

IBM WebSphere Transformation Extender



# Trading Manager Performance Tuning and Debugging

*Version 7.8*

**Note**

Before using this information, be sure to read the general information in "Notices" on page 23.

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This edition of this document applies to IBM WebSphere Transformation Extender Trading Manager Performance Tuning and Debugging Version 7.8; and to all subsequent releases and modifications until otherwise indicated in new editions.

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## Chapter 1. Overview and performance checklist

xxThis documentation presented here is divided into two major parts. The first part provides a high level overview of the performance optimization techniques. The second part provides a checklist that you can use to guide you through the performance optimization process.

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### Overview

Throughout the discussions contained in this guide, you should bear in mind that Trading Manager is only one component in the B2B solution. The final performance depends on how well each of the various parts such as partner and application connectivity, individual data translation maps, routers, and Trading Manager itself are configured.

#### CPU and memory requirements

Analyze the CPU and Memory requirements of other applications running on the same server as Message Manager.

Optimum performance is achieved when the competition for shared resources is minimized. Tuning Message Manager requires knowing how many resources are available to it. The IBM WebSphere Transformation Extender is, in an optimal configuration, a CPU intensive application that can degrade the performance of other applications (for example, databases) on the same server. The performance of the IBM WebSphere Transformation Extender can also be degraded by other applications on that server. For example, antivirus software that checks every file created for viruses will drastically hinder the performance of the IBM WebSphere Transformation Extender, and therefore Trading Manager and any application maps, due to the amount of files, such as work files, logs, and intermediate files, that are created during the normal course of events. Therefore, it is best to limit the number of other applications running on the IBM WebSphere Transformation Extender server.

#### Analyze transmission sizes

The size of the transmissions to be processed by Trading Manager determines the best configuration options for Message Manager. The default system, using workfiles in memory, is best for small to medium size transmissions. The cutoff transmission size depends on the amount of memory available to Message Manager on the server after accounting for other applications and services. See "Analyzing Small Transmissions" for additional information.

#### Logical vs. physical implementations

Consider the logical vs. physical implementations of Trading Manager. Trading Manager uses Post Offices to define the sources and destinations of data. They are logical sources and destinations that can match the same physical locations. If you have external processes to get the data from partners (either via a VAN or direct connect) you probably define a single Get Post Office in Trading Manager, the default location being:

```
install_dir\tmgr_vn.n\mmgr\mail.
```

The performance of the system can be increased if multiple GET Post Offices are defined (instead of one) even if they point to the same ...\**mail** folder, as long as the GET Post Office name can be easily derived from the input data. Message Manager handles trade link information by GET Post Office and defining multiple GET Post Offices spreads the trade link information, thus reducing overhead. For example, you can use a VAN for most of the inbound EDI traffic, but you can also have numerous other partners that connect via FTP. The best configuration is to create a single GET Post Office for the VAN transmissions and group all of the FTPs into another GET Post Office. There is no advantage in breaking up the transmissions retrieved from a VAN into multiple GET Post Offices since the overhead of breaking up the transmission, in most cases, overshadows the benefits.

## Interfacing with non-IBM WebSphere Transformation Extender systems

Consider the following when interfacing non-IBM WebSphere Transformation Extender systems with the IBM WebSphere Transformation Extender. The Launcher triggers a map as soon as the trigger file is created. This can cause maps to execute before the trigger file is actually completed writing, especially with large files. To solve this problem, refer to "Solving IBM WebSphere Transformation Extender interface problems".

## Avoiding resource pending configurations

Avoid configuring maps that can cause them to become "Resource Pending".

The Launcher prepares maps for execution through a two step process. The following is a simplified discussion of the process. For a detailed discussion, refer to the Launcher documentation.

**Step 1:** Allocates a thread for a map/trigger file combination. Map/trigger file combination that fail to fulfill the requirements to successfully allocate a thread get placed on hold with a status of "Init Pending".

**Step 2:** Maps/trigger file combinations that have a thread allocated will then be executed unless they fail resource requirements. If they do they get placed on hold with a status of "Resource Pending".

The Launcher is configured with a finite number of threads to execute maps (either Message Manager maps and/or your own maps). If a map becomes **Resource Pending** (for example, if multiple instances of it append to a single file), it prevents other maps from using that thread. Multiple instances of the same map, all but the one that owns the resource in a Resource Pending state will, in effect, stall the Launcher's processing capabilities down to the one map that owns the resource. If this occurs, it is better to configure that map so that it becomes **Init Pending** before it can become **Resource Pending**, and therefore allow other maps to use the available thread.

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## Performance checklist

The following checklist is designed to help you configure Trading Manager for optimum performance. Although the steps in this checklist are presented in the order in which they should be worked, you should only implement those steps that are required for your particular system to achieve optimum performance.

## IBM WebSphere Transformation Extender checklist

In IBM WebSphere Transformation Extender, perform the following steps:

1. Turn ON the Launcher File. See "Turning On the Launcher Trace File" .
2. Update the Max Threads Parameter. See "Updating the Max Threads Parameter".

## Message Manager checklist

The options described below are accessed from the **Message Manager Configuration Maintenance** window. Open this window as described in the section titled "Opening the Message Manager Configuration Window", then check the following options:

1. Select the Use Stored Procedures option (under the **Database** tab). Turn ON if stored procedures are available. See "Use Stored Procedures Option".
2. **Optional X12 Validation** (select **Mapping Options** tab). Turn OFF. See "Optional X12 Validation".
3. **TSV Sort Option** (select **Database** tab). Turn OFF. This option is needed only when using backend databases that sort rows without regard to upper or lower case. See "TSV Sort Option".
4. **TA1 Control** option (select **X12 Acknowledgements** tab). Turn OFF if your partners are not capable of accepting and processing TA1 segments. See "TA1 Control Option".
5. **Store 997 Content** option (select **X12 Acknowledgements** tab). Turn OFF if you do not need to view inbound and outbound 997 transactions. See "Store 997 Content Option".
6. **Ignore Missing Trade Links** option (select **X12 Acknowledgements** tab). Turn ON unless you want to post-process your partners 997s. See "Ignore Missing Trade Links Option".
7. **Inbound Transmissions into Trading Manager (Archive Options** tab) Turn ON unless you already have a process in place to archive all of the transmissions received from your partners. See "Inbound Transmissions into Trading Manager".
8. **Outbound Transmissions into Trading Manager (Archive Options** tab). Turn OFF. See "Outbound Transmissions into Trading Manager".
9. **Inbound Interchange (Archive Options** tab). Turn OFF if testing is complete and the **Edit/Resend** feature is not needed. See "Inbound Interchange".
10. **Outbound Interchange before re-enveloping (Archive Options** tab). Turn OFF if testing is complete and the **Edit/Resend** feature is not needed. See "Outbound Interchange before re-enveloping".
11. **Outbound Interchange after re-enveloping (Archive Options** tab). Turn OFF if testing is complete and the **Edit/Resend** feature is not needed. See "Outbound Interchange after re-enveloping".
12. **Outbound Transmissions from Trading Manager (Archive Options** tab). Turn ON unless you have a process in place to archive all of the transmissions sent to your partners. See "Outbound Transmissions from Trading Manager".

## External X12 partner checklist

The options described below are accessed from the Address Book for External X12 window. Open this window as described in "Options for External X12 Partners", then check the following options:

1. **Duplicate Control (Trading Partner tab)**. Turn OFF if duplicate checking is not necessary. See "Duplicate Control Option".
2. **Authorization and Security Validation (Trading Partner tab)**. Turn OFF. This option is rarely used. See "Authorization and Security Validation".

### **Inbound X12 trade link checklist**

The options described below are accessed from the X12 Inbound Trade Links window. Open this window as described in "Options for Inbound X12 Trade Links", then check the following options:

1. **Routing (Application Post Offices/Routing tab)**. Turn ON if the criteria described in "Routing Options (Inbound)" is met.
2. **Acknowledgements (Acknowledgements/Validate By tab)**. Turn OFF. See "Acknowledgments Option".
3. **HIPAA Validation Types option (HIPAA Validation Types tab)**. Turn OFF if you are using the Packs for HIPAA EDI elsewhere in your system. See "HIPAA Validation Option".

### **Outbound X12 trade link checklist**

The following options are configured from the "Opening the X12 Outbound Trade Links Window" with the **Application** tab view displayed.

1. **Routing** options. Turn ON for no X12 validation, or OFF for validation. See "Routing Options (Outbound)".
2. **Outbound 997s**. Should always be defined as Route Only. See "Outbound 997's"

### **Small transmission size checklist**

Options 1 and 2 in the following checklist are configured using the Integration Flow Designer. See the Integration Flow Designer documentation for more information. Options 3 and 4 are configured using the "Opening the Message Manager Configuration Window" .

1. In **StampAndSort** change output cards two and three from **File** to **Sink**. This affects both inbound and outbound X12 files. See "Analyzing Small Transmissions".
2. In **sendx12** change output cards two and three from File to Sink. This affects outbound X12 files. See "Analyzing Small Transmissions".
3. Set the **Work File** options (**Optimization** tab). Set to **-WM**. See "Work File Option".
4. Set the **X12 Outbound PO Packaging** option (**Optimization** tab). Select the **One File per Put PO** button if you generate small batches of outbound data. See "X12 Outbound PO Packaging Option".

### **Large transmission size checklist**

Option 1 in the following checklist is configured using the Integration Flow Designer. See the Integration Flow Designer documentation for more information. Options 2 and 5 are configured using the "Opening the Message Manager Configuration Window" .



1. Change workspace settings for **stampandsortfile**, **sortx12** and **sendx12**. This option is set using the **msg\_mgr.msdl** opened in the *Integration Flow Designer*. See "stampandsort and sendx12".
2. Set the **Maximum X12 FG Validation Group** option (**Optimization** tab). See "Maximum FG Validation Size".
3. Set **Work File** options (**Optimization** tab). Set to **-WU**. See "Work File Option".
4. Set the **Maximum Reject File Size** option (**Mapping Options** tab). See "Select Maximum Reject File Size".
5. Set the **X12 Outbound PO Packaging** option (**Optimization** tab). Select the **One File per Put PO per Interchange** button if you generate large batches of outbound data. See "X12 Outbound PO Packaging Option".



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## Chapter 2. Tuning the IBM WebSphere Transformation Extender

This information presented here provides information about those IBM WebSphere Transformation Extender tuning procedures that may be required in order to achieve optimum performance from your Trading Manager application.

Specific information related to IBM WebSphere Transformation Extender tuning is contained in the IBM WebSphere Transformation Extender Performance documentation and in the Launcher documentation. You should familiarize yourself with the information before continuing with these procedures.

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### Turning on the Launcher trace file

Turn on the Launcher trace file in the **dstx.ini** file. This option facilitates debugging in both Trading Manager and the application maps. The option for performing this task is:

**LauncherLog=ewsc**

See the IBM Transformation Extender Launcher documentation for additional information.

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### Updating the max threads parameter

The Max Threads parameter is updated in the **dstx.ini** file. By default the IBM WebSphere Transformation Extender is configured to have a maximum number of threads of 20 . This might be too high for platforms with one or two CPUs. Low end Windows platforms with only one CPU will do best with an approximate setting of 5 but it depends on what else is loaded on that server. Perform benchmarks with a range of settings to determine the best setting. The option is:

**MaxThreads=20**

For specific information on the Max Threads parameter, as well as all other Launcher performance parameters, refer to the IBM WebSphere Transformation Extender Performance documentation. Also see the IBM WebSphere Transformation Extender Launcher documentation.

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### Solving IBM Transformation Extender interface problems

There are two ways to solve the problems that occur when interfacing non-IBM Transformation Extender systems with IBM Transformation Extender systems:

- Create files with a **.tmp** extension and rename the file when done writing. The IBM Transformation Extender with Launcher ignores any file with a **.tmp** extension and will process the file after it is renamed. This is the technique used by the IBM Transformation Extender internally, and it is called a "shadow file".
- Create two files: first the actual data file and then a one-byte trigger file. This is a popular option when FTPing into a system running under the Launcher, there has to be a relationship in the file names between the trigger file and the data

file, so that the Launcher can derive the name of the data file from the trigger file name. The triggered map has to have the trigger file card before the data file card and the data file card should not be a trigger, only the trigger card should be a trigger.

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## Running multiple Launchers

If you are running UNIX, you have probably created multiple instances of the Launcher and segregated your application maps across them. Trading Manager is distributed to run in a single instance and even with the new multi-instance capabilities of the Launcher, the benefits of breaking Message Manager into multiple instances will only be obtained in the most extreme cases. Segregating application maps, however, into a separate system from Message Manager is still a good way to control and improve maintainability, performance, and throughput.

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## Chapter 3. Configuring Partner Manager

This section describes how to change the configuration settings Partner Manager in order to achieve optimum performance in the Trading Manager application

These procedures are, for the most part, detailed descriptions of the checklist items provided in the "Overview and Performance Checklist".

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### Overview

Trading Manager provides a rich set of functionality that you may, or may not require. It contains functions may be turned on or off as needed. Functions such as:

- stored procedures
- extended X12 validation
- TA1 generation and routing
- several layers of archiving, etc.

All of these require processing that translates into wasted overhead if the functionality is not used.

In the sections that follow, turn OFF any functionality that you do not need, and turn on functionality that you can use.

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### Configuring Message Manager

The Message Manager options described here are all accessed using the Message Manager Configuration Maintenance window. Access the window as described in the following section, then refer to the following sections for option details.

#### Opening the Message Manager Configuration Window

To access Message Manager configuration options, first open the Message Manager Configuration Maintenance window:

1. Start Partner Manager.
2. Select **Utilities** from the Partner Manager toolbar.
3. Expand **Configuration** in the **Utilities** navigator and select **Message Manager Config**.

The Message Manager Configuration window opens:

#### Use stored procedures option

By default, Message Manager uses in-line SQL statements to generate thread ids and control numbers. Trading Manager provides stored procedures for those databases that support it. If these stored procedures are available they should be used.

To set this option:

1. Perform the steps provided in "Opening the Message Manager Configuration Window" .

2. Select the **Database** tab view.
3. Turn the option ON this by checking the **Use Stored Procedures** checkbox.

### **TSV sort option**

This option impacts export processing performance. It forces a resorting of the TSV (those Trading Manager files containing partner and transaction information) during the export so that the Trading Manager maps can take advantage of the SEARCHUP function. It should be noted that this functionality is only needed when using backend databases that sort rows without regard to case (lower vs. upper).

To set this option:

1. Perform the steps provided in "Opening the Message Manager Configuration Window" .
2. Select the **Database** tab view.
3. Disable the option by unchecking the **Sort TSV Files During Extract** checkbox, if you do not need this functionality.

### **Optional X12 validation**

Although it is important that this option be enabled when testing with a new partner, after testing is concluded it is not necessary for it to remain in that state. For this reason, it is recommended that this option be turned OFF.

To set this option:

1. Perform the steps provided in "Opening the Message Manager Configuration Window" .
2. Select the **Mapping Options** tab view.
3. Uncheck the checkbox in the **Optional X12 Validation** area of the window.

### **TA1 control option**

This option should be turned OFF if your partners are not capable of accepting and processing TA1 segments.

To set this option:

1. Perform the steps provided in "Opening the Message Manager Configuration Window" .
2. Select the **X12 Acknowledgements** tab view.
3. Check the **No TA1's** button.

### **Store 997 content option**

This option should be turned OFF unless you have the explicit need to view inbound and outbound 997 transactions online.

To set this option:

1. Perform the steps provided in "Opening the Message Manager Configuration Window" .
2. Select the **X12 Acknowledgements** tab view.
3. Uncheck the **Store 997 Content in Database**.

## Ignore missing trade links option

This option should be turned ON unless you are planning on post-processing your partner's 997's. You should also avoid creating tradelinks for inbound 997's.

To set this option:

1. Perform the steps provided in "Opening the Message Manager Configuration Window" .
2. Select the **X12 Acknowledgements** tab view.
3. Check the **Ignore Missing Trade Links for Inbound 997's**.

## Archive options

Archive Options: Message Manager archives data at different times and some of the options might be redundant:

To set these options:

1. Perform the steps provided in "Opening the Message Manager Configuration Window" .
2. Select the **Archive** tab view.
3. Make selections to the checkboxes.

### Inbound Transmissions into Trading Manager:

This option should always be ON (checkbox checked) unless you already have a process in place to archive all the transmissions received from your partners elsewhere.

### Outbound Transmissions into Trading Manager:

Turn this option ON (checkbox checked) if you want to archive all outbound transmissions, i.e. files created by your "Application to EDI" conversion maps using data from your internal systems. These files can usually be recreated from your internal applications and, therefore, it is recommended that this option be turned OFF.

### Inbound Interchange:

When enabled (checkbox checked) a text file is created for each inbound interchange and the **Edit/Resend** feature in Partner Manager is enabled. Although this feature may be useful during testing it can be turned OFF if the **Edit/Resend** feature is not used or not allowed.

### Outbound Interchange before re-enveloping:

When enabled (checkbox checked) a text file is created for each outbound interchange and the **Edit/Resend** feature in Partner Manager is enabled. Although this feature may be useful during testing it can be turned OFF if the **Edit/Resend** feature is not used or not allowed.

### Outbound Interchange after re-enveloping:

When enabled (checkbox checked) a text file is created for each outbound interchange and the **Edit/Resend** feature in Partner Manager is enabled. Although this feature may be useful during testing it can be turned OFF if the **Edit/Resend** feature is not used or not allowed.

#### **Outbound Transmissions from Trading Manager:**

This option should always be ON unless you already have a process in place to archive all the transmissions sent to your partners elsewhere.

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## **Options for external X12 partners**

Options for each External X12 Partner in the Address Book are accessed as follows. These options are set using the Edit X12 Trading Partner in External Folder X12 window.

### **Opening the Edit X12 Trading Partner Window**

Refer to the following steps to open the window:

1. Start Partner Manager.
2. Select **Address Book** from the Partner Manager toolbar.  
The Address Book for External X12 window opens.
3. Select a Trading Partner from the listbox.  
The Edit X12 Trading Partner In External X12 window opens with the Trading Partner tab view displayed.

The following sections describe how to set options to maximize Trading Manager performance.

#### **Duplicate control option**

When the Edit X12 Trading Partner in External X12 window opens, the **Trading Partner** tab is displayed. If this is not the case, click the Trading Partner tab.

To set this option:

1. Perform the steps provided in the "Opening the Edit X12 Trading Partner Window" .
2. Select the **Trading Partner** tab view.
3. Note the condition of the **Duplicate Control** checkboxes and set accordingly:  
Turn the option ON (checkboxes checked) only if it is required for the partner. Most partners have internal controls that make duplicate checking unnecessary. For this reason you will probably set this option to OFF as shown:

#### **Authorization and security validation**

The **Validate Authorization** and the **Validate Security** options should ordinarily be turned OFF as these options are rarely used.

To set these options:

1. Perform the steps provided in the "Opening the Edit X12 Trading Partner Window" .
2. Select the **Authorization/Security** tab view.
3. Ensure that the **Validation** check boxes are turned OFF.



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## Options for inbound X12 trade links

Options for each Inbound X12 Trade Link are accessed as follows.

### Opening the X12 Inbound Trade Links Window

Open the window as follows:

1. Start Partner Manager.
2. Select **Trade Links** from the Partner Manager toolbar.
3. Make certain that **Inbound** is expanded in the navigator and select **Inbound > X12**.

The **X12 Inbound Trade Links** window opens.

4. Click the **Applications** tab.

The window opens as shown:

#### Routing options (inbound)

This option allows you to use Trading Manager to route EDI data without performing data validation.

Acknowledgments, if configured, report transactions with the **Routing** option as valid.

In deciding whether or not to turn this option ON or OFF, remember the following points:

- If you have an external system in place before Trading Manager that performs validation (that is, the IBM Healthcare Packs) there is no need to perform any additional validation in Trading Manager. Therefore, turn this option ON to improve performance.
- This option can also be turned ON for those transactions that are known to be good (i.e. inbound 997s) or when you trust the partner and have some error detection/reporting process in place in your **EDI to Application** conversion maps.

To set this option:

1. Perform the steps provided in "Opening the X12 Inbound Trade Links Window" to open the window.
2. Select the **Post Offices Routing** tab view.
3. Enable or disable the **Route Only; No Validation** checkbox and set according to your individual requirements. In most cases, this checkbox will be ON (checked).

#### Acknowledgments option

Most partners require acknowledgments to be returned. There may, however, be select cases in which they are not needed. If this is the case, proceed as follows:

Make certain that you check with each partner before turning off acknowledgements.

To change this option:

1. Perform the steps provided in "Opening the X12 Inbound Trade Links Window" to open the window.

2. Select the **Acknowledgements/Validate By** tab view.
3. In the **Ack Level** field, select **No Acknowledgement** from the drop down menu.

Do not create tradelinks for Inbound 997s unless your are planning on post processing them by a custom system. Trading Manager releases previous to 7.6 required you to create those trade links and they should be deleted as part of the migration.

The "Ignore Missing Trade Links Option" options should be turned ON.

### HIPAA Validation Option

To change these options:

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## Options for outbound X12 trade links

The options discussed in this section are configured for each Inbound X12 Trade Link. The options are accessed from the **X12 Outbound Trade Links** window.

### Opening the X12 Outbound Trade Links Window

1. Start Partner Manager.
2. Select **Trade Links** from the Partner Manager toolbar.
3. Make certain that **Outbound** is expanded in the navigator and select **Outbound > X12**.

The **X12 Outbound Trade Links** dialog opens.

4. Click the **Applications** tab.

The window opens as shown:

### Routing options (outbound)

This option allows you to use Trading Manager to route EDI data without performing data validation.

By default, Trading Manager validates each outbound transaction and guarantees that the partner always receives valid X12 data. Once a system is in production, however, the likelihood of it creating invalid data is minimal, and a partner's negative acknowledgement would highlight when it occurs.

You can increase the performance of Trading Manager by turning ON the **Route Only; No Validation** option for outbound transactions with minimal risk. To further minimize the risk, since this option applies by outbound Functional Group, it can be used only for those transactions with which you feel comfortable.

To set this option:

1. Perform the steps provided in "Opening the X12 Outbound Trade Links Window" to open the window.
2. Select the **PO/Validation/Ack** tab view.
3. Turn ON or OFF the **Route Only; No Validation** checkbox and according to your individual requirements. In most cases, this checkbox will be ON (checked).

## Outbound 997's

Outbound 997's should always be defined as Route Only (**Route Only; No Validation** checkbox checked).

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## Analyzing small transmissions

In order to maximize Trading Manager performance, it is important that you analyze the size of your:

- Transmission
- Interchange
- Functional Group
- Transaction.

Servers that have large amounts of memory available but are used to process small transmissions, and are used primarily for Message Manager can further increase Trading Manager performance by:

- In **stampandsortfile** change output cards #2 and #4 from:
  - **File**  
to
  - **Sink** This affects inbound and outbound files.
- In **sendx12** change output cards #2 and #3 from:
  - **File**  
to
  - **Sink** This affects outbound X12 files.

The procedures required to change these options are described in the following sections.

## Changing stampandsort options

To perform this procedure follow these steps:

1. Open the **msg\_mgr.msd** file located in: *install\_dir\tmgr\_vn.n\mmgr*  
This file opens in the Integration Flow Designer. For more information, see the Integration Flow Designer documentation.
2. In **stampandsortfile** change output cards #2 and #4 from **File** to **Sink**.

## Changing sendx12 options

1. Open the **msg\_mgr.msd** file located in: *install\_dir\tmgr\_vn.n\mmgr*  
This file opens in the Integration Flow Designer. For more information, see the Integration Flow Designer documentation.
2. In **sendx12** change output cards #2 and #3 from **File** to **Sink** .

## Work file option for small transmissions

To set this option for small transmissions:

1. Perform the steps provided in the "Opening the Message Manager Configuration Window" .
2. Select the **Optimization** tab view.

3. Select **-WM** from the **Work File Options** drop-down menu.

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## Analyzing large transmissions

Servers processing large transmissions and/or not having much memory available will have to configure Message Manager so that the amount of memory used for processing is reduced.

With one exception, the options described here are accessed through the Message Manager Configuration Maintenance window. Access the window as described in "Opening the Message Manager Configuration Window" .

Open the window and then refer to the following sections for option details.

### stampandsort and sendx12

For very large transmissions, Trading Manager performance can be improved by changing the work space settings for **stampandsortfile** (affects both inbound and outbound), **sortx12** (affects inbound X12), and **sendx12** (affects outbound X12).

To perform this procedure follow these steps:

1. Open the **msg\_mgr.ms** file located in: *install\_dir\tmgr\_vn.n\mmgr*  
This file opens in the Integration Flow Designer. For more information, see the *Integration Flow Designer Reference Guide*.
2. Change the entry in the **WorkSpace** field for **stampandsortfile**, **sortx12** and **sendx12** from **Memory** to **File** .

### Maximum FG validation size

To select this option:

1. Perform the steps provided in the "Opening the Message Manager Configuration Window" .
2. Select the **Optimization** tab view.
3. Specify the maximum size of a functional group to validate in a single pass. Enter this value in the **Maximum Validation Size** field.

The value is in Megabytes. Start with a value that reflects the average size of your functional groups (by size, not by weight) or  $\frac{1}{4}$  of the RAM memory available (whichever is less) and decrease as needed.

### Work file option

To select this option:

1. Perform the steps provided in the "Opening the Message Manager Configuration Window" .
2. Select the **Optimization** tab view.
3. In the **Work Options** field, select **-WU** from the **Work File Options** drop down menu:

This will reduce the amount of memory used by the Message Manager system in general.

## Select maximum reject file size

Under mapping options, select the maximum size of the reject file to be created by the system.:

To select this option:

1. Perform the steps provided in the "Opening the Message Manager Configuration Window" .
2. Select the **Mapping Options** tab view.
3. Enter the desired value in the **Maximum Reject File Size** field.

## X12 outbound PO packaging option

To select this option:

1. Perform the steps provided in the "Opening the Message Manager Configuration Window" .
2. Select the **Optimization** tab view
3. Select the **One File per Put PO per Interchange** button for each Interchange in the mapping options screen.



---

## Chapter 4. Debugging Trading Manager

These topics describe how to perform debugging operations on the Trading Manager system. It describes:

- "Deployment Errors and Failures"
- "Startup Errors"
- "Running Message Manager"
- "Processing Large X12 Transactions"

---

### Deployment errors and failures

It is important to remember that both **MessageManager** and **RunMaps** have to be deployed, one after the other. Deploying **MessageManager** will not include the **RunMaps**. Failing to deploy RunMaps will cause export run maps to fail with condition code 3 (map not available).

The **msg\_mgr.msd** provides three different deployment definitions for MessageManager and one for RunMaps, all preconfigured for a default Windows platform. The following should be checked:

#### Check Notes

##### Build and transfer maps

This should display the **mmgr** folder on the server that is going to run Message Manager. If it is not correct, the global search/replace failed and has to be redone. Showing a Windows path when the server is a UNIX variant is an indication the global search/replace failed or was not done at all

##### Generate and transfer Launcher Control File

Must be configured to point to the **systems** folder on the server and must be done manually for all deployment scripts that have it check marked.

##### Transfer Additional Files

Must be configured to point to the **mmgr** folder on the server and must be done manually for all deployment scripts that have it check marked. You have to press ENTER for the path to take, simply clicking OK after editing a path will result in the edited path being lost.

This option is only necessary if transferring files to a server or different Windows drive. For example, if the **mmgr.mrn** file is being transferred to a UNIX server. If the design and runtime installs are the same, (i.e. deploying and running on the same Windows machine, this option can be left unchecked).

---

### Startup errors

Startup is completed successfully if the export process manages to build all the tsv files the system needs in the **mmgr\share** directory. Typical errors are:

Error Condition	Reason
-----------------	--------

**Export runs fine but there are no files in the mmgr\share folder. The tsv files are then found in the mmgr folder, some of them preceded with the string %export\_dir%.**

This means that the user failed to properly configure the Launcher Resource Registry (**mrc** and/or **mrn** files) and/or the Launcher Administration tool. The Launcher Administration tool has to point to a user-created **mrc** file that in turn has to point to the **mmgr.mrn** file provided with CM.

**Export runs but fails with "Source Not Available".**

The back end database is not properly configured, usually an error in the **export.mdq** file. Adding "-t" to the database card will generate a database trace that can be used to determine the problem. Both MessageManager and RunMaps have to be re-deployed once the **mdq** file has been corrected.

**Export runs, but creates a reject file indicating all run maps failed with return code 3.**

Run Maps have not been deployed.

**Export runs, but creates a reject file indicating some or all run maps failed with return code 12 or similar.**

Run Maps have not been deployed after fixing the **update.mdq** file, or the database creation failed.

**Export runs, but creates a reject file indicating that a dll/so is either not found or the wrong version.**

Message Manager requires two **dll/so**s: **cmsvc** and **cmsvu**. They have to be deployed in binary mode and their properties have to be defined as executables. On Windows the **dlls** have to be in the **mmgr** folder, on UNIX the **so's** have to be in the **DSTX libs** folder.

**Export runs, but creates a reject file indicating HIPAA components are missing.**

If you select HIPAA validation, the export process verifies that the components required by Trading Manager from the HIPAA Pack have been deployed. Two maps from the HIPAA Pack (**x4010hipaasegmentdataaudit.mmc** and **x12type6qualifier.mmc**) have to be deployed into the **mmgr** folder on the server. Additionally, one file (**hipaa\_x12\_type\_6\_value.dat**) has to be deployed into the **mmgr\share** folder on the server. See Validating HIPAA X12 Data the IBM WebSphere Transformation Extender Pack for HIPAA EDI documentation. for more information.

**Launcher starts up fine but nothing is running, the Management Console is blank.** The Launcher did not find any **msl** Launcher Control file. Either Trading Manager was not deployed or the location in the deployment definition is incorrect.

Redeploy and review the **MSEDPloy.TXT** file to verify where the maps and **\*.msl** file are being deployed.

**Launcher startup, customer maps are running, but files are piling up in the mmgr\mail folder.**

See previous error condition.



---

## Running Message Manager

Trading Manager has been enhanced to create logs with more detailed information about failures while running Message Manager. Therefore it is critical that all reject files be examined to get additional information about errors.

### **Error Condition**

#### **Reason**

#### **System runs slow, high CPU utilization.**

Could be caused by Max Threads parameter being set too high in the **dstx.ini** file. A lower setting allows the server to perform more useful work and less swapping between threads.

#### **Random map failures due to not enough memory available**

Could be caused by Max Threads parameter being set too high in the **dstx.ini** file. See the section titled "Analyzing Large Transmissions" for more memory reduction options.

#### **Files do not show up in the PUT Post Office**

Usually occurs when the path is not correctly defined in Partner Manager. A reject file and the Partner Manager Traffic Log provide specific error information. At times a reject file is not created; in that case the files might be found in the root of the server. The Partner Manager Traffic report will show the location where the files are written.

#### **Reject files getting created by StampAndSort containing partial files.**

Occurs when files are written to the mail folder by an application other than the IBM Transformation Extender. See the section titled "Interfacing with non-IBM Transformation Extender systems for additional information.

#### **System runs slow, low CPU utilization; most maps are in Resource pending state.**

This is a configuration error. Avoid configuring maps that can cause them to become Resource Pending. See the section titled "Avoiding Resource Pending Configurations" for additional information.

#### **File errors when writing to other servers.**

If the paths are correct and/or the drive mappings have not been reset then it is most likely a permission problem. The Launcher user id must have write permissions on all the folders that are configured as PUT Post Offices.

#### **Valid files fail X12 Validation.**

Each new transaction/version combination is added, the EDI Wizard has to be executed to generate a new **x12mail.mtt** type tree that has to go into the folder where all the Message Manager sources are located. Next, the customer has to deploy the RunMaps system for the new transactions to go into effect on the server. Deploying MessageManager is not needed.

#### **Tradelink errors even though the Trade Links have just been added to Partner Manager.**

Message manager exports the Trade Links information at Launcher startup and each night at midnight. For new Trade Links to go in effect immediately, the export has to be triggered from the Message Manager Config. section in Partner Manager. The export has to be triggered using the **Run Export Process on Demand** feature from the Message Manager Config. section in Partner Manager.

**Valid files are getting rejected by StampAndSort as invalid file names when they do conform to the Trading Manager standards.**

Message Manager is failing to access the database. Either RunMaps were not redeployed after correcting the **update.mdq** file or the database is not available.

---

## **Processing large X12 transactions**

If you are processing large X12 transactions you should define a **Max Reject Size** limit to prevent the server from becoming overloaded when generating reject files. 1 - 5 Kbytes should be enough to give meaningful information about the transaction in error. See "Select Maximum Reject File Size" for more information.

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