



Global PAYplus

Data Monitoring

Business Guide

Product Version: GPP 4.6.8
Catalog ID: GPP4.6-00-BG32-01-201708

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Version Control

Version	Date	Summary of Changes
1.0	Mar-2017	Document created

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1 Introduction

1.1 Data Monitoring Overview

GPP Data Monitoring enables a financial institution to apply fraud and risk detection validations to transactions during transaction processing.

A financial institution can define reference data that GPP uses to perform various Data Monitoring validations (see [Validation Types](#)) on each transaction. GPP routes each transaction that does not pass the defined validations to a specific queue for manual handling. An authorized GPP user must access each transaction via the GPP user interface to determine continued transaction processing.

Note: Each transaction that passes all defined validations continues with the generic Straight-Through Processing (STP) workflow.

For more information about the GPP user interface, see the GPP Online Help.

1.2 Validation Types

GPP enables a financial institution to define the various Data Monitoring validations to perform on transactions during transaction processing.

If a transaction does not pass all defined validations, GPP routes the transaction to the Monitoring Review queue for manual handling.

Note: GPP performs only those validations that are explicitly defined.

A financial institution can define the following types of validations:

- **Account:** Using an Accounts profile, a financial institution can define various validations for each account that is party to a transaction:
 - Active Account: Validates that each account is active as per a defined date.
 - Valid External Agreement: Validates that each account in an outgoing transaction has a valid external wire agreement as defined using a start and end date.
 - Category: Validates that each account is not of one of the defined categories.
 - Daily Totals: Validates that each account does not exceed daily aggregate totals, for either transaction amount or transaction count, as calculated by GPP.
- **Associated Beneficiary:** The transaction's originator (debtor) account and beneficiary (creditor) account must be associated, that is, the accounts must have been party to at least one previous transaction with each other. GPP generates a unique combination of fields to determine whether the originator and debtor accounts are associated.
- **Restricted Beneficiary:** The transaction's beneficiary (creditor) account cannot have a Restricted Beneficiary profile (see [Restricted Beneficiary Profile](#)) defined in GPP.
- **Other:** A financial institution can define business rules to perform other validations, such as checking for a specific Method of Payment (MOP). For more information, see [Business Rules](#).

1.3 Target Audience

This document is intended for GPP users and business analysts who need to understand the Data Monitoring functionality in GPP.

Note: This document assumes that the reader is familiar with generic GPP processing flows and concepts.

1.4 Related Documents

For additional information, see the following:

- GPP Online Help: Describes the basic procedures required during transaction and payment-related message processing via the GPP UI. This guide also describes GPP reference data, such as profiles, business rules, and other interface entities.
- GPP System Integration - Single Transaction Business Guide: Describes how GPP integrates with various external interfaces during transaction processing.

2 Data Monitoring Processing

GPP processes each incoming and outgoing transaction individually using GPP workflows that follow a standard high-value processing flow. GPP determines the correct workflow for each transaction using defined GPP reference data, such as profiles, business and system rules, and configured system parameters.

As part of the standard workflow, GPP invokes the Data Monitoring business object (BO) to verify that each transaction passes the defined Data Monitoring validations (see [Validation Types](#)). GPP invokes the dedicated business object between the Compliance and Balance Inquiry workflow stages.

For more information about the Data Monitoring workflow, see [Data Monitoring Workflow](#).

2.1 Data Monitoring Workflow

During the standard GPP transaction processing workflow, GPP invokes the Data Monitoring business object to verify that each transaction passes all defined validations and to determine continued transaction processing.

The Data Monitoring business object does the following:

- For each outgoing transaction, GPP accesses the relevant Accounts profile (see [Accounts Profile](#)) to determine whether aggregate totals require validation. If defined, GPP does the following:
 - Adds the transaction amount to the daily aggregate amount for the account
 - Increments the daily aggregate transaction count for the account
 - Verifies that the transaction does not exceed the daily aggregate transaction amount for the account, as defined in the Data Monitoring profile (see [Data Monitoring Profile](#)).
 - Verifies that the transaction does not exceed the daily aggregate transaction count for the account and count totals, as defined in the Data Monitoring profile.

Note: If GPP does not identify a relevant Data Monitoring profile for the transaction, validations are not performed but aggregates are calculated.

If a transaction exceeds either daily aggregate total, GPP sets the transaction with a MONITORING REVIEW status and routes it to the Monitoring Review queue for manual handling.

Note: GPP rolls back the daily aggregate totals for an account if the transaction is subsequently canceled or rejected during manual handling.

- For each transaction, GPP invokes Data Monitoring Profile Selection rules to determine whether the transaction has a relevant Data Monitoring profile. GPP does one of the following:
 - If a transaction meets the conditions defined in a rule, GPP evaluates the defined Data Monitoring profile to determine which validations are required.
 - If a transaction does not meet the conditions defined in a rule, GPP exits the Data Monitoring BO and continues with the standard transaction processing workflow.

- After determining which validations are required by the relevant Data Monitoring profile, GPP performs the validations and does one of the following:
 - If a transaction fails any of the defined validations, GPP sets the transaction with a MONITORING REVIEW status and routes it to the Monitoring Review queue for manual handling.
 - If a transaction passes all the defined validations, GPP exits the Data Monitoring BO and continues with the standard transaction processing workflow

For more information about manual handling, see [Reference Data Management](#) and [Transaction Handling](#).

3 Manual Handling

The GPP user interface enables authorized users to do the following:

- **Handle Transactions:** Upon determining that a transaction requires manual handling, GPP routes the transaction to the Monitoring Review, where an authorized user must access the transaction to determine continued processing. For more information, see [Transaction Handling](#).
- **Manage Reference Data:** An authorize user can manage, create, and update the reference data required for Data Monitoring. For more information, see [Reference Data Management](#).

3.1 Reference Data Management

The GPP user interface enables authorized users to manage the following profiles that implement Data Monitoring:

- **Accounts:** A user can create and update data about individual accounts. For more information, see [Accounts Profile](#).
- **Data Monitoring:** A user can create and update data about validations stored in this profile. For more information, see [Data Monitoring Profile](#).
- **Restricted Beneficiary:** A user can create and update data about a restricted beneficiary stored in this profile. For more information, see [Restricted Beneficiary Profile](#).

GPP also enables authorized users to define and execute the following Data Monitoring tasks:

- **Upload Associated Beneficiaries:** Uploads a list of associated beneficiary combinations. For more information about the task, see [Upload Associated Beneficiaries Task](#).
- **Upload Restricted Beneficiaries:** Uploads a list of restricted beneficiaries. For more information about the task, see [Upload Restricted Beneficiaries Task](#).

3.2 Transaction Handling

During transaction processing, GPP can route a transaction to one of the following queues for manual handling:

- **Monitoring Review Queue:** GPP routes a transaction to this queue after determining that a transaction did not pass a Data Monitoring validation defined for it. An authorized user must access the transaction in the queue and do one of the following:
 - **Release:** The user releases the transaction for continued processing. GPP routes the transaction to the Approve Monitoring Review queue where another authorized user must access the transaction and approve it for continued processing.
 - **Cancel:** The user cancels the transaction, which routes the transaction to the final status Canceled queue to end transaction processing.
 - **Return:** The user returns an incoming FED message. GPP generates a Return message and transmits it to the Fedwire Securities Service. GPP routes the transaction to the Returned queue for continued processing.

- **Reject:** The user rejects an incoming SWIFT message. GPP generates a Reject message and transmits it to the relevant MOP. GPP routes the transaction to the Rejected queue for continued processing.
- **Send to Repair:** The user decides that the transaction requires additional manual handling by sending it to the Repair queue. GPP routes the transaction to the Repair queue for additional manual handling by another authorized user.
- **Approve Monitoring Review Queue:** Upon release from the Monitoring Review queue, GPP routes a transaction to this queue where another authorized user must do one of the following:
 - **Approve:** The user approves the transaction for continued processing and GPP routes it to the standard transaction processing workflow.
 - **Refuse:** The user refuses to accept the decision to release the transaction from the Monitoring Review queue. GPP routes the transaction back to the Monitoring Review queue for additional manual handling.

4 Data Monitoring Reference Data

GPP reference data includes business rules, system rules, profiles, and other definitions that implement the transaction and payment-related message processing.

4.1 Business Profiles

GPP uses business profiles to determine how to process each transaction and payment-related message.

GPP requires the following types of business profiles to implement Data Monitoring:

- [Accounts Profile](#)
- [Data Monitoring Profile](#)
- [Restricted Beneficiary Profile](#)

4.1.1 Accounts Profile

The Accounts profiles stores information about individual accounts defined in GPP.

Data Monitoring accesses the following fields in the General tab of the profile:

- **Activation Date:** The date on which the account becomes active and can be a valid party in a transaction.
- **External Agreement Indicator:** An indicator that determines whether a valid external wire agreement exists for outgoing transactions for the account.
 - **Start Date:** The date on which the external wire agreement becomes valid.
 - **End Date:** The date after which the wire agreement is not valid.

Data Monitoring accesses the following fields in the Preferences tab in the profile:

- **Category:** A list of categories that GPP uses to determine whether to route a transaction to the Monitoring Review queue for manual handling. A user can select one or more categories, each of which requires manual handling for a transaction to which the account is party.
- **Balance and Count for Data Monitoring:** An indicator that determines whether GPP performs validations using the aggregate transaction amount and count.

For more information about this profile, see the GPP Online Help.

4.1.2 Data Monitoring Profile

The Data Monitoring profile stores information about Data Monitoring validations. GPP invokes Data Monitoring Profile Selection rules (see [Business Rules](#)) to determine if a transaction is associated with a specific profile. If a transaction meets the conditions defined in the rule, GPP performs the validations that are defined in the profile.

The profile has the following fields:

- **Name:** The name of the profile.
- **Description:** A description of the profile.
- **Associated Beneficiary Validation:** An indicator that determines whether GPP performs an associated beneficiary validation.
- **Restricted Beneficiary Validation:** An indicator that determines whether GPP performs a restricted beneficiary validation.
- **Limits Validation:** An indicator that determines whether GPP performs a validation using the daily aggregate totals.
 - **Daily Amount Limit:** The amount over which all transactions for the account on a specific day cannot exceed.
 - **Daily Count Limit:** The number of transactions over which all transactions for the account on a specific day cannot exceed.

For more information about Data Monitoring validations, see [Validation Types](#).

4.1.3 Restricted Beneficiary Profile

The Restricted Beneficiary profile stores information about a restricted beneficiary. During transaction processing, if GPP identifies that an account is defined with this type of profile, GPP routes the transaction to the Monitoring Review queue for manual handling (see [Transaction Handling](#)).

The profile has the following fields:

- **Name:** The name of the profile.
- **Bank Type:** The type of bank of the profile.
- **Bank ID:** The bank identifier.
- **Account Type:** The account type of the profile.
- **Account ID:** The account identifier.

Note: The Upload Restricted Beneficiaries task enables authorized user to upload a list of restricted beneficiaries that GPP uses to generate this type of profile. For more information, see [Upload Restricted Beneficiaries Task](#).

4.2 Business Rules

GPP invokes business rules to determine transaction and payment-related message processing using specific transaction attributes and other related information.

Each GPP business rule has a set of conditions and a related action. The conditions refer to attributes of a transaction or other associated reference data. GPP performs the action if a transaction meets the defined rule conditions.

Data Monitoring requires the following business rules:

- **Data Monitoring Filter:** GPP invokes this type of business rule to determine which validations to perform for a transaction. For more information about validations, see [Validation Types](#).

- **Data Monitoring Profile Selection:** GPP invokes this type of business rule to determine the most appropriate Data Monitoring profile for a transaction. For more information about the Data Monitoring profile, see [Data Monitoring Profile](#).

For more information about business rules, see the GPP Online Help.

4.3 Entitlement Classes

The following table describes the Entitlement Classes required by Data Monitoring.

Entitlement Group	Entitlements
Access > Profiles	<ul style="list-style-type: none"> • Data Monitoring Profile • Restricted Beneficiary Profile
Statuses and Filters > Manual Process	<ul style="list-style-type: none"> • Approve Monitoring Review • Monitoring Review
Rule Types > Rule	<ul style="list-style-type: none"> • Data Monitoring Filter • Data Monitoring Profile Selection
Access > Housekeeping > Upload	<ul style="list-style-type: none"> • Upload Associated Beneficiaries • Upload Restricted Beneficiaries

4.4 System Profiles

Data Monitoring does not require any specific system profiles.

4.5 System Parameters

The following table describes the system parameters that enable Data Monitoring.

Parameter Name	Description
ACCTAGGRGTKEEP	Defines the number of calendar days for which GPP retains aggregate transaction amounts and counts during the Clean Profile Deleted Entries task (see Clean Profile Deleted Entries Task).
ASSOCBENEKEEP	Defines the number of calendar days for which GPP retains associated beneficiary combinations during the Clean Profile Deleted Entries task.
ASSOCIATED_BENE_PATH	Defines the path to the source file that the Upload Associated Beneficiaries task uploads during execution. For more information, see Upload Associated Beneficiaries Task .
RESTRICTED_BENE_PATH	Defines the path to the source file that the Upload Restricted Beneficiaries task uploads during execution. For more information, see Upload Restricted Beneficiaries Task .

4.6 System Rules

Data Monitoring does not require any specific system rules.

4.7 Tasks

GPP enables authorized users to define and execute tasks to assist with system maintenance and functionality.

Data Monitoring requires the following tasks:

- [Clean Profile Deleted Entries Task](#)
- [Upload Associated Beneficiaries Task](#)
- [Upload Restricted Beneficiaries Task](#)

4.7.1 Clean Profile Deleted Entries Task

This task enables an authorized user to delete from the database various profiles that were designated as deleted by an authorized user.

The task deletes the following Data Monitoring reference data:

- **Associated Beneficiaries:** The associated originator and beneficiary account combinations that have not been accessed for a specific number of calendar days. GPP accesses these combinations when performing Associated Beneficiary validations (see [Validation Types](#)).

The ASSOCBENEKEEP system parameter defines the number of calendar days for which GPP retains associated beneficiary account combinations when executing this task. For more information, see [System Parameters](#).

- **Daily Aggregates:** The daily aggregate amounts and counts that were calculated during transaction processing. GPP accesses these daily aggregate totals when performing Data Monitoring validations.

The ACCTAGGRGKEEP system parameter defines the number of calendar days for which GPP retains aggregate transaction amounts and counts when executing this task.

Note: GPP performs a hard delete of the relevant reference data during task execution.

4.7.2 Upload Associated Beneficiaries Task

This task enables an authorized user to upload a file that contains a list of associated beneficiary account combinations, which GPP requires for Data Monitoring functionality.

During transaction processing, GPP determines whether a transaction's originator and beneficiary accounts must have been party to at least one previous transaction with each other. If GPP determines that a combination does not exist, GPP routes the transaction to the Monitoring Review queue for manual handling (see [Transaction Handling](#)).

Note: This task does not affect previously uploaded or defined data.

4.7.3 Upload Restricted Beneficiaries Task

This task enables an authorized user to upload a file that contains a list of restricted beneficiary accounts, which GPP stores in Restricted Beneficiary profiles.

During transaction processing, GPP determines whether a transaction's beneficiary account has a defined Restricted Beneficiary profile. If GPP determines that the transaction has a Restricted Beneficiary profile, GPP routes the transaction to the Monitoring Review queue for manual handling (see [Transaction Handling](#)).

The RESTRICTED_BENE_PATH system parameter defines the path to the upload source file. For more information, see [System Parameters](#).

Note: This task does not affect previously uploaded or defined data.

5 Data Monitoring Message Data

5.1 Audit Trail Entry

GPP does not generate Audit Trail entries specifically for Data Monitoring.

5.2 Error Codes

The following table describes the error codes required for Data Monitoring.

Error Code	Error Message	Description
764	At least one combination of type and ID must be defined.	Generated when a user attempts to save a Restricted Beneficiary profile that is missing mandatory field definitions.
765	At least one validation must be defined.	Generated when a user attempts to save a Data Monitoring profile that is missing mandatory validation field definitions.
766	At least one daily limit must be defined.	Generated when a user attempts to save a Restricted Beneficiary profile that is missing mandatory daily limit field definitions.

For more information about profiles, see [Business Profiles](#).

5.3 Journal Message Entry Codes

The following table describes the Journal Message entry codes required for Data Monitoring.

Code	Description
40553	Data Monitoring Exception - Amount over allowed daily limit.
40554	Data Monitoring Exception - Count over allowed daily limit.
40555	Data Monitoring Exception - Beneficiary is in restricted list.
40556	Data Monitoring Exception - Beneficiary is not in associated list for this originator.
40557	Message stopped for review by Data Monitoring rule.
TBD	Data Monitoring Exception - Account external agreement is not active.

5.4 Transaction Statuses

The following table lists the transaction statuses required for Data Monitoring functionality.

Status	Queue	Description
Monitoring Review	MONITORING_REVIEW	A status for transactions that did not pass defined Data Monitoring validations and are currently waiting for manual handling.
Approve Monitoring Review	APPROVE_MONITORING_REVIEW	A status for transactions that were released from the Monitoring Review queue and are currently waiting for additional manual handling.

For more information about transaction handling, see [Transaction Handling](#).

6 Appendix

6.1 Glossary

Term	Description
Fedwire Securities Service	A securities settlement system operated by the United States Federal Reserve Banks.
MOP	<p>Method of Payment</p> <p>An internal or external channel for transferring funds. Usually, GPP uses reference data to determine the most appropriate MOP to execute a transaction.</p>
Reference Data	Data, including business rules and profiles, system rules and profiles, and other definitions, required by GPP to implement transaction and payment-related message processing and management.
STP	<p>Straight-Through Processing</p> <p>The concept that enables GPP to process payment transactions to completion without the need for manual intervention. STP enables shortened processing cycles, reduced settlement risk, and lower operating costs.</p>
SWIFT	<p>Society for Worldwide Interbank Financial Telecommunication</p> <p>A member-owned cooperative that provides the communications platform, products, and services to connect over 8,600 banking organizations, securities institutions, and corporate customers in more than 208 countries.</p>