



webMethods X.400 Adapter  
User's Guide

VERSION 6.5

MARCH 2009

This document applies to webMethods X.400 Adapter Version 6.5.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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# 1 About This Guide

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## Welcome!

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In Europe, the X.400 is a popular mail standard protocol just like the SMTP and POP3 protocols in the United States. The webMethods X.400 Adapter enables business document exchange via the X.400 ISO Standard. The X.400 Adapter provides a way for webMethods Trading Networks (Trading Networks) to communicate with X.400 servers using ADDONMAIL UA-FI communication software (third party product). The webMethods X.400 Adapter is implemented as an Integration Server Gateway Service.


You should be familiar with configuring Trading Networks to exchange business documents before performing the procedures in this guide. For information, see the *webMethods Trading Networks Concepts Guide* and the *webMethods Trading Networks Users Guide* manuals.



You should also be familiar with the communication standards: X.400, X.420, and X.435.

## Typographical Conventions

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This document uses the following typographical conventions:

Convention	Example
Procedures are highlighted by a blue box in the left column. Procedures are described as a series of numbered steps.	 <b>Procedure Title</b> 1. Select the <b>File</b> command from the <b>Activity</b> menu.
Characters that you must type exactly are shown in a typewriter ( <i>courier</i> ) font.	Type: <code>setup</code> and then press ENTER.
Variable information that you must type based on your specific situation or environment is shown in italics.	Type: <i>webMethods6\IntegrationServer\setup</i> and then press ENTER.
Keyboard keys are shown in uppercase.	Press ENTER; then press TAB.
Keys that you must press simultaneously are joined with the “+” symbol.	Press CTRL+ALT+M.
Directory paths are shown with the “\” directory delimiter unless the subject is UNIX-specific. In these cases, the “/” is used. If you are working in a UNIX environment, substitute a “/” for the “\” shown in the procedures in this book.	<i>webMethods6\IntegrationServer\packages\Default</i>

Convention	Example
Information that you must read before beginning a procedure or that alerts you to negative consequences of certain actions is denoted with this special symbol.	 <b>Caution:</b> If the folder is not already open in the Document Browser, open it before you start the following procedure.
Notes that provide related, but non-critical, information are denoted with this special symbol.	 <b>Note:</b> When you start the Trading Networks Console, you will be asked to log on to an Integration Server.

## Program Code Conventions

For programming code and command syntax, this document uses the following typographical conventions:

Convention	Example
Keywords and values that you must type exactly as printed are shown in typewriter ( <i>courier</i> ) font.	<code>%CoSymbol%</code>
Variable values or parameters that you must supply are shown in italics.	<code>%VarName%</code>
Keywords or values that are optional are enclosed in [ ]. Do <i>not</i> type the [ ] symbols in your own code.	<code>%loop LoopVar [null=NULLValue]%</code>

## Related Documentation

This section lists the documentation provided with webMethods X.400 Adapter. In addition, it lists documentation provided with webMethods Trading Networks, webMethods Integration Server, webMethods Developer, and ADDONMAIL UA-FI that you might also find useful.

### webMethods X.400 Adapter Documentation

The following table lists other manuals that webMethods provides with webMethods X.400 Adapter.

Refer to this book...	For...
<i>webMethods X.400 Adapter: Installation Guide</i>	Describes how to install the X.400 Adapter. This book is for server administrators

### ADDONMAIL UA-FI Documentation

The ADDONMAIL product UA-FI (User Agent File Interface) is for mail enabling of applications using the X.400 network.

Refer to this book...	For...
<i>ADDONMAIL UA-FI Programmer's Guide</i>	The scope of the Guide is to provide all necessary information for Programmers integrating an application with the ADDONMAIL UA-FI. Location: Installation CD of ADDONMAIL UA-FI (Third party product)

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### Additional Information

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You can find additional information about webMethods products at the locations described below.

#### webMethods Central Documentation Directory

During product installation, you can download the webMethods product documentation to a single directory called “\_documentation.” This directory is located by default under the webMethods installation directory.

#### webMethods Advantage Web Site

The webMethods Advantage Web site at <http://advantage.webmethods.com> provides you with important sources of information about webMethods products:

- **Product Documentation.** You can find documentation for all webMethods products on the webMethods Bookshelf <http://advantage.webmethods.com/Bookshelf>.
- **Troubleshooting Information.** The webMethods Knowledge Base <http://advantage.webmethods.com/knowledgebase> provides troubleshooting information for many webMethods products.
- **Documentation Feedback.** To provide feedback on webMethods documentation, go to the [Documentation Feedback Form](#) on the webMethods Bookshelf.

### Software AG Developer Community

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Additional articles, demos, and tutorials are available on the [webMethods](#) portion of the [Software AG Developer Community](#). The various Developer Communities feature technical information, useful resources, and online discussion forums, moderated by Software AG professionals, to help you do more with webMethods technology.



## 2 Concepts

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### What is the X.400 Adapter?

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In Europe, the X.400 is a popular mail standard protocol just like the SMTP and POP3 protocols in the United States. The International Standards Organisation (ISO) and the International Telecommunications Union (UIT) developed the X.400 as a set of recommendations for message handling. The X.400 standard provides detailed specifications for message handling systems and services for message exchange.

The webMethods X.400 Adapter enables business document exchange via the X.400 ISO Standard. The X.400 Adapter provides a way for webMethods Trading Networks (Trading Networks) to communicate with X.400 servers using ADDONMAIL UA-FI communication software (third party product). The webMethods X.400 Adapter is implemented as an Integration Server Gateway Service.

### Technical Architecture Overview

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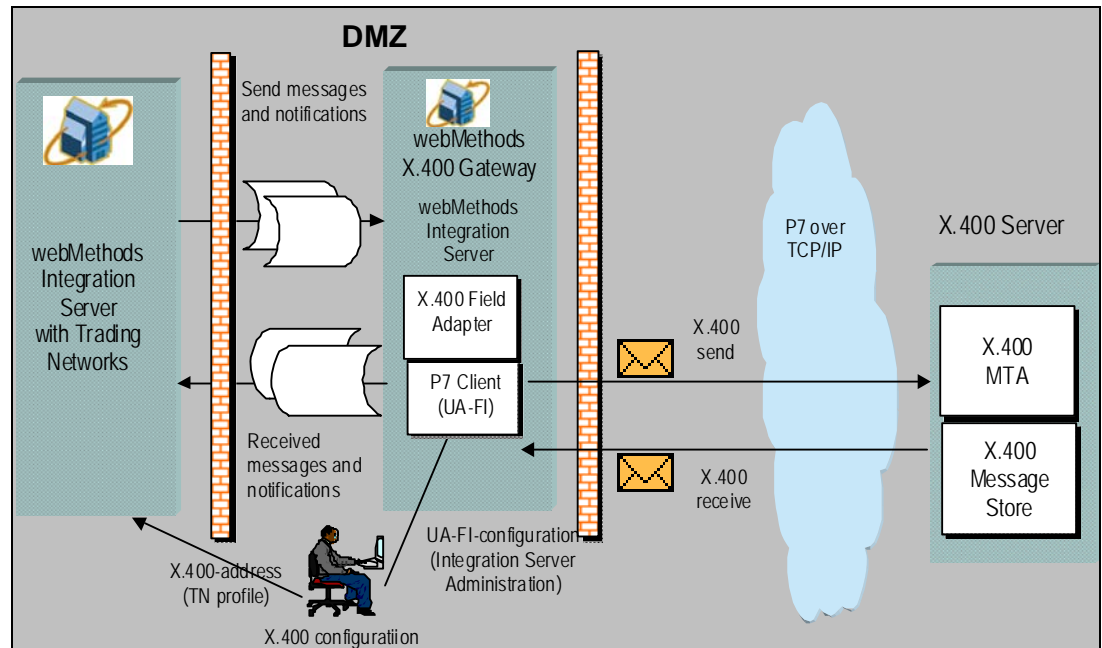
The webMethods X.400 Adapter is a package in the webMethods Integration Server that is built on top of webMethods Trading Networks (Trading Networks). The webMethods X.400 Adapter uses ADDONMAIL UA-FI P7 client (third party product) to communicate with an X.400 server using the P7 protocol.



Note: ADDONMAIL UA-FI software is required to run the webMethods X.400 Adapter. For more information about requirements to use the webMethods X.400 Adapter, see the *webMethods X.400 Adapter Installation Guide*.

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## webMethods X.400 Adapter Overview



To send a document to a trading partner, the X.400 Adapter does not send it immediately. Rather, the X.400 Adapter places the document into a queue.

webMethods provides a `wm.X400forTN.wm.x400.tn.rec:receiveX400` service with the X.400 Adapter service that processes the contents of this queue. To have the X.400 Adapter process X.400 documents, invoke the provided receive service. The `receiveX400` service invokes the UA-FI to extract all messages and notifications from the X.400 server mailbox. Note that the webMethods Integration Server can only connect to a single X.400 server.

The Trading Networks profiles represent your mailbox respectively the user account (e.g., Enterprise) as well as the X.400 recipients. For each profile, you must specify an X.400 address as the X.400 address external ID type. When you install the X.400 Adapter, it adds the X.400 external ID type, as well as the X.400 extended profile fields.

## X.400 Adapter Components Overview

To support configurations using a demilitarized zone (DMZ), the webMethods X.400 Adapter consists of two parts:

- An X.400 Gateway service on the Integration Server in the DMZ. This X.400 Gateway service is Trading Networks-aware and contained in the X400 package. You configure the X.400 Gateway service using the Integration Server Administrator.

- Delivery and receive services in the Integration Server running Trading Networks. These services are in the X400forTradingNetworks package. The delivery and receive services are behind the firewall and use remote invoke to access the X.400 Gateway service in the DMZ. These services also use Trading Networks partner profiles. You configure the X.400 partner information (e.g., the X.400 address) in profiles using the Trading Networks Console.

You can install the gateway configuration together with Trading Networks on one machine if there is no need for a DMZ.

### X.400 Gateway Folder Structure

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The X.400 Gateway service is contained in the X400 package. The X.400 Adapter stores the inbound messages from the mailbox temporary into an inbound folder before they are received by Trading Networks. Outbound messages to the mailbox are stored temporarily into an outbound folder for each receiver before they are sent via UA-FI to the X.400 server. The X.400 Gateway contains the following folders:

Folder name	Description of contents (TN document type)
Inbound	Inbound messages (ipMessageIn/ediMessageIn) notifications and error messages (x400statusIn)
Outbound	Represents the file based Outbound Queue. Covers the subfolders for each receiver and the subfolder status for the outbound notifications.
Outbound/receiver(1-n)	Outbound messages (ipMessageOut/ediMessageOut)
Outbound/status	Outbound notifications (x400statusOut)
Error	Outbound messages (release a UA-FI parser error)
Uafi/inbound	Temporary ADDONMAIL UA-FI files (inbound)
Uafi/outbound	Temporary ADDONMAIL UA-FI files (outbound)
Uafi/outbound/error	Erroneous temporary ADDONMAIL UA-FI outbound files

### The X.400 Adapter Feature Overview

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The webMethods X.400 Adapter supports the following:

- Sending and receiving of X.400 IP and EDI messages (PEDI)
- Sending and receiving of X.400 IP and EDI Notifications
- Processing of error messages

- Processing of format ANSI X.12, EDIFACT, EANCOM, VDA, ODETTE, IDOC, XML, HTML, UNKNOWN
- Network access with ISDN (uses ISDN variant of UA-FI, Windows only) and TCP/IP (uses TCP/IP variant of UA-FI)
- P7 (X.413) protocol operations (e.g. Bind, Un-Bind, Submit, Fetch, List, Delete) with X.400 server (MS)
- P2 and P22 (X.420) Interpersonal Messaging Protocol (X.400 1984 and 1988 address support except attribute DN, Directory Name. T61 String.)
- PEDI (X.435) EDI Messaging Protocol
- Inbound bodypart (=X.400 message attachment) types
  - IA5 text
  - Accented text
  - Bilaterally defined (=binary)
  - T61
  - 8859-1...9
  - FTAM (content only)
  - EDI
- Outbound bodypart types
  - IA5 text
  - Accented text
  - Bilaterally defined
  - T61
  - 8859-1...9
  - EDI

## Trading Networks Document Types

When you install the webMethods X.400 Adapter, you install the following Trading Networks (TN) XML document types:

TN Document Type	Description
ipMessageIn	Contains X.420 header information and one or more bodyparts (with Base64 encoded payload and a message format identifier)
ipMessageOut	Contains X.420 header information and one bodypart (with Base64 encoded payload)

TN Document Type	Description
ediMessageIn	Contains X.435 header information and one EDI bodypart (with Base64 encoded payload and a message format identifier)
ediMessageOut	Contains X.435 header information and one EDI bodypart (with Base64 encoded payload)
x400statusIn	Contains inbound notifications (submitted/non-submitted, delivery/non-delivery, receipt/non-receipt, positive/negative/forwarded EDI, errors)
x400statusOut	Contains outbound notifications to be sent (receipt/non-receipt, positive/negative/forwarded EDI)
x400payload	Contains one extracted content part (X.400 bodypart) out of an ipMessageIn or an ediMessageIn with unknown format
x400correlation	Contains a list of IDs of documents which were sent together in one X.400 message (X.400 batchIdpm extended field in the Trading Networks partner profile)

## 3 How the X.400 Adapter Processes Messages

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## Sending and Fetching Messages to the X.400 Server

There are two X.400 message types that you can send or receive:

- Inter Personal Messages referred to as *IP messages* or *IPMs* and
- X.435 EDI messages (PEDI) referred to as EDI messages.

For outbound processing, when you want to send an X.400 message (IP or EDI message) to a partner, the X.400 Adapter batches the messages in an Outbound Queue. There is one Outbound Queue for each receiving partner. The X.400 Adapter provides the `wm.x400.gateway.Gw:sendAndFetch` and `wm.x400.gateway.Gw:send` services to retrieve messages from the Outbound Queues and send them to the X.400 Server. To send the messages, the `sendAndFetch` and `send` services invoke the ADDONMAIL-UAFI (third party product).

The `sendAndFetch` and `fetch` services are used for inbound processing to retrieve the data from your X.400 mailbox on the X.400 Server. In this situation, the `sendAndFetch` and `fetch` services invoke the ADDONMAIL-UAFI, which fetches the messages and notifications out of your X.400 mailbox. The `sendAndFetch` and `fetch` services then convert the messages and notifications into XML and store them in the inbound folder for further processing.

You should create a scheduled task to have the Integration Server periodically invoke the `sendAndFetch` service. When you create the scheduled task, you define the time interval when you want outbound messages sent to the X.400 Server and when you want to retrieve the inbound data from your X.400 mailbox. If you want to define different times for sending and fetching, you can create scheduled tasks for the `send` and `fetch` services. Use the Scheduler function of the Server Administrator to create a scheduled task. Before using the X.400 Adapter you have to configure the connection to the X.400 mailbox. For information on how to create a scheduled task, refer to the *webMethods Integration Server Administrator's Guide* or the *webMethods Integration Server Administrator Online Reference*.

For information on how to configure the X.400 Field Adapter refer to the *webMethods X.400 Adapter Installation Guide*.



The table below specifies what input parameters you can provide for the send and fetch services. If you use a combined filter (combination of simple criteria), there is an implicit logical OR between values of the same attribute/criteria type (e.g. the values new/listed/processed for the attribute type entry status), and an implicit AND between values of different attribute/criteria type.

Service name	Input parameters for the service
send	<ul style="list-style-type: none"> <li data-bbox="699 510 846 537">▪ <b>text_format</b> This parameter is used to set the text conversion tables for IA5 and T.61 strings to be used. The tables are specified in files with extension .chs. This parameter specifies which charactermapping file to use. The most commonly needed files (ANSI character set and the most common DOS code pages) are installed together with UA-FI. This parameter is seldom needed. It can for instance be used if you want to submit PCASCII text files while using UA-FI for Windows. The default values are ANSI for all Operating systems except DOS where it is PCASCII. Possible values: <i>ANSI, PCASCII</i></li> </ul>

Service name	Input parameters for the service
fetch	<ul style="list-style-type: none"> <li data-bbox="641 275 1403 548"> <p>▪ <b>text_format</b> This parameter is used to set the text conversion tables for IA5 and T.61 strings to be used. The tables are specified in files with extension .chs. This parameter specifies which charactermapping file to use. The most commonly needed files (ANSI character set and the most common DOS code pages) are installed together with UA-FI. This parameter is seldom needed. It can for instance be used if you want to submit PCASCII text files while using UA-FI for Windows. The default values are ANSI for all Operating systems except DOS where it is PCASCII.</p> </li> <li data-bbox="641 562 1403 653"> <p>▪ <b>deleteMessages</b> If set to <i>false</i>, messages will not be deleted from the X.400 mailbox. Default value is <i>true</i>.</p> </li> <li data-bbox="641 667 1403 968"> <p>▪ <b>messageFilter/ms-entry-status</b> The ms-entry-status (the status of the message in the MS) <i>new</i> means that no attributes have yet been fetched or listed from this message. <i>listed</i> means that the message has been listed or that parts of it have been fetched. <i>processed</i> means that the entire message with all BodyParts has been fetched from the MS.</p> </li> <li data-bbox="641 982 1403 1171"> <p>▪ <b>messageFilter/ms-entry-type</b> <i>delivered_message</i> is used to select e-mail messages (IPM), EDI messages (Pedi), Receipt Notifications (IPN) and Pedi Notifications (EDIN). <i>delivered_report</i> selects Delivery and Non-Delivery Reports.</p> </li> <li data-bbox="641 1186 1403 1402"> <p>▪ <b>messageFilter/p2-content</b> This filter fetches IPM/IPN messages only (P2 or P22). The P2_content can be: <i>IPM (Inter Personal Message)</i> <i>IPN (Receipt Notification)</i> This criterion is only valid for the entry type <i>delivered_message</i>. Delivery Reports will NOT be fetched when using this selection criterion.</p> </li> <li data-bbox="641 1417 1403 1724"> <p>▪ <b>messageFilter/content-type</b> The content_type can be: <i>P2</i> <i>P22</i> <i>Pedi</i> <i>P2</i> will select IPM messages with content according to the 1984 X.400 standard, while <i>P22</i> will select messages with content according to the 1988 X.400 standard. The content_type describes the content of the message. This filter can for example be used to select between EDI and IPM messages.</p> </li> </ul>

fetch	<ul style="list-style-type: none"> <li>▪ <b>messageFilter/pedi-content</b> This criterion fetches PEDI messages only. PEDI-content can be: <i>EDIM</i> (EDI message) <i>EDIN</i> (EDI Notification) Note: This criterion is not always supported by the MS. Check with your service provider.</li> <li>▪ <b>messageFilter/x400-address</b> This criterion is used to fetch messages that are sent from a certain originator.</li> <li>▪ <b>messageFilter/ms-sequence-numbers</b> The MS sequence numbers is a unique number assigned by the central Message Store to identify a message (range 0-2147483647). For MS sequence numbers you can: <ul style="list-style-type: none"> <li>- Specify a list of single MS sequence numbers separated by commas.</li> <li>- Specify a range by giving the first and the last number separated by a hyphen.</li> <li>- Specify a combination of single MS sequence numbers and ranges separated by commas.</li> </ul> </li> </ul>
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## Manage Partner Profiles for the X.400 Adapter

Use the Trading Networks Console to define sender and receiver profiles.

- **Sender profiles.** For the sender profile (Enterprise), specify the X.400 address, which is an external ID that uses the external ID type X.400 address. You can only specify a single external ID with the external ID type X.400 address.
- **Receiver profiles.** For the receiver profiles, specify the following:
  - X.400 address (as an X.400 address external ID). You can only specify a single external ID with the external ID type X.400 address.
  - Parameters in the X.400 extended field group. These parameters define:
    - The content type to use for outbound messages (P2 or P22 Interpersonal Messaging Protocol or PEDI EDI Messaging Protocol) to the receiver.
    - The types of notifications that the receiver requests.
    - Whether the receiver wants outbound IP messages (messages with the TN document type of ipMessageOut) to be batched into one X.400 mail message with multiple content parts (X.400 bodyparts). This parameter does not affect EDI messages because they only have a single content part (X.400 bodypart).

#### X.400 Address Elements

The X.400 address is unique for each user. Note that you *must* enter the X.400 address elements in the fixed sequence listed in the table below, and you can skip unused address elements. The X.400 address elements are not case-sensitive. As in the example below, you do *not* use a semi-colon after the last value.

Example of an X.400 address:

```
g=jones;i=JR;o=purchase;oul=europe;p=mycompany;a=viaT;c=de
```

When you define the value for the X.400 address external ID, use the following address elements.

<u>X.400 element</u>	<u>Address element represented</u>
G	Given name (up to 16 characters)
I	Initials (up to 5 characters)
S	Surname (up to 40 characters)
Q	Generation qualifier that distinguishes between users with the same (identical) name, such as a father and son, e.g., Sr and Jr (up to 3 characters)
GQ	RARE Generation qualifier
CN	Common name (up to 64 characters)
O	Organization name (up to 64 characters)
OU1	Organization unit name 1 (up to 32 characters)
OU2	Organization unit name 2 (up to 32 characters)
OU3	Organization unit name 3 (up to 32 characters)
OU4	Organization unit name 4 (up to 32 characters)
OU	RARE Organization unit
P	Private domain name (PRMD)
PRMD	RARE Private domain name (up to 16 characters)
A	Administrative management domain name (ADMD), i.e., the service provider (up to 16 characters)
ADMD	RARE Administrative management domain name
C	ISO-Country code (2 characters)
PD-PN	Physical delivery personal name (up to 30 characters)
PD-EA	Physical delivery extension components (up to 30 characters)
PD-ED	Physical delivery extension name components (up to 30 characters)

X.400 element	Address element represented
PD-OFN	Physical delivery office number (up to 30 characters)
PD-OF	Physical delivery office name (up to 30 characters)
PD-O	Physical delivery organization name (up to 30 characters)
PD-S	Physical delivery street address (up to 30 characters)
PD-A	Physical delivery unformatted postal address line 1-6 (up to 30 characters per line)
PD-U	Physical delivery unique postal name (up to 30 characters)
PD-L	Physical delivery local postal attributes (up to 30 characters)
PD-R	Physical delivery poste restante address (up to 30 characters)
PD-B	Physical delivery post office box address (up to 30 characters)
PD-PC	Physical delivery postal code (up to 16 characters)
PD-SN	PDS name (up to 30 characters)
PD-C	Physical delivery country name (up to 2 characters)
X.121	X.121address, i.e., network address (up to 15 characters)
X121	RARE X.121-address
N-ID	Numeric user identifier (up to 32 characters)
UA-ID	RARE Numeric user identifier
T-ID	Terminal identifier (up to 24 characters)
T-TY	Terminal type
DDA:	Domain defined attribute 1-4

## Defining the Sender Profile

Use the following procedure to define the sender (Enterprise) profile.

### Define the Sender Profile

1. Create the Trading Networks profile for **Enterprise** following the procedure in the webMethods *Trading Networks Users Guide*.
2. When creating the X.400 profile, be sure to specify the information defined in the following steps.
3. In the **Corporate** tab of **Enterprise**, select **Add new External ID**.
4. In the **External ID Type** field, select **X.400 address**.

5. Enter the X.400 address of your enterprise in the **Value** field. Refer to the address element values from the table in the previous section, “X.400 Address Elements” on page 20.

**Example of an X.400 address:**

```
g=jones;i=JR;o=purchase;oul=europe;p=mycompany;a=viaT;c=de
```



**Caution:** You must enter the X.400 address elements in a fixed sequence. Skip unused elements. The X.400 address elements are not case-sensitive. Do *not* use a semi-colon after the last value.

For more information about how to enter address elements, refer to the table in the previous section, “X.400 Address Elements” on page 20.

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## Defining the Receiver Profile

Use the following procedure to define the receiver profile.

### Define the Receiver Profile

1. Create the Trading Networks profile for your partner following the procedure in the webMethods *Trading Networks Users Guide*.
2. When creating the X.400 profile, be sure to specify the information defined in the following steps.
3. In the **Corporate** tab of your partner’s profile, select **Add new External ID**.
4. In the **External ID Type** field, select **X.400 address**.
5. Enter the X.400 address of the partner in the **Value** field. Refer to the address element values from the table in the previous section, “X.400 Address Elements” on page 20. When creating the X.400 profile, be sure to specify the information defined in the following steps,

**Example of an X.400 address:**

```
g=jones;i=JR;o=purchase;oul=europe;p=mycompany;a=viaT;c=de
```



**Caution:** You must enter the X.400 address elements in a fixed sequence. Skip unused elements. The X.400 address elements are not case-sensitive. Do *not* use a semi-colon after the last value.

For more information about how to enter address elements, refer to the table in the previous section, “X.400 Address Elements” on page 20.

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6. Select the **Extended Fields** tab of your partner’s profile.

7. Under the **Group** list, select **X.400**.
8. Select **Edit field** to modify the extended field values.
9. Select the **contentType** and choose the value for the content type you want to use for outbound messages (**P2**, **P22**, or **PEDI**) from the list.
  - **For outbound IP messages** (messages with the Trading Networks document type of **ipMessageOut**) – set the content type to **P2** or **P22**.
  - **For outbound EDI messages**– set the content type to **PEDI**.
10. Set the value of **replyRequest** to **Yes** or **No**.



**Note:** If you want to request for any of the notifications, you must set **replyRequest** to **Yes**.

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11. Set the value for the notification(s) you want to request for to **Yes**. Possible notifications are **requestDN**, **requestND**, **requestRN**, **requestNR**, **requestPN**, **requestNN**, and **requestFN**.



**Note:** If you want to request EDI notifications from a particular X.400 receiver (partner), you must set the parameters **replyRequest**, **requestPN**, **requestNN**, and **requestFN** to **Yes**. The comments for these notification fields specify that these notifications are bundled with the content type of **PEDI**.

---

12. If you want to batch IP messages, set the value of **batchIpm** to **Yes**.



**Note:** You *cannot* batch EDI messages.

---

For more information on defining profiles, refer to the webMethods *Trading Network Concepts Guide* and *Trading Networks Users Guide*.

## Sending Outbound Messages

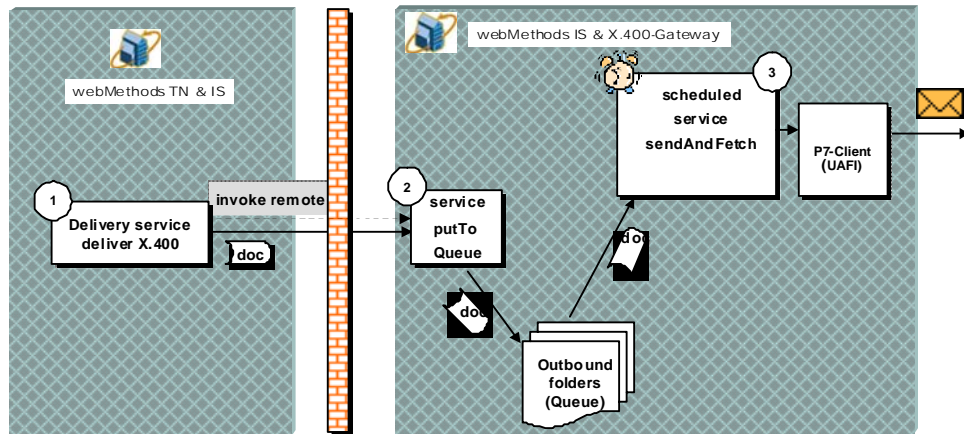
---

The X.400 Adapter provides a set of services to send IP messages (messages with the TN document type of **ipMessageOut**) and X.400 EDI messages (messages with the TN document type of **ediMessageOut**.)

Before you can send X.400 IP or X.400 EDI messages, fulfill the following prerequisites:

Prerequisites	For more information, see...
Create a scheduled task that runs the sendAndFetch or send service.	“Sending and Fetching Messages to the X.400 Server” on page 16.
Configure the profiles for the sender and receiver of the message.	“Manage Partner Profiles for the X.400 Adapter on page 19.

Overview outbound message processing



The following illustrates how the X.400 Adapter processes both IP and EDI outbound messages.

Step	Description
1.	<p>To send IP/EDI messages, you have to invoke the delivery service <code>wm.X400forTN.wm.x400.tn.rec:deliverX.400</code>. The deliverX400 service:</p> <ul style="list-style-type: none"> <li>Converts the <i>bizdoc/ContentParts</i> into X.400 bodyparts</li> <li>Determines the receiver by matching X.400 address information from the document to the corresponding Trading Networks partner profile</li> <li>Creates an IP/EDI message by mapping the X.400 bodyparts into an X.400 IP/EDI message (depending on the X.400 extended field, <i>contentType</i>, of the Trading Networks partner profile)</li> <li>Invokes the <code>X400forTN.wm.x400.tn.rec:putToQueue</code> service to send the message to your X.400 partner via the X.400 Gateway</li> </ul>
2.	<p>The <code>putToQueue</code> service stores the IP/EDI messages into an Outbound Queue (a particular folder per receiving partner) in the webMethods X.400 Gateway.</p>



Step	Description
3	The <code>wm.x400.gateway.Gw:sendAndFetch</code> or <code>wm.x400.gateway.Gw:send</code> services retrieve the messages from the Outbound Queues and send them to the X.400 Server as separate mail messages to the recipients via the ADDONMAIL-UAFI (third party product). If the extended field <code>batchlpm</code> is set to <code>Yes</code> , the messages are combined into one X.400 mail message with multiple content parts (up to 999 content parts) called X.400 bodyparts. For more information about the <code>batchlpm</code> extended field, see “Defining the Receiver Profile” on page 22.

### IP Message – Input Parameters for the deliverX400 Service

The following specifies the input parameters for the deliverX400 service if you want to send an IP message

Type of X.400 message	Input parameters for the deliverX400 service
IP messages	<p><b>Bizdoc</b> (BizDocEnvelope) with one or more content parts and address information out of Trading Networks Profiles. This is the message you want the X.400 Adapter to send.</p> <p><b>ipMessageOut</b> with additional parameters for an X.400 IP message to be set by the user (e.g., subject ).</p> <p><b>Alias Name</b> of the remote Integration Server, if the X.400 Gateway does not reside on the local machine.</p>

The deliverX.400 service automatically sets the following parts of the `ediMessageOut` structure:

```

contentType (P2 or P22)
localID ( unique Trading Networks document ID)
from
primary
p7recipient
bodypart(s) ( one or more message content parts, Base64 encoded)

```

The `BizDocEnvelope` provides the information for all these. For more information about the structure of an IP message (Trading Networks document type of `ipMessageOut`), see the chapter on submitting and receiving IP messages in the *UA-F1 Programmer's Guide*.

If an IP message was sent via service `deliverX400`, the X.400 Adapter sets the Trading Networks user status to `X400queued`. After receiving an inbound notification, the X.400 Adapter then sets the actual value of the user status of the document to: `X400submitted/X400non-submitted`, `X400delivered/ X400non-delivered`, or `X400receipt/X400non-receipt`.

### EDI Message – Input Parameters for the deliverX400 Service

The following specifies the input parameters for the deliverX400 service if you want to send an EDI message.

Type of X.400 message	Input parameters for the deliverX400 service
EDI messages	<p><b>Bizdoc (BizDocEnvelope)</b> with one content part and address information out of Trading Networks Profiles. This is the EDI message you want the X.400 Adapter to send and it cannot have more than one content part.</p> <p><b>ediMessageOut</b> with additional parameters for an X.400 EDI message to be set by the user (e.g., subject).</p> <p><b>Alias Name</b> of the remote Integration Server, if the X400 Gateway does not reside on the local machine.</p>

The deliverX.400 service automatically sets the following parts of the ediMessageOut structure:

- contentType (PEDI)
- localID ( unique Trading Networks document ID)
- from
- primary
- p7recipient
- bodypart(s) ( one or more message content parts, Base64 encoded)

The BizDocEnvelope provides the information for all these. For the bodypart, the X.400 Adapter pulls the first content with PartName edidata from the BizDocEnvelope structure. If no content with the name edidata is present, the X.400 Adapter uses the first content part.

For more information about the structure of an EDI message, see the chapter on submitting and receiving EDI messages in the *UA-F1 Programmer's Guide*.

If an EDI message was sent via service deliverX400, the X.400 Adapter sets the Trading Networks user status to X400queued. After receiving an inbound notification, the X.400 Adapter then sets the actual value of the user status of the document to: X400submitted/X400non-submitted, X400delivered/ X400non-delivered, or X400positiveEDI/X400negativeEDI/X400forwardedEDI.

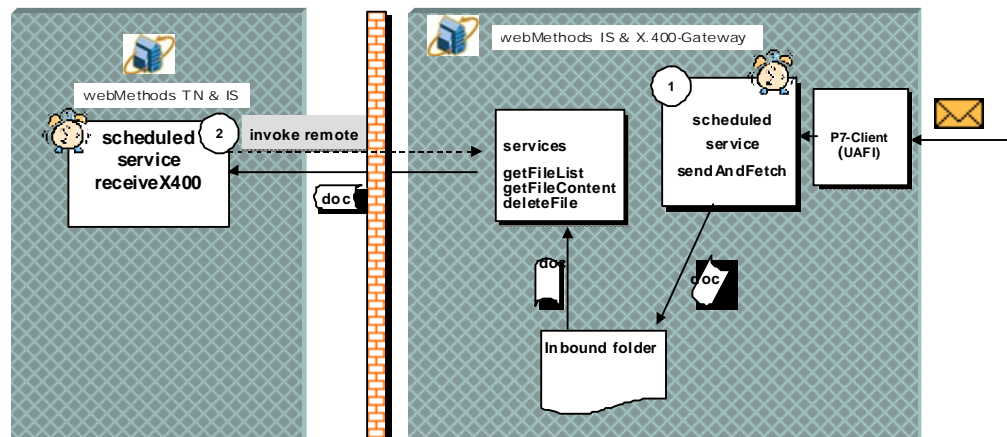
## Receiving Inbound Messages

The X.400 Adapter provides a set of services for receiving inbound IP messages (messages with the TN document type of ipMessageIn) and EDI messages (messages with the TN document type of ediMessageIn).

Before you can receive X.400 IP or X.400 EDI messages, fulfill the following prerequisites:

Prerequisites	For more information, see...
Create a scheduled task that runs the sendAndFetch or fetch service.	“Sending and Fetching Messages to the X.400 Server” on page 16.
Configure the profiles for the sender and receiver of the message.	“Manage Partner Profiles for the X.400 Adapter” on page 19.

### Overview inbound message processing



The following illustrates how the X.400 Adapter processes both IP and EDI inbound messages.

Step	Description
1.	<p>The scheduled <code>wm.x400gateway.Gw:sendAndFetch</code> or <code>wm.x400gateway.Gw:fetch</code> services invoke the <code>ADDONMAIL-UAFI</code> (third party product), which fetches the messages and notifications out of your X.400 mailbox. The <code>sendAndFetch</code> and <code>fetch</code> services convert the messages and notifications into XML and store them in the <code>Inbound</code> folder for further processing.</p>
2.	<p>You should create a client that invokes the <code>wm.X400forTN.wm.x400.tn.rec:receiveX400</code> service to retrieve the messages from the <code>Inbound</code> folder. (Note, you can also create a scheduled task to periodically invoke the <code>receiveX400</code> service.)</p> <p>The <code>receiveX400</code> service stores the mail message in the Trading Networks database. The <code>receiveX400</code> service automatically pulls the sender/receiver information for Trading Networks out of the message header.</p> <p>Next, the <code>receiveX400</code> service parses the message for the content. Each content part (X.400 bodypart) is checked for its format.</p> <ul style="list-style-type: none"> <li>▪ <b>Known format</b> – The X.400 Adapter routes content parts of a known format (e.g., ANSI X.12, EDIFACT, EANCOM, IDOC, XML, HTML) to the <code>wm.tn:receive</code> service.</li> <li>▪ <b>Unknown format</b> – The X.400 Adapter stores content parts of an unknown format as the TN document type of <code>X400payload</code>. The <code>X400payload</code> document contains the Sender/Receiver X.400 address, a format description (e.g., UNKNOWN, ODETTE, VDA), and the content (Base64 encoded).</li> </ul>
3.	<p>The X.400 Adapter creates a Transactions relationship between the original message retrieved from the <code>Inbound</code> folder and each extracted content part(s), whether the content part is of known or unknown format.</p> <p>To see relationships go to <b>webMethods Trading Network Console &gt; View &gt; Transaction Analysis</b>, search for a transaction, select it and click on <b>Transactions &gt; View Related Documents</b> in the main menu.</p>
4.	<p>The X.400 Adapter sets the Transactions user status of the original message retrieved from the <code>Inbound</code> folder and each extracted content part(s) to <code>X.400 received</code>.</p>

### Input Parameters for the receiveX400 Service

The table below specifies what input parameters you need to provide for the `receiveX400` service based on the type of message you are receiving.

Type of X.400 message	Input parameters for the receiveX400 service
IP messages	Alias Name of the remote Integration Server, if the X400 Gateway does not reside on the local machine.
EDI messages	Alias Name of the remote Integration Server, if the X400 Gateway does not reside on the local machine.



## 4 How the X.400 Adapter Processes Notifications

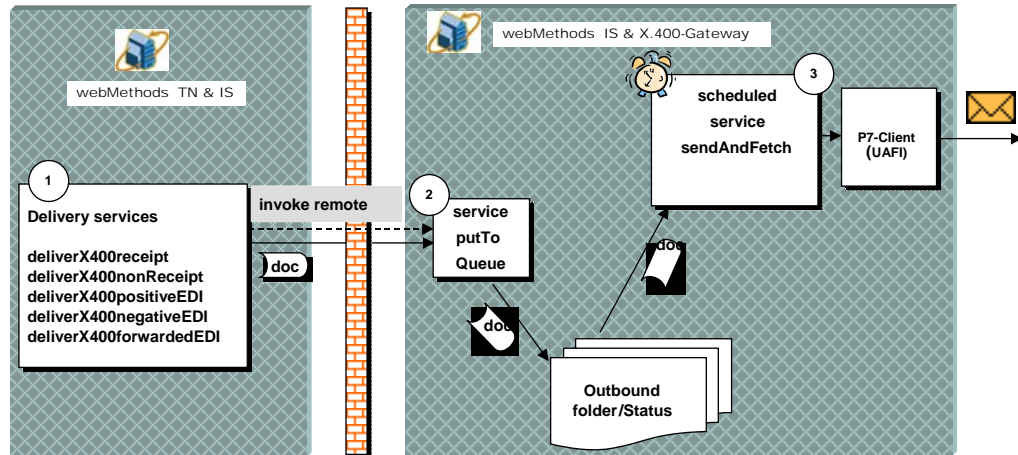
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■ Receiving an X.400 Notification .....	38
■ Receiving a Correlation Document .....	46

## Sending an X.400 Notification

The principles for sending notifications (TN document type x400statusOut) are the same as for sending messages. For each message output (message, notification, report) submitted, there must be a positive or negative (in case of an error) acknowledgment. For more information about sending messages, see the section “Sending Outbound Messages” on page 23.

Overview outbound notification processing



The following illustrates how the X.400 Adapter sends notifications.

Step	Description
1.	To send notifications, you have to invoke one of the following services <ul style="list-style-type: none"> <li>▪ wm.X400forTN.wm.x400.tn.rec:deliverX400receipt</li> <li>▪ wm.X400forTN.wm.x400.tn.rec:deliverX400noReceipt</li> <li>▪ wm.X400forTN.wm.x400.tn.rec:deliverX400positiveEDI</li> <li>▪ wm.X400forTN.wm.x400.tn.rec:deliverX400negativeEDI</li> <li>▪ wm.X400forTN.wm.x400.tn.rec:deliverX400forwardedEDI</li> </ul>
2.	The X.400 Adapter stores the notifications in the <code>Outbound/Status</code> folder in the webMethods X.400 Gateway.
3.	The <code>sendAndFetch</code> or <code>send</code> services retrieve the messages from the <code>Outbound/Status</code> and send them to the X.400 Server as separate mail messages to the recipients via the ADDONMAIL-UAFI (third party product).



## Structure of an Outbound Notification (x400statusOut)

The following describes the structure of an outbound notification (TN document type x400statusOut).



**Note:** Typically an outbound notification contains *one* notification type per file.

### Structure of an Outbound Notification (x400statusOut)

```
<?xml version="1.0"?>
<!--X.400 outgoing status-->
<x400statusOut>

  <receiptNotificationOut>
    <contentType>UA-FI-HDR-CONTENT_TYPE=P2</contentType>
    <type>UA-FI-HDR-TYPE=RECEIPT</type>
    <localId>UA-FI-HDR-LOCAL_ID</localId>
    <p7-recipient>
      <x400address>UA-FI-HDR-P7_RECIPIENT_X400ADDRESS</x400address>
    </p7-recipient>
    <subjectIpn>UA-FI-HDR-SUBJECT_IPN</subjectIpn>
    <p2originator>
      <x400address>UA-FI-HDR-P2_ORIGINATOR</x400address>
    </p2originator>
    <preferredRecipient>
      <x400address>UA-FI-HDR-PREFERED_RECIPIENT</x400address>
    </preferredRecipient>
    <receiptTime>UA-FI-HDR-RECEIPT_TIME</receiptTime>
    <acknowledgeMode>UA-FI-HDR-ACKNOWLEDGE_MODE</acknowledgeMode>
    <supplementaryInfo>UA-FI-HDR-SUPPLEMENTARY_INFO</supplementaryInfo>
  </receiptNotificationOut>

  <nonReceiptNotificationOut>
    <contentType>UA-FI-HDR-CONTENT_TYPE=P2</contentType>
    <type>UA-FI-HDR-TYPE=NON-RECEIPT</type>
    <localId>UA-FI-HDR-LOCAL_ID</localId>
    <p7recipient>
      <x400address>UA-FI-HDR-P7_RECIPIENT_X400ADDRESS</x400address>
    </p7recipient>
    <subjectIpn>UA-FI-HDR-SUBJECT_IPN</subjectIpn>
    <p2originator>
      <x400address>UA-FI-HDR-P2_ORIGINATOR</x400address>
    </p2originator>
    <preferredRecipient>
      <x400address>UA-FI-HDR-PREFERED_RECIPIENT</x400address>
    </preferredRecipient>
    <reason>UA-FI-HDR-REASON=DISCARDED or AUTOFORWARDED</reason>
    <discardReason>UA-FI-HDR-DISCARD_REASON</discardReason>
    <autoforwardComment>UA-FI-HDR-AUTOFORWARD_COMMENT</autoforwardComment>
  </nonReceiptNotificationOut>
```

```
<positiveEdiNotificationOut>
  <contentType>UA-FI-HDR-CONTENT_TYPE=PEDI</contentType>
  <type>UA-FI-HDR-TYPE=EDI_RECEIPT</type>
  <localId>UA-FI-HDR-LOCAL_ID</localId>
  <p7recipient>
    <x400address>UA-FI-HDR-P7_RECIPIENT_X400ADDRESS</x400address>
  </p7recipient>
  <subjectEdim>UA-FI-HDR-SUBJECT_EDIM</subjectEdim>
  <from>
    <x400address>UA-FI-RSP-FROM_X400ADDRESS</x400address>
  </from>
  <preferredRecipient>
    <x400address>UA-FI-HDR-FIRST_RECIPIENT_X400ADDRESS</x400address>
  </preferredRecipient>
  <receiptTime>UA-FI-HDR-RECIPIENT_TIME</receiptTime>
  <supplementaryInfo>UA-FI-HDR-SUPPLEMENTARY_INFO</supplementaryInfo>
</positiveEdiNotificationOut>

<negativeEdiNotificationOut>
  <contentType>UA-FI-HDR-CONTENT_TYPE=PEDI </contentType>
  <type>UA-FI-HDR-TYPE=EDI_NON-RECEIPT</type>
  <localId>UA-FI-HDR-LOCAL_ID</localId>
  <p7recipient>
    <x400address>UA-FI-HDR-P7_RECIPIENT_X400ADDRESS</x400address>
  </p7recipient>
  <subjectEdim>UA-FI-HDR-SUBJECT_EDIM</subjectEdim>
  <from>
    <x400address>UA-FI-RSP-FROM_X400ADDRESS</x400address>
  </from>
  <preferredRecipient>
    <x400address>UA-FI-HDR-FIRST_RECIPIENT_X400ADDRESS</x400address>
  </preferredRecipient>
  <receiptTime>UA-FI-HDR-RECIPIENT_TIME</receiptTime>
  <nnReason>UA-FI-HDR-NN_REASON</nnReason>
  <nnDiagnostic>UA-FI-HDR-NN_DIAGNOSTIC</nnDiagnostic>
  <supplementaryInfo>UA-FI-HDR-SUPPLEMENTARY_INFO</supplementaryInfo>
</negativeEdiNotificationOut>

<forwardedEdiNotificationOut>
  <contentType>UA-FI-HDR-CONTENT_TYPE=PEDI</contentType>
  <type>UA-FI-HDR-TYPE=EDI_FORW_RECEIPT</type>
  <localId>UA-FI-HDR-LOCAL_ID</localId>
  <p7recipient>
    <x400address>UA-FI-HDR-P7_RECIPIENT_X400ADDRESS</x400address>
  </p7recipient>
  <subjectEdim>UA-FI-HDR-SUBJECT_EDIM</subjectEdim>
  <from>
    <x400address>UA-FI-RSP-FROM_X400ADDRESS</x400address>
  </from>
  <preferredRecipient>
    <x400address>UA-FI-HDR-FIRST_RECIPIENT_X400ADDRESS</x400address>
  </preferredRecipient>
```

```

</preferredRecipient>
<receiptTime>UA-FI-HDR-RECIPIENT_TIME</receiptTime>
<forwardedTo>
  <x400address>UA-FI-HDR-FORWARDED_TO_X400ADDRESS</x400address>
</forwardedTo>
<reason>UA-FI-HDR-FN_REASON</reason>
<supplementaryInfo>UA-FI-HDR-SUPPLEMENTARY_INFO</supplementaryInfo>
</forwardedEdiNotificationOut>

<x400statusOut>

```

For more details about the parameters of an X.400 notification (e.g., localID, p7originator), see the *ADDONMAIL UA-FI Programmer's Guide* for the chapter about submitting IP notifications and the chapter about submitting EDI notifications.

## Sending Receipt and Non-receipt Notifications

You can have the X.400 Adapter send a receipt notification informing you that the receiver has read your IP message. You can also have the X.400 Adapter send a non-receipt notification containing the reason code for non-receipt of the IP message.

Before you can send receipt or non-receipt notifications for IP messages, fulfill the following prerequisite:

Prerequisite	For more information, see...
Create a scheduled task that runs the sendAndFetch or send service.	“Sending and Fetching Messages to the X.400 Server” on page 16.

To send X.400 receipt and non-receipt notifications, you must invoke the appropriate service based on the type of notification you want to send.

- **Receipt notification** – invoke `wm.X400forTN.wm.x400.tn.rec:deliverX400receipt` service
- **Non-receipt notification** – invoke `wm.X400forTN.wm.x400.tn.rec:deliverX400nonReceipt` service

After invoking the service, the X.400 Adapter creates a receipt or non-receipt notification (TN document type x400statusOut) for an inbound IP message and sends the notification to your X.400 partner using the X.400 Gateway.

The table below specifies what input parameters you need to provide for the service based on the type of notification you are sending.

Type of notification	Service name	Input parameters for the service
Receipt	deliverX400receipt	<ul style="list-style-type: none"> <li>▪ Bizdoc (BizDocEnvelope) that contains the message (TN document type ipMessageIn) that you want to generate the notification (TN document type x400statusOut) for.</li> <li>▪ Alias Name of the remote Integration Server, if the X400 Gateway does not reside on the local machine.</li> </ul>
Non-receipt	deliverX400nonReceipt	<ul style="list-style-type: none"> <li>▪ Bizdoc (BizDocEnvelope) that contains the message (TN document type ipMessageIn) that you want to generate the notification (TN document type x400statusOut) for.</li> <li>▪ Alias Name of the remote Integration Server, if the X400 Gateway does not reside on the local machine.</li> <li>▪ DiscardReason or the reason code for the non-receipt notification.</li> </ul> <p>AutoforwardComment for reason code 1. In that case the message was automatically forwarded by the recipient's mail system. The comment describes details regarding the forwarding.</p>

For more details about the structure and parameters of an X.400 notification (e.g., localID, p7originator), see the *ADDONMAIL UA-FI Programmer's Guide* for the chapters about receipt and non-receipt notifications.

### Sending EDI Notifications

The X.400 Adapter provides three types of EDI notifications:

- Positive EDI notification – If you received and processed the original X.400 EDI message successfully, you have to call the `wm.X400forTN.wm.x400.tn.rec.deliverX400positiveEDI` to send a positive EDI notification.

- **Negative EDI notification** – If something went wrong with the original X.400 EDI message, you have to call the service `wm.X400forTN.wm.x400.tn.rec:deliverX400negativeEDI` to send a negative EDI notification containing the reason and diagnostic codes.
- **Forwarded EDI notification** – If the X.400 EDI message was forwarded from your side, you have to call the service `wm.X400forTN.wm.x400.tn.rec:deliverX400forwardedEDI` to send a forwarded EDI notification containing the reason code and the X.400 address of the receiver the message was forwarded to.

Before you can send positive, negative, and forwarded EDI notifications, fulfill the following prerequisite:

Prerequisite	For more information, see...
Create a scheduled task that runs the <code>sendAndFetch</code> or <code>send</code> service.	“Sending and Fetching Messages to the X.400 Server” on page 16.

After invoking the service, the X.400 Adapter creates an X.400 EDI notification for an inbound EDI message and sends the notification to your X.400 partner using the X.400 Gateway.

The table below specifies what input parameters you need to provide for the service based on the type of notification you are sending.

Type of notification	Service name	Input parameters for the service
Positive	<code>deliverX400positiveEDI</code>	<ul style="list-style-type: none"> <li>▪ <b>Bizdoc</b> (BizDocEnvelope) that contains the message (TN document type <code>ediMessageIn</code>) that you want to generate the notification (TN document type <code>x400statusOut</code>) for.</li> <li>▪ <b>Alias Name</b> of the remote Integration Server, if the X400 Gateway does not reside on the local machine.</li> </ul>
Negative	<code>deliverX400negativeEDI</code>	<ul style="list-style-type: none"> <li>▪ <b>Bizdoc</b> (BizDocEnvelope) that contains the message (TN document type <code>ediMessageIn</code>) that you want to generate the notification (TN document type <code>x400statusOut</code>) for.</li> <li>▪ <b>Alias Name</b> of the remote Integration Server, if the X400 Gateway does not reside on the local machine.</li> <li>▪ <b>nnReason</b> or the negative (EDI) notification reason.</li> <li>▪ <b>nnDiagnostic</b> or diagnostic code.</li> </ul>

Type of notification	Service name	Input parameters for the service
Forwarded	deliverX400forwardedEDI	<ul style="list-style-type: none"><li>▪ <b>Bizdoc</b> (BizDocEnvelope) that contains the message (TN document type ediMessageIn) that you want to generate the notification (TN document type x400statusOut) for.</li><li>▪ <b>Alias Name</b> of the remote Integration Server, if the X400 Gateway does not reside on the local machine.</li><li>▪ <b>Reason</b> and the reason code. The X.400 address of the receiver the message was forwarded to and the reason code “1”</li></ul>

For more details about the structure and parameters of an X.400 notification (e.g., localID, p7originator), see the *ADDONMAIL UA-FI Programmer's Guide* for the chapter about submitting notifications.

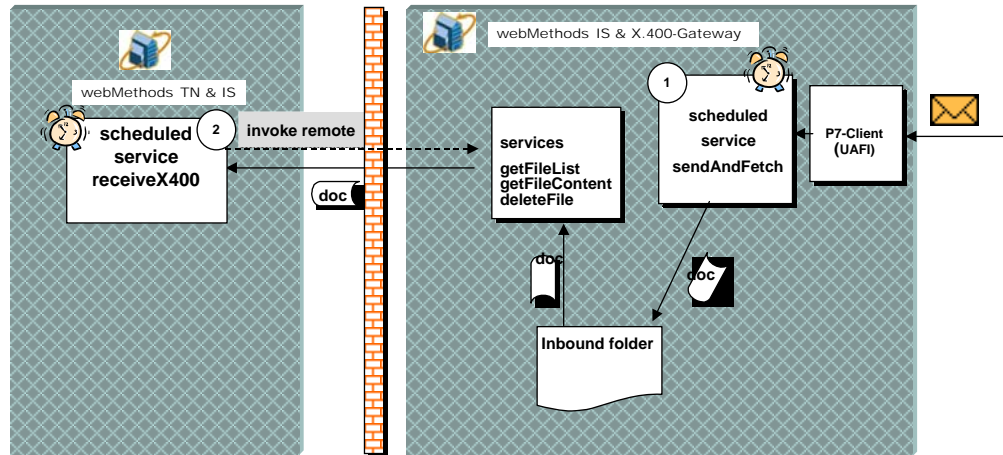
For more information about the parameters of an X.400 EDI notification (e.g., localID, p7originator), see the chapter on submitting EDI notifications in the *ADDONMAIL UA-FI Programmer's Guide*.

### Receiving an X.400 Notification

---

The principles for receiving notifications (TN document type x400statusIn) are the same as for receiving messages. For each message output (message, notification, report) submitted, there must be a positive or negative (in case of an error) acknowledgment. For more information about sending messages, see the section “Receiving Inbound Messages” on page 27.

Overview inbound notification processing



The following illustrates how the X.400 Adapter processes inbound notifications.

Step	Description
1.	The scheduled <code>wm.x400gateway.Gw:sendAndFetch</code> or <code>wm.x400gateway.Gw:fetch</code> services invoke the <code>ADDONMAIL-UAFI</code> (third party product), which fetches the messages and notifications out of your X.400 mailbox. The <code>sendAndFetch</code> and <code>fetch</code> services convert the messages and notifications into XML and store them in the <code>Inbound folder</code> for further processing.
2.	You should create a client that one of the following services to retrieve the messages from the <code>Inbound folder</code> <ul style="list-style-type: none"> <li>▪ <code>wm.x400gateway.Inbound:getFileList</code></li> <li>▪ <code>wm.x400gateway.Inbound:getFileContent</code></li> <li>▪ <code>wm.x400gateway.Inbound:deleteFile</code></li> </ul> <p>Note, you can also create a scheduled task to periodically invoke the <code>wm.X400forTN.wm.x400.tn.rec:receiveX400service</code>.</p>

The X.400 Adapter stores received notifications in the Trading Networks database and sets the user status to X.400 received.

Additionally, the X.400 Adapter creates a Transactions relationship between the notification and the original document the notification refers to.

To see relationships go to **webMethods Trading Network Console > View > Transaction Analysis**, search for a transaction, select it and click on **Transactions > View Related Documents** in the main menu.

### Structure of an Inbound Notification (x400statusIn)

The following is an example of the structure of an inbound notification (TN document type x400statusIn).



Note: Typically an inbound notification contains *one* notification type per file.

---

#### Structure of an Inbound Notification (x400statusIn)

```
<?xml version="1.0"?>
<!-- X.400 incoming status-->
<x400statusIn> to be change to 400statusOut
<statusType> </statusType>

<deliveryReportIn>
  <msSequenceNumber>UA-FI-RSP-DELIVERED-MS_ENTRY_NO</msSequenceNumber>
  <mtsId>UA-FI-RSP-MTS_ID</mtsId>
  <localId>UA-FI-RSP-CONTENT_ID</localId>
  <p7originator>
    <x400address>UA-FI-RSP-P7_ORIGINATER_X400ADDRESS</x400address>
  </p7originator>
  <deliveryTime>UA-FI-RSP-DELIVERY_TIME</deliveryTime>
</deliveryReportIn>

<nonDeliveryReportIn>
  <msSequenceNumber>UA-FI-RSP-DELIVERED-MS_ENTRY_NO </msSequenceNumber>
  <mtsId>UA-FI-RSP-MTS_ID</mtsId>
  <localId> UA-FI-RSP-CONTENT_ID</localId>
  <p7originator>
    <x400address>UA-FI-RSP-P7_ORIGINATER_X400ADDRESS</x400address>
  </p7originator>
  <reason>UA-FI-RSP-REASON</reason>
  <diagnostic>UA-FI-RSP-DIAGNOSTIC</diagnostic>
  <supplementaryInfo>UA-FI-RSP-SUPPLEMENTARY_INFO</supplementaryInfo>
</nonDeliveryReportIn>

<receiptNotificationIn>
  <msSequenceNumber>UA-FI-RSP-DELIVERED-MS_ENTRY_NO</msSequenceNumber>
  <localId>UA-FI-RSP-LOCAL_ID</localId>
  <p2originator>
    <x400address>UA-FI-RSP-P2_ORIGINATER_X400ADDRESS</x400address>
```



```

</p2originator>
<receiptTime>UA-FI-RSP-RECEIPT_TIME</receiptTime>
</receiptNotificationIn>

<nonReceiptNotificationIn>
  <msSequenceNumber>UA-FI-RSP-DELIVERED-MS_ENTRY_NO</msSequenceNumber>
  <localId>UA-FI-RSP-LOCAL_ID</localId>
  <p2originator>
    <x400address>UA-FI-RSP-FROM_X400ADDRESS</x400address>
  </p2originator>
  <nrnReason>UA-FI-RSP-REASON</nrnReason>
</nonReceiptNotificationIn>

<positiveEdiNotificationIn>
  <msSequenceNumber>UA-FI-RSP-DELIVERED-MS_ENTRY_NO</msSequenceNumber>
  <localId>UA-FI-RSP-LOCAL_ID</localId>
  <from>
    <x400address>UA-FI-RSP-FROM_X400ADDRESS</x400address>
  </from>
  <notificationTime>UA-FI-RSP-NOTIFICATION_TIME</notificationTime>
  <supplementaryInfo>UA-FI-RSP-SUPPLEMENTARY_INFO</supplementaryInfo>
</positiveEdiNotificationIn>

<negativeEdiNotificationIn>
  <msSequenceNumber>UA-FI-RSP-DELIVERED-MS_ENTRY_NO</msSequenceNumber>
  <localId>UA-FI-RSP-LOCAL_ID</localId>
  <from>
    <x400address>UA-FI-RSP-FROM_X400ADDRESS</x400address>
  </from>
  <notificationTime>UA-FI-RSP-NOTIFICATION_TIME</notificationTime>
  <nnGeneratedBy>UA-FI-RSP-GENERATED_BY</nnGeneratedBy>
  <nnReason>UA-FI-RSP-NN_REASON</nnReason>
  <nnDiagnostic>UA-FI-RSP-NN_DIAGNOSTIC</nnDiagnostic>
  <supplementaryInfo>UA-FI-RSP-SUPPLEMENTARY_INFO</supplementaryInfo>
</negativeEdiNotificationIn>

<forwardedEdiNotificationIn>
  <msSequenceNumber>UA-FI-RSP-MS_ENTRY_NO</msSequenceNumber>
  <localId> UA-FI-RSP-LOCAL_ID </localId>
  <from>
    <x400address>UA-FI-RSP-P2_ORIGINATER_X400ADDRESS</x400address>
  </from>
  <notificationTime>UA-FI-RSP-NOTIFICATION_TIME</notificationTime>
  <forwardedTo>
    <x400address>UA-FI-RSP-FORWARDED_TO_X400ADDRESS</x400address>
  </forwardedTo>
  <fnGeneratedBy>UA-FI-RSP-GENERATED_BY</fnGeneratedBy>
  <fnReason>UA-FI-RSP-FN_REASON</fnReason>
  <fnDiagnostic>UA-FI-RSP-FN_DIAGNOSTIC</fnDiagnostic>
  <supplementaryInfo>UA-FI-RSP-SUPPLEMENTARY_INFO</supplementaryInfo>
</forwardedEdiNotificationIn>

<submittedNotificationIn>

```

```

<localId>UA-FI-RSP-LOCAL_ID</localId>
<mtsId>UA-FI-RSP-MTS_ID</mtsId>
<submissionTime>UA-FI-RSP-SUBMISSION_TIME</submissionTime>
</submittedNotificationIn>

<nonSubmittedNotificationIn>
<localId>UA-FI-RSP-LOCAL_ID</localId>
<errorCode>UA-FI-RSP-ERROR_CODE</errorCode>
<errorText>UA-FI-RSP-ERROR_TEXT</errorText>
</nonSubmittedNotificationIn>
</x400statusIn>

```

For more details about the parameters of an X.400 notification (e.g., localID, p7originator), see the *ADDONMAIL UA-FI Programmer’s Guide* for the chapter about receiving IP notifications and the chapter about receiving EDI notifications.

### Receiving Submitted and Non-submitted Notifications

You will receive a submitted notification from the X.400 Adapter, if the IP or EDI message was successfully sent by the ADDONMAIL UA-FI to the X.400 server. If the ADDONMAIL UA-FI could not send the message to the X.400 server, you will receive a non-submitted notification.

Before you can receive submitted or non-submitted notifications for X.400 messages, fulfill the following prerequisite:

Prerequisites	For more information, see...
Create a scheduled task that runs the sendAndFetch or fetch service.	“Sending and Fetching Messages to the X.400 Server” on page 16.

To receive X.400 submitted or non-submitted notifications, you must invoke the receiveX400 service.

After you invoke the service, the X.400 Adapter receives X.400 messages (both IP and EDI) and notifications (TN document type x400statusIn) via the X.400 Gateway from a X.400 mailbox.

The table below specifies what input parameters you need to provide for the receiveX400 service based on the type of message you are receiving if the X400 Gateway does not reside on the local machine.

Type of X.400 message	Input parameters for the receiveX400 service
IP message	Alias Name of the remote Integration Server
EDI message	Alias Name of the remote Integration Server



Note: You can create a scheduled task for this service, as well as for the `sendandFetch` or `fetch` service, to automate receipt of the notification.

## Receiving Delivery and Non-delivery Notifications

You can request to receive a delivery notification if the X.400 Adapter successfully sent the X.400 IP and EDI message to the receiver's mailbox. If the X.400 MTA (Message Transfer Agent) could not send the message to the receiver's X400 mailbox, you receive a non-delivery notification.

Before you can receive delivery or non-delivery notifications for X.400 messages, fulfill the following prerequisites:

Prerequisites	For more information, see...
Create a scheduled task that runs the <code>sendAndFetch</code> or <code>fetch</code> service.	"Sending and Fetching Messages to the X.400 Server" on page 16.
Configure the profile for the receiving partner and define the x.400 extended fields based on the type of messages (IP or EDI). When defining the X.40 extended fields, you must set the following parameters: <ul style="list-style-type: none"> <li>▪ <code>Content type</code> is set to P2 or P22 or PEDI for the receiver</li> <li>▪ <code>replyRequest</code> is set to Yes</li> <li>▪ Either a <code>requestDN</code> or <code>requestND</code> notification in case of an IP message</li> <li>▪ <code>requestDN</code> and <code>request ND</code> in case of an EDI message</li> </ul> <p>For more information about the x.400 extended fields for a Trading Networks profile, see the section, "Defining the Receiver Profile" on page 22.</p>	"Manage Partner Profiles for the X.400 Adapter" on page 19.

To receive X.400 delivery or non-delivery notifications, you must invoke the `receiveX400` service.

After you invoke the service, the X.400 Adapter receives the X.400 messages (both IP and EDI) and notifications (TN document type `x400statusIn`) from an X.400 mailbox via the X.400 Gateway.

The table below specifies what input parameters you need to provide for the `receiveX400` service based on the type of message you are receiving if the X400 Gateway does not reside on the local machine. .

Type of X.400 message	Input parameters for the <code>receiveX400</code> service
IP message	Alias Name of the remote Integration Server

Type of X.400 message	Input parameters for the receiveX400 service
EDI message	Alias Name of the remote Integration Server



**Note:** You can create a scheduled task for this service, as well as for the sendandFetch or fetch service, to automate receipt of the notification.

For more details about the structure and parameters of an X.400 notification (e.g., localID, p7originator), see the *ADDONMAIL UA-FI Programmer’s Guide* for the chapter about receiving notifications.

### Receiving Receipt and Non-receipt Notifications

You can have the X.400 Adapter send a receipt notification informing you that the receiver has read your IP message. You can also have the X.400 Adapter send you a non-receipt notification containing the reason code for non-receipt of the IP message.

Before you can receive receipt or non-receipt notifications for X.400 messages, fulfill the following prerequisites:

Prerequisites	For more information, see...
Create a scheduled task that runs the sendAndFetch or fetch service.	“Sending and Fetching Messages to the X.400 Server” on page 16.
Configure the profile for the receiving partner and define the x.400 extended fields based on the type of messages (IP). When defining the X.40 extended fields, you must set the following parameters: <ul style="list-style-type: none"> <li>▪ Content type is set to P2 or P22 for the receiver</li> <li>▪ replyRequest is set to Yes</li> <li>▪ Either a requestRN or requestNR notification</li> </ul> For more information about the x.400 extended fields for a Trading Networks profile, see the section, “Defining the Receiver Profile” on page 22.	“Manage Partner Profiles for the X.400 Adapter” on page 19.

To receive X.400 receipt or non-receipt notifications, you must invoke the receiveX400 service.

The table below specifies what input parameters you need to provide for the receiveX400 service based on the type of message you are receiving if the X400 Gateway does not reside on the local machine.

Type of X.400 message	Input parameters for the receiveX400 service
IP messages	Alias Name of the remote Integration Server



**Note:** You can create a scheduled task for this service, as well as for the sendandFetch or fetch service, to automate receipt of the notification.

For more information, see the chapters about receipt and non-receipt notifications in the *ADDONMAIL UA-FI Programmer's Guide*.

## Receiving EDI Notifications

The X.400 Adapter provides three types of EDI notifications:

- **Positive EDI notification** – If the receiver processed the original X.400 EDI message, you receive a positive EDI notification.
- **Negative EDI notification** – If something went wrong with the original X.400 EDI message, you receive a negative EDI notification containing the reason and diagnostic codes.
- **Forwarded EDI notification** – If the X.400 EDI message was forwarded, you receive a forwarded EDI notification containing the reason code and the X.400 address of the receiver the message was forwarded to.

Before you can receive positive, negative, or forwarded EDI notifications, fulfill the following prerequisites:

Prerequisites	For more information, see...
Create a scheduled task that runs the sendAndFetch or Fetch service.	“Sending and Fetching Messages to the X.400 Server” on page 16.
Configure the profile for the receiving partner and define the x.400 extended fields based on the type of messages (EDI). When defining the X.40 extended fields, you must set the following parameters: <ul style="list-style-type: none"> <li>▪ <b>Content type</b> is set to PEDI for the receiver</li> <li>▪ <b>replyRequest</b> is set to Yes</li> <li>▪ Either a <b>requestPN</b>, <b>requestNN</b>, or <b>requestFN</b> notification</li> </ul> <p>For more information about the x.400 extended fields for a Trading Networks profile, see the section, “Defining the Receiver Profile” on page 22.</p>	“Manage Partner Profiles for the X.400 Adapter” on page 19.

To receive X.400 positive, negative, and forwarded EDI notifications, you must do the following. In your client code that receives the document, invoke the receiveX400 service.

The table below specifies what input parameters you need to provide for the receiveX400 service.

Type of X.400 message	Input parameters for the receiveX400 service
EDI messages	Alias Name of the remote Integration Server, if the X400 Gateway does not reside on the local machine.



**Note:** You can create a scheduled task for this service, as well as for the sendandFetch or fetch service, to automate receipt of the notification.

For more information, see the chapters about EDI notifications in the *ADDONMAIL UA-FI Programmer's Guide*.

### Receiving a Correlation Document

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Normally each IP or EDI message is sent in one mail. The X.400 standard allows to send one mail with more than one attachment. One attachment represents an IP or EDI message. ADDONMAIL UA-FI calls this batched messages. To configure whether you want to send one message in one mail or more messages in one mail you have to set the parameter batchIpm to NO/YES.

If you set batchIpm to YES, sendAndFetch and fetch services put all messages (which are stored in the outbound/receiver folder) together into one mail and send it to the recipient. If batchIpm is set to NO, sendAndFetch and fetch put each message into a separate mail.

In case of batchIpm is set to YES, you will get from UA-FI only one notification with the status for the mail. But this status refers to all included messages respectively all TN documents.

To set the user status of all these TN documents to the correct value, you need a list of the documents related to the mail. This is the document x400correlation. The user has nothing to do. All things are done automatically by the X.400 Adapter. But the user should know what the x400correlation document is for. Otherwise he is wondering what happens in TN. This is the intension of this section.

If the X.400 Adapter sends batched messages (that is, the X.400 extended profile field batchIpm is set to Yes in the Trading Networks profile), you will receive in Trading Networks a correlation document (TN document type x400correlation) from the X.400 Gateway. This correlation document contains a list of all of the messages included in one particular mail (batch). Since you will receive notifications and error messages relating only to the correlation document that represents the mail, the correlation document is necessary to relate all enclosed messages and to update their user status automatically.

When receiving a correlation document in Trading Networks, the X.400 Adapter creates a relationship between the correlation document and the first included message (Trading Networks document). The X.400 Adapter uses the status information from the received notification to update the Trading Networks user status for all enclosed messages.

When you call the SendAndFetch or fetch service for receiving of messages or notifications out of the mailbox you will get automatically the x.400correlation documents.





## 5 Error Handling

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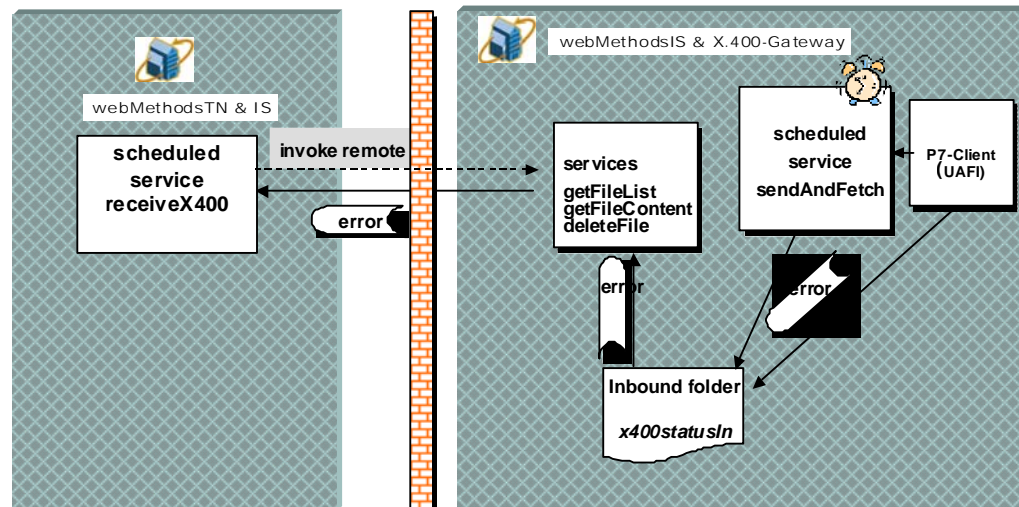
## Overview of Error Handling

The webMethods X.400 Adapter uses the error handling function of the Integration Server and Trading Networks. For error logging, the X.400 Adapter uses the following standard routines:

- The X.400 Adapter writes every adapter error into the Server Log of the Integration Server.
- In the case of an exception, the X.400 Adapter also generates an entry into the Error Log of the Integration Server.
- In the case of an error during extraction of inbound X.400 content (bodyparts), the X.400 Adapter generates an entry in the Trading Networks activity log.  
To see Activity logs go to **webMethods Trading Network Console > View > Activity Log**, or search for a transaction in **webMethods Trading Network Console > View > Transaction Analysis**, view the details by **Transactions > View Document** in the main menu and click on the tab **Activity Log**.

Because the X.400 Gateway can reside on a remote Integration Server, X.400 Gateway errors result in an error message (TN document type `x400statusIn`) that is stored in the `Inbound` folder. With the next `receiveX400` cycle, the X.400 Adapter transports the error message to Trading Networks together with messages and notifications.

Overview receiving error messages



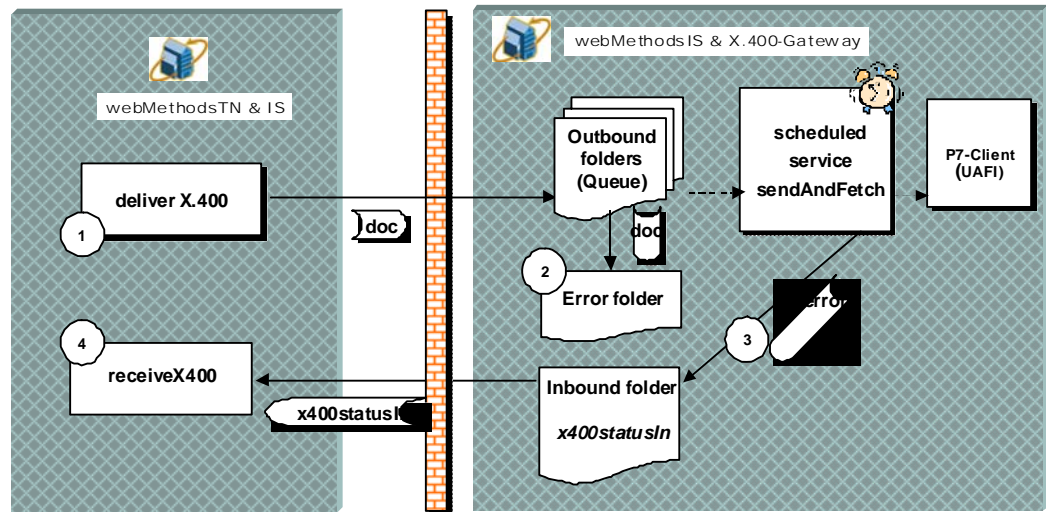
### Severe UA-FI Parser Error

In the case of an UA-FI parser error where the UA-FI could not process the messages in the `Outbound` folder, `wm.x400gateway.Gw:sendAndFetch` and

wm.x400gateway.Gw:send services move the regarding message from folder `Outbound/<receiver>` into the `Error` folder and the X.400 Adapter creates an error message (TN document type `x400statusIn`).

In all other cases, the message remains in the `Outbound` folder for an automatic resubmit.

Error handling in case of a UA-FI parser error



**Caution:** If a parser error occurs, the administrator has to analyze the problem manually because it indicates a severe problem with the configuration and operating of the X.400 Adapter.

## Receiving Error Messages

The X.400 Adapter sends an error message if an error occurs during the sending or retrieving of X.400 messages via the X.400 Gateway service. For example, you may receive an error message if there is no connection to the X.400 mailbox or if there is an UA-FI error.

Before you can receive X.400 error messages, fulfill the following prerequisite:

Prerequisites	For more information, see...
Create a scheduled task that runs the <code>sendAndFetch</code> or <code>fetch</code> service.	“Sending and Fetching Messages to the X.400 Server” on page 16.

To receive X.400 submitted or non-submitted notifications, you must do the following. In your client code that sends the document, invoke the `wm.X400forTN.wm.x400.tn.rec:receiveX400` service.

After you invoke the service, the `receiveX400` service retrieves the error message (TN document type `x400statusIn`) out of the `Inbound` folder of the X.400 Gateway.

The table below specifies what input parameters you need to provide for the receiveX400 service for the error message.

Type of X.400 message	Input parameters for the receiveX400 service
Error message	Alias Name of the remote Integration Server, if the X400 Gateway does not reside on the local machine.



**Note:** You can create a scheduled task for this service, as well as for the sendandFetch or fetch service, to automate receipt of the notification.

If you want to further process the error message, you can set up a Trading Networks processing rule. For example, you can use the Alert e-mail action to send the error text to the administrator.

## Structure of an Error Message

The following is an example of the structure of an error message.

Example of the structure of an error message

```
<?xml version="1.0"?>
<!-- X.400 incoming status-->
<x400statusIn>

<error>
  <documented>TN documented</documentId>          if available
  <functionName>function name</functionName>
  <class>error group (UAFI or X.400 gateway)</class>
  <code>error code</code>
  <text>error text</text>
</error>

</x400statusIn>
```

### Text of X.400 Gateway Error Messages

Internal X.400 Gateway error messages have the following:

- <class> tag = X.400 gateway
- <code> tag = -1

The following lists X.400 Gateway internal error texts.

Error while parsing the UAFI response file 'xxx'.  
 Error while converting X.400 ip-message into UAFI syntax.  
 Error while converting X.400 edi-message into UAFI syntax.  
 Error while converting X.400 notification into UAFI syntax.  
 Cannot delete file 'xxx'.

The following lists the X.400 Gateway exception error texts.

IOException

- IOException: cannot read UAFI response file 'xxx': <exception info>
- IOException: cannot write UAFI command file 'xxx'. <exception info>
- IOException: cannot close UAFI response file 'xxx': <exception info>
- IOException: cannot close header file 'xxx': <exception info>
- IOException: cannot read header file 'xxx': <exception info>
- IOException: cannot close input file 'xxx': <exception info>
- IOException: cannot close output file 'xxx': <exception info>

InterruptedException

Exception while creating an inbound X.400 submitted notification  
 Exception while creating an inbound X.400 non-submitted notification  
 Exception while creating an inbound X.400 delivery report  
 Exception while creating an inbound X.400 non-delivery report  
 Exception while creating an inbound X.400 receipt notification  
 Exception while creating an inbound X.400 non-receipt notification  
 Exception while creating an inbound X.435 positive EDI notification  
 Exception while creating an inbound X.435 negative EDI notification  
 Exception while creating an inbound X.435 forwarded EDI notification  
 Exception while parsing an XML string  
 Exception while parsing a XML file 'xxx'  
 Exception while creating a XML file  
 Exception while creating UAFI file  
 Exception while renaming the file 'xxx' into 'yyy'  
 Exception while deleting files  
 Exception while updating the correlation file  
 Exception while converting 'xxx'

### Text of ADDONMAIL UA-FI Error Messages

The following lists the UA-FI error message texts reported via the UA-FI response file. The `wm.x400gateway.Gw:sendAndFetch`, `wm.x400gateway.Gw:send` and `wm.x400gateway.Gw:fetch` services store both the error text from the UA-FI response file and the error code in the error message (TN document type `x400statusIn`).

Supported UA-FI error groups are:

- DELETED
- LOGON
- WARNING
- ERROR
- FATAL-ERROR
- ABORTED

For more details about the UA-FI error codes and error text, see the chapter about error handling in the *ADDONMAIL UA-FI Programmer's Guide*.

## 6 Restrictions

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## Clustering

---

The X.400 Adapter isn't usable in a clustered webMethods environments.

It isn't possible to run the Adapter parallel on two or more Integration Servers in a load balanced scenario.

The webMethods X.400 Adapter only supports fail-over configurations.

In these onfigurations the adapter is installed on two integration servers (production and fail over system), but there is only one running instance on the active Integration Server.

## Standards Conformance

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P7 (X.413) protocol operations with X.400 server (MS), P2, P22, PEDI

## Common Restrictions

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Common restrictions for the webMethods X.400 Adapter include the following:

- X.25 is unsupported (but might be possible by TCP/IP over X.25)
- Maximum 999 bodyparts per message
- P772 (military messaging protocol) is unsupported
- X.420 (P22) is partially supported
- X.400 1988 address parameter DN is not supported
- **Outbound:** content type is set to P2/P22/PEDI. FTAM bodyparts are unsupported.
- **Inbound:** The X.400 Adapter processes FTAM bodyparts by sending the content to Trading Networks and discarding the FTAM file name parameters.
- Transaction protection will be provided between the X.400 Adapter Gateway Inbound /Outbound folders and the X.400 message store.
- Large document handling is only supported within Trading Networks for received IP and EDI messages. During the transport from the mailbox to Trading Networks via X.400 Gateway Service a large document will be held in memory. Therefore sufficient memory has to be provided by the hardware.



## Special Features

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- **Switch-off the Trading Network user status update.** X.400 Adapter allows you to switch-off the user status. To do this, set parameter "noUserStatus=true" in the configuration file <IntegrationServer name>\packages\X400forTN\config\x400Cfg.properties". The default value is "false".

