Accounts](#)
[Logo](#)

2 Configure Receiving From

2 Sending Point Related

[Inbound Message Standard Service Subscription Transmissions](#)
[Authorized Originators](#)
[Expected Transmissions](#)

3 Originator Related

[Inbound Products Subscriptions](#)
[Attributes](#)
[Authorized Destinations](#)
[Authorized Message Types](#)

3 Risk Management

[Exposure Limit Monitors](#)
[Batch / ICL Limits](#)
[Transaction Limits](#)

4 Configure Sending To

Receiving Point Related

[Endpoints](#)
[Transmission Deliveries](#)
[Attributes](#)
[Expected Transmissions](#)
[Transmission Configuration](#)

Risk Management

[Account Rules](#)

OK

Figure 6-3 Partner definition in Control Center

It is not mandatory to configure every property. However, as items are configured, a green check mark appears on the right side of the configuration box for each item that is configured as shown in Figure 6-4.

ID: 000999000
Name: Bank, Corp, Clearing

Configure Roles

- Sending Point **Activation Date:**
- Originator
- Receiving Point **Deactivation Date:**

Configure General

- [Address](#) ✓
- [Contacts](#) ✓
- [Attributes](#) ✓
- [Sub-Partners](#)
- [Custom Attributes](#)
- [Client Identifiers](#)
- [Accounts](#)
- [Logo](#)

Configure Receiving From

Sending Point Related

- [Inbound Message Standard Service Subscription](#) ✓
- [Transmissions](#) ✓
- [Authorized Originators](#)
- [Expected Transmissions](#)

Originator Related

- [Inbound Products Subscriptions](#) ✓
- [Attributes](#) ✓
- [Authorized Destinations](#) ✓
- [Authorized Message Types](#)

Risk Management

- [Exposure Limit Monitors](#)
- [Batch / ICL Limits](#)
- [Transaction Limits](#)

Configure Sending To

Receiving Point Related

- [Endpoints](#) ✓
- [Transmission Deliveries](#) ✓
- [Attributes](#) ✓
- [Expected Transmissions](#)
- [Transmission Configuration](#)

Risk Management

- [Account Rules](#)

Figure 6-4 Partner definition with configuration in the Control Center

6.1.2 Opening the Partner Details view

To configure partner options on an existing partner, open the Partner Details view. Open the manage partner page by clicking **Configuration** → **Partners** → **Partners**. From this page, click the magnifying glass icon (**view details**) to the left of the partner as shown in Figure 6-5.

	Id	Name	Sending Point	Originator	Receiving Point
	000000000	No Role			
	000123000	Bank-123	✓		
	000456000	Corporation-456		✓	
	000789000	Clearing House-789			✓
	000999000	Bank, Corp, Clearing	✓	✓	✓

Figure 6-5 Partner Details view

6.1.3 Using the data setup utility (DSU)

Defining a partner by using the DSU requires validation and updates in several files that are distributed with Financial Transaction Manager for ACH. The default names of the files to be validated or updated are:

- ▶ `install_directory/shared/v300/pfs/DSU/importexport/cmd/BaseImport.properties`
- ▶ `install_directory/shared/v300/pfs/DSU/importexport/xls/BaseMap.xls`
- ▶ `install_directory/shared/v300/pfs/DSU/importexport/xls/BaseXREF.xls`
- ▶ `install_directory/shared/v300/pfs/DSU/importexport/xls/SampleBaseConfiguration.xls`

where `install_directory` is the directory that was specified when installing Financial Transaction Manager for ACH.

Table 6-2 shows the correlation of the Control Center partner details general properties links to the workbook tabs.

Table 6-1 Partner Control Center Command to workbook tab

Control Center Link	Workbook Tab
Configuration → Partners → Partners → Add Partner	SampleAchConfiguration.xls – Partner

BaseImport.properties

In the properties file, validate the workbook reference tags have the correct file names for the Cross Reference, Map, and Configuration Data workbooks. If the workbook names are different from the defaults, update the designated files according to the instructions under the default name. The specific tags to be validated are shown in Figure 6-6.

```
mapFileName      = ../xls//BaseMap.xls
XREFFileName    = ../xls//BaseXREF.xls
inRulesFileName = ../xls//SampleBaseConfiguration.xls
```

Figure 6-6 Workbook reference tags

BaseMap.xls

The Map workbook should not require any modifications unless tab names or column names were modified in either the Cross Reference or Configuration Data workbooks. The names of the tabs and columns must match between the MAP and the Configuration Data workbooks.

BaseXREF.xls

In the Cross Reference workbook, on the *Import* tab, ensure that the value in the *Import* column is **Y** and the *Mode* column is **InsertUpdate** in the row where the *Import sheet name* value is **Partner**.

SampleBaseConfiguration.xls

In the Configuration Data worksheet, the *Partner* tabs enter a single row of data completing all the fields necessary to define the partner. The column names on the worksheet match the input boxes that are used in the Control Center. See 6.1.1, “Using the Control Center” on page 112 for additional information about each field.

The Partner tab also includes the fields set the **Address** and **Attributes** properties. The field definitions for those columns can be found in 6.2, “Configuring general properties” on page 118 and 6.2.3, “Attributes” on page 123.

Figure 6-7 illustrates the same example of defining a Partner, but it also includes settings for the Address and Attributes configurations.

A	B	C	D	E	F	G	H		
Partner Id	Originator (Y/N)	Depositor (Y/N)	Presentment Customer (Y/N)	Receiver (Y/N)	Customer Type	Name	Address Line 1		
000999000	Y	Y		Y	I	Bank, Corp, Clearing	999 Main Street		
I	J	K	L	M	N	O	P	Q	R
Address Line 2	Address Line 3	Country	Region	City	State	Zip	Activation Date	Deactivation Date	Additional Information
		United States		Charlotte	NC	28204			

Figure 6-7 Partner definition in the workbook

After all the services that you want are added into the Configuration Data workbook, import the data using the DSU tool import command. The execution of the DSU tool should be done from *install_directory/shared/v300/pfs/DSU/importexport/cmd*, or, for larger workbooks, use the 64-bit version from *install_directory/shared/v300/pfs/DSU/importexport/cmd64* by using these commands:

```
dsu import BaseImport.properties
```

or

```
dsu64 import BaseImport.properties
```

The DSU tool will log the results of the command to a log file for later inspection. The log file is in *install_directory/shared/v300/pfs/DSU/importexport/cmd* or wherever the properties file specifies in the `logFileLocation` tag.

Additional information about the Data Setup Utility can be found in 1.5, “Importing and exporting system configuration” on page 20 of this document.

6.2 Configuring general properties

This section provides addition information about the configure general box properties and the parameters that are required to configure them. This section contains a list of the configurations properties available to be set and a high-level description of what the property is used to configure. It then follows with a sub section on each property that contains a more detailed description of the property and the parameters that are required to configure the property within the Control Center. The last sub section provides the information necessary to configure the same properties using the DSU.

The configure general box contains links to configure the following properties:

- ▶ Address

The physical or mailing address of the partner.

- ▶ **Contacts**
A list of people who can be contacted at the partner and the information necessary to run the communication.
- ▶ **Attributes**
Sets the Partner Type and any additional information the financial institution wants to associate with the partner.
- ▶ **Sub-Partners**
Associates other Partners with this one as a Master Partner.
- ▶ **Custom Attributes**
Enables Partners to be added as authorized originators for a sending point.
- ▶ **Client Identifiers**
Associates addition routing numbers, tax ID, or other identifiers with this partner for identification purposes when assigning transmissions to a partner. Enables Partners to be added as authorized originators for a sending point.
- ▶ **Accounts**
Associates individual account numbers with a Partner. These account numbers are then available in other partner configurations where an account number might be required.
- ▶ **Logo**
Associates a graphic with the Partner. The logo currently has no impact on any functionality, other than displaying on the Partner Details window.

6.2.1 Address

Add an address for the partner by selecting the **Address** link from the Partner Details window. This opens a new page to add the partner address as shown in Figure 6-8.

Add Partner Address

ID: 000789000
Type: Customer ID
Name: Clearing House-789
Address:
Address2:
Address3:
City:
State/Province:
Zip/Postal:
Region:
Country: --choose a country-- ▼

Figure 6-8 General Properties - Add Address

To define the new Address, configure the following properties:

- ▶ **Address {OPTIONAL}**
This is the first line of the partner's address. It is an alphanumeric string with a maximum length of fifty characters.
- ▶ **Address2 {OPTIONAL}**
This is the second line of the partner's address. It is an alphanumeric string with a maximum length of 50 characters.
- ▶ **Address3 {OPTIONAL}**
This is the third line of the partner's address. It is an alphanumeric string with a maximum length of 50 characters.
- ▶ **City {OPTIONAL}**
This is the city for the partner's address. It is an alphanumeric string with a maximum length of 30 characters.
- ▶ **State/Province {OPTIONAL}**
This is the state or province for the partner's address. It is an alphanumeric string with a maximum length of 30 characters.
- ▶ **Zip/Postal {OPTIONAL}**
This is the zip or postal code for the partner's address. It is an alphanumeric string with a maximum length of 10 characters.
- ▶ **Region {OPTIONAL}**
This is a user-defined region that is related to the partner's address. It is an alphanumeric string with a maximum length of 50 characters.
- ▶ **Country {OPTIONAL}**
This is the drop-down list of the country of the partner's address.

Figure 6-9 depicts the same example as shown in 6.1.3, "Using the data setup utility (DSU)" on page 117 where the address fields are included when adding the partner.

The screenshot shows a form titled "Add Partner Address" with the following fields and values:

ID:	000999000
Type:	Customer ID
Name:	Bank, Corp, Clearing
Address:	999 Main Street
Address2:	
Address3:	
City:	Charlotte
State/Province:	NC
Zip/Postal:	28204
Region:	
Country:	United States

Figure 6-9 Address definition for Partner in Control Center

Select **Save** to complete the partner address configuration. The view returns to the Partner Details window and it displays a check mark in the rightmost position of the Configure General window for the Address.

6.2.2 Contacts

Add contacts for the partner by selecting the **Contacts** link from the Partner Details window. Doing so opens the Manage Contact view Select **Contact** to open the Add Contact window as shown in Figure 6-10. General contact information is also used when sending email notifications using the Email Channel type from the Gateway.

The screenshot shows a web form titled "Add Contact". The form contains the following fields and controls:

- Partner ID: 000789000
- Partner Description: Clearing House-789
- Last Name: [Text Input] *
- First Name: [Text Input] *
- Middle Name: [Text Input]
- Primary Contact:
- Business Contact:
- Technical Contact:
- Email Notification:
- Remote User:
- User Id: [Text Input]
- Email: [Text Input]
- Phone Number: [Text Input]
- Alternate Phone Number: [Text Input]
- Fax Number: [Text Input]
- Additional Information: [Text Area]

Figure 6-10 General Properties - Add Contact

To define the new Contact, configure the following properties:

- ▶ Partner ID

The ID of the partner to add a contact to. This field is pre-filled by the Control Center.

- ▶ Last Name {REQUIRED}

This is the surname of a partner contact. It is an alphanumeric string with a maximum length of 35 characters.

- ▶ First Name {REQUIRED}

This is the given name of a partner contact. It is an alphanumeric string with a maximum length of 25 characters.

- ▶ Middle Name {OPTIONAL}

This is the middle name of a partner contact. It is an alphanumeric string with a maximum length of 10 characters.

- ▶ Primary Contact {OPTIONAL}
Indicates whether this contact is the Primary Contact. A partner can have many contacts, but only one can be designated as the primary.
- ▶ Business Contact {OPTIONAL}
Indicates whether this contact is a Business Contact.
- ▶ Email Notification {OPTIONAL}
Indicates whether this contact receives email notifications. Although it is not required, it is recommended to enter a value in the Email field when this option is enabled.
- ▶ Remote User {OPTIONAL}
Indicates whether this contact is a Remote User.
- ▶ User Id {REQUIRED if Remote User is selected}
Defines the contact's User ID for remote access.
- ▶ Email or Email Address {OPTIONAL}
Defines the email address of the contact. Enter a value when Email Notification is enabled.
- ▶ Contact Time [Workbook ONLY] {OPTIONAL}
Define a window of time when the contact is available.
- ▶ Phone Number or Primary Phone # {OPTIONAL}
Defines a phone number for the contact.
- ▶ Alternate Phone Number or Alternate Phone # {OPTIONAL}
Defines a secondary phone number for the contact.
- ▶ Fax Number or Fax # {OPTIONAL}
Defines a fax phone number for the contact.
- ▶ Additional Information [Control Center ONLY] {OPTIONAL}
Any additional information to be stored within the system about the contact. This is an alphanumeric field of 500 characters maximum.
- ▶ Entitlements [Control Center ONLY] {{OPTIONAL Displayed if Remote User is selected}
Displays the available list of entitlements that can be selected for the contact.

Figure 6-11 shows an example of a Primary and Business contact who receives email notifications and has remote logon privileges.

Add Contact

Partner ID: 000999000

Partner Description: Bank, Corp, Clearing

Last Name: Banker *

First Name: Bob *

Middle Name:

Primary Contact:

Business Contact:

Technical Contact:

Email Notification:

Remote User:

User Id: BBanker *

Email: BBanker@FinancialInstitution1.com

Phone Number :

Alternate Phone Number:

Fax Number:

Additional Information:

Available List Entitlement Groups Name	Selected List Entitlement Groups Name
	Banks Clearing Corporations

Figure 6-11 Contact definition for Partner in Control Center

Repeat this procedure for each contact to be defined.

Tip: It might be faster to add contact by using the DSU because all contacts can be entered into a single tab in the workbook and uploaded to the system with a single DSU command. See 6.2.9, “Using the data setup utility (DSU)” on page 131 for additional information about this procedure.

6.2.3 Attributes

Financial Transaction Manager for ACH has only one attribute: Customer type. The customer types are defined by the financial institution as part of the base deployment.

The Financial Transaction Manager for ACH Reference Application defines six customer types, but more customer types can be defined on the *Customer Types* tab in *BaseConfiguration.xls*. The tab contains columns for the customer type and a description. Run `dsu import baseimport.properties` to add more customer types to the drop-down menu.

Add attributes for the partner by selecting the **Attributes** link from the Partner Details window. Doing so opens the Add Partner Attributes window as shown in Figure 6-12.

The screenshot shows a window titled "Add Partner Attributes". Inside the window, there are three labeled fields: "ID:" with the value "000789000", "Name:" with the value "Clearing House-789", and "Customer Type:" with a dropdown menu currently displaying "--choose a customer type-". Below these fields is a large, empty rectangular box labeled "Additional Information:".

Figure 6-12 General Properties - Add Partner Attributes

Adding the Customer Type requires input for the following fields:

▶ Customer Type {OPTIONAL}

A list of defined customer types. Select the most appropriate type for this partner. A list of customer types is not provided because these are user-defined. The Financial Transaction Manager for ACH Reference Application defines these types:

- -- Not Specified --
- A - Internal Application
- C - Corporate Client
- G - Government Agency
- I - Other Financial Institution
- M - My Institution

▶ Additional Information [Control Center Only] {OPTIONAL}

Any additional information to be stored within the system about the partner. This is an alphanumeric field with 1000 characters maximum.

Figure 6-13 depicts the same example as show in 6.1.3, “Using the data setup utility (DSU)” on page 117 where the attribute fields are included when adding the partner.

The screenshot shows a dialog box titled "Add Partner Attributes". It contains the following fields and controls:

- ID:** 000999000
- Name:** Bank, Corp, Clearing
- Customer Type:** I - Other Financial Institution (dropdown menu)
- Additional Information:** A large empty text area with a small icon in the bottom right corner.
- Buttons:** "Save" and "Cancel" buttons at the bottom.

Figure 6-13 Attribute definition for partner in Control Center

6.2.4 Sub-Partners

Financial Transaction Manager for ACH allows any partner to be associated with another partner or subpartner. Any partner that is associated with a sub partner is called a “master partner.” The subpartners concept is only applicable when using risk exposure limits. If a master partner has been defined with an exposer limit, all subpartner transactions are included in the calculations when determining whether the limit has been exceeded.

To add subpartners for the partner, click the **Sub-Partners** link from the Partner Details window. Doing so opens the Add Sub Partners window shown in Figure 6-14.

ID: 000789000
Type: Customer ID
Name: Clearing House-789

Filter: -- No Filter -- [Go]

Available List		Selected List
Partner Name - Partner ID		Partner Name - Partner ID
Bank-123 - 000123000 Corporation-456 - 000456000 Financial Institution 3 - 011000028 The Clearing House - 021001208 Federal Reserve Bank - 041000014 Federal Reserve Bank - 061000146 First Global Bank (FGB) - 123456780 Second National Bank (SNB) - 987654320 Online Bill Payment System - APPL100001 Internal ACH System - INTRNALACH Internal CPA System - INTRNALCPA Internal EDI System - INTRNALEDI Internal SWIFT System - INTRNALSWF Internal Wire System - INTRNALWRE PDQ Company - SMB1000001	[Add Selected (>)] [Remove Selected (<)] [Add All (>>)] [Remove All (<<)]	

Figure 6-14 General Properties - Add Sub-Partners

Select the partners that you want from the Available List and click the **Add Selected** icon to include the partner as a subpartner. Multiple partners can be selected by holding down the Ctrl key while you select the partners that you want to add.

Figure 6-15 shows the Bank-123, Corporation-456, and Clearing House-789 as subpartners to partner 000999000 Bank, Corp, Clearing.

Add Sub Partners

ID: 000999000
Type: Customer ID
Name: Bank, Corp, Clearing

Available List		Selected List
Partner Name - Partner ID		Partner Name - Partner ID
Federal Reserve Bank - 041000014 Federal Reserve Bank - 061000146 Financial Institution 3 - 011000028 First Global Bank (FGB) - 123456780 Internal ACH System - INTRNALACH Internal CPA System - INTRNALCPA Internal EDI System - INTRNALEDI Internal SWIFT System - INTRNALSWF Internal Wire System - INTRNALWRE No Role - 000000000 Online Bill Payment System - APPL100001 PDQ Company - SMB1000001 Second National Bank (SNB) - 987654320 The Clearing House - 021001208 test - 1	[Add Selected (>)] [Remove Selected (<)] [Add All (>>)] [Remove All (<<)]	Bank-123 - 000123000 Clearing House-789 - 000789000 Corporation-456 - 000456000

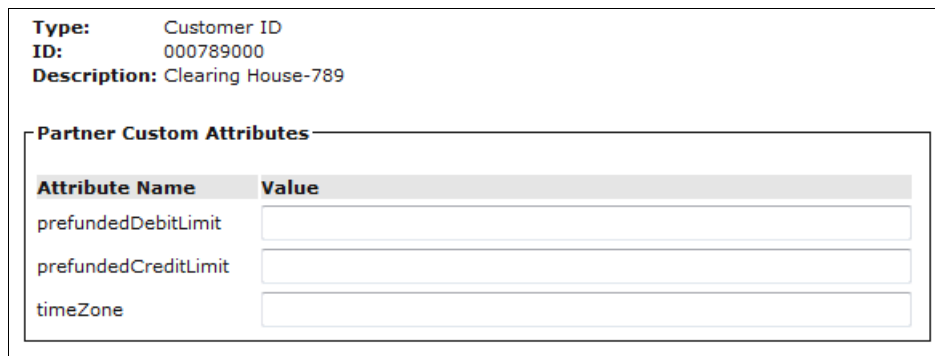
Figure 6-15 Sub-Partner definition for partners in Control Center

6.2.5 Custom attributes

Financial Transaction Manager for ACH allows for custom attributes to be set for data to be used in User Exits. Currently, there are three custom attributes at the partner level that are defined in the Financial Transaction Manager for ACH reference application.

Extra custom attributes can be defined in the Control Center by clicking **Administration** → **System** → **Customer Attributes** or on the Custom Attribute tab and the Custom Attr Level tab in the BaseConfiguration.xls file. The Custom Attribute tab defines the name of the attribute and its description, and the Custom Attr Level tab defines what level the custom attribute is related to. Attribute levels are partner and transmission. Run `dsu import baseimport.properties` to add more custom attributes definitions.

Add custom attributes for the partner by clicking the **Custom Attributes** link from the Partner Details window. Doing so opens the Assign Custom Attribute Values for a Partner as shown in Figure 6-16.



Type:	Customer ID
ID:	000789000
Description:	Clearing House-789
Partner Custom Attributes	
Attribute Name	Value
prefundedDebitLimit	<input type="text"/>
prefundedCreditLimit	<input type="text"/>
timeZone	<input type="text"/>

Figure 6-16 General Properties - Add Custom Attributes

To configure Custom Attributes, enter values for these fields:

▶ `prefundedDebitLimit` {OPTIONAL}

The debit limit to be used by the risk prefunding user exit. Limit checking for prefunding is responsibility of the financial institution to configure within a customized user exit. Financial Transaction Manager for ACH does not include any functions to validate prefunding.

▶ `prefundedCreditLimit` {OPTIONAL}

The credit limit to be used by the risk prefunding user exit. Limit checking for prefunding is the responsibility of the financial institution to configure within a customized user exit. Financial Transaction Manager for ACH does not include with any functions to validate prefunding.

▶ `timeZone` {OPTIONAL}

Time zone to be used by any user exits. The format is as defined by the user exit requirements.

Figure 6-17 shows an example of setting the time zone for user exit functionality.

Assign Custom Attribute Values for a Partner

Type: Customer ID
ID: 000999000
Description: Bank, Corp, Clearing

Partner Custom Attributes

Attribute Name	Value
prefundedDebitLimit	<input type="text"/>
prefundedCreditLimit	<input type="text"/>
timeZone	(UTC-06:00) Central Time (US & Canada)

Figure 6-17 Custom Attribute definition for Partner in Control Center

6.2.6 Client identifiers

Financial Transaction Manager for ACH allows for any partner to be associated with multiple client identifiers. A client identifier is used to associate a transmission or batch to a partner if no match is found using the partner ID. The client identifier allows the financial institution to group routing numbers, bank identifier codes (BICs), or Tax ID numbers to a single partner profile.

The client identifier is used by the Gateway to identify the destination and sending point of a transmission and the originator of a batch if the routing number from the transmission did not match a Partner ID. For example, if you have a Partner ID of ABC123 for the sending point, the ACH header record has the immediate origin field in with the routing number of the sending point. This would not match the Partner ID, so the Gateway would look at the client identifiers to find a match. If a client identifier matches, then the Partner ID ABC123 is associated as the sending point. The same applies to determining the Originating Depository Financial Institution (ODFI) in the batch header record. In addition, the Gateway provides a user exit to identify an originator of a batch by using the Company ID and name.

Add client identifier for the partner by selecting the **Client Identifiers** link from the partner details view. Doing so opens the View Client Identifiers window. To add a client identifier, put the page into edit mode. Figure 6-18 illustrates the client identifier page in edit mode.

Edit Client Identifiers


ID: 000789000
Name: Clearing House-789
Type : -- Select Client Type --
Identifier :

Figure 6-18 General Properties - Add Client Identifiers

Configuring the Client Identifiers requires setting the following fields:

- ▶ Partner ID [Workbook ONLY]
Type of the partner adding client identifiers.
- ▶ Partner Type [Workbook ONLY]
ID of the partner adding client identifiers.
- ▶ Type {OPTIONAL}
A drop-down menu of identifier types such as:
 - ABA Transit Routing Number - Client Type 1
 - Bank Identifiers Code (BIC) - Client Type: 2
 - Company- Client Type: 3
 - Duns (Dun & Bradstreet)- Client Type: 4
 - Phone (Telephone Companies)- Client Type: 5
 - U.S. Federal Tax Identification Number- Client Type: 6
 - U.S. Federal Employer Identification Number- Client Type: 7
- ▶ Identifier {OPTIONAL}
The value of the identifier type. This is the value that would be found within the transmission header data.

Figure 6-19 provides an example of additional client identifiers for a partner.



Client Type	Client Identifier
ABA	000999123
ABA	000999456
ABA	000999789
BIC	AAAAUSXXX999
6	123996789
7	88-56743

Figure 6-19 Client Identifier definition for Partner in Control Center

6.2.7 Accounts

Each partner can be associated to multiple accounts. Accounts are used when performing payment authorization checks on transactions and to create debit and credit offsets. Accounts support authorization service types such as:

- ▶ Authorization filters
- ▶ Blocking filters
- ▶ Positive pay
- ▶ Stop pay

Each account has an associated account type. The Financial Transaction Manager for ACH Reference Application defines four account types, but more account types can be defined on the Account Types tab in BaseConfiguration.xls. The Account Type tab contains columns for

the account type and a description. Run `dsu import baseimport.properties` to add additional accounts types to the drop-down menu.

To add an account for the partner, click the **Accounts** link from the partner details view. Doing so opens a new tab that displays any accounts that are associated with the partner. To add an account, select the **+** icon on the page as highlighted in Figure 6-20.

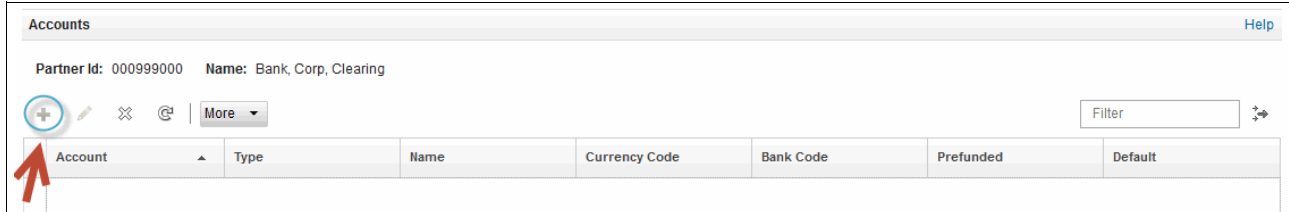


Figure 6-20 Account View

After you click the **Add** icon, an Add Account window as shown in Figure 6-21 is displayed.

Figure 6-21 General Properties - Add Accounts

- ▶ Partner ID [Workbook ONLY]
The ID of the partner to add the accounts to.
- ▶ Account or Account Number {REQUIRED}
The partners account number, which is a unique alphanumeric string no longer than 35 characters.
- ▶ Type or Account Type {REQUIRED}
The type of account, such as:
 - General Ledger
 - Direct Debit Account
 - Savings
 - Loan
- ▶ Name {OPTIONAL}
A name to be associated with the account that is an alphanumeric string no longer than 64 characters.
- ▶ Currency Code {REQUIRED}
A drop-down menu of supported currencies. US Dollar (USD) is the default value.

- ▶ **Bank Code {OPTIONAL}**
A unique code that is assigned by the bank that holds the originators account. It can be a financial institution assigned value, or an ABA or BIC routing code.
- ▶ **Prefunded or Pre-funded Indicator {OPTIONAL}**
An indicator that signifies whether this account must be prefunded. Funds for a transaction associated with a prefunded account must be reserved before the transaction can be distributed.
- ▶ **Default or Default Account Indicator {OPTIONAL}**
An indicator that signifies whether this is the default account for this partner. Only one account can be designated as the default.

Figure 6-22 shows an account of General Ledger type, in US dollars and marked as the default for the partner.

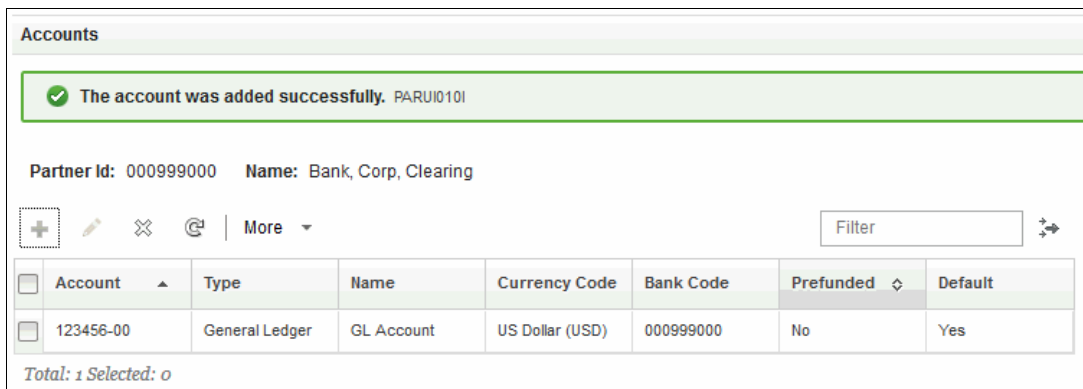


Figure 6-22 Account definition for Partner in Control Center

6.2.8 Logo

A partner logo can be saved in Financial Transaction Manager for ACH. However, currently the logo is not used. To add a logo for the partner, select the **Logo** link from the partner details view. Figure 6-23 illustrates the Add Partner Logo page.

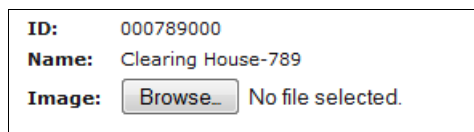


Figure 6-23 General Properties - Add Logo

Click **Browse** to import the logo into the partner definition.

6.2.9 Using the data setup utility (DSU)

Configuring the Partner General Properties using the DSU requires validation and updates in several files distributed with Financial Transaction Manager for ACH. The default names of the files to be validated or updated are:

- ▶ `install_directory/shared/v300/pfs/DSU/importexport/cmd/BaseImport.properties`
- ▶ `install_directory/shared/v300/pfs/DSU/importexport/xls/BaseMap.xls`
- ▶ `install_directory/shared/v300/pfs/DSU/importexport/xls/BaseXREF.xls`
- ▶ `install_directory/shared/v300/pfs/DSU/importexport/xls/SampleBaseConfiguration.xls`

where *install_directory* is the directory that was specified when installing Financial Transaction Manager for ACH.

Table 6-2 shows the correlation from the Control Center partner details general properties links to the workbook tabs.

Table 6-2 Partner general properties Control Center links to Workbook tabs

Control Center Link Configuration → Partners → Partners → (view details) →	Workbook Tab
Address	SampleAchConfiguration.xls – Partner
Contacts	SampleAchConfiguration.xls – Partner Contacts
Attributes	SampleAchConfiguration.xls – Partner
Sub-Partners	SampleAchConfiguration.xls – Master Sub Partner
Custom Attributes	SampleAchConfiguration.xls – Partner Custom attr
Client Identifiers	SampleAchConfiguration.xls – Partner Client Identifier
Accounts	SampleAchConfiguration.xls – Partner Accounts
Logo	Not Available from the DSU

The Partner tab that contains fields to not only define the partner, but the General Properties Address and Attributes as well. These general property configurations settings are covered in 6.1.3, “Using the data setup utility (DSU)” on page 117.

BaseImport.properties

In the properties file, validate the workbook reference tags have the correct file names for the Cross Reference, Map, and Configuration Data workbooks. If the workbook names are different than the defaults, update the designated files per the instructions under the default name. The specific tags to be validated are shown in Figure 6-24.

```
mapFileName      = ../xls/BaseMap.xls
XREFFileName    = ../xls/BaseXREF.xls
inRulesFileName = ../xls/SampleBaseConfiguration.xls
```

Figure 6-24 Workbook reference tags

BaseMap.xls

The Map workbook should not require any modifications unless tab names or column names were modified in either the Cross Reference or Configuration Data workbooks. The names of the tabs and columns must match between the MAP and the Configuration Data workbooks.

BaseXREF.xls

In the Cross Reference workbook, on the Import tab, ensure that the value in the Import column is **Y** and the Mode column is **InsertUpdate** in the rows where the Import sheet name value is in Table 6-2 on page 132.

SampleBaseConfiguration.xls

For each tab (Partner Contacts, Master Sub Partner, Partner Custom attr, Partner Client Identifier, and Partner Accounts), enter a single row of data for each entry. Each of these tabs can contain multiple rows for the same partner. The column names on the worksheet are shown with the names of the input boxes used in the Control Center. See 6.2, “Configuring general properties” on page 118 for additional information about each field.

To clarify any differences between the two methods of configuration, the following examples, Figure 6-25 through Figure 6-29 on page 134, illustrate the Partner configuration using the Workbook tabs. The configuration data matches that of the data used in the examples in 6.2, “Configuring general properties” on page 118.

Figure 6-25 shows an example of a Partner Contacts tab in the workbook. The entitlements can only be configured by using the Control Center.

Partner Id	Primary Contact	Technical Contact	Business Contact	First Name	Middle Name	Last Name	Primary Phone #	Alternate Phone #	Fax #	Email Notification	Email Address	Contact Time	Remote User
000999000	Y		Y	Bob		Banker				Y	BBanker@financialInstitution1.com		Y

Figure 6-25 Partner Contacts definition for partner in workbook

Figure 6-26 contains an example of the Master Sub Partner entry in the workbook. The Partner Type fields are not required when adding Sub-Partners with the Control Center.

Master Partner Id	Master Partner Type	Sub Partner Id	Sub Partner Type
000999000	7	000123000	2
000999000	7	000456000	1
000999000	7	000789000	4

Figure 6-26 Master Sub Partner definition for Partner in Workbook

Figure 6-27 is an example of configuring a Partner Custom Attr. The attribute names are pre-filled within the Control Center, but must be specified in the workbook.

Partner Id	Name	Value
000999000	timeZone	(UTC-06:00) Central Time (US & Canada)

Figure 6-27 Partner Custom Attr definition for Partner in Workbook

Figure 6-28 shows the Partner Client Identifier example.

Partner Id	Partner Type	Client Type	Client Identifier
000999000	7	1	000999123
000999000	7	1	000999456
000999000	7	1	000999789
000999000	7	2	AAAAUSXX999
000999000	7	6	123996789
000999000	7	7	88-56743

Figure 6-28 Partner Client Identifier definition for Partner in Workbook

Figure 6-29 illustrates the Partner Account data.

Partner Id	Account Number	Account Type	Currency Code	Name	Bank Code	Pre-funded Indicator	Default Account Indicator
000999000	123456-00	1	USD	GL Account	000999000	N	Y

Figure 6-29 Partner Accounts definition for Partner in Workbook

After all the tabs have been updated in Configuration Data workbook, import the data using the DSU tool import command. The execution of the DSU tool should be done from the *install_directory/shared/v300/pfs/DSU/importexport/cmd*, or, for larger workbooks, use the 64-bit version from *install_directory/shared/v300/pfs/DSU/importexport/cmd64* using the commands:

```
dsu import BaseImport.properties
```

or

```
dsu64 import BaseImport.properties
```

The DSU tool will log the results of the command to a log file for later inspection. The log file is in *install_directory/shared/v300/pfs/DSU/importexport/cmd* or wherever the properties file specifies in the `logFileLocation` tag.

Additional information about the Data Setup Utility can be found in 1.5, "Importing and exporting system configuration" on page 20.

6.3 Configuring a sending point

This section provides additional information about the Configure Receiving From - Sending Point Related box properties and the parameters that are required to configure them. The section contains a definition of a sending point. In addition, it contains a more in-depth description of the properties and parameters related to a sending point configuration within the Control Center. Lastly it supplies the information necessary to configure the same properties by using the DSU.

A sending point is an entity that Financial Transaction Manager for ACH will be receiving transmissions from and sending transmissions to.

The configurations settings for a sending point enable the financial institution to perform these tasks:

- ▶ Set ingestion options for transmission types and enable acknowledgements
- ▶ Enable services and their billing options
- ▶ Authorize originator configuration
- ▶ Set schedules for inbound transmissions

The following pages are needed to configure a sending point:

- ▶ Inbound Message Standard Service Subscription

Configures the services that are associated with a message standard for the partner when acting as a sending point. This configuration also enables or disables the billing of the associated services. Available services are listed by the message types that the services have been registered with from the message standards definitions.

- ▶ **Transmissions**
Configures the transmission types that the financial institution can expect to receive from or send to the sending point.
- ▶ **Authorized Originators**
Enables Partners to be added as authorized originators for a sending point.
- ▶ **Expected Transmissions**
Expected transmissions from the sending point

6.3.1 Inbound Message Standard Service Subscription

Configuring the inbound message standard service subscriptions allows the financial institution to define the services available for each message standard transmission from the sending point. This ensures that the sending point is not using services that they have not been authorized to use. The financial institution can enable/disable billing of this service specifically for this sending point.

To add a service subscription for the sending point, click **Inbound Message Standard Service Subscription** from the Partner Details window. Doing so opens a new tab that displays any message service subscriptions that are associated with the sending point. To add a subscription, select the + icon on the page as highlighted in Figure 6-30.

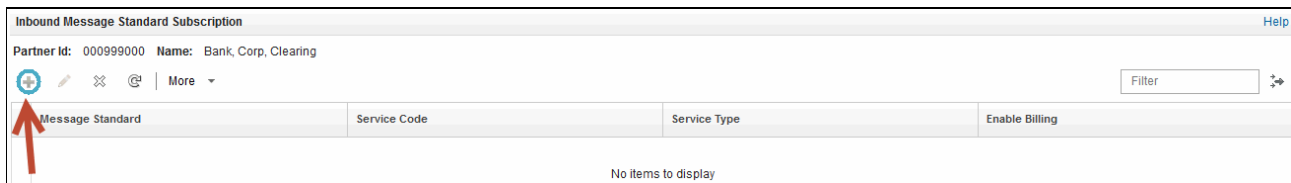


Figure 6-30 Inbound Message Standard Subscriptions view

Upon selection of the add icon, an Add Inbound Message Standard Subscription window as shown in Figure 6-31 is displayed.

Add Inbound Message Standard Subscription

Partner: 000123000

* Standard Type: ? ▼

* Service Code: ? ▼

Service Type:

* Enable Billing: ? Yes No

Figure 6-31 Sending Point Related - Add Inbound Message Standard Service Subscriptions

- ▶ **Partner ID [Workbook ONLY]**
The ID of the partner to add the accounts to.

- ▶ **Standard Type or Standard Type Id {REQUIRED}**
 Drop down list containing the Message Standards that have been defined in the system. Some Financial Transaction Manager for ACH message standards are:
 - NACHA
 - EDI X12
 - Fedwire
 - SWIFT
- ▶ **Service Code {REQUIRED}**
 Drop down list that contains the services defined for the message standard selected. The service codes are defined when services are created and associated to the message standard.
- ▶ **Service Type [Workbook ONLY] [OPTIONAL]**
 This field is pre-filled when a Service Code is selected. It is optional input in the workbook definition. The valid service types can be found in 2.4, “Creating an inbound service” on page 34.
- ▶ **Enable Billing or Billing Indicator {REQUIRED}**
 Radio button that indicates whether to enable billing for the service for this sending point. This value overrides the billing setting that is configured for the service.

Figure 6-32 illustrates create balancing entries and control total verification services added for the NACHA message standard for this sending point partner. The control total verification service is billable, whereas the create balancing entries is not.

The screenshot shows the 'Inbound Message Standard Subscription' interface. At the top, there is a green success message: 'The partner message standard subscription service was updated successfully. PARUI084I'. Below this, the partner information is displayed: 'Partner Id: 000999000 Name: Bank, Corp, Clearing'. There are icons for adding, editing, deleting, and refreshing, along with a 'More' dropdown menu. A table lists the subscriptions:

<input type="checkbox"/>	Message Standard	Service Code	Service Type	Enable Billing
<input type="checkbox"/>	NACHA	CBAL	Create balancing entries	No
<input type="checkbox"/>	NACHA	CTV2	Control Total Verification	Yes

At the bottom of the table, it says 'Total: 2 Selected: 0'.

Figure 6-32 Message Standard Service Subscriptions definition for Sending Point in Control Center

6.3.2 Transmissions

Adding a transmission for the sending point allows the financial institution to define which transmission types are allowed to be processed when the associated Transmission Rule Set has **Sending Point is Defined** enabled. See Chapter 3.1.1, “Gateway validation” on page 54 for information about Transmission Rule Sets.

In addition, the transmission configuration provides the financial institution with the ability to override the transmission validation rule set and the batch/ICL rule set as defined by the message standard. The financial institution can create custom rule sets for the sending point and those rule sets are configured in this view. The transmission view also provides the financial institution with the option to create acknowledgements back to this sending point.

Note: Configuring rule sets and acknowledgements will OVERRIDE the settings that are defined by the message standard when processing transmission from this partner.

To configure the sending point transmission, click the **Transmission** link from the partner details view. This opens the Add Sending Point Transmission page as shown in Figure 6-33.

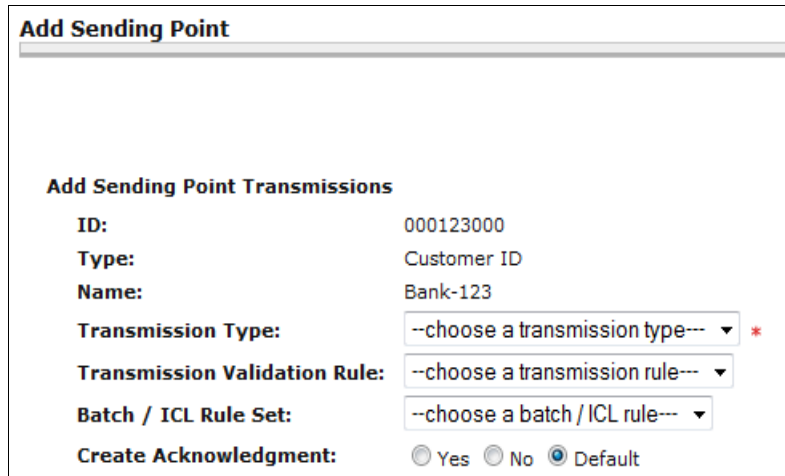


Figure 6-33 Sending Point Related - Add Sending Point Transmissions

- ▶ ID or Partner Id [Workbook ONLY] {REQUIRED}
The ID of the partner to configure the transmission type to.
- ▶ Type {Pre-Filled}
Type of the partner ID.
- ▶ Name {Pre-Filled}
Name of the partner.
- ▶ Transmission Type {REQUIRED}
Drop list of the defined transmission types. Add an entry for each transmission type that can be received from or sent to this sending point partner.
- ▶ Transmission Validation Rule or Transmission Rule Name {OPTIONAL}
Drop down list of transmission validation rules based on the transmission type selected. The transmission validation rule that is chosen applies for transmissions received from the partner sending point. If no value is select, the transmission validation rules defined for the transmission type apply.
- ▶ Batch/ICL Rule Set or Batch Rule Name {OPTIONAL}
Drop down list of batch/ICL rule sets based on the transmission type selected. The batch rule that is chosen applies for all batches in each transmission received from the sending point. If no value is select, the batch rules defined for the transmission type apply.
- ▶ Create Acknowledgement or Deposit Notification {REQUIRED}
This button indicates whether to enable acknowledgment creation. This can be set for the partner sending point, or left to default to the transmission type setting.

Figure 6-34 illustrates setting a transmission type NACHA and using the message standard rules for transmissions and batches. This example includes enabling the acknowledgment creation.

Figure 6-34 Transmission definition for Sending Point in Control Center

6.3.3 Authorized originators

Adding authorized originators to a sending point partner allows the financial institution to verify that batches within the transmission originate from an authorized partner, if originator authorization checking is enabled in the transmission rule set. Transmissions from non-authorized originators are rejected and flagged as an error.

To add authorized originators to the sending point partner, click **Authorized Originators** from the partner details view. This opens the window shown in Figure 6-35.

Figure 6-35 Sending Point Related: Add Authorized Originators

Select the partners that you want from the Available List and click **Add Selected** to include the partner as an originator for this sending point partner. Multiple partners can be selected by holding the Ctrl key when you select the available partner.

Figure 6-36 shows the Bank-123, Corporation-456, Clearing House-789 and Bank, Corp, Clearing as originators to partner 000999000 Bank, Corp, Clearing.

Add Sending Point

Add Sending Point Originators

ID: 000999000
Type: Customer ID
Name: Bank, Corp, Clearing

Available List (Partner ID)Partner Name - Partner ID		Selected List (Partner ID)Partner Name - Partner ID
<div style="border: 1px solid gray; min-height: 150px;"> (00000000) No Role - 000000000 (011000028) Financial Institution 3 - 011000028 (021001208) The Clearing House - 021001208 (041000014) Federal Reserve Bank - 041000014 (061000146) Federal Reserve Bank - 061000146 (1) test - 1 (123456780) First Global Bank (FGB) - 123456780 (987654320) Second National Bank (SNB) - 987654320 (APPL100001) Online Bill Payment System - APPL100001 (INTRNALACH) Internal ACH System - INTRNALACH (INTRNALCPA) Internal CPA System - INTRNALCPA (INTRNALEDI) Internal EDI System - INTRNALEDI (INTRNALSWF) Internal SWIFT System - INTRNALSWF (INTRNALWRE) Internal Wire System - INTRNALWRE </div>	<div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px;">Add Selected (>)</div> <div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px;">Remove Selected (<)</div> <div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px;">Add All (>>)</div> <div style="border: 1px solid gray; padding: 5px;">Remove All (<<)</div>	<div style="border: 1px solid gray; min-height: 150px;"> (000123000) Bank-123 - 000123000 (000456000) Corporation-456 - 000456000 (000789000) Clearing House-789 - 000789000 (000999000) Bank, Corp, Clearing - 000999000 </div>

Figure 6-36 Authorized Originator definition for Sending Point in Control Center

6.3.4 Expected Transmissions

Adding sending point expected transmissions enables the financial institution to notify the sending point if a transmission was not received in the expected transmission window. It allows the financial institution to inform with their sending point partners that no transmissions have been received and there is a potential problem.

To view Expected Transmissions, click **Expected Transmissions** from the partner details view. This opens the Manage Inbound Expected Transmission window. To add a transmission window, select **Expected Transmission** from the **Sending Point Related** menu. Figure 6-37 displays the window for adding an expected transmission window.

Figure 6-37 Sending Point Related: Add Expected Transmissions

- ▶ **Originator Type {Pre-filled}**
The ID type of the partner with the expected transmission window.
- ▶ **Originator ID or Partner ID [Workbook Only] {REQUIRED}**
The ID of the partner.
- ▶ **Name {Pre-Filled}**
Name of the partner.
- ▶ **Inbound Indicator Description [Workbook Only] {REQUIRED}**
An indicator in the workbook that is used to designate the Inbound Expected Transmissions from the Outbound Expected Transmissions. For Inbound Expected Transmissions, this value must be **Y**.
- ▶ **Description or Tracking Name {REQUIRED}**
The tracking name for the expected transmission. This name helps the sending point to determine which transmission is missing if more than one expected transmission is configured.
- ▶ **Business Category or Business Day Category {OPTIONAL}**
The category of the expected transmission. Multiple categories can be specified in a comma delimited list.
- ▶ **Transmission Type or Transmission Type Description {REQUIRED}**
The messages standard of the expected transmission.
- ▶ **Expected Time or Expected By {REQUIRED}**
The time that the expected transmission is to be received by. The time zone that is displayed is that of the user who is configuring the transmission.
- ▶ **Affects EOD or Affects End Of Day {REQUIRED}**
A button that indicates whether the business day end of day processing is affected by the missing transmission. If set to **Yes**, end of day processing cannot be completed if the transmission has not been received. If set to **No**, end of day processing can be complete even if the expected transmission has not been received.

Figure 6-38 provides an example of defining an expected transmission with a message standard of NACHA by 2 pm Eastern. If the transaction is not received, the end of day processing will not be affected.

Add Inbound Expected Transmissions

Originator Type: Customer ID
Originator ID: 000999000
Sending Point: Bank, Corp, Clearing
Description: *
Business Category: (Blank indicates all categories)
Transmission Type: *
Expected Time: : **hh:mm - Eastern Daylight Time**
Affects EOD: Yes No

Figure 6-38 Expected Transmission definition for Sending Point in Control Center

6.3.5 Using the data setup utility (DSU)

Configuring Sending Point Properties using the DSU requires validation and updates in both the Base Configuration and the ACH Shared Configuration set of workbooks. These workbooks are distributed with Financial Transaction Manager for ACH. The default names of the files to be validated or updated are:

- ▶ Base Configuration Files
 - *install_directory*/shared/v300/pfs/DSU/importexport/cmd/BaseImport.properties
 - *install_directory*/shared/v300/pfs/DSU/importexport/xls/BaseMap.xls
 - *install_directory*/shared/v300/pfs/DSU/importexport/xls/BaseXREF.xls
 - *install_directory*/shared/v300/pfs/DSU/importexport/xls/SampleBaseConfiguration.xls
- ▶ ACH Configuration Files
 - *install_directory*/shared/v300/pfs/DSU/importexport/cmd/AchSharedImport.properties
 - *install_directory*/shared/v300/pfs/DSU/importexport/xls/SharedMap.xls
 - *install_directory*/shared/v300/pfs/DSU/importexport/xls/SharedXREF.xls
 - *install_directory*/shared/v300/pfs/DSU/importexport/xls/SampleAchConfiguration.xls

where *install_directory* is the directory that was specified when installing Financial Transaction Manager for ACH.

Table 6-3 shows the correlation from the Sending Point Related properties links in the Control Center to the workbook tabs.

Table 6-3 Sending Point Related Properties Control Center Links to workbook tabs

Control Center Link Configuration → Partners → Partners → (view details) →	Workbook - Tab
Inbound Message Standard Service Subscription	SampleAchConfiguration.xls – Partner Subscribed Services
Transmissions	SampleAchConfiguration.xls – Originator Transmission Rules
Authorized Originators	SampleBaseConfiguration.xls – Depositor to Processor
Expected Transmissions	SampleBaseConfiguration.xls – Expected Transmissions

BaseImport.properties and AchSharedImport.properties

In the properties file, validate that the workbook reference tags have the correct file names for the Cross Reference, Map, and Configuration Data workbooks. If the workbook names are different than the defaults, update the designated files per the instructions under the default name. The specific tags to be validated are shown in Figure 6-39 and Figure 6-40.

```
mapFileName      = ../xls/BaseMap.xls
XREFFileName     = ../xls/BaseXREF.xls
inRulesFileName  = ../xls/SampleBaseConfiguration.xls
```

Figure 6-39 BaseImport.properties Workbook Reference Tags

Figure 6-40 shows the specific tags for AchSharedImport.properties.

```
mapFileName      = ../xls/SharedMap.xls
XREFFileName     = ../xls/SharedXREF.xls
inRulesFileName  = ../xls/SampleAchConfiguration.xls
```

Figure 6-40 AchShareImport.properties Workbook Reference Tags

BaseMap.xls and SharedMap.xls

The Map workbook should not require any modifications unless tab names or column names were modified in either the Cross Reference or Configuration Data workbooks. The names of the tabs and columns must match between the MAP and the Configuration Data workbooks.

BaseXREF.xls and SharedXREF.xls

In the Import tab, ensure that the value in the Import column is **Y** and the Mode column is **InsertUpdate** in the rows where the **Import sheet name** value is in Table 6-3 on page 142.

SampleBaseConfiguration.xls and SampleAchConfiguration.xls

For the tabs Partner Subscribed Services and Originator Transmission Rules, in SampleAchConfiguration.xls and Depositor to Processor and Expected Transmissions in SampleBaseConfiguration.xls, enter a single row of data for each entry. Each of these tabs can contain multiple rows for the same partner. The column names on the worksheet are shown with the names of the input boxes that are used in the Control Center. See 6.3.1,

“Inbound Message Standard Service Subscription” on page 135 for additional information about each field.

To clarify any differences between the two methods of configuration, the examples in Figure 6-41 on page 143 through Figure 6-44 on page 143 illustrate the Sending Point properties configuration using the workbooks. The configuration data matches that used in the examples in 6.3.1, “Inbound Message Standard Service Subscription” on page 135.

Figure 6-41 illustrates the subscribing to create balancing entries and control total verification for the partner. The Standard Type Id (2) is for NACHA. The Message Standards are defined in SampleAchConfiguration.xls on the Message Standard tab.

Partner Id	Standard Type Id	Service Code	Service Type	Billing Indicator
000999000	2	CBAL	Create balancing entries	N
000999000	2	CTV2	Control Total Verification	Y

Figure 6-41 Message Standard Service Subscriptions definition for Sending Point in workbook

Figure 6-42 shows the configuration for the transmissions. The transmission type (10) is for NACHA. The Transmission Type is defined in SampleAchConfiguration.xls on the Transmission Type tab.

Partner Id	Transmission Type	Transmission Rule Name	Batch Rule Name	Deposit Notification
000999000	10			Y

Figure 6-42 Transmissions definition for Sending Point in workbook

Figure 6-43 is an example of setting the authorized originators for the sending point partner. Notice that the Sending Point is referred to as the *Processor* and the Originator is called *Depositor*.

Depositor (Partner Id)	Processor (Partner Id)
000123000	000999000
000456000	000999000
000789000	000999000
000999000	000999000

Figure 6-43 Authorized Originators for Sending Point in workbook

Expected Transmission for both sending points and receiving points appear on the same tab within the workbook. Figure 6-44 is an example of the definition of an expected transmission for both the sending and receiving points. The Inbound Indicator, which is not present in the Control Center, is critical to whether the expected transmission is for a sending point (Y) or a receiving point (N). In the example, row one defines a sending point expected transmission and row two defines one for a receiving point.

Partner Id	Inbound Indicator	Tracking Name	Business Day Category	Transmission Type Description	Expected By	Affects End Of Day
000999000	Y	Daily Transmission		10	14:00:00	N
000999000	N	Daily Distribution		10	07:50:00	Y

Figure 6-44 Expected Transmissions for Sending Point in workbook

After all the tabs have been updated in Configuration Data workbook, import the data by using the DSU tool import command. The execution of the DSU tool should be done from *install_directory/shared/v300/pfs/DSU/importexport/cmd*. For larger workbooks, use the 64-bit version from *install_directory/shared/v300/pfs/DSU/importexport/cmd64*. Run the following commands:

```
dsu import BaseImport.properties
```

or

```
dsu64 import BaseImport.properties
```

and

```
dsu import AchSharedImport.properties
```

or

```
dsu64 import AchSharedImport.properties
```

Be sure to run the **BaseImports** command before the **AchSharedImports** one.

The DSU tool will log the results of the command to a log file for later inspection. The log file is in *install_directory/shared/v300/pfs/DSU/importexport/cmd* or wherever the properties file specifies in the `logFileLocation` tag.

Additional information about the Data Setup Utility can be found in 1.5, “Importing and exporting system configuration” on page 20.

6.4 Configuring an originator

This section provides addition information about the **Configure Receiving From - Originator Related** and **Risk Management** properties and the parameters that are required to configure them. The section defines an originator. It also has a more detailed description of the properties and parameters that are related to an originator configuration within the Control Center. Finally, it provides guidance to configure the same properties by using the DSU.

An originator is an entity in Financial Transaction Manager for ACH that owns the initial payment request. The originator initiates payments into Financial Transaction Manager for ACH using a sending point. An originator can also be its own sending point, but this configuration is not a requirement.

The configurations settings for an originator enable the financial institution to:

- ▶ Subscribe to defined products
- ▶ Set close of business day risk actions
- ▶ Configure transmission destinations
- ▶ Define authorized message standards
- ▶ Set exposure limits

Use these configuration pages to configure an originator partner:

- ▶ Originator Related
 - Inbound Product Subscriptions
Subscribes the originator to available products.
 - Attributes
Configures attributes such as billing account and close of day risk actions.

- Authorized Destinations
Enables authorized destinations for the originator's data by message type.
- Authorized Message Types
Configure message types to be accepted from the originator.
- ▶ Risk Management
 - Exposure Limit Monitors
Sets exposure limits.
 - Batch/ICL Limits
Sets overall Batch/ICL limits for the originator.
 - Transaction Limits
Sets individual transaction limit for the originator.

6.4.1 Inbound Products Subscriptions

Configuring an originator product subscription enables the financial institution to define which products that an originator is associated with. Selecting **Originator is Authorized for Product** in the Transmission Rule Set enables this feature. The product association determines the business rules and workflow used to process transmissions from this originator.

To add a product subscription, click the **Inbound Product Subscription** link from the partner details view. This opens Step 1 in the Add Inbound Product Subscription window as shown in Figure 6-45.

Add Inbound Product Subscription

Step 1 of 2

ID: 000456000

Type: Customer ID

Name: Corporation-456

Inbound Product: --choose an inbound product-- *

Batch / ICL Validation Rule: --Use Existing Rule on Inbound Product--

Transaction Type: Default

Approval Required: Yes No Default

Figure 6-45 Originator Related - Add Inbound Products Subscriptions (1 of 2)

- ▶ ID [Workbook ONLY] {REQUIRED}
The ID of the partner.
- ▶ Type [Workbook ONLY] {REQUIRED}
Type of the partner ID.
- ▶ Name [Workbook ONLY] {REQUIRED}
Name of the partner.

- ▶ Inbound Product {REQUIRED}
Drop down list of products available for this originator.
- ▶ Batch/ICL Validation Rule {OPTIONAL}
Drop down list of Batch/ICL Validation rules. If a rule set is selected, it will **OVERIDE** the rule set associated with the product.
- ▶ Transaction Type {OPTIONAL}
Drop down list to define the type of transactions that the product is applied against. Selecting a value other than Default will **OVERRIDE** the setting that is defined in the product definition.
- ▶ Approval Required {OPTIONAL}
Indicates whether approval is required. Selecting a value other than Default will **OVERRIDE** the product definition for approvals.

Figure 6-46 illustrates Step 2 in the Add Inbound Product Subscription settings.

Add Inbound Product Subscription

Step 2 of 2

ID: 000999000
Type: Customer ID
Name: Bank, Corp, Clearing
Inbound Product: --choose an inbound product-- *
Inbound Service: --choose an inbound service-- *
Enable Billing: Yes No *


Figure 6-46 Originator Related: Add Inbound Products Subscriptions (2 of 2)

- ▶ ID [Workbook ONLY] {REQUIRED}
The ID of the partner.
- ▶ Type [Workbook ONLY] {REQUIRED}
Type of the partner ID.
- ▶ Name [Workbook ONLY] {REQUIRED}
Name of the partner.
- ▶ Inbound Product {REQUIRED}
Drop down list of products available to the originator. The products would be added in Step 1 of the configuration.
- ▶ Inbound Service {REQUIRED}
Drop down list of services available with the selected product.
- ▶ Enable Billing {REQUIRED}
Button that enables generation of billing entries for this service.

Figure 6-47 depicts an example of adding a product to the originator, using service default rules, overriding the product approval to not require approval, enabling a service on the product, and enabling billing for the service.


Inbound Product Subscription

Step 1 of 2

 **ID:** 000999000
Type: Customer ID
Name: Bank, Corp, Clearing

Inbound Product	Batch / ICL Validation Rule	Transaction Type	Approval Required
ACHI		Default	No

Step 2 of 2

 **ID:** 000999000
Type: Customer ID
Name: Bank, Corp, Clearing

Inbound Product	Inbound Service	Service Type	Enable Billing
ACHI	CBAL	Create balancing entries	Y

Figure 6-47 Inbound Product Subscription definition for Originator in Control Center

6.4.2 Attributes

Configuring Attributes lets the financial institution define additional attributes and behavior for an Originator.

To set attributes and close of day actions, click the **Attributes** link in the Originator Related box from the partner details view. This opens the Add Originator Attribute window as illustrated in Figure 6-48.

Add Originator Attribute

ID: 000456000
Type: Customer ID
Name: Corporation-456

Billing Account Number:

Administrative Returns Customer: Yes No

Risk Close of Day Actions

Monitor:	Default ▼
Batch / ICL:	Default ▼
Transaction:	Default ▼

Company Identifier:

Figure 6-48 Originator Related - Add Originator Attribute

- ▶ **ID [Workbook ONLY] {REQUIRED}**
The ID of the partner.
- ▶ **Type [Workbook ONLY] {REQUIRED}**
Type of the partner ID.

- ▶ Name [Workbook ONLY] {REQUIRED}

Name of the partner.
- ▶ Billing Account Number {OPTIONAL}

A Billing account number. This is an alphanumeric string that is a maximum of 14 characters in length. An account number here will be the associated billing account for this originator.
- ▶ Administrative Returns Customer {OPTIONAL}

Button that indicates whether this Originator is an administrative return customer. Selecting **Yes** causes Business Rules to assign a return endpoint to exception transactions.
- ▶ Risk Close of Day Actions {OPTIONAL}

The risk close of day action selections allow the financial institution to configure by partner the action that is taken on items that are awaiting risk review at the close of a business day. The following actions are available:

Default	The Risk system default value is used instead.
Accept	Accepts all items awaiting review.
Reject	Rejects all items awaiting review.
No action	No decisions are made.

 - Monitor {OPTIONAL}

Defines the actions that the Risk module runs during close of day processing. The monitor setting affect any suspended work that is associated with account monitoring.
 - Batch/ICL {OPTIONAL}

Configures the action to be taken by the Risk module on suspended batches at the close of the business day.
 - Transaction {OPTIONAL}

Defines the action to be performed by the Risk module during close of day processing on any suspended transactions.
- ▶ Company Identifier {OPTIONAL}

A field for entering the value for the Company Identifier. This value is only relevant in Financial Transaction Manager for Check.

Figure 6-49 on page 149 shows an example of an originator configured without administrative returns, the default value for account monitoring, taking no actions on suspended batches, and rejecting suspended transaction at close of the business day.

Add Originator Attribute

ID: 000999000
Type: Customer ID
Name: Bank, Corp, Clearing
Billing Account Number:
Administrative Returns Customer: Yes No

Risk Close of Day Actions

Monitor:
Batch / ICL:
Transaction:

Company Identifier:

Figure 6-49 Attribute definition for Originator in Control Center

6.4.3 Authorized Destinations

Configuring an authorized destination for the originator allows the financial institution to define who the originator can send completed transactions to. This is used when the Transmission Rule Set has **Originator is Authorized for Destination** enabled.

To authorize a destination, click the **Authorized Destinations** link from the partner details view. This opens the Add Destination selection windows as depicted in Figure 6-50.

Add Destination

Add Destination

ID: 000456000
Type: Customer ID
Name: Corporation-456

Filter

Available List (Partner ID)Partner Name - Partner ID		Selected List (Partner ID)Partner Name - Partner ID
<ul style="list-style-type: none"> (000123000) Bank-123 - 000123000 (000456000) Corporation-456 - 000456000 (000789000) Clearing House-789 - 000789000 (011000028) Financial Institution 3 - 011000028 (021001208) The Clearing House - 021001208 (041000014) Federal Reserve Bank - 041000014 (061000146) Federal Reserve Bank - 061000146 (123456780) First Global Bank (FGB) - 123456780 (987654320) Second National Bank (SNB) - 987654320 (APPL100001) Online Bill Payment System - APPL100001 (INTRNALACH) Internal ACH System - INTRNALACH (INTRNALCPA) Internal CPA System - INTRNALCPA (INTRNALEDI) Internal EDI System - INTRNALEDI (INTRNALSWF) Internal SWIFT System - INTRNALSWF (INTRNALWRE) Internal Wire System - INTRNALWRE (SMB1000001) PDQ Company - SMB1000001 	<input type="button" value="Add Selected (>)"/> <input type="button" value="Remove Selected (<)"/> <input type="button" value="Add All (>>)"/> <input type="button" value="Remove All (<<)"/>	<div style="border: 1px solid gray; height: 150px; width: 100%;"></div>

Figure 6-50 Originator Related: Add Authorized Destinations

Select the partners that you want from the Available List and click **Add Selected** to include the partner as a destination for this originator. Multiple partners can be selected by holding down the Ctrl key when you select the available partner.

Figure 6-51 shows The Clearing House-021001208, Federal Reserve Bank-041000014, and Federal Reserve Bank-06000146 as authorized destinations for the Originator.

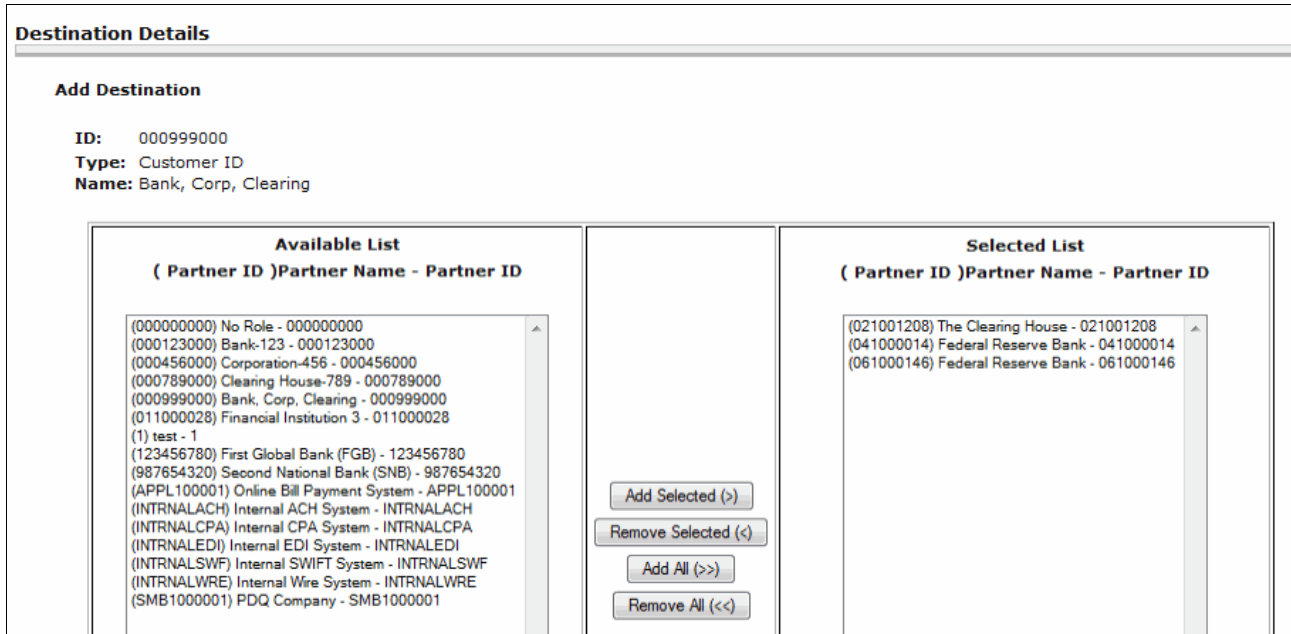


Figure 6-51 Destination definition for Originator in Control Center

6.4.4 Authorized Message Types

Configuring the Authorized Message Types defines which message types that the originator is authorized to transmit. When the Batch/ICL Rule Set has **Message Type Validation** enabled, messages not in the authorized list are rejected. This configuration provides the receiver of the transmissions with additional controls to verify the data that they are sending for their originators.

To authorize a message type, click the **Authorized Message Types** link in the partner details view. This opens a new tab that displays any authorized message types for the originator. To add a Message Type, select the **+** icon on the page as highlighted in Figure 6-52.

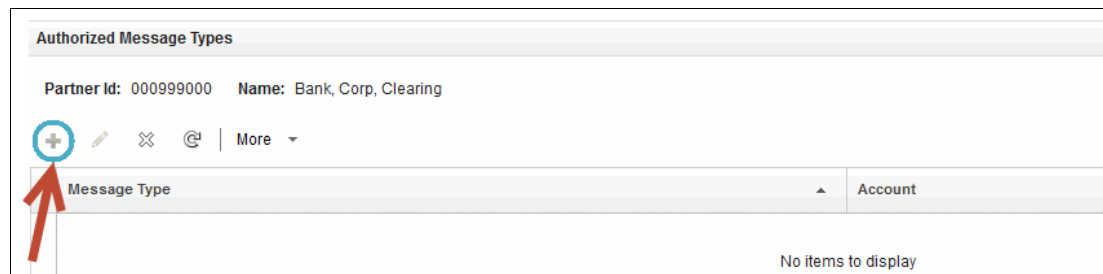


Figure 6-52 Authorized Message Types view

Upon selection of the **Add** icon, an Add Authorized Message Type window as shown in Figure 6-53 is displayed.

Figure 6-53 Originator Related: Add Authorized Message Types

- ▶ Partner [Workbook ONLY] {REQUIRED}
 - The ID of the partner.
- ▶ Message Type [{REQUIRED}]
 - Drop down list of the message types to choose from.
- ▶ Account {OPTIONAL}
 - If specified, this account is used to create offset debits and credits.

Figure 6-54 demonstrates authorization of Type 820 messages to be offset using a specific account.

Message Type	Account
820	123456-00

Figure 6-54 Authorized Message Type definition for Originator in Control Center

6.4.5 Exposure Limit Monitors

Exposure Limit Monitors accumulate the total credit and debit activity for originators using a number of methods. The monitors include a moving time window during which financial activity can be measured. Activity can be measured for specific message formats, message types, or products. Limits are established for each monitor. If a limit is exceeded for the specified type of activity and the specified time-window, work is held from further processing until it is reviewed by an authorized user. Either the credit field or the debit fields must be completed to create the monitor. Both credit and debit limit monitors can be active.

Monitors are provided at the batch/ICL level and the transaction level as well.

To configure an exposure limit monitor, click the **Exposure Limit Monitors** link from the partner details view. This opens the Exposure Limit Monitors page as shown in Figure 6-55.

Exposure Limit Monitors

ID: 000456000
Partner Name : Corporation-456
Monitor Description:
Monitor Level Batch Transaction
Monitor Type: --choose a monitor type-- *
Prefunded:
Credit Monitor Period (Days):
Credit Limit: ⓘ
Credit Error Code: ⓘ
Debit Monitor Period (Days):
Debit Limit: ⓘ
Debit Error Code: ⓘ
Effective Begin Date (MM/dd): (MM/dd)
Effective End Date (MM/dd): (MM/dd)

Figure 6-55 Risk Management - Add Exposure Limit Monitors

- ▶ ID [Workbook ONLY] {REQUIRED}
The ID of the partner.
- ▶ Name [Workbook ONLY] {REQUIRED}
Name of the partner.
- ▶ Monitor Description {OPTIONAL}
Descriptive name for the Exposure Limit Monitor.
- ▶ Monitor Level {REQUIRED}
Indicates whether the monitor is occurring on the Batch or Transaction level. This selection determines the Monitor Types available for selection.
- ▶ Monitor Type {REQUIRED}
The level for monitoring to be run. See Table 6-4 for the monitor types based on the monitor level.

Table 6-4 Monitor Types

Batch	Transaction
▶ Inbound Message Standard	▶ Outbound Message Standard
▶ Inbound Message Type	▶ Outbound Message Type
▶ Product	▶ Inbound Product
▶ Account	▶ Account

- ▶ Message Standard / Message Type / Product Subscriptions/ Account {REQUIRED}

After a Monitor Type is selected, an available list of items of that type will be available for selection to further refine the monitor.
- ▶ Prefunded {OPTIONAL}

Check box to have exposure limit monitoring run at the prefunded user exit level. The prefunded user exit is custom code provided by the financial institution. If **Prefunded** is selected, this code would be called to determine whether the partner's activity is within the set limits. This code uses the custom attributes configured for the partner to supply these limits. The user exit provides return values that indicate whether financial activity is approved or not.
- ▶ Credit Monitor Period {OPTIONAL}

A time-window period, in days, to accumulate credit activity for monitoring.
- ▶ Credit Limit {OPTIONAL}

The total credit amounts that the originator can receive in the time period.
- ▶ Credit Error Code {OPTIONAL}

An error code to be recorded when limits are exceeded. If no error codes are provided, the pre-configured code that is provided on the Risk General Properties is used. The reject level of the error code determines the action to perform upon exceeding a limit monitor.
- ▶ Debit Monitor Period {OPTIONAL}

A time-window period, in days, to accumulate debit activity for monitoring.
- ▶ Debit Limit {OPTIONAL}

The total debit amounts that the originator can receive in the time period.
- ▶ Debit Error Code {OPTIONAL}

An error code to be recorded when limits are exceeded. If an error code is not specified, the pre-configured code that is provided on the Risk General Properties is used. The reject level of the error code determines the action to perform upon exceeding a limit monitor.
- ▶ Effective Begin Date (MM/dd) {OPTIONAL}

Date to start limit monitoring. If the date is specified, the monitor is active for the next business day.
- ▶ Effective End Date (MM/dd) {OPTIONAL}

Date to end limit monitoring. If no date is specified, limit monitoring will always be active.

Figure 6-56 illustrates creating an exposure risk monitor at the batch level on an inbound message type of **820** with a credit limit of **1,000,000** and a debit limit of **250,000** each over a 5-day period between November 22nd and December 31st. If either of the limits is exceeded, the default error code is used.

Exposure Limit Monitors	
ID:	000999000
Partner Name :	Bank, Corp, Clearing
Monitor Description:	Holiday Season Monitor
Monitor Level	<input checked="" type="radio"/> Batch <input type="radio"/> Transaction
Monitor Type:	Inbound Message Type *
Message Type:	820 *
Prefunded:	<input type="checkbox"/>
Credit Monitor Period (Days):	5
Credit Limit:	1000000
Credit Error Code:	<input type="text"/>
Debit Monitor Period (Days):	5
Debit Limit:	250000
Debit Error Code:	<input type="text"/>
Effective Begin Date (MM/dd):	11/22 (MM/dd)
Effective End Date (MM/dd):	12/31 (MM/dd)

Figure 6-56 Exposure Limit Monitor definition for Originator in Control Center

6.4.6 Batch/ICL Limits

Batch/ICL limits work in much the same way as the Exposure Limit monitors, except these limits are for an individual item and not an accumulation of items over a time window. Limit checking can be done for specific message standard, message type, or product. Limits are established for each monitor. If a limit is exceeded for the specified type of activity, work is held from further processing until it is reviewed by an authorized user. Either the credit field or the debit fields must be completed to create the batch limit. It is possible to set both the credit and debit limits.

To configure a limit at the batch level, select the **Batch/ICL Limits** link from the partner details view. This opens the Batch/ICL Limit window as depicted in Figure 6-57.

Figure 6-57 Risk Management - Add Batch/ICL Limits

- ▶ ID [Workbook ONLY] {REQUIRED}

The ID of the partner.
- ▶ Name [Workbook ONLY] {REQUIRED}

Name of the partner.
- ▶ Monitor Description {OPTIONAL}

Descriptive name for the Batch/ICL Limit.
- ▶ Monitor Type {REQUIRED}

The level for monitoring to be run. The following monitor types are available:

 - Inbound Message Standard
 - Inbound Message Type
 - Product
- ▶ Message Standard / Message Type / Product Subscriptions {REQUIRED}

After a Monitor Type is selected, an available list of items of that type will be available for selection to further refine the monitor. A specific account cannot be specified with the limit monitor.
- ▶ Credit Limit {OPTIONAL}

The total credit amounts the originator can receive in the time period.
- ▶ Credit Error Code {OPTIONAL}

An error code to be recorded when limits are exceeded. If no error codes are provided, the pre-configured code provided on the Risk General Properties is used. The reject level of the error code determines the action to perform upon exceeding a limit monitor.
- ▶ Debit Limit {OPTIONAL}

The total debit amounts that the originator can receive in the time period.

- ▶ Debit Error Code {OPTIONAL}

An error code to be recorded when limits are exceeded. If an error code is not specified, the pre-configured code provided in the Risk General Properties is used. The reject level of the error code determines the action to perform upon exceeding a limit monitor.
- ▶ Effective Begin Date (MM/dd) {OPTIONAL}

Date to start limit monitoring. If a date is specified, the monitor is active for the next business day.
- ▶ Effective End Date (MM/dd) {OPTIONAL}

Date to end limit monitoring. If no date is specified, limit monitoring will always be active.

Figure 6-58 provides an example of a limit on the inbound product ACHI where the credits are limited to 10,000 and debits are limited to 5000. If either of the limits is exceeded, a custom error code is generated. These limits have no start and end dates.





Batch / ICL Limit	
ID:	000999000
Partner Name :	Bank, Corp, Clearing
Monitor Description:	ACH Inbound Batch Limit
Monitor Type:	Inbound Product *
Product Subscriptions :	ACHI *
Credit Limit:	10000 
Credit Error Code:	RSKBCE01 
Debit Limit:	5000 
Debit Error Code:	RSKBDE01 
Effective Begin Date (MM/dd):	<input type="text"/> (MM/dd)
Effective End Date (MM/dd):	<input type="text"/> (MM/dd)

Figure 6-58 Batch/ICL Limit definition for Originator in Control Center

6.4.7 Transaction Limits

Transaction limits are similar to the batch limits, except that the transaction limit is checking individual transactions. The transactions limits are on individual items and not accumulations over a time window.

Limit checking can be done for specific message standards or message types. Limits are established for each monitor and, if a limit is exceeded for the specified type of activity, work is held from further processing until it is reviewed by an authorized user. Either the credit field or the debit fields must be completed to create the limit check. It is possible to set both the credit and debit limits.

To configure a limit at the transaction level, click **Transaction Limits** link from the partner details view. This opens the Transaction Limit page as shown in Figure 6-59.

Figure 6-59 Risk Management - Add Transaction Limits

- ▶ ID [Workbook ONLY] {REQUIRED}

The ID of the partner.
- ▶ Name [Workbook ONLY] {REQUIRED}

Name of the partner.
- ▶ Monitor Description {OPTIONAL}

Descriptive name for the Transaction Limit.
- ▶ Monitor Type {REQUIRED}

The level for monitoring to be run. The following monitor types are available:

 - Outbound Message Standard
 - Outbound Message Type
 - Account
- ▶ Message Standard / Message Type / Account {REQUIRED}

After a Monitor Type is selected, an available list of items of that type will be available for selection to further refine the monitor.
- ▶ Credit Limit {OPTIONAL}

The total credit amounts the originator can receive in the time period.
- ▶ Credit Error Code {OPTIONAL}

An error code to be recorded when limits are exceeded. If no error code is provided, the pre-configured code provided in the Risk General Properties is used. The reject level of the error code determines the action to perform upon exceeding a limit monitor.
- ▶ Debit Limit {OPTIONAL}

The total debit amounts that the originator can receive in the time period.

- ▶ Debit Error Code {OPTIONAL}

An error code to be recorded when limits are exceeded. If an error code is not specified, the pre-configured code provided on the Risk General Properties is used. The reject level of the error code determines the action to perform upon exceeding a limit monitor.
- ▶ Effective Begin Date (MM/dd) {OPTIONAL}

Date to start limit monitoring. If a date is specified, the monitor is active for the next business day.
- ▶ Effective End Date (MM/dd) {OPTIONAL}

Date to end limit monitoring. If no date is specified, limit monitoring will always be active.

An example of a transaction limit for the Message Standard NACHA of 5000 for credits and 10,000 for debits is illustrated in Figure 6-60.





Transaction Limit	
ID:	000999000
Partner Name :	Bank, Corp, Clearing
Monitor Description:	Trasaction Limit
Monitor Type:	Outbound Message Standard *
Message Standard:	NACHA *
Credit Limit:	5000 
Credit Error Code:	<input type="text"/> 
Debit Limit:	10000 
Debit Error Code:	<input type="text"/> 
Effective Begin Date (MM/dd):	<input type="text"/> (MM/dd)
Effective End Date (MM/dd):	<input type="text"/> (MM/dd)

Figure 6-60 Transaction Limit definition for Originator in Control Center

Using the data setup utility (DSU)

Configuring Originator or Depositor Properties using the DSU requires validation and updates in both the Base Configuration and the ACH Shared Configuration set of workbooks. These workbooks are distributed with Financial Transaction Manager for ACH. The default names of the files to be validated or updated are:

- ▶ Base Configuration Files
 - *install_directory/shared/v300/pfs/DSU/importexport/cmd/BaseImport.properties*
 - *install_directory/shared/v300/pfs/DSU/importexport/xls/BaseMap.xls*
 - *install_directory/shared/v300/pfs/DSU/importexport/xls/BaseXREF.xls*
 - *install_directory/shared/v300/pfs/DSU/importexport/xls/SampleBaseConfiguration.xls*
- ▶ ACH Configuration Files
 - *install_directory/shared/v300/pfs/DSU/importexport/cmd/AchSharedImport.properties*
 - *install_directory/shared/v300/pfs/DSU/importexport/xls/SharedMap.xls*

- `install_directory/shared/v300/pfs/DSU/importexport/xls/SharedXREF.xls`
- `install_directory/shared/v300/pfs/DSU/importexport/xls/SampleAchConfiguration.xls`

where `install_directory` is the directory that was specified when installing Financial Transaction Manager for ACH.

Table 6-5 shows the correlation from the Originator Related properties links in the Control Center to the workbook tabs.

Table 6-5 Originator Related Properties Control Center Links to workbook tabs

Control Center Link Configuration → Partners → Partners → (view details) →	Workbook - Tab
Inbound Products Subscriptions (Step 1)	SampleAchConfiguration.xls - Depositor subscribed products
Inbound Products Subscriptions (Step 2)	SampleAchConfiguration.xls - Depositor Subscribed Services
Attributes	SampleBaseConfiguration.xls - Partner Depositor Attributes
Authorized Destinations	SampleBaseConfiguration.xls - Destination to Depositor
Authorized Message Types	Configuration Not Available from the DSU

Table 6-6 shows the correlation from the Originator Related Risk Management properties links in the Control Center to the workbook tabs.

Table 6-6 Originator Risk Management Properties Control Center Links to workbook tabs

Control Center Link Configuration → Partners → Partners → (view details) →	Workbook - Tab
Exposure Limit Monitors Batch / ICL Limits Transaction Limits	SampleBaseConfiguration.xls - Risk Monitor Def

BaselImport.properties and AchSharedImport.properties

In the properties file, validate the workbook reference tags have the correct file names for the Map, Cross Reference, and Configuration Data workbooks. If the workbook names are different from the defaults, update the designated files according to the instructions under the default name. The specific tags to be validated in `BaseImport.properties` are shown in Figure 6-61.

```
mapFileName      = ../xls/BaseMap.xls
XREFFileName    = ../xls/BaseXREF.xls
inRulesFileName = ../xls/SampleBaseConfiguration.xls
```

Figure 6-61 `BaseImport.properties` Workbook Reference Tags

The specific tags to be validated in AchShareImport.properties are shown in Figure 6-62.

```
mapFileName      = ../xls//SharedMap.xls
XREFFileName    = ../xls//SharedXREF.xls
inRulesFileName = ../xls//SampleAchConfiguration.xls
```

Figure 6-62 AchShareImport.properties Workbook Reference Tags

BaseMap.xls and SharedMap.xls

The Map workbook should not require any modifications unless tab names or column names were modified in either the Cross Reference or Configuration Data workbooks. The names of the tabs and columns must match between the MAP and the Configuration Data workbooks.

BaseXREF.xls and SharedXREF.xls

On the Import tab, ensure that the value in the Import column is **Y** and the Mode column is **InsertUpdate** in the rows where the Import sheet name value is in Table 6-5 on page 159 and Table 6-6 on page 159.

SampleBaseConfiguration.xls and SampleAchConfiguration.xls

For the tabs Depositor subscribed products and Depositor Subscribed Services in SampleAchConfiguration.xls and Partner Depositor Attributes, Destination to Depositor, and Risk Monitor Def in SampleBaseConfiguration.xls, enter a single row of data for each entry. Each of these tabs can contain multiple rows for the same partner. The column names on the worksheet are shown with the names of the input boxes used in the Control Center. See 6.4.1, “Inbound Products Subscriptions” on page 145 for additional information about each field.

To clarify any differences between the two methods of configuration, Figure 6-63 through Figure 6-67 on page 161 illustrate the Originator configuration using the workbook tabs. The configuration data matches the data used in the examples in 6.4.1, “Inbound Products Subscriptions” on page 145. The Authorized Message Types cannot be set using the workbooks and must be configured using the Control Center.

Figure 6-63 and Figure 6-64 depicts the settings for the inbound product subscriptions for an Originator. Note the Originator is referred to as a *Depositor*.

Depositor (Partner Id)	Inbound Product Code	Batch Rule Name	Transaction Type	Approval Indicator
000999000	ACHI			N

Figure 6-63 Inbound Products Subscription (Step 1) definition for Originator in workbook

Figure 6-64 shows the second step of the process.

Depositor (Partner Id)	Inbound Product Code	Inbound Service Code	Billing Indicator
000999000	ACHI	CBAL	Y

Figure 6-64 Inbound Products Subscription (Step 2) definition for Originator in workbook

Figure 6-65 illustrates the attributes settings for an Originator. Note that the workbook contains columns that are setting values specific to Financial Transaction Manager for Check.

Partner Id	Deposit Settlement Account	Deposit Billing Account	Adjustment Account	Risk Monitor Close of Day Action	Risk Batch Close of Day	Risk Transaction Close of Day Action	Administrative Returns Customer	Company Id	Default GL Field 2	Default GL Field 3	Default GL Field 4	Default GL Field 5	Default GL Field 6	Default GL Field 7
000999000		567345-99		N	N	R	N							

Figure 6-65 Attribute definition for Originator in workbook

Figure 6-66 is an example of setting the authorized destinations for an Originator. Note that the Originator is referred to as a *Depositor*.

Destination (Partner Id)	Depositor (Partner Id)
021001208	000999000
041000014	000999000
061000146	000999000

Figure 6-66 Authorized Destinations definition for Originator in workbook

Figure 6-67 illustrates the risk management settings for the Originator. These setting are on three windows in the Control Center, but a single worksheet. The **Type** field corresponds with the individual links in the Control Center. Table 6-7 shows the value translations for the columns. The credit limit and debit limit should be specified in cents.

Table 6-7 Risk management settings for the Originator

Column Name	Field Settings
Partner Type	1 (Always)
Type	0=Account Monitor 1=Batch Limit 2=Transaction Limit
Monitor Type	0=Message Type 1=Product 2=Account 3=Message Standard
Monitor Name	Monitor Type = 0 enter the Message Type Monitor Type = 1 enter the inbound product name Monitor Type = 2 enter the account number Monitor Type = 3 enter the Message Standard

Partner Id	Partner Type	Type	Monitor Type	Monitor Name	Description	Credit Period (Days)	Credit Limit	Credit Error Code	Debit Period (Days)	Debit Limit	Debit Error Code	Start Date	End Date	Prefunded Account	Monitor Level
000999000	1	0	0	820	Holiday Season Monitor	5	100000000		5	25000000		11/22	12/31		B
000999000	1	1	2	ACHI	ACH Inbound Batch Limit		1000000	RSKCBE01		500000	RSKDBE01				B
000999000	1	2	3	2	Transaction Limit		500000			1000000					T

Figure 6-67 Exposure Limit Monitor, Batch/ICL Limits, and Transaction Limits definition for Originator in workbook

After all the tabs are updated in Configuration Data workbook, import the data by using the DSU tool import command. The execution of the DSU tool should be done from *install_directory/shared/v300/pfs/DSU/importexport/cmd* or the 64-bit version from *install_directory/shared/v300/pfs/DSU/importexport/cmd64* for larger workbooks by using these commands:

```
dsu import BaseImport.properties or dsu64 import BaseImport.properties
```

and

```
dsu import AchSharedImport.properties or dsu64 import AchSharedImport.properties
```

Be sure to run the BaseImports command before the AchSharedImports command.

The DSU tool will log the results of the command to a log file for later inspection. The log file is in *install_directory/shared/v300/pfs/DSU/importexport/cmd* or wherever the properties file specifies in the `logFileLocation` tag.

Additional information about the Data Setup Utility can be found in 1.5, “Importing and exporting system configuration” on page 20.

6.5 Configuring a receiving point

This section provides addition information about the **Configure Sending To - Receiving Point Related** and **Risk Management** properties and the parameters that are required to configure them. The section contains a definition of a receiving point. It also contains a more thorough description of the properties and parameters related to a receiving point configuration within the Control Center. Lastly, it provides the information necessary to configure the same properties by using the DSU.

A receiving point is an entity that Financial Transaction Manager for ACH sends transmissions to. Transmissions sent to receiving points have completed processing through Financial Transaction Manager for ACH business rules and workflows.

The configurations settings for a receiving point enable the financial institution to accomplish these tasks:

- ▶ Set delivery configurations and define endpoints
- ▶ Enable services and their billing options
- ▶ Configure attributes
- ▶ Set schedules for outbound transmissions
- ▶ Set risk management account rules

The pages to configure a receiving point are:

- ▶ Receiving Point Related
 - Endpoints
Configures the characteristics of the endpoint
 - Transmission Deliveries
Configures the transmission delivery. The delivery information defined is used to schedule outbound distributions according to the receiving point's needs.
 - Attributes
Configures the distribution notification setting.

- Expected Transmissions
Configure any expected deliveries.
- Transmission Configuration
Configure settings for EDI and CPA distribution transmissions.
- ▶ Risk Management
 - Account Rules
Configure a rule set for a specific account.

6.5.1 Endpoints

Configuring receiving points endpoints provides the financial institution with the ability to define the setting necessary to distribute the processed transaction out of Financial Transaction Manager for ACH. The endpoint defines how transmissions being exchanged between two partners are determined. Endpoints specify the message standard and the sending and receiving point of the transmissions. Multiple endpoints can be defined for the same partner. Transmission definitions and building options must be created before endpoints can be created.

To view Endpoints, click the **Endpoints** link from the partner details view. This opens the Manage Endpoints page. Endpoint setup has either 3 or 4 total steps depending on the selections made in Step 1. To add an endpoint, click **Add Endpoints**.

Figure 6-68 illustrates Step 1 of the Add Endpoint page. Endpoint can also be added directly from the configuration menu by clicking **Configuration** → **Partners** → **Endpoints**.

Add Endpoint

Step 1 of 3 (Endpoint Information)

Endpoint ID: *

Receiving Point: 000789000

Destination Routing Transit:

Return Routing Transit:

Originator Routing Transit:

Outbound Product: --choose an outbound product option-- ▾

Collection Type: --choose a collection type-- ▾

Work Type:

Building Option: --choose a building option-- ▾

Transmission Definition: --choose a distribution transmission definitio ▾

Null File Required: Yes No

Bill To Original : Yes No

Returns Indicator:

Replication Endpoint: None ▾

Distribution Billing Account:

Settlement Cutoff Days : --Please select-- ▾

Distribution Suspended Accumulator Id :

Distribution Settled Accumulator Id :

Figure 6-68 Receiving Point Related: Add Endpoints Step 1

► **Endpoint ID**

A unique identifier for the endpoint. This is an alphanumeric string with a maximum of 10 characters in length.

► **Receiving Point [Workbook ONLY] {REQUIRED}**

The ID of the partner. If the endpoint is being added from the partner details view, this field is prefilled. Otherwise, select from the available partners in the drop down menu.

► **Destination Routing Transit {OPTIONAL}**

The routing number of the receiving financial institution. A routing number is a nine digit number with a specific format. The routing transit number must be in the format of 99999-999, five digits - three digits for Canadian routing, or nine digits that are composed of an eight digit routing number and a one digit check digit. Entries comprising nine digits are validated with a mod check.

► **Return Routing Transit {OPTIONAL}**

The routing number of the sending financial institution. A routing number is a nine digit number with a specific format. The routing transit number must be in the format of 99999-999, five digits - three digits for Canadian routing, or nine digits that are composed

of an eight digit routing number and a one digit check digit. Entries comprising nine digits are validated with a mod check.

► **Originator Routing Transit {OPTIONAL}**

The routing number of the originator of the payment request.

Record 01 matching of this value is done in the following order:

- a. File Definitions window attribute Originator Routing Transit
- b. Bank window attribute Routing Number.

All other Record matching uses this order:

- a. Endpoint window attribute Originator Routing Transit (This Setting)
- b. Transmission Definitions window attribute Originator Routing Transit
- c. Bank window attribute Routing Number

The routing number is a nine digit number with a specific format. The routing transit number must be in the format of 99999-999 (five digits - three digits) for Canadian routing, or nine digits that are composed of an eight digit routing number and a one digit check digit. Entries comprising nine digits are validated with a mod check.

► **Outbound Product {OPTIONAL}**

The product code identifies the outbound product that should be used for this endpoint. It is a drop-down menu that shows all the outbound product codes in the system. If an outbound product is selected, then the **Collection Type** and **Work Type** fields will not be available. The details of the chosen outbound product are used in place of these fields.

► **Building Options {REQUIRED IF an Outbound Product is NOT Selected}**

A drop-down menu that lists the build options available for selection. If an endpoint is configured with an Outbound Product AND a Building Option, the building option that is configured in the endpoint definition will **OVERRIDE** the building option that is configured in the Outbound Product.

► **Transmission Definition {REQUIRED}**

A drop-down menu of available transmission definitions. The transmission definition tells Financial Transaction Manager for ACH how to format the outbound transmission.

► **Bill to Original {OPTIONAL}**

Indicates whether the billing should be to the original endpoint when a Replication Endpoint is defined.

► **Replication Endpoint {OPTIONAL}**

A drop-down menu of all existing endpoints. If set, it defines how a second set of replica transmissions are built. Transactions mapped to an endpoint associated with a replica appear in both the original endpoint transmission and the replica endpoint transmission. Each transmission contains the same number of transactions and batches. The replication endpoint can specify different building options including a different format transmission.

► **Distribution Billing Account {OPTIONAL}**

Account number to be used for Product and Services Billing for this endpoint. If this field is blank, the Distribution Routing Transit is used for charges.

► **Settlement Cutoff Days {OPTIONAL}**

A drop-down menu to select the Settlement Cutoff Days configuration used by Business Rules Server to determine the processing or distribution business date to assign an item to. The items in the menu are defined on the Settlement Cutoff Days view. This view also provides more details about the settlement cutoff window. To see the Settlement Cutoff Days view, click **Configuration** → **System** → **Settlement Cutoff Days**.

- ▶ Distribution Suspended Accumulator ID {OPTIONAL}

The ID of the accumulator to be used for suspended items in the distribution. The accumulator ID must already have been defined in the Settlement Accumulators list to be a valid entry in the endpoint configuration.

- ▶ Distribution Settled Accumulator ID {OPTIONAL}

The ID of the accumulator to be used for settled items in the distribution. The accumulator ID must already have been defined in the Settlement Accumulators list to be a valid entry in the endpoint configuration.

Note: The configuration fields Collection Type, Work Type, Null File Required, and Returns Indicator are all specific to Financial Transaction Manager for Check and have been removed from the above list. The fields should not contain any data when configuring an endpoint in Financial Transaction Manager for ACH.

If a product is selected in Step 1 Outbound Product, then an additional step appears in the Endpoint Process. This is Step 2 of 4 (Service Information). In this step, the add-on outbound services that are defined for the product can be selected as shown in Figure 6-69.

The screenshot shows a window titled "Add Endpoint". Inside, it says "Step 2 of 4 (Service Information)". There are three fields: "Endpoint ID:" with the value "999999999"; "Service:" with a dropdown menu showing "--choose an outbound service--" and a red asterisk to its right; and "Billing Indicator:" with two radio buttons, "Yes" (selected) and "No".

Figure 6-69 Receiving Point Related - Add Endpoints Step 2

- ▶ Endpoint ID [Workbook ONLY] {REQUIRED}

The ID of the endpoint, as specified in Step 1.

- ▶ Service {REQUIRED}

A drop-down menu of available services that are defined for the product selected in Step 1.

- ▶ Billing Indicator {REQUIRED}

A button to indicate whether billing entries for the service should be generated. The default is **Yes**.

- ▶ MICR Edit Prefix {OPTIONAL}

This field is specific to Financial Transaction Manager for Check only.

The user must **Add** the service to the list before advancing to the next step to include the service in the endpoint configuration.

The next Endpoint configuration Step 3 or Step 2 (if no product is selected) is for Endpoint Custom Attributes. These would be user-defined attributes. The Financial Transaction Manager for ACH reference application does not support any endpoint custom attributes as shown in Figure 6-70.

Add Endpoint

Step 3 of 4 (Custom Attributes Information)

Endpoint ID: 999999999

Endpoint Custom Attributes

Attribute Name	Value
No attributes present	

Figure 6-70 Receiving Point Related - Add Endpoint Step 3

The final Endpoint configuration Step 4 or Step 3 (if no product is selected) Endpoint configuration is for Legacy Attribute Information and is for compatibility with the earlier version of Financial Transaction Manager for ACH. The use of these fields is not addressed in this book.

Figure 6-71 is an example of an endpoint definition using the Outbound Product ACHO and the outbound service CUT1. It defines uses the settlement cutoff day rules for NACHA and the NACHAFGB-FedAcct and NACHAFGB-FEDSusp accumulators.

Endpoint Details

Step 1 of 4 (Endpoint Information)

Endpoint ID: 999999999
 Receiving Point: 000999000
 Destination Routing Transit: 061000146
 Return Routing Transit: 000999000
 Originator Routing Transit: 000123000
 Outbound Product: ACHO
 Collection Type:
 Work Type:
 Building Option:
 Transmission Definition: NACHA 0001
 Null File Required: No
 Bill To Original: Yes
 Returns Indicator:
 Replication Endpoint: --
 Distribution Billing Account:
 Settlement Cutoff Days: NACHA
 Distribution Suspended Accumulator Id: NACHAFGB-FedSusp
 Distribution Settled Accumulator Id: NACHAFGB-FedAcct

Step 2 of 4 (Service Information)

Endpoint ID: 999999999

Service	Service Type	Billing Indicator
CUT1	Cutoff	Yes

Step 3 of 4 (Custom Attributes Information)

Endpoint ID: 999999999

Endpoint Custom Attributes

Attribute Name	Value
No attributes present	

Step 4 of 4 (Legacy Attributes Information)

Endpoint ID: 999999999

Kill Line1:
 Kill Line2:
 Kill Line3:
 Kill Line4:
 Special Instruction Line1:
 Special Instruction Line2:
 Special Instruction Line3:
 On Us: No
 Paper Cash Letter: No

Figure 6-71 Endpoint definition for Receiving Point in Control Center

6.5.2 Transmission Deliveries

The configuration of transmission deliveries lets the financial institution set up schedules to distribute outbound transmission based on the receiving partner's processing needs.

To view Transmission Deliveries, click the **Transmission Deliveries** link from the partner details view. This opens the Manage Transmission deliveries window. To add a transmission delivery schedule, click **Add Transmission deliveries**. Figure 6-72 illustrates the configuration necessary for adding a transmission delivery.

Add Receiving Point Transmission Deliveries

Type: Customer ID
ID: 000789000
Name: Clearing House-789

End of Day Delivery: Yes No

Delivery Time: 01 37 PM *

Cutoff Time: 01 27 PM *

Time Zone: Eastern Time - EST5EDT (GMT -5:00 DST) *

Transmission Definition: --choose a transmission d *

No Earlier Than: Yes No Default

Business Day

Use Offset: Yes No

Business Day Of Week: --choose a day-- *

Delivery Day Of Week: --choose a day-- *

Holiday Delivery: Always *

Figure 6-72 Receiving Point Related - Add Transmission Deliveries

- ▶ Type [Workbook ONLY] {REQUIRED}
- ▶ ID [Workbook ONLY] {REQUIRED}
- ▶ Name [Workbook ONLY] {REQUIRED}
- ▶ End of Day Delivery {REQUIRED}

Type of the partner ID.

The ID of the partner.

Name of the partner.

A button to determine whether the delivery is End of Day. The default is **No**, or not end of day. If **Yes** is selected, only the End of Day Delivery has (Y/N) option and the default value should be set to **No**. If **Yes**, only the transmission definition needs to be configured.

Multiple delivery times can be added, but only one End Of Day delivery can be added to the delivery list. If no EOD delivery is added, then a warning message is generated.

- ▶ **Delivery Time {REQUIRED}**
The delivery time is the time at which the receiving partner considers the transmission late. A delivery time is considered missed if the transmission is not successfully placed on the routing channel by the delivery time. The delivery time is set with three drop-down menus for hours, minutes, and AM/PM.
- ▶ **Cutoff Time {REQUIRED}**
The cutoff time is the time when the processing closes. No additional payments are added to the transmission after the cutoff time. The building process then begins so that the transmission can be distributed to the partner. The cutoff time is set by using three drop-down menus to enter hours, minutes, and AM/PM.
- ▶ **Time Zone {REQUIRED}**
This drop-down menu allows you to select the time zone to be used for the delivery and cutoff times.
- ▶ **Transmission Definition {REQUIRED}**
The transmission definition is the set of instructions that are used to build and release the transmission to the receiving point partner. Select from a drop-down menu of transmission definitions to configure within Financial Transaction Manager for ACH.
- ▶ **No Earlier Than {REQUIRED}**
A button to configure whether to hold the file until the transmission deadline or not. Selecting **Yes** or **No** overrides the auto release property defined for the Transmission Properties. Selecting **Default** uses the value set by the Auto Release property value in the Transmission Properties.
- ▶ **Use Offset {REQUIRED}**
A button that configures the business day fields. If set to **Yes**, only the **Business Day Offset** field needs to be set. Otherwise, the **Business Day Of Week**, **Delivery Day Of Week**, and **Holiday Delivery** fields must be set.
- ▶ **Business Day Offset {REQUIRED if Use Offset is Yes}**
The offset from the processing business day that the file is delivered.
- ▶ **Business Day Of Week {REQUIRED if Use Offset is No}**
The processing business day of the week.
- ▶ **Delivery Day Of Week {REQUIRED if Use Offset is No}**
The day of the week that the delivery is run.
- ▶ **Holiday Delivery {REQUIRED if Use Offset is No}**
A button to configure how deliveries are handled on Holidays. The options to set for holiday delivery are:
 - Always
 - Only if the previous business day was a holiday
 - Not if the previous business day was a holiday
 - Not if business day is a holiday

Figure 6-73 has an example of three delivery schedules:

- ▶ One specifying the time and business and delivery days and holiday delivery
- ▶ An end of day delivery
- ▶ A delivery schedule using the business day offset value

Manage Transmission deliveries											
Type: Customer ID											
ID: 000999000											
Name: Bank, Corp, Clearing											
Page 1 of 1											
Beginning		Back 10 Pages			Back 1 Page		[1]	Forward 1 Page		Forward 10 Pages	
Delivery Time	Cutoff Time	Time Zone	Transmission Definition	No Earlier Than	Business Day Offset	Business Day Of Week	Delivery Day Of Week	Holiday Delivery	Endpoints		
8:00 AM	7:45 AM	Central Time - CST6CDT (GMT -6:00 DST)	NACHA 0001	Y		Friday	Monday	A	1		
EOD	EOD	EOD	NACHA 0001	--N/A--	--N/A--	--N/A--	--N/A--	--N/A--	1		
4:00 PM	3:45 PM	Central Time - CST6CDT (GMT -6:00 DST)	NACHA 0001	Y	2				1		

Figure 6-73 Transmission Deliveries definition for Receiving Point in Control Center

6.5.3 Attributes

The receiving point has only one attribute that can be configured. The setting determines whether distribution notifications are sent to the receiving point. This setting overrides the setting for distribution notifications define for the transmission type.

To set an attribute, click the **Attributes** link in the Receiving Point Related box from the partner details view. This opens the Define Receiving Point Attributes window. Figure 6-74 illustrates the window for setting the distribution notifications.

Define Receiving Point Attributes

Define Receiving Point Attributes

ID: 000789000

Type: Customer ID

Name: Clearing House-789

Distribution Notification: Yes No Default *

Figure 6-74 Receiving Point Related - Add Attributes

- ▶ ID [Workbook ONLY] {REQUIRED}

The ID of the partner to configure the transmission type to.
- ▶ Type [Workbook ONLY] {REQUIRED}

Type of the partner ID.
- ▶ Name [Workbook ONLY] {REQUIRED}

Name of the partner.
- ▶ Distribution Notification {REQUIRED}

A button that indicates whether to enable notification of distribution messages. Setting **Yes** sends notifications to this receiving point partner regardless of the setting in the transmission type. Selecting **No** prevents distribution notifications from being sent to the

receiving point. Leaving the value as **Default** sends distribution notification messages based on the value in the transmission type configuration.

Figure 6-75 illustrates an example where the distribution notifications are not sent to the receiving point partner.

Define Receiving Point Attributes	
Define Receiving Point Attributes	
ID:	000999000
Type:	Customer ID
Name:	Bank, Corp, Clearing
Distribution Notification:	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Default *

Figure 6-75 Attributes for Receiving Point in the Control Center

6.5.4 Expected Transmissions

Adding receiving point expected transmissions enables the financial institution to schedule deliveries.

To view Expected Transmissions, click the **Expected Transmissions** link in the Receiving Point Related box from the partner details view. This opens the Manage Outbound Expected Transmission window. To add a transmission window, select **Expected Transmission**. Figure 6-76 displays the window for adding an expected transmission window.

Add Outbound Expected Transmissions	
Receiver Type:	Customer ID
Receiver ID:	000789000
Receiver Name:	Clearing House-789
Description:	<input type="text"/> *
Business Category:	<input type="text"/> (Blank indicates all categories)
Transmission Type:	--Select File Type-- *
Expected Time:	01 : 00 AM hh:mm - Eastern Daylight Time
Affects EOD:	<input type="radio"/> Yes <input checked="" type="radio"/> No

Figure 6-76 Receiving Point Related - Add Expected Transmissions

- ▶ Receiver Type [Workbook ONLY] {REQUIRED}
Type of the partner ID.
- ▶ Receiver ID [Workbook ONLY] {REQUIRED}
The ID of the partner.
- ▶ Receiver Name [Workbook ONLY] {REQUIRED}
Name of the partner.
- ▶ Description {REQUIRED}
A descriptive name to identify the expected transmission.

- ▶ **Business Category {OPTIONAL}**
The category of the expected transmission. Multiple categories can be specified in a comma delimited list
- ▶ **Transmission Type {REQUIRED}**
The message standard to be used to create the transmission. This is a drop-down menu of available message standards.
- ▶ **Expected Time {REQUIRED}**
The time that the expected transmission is to be received by the partner. The time zone that is displayed is that of the user who is configuring the transmission.
- ▶ **Affects EOD {REQUIRED}**
A button that indicates whether the business day end of day processing is affected by the sent transmission. If set to **Yes**, end of day processing cannot be completed if the transmission has not been sent. If set to **No**, end of day processing can be complete even if the expected transmission has not been sent.

Figure 6-77 provides an example of defining an expected transmission of NACHA message standard by 07:59 am eastern. If this transmission is not received by the partner, the business day end of day processing cannot complete.

Receiver Type:	Customer ID
Receiver ID:	000999000
Receiver Name:	Bank, Corp, Clearing
Description:	<input type="text" value="Daily Distribution"/> *
Business Category:	<input type="text"/> (Blank indicates all categories)
Transmission Type:	NACHA *
Expected Time:	07 : 59 AM hh:mm - Eastern Daylight Time
Affects EOD:	<input checked="" type="radio"/> Yes <input type="radio"/> No

Figure 6-77 Expected Transmission definition for Receiving Partner in Control Center

6.5.5 Transmission configuration

The transmission configuration allows the financial institution to define the use of control numbers for electronic data interchange (EDI) and Canadian Payments Association (CPA) transmissions.

These options are not relevant in Financial Transaction Manager for ACH and therefore are not covered.

6.5.6 Account rules

Configuring the account rules provides the financial institution to configure the rules within Financial Transaction Manager for ACH.

The Authorization Check enables authorization filter criteria to be verified against the transactions and only accept the matching transactions. Authorization filters are defined for a specific account on the receiving partner. If a transaction for an account that enabled authorization checking is received and a matching filter is not found, the transaction is either marked as reviewable or rejected.

The Positive Pay check is used to accept only transactions that match the positive pay record. Positive pay records are defined for a receiving partner for a specific account. The positive pay record can be a recurring payment and would be accepted multiple times, whereas a nonrecurring payment is only accepted once. Transactions on an account requiring positive pay checking that do not have a matching positive pay record are either marked as rejected or reviewable.

To set up account rules, click the **Account Rules** link from the partner details view. This opens a new tab displaying all account rules on the receiving point. To add an Account Rule, select the **+** icon on the page as highlighted in Figure 6-78.

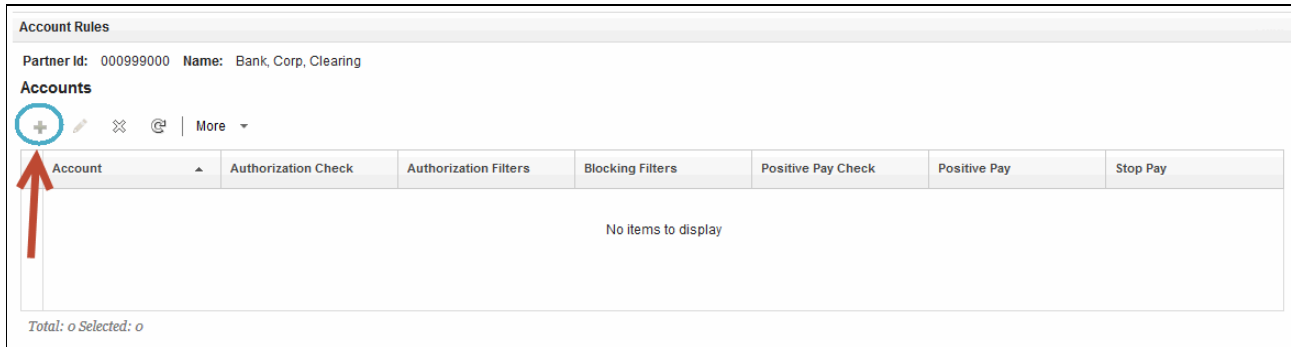


Figure 6-78 Accounts View

Upon selection of the **Add** icon, an Add Account window as shown in Figure 6-79 appears.

Figure 6-79 Risk Management: Add Account Rules

The following fields can be configured to add Account Rules:

- ▶ **Account {REQUIRED}**
Drop-down menu of available accounts to set rules against.
- ▶ **Authorization Check {OPTIONAL}**
Check box to enable authorization filter validation.
 - **Reviewable Override {OPTIONAL; Available only if Authorization Check is ENABLED}**
Check box to override the default setting for an authorization filter validation failure. Enabling the override permits a value from the drop-down menu to be selected. Options are **Review** and **Reject**.

- ▶ Positive Pay Check {OPTIONAL}
 - Check box to enable positive pay validation.
 - Reviewable Override {OPTIONAL; Available only if Positive Pay Check is ENABLED}
 - Check box to override the default setting for a positive pay validation failure. Enabling the override permits a value from the drop-down menu to be selected. Options are **Review** and **Reject**.

Figure 6-80 provides an example of adding account rules to run an Authorization Check with a reviewable override to reject and enabling the Positive Pay Check, but without a reviewable override.

The screenshot shows a form titled "Add Account" with the following configuration:

- * Account:** 123456-00 (dropdown menu)
- Authorization Check:** Enabled
- Reviewable Override:** Enabled (Reject dropdown menu)
- Positive Pay Check:** Enabled
- Reviewable Override:** Enabled (Review dropdown menu)

Figure 6-80 Account Rules definition for Receiving Partner in Control Center

6.5.7 Using the data setup utility (DSU)

Configuring Originator or Depositor Properties by using the DSU requires validation and updates in both the Base Configuration and the ACH Shared Configuration set of workbooks. These workbooks are distributed with Financial Transaction Manager for ACH. The default names of the files to be validated or updated are:

- ▶ Base Configuration Files
 - *install_directory*/shared/v300/pfs/DSU/importexport/cmd/BaseImport.properties
 - *install_directory*/shared/v300/pfs/DSU/importexport/xls/BaseMap.xls
 - *install_directory*/shared/v300/pfs/DSU/importexport/xls/BaseXREF.xls
 - *install_directory*/shared/v300/pfs/DSU/importexport/xls/SampleBaseConfiguration.xls
- ▶ ACH Configuration Files
 - *install_directory*/shared/v300/pfs/DSU/importexport/cmd/AchSharedImport.properties
 - *install_directory*/shared/v300/pfs/DSU/importexport/xls/SharedMap.xls
 - *install_directory*/shared/v300/pfs/DSU/importexport/xls/SharedXREF.xls
 - *install_directory*/shared/v300/pfs/DSU/importexport/xls/SampleAchConfiguration.xls

where *install_directory* is the directory that was specified when installing Financial Transaction Manager for ACH.

Table 6-8 shows the correlation from the Receiving Point Related links in the Control Center to the workbook tabs.

Table 6-8 Receiving Point Related Properties Control Center Links to workbook tabs

Control Center Link Configuration → Partners → Partners → (view details) →	Workbook - Tab
EndPoint (Step 1)	SampleAchConfiguration.xls – Endpoint
EndPoint (Step 2)	SampleAchConfiguration.xls – Endpoint Subscribed Services
EndPoint (Step 3)	SampleAchConfiguration.xls – Endpoint - Custom attr
Transmission Deliveries	SampleAchConfiguration.xls – Transmission Deliveries
Attributes	SampleBaseConfiguration.xls – Partner Receiver Attributes
Expected Transmissions	SampleBaseConfiguration.xls – Expected Transmissions

Table 6-9 contains the correlations between the Receiving Point Risk Management links in the Control Center and the workbook tabs.

Table 6-9 Receiving Point Risk Management Properties Control Center Links to workbook tabs

Control Center Link Configuration → Partners → Partners → (view details) →	Workbook - Tab
Account Rules	SampleBaseConfiguration.xls – Risk Partner Accounts

BaselImport.properties and AchSharedImport.properties

In the properties file, validate that the workbook reference tags have the correct file names for the Cross Reference, Map, and Configuration Data workbooks. If the workbook names are different than the defaults, update the designated files per the instructions under the default name. The specific tags to be validated are shown in Figure 6-61 and Figure 6-62.

```
mapFileName      = ../xls/BaseMap.xls
XREFFileName    = ../xls/BaseXREF.xls
inRulesFileName = ../xls/SampleBaseConfiguration.xls
```

Figure 6-81 BaselImport.properties Workbook Reference Tags

Figure 6-62 shows the tags for AchShareImport.properties.

```
mapFileName      = ../xls/SharedMap.xls
XREFFileName    = ../xls/SharedXREF.xls
inRulesFileName = ../xls/SampleAchConfiguration.xls
```

Figure 6-82 AchShareImport.properties Workbook Reference Tags

BaseMap.xls and SharedMap.xls

The Map workbook should not require any modifications unless tab names or column names were modified in either the Cross Reference or Configuration Data workbooks. The names of the tabs and columns must match between the MAP and the Configuration Data workbooks.

BaseXREF.xls and SharedXREF.xls

On the Import tab, ensure that the value in the Import column is **Y** and the Mode column is **InsertUpdate** in the rows where the Import sheet name value is in Table 6-8 on page 175 and Table 6-9 on page 175.

SampleBaseConfiguration.xls and SampleAchConfiguration.xls

For the tabs Endpoint, Endpoint Subscribed Services, Endpoint - Custom attr, and Transmission Deliveries in SampleAchConfiguration.xls and Partner Receiver Attributes, Expected Transmissions, and Risk Partner Accounts in SampleBaseConfiguration.xls, enter a single row of data for each entry. Each of these tabs can contain multiple row for the same partner. The column names on the worksheet are shown with the names of the input boxes that are used in the Control Center. See 6.5.1, “Endpoints” on page 163 for additional information about each field.

To clarify any differences between the two methods of configuration, the following examples illustrate the Receiving Point configuration by using the workbook tabs. The configuration data matches that of the data that is used in the examples in 6.5.1, “Endpoints” on page 163.

Figure 6-83, Figure 6-84 and Figure 6-85 illustrate steps 1, 2 and 3 for configuring an Endpoint for the Receiving Point. Each step of the endpoint configuration is on different tab and corresponds with the multiple windows used in the Control Center.

A	B	C	D	E	F	G	H	I	J	K	L
Endpoint											
Endpoint	Partner Id	Presentment Customer (Routing Number)	Availability	Accounting Type	Distribution Settlement Account	Distribution Billing Account	Commingled Accounting Indicator	Destination Routing Number	Return Routing Number	Outbound Product Code	Transmission Definition Name
999999999	000999000		0				0	061000146	000999000	ACHO	NACHA 0001
M	N	O	P	Q	R	S	T	U	V	W	X
Replication Endpoint	Null File Support	Collection Type	Fed Work Type	Building Options Name	Originator RT	Returns Indicator	Bill to Original	On Us	Settlement Cutoff Name	Accumulator Distribution Pending ID	Accumulator Distribution Settle ID
N	N								NACHA	NACHAFGB-FedSusp	NACHAFGB-FedAcct

Figure 6-83 Endpoint (Step 1) definition for Sending Point in workbook

Figure 6-84 shows step 2 for configuring an Endpoint for the Receiving Point.

Endpoint	Outbound Service Code	MICR Edit Prefix	Outsort Prefix	Billing Indicator	Courtesy Delivery Billing End
999999999	CUT1			Y	

Figure 6-84 Endpoint (Step 2) definition for Sending Point in workbook

Figure 6-85 shows step 3 for configuring an Endpoint for the Receiving Point.

Endpoint	Name	Value
999999999		

Figure 6-85 Endpoint (Step 3) definition for Sending Point in workbook

Figure 6-86 depicts the transmission delivery schedules for the Receiving Point. Three transmissions are configured: One in the morning using specific business and delivery days, another in the afternoon using the business day offset to determine the distributions, and lastly an end of day delivery.

Partner Id	Transmission Definition Name	Business Day Offset	Business Day Of Week	Delivery Day Of Week	Holiday Delivery Indicator	Delivery Time	CutOff Time	No Earlier Than	TimeZone	End Of Day Delivery
000999000	NACHA 0001		5	1	A	08:00:00	07:00:00	Y	America/Chicago	N
000999000	NACHA 0001								America/Chicago	Y
000999000	NACHA 0001	2				16:00:00	15:45:00	Y	America/Chicago	N

Figure 6-86 Transmission Deliveries definition for Receiving Point in workbook

Figure 6-87 is an example of setting the Receiving Point Attributes.

Partner Id	Distribution Notification
000999000	N

Figure 6-87 Attributes definition for Receiving Point in workbook

Expected Transmission for both sending points and receiving points appears on the same tab within the workbook. Figure 6-88 is an example of the definition of an expected transmission for both the sending and receiving points. The Inbound Indicator that is not present in the Control Center is critical to whether the expected transmission is for a sending point (Y) or a receiving point (N). In the example, row two defines a receiving point expected transmission, whereas row one defines one for a sending point.

Partner Id	Inbound Indicator	Tracking Name	Business Day Category	Transmission Type Description	Expected By	Affects End Of Day
000999000	Y	Daily Transmission		10	14:00:00	N
000999000	N	Daily Distribution		10	07:50:00	Y

Figure 6-88 Expected Transmissions definition for Receiving Point in workbook

Figure 6-89 displays the risk management account settings for the Receiving Point. It enables Authorization Check and Positive Pay Check. Transactions are rejected if they fail an authorization check. This value overrides any settings on the message standard or product level for this validation.

Partner Id	Account Num	Authorization Check	Authorization Decision	Positive Pay Check	Positive Pay Decision
000999000	123456-00	Y	R	Y	

Figure 6-89 Account Rules definition for Receiving Point in workbook

After all the tabs have been updated in Configuration Data workbook, import the data by using the DSU tool import command. The execution of the DSU tool should be done from the `install_directory/shared/v300/pfs/DSU/importexport/cmd` or the 64-bit version from `install_directory/shared/v300/pfs/DSU/importexport/cmd64` for larger workbooks using these commands:

```
dsu import BaseImport.properties or dsu64 import BaseImport.properties
```

and

```
dsu import AchSharedImport.properties or dsu64 import AchSharedImport.properties
```

Be sure to run the `BaseImports` command before the `AchSharedImports` command.

The DSU tool will log the results of the command to a log file for later inspection. The log file is located in `install_directory/shared/v300/pfs/DSU/importexport/cmd` or wherever the properties file specifies in the `logFileLocation` tag.

Additional information about the Data Setup Utility can be found in 1.5, “Importing and exporting system configuration” on page 20.



Delivery of payments to receiving points

After the payment is processed successfully using the processing workflow as described in Chapter 5, “Remediation and auxiliary processing workflow” on page 83, these payments are marked eligible to be sent to their final destination (receiving point). A receiving point in the context of Financial Transaction Manager for ACH is any system that receives work from the product such as ACH operator, another financial institution, or internal backend system. This chapter describes various configuration options available in Financial Transaction Manager for ACH for delivery of payments to receiving points with its significance.

The delivery of payments is handled by the distribution and gateway server component (outbound):

- ▶ Configuring the delivery
- ▶ Creating outbound channel
- ▶ Creating transmission definition
- ▶ Configuring endpoints
- ▶ Creating custom format files
- ▶ Creating custom extracts
- ▶ Scheduling transmission delivery

During ingestion, an endpoint is assigned to each payment for the receiving point that this payment is sent to. The Distribution component groups payments together into a transmission file that is destined for that endpoint. Part of an endpoint’s configuration is the Transmission Definition to use. Part of the Transmission Definition is the Channel to use, which defines the transport configuration that the Gateway component uses to deliver the transmission file to the receiving point.

This chapter includes the following sections:

- ▶ Creating an outbound channel
- ▶ Creating a transmission definition
- ▶ Configuring an endpoint
- ▶ Creating custom format files

7.1 Creating an outbound channel

An outbound channel defines the connectivity details to send the outbound transmission to a receiving point. The key option to choose for an outbound channel is the routing mode. The routing mode describes the mechanism to send the outbound transmission and corresponding properties associated with the mechanism. For example, if you chose FTP as the routing mode, you need to configure details such as host address, port, userid, and password.

An outbound channel will be associated with a transmission definition that is associated with one or more receiving points. Because an outbound channel contains the connectivity details to a specific receiving point, it is unlikely that an outbound channel definition will be reused across multiple transmissions or receiving points.

This section looks at configuring an outbound channel using Control Center and data setup utility (DSU).

In Control Center, the outbound channels can be configured by clicking **Configuration** → **Outbound** → **Channels**. In DSU, the configuration can be added in the Channel worksheet in the Configuration workbook in the `install/shared/v300/pfs/DSU/importexport/xls` directory. Depending on the type routing mode that you chose, additional worksheets need to be populated:

- ▶ FTP Channel
- ▶ User Exit Channel
- ▶ Email Channel
- ▶ FTM Workflow Channel
- ▶ CD Channel (*Connect:Direct Channel*)

The names of these worksheets correspond directly to the routing mode displayed in the Control Center.

7.1.1 Adding basic channel information

In the Control Center, when you click **Add Channel definition** on the Manage Channel definition window, the basic information you need to enter is shown in Figure 7-1.

The screenshot shows the 'Add Channel definition' form in the IBM Financial Transaction Manager. The form is titled 'Add Channel definition' and has a 'Help' link. It contains the following fields and options:

- Name:** A text input field with an asterisk indicating it is a required field.
- Description:** A text input field.
- Routing mode selection:** A section containing radio buttons for the following routing modes: DTA, FILE, FTP, SA, E-MAIL, EXIT, FTM Workflow, and Connect:Direct. The 'E-MAIL' option is selected.
- Routing Mode Options:** A section containing a checkbox labeled 'Include UCD Tag in Transmittals', which is currently unchecked.
- ICL General options:** A section containing radio buttons for 'Save Image file: Yes' and 'No'. The 'No' option is selected.

At the bottom of the form are 'Save' and 'Cancel' buttons. A legend at the bottom left indicates that an asterisk (*) denotes a required field.

Figure 7-1 Basic outbound channel information

- ▶ **Name:** Describes the short name of the channel. This name is populated in the drop-down menu on the transmission definition window for associating channel with transmission definition window.
- ▶ **Description:** Detailed description of this outbound channel.
- ▶ **Routing mode:** This button depicts what type of routing mode is used by this channel. Details of each option are described later in this chapter.

Note: Options **DTA** and **SA** are not applicable to Financial Transaction Manager for ACH. They are used in Financial Transaction Manager for Check product.

These options can be configured by using DSU in the Channels worksheet in the Configuration workbook in the *install/shared/v300/pfs/DSU/importexport/xls* directory.

7.1.2 Adding FILE routing mode information

The *FILE* routing mode allows Financial Transaction Manager for ACH to send the transmission using simple file copy. If this routing mode is chosen, the gateway server writes the files to the directory you configured. This option is typically used for sending

transmissions to internal systems of the financial institutions. The options for configuring this routing mode are depicted in Figure 7-2.

The screenshot shows the 'Add Channel definition' form in the IBM Financial Transaction Manager. The form includes several sections:

- Name:** A required text field (marked with a red asterisk).
- Description:** A text field.
- Routing mode selection:** A group of radio buttons for 'DTA', 'FILE' (selected), 'FTP', 'SA', 'E-MAIL', 'EXIT', 'FTM Workflow', and 'Connect:Direct'.
- Routing Mode Options:** A section highlighted with a red border, containing:
 - Routing Directory:** A required text field (marked with a red asterisk).
 - Transmit Command:** A text field.
- Handshake Options:** An 'Enabled' checkbox set to 'No'.
- ICL General options:** A 'Save Image file' checkbox set to 'No'.

 At the bottom, there are 'Save' and 'Cancel' buttons, and a legend indicating that a red asterisk denotes a required field.

Figure 7-2 File routing mode

- ▶ Routing Directory is the directory where the outbound transmission (files) is written.
- ▶ Transmit Command allows you to configure a script to copy the file from the gateway server's staging directory to the final destination. This is an optional parameter. If this parameter is empty, gateway server automatically copies the transmission from the staging directory to the final destination directory. This is useful when you want to perform extra processing before sending the file to the final destination. The script that you configure here has two parameters:
 - Source file: Fully qualified name of the source file from the staging directory.
 - Target file: Fully qualified name of the destination file to be created according to the configuration.

The script can use these parameters to perform extra processing before and after copying the file.

Note: If Transmit Command parameter is specified, the script must explicitly copy the file to the destination directory. The gateway server, in this case, will not copy the file to the destination directory.

These parameters can also be configured by using DSU in the Channels worksheet in the Configuration workbook in the *install/shared/v300/pfs/DSU/importexport/xls* directory.

7.1.3 Adding FTP routing mode information

The *FTP* routing mode allows Financial Transaction Manager for ACH to send the transmission using the FTP mechanism to a remote server. If this routing mode is chosen, the gateway server sends the transmission to the remote server by using the FTP details configured. Typically, this option is used to send the transmission outside the financial institution network. The options for configuring this routing mode are depicted in Figure 7-3.

The screenshot shows the 'Add Channel definition' form in the IBM Financial Transaction Manager. The 'Routing mode selection' section has 'FTP' selected. The 'Routing Mode Options' section, highlighted with a red box, includes the following fields and options:

- Host Address: *
- Port:
- Path:
- User Id:
- Password:
- Include routing file:
- Include trigger file:
- Include eod file:

Figure 7-3 FTP routing mode

- ▶ **Host Address** is the url to the host. This can be either the host name or the IP address of the destination server.
- ▶ **Port** on the destination server where FTP server is listening.
- ▶ **Path** on the destination FTP server to send the transmission to. The Gateway Server, after establishing a connection with the destination FTP Server, will change to this directory before sending the transmission.
- ▶ **User id** to connect to the destination server.
- ▶ **Password** to connect to the destination server.
- ▶ **Include routing file** indicates whether to include the routing file in the transmission. If selected, the routing file is sent in addition to the data files.
- ▶ **Include trigger file** indicates whether to include the trigger file in the transmission. If selected, the trigger file is sent in addition to the data files.

- ▶ **Include eod file** indicates whether to include the eod file in the transmission. If selected, the eod file is sent in addition to the data files

These parameters can also be configured by using DSU in the FTP Channel worksheet in the Configuration workbook in the *install/shared/v300/pfs/DSU/importexport/xls* directory.

7.1.4 Adding email routing mode information

The email routing mode allows Financial Transaction Manager for ACH to send the transmission as an email attachment to an email address. If this routing mode is chosen, the gateway creates an email message with transmissions and other files as attachments and send it using the email server configured in the product. The options for configuring this routing mode are depicted in Figure 7-4.

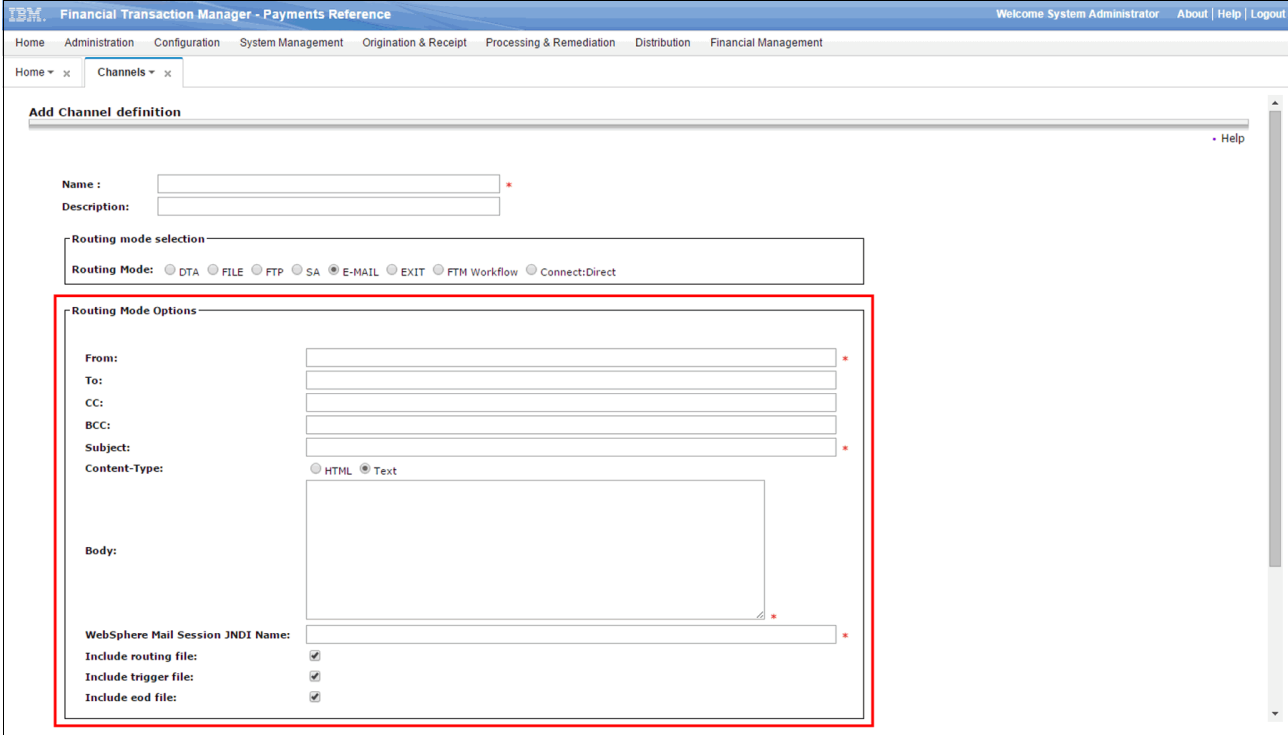


Figure 7-4 Email routing mode

- ▶ **From** allows entering email address from which the email is to be sent out.
- ▶ **To** field allows providing a comma-separated list of email addresses. Additionally, gateway server retrieves the address list from contacts enabled for email notification that are associated with the partner specified by clicking **Configuration** → **Partner Details** → **Contacts**. See 6.2, “Configuring general properties” on page 118 for more information about configuring these details.
- ▶ **CC** and **BCC** fields allows providing a comma-separated list of email addresses.
- ▶ **Subject** of the email to be sent out.
- ▶ **Content-Type** allows choosing the formatting of the email being sent.
- ▶ **Body** is the email body for the outbound email. For dynamic content in the body, xml transformations can be applied on the notification file inline with the body text by using the transformation stylesheets (XSLT). Gateway server must be able to load these stylesheets on startup.

Note: An example of a transformation stylesheet can be found in the `install/shared/v300/pfs/Gateway/samples` directory.

- ▶ **WebSphere Mail Session JNDI Name** provides the JNDI name for the email server configuration. This JNDI name is created during the product installation.
- ▶ **Include routing file** indicates whether to include the routing file in the transmission. If selected, the routing file is attached with the extension as `.rte` in addition to the data files.
- ▶ **Include trigger file** indicates whether to include the trigger file in the transmission. If selected, the trigger file is attached with the extension as `.eof` in addition to the data files.
- ▶ **Include eod file** indicates whether to include the eod file in the transmission. If selected, eod file is attached with extension as `.eod` in addition to the data files.

7.1.5 Adding EXIT routing mode information

The *EXIT* routing mode provides a programmatic way of transmitting the file to the receiving point. This routing mode gives the control to a Java class that you implement to perform the transfer from the staging directory to the receiving point. The options for configuring this routing mode are depicted in Figure 7-5.

The screenshot shows the 'Add Channel definition' form in the IBM Financial Transaction Manager. The form includes the following fields and options:

- Name:** A required text input field.
- Description:** A text input field.
- Routing mode selection:** A group of radio buttons for selecting the routing mode. The 'EXIT' option is selected.
- Routing Mode Options:** A section containing a required text input field for the 'User Exit Class Name'.
- ICL General options:** A section containing a 'Save Image file' option with radio buttons for 'Yes' and 'No'.

At the bottom of the form, there are 'Save' and 'Cancel' buttons. A legend indicates that an asterisk (*) denotes a required field.

Figure 7-5 EXIT routing mode

- ▶ **User Exit Class Name** provides the fully qualified Java class name of the implementation. This class must be added to the class path of the gateway server. The class must implement `com.ibm.icpcs.gatewayserver.user.UserTransmitExitInterface`.

Note: A sample user exit class, which is called `com.ibm.icpcs.gatewayserver.samples.SampleUserTransmitFileExit`, is provided with the product.

This parameter can also be configured by using DSU in the User Exit Channel worksheet in the Configuration workbook in the `install/shared/v300/pfs/DSU/importexport/x1s` directory.

7.1.6 Adding FTM Workflow routing mode information

The *FTM Workflow* routing mode allows you to define a Financial Transaction Manager base product based application for sending the transmission to receiving point. Typically, this is used to support hard posting and memo posting files to your internal applications. See the Financial Transaction Manager information center at **Financial Transaction Manager for Multiplatforms 3.0.0** → **Financial Transaction Manager** for details about creating a Financial Transaction Manager application. When configured, Financial Transaction Manager for ACH inserts Transaction, Transmission, and Batch records into the Financial Transaction Manager base database tables and triggers the application by using an WebSphere MQ message. The options for configuring this routing mode are depicted in Figure 7-6.

The screenshot shows the 'Add Channel definition' form in the IBM Financial Transaction Manager interface. The 'Routing Mode' section includes radio buttons for DTA, FILE, FTP, SA, E-MAIL, EXIT, FTM Workflow (selected), and Connect:Direct. The 'Routing Mode Options' section, highlighted with a red box, contains two text input fields: 'FTM Application Name' and 'FTM Queue Name'. A legend at the bottom left indicates that an asterisk (*) denotes a required field.

Figure 7-6 FTM Workflow routing mode

- ▶ **FTM Application Name** to be used for inserting Transaction, Transmission, and Batch records into the Financial Transaction Manager base database tables.
- ▶ **FTM Queue Name** provides the queue to be used for triggering the application deployed in Financial Transaction Manager base to process the inserted records.

These parameters can also be configured by using DSU in the FTM Workflow Channel worksheet in the Configuration workbook in the `install/shared/v300/pfs/DSU/importexport/xls` directory.

7.1.7 Adding Connect:Direct routing mode information

The Connect:Direct routing mode allows Financial Transaction Manager for ACH to use IBM Connect:Direct for transmitting the files to the receiving point. Many financial institutions use IBM Connect:Direct as an enterprise standard for sending and receiving files for external entities. This option allows Financial Transaction Manager for ACH to reuse this platform for transmitting files to the receiving points. The options for configuring this routing mode are depicted in Figure 7-7.

The screenshot shows the 'Add Channel definition' form in the IBM Financial Transaction Manager. The 'Routing Mode' is set to 'Connect:Direct'. The 'Routing Mode Options' section is highlighted with a red box and contains the following fields:

- Local Configuration File: *
- Remote Node: *
- Remote User Id:
- Remote Password:
- Include routing file:
- Include trigger file:
- Include eod file:

Below the 'Routing Mode Options' section are the 'Handshake Options' and 'ICL General options' sections.

Figure 7-7 Connect:Direct routing mode

- ▶ **Local Configuration File:** To use this routing mode, the node where the gateway server is running should be configured as an IBM Connect:Direct node. Then generate a configuration file by using the Connect:Direct Java node definition utility, The fully qualified path of this file should be configured in this parameter.
- ▶ **Remote Node** specifies the remote IBM Connect:Direct node name.
- ▶ **Remote User Id** to be used to access the remote node.
- ▶ **Remote Password** to be used to access the remote node.

- ▶ **Include routing file** indicates whether to include the routing file in the transmission. If selected, the routing file is transmitted in addition to the data files.
- ▶ **Include trigger file** indicates whether to include the trigger file in the transmission. If selected, the trigger file is transmitted in addition to the data files.
- ▶ **Include eod file** indicates whether to include the eod file in the transmission. If selected, the eod file is transmitted in addition to the data files

These parameters can also be configured by using DSU in the CD Channel worksheet in the Configuration workbook in the `install/shared/v300/pfs/DSU/importexport/x1s` directory.

7.2 Creating a transmission definition

Although the outbound channel defines the technical connectivity details of the outbound transmission, a transmission definition provides properties of the generated transmission itself. These properties include format, encoding, maximum number of transactions in a single file, and maximum number of transactions in a file. A transmission definition is associated with one or more endpoints that partner receiving points have configured.

A transmission uses one of the outbound channels configured in the system as described in 7.1, “Creating an outbound channel” on page 180.

This section looks at configuring a transmission definition using Control Center and DSU.

In Control Center, the transmission definition can be configured by clicking **Configuration** → **Outbound** → **Transmissions**. In DSU, the configuration can be added in the *Transmission Definition* worksheet in the *Configuration* workbook in the `install/shared/v300/pfs/DSU/importexport/x1s` directory.

In the Control Center, the process of adding transmissions is divided in two windows. Figure 7-8 shows the first window.

Figure 7-8 Add transmission definition: Window 1

- ▶ **Name** indicates the name of this transmission definition. This appears in various drop-down menus in the Control Center whenever transmission definitions are referenced.
- ▶ **Channel** provides the list of channels available in the system that can be assigned to this transmission and allows you to choose exactly one channel.
- ▶ **Encoding** allows you to choose EBCDIC or ASCII encoding based on the specification of the receiving point.
- ▶ **Max Size(bytes)** allows you to specify the maximum size of the generated transmission. If the file size exceeds this value, the current transmission is closed and a new one is created with subsequent transactions. If you do not want to put any restriction on the generated transmission, enter **-1** as the value.

Note: This value is not used if *FTM Workflow* is selected as the transmission format

- ▶ **Max Currency Value** provides similar behavior to that of the **Max Size(bytes)** field. However, the transmission is split based on the total value of transactions in a transmission.
- ▶ **Max Number Of Transactions** provides similar behavior to that of the **Max Size(bytes)** field. However, the transmission is split based on total number of transactions in a transmission.
- ▶ **Transmission Format** allows choosing one of the transmission formats that are configured in the system:
 - **Extract** indicates that a custom file extract will use this definition.
 - **FTM Workflow** indicates that transmission format is decided by FTM Workflow defined in the Financial Transaction Manager base product.
 - **NACHA** indicates that the transmission format follows the NACHA standard.

Note: If FTM Workflow is selected as the transmission format, then the selected channel must be of routing mode type FTM Workflow. Otherwise, the selected channel must not be of routing mode type FTM Workflow.

- ▶ **Missing Image Percent** is not relevant in Financial Transaction Manager for ACH.
- ▶ **Test File Indicator** provides an ability to indicate whether the generated transmission is a test or production level. For ACH, the value will be substituted in the File Name Pattern for the %PT% substitution pattern variable.
- ▶ **File Name Pattern** provides the file naming pattern to use when building the file. The name is formulated using a file pattern and a predefined set of substitution tokens. The file name pattern must be unique. Otherwise, the files that are created might overwrite each other. Refer to onscreen help of this field for details of the substitution tokens that can be used in the pattern. This value is not used if FTM Workflow is chosen as the transmission format.
- ▶ **Data File Extension** allows you to specify an optional extension for the created data files. The extension should have a dot (.) as a prefix.
- ▶ **Route File Formatter Class** allows you to specify a Java class to add custom attributes to the generated routing file. If no value is specified or the specified Java class is not found, a default routing file is generated. This Java class must be on the class path of the distribution server. This value is not used if FTM Workflow is chosen as the transmission format.

Note: Depending on the Channel definition, the routing file will be delivered by the Gateway. You might want to add custom attributes to the routing file for use by your internal applications.

- ▶ **Route File Schema Name** provides the location of the schema file that provides the definition of the custom attributes generated by the Route File Formatter Class. This value is not used if FTM Workflow is chosen as the transmission format.
- ▶ **Time Zone** to be used for generated file. All of the time stamps in the generated file are created using the specified time zone. This value is not used if FTM Workflow is chosen as the transmission format.
- ▶ **Originator Routing Transit** is specific to the NACHA transmission type. The value here is populated in Record 01 header attribute Originator Routing Transit along with other records in the transmission. For the header record, if the value is not specified, the routing number of the originator bank as configured in the system is used. For other records, this value is used if no value is provided on the endpoint (described in 7.3, “Configuring an endpoint” on page 191), providing an override capability for a specific transmission definition.
- ▶ **Sending Point Name** is not used in Financial Transaction Manager for ACH.
- ▶ **File to File**, if set to Yes, indicates that the generated transmission can only contain transactions from a single file that was ingested. For example, Financial Transaction Manager for ACH might receive two inbound transmissions and the product detects that it is possible to combine the work into single outbound transmission. However, this flag instructs the product not to combine the work into single file, but rather send it as two different files to the receiving point.
- ▶ **Sequence Number Required** is not applicable to Financial Transaction Manager for ACH and should always be set to **No**.
- ▶ **Use Original Data**, if set to **Yes**, instructs Financial Transaction Manager for ACH to use the original data as it was ingested
- ▶ **Sub Type** is used only if transmission type is selected as FTM Workflow. It provides the transaction subtype to be used for processing the transaction. This subtype decides which path the transaction follows in the Financial Transaction Manager application.

The next window allows adding any custom attributes to the channel definition. These custom attributes can also be added by using DSU in the Transmission Def - Custom attr worksheet in the Configuration workbook in the *install/shared/v300/pfs/DSU/importexport/x1s* directory.

Figure 7-9 shows the custom attributes.

The screenshot shows the 'Add Transmission definition' window in the IBM Financial Transaction Manager. The page is titled 'Add Transmission definition' and is 'Step 2 of 2 (Custom Attributes information)'. The 'Name' field is set to 'Demo'. Below, a table titled 'Transmission Custom Attributes' has one row with 'Attribute Name' 'SUBTYPE' and an empty 'Value' field. A legend indicates that an asterisk (*) denotes a required field. Navigation buttons for 'Back', 'Save', and 'Cancel' are at the bottom.

Figure 7-9 Add transmission definition: Window 2

The only custom attribute that can be added is SUBTYPE, which is used only if the transmission type is set to FTM Workflow.

7.3 Configuring an endpoint

Outbound channel and transmission definition together provides the structure and connectivity details of the outbound transmission to be created. Using this information, an endpoint can now be created to which Financial Transaction Manager for ACH can route the work to be sent to receiving point. Endpoints are created for a receiving point partner type and cannot be shared between partners. An endpoint is assigned to each transaction during ingestion as part of the Business Rules data enrichment processing. See 6.5.1, “Endpoints” on page 163 for details about configuring endpoints.

7.4 Creating custom format files

While processing on-us payment, Financial Transaction Manager for ACH needs to integrate with financial institution’s general ledger or memo posting systems. Most of the time, these systems do not comply with NACHA formats for legacy reasons. Thus, a custom transformation is needed to create the files for these systems in a format they understand. Financial Transaction Manager for ACH uses the capabilities of Financial Transaction Manager base product to perform this transformation and integration.

When transmission type on an endpoint is set to FTM Workflow, Financial Transaction Manager for ACH creates records in the Financial Transaction Manager base database tables such as Transmission, Batch, and Transaction with outbound batch details and starts the workflow using a WebSphere MQ message. The Financial Transaction Manager workflow then uses WebSphere Transformation Extender based outbound mapper to transform these transactions into the custom format and send it to the receiving point. After it is sent, it updates the distribution server about the status of the transmission so that it can continue processing. See the Financial Transaction Manager information center at **Financial**

Transaction Manager for Multiplatforms 3.0.0 → **Financial Transaction Manager** for details about creating a Financial Transaction Manager application.

Note: The reference application provided with Financial Transaction Manager for ACH provides examples for Hard Posting and Memo Posting.

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