U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

*Office of Information Services*
*Chief Information Officer*

# CMS Enterprise File Transfer (EFT) Infrastructure

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CMS
CENTERS for MEDICARE & MEDICAID SERVICES

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# 1. FOREWORD

This document provides an overview of the Centers for Medicare and Medicaid Services (CMS) Enterprise File Transfer (EFT) Infrastructure, including architecture, standards, implementation, and security requirements. The EFT Infrastructure component enables secure, flexible, and robust business-to-business data exchanges over the Internet and private Medicare Data Communications Network (MDCN) / AT&T Global Networking Services (AGNS) Network.

The Office of Information Services' (OIS) Deputy Director / Chief Technology Officer (CTO) led the development of this architecture, including the overall Internet architecture, with support from all components in OIS. It is applicable and serves as the blue print for the implementation of the CMS EFT and contractor systems that support CMS business operations.

/s/ 10/3/2006

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## 2. EXECUTIVE SUMMARY

A variety of external organizations currently exchange data with CMS to support the administration of the Medicare and Medicaid programs. The recent Medicare Modernization Act (MMA) represents the most comprehensive change in the Medicare program in its history. CMS has an extensive investment and deployment of the Sterling Connect:Direct product for secure, business-to-business file transfer. With the recent implementation of Medicare Part D, CMS has expanded the capabilities and functionality of file transfer by deploying the Sterling Commerce Gentran Integration Suite (GIS). GIS provides secure Internet-based file transfer capabilities, including mailbox functionality. GIS has been integrated into the existing Connect: Direct infrastructure.

This document depicts the EFT Infrastructure that supports the exchange of data between CMS and its business partners and the movement of data between platforms within the CMS Data Center. It also describes the new data exchange environment to include the architecture, standards for file naming, flow of data in the EFT process, and security.

# 3. BACKGROUND

CMS identified the need to decouple file transfer services from the business applications. Decoupling EFT from the business applications is a shift from the traditional way in which file transfer services were used. The following outlines the problems that existed before the implementation of EFT and their subsequent resolution.

| Issue | Resolution |
|---|---|
| Connect:Direct exchanges were application to application. If the CMS receiving application was down or unable to process received files, the ability for Connect:Direct to receive subsequent files for that application stopped regardless of the availability of the Connect:Direct region. | Trading partners will now exchange data with the EFT Sweeps application under a unique file name as defined by the file naming convention. EFT will be able to receive files regardless of the operational state of the target application. |
| Trading partners could force file transfers overlaying received but unprocessed files. | Because of the uniqueness defined in the new file naming convention, overlays are prevented. |
| CMS did not have a consistent file transfer file naming conventions. | With the development of the EFT Sweeps application, a consistent file transfer naming convention is defined. |
| CMS did not have an architectural method to function as a data switch with business partners. | A pass through mechanism has been defined and CMS can now function as a data switch. |
| Connect:Direct process development and troubleshooting were handled by the business application teams rather than the EFT Team. | The EFT Team will now be responsible for coding the outbound pushes. The EFT Team will take ownership of all file transfer failures and trouble resolution and will engage the business application owner as necessary. |
| Under the traditional architecture, business partners would trigger applications jobs to process received files. Frequently, the trigger parameters would be incorrectly coded which resulted in a failure of the trigger process causing file backlogs. | The EFT Sweeps application will trigger the correct application job based on the file received, removing the requirement for the trading partner to do so. |
| No consistent file archiving processes which resulted in retransmissions of lost or mishandled files. | External to the business application, the EFT Sweeps application will keep a copy of received or transmitted files for 15 calendar days. |

| Issue | Resolution |
|---|---|
| There was limited control over who was authorized to submit NDM processes. | New security requirements will be implemented to allow only the EFT Sweeps application address space and EFT Team members to submit NDM (network data mover) processes. |
| There was no guarantee that files were presented to the application in sequence. | The file naming convention standard will allow files to be passed to the application in sequence. |
| An overlay condition could occur on the trading partners' system. | The EFT Team will insure uniqueness to the file name; therefore, files should not over lay on the trading partners system. |

EFT will dictate the development and overall architecture requirements for inbound and outbound file transfers to include file naming conventions.

The EFT activities will be managed by the EFT Team that is comprised of CMS and Lockheed Martin staff.  The CMS staff is responsible for reviewing all new projects that wish to leverage the EFT environment.  Lockheed Martin staff is responsible for the day-to-day operation of the EFT environment and implementing new projects into the environment.

# 4. Enterprise File Transfer

## 4.A. EFT INPUT Narrative

The following graphic illustrates the flow of data from a trading partner into CMS. The succeeding section breaks down each element of the data input process.

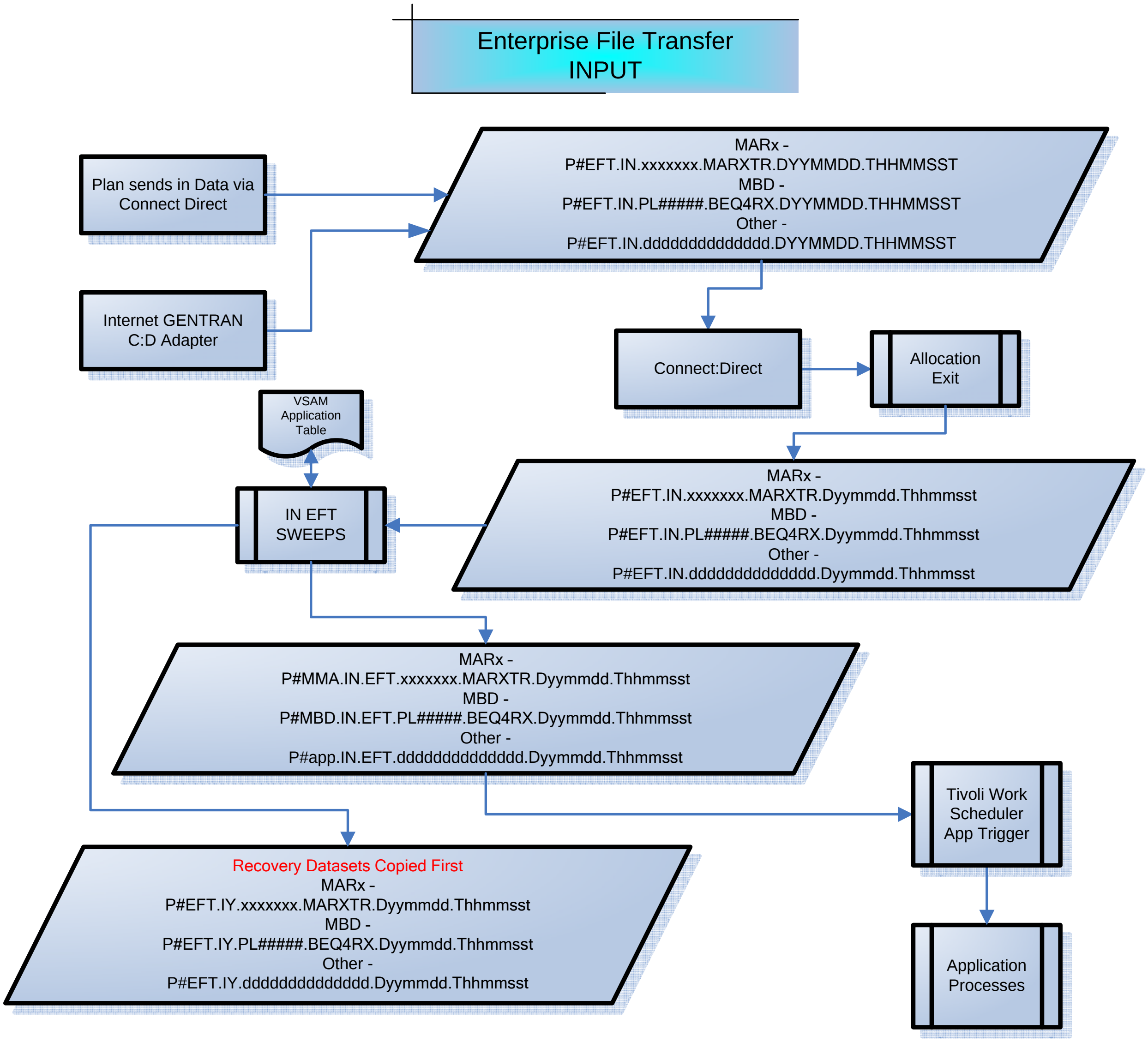

Enterprise File Transfer
INPUT
Plan sends in Data via Connect Direct
Internet GENTRAN C:D Adapter
MARx -
P#EFT.IN.xxxxxxx.MARXTR.DYYMMDD.THHMMSST
MBD -
P#EFT.IN.PL#####.BEQ4RX.DYYMMDD.THHMMSST
Other -
P#EFT.IN.ddddddddddddd.DYYMMDD.THHMMSST
Connect:Direct
Allocation Exit
VSAM Application Table
IN EFT SWEEPS
MARx -
P#EFT.IN.xxxxxxx.MARXTR.Dyymmdd.Thhmmsst
MBD -
P#EFT.IN.PL#####.BEQ4RX.Dyymmdd.Thhmmsst
Other -
P#EFT.IN.ddddddddddddd.Dyymmdd.Thhmmsst
MARx -
P#MMA.IN.EFT.xxxxxxx.MARXTR.Dyymmdd.Thhmmsst
MBD -
P#MBD.IN.EFT.PL#####.BEQ4RX.Dyymmdd.Thhmmsst
Other -
P#app.IN.EFT.ddddddddddddd.Dyymmdd.Thhmmsst
Tivoli Work Scheduler App Trigger
Application Processes
Recovery Datasets Copied First
MARx -
P#EFT.IY.xxxxxxx.MARXTR.Dyymmdd.Thhmmsst
MBD -
P#EFT.IY.PL#####.BEQ4RX.Dyymmdd.Thhmmsst
Other -
P#EFT.IY.ddddddddddddd.Dyymmdd.Thhmmsst

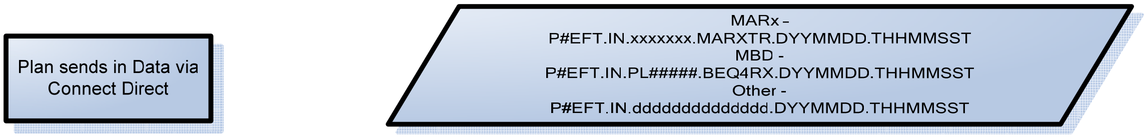
**Figure 1 -- EFT Data Flow Diagram (Inbound)**

### 4.A.1 Description of the EFT INPUT Narrative

**Connect:Direct**

Trading partners submit files through Connect:Direct following EFT file naming conventions that are documented within specific business application guides and/or the file transmission inventory.

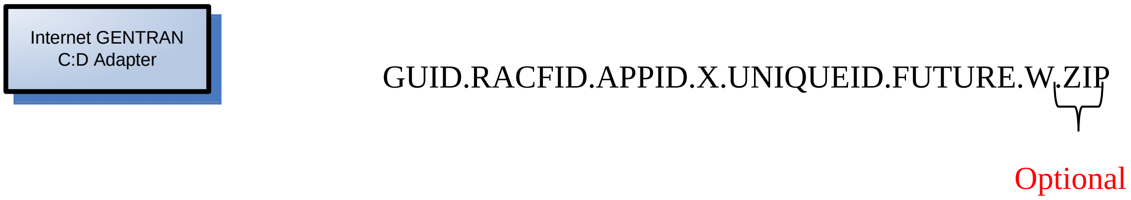
Inbound file date.time stamp is a literal that should be coded **EXACTLY** as shown. (DYYMMDD.THHMMSST)


Plan sends in Data via Connect Direct
MARx –
P#EFT.IN.xxxxxxx.MARXTR.DYYMMDD.THHMMSST
MBD -
P#EFT.IN.PL#####.BEQ4RX.DYYMMDD.THHMMSST
Other -
P#EFT.IN.ddddddddddddd.DYYMMDD.THHMMSST

**Gentran Mailbox**

Trading partners (Plans) submit files through Gentran following the EFT file naming conventions that are documented within specific business application guides and/or the file transmission inventory.

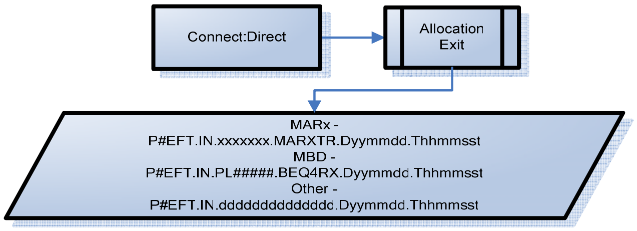
The incoming Gentran file name maps internally to the Connect:Direct file name. Gentran will hold all incoming submissions for approximately 1 to 2 minutes before releasing to Connect:Direct.


Internet GENTRAN C:D Adapter
GUID.RACFID.APPID.X.UNIQUEID.FUTURE.W.ZIP
Optional

**Connect:Direct**

The allocation exit will substitute the date/time literal with the current date/time. The allocation exit ensures a unique file name to the tenth of a second. The intent of this is to prevent files from being overlaid and to enforce EFT input file name convention.

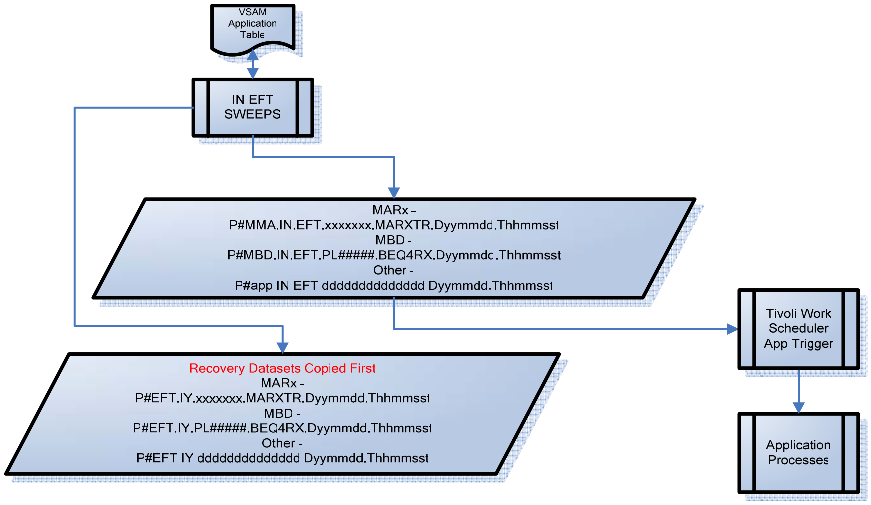
Gentran will enforce the tenth of a second uniqueness on the Gentran application server before moving the data to Connect: Direct.


Connect:Direct
Allocation Exit
MARx -
P#EFT.IN.xxxxxxx.MARXTR.Dyymmdd.Thhmmsst
MBD -
P#EFT.IN.PL#####.BEQ4RX.Dyymmdd.Thhmmsst
Other -
P#EFT.IN.ddddddddddddc.Dyymmdd.Thhmmsst

The EFT Sweeps[1] application periodically searches the system catalog for availability of non-processed inbound files. When a non-processed inbound file is located, Sweeps copies the file to an archive data set and then renames the original file to the business function's application high-level qualifier. The archive data set provides for rapid recovery of the original file submitted by the trading partner (Plan) in the event the file is damaged or lost in processing by the business application. Archive files will be available for 15 calendar days.

The Sweeps application will determine the appropriate application trigger job name for the file, then trigger Tivoli Work Scheduler to submit the application job for processing. Business application owners must modify all current trigger jobs to read the new EFT file naming convention. This can be easily accomplished by means of the EFT rename (EFTRENAM) utility. Please note that the trigger jobs will be submitted by the EFT Sweeps application and not by the Plans' Connect:Direct process. If the system owner does not want the EFT process to submit a trigger job, it will be the responsibility of the Sweeps application to detect that files have arrived for their application. The EFT Team will maintain a consolidated file and trigger job inventory.

The automated operator on COM1 LPAR will automatically generate Remedy tickets for every failed file transfer. The EFT Team will be the owner of these Remedy tickets for the initial assessment and take further action if required or re-assign the ticket to the appropriate group for resolution. The EFT Team will continue to provide automated daily EFT reports of the previous 24 hours. The report will consist of all inbound/outbound files successful and failures for the Connect:Direct and Gentran environments.


VSAM
Application
Table
IN EFT
SWEEPS
MARx -
P#MMA.IN.EFT.xxxxxxx.MARXTR.Dyymmdd.Thhmmsst
MBD -
P#MBD.IN.EFT.PL#####.BEQ4RX.Dyymmdd.Thhmmsst
Other -
P#app IN EFT dddddddddddddd Dyymmdd.Thhmmsst
Tivoli Work
Scheduler
App Trigger
Recovery Datasets Copied First
MARx -
P#EFT.IY.xxxxxxx.MARXTR.Dyymmdd.Thhmmsst
MBD -
P#EFT.IY.PL#####.BEQ4RX.Dyymmdd.Thhmmsst
Other -
P#EFT IY dddddddddddddd Dyymmdd.Thhmmsst
Application
Processes

[1] The Sweeps application was developed by Lockheed Martin for CMS as an intermediary application that allows the trading partner to exchange data with CMS, regardless of the operational state of the business application. The Sweeps application will prevent overlays, insure uniqueness, consistent file transfer naming convention, correctly trigger application jobs, and provide specific routing parameters on the outbound transfer. The Sweeps application is not portable to the mid-tier environment. The source code and executable library are documented in the EFT Concept of Operations document, which is an internal document only.

Business application owners will no longer generate or be responsible for file transfer naming standards; it is now the responsibility of the EFT Team.

## 4.B. EFT OUTPUT Narrative

The following graphic describes the flow of data from a CMS application to a trading partner. The succeeding section breaks down each element of the data input process.

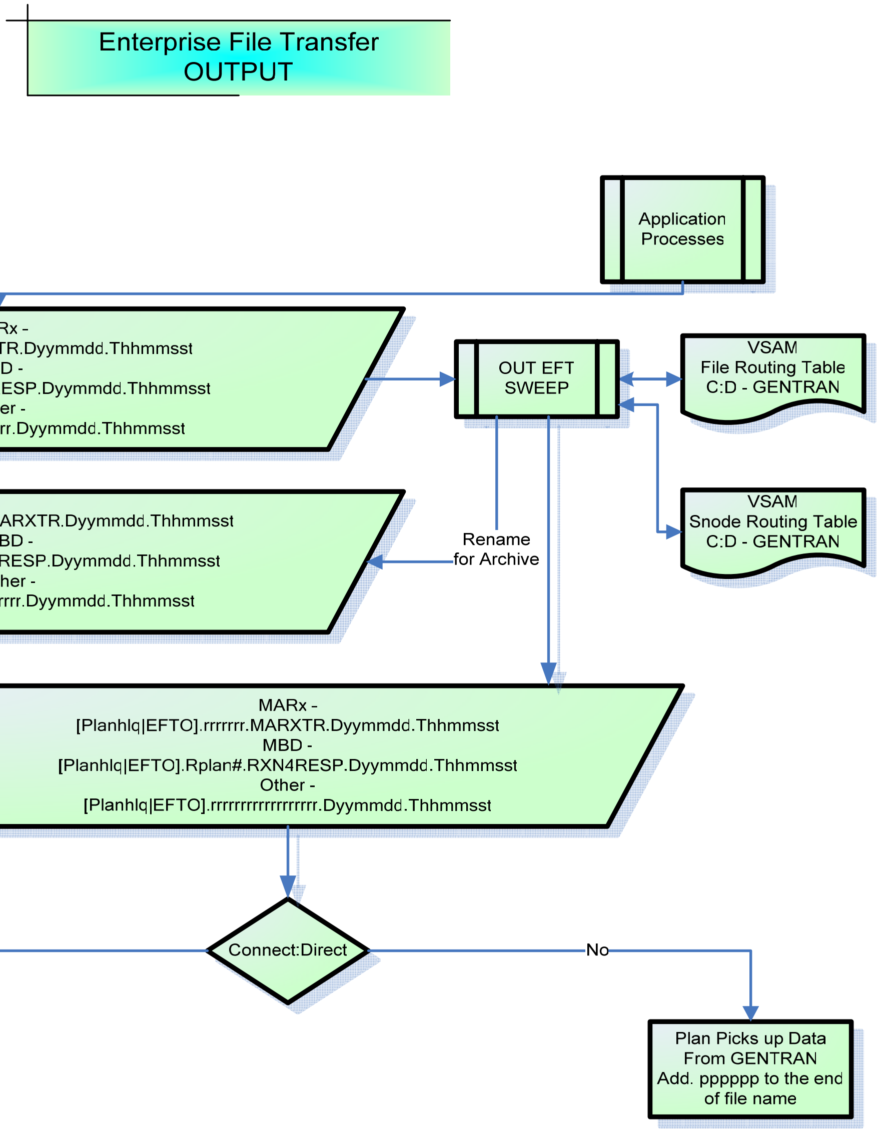
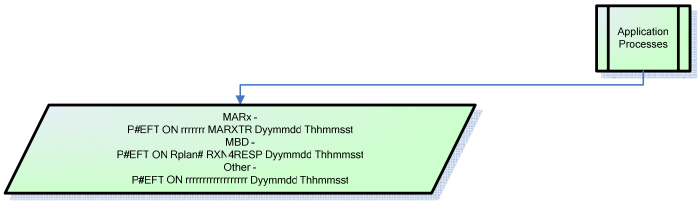

Enterprise File Transfer
OUTPUT
Application Processes
MARx -
P#EFT.ON.rrrrrrr.MARXTR.Dyymmdd.Thhmmsst
MBD -
P#EFT.ON.Rplan#.RXN4RESP.Dyymmdd.Thhmmsst
Other -
P#EFT.ON.rrrrrrrrrrrrrrrrr.Dyymmdd.Thhmmsst
OUT EFT SWEEP
VSAM
File Routing Table
C:D - GENTRAN
VSAM
Snode Routing Table
C:D - GENTRAN
MARx - P#EFT.OY.rrrrrrr.MARXTR.Dyymmdd.Thhmmsst
MBD -
P#EFT.OY.Rplan#.RXN4RESP.Dyymmdd.Thhmmsst
Other -
P#EFT.OY.rrrrrrrrrrrrrrrrr.Dyymmdd.Thhmmsst
Rename
for Archive
MARx -
[Planhlq|EFTO].rrrrrrr.MARXTR.Dyymmdd.Thhmmsst
MBD -
[Planhlq|EFTO].Rplan#.RXN4RESP.Dyymmdd.Thhmmsst
Other -
[Planhlq|EFTO].rrrrrrrrrrrrrrrrr.Dyymmdd.Thhmmsst
Connect:Direct
Yes
No
Plan is sent Data
thru C:D
Plan Picks up Data
From GENTRAN
Add. pppppp to the end
of file name

**Figure 2 - EFT Data Flow Diagram (Outbound)**

### 4.B.1 Description of the EFT OUTPUT Narrative

Business application output file naming standards are established and maintained by the EFT Team. Applications must generate output files in accordance with the naming convention developed for the business application.

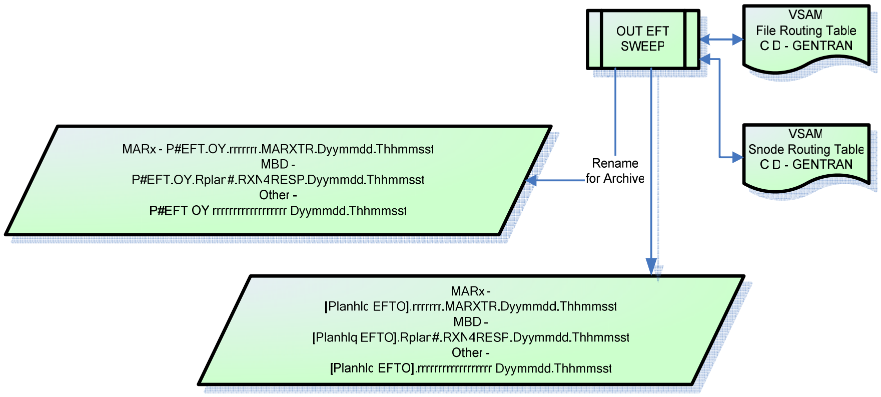

Application Processes
MARx -
P#EFT ON rrrrrrr MARXTR Dyymmdd Thhmmsst
MBD -
P#EFT ON Rplan# RXN4RESP Dyymmdd Thhmmsst
Other -
P#EFT ON rrrrrrrrrrrrrrrrr Dyymmdd Thhmmsst

The Sweeps application software identifies the files from the system catalog, references the VSAM file and snode routing tables for specific routing parameters (e.g. plan Connect:Direct node, level of compressions, security, high-level qualifier for mainframe, directory structure for mid tier) and constructs a copy process. Sweeps then submits the copy process to Connect: Direct to initiate the push of the file to the trading partner. This is the file name that the trading partner will be expecting based on the transmission inventory document. Gentran will append to the end of the file a processing number of varying length as a unique identifier.

The sweep of the catalog is performed at specific intervals to identify outbound files that applications have created added since the last search.

Only EFT Sweeps will be authorized to submit Connect:Direct processes to the Connect:Direct regions. Business application teams will no longer be authorized to submit processes directly to production Connect:Direct regions.

All outbound file routing will be based on the Sweeps File Routing and Snode Routing VSAM tables. Gentran will no longer be a default route.


OUT EFT SWEEP
VSAM
File Routing Table
C D - GENTRAN
VSAM
Snode Routing Table
C D - GENTRAN
Rename for Archive
MARx - P#EFT.OY.rrrrrrr.MARXTR.Dyymmdd.Thhmmsst
MBD -
P#EFT.OY.Rplan#.RXN4RESP.Dyymmdd.Thhmmsst
Other -
P#EFT OY rrrrrrrrrrrrrrrrr Dyymmdd.Thhmmsst
MARx -
[Planhlq EFTO].rrrrrrr.MARXTR.Dyymmdd.Thhmmsst
MBD -
[Planhlq EFTO].Rplan#.RXN4RESP.Dyymmdd.Thhmmsst
Other -
[Planhlq EFTO].rrrrrrrrrrrrrrrrr Dyymmdd.Thhmmsst

The outbound EFT Sweep process will archive the file under a new name. This file will be available for approximately 15 calendar days. The purpose of the new name is to prevent the file from being processed by sweeps a second time and to provide for rapid recovery in the event the file must be resent to the trading partner.

## 4.C. EFT Store and Forward Narrative

The following graphic depicts the flow of data from a trading partner to a third party entity via CMS.

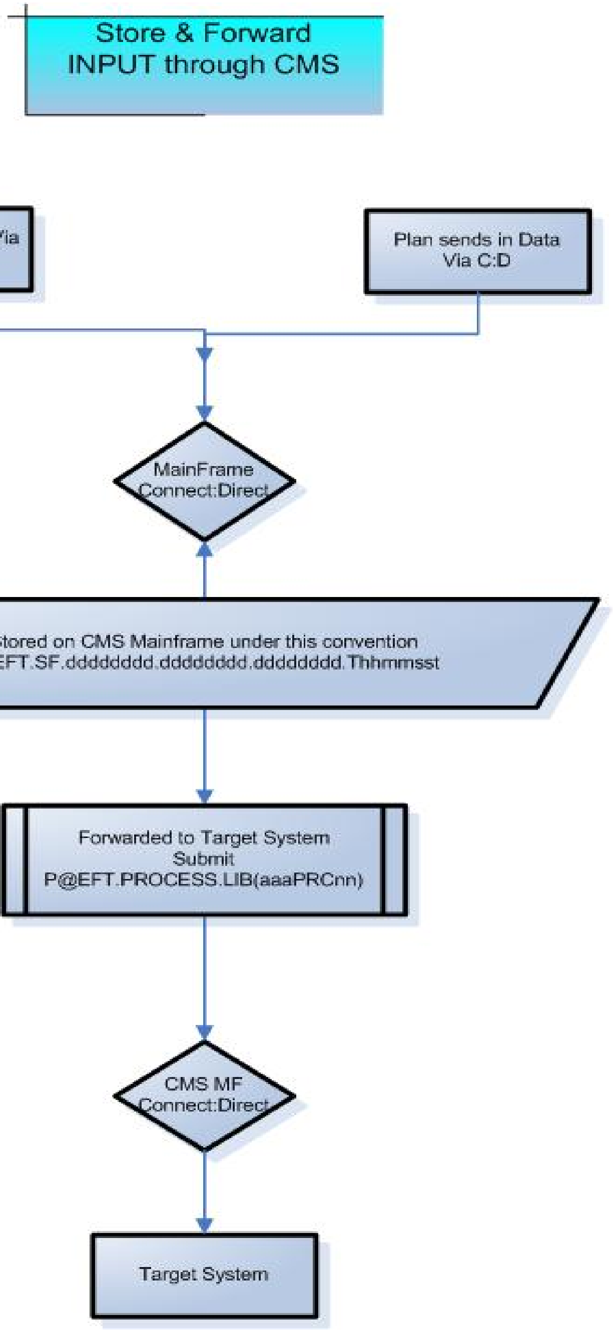

Store & Forward
INPUT through CMS
Plan sends in Data Via GENTRAN
Plan sends in Data Via C:D
MainFrame Connect:Direct
Stored on CMS Mainframe under this convention
P#EFT.SF.dddddddd.dddddddd.dddddddd.Thhmmsst
Forwarded to Target System
Submit
P@EFT.PROCESS.LIB(aaaPRCnn)
CMS MF Connect:Direct
Target System

**Figure 3 - EFT Data Flow Diagram (Pass Through Inbound)**

The following graphic depicts the flow of data from a third party to a trading partner entity via CMS.

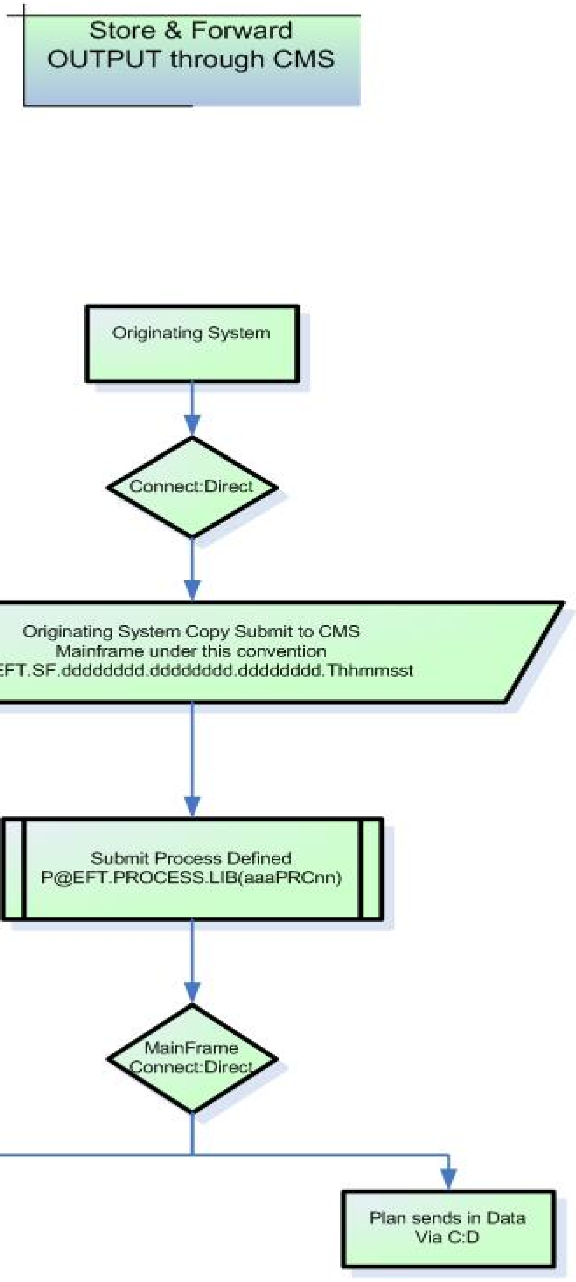


**Figure 4 - EFT Data Flow Diagram (Pass Through Outbound)**

### 4.C.1 Description of the EFT INPUT/OUTPUT Narrative (CMS Pass Through)

Data can be forward via Gentran and/or Connect:Direct. All file names and jobs are defined and created by the EFT Team. The file names that are created at CMS are temporary and will be deleted upon completion of the copy processes (pass through). The pass through mechanism is a separate process and does not reference the CMS routing tables or process through the Sweeps applications.

It is the responsibility of the originating and/or target systems to archive and/or retransmit in the case of failures. Data in-flight failures and/or troubleshooting could involve the EFT Team; however, no archiving of the data will be maintained at CMS.

## 4.D. Connect:Direct File Transfer Naming Conventions

### 4.D.1 Inbound File-Naming Life Cycle

The inbound filename will change as it progresses through the inbound EFT life cycle. Note that examples are provided for both the Medicare Beneficiary Database (MBD) (plan H1234) and the Medicare Advantage Prescription Drug System (MARX) (submitter UZZ5).

The inbound filename from the CMS business partner is a maximum of 40 characters. The first 9 characters and last 17 characters of the filename follow a rigid EFT format. The remaining characters identify EFT routing and business purpose of the data and are variable in length to a maximum of 14. The EFT Team will establish all elements of the inbound file name.

P#EFT.IN.dddddddd.ddddd.DYYMMDD.THHMMSST

- Where P = P for production, P=T for test, P=V for validation or P=D for development.
- "#EFT" is the EFT high-level qualifier.
- "IN" where "I" is the direction ("I" for inbound) and "N" is the process state ("N" for no) indicating that EFT has not yet copied the file to the application.
- "dddddddd.ddddd" is variable length file type up to 14 characters, with a maximum of 8 characters per level with each level delimited with a period "."
- Where "DYYMMDD.THHMMSST" is a literal that should be coded EXACTLY as shown. The CMS allocation exit will modify the literal with the actual date/time stamp value. The time inserted into the literal will be Baltimore, Maryland local time.

**Example:**

MBD: P#EFT.IN.PLH1234.BEQ4RX.DYYMMDD.THHMMSST
MARX: P#EFT.IN.UZZ5.MARXTR.DYYMMDD.THHMMSST

The Connect:Direct allocation exit detects the EFT filename and modifies the literal "DYYMMDD.THHMMSST" with a unique 17-character time stamp. Then Connect:Direct allocates the file under the changed name and proceeds with the file transfer.

P#EFT.IN.dddddddd.ddddd.Dyymmdd.Thhmmsst

- "Dyymmdd" designates the file Connect:Direct arrival date in year, month, day format.
- "Thhmmsst" designates the file Connect:Direct arrival time in hours, minutes, seconds, tenths of second format.

**Example:**

| | |
|---|---|
| MBD: | P#EFT.IN.PLH1234.BEQ4RX.D060201.T0956238 |
| MARX: | P#EFT.IN.UZZ5.MARXTR.D060201.T0956243 |

The EFT Sweeps program sweeps the mainframe catalog for availability of non-processed inbound files. When a file is detected, it is copied to an archive filename.

P#EFT.IY.dddddddd.ddddd.Dyymmdd.Thhmmsst

- "IY" where "I" is the direction ("I" for inbound).
- "Y" is the process state ("Y" for yes) indicating that EFT has copied the file to the application.

**Example:**

| | |
|---|---|
| MBD: | P#EFT.IY.PLH1234.BEQ4RX.D060201.T0956238 |
| MARX: | P#EFT.IY.UZZ5.MARXTR.D060201.T0956243 |

The EFT Sweeps application then renames the file under the business function application high-level qualifier. This also indicates that the file has already been processed and to avoid repeated detection by subsequent sweeps of the catalog.

P#aaa.IN.EFT.dddddddd.ddddd.Dyymmdd.Thhmmsst

**Example:**

| | |
|---|---|
| MBD: | P#MBD.IN.EFT.PLH1234.BEQ4RX.D060201.T0956238 |
| MARX | P#MMA.IN.EFT.UZZ5.MARXTR.D060201.T0956243 |

## 4.E. Connect:Direct Outbound File Naming Conventions

The new outbound file naming convention was designed to provide routing information, and an additional number of characters to be used to identify the business purpose of the data and a unique time stamp.

The new outbound file naming convention was designed to meet a number of requirements:

- be distinguishable from inbound file names;
- provide sufficient number of characters for the application to append a unique time stamp to the filename;
- provide routing information for push of file to CMS business partners;
- optimum performance in sweeping of filenames by Catalog Search Interface (CSI);
- good pattern matching for Resource Access Control Facility (RACF) generic profiles;
- provide isolation of production data from user based high level qualifiers; and
- provide centralized administration of access control for EFT files.

### 4.E.1 Outbound File-Naming Life Cycle

The outbound filename will change as it progresses through the outbound EFT life cycle. CMS applications create outbound files for EFT routing to a CMS business partner. The CMS application must name the file using the new naming convention, which provides uniqueness as well as routing information to be used by EFT during the file push to the CMS business partner. The first 9 characters of the filename follow a rigid EFT format that identifies the file as an EFT outbound file. The next 18 characters are used to identify the routing information and file type of the outbound file and will be provided to the application by the EFT Team. The remaining 17 characters are used by the application to insert a unique time stamp. This can be easily accomplished by means of the EFT timestamp (EFTIMEST) utility.

P#EFT.ON.rrrrrrrrrrrrrrrrrr.Dyymmdd.Thhmmsst
(Note: this is 44 characters)

- "P#EFT" is the EFT high-level qualifier.
- "ON" where "O" is the direction ("O" for outbound) and "N" is the process state ("N" for no) indicating that EFT has not yet initiated the CONNECT:DIRECT process to push the file to Gentran nor directly to the business partner.
- "rrrrrrrrrrrrrrrrrr" is up to 18 characters of routing and file type information provided by the EFT Team to the application If more than 8 characters is specified, it must separated into multiple levels of no more than 8 characters each with each level delimited by a ".". CMS currently routes by submitter ID (MARX) and the HPMS plan contract number (MARX and MBD). Additional routing keys will be developed and documented by EFT for the CMS user community.
- "Dyymmdd.Thhmmsst" the application must insert a unique time stamp in the last 17 bytes. (Note: 17 because we include the "." delimiter that precedes the time stamp).

**Example:**

| | |
|---|---|
| MBD: | P#EFT.ON.RH1234.RXN4RESP.D060201.T100353 |
| MARX: | P#EFT.ON.RUZZ5.BATCHSTD.D060201.T100942 |

The EFT outbound Sweeps application sweeps the mainframe catalog for availability of non-processed outbound files. When a file is detected, the file is renamed to indicate that EFT has selected the file and initiated the Connect:Direct process to push the file. The rename also serves to avoid repeated detection of the file by subsequent sweeps of the catalog.

P#EFT.OY.rrrrrrrrrrrrrrrrrr.Dyymmdd.Thhmmsst

- "OY" where "O" is the direction ("O" for outbound).
- "Y" is the process state ("Y" for yes) indicating that EFT has selected the file and initiated the Connect:Direct process to push the file to Gentran or directly to the business partner.

**Example:**

MBD: P#EFT.OY.RH1234.RXN4RESP.D060201.T100353
MARX: P#EFT.OY.RUZZ5.BATCHSTD.D060201.T100942

The EFT outbound Sweeps application determines routing by means of the routing key obtained from the routing information (“rrrrrrrrrrrrrrrrr”) that begins in the 3rd qualifier. The key is used to obtain the Connect:Direct routing information (e.g., snode), plan high-level qualifier, and other data required to initiate the file transfer push to Gentran or directly to the CMS business partner via Connect:Direct. Sweeps first attempts to obtain routing information from the File Routing VSAM file by using the entire routing information as the key. This is known as file level routing. If no file level routing key is found, Sweeps attempts to obtain routing information by using the generic routing key, which is the first level of the routing information. This two-level routing design provides the capability to support unique routing requirements at the file level.

All files sent outbound by EFT Outbound Sweeps are named by prefixing the filename with an optional plan high-level qualifier. If none exists, the high-level qualifier defaults to the constant “EFTO”. The second through ending qualifiers of the filename is taken from the remainder of the outbound filename that begins with the routing information:

Mainframe
Planhlq.rrrrrrrrrrrrrrrrr.Dyymmdd.Thhmmsst
EFTO.rrrrrrrrrrrrrrrrr.Dyymmdd.Thhmmsst

Mid-tier Connect Direct
\directory\rrrrrrrrrrrrrrrrr.Dyymmdd.Thhmmsst
\EFTO.rrrrrrrrrrrrrrrrr.Dyymmdd.Thhmmsst

Default Testing high-level qualifier will be “EFTT”.

EFTO - Production
EFTT – Testing

Following are two examples each for MBD and MARX. The first example shows the filename sent to the plan given a plan high-level qualifier of “LOC.NDM”. The second example shows the filename sent to the plan given the plan has not provided a plan high-level qualifier. Note that the MARX example demonstrates a 4-character userID, however, the naming convention supports up to a 7-character userID.

**Example:**

MBD: LOC.NDM.RH1234.RXN4RESP.D060201.T100353
EFTO.RH1234.RXN4RESP.D060201.T100353

MARX: LOC.NDM.UZZ5.BATCHSTD.D060201.T100942
EFTO.UZZ5.BATCHSTD.D060201.T100942

## 4.F. Store and Forward Convention

CMS will function as a data switch for some business partners. The following conventions and architecture will be followed for all “store and forward” file transfers where CMS acts as data switch between two business partners. The source plan will copy the file to the CMS system and then submit a Connect:Direct process established by the EFT Team to copy the file to the target business partner.

The file naming convention for the store and forward to CMS is:

P#EFT.SF.dddddddd.dddddddd.dddddddd.Thhmmsst

- “P#EFT” is the EFT high-level qualifier.
- “SF” is a hard-coded identifier for “store and forwarded files.
- “dddddddd.dddddddd.ddddddd” is variable-length file type up to 17 characters, with a maximum of 8 characters per level with each level delimited with a period “.”
- Thhmmsst a unique time stamp on every file.

The convention for dataset and members for the “store and forward” Connect: Direct processes is:

P@EFT.PROCESS.LIB

The PDS member naming convention will be:

aaaPRCnn

- where aaa is a three letter abbreviation for the target business partner.
- PRC is a hard coded for PROC.
- nn is 00-zz for counter for procs for that partner.

**Example:**

P@EFT.PROCESS.LIB(PALPRC00) PAL for Palmetto

## 4.G. GENTRAN Store and Forward Process

CMS will function as a data switch for some business partners. The following conventions and architecture will be followed for all “GIS store and forward” file transfers where CMS acts as data switch between two business partners. GIS will copy the data and JCL files to the CMS system and then submit the JCL that kicks off a Connect Direct process to copy the file to the target business partner:

The file naming convention for the “store and forward” to CMS will be:

DATA - P#EFT.SF.GIS.Ddddddd.Dcyymmdd.Thhmmss
JCL - P#EFT.SF.GIS.Jddddddd.Dcyymmdd.Thhmmss

“P#EFT” is the EFT high-level qualifier.
“SF” is a hard-coded identifier for “store and forwarded files.
"GIS" denotes it is from GENTRAN.

D = Data or J = JCL
“ddddddd” is a variable-length file type up to 7 characters, which comes from the GIS business process number.
Dcyymmdd is a date stamp on every file.
Thhmmsst a time stamp on every file.

The GIS store and forward Connect: Direct process PDS member is:

P@EFT.PROCESS.LIB(GISPRCSF)

## 4.H. Trigger Naming Convention

Triggers will continue to be developed by the business application owner and provided to the Lockheed Martin Production Control using the inbound trigger naming convention outlined below.

The sweeps application will determine the appropriate application trigger job for the file and submit the job to Tivoli Work Scheduler for processing. The trigger convention is based upon the data set naming convention.

Inbound Trigger Naming Convention:

The trigger name will be the same Data Set Name (DSN) that is passed by EFT Sweeps to the business function application high-level qualifier minus the date/time stamp.

Example MBD DSN: [P/T]#MBD.IN.EFT.PLH1234.BEQ4RX.D060201.T0956238

Example MBD Trigger: [P/T]#MBD.IN.EFT.PLH1234.BEQ4RX

Example MARx DSN: [P/T]#MMA.IN.EFT.UZZ5.MARXTR.D060201.T0956238

Example MARx Trigger: [P/T]#MMA.IN.EFT.UZZ5.MARXTR

The first byte will determine whether a Production or Test job will be triggered.

## 4.I. Connect:Direct Inter-Zone File Transfer

Inter-Zone File Transfer requirements are yet to be determined.

## 4.J. Connect:Direct Cross Zone File Transfer

Cross Zone File Transfer requirements are yet to be determined.

## 4.K. Connect:Direct RACF/SPOE Requirements

A Connect:Direct business trading partner must have a CMS secure point of entry (SPOE) to submit files to the CMS EFT System. This is technically an “alias” type of account. SPOE request forms are available from the CSMM Helpdesk and/or EFT Support. The CMS EFT Team is not directly responsible for processing your security access. The completed SPOE request form must be submitted to the CMS Enterprise User Administration (EUA) Support Team for processing.

For mail applications, please use the following address:

Lockheed Martin  
c/o EUA Support Team  
3300 Lord Baltimore Drive  
Suite 200  
Baltimore, MD 21244

## 4.L. Access to P# Data Sets on the CMS Mainframe

Project owners/managers must contact the CMS Support Desk (Helpdesk) to request access to specific data sets on the CMS mainframe. D# data set access can be assigned by the application owners.

## 4.M. Connect:Direct MDCN/MPLS Connectivity

Trading partners that will require the use of Connect:Direct will be submitting data through the CMS MDCN or MPLS Network. This will require telecommunications (T1 or DS3) and routing equipment. Sufficient time must be allocated for the installation and testing of the circuit. Appropriate sizing of the circuit is the sole responsibility of the trading partner or CMS contractor.

Please contact the CMS MDCN/MPLS Team for specific information.

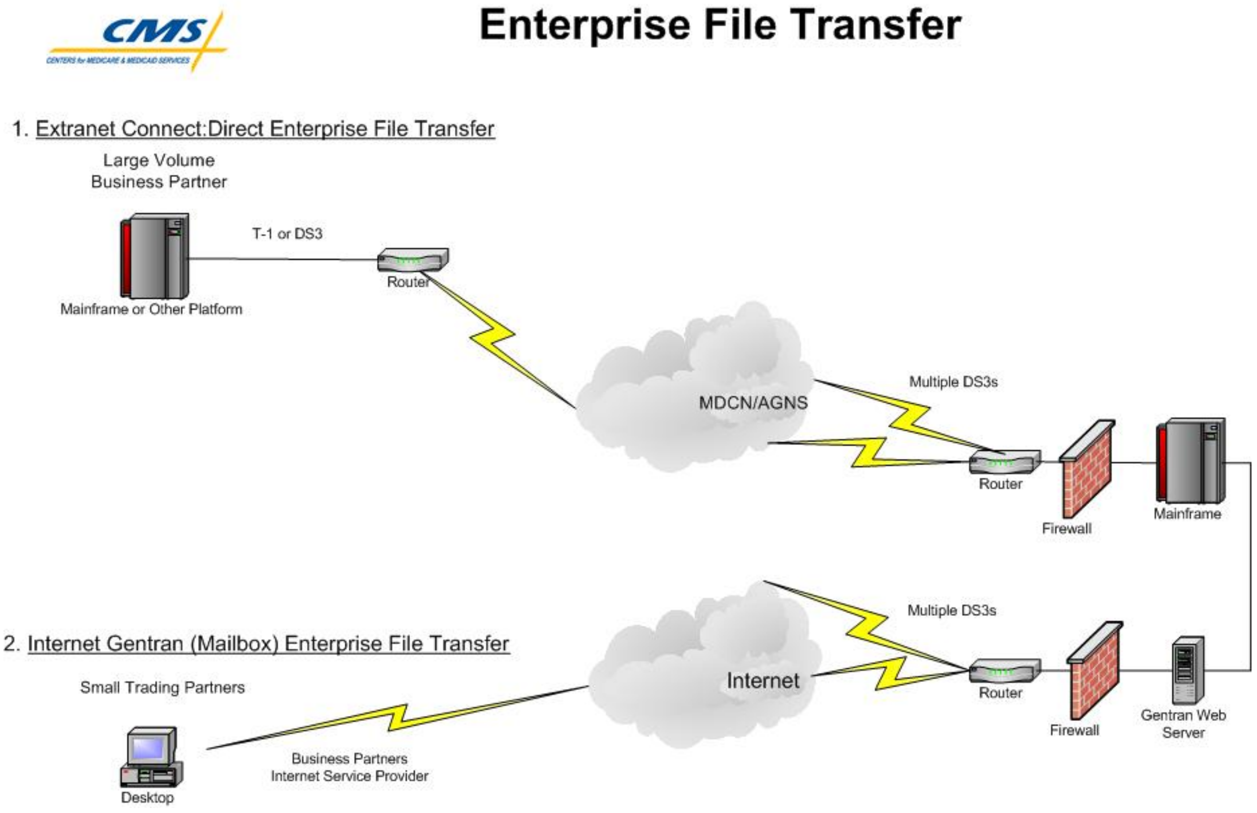


**Figure 5 -- EFT Connectivity View (High Level)**

## 4.N. Connect:Direct Information Exchange Templates

The EFT Team will require trading partners to complete the Connect:Direct information exchange template. This form will share specific setup and configuration parameters and other information required to exchange data successfully. The trading partner will receive a specific CMS Connect:Direct template containing configuration parameters about the CMS Connect:Direct facility. This information will be required to establish connectivity. To request the template and/or exchange template information please contact the e-mail resource: CMSEFT_ADMIN@cms.hhs.gov

# 5. GENTRAN INTEGRATION SUITE

The GIS was introduced as part of the MMA Part D initiative. A large number of new organizations have begun to exchange data with CMS under the Part D provisions of MMA. Many of the new organizations are smaller than those who have traditionally conducted business with CMS. Therefore, CMS implemented a new file transfer process that is both flexible and robust enough to accommodate the data exchange requirements of all CMS business partners. The new system also reduces time to deployment, eliminating the need for “private” circuits to the MDCN network, routing equipment and more expensive Sterling Commerce Connect: Direct software. Gentran, is a commercial off-the-shelf (COTS) product, met the CMS Internet Architecture requirements and will leverage the existing Connect: Direct infrastructure.

## 5.A. Current Gentran Architecture

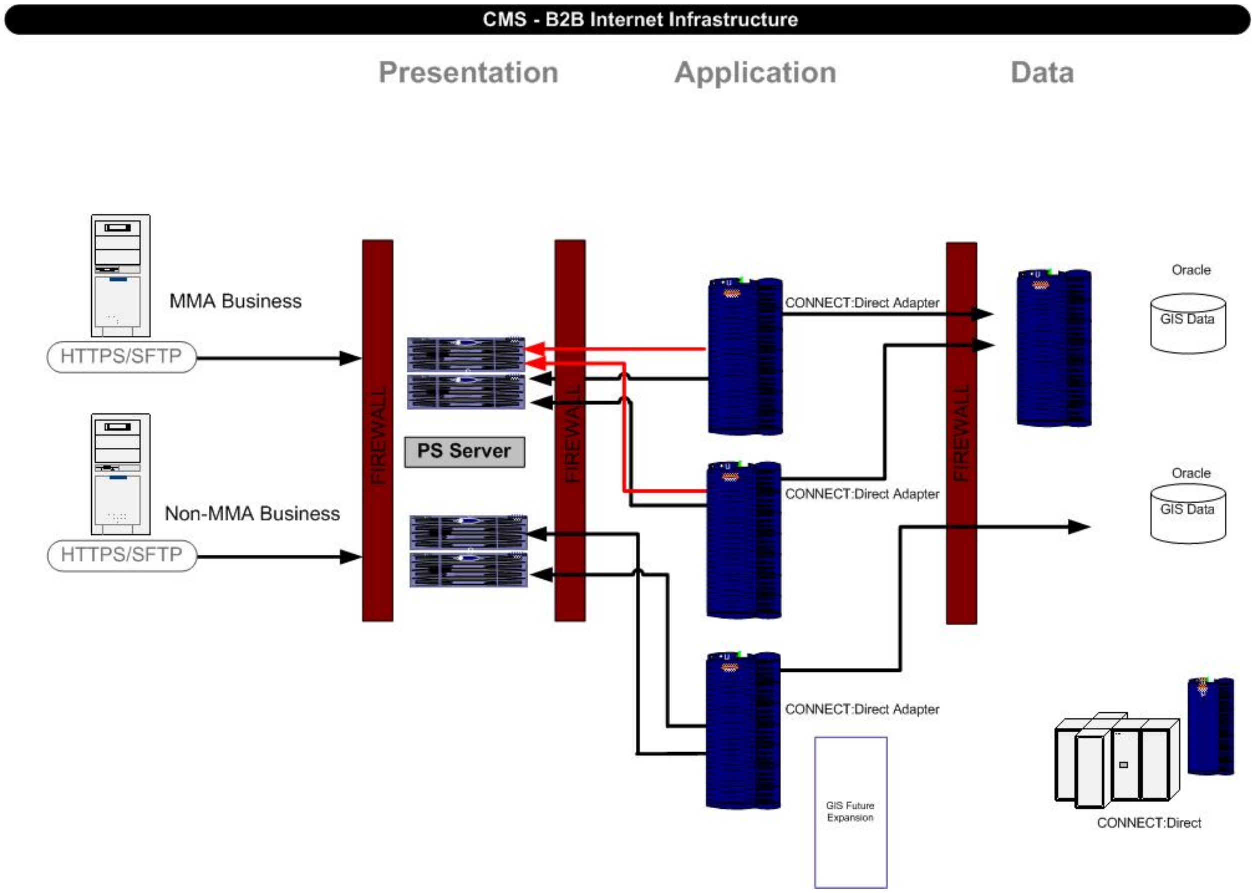


**Figure 6 – Current Gentran Architecture**

## 5.B. GENTRAN Architecture with Enhancements

The EFT Team was anticipating future growth outside of the MMA Part D initiative. Therefore, a new instance of Gentran has been developed within the CMS Internet Three Zone Architecture to support other CMS business requirements.

The Non-MMA instance has a base configuration similar to the MMA Part D system offering mailbox functionality however; the EFT Team will also offer a Web Graphical User Interface (GUI). The GUI interface will support the non-fixed user who may have limited access requirements.

The MMA instance of GIS has been enhanced to provide Application level (GIS Application) clustering. Gentran is using the clustering feature set native to GIS. At the Presentation Zone, physical and virtual servers will support load balancing across the GIS Application leveraging the Cisco Catalyst 65XX Load Balancing modules. SSL terminates at the GIS Application server; therefore, the Catalyst SSL Accelerator is not used.

At the Data Zone, it is expected that the GIS Application will be updated to support Oracle 10G Release 2 in January 2007. Gentran is a 24 x 7 application with Daily Hot Backups of the Oracle database with an approximate 15-minute outage scheduled monthly (first Monday of each month) for an Oracle DB reboot.

## 5.C. Trading Partner Internet Connectivity

Internet connectivity and appropriate sizing of the connectivity is the sole responsibility of the trading partner or CMS contractor.

## 5.D. GENTRAN File Transfer Naming Convention

As stated in previous segments of this document, the Gentran File Names are developed and maintained by the EFT Team. Files sent to the Gentran should follow the naming conventions outlined in the business application guidelines and/or transmission inventory document.

Example based on the legend: GUID.RACFID.APPID.X.UNIQUEID.FUTURE.W.$\underbrace{\text{ZIP}}_{\text{Optional}}$

The incoming Gentran file transfer names map internally to the Connect: Direct file name. Gentran will hold all incoming submissions for approximately 1 to 2 minutes before releasing to Connect: Direct.

| File Name Convention | Description |
|---|---|
| GUID | 7 character alphanumeric user ID generated by the Individuals Authorized Access to CMS Systems (IACS) |
| RACFID | 4 character RACF user ID<br>Note: If a RACF ID was not assigned insert NONE ALL CAPS<br>Future Transition – GIS will support the new 7 character RACFID |
| APPID | Application Identifier |
| X (Frequency) | D – DAILY<br>W – WEEKLY<br>M – MONTHLY<br>Q – QUARTERLY<br>Y – YEARLY<br>A – AD HOC<br>**Note:** This field indicates frequency of data, e.g., Daily, Monthly. However, multiple file types may be transmitted on the same day (2 daily submissions). |
| UNIQUEID | If no UNIQUE ID, insert DEFAULT refer to business application guidelines and/or transmissions inventory. |
| FUTURE | FUTURE unless otherwise specified this field is reserved for future use. (For additional reference, see business application guidelines and/or transmissions inventory.) |
| W | Code T for test data<br>Code P for production data |
| ZIP **Optional** | Only used when file compression is used and automatically added to the file name by the ZIP application, e.g., WINZIP or PKZIP.<br>Note: WINZIP version 9 or higher is required to support long file names. |
| . (Periods) | Delineators |

### 5.E. Gentran Out Bound File Naming Conventions (Files as they appear in the Mailbox)

The file names created by the new EFT naming standard will be sent unchanged to the mailbox. Gentran will then append a unique identifier to the end of the file. When downloading the file from your organizational mailbox, you may change the file name in accordance with your organizational naming requirements. MMA Part D outbound files will be prefixed with a “P.” for Production and/or “T.” for Test. Reference the appropriate Business Application Guidelines or File Transmission Inventory document for specific file names.

### 5.E.1 File Path Limitation

A limitation has been found relating to the use of the HTTPS mailbox interface. The ActiveX control used to browse for a file (written by Microsoft) has a limitation of 128 characters for the entire path/file name. If a path/file name exceeds this 128-character limit then the file will not be transmitted. The path/file name is the result of the Microsoft browse button and produces a result of "c:\folder1\folder2\folder3\filename.extension". The total character count needs to remain under the 128-character limit for anyone using the HTTPS mailbox interface.

## 5.F. Gentran User Receipt Notification

Gentran users will receive a receipt notification upon successful upload of a file. The receipt is placed in the Gentran mailbox and should be downloaded. This is not an SMTP e-mail receipt.

## 5.G. Gentran File Size Limitation

The inbound file size limitation is 1.5 GB with or without compression. If trading partners are submitting or retrieving larger files size, they may need to consider switching to Connect: Direct and acquiring an MDCN/MPLS circuit. Typical MMA Part D files are around 20 to 30 MB.

### 5.G.1 CRLF Considerations

The CRLF (carriage return line feed) characters will be handled by Gentran.

### 5.G.2 ZIP Utility Software

At the present time, Gentran can not support multiple files within a single compressed file name. NOTE: Compression utilities must support long files names (i.e. WINZIP Version 9 or higher).

## 5.H. Gentran Access Requirements

To access Gentran, you must use the GUID assigned to you by the IACS system. This is a 7-character user ID. MMA Part D Plans may only have **4 submitters**. Designated submitters must be identified within the Plan organization and approved by the local External Point of Contact (EPOC). End users who require access to multiple mailboxes must request access to those mailboxes through the IACS system and be approved through a specific workflow process.

RACFID Note: CMS will be expanding the current 4 character RACFID to 7 characters.

## 5.I. HTTPS Gentran Access and System Requirements

Small trading partners and/or those specifically identified will use either HTTPS or the Sterling SFTP Client for file submission or retrieval. The Internet URL for the MMA Part D system is: https://gis.cms.hhs.gov:3443/mailbox

The URL for the Non-MMA Part D system is https://gis2.cms.hhs.gov:3443/mailbox for mailbox functionality. Other URL's maybe required to support additional functionality.

HTTPS Post functionality will be offered on the Non-MMA Part D system allowing for additional automation. In-house scripting must support Security Certificates, User ID and Password authentication. Upon the first successful access attempt, you must download and store the Certificate locally. The Port requirement for this access is 5443.

### 5.I.1 Trading Partner Firewall Configuration

Port 3443 is used for connectivity to the Gentran facility.

### 5.I.2 Browser Requirements

The browser requirement is Microsoft Internet Explorer 5.x or later. Updated browser requirements are available from Sterling Commerce. CMS recommends that trading partners use a Microsoft Operating Systems that is currently supported by Microsoft and at the appropriate Service Pack Levels.

## 5.J. SFTP/SSH Client Gentran Access and System Requirements

Small trading partners and/or those specifically identified will use either HTTPS or the SFTP Client for file submission or file retrieval. CMS recommends the Sterling FTP client. If you will be using a client other than what has been recommended, it must support SSH V2. Connectivity troubleshooting and/or configuration parameter assistance will be very limited with the use of other FTP clients. Sterling FTP user manuals are available from Sterling Commerce. The EFT Team will provide the client configuration parameters for accessing the CMS GIS system.

CMS does not procure and/or provide licensing for the Sterling SFTP client. The decision to use HTTPS or FTP client is the responsibility of the end user or trading partner.

### 5.J.1 Trading Partner Firewall

TCP Port 10022 for SFTP with SSH is used for the SFTP sessions.

### 5.J.2 Sterling FTP Client Minimum Requirements and Support

Sterling FTP Client minimum platform and hardware requirements may be obtained from the Sterling Commerce web site (http://www.sterlingcommerce.com) or by contacting Sterling Commerce. Sterling FTP software support services are available from Sterling Commerce. When calling Sterling Support Services mention that you are either 1) using a CMS licensed version of the Sterling FTP Client or 2) need assistance with the Sterling FTP Client in relation to a CMS Project/Program. The CMS EFT Team, CMS Lockheed Martin Helpdesk, and the MMA Helpdesk do not provide Sterling FTP client installation, configuration, or technical software support services.

## 5.K. Sterling FTP Configuration Parameters

| Description | Parameters |
|---|---|
| Sterling SFTP Client Configuration | Standard SSH Server - SSH Ver. 2 |
| | Port 10022 |
| | Use System Keys |
| | Enable Compression (at zlib Level 6) |
| | Ciphers AES-128-CBC |
| | MAC Cipher HMAC-SHA1 |

## 5.L Gentran Interfaces

| Interfaces | Systems |
|---|---|
| https://gis.cms.hhs.gov:3443/mailbox<br>or<br>gis.cms.hhs.gov Port 10022 (SFTP) | MMA Part D Systems<br>MARx, MBD, COBA/VDSA, HPMS, ECRS, MAS, IACS, PDE, RAPS, SPAP, PBM, SD, CTM, NPI Crosswalk, DDPS (Medispan, NCPDP) |
| https://gis2.cms.hhs.gov:3443/mailbox<br>or<br>gis2.cms.hhs.gov Port 10022 (SFTP)<br>or<br>https://gis2.cms.hhs.gov:5443 (HTTPS Post) | Non-MMA System<br>GovTrip, Wachovia Bank (CLIA Lockbox) |

## 5.M. Gentran Mailbox File Retentions

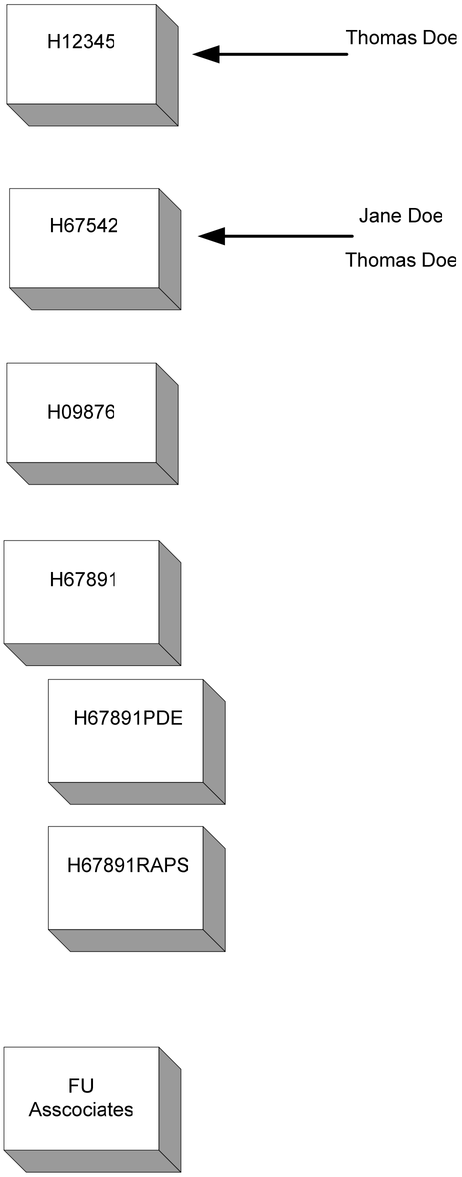
The current CMS mailbox retention periods for all outgoing files are listed in the table below. The maximum retention period for all files is 30 days.

| Application | Minimum Retention |
|---|---|
| MARx | Monthly reports 30 days total, all other reports 6 days (including weekends) |
| MBD (BEQ/4RX/Auto Assign) | All files 6 days (including weekends) |
| DDPS PDE/RAPS | All files 14 days (including weekends) |
| COBA/VDSA/SPAP/PBM/SD | All files 6 days (including weekends) |
| HPMS | All files 6 days (including weekends) |
| ECERS | All Files 6 days (including weekends) |

## 5.N. Gentran Mailbox Design

The Gentran mailbox design for MMA Part D is based primarily on Plan contract numbers (e.g. H1234, E9876). In some instances, mailboxes have been created for specific application groups who will feed downstream MMA business applications.

Data is received encrypted, unencrypted in memory on the GIS application server and stored in the Oracle Data Base encrypted.



## 6. Engaging the EFT Team for New Projects

Project owners/managers of new IT projects should contact the Division of Enterprise Architecture Program Management in OIS. Any new projects that require the use of Gentran services must contact the CMS Individuals Authorized Access to CMS Computer Services (IACS) Team for support. It may be necessary for this team to develop a workflow process to support your project requirements.

## 7. Business Applications File Transfer Specifications

Business application owners must provide the EFT Team with a complete inventory of the expected inbound and outbound files, a brief description of the file and logical record length (LRECL). The EFT Team will construct the necessary file transfer naming convention based on this document. The EFT Team will provide Production and Test file names. The EFT Team is not responsible for data formats, data structures, and/or parsing files.

**Example:**

| **File Type** | **Description** | **Length** |
|---|---|---|
| Inbound File | Marx Enrollment Transaction | LRECL 512 |
| Outbound File | Marx Failed Transaction | |

Note: Outbound LRECL is not required.

Business application owners must provide the EFT Team with a file transfer data flow diagram.

Note: Business application owners who intend to transmit Microsoft Excel spreadsheet data through Gentran to the mainframe or to a trading partner who is using Connect: Direct on the mainframe must send the data in Comma Separated Value (CSV) format.

## 8. Production Applications and File Naming Conventions

Existing business applications must adhere to the new CMS EFT file naming convention for all inbound and outbound file transmissions.

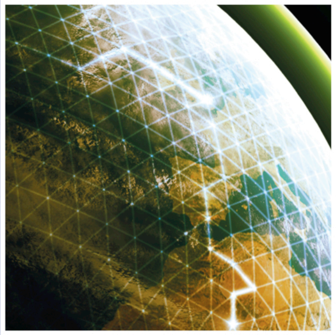
Inbound files defined – Any files sent from a trading partner, business partner, and/or contractor with a destination of CMS or CMS business application that will leverage the EFT infrastructure (Gentran – Connect: Direct).

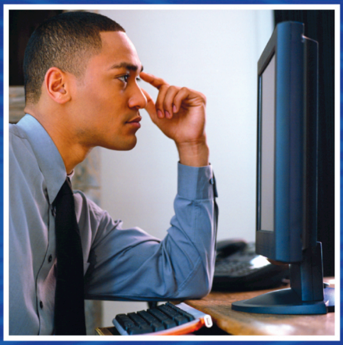
Outbound files defined – Any files transmitted from CMS or CMS business applications with a destination of a trading partner, business partner, and/or contractor that will leverage the EFT infrastructure (Gentran - Connect: Direct).

At the direction of the CMS CTO, date/time stamps will now take the place of Generation Data Groups (GDGs) to guarantee file name uniqueness within the EFT architecture (inbound/ outbound). However, this standard does not apply to all application files. Applications may use GDGs within the application. The date/time stamp requirement affects the initial inbound file and transmitted outbound file.

The EFT Team will be working with the business application owners to map existing inbound/outbound files to the new file naming convention.

Business application owners will periodically have requirement changes to existing file transmissions (inbound/outbound). Please contact the EFT Team so that we can work with you in developing new file names (inbound/outbound) for the inbound/outbound file transmissions.





OIS Office of Information Services

Centers for Medicare & Medicaid Services
7500 Security Boulevard
Baltimore, MD 21244-1850

*www.cms.hhs.gov*
*www.medicare.gov*