

White Paper

JAVA Translation Option 5.2

For

IBM® Sterling Gentran:Server® for iSeries® 3.6

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This edition applies to the 3.6 Version of IBM® Sterling Gentran:Server® for iSeries® and to all subsequent releases and modifications until otherwise indicated in new editions.

Before using this information and the product it supports, read the information in [Notices](#).

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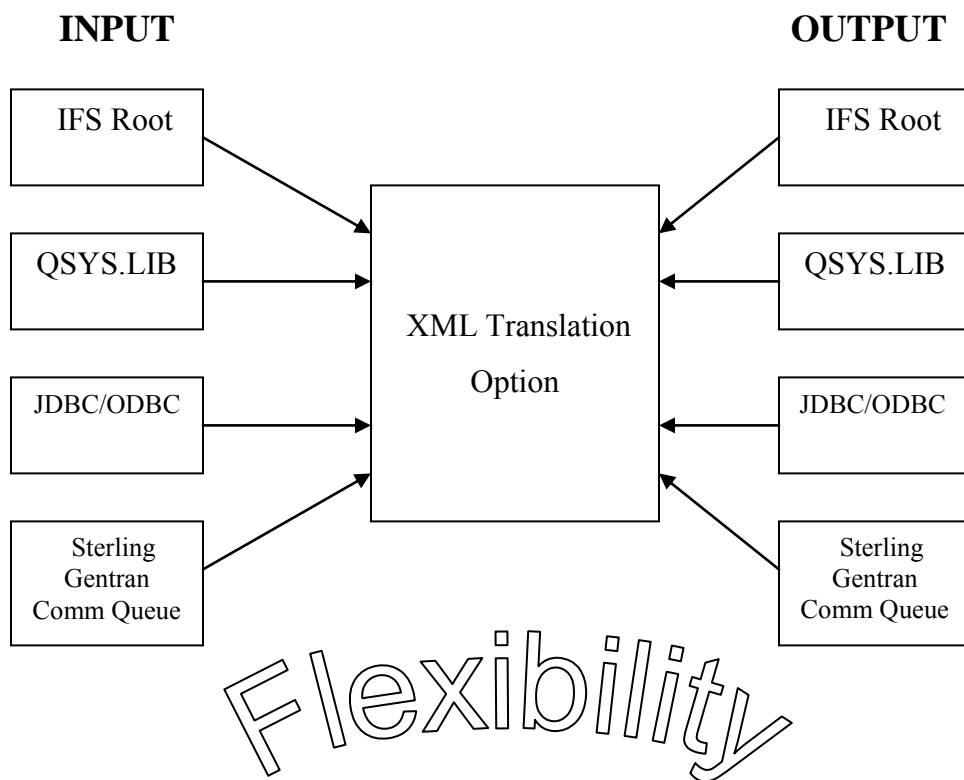
Introduction

For several years, there has been a great need for IBM Sterling Gentran Server iSeries customers to translate different options that were not available to them, including Flat file to Flat file transformation and XML translations. We now have a solution that enables you to perform these types of translations. Through the use of the Sterling Integrator's JAVA translator, we have put into place a quick and efficient translating mechanism.

With the new JAVA translator, you can translate the following types of documents:

- Files from the IFS file system
- An internally described (flat) file in QSYS.LIB
- Database files
- Files from the Sterling Gentran Communication queue.

The output of the translator can also be any one of the four types of documents listed above. The output file type is determined in the configuration of your map and translation job. The following diagram illustrates the capabilities of the JAVA translator.



System Requirements

iSeries System Requirements for Java Translator

System Requirements, iSeries:

1. OS/400 V6R1 or V7R1
2. TCP/IP Connectivity Utilities
3. Host Servers
4. Developer Kit for Java
5. Java Developer Kit 1.6 (J9 JDK)
6. Toolbox for Java
7. Client Access host components

Tested Configurations:

	V6	V7
OS/400	V6R1M0	V7R1M0
i5/OS V6R1	5761-SS1 *BASE	
i5/OS V7R1		5770-SS1 *BASE
TCP/IP Connectivity Utilities	5761-TC1 *BASE	5770-TC1 *BASE
Developer Kit for Java	5761-JV1 *BASE	5761-JV1 *BASE
Java (IBM J9 JDK 1.6)	5761-JV1 Option 12 Java SE 6 64 bit	5761-JV1 Option 12 Java SE 6 64 bit
IBM eServer iSeries Access for Windows	5761-XE1 *BASE	5770-XE1 *BASE
IBM Tools for Developers for i5/OS	5799-PTL	5799-PTL
i5/OS Cum Level	SF99610 Level 11102	SF99710 Level 11116
Java Group PTF level	SF99562 Level 16	SF99572 Level 5
Group Hyper	SF99609 Level 97	SF99709 Level 32
DB2 for IBM i	SF99601 Level 20	SF99701 Level 9

Restrictions

The JAVA translator can only translate one document at a time. Because this restriction is in place, you must organize your data accordingly. When documents are bundled together, it is your responsibility to separate them into an appropriate structure.

- When the IFS file system is used, a directory should be created to hold each specific document type. Each document must be a unique file within that directory. The interface can process multiple like documents within a directory.
- When the GENTRAN communication queue is used, each document must reside as a separate batch on the queue.
- When a flat file within QSYS.LIB is used, the file must contain one document. To make this process more efficient, a multi-membered flat file can be used. Each member is treated as a separate document and will process one member at a time.

Installation and Configuration

XML Translation Option Installation on the iSeries

Installing the Sterling Gentran Server 3.6 update for version 3.6.0.2 and later, installs the portion of the XML Translation Option that resides in the OS/400 library file system, QSYS.LIB. There is also another portion that contains all the java files, property files, and other PC-like stream files. These components reside in a directory in the root file system of the OS/400 Integrated File System (IFS). This part is installed separately by using the **XMLINST36** command.

After you install version 3.6.0.2 or later, make sure you are signed on with a Gentran library list and select option 1 (Global Parameters) from the Systems Administration menu. Proceed to the fourth panel and answer 'Y' to the Java Translation Activation parameter.

After you turn on the Java Translation Activation flag, make sure you are signed on with a Sterling Gentran library list and prompt the **XMLINST36** command.

The **XMLINST36** command will be displayed:

```
                Install XML Translation Option (XMLINST36)

Type choices, press Enter.

Directory to install under . . .    '/jtx52'

Overwrite existing files . . . .    *NO                *YES, *NO

                                                                 Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

Keep the default or supply a directory name under which the XML Translation Option will be installed. For example, keeping the default would result in the following directory tree:

```
/                (IFS root)
/jtx52           (directory specified on XMLINST36)
/jtx52/mapper   (map editor install and doc)
/jtx52/translator (translator runtime support)
/jtx52/sample   (installation verification)
```

Note: The **XMLINST36** command creates the directory for you, but it only creates a directory one level below a directory that already exists. For example, if you specify the following directories on the **XMLINST36** command:

/jtx52

This will always work because it is one level under root and root always exists.

/home/myjtx

This will work only if the /home directory already exists.

/userapp/jtx52/prod

This will work only if the /userapp/jtx52 directory already exists.

Assigning your user profile to the proper JDK

You have to create a file in the home directory of your user profile that points to the J9 jdk 1.6. Sign on with the user profile that you will use to access the XML Translator. Verify that the home directory exists by entering `WRKLNK '/home/userprofile'`. If it is not there, create it by entering `CRTDIR '/home/userprofile'`. After your home directory is verified, enter `EDTF '/home/userprofile/.profile'` and press Enter.

An edit screen will be displayed. Copy and paste the below information so that the content of your file matches this:

```
Edit File: /home/userprofile/.profile
Record :      1  of      1  by  8          Column :      1      59 by  74
Control :

CMD .....1.....2.....3.....4.....5.....6.....7.....+
*****Beginning of data*****
___ export JAVA_HOME=/QOpenSys/QIBM/ProdData/JavaVM/jdk60/64bit
*****End of Data*****

F2=Save   F3=Save/Exit  F12=Exit  F15=Services  F16=Repeat find
F17=Repeat change  F19=Left  F20=Right
```

Note: Ensure that the text you enter starts in position one of the file, not directly underneath the first asterisk on the screen.

To update, press F2, then F3.

Note: After this file is created, it does not show up on the WRKLNK `'/home/userprofile'`. You can view it by using the **EDTF** command or by viewing it through a windows file share.

ODBC/JDBC Mapping Configuration

If the XML Translation Option is using a database using ODBC or JDBC, additional configuration is required. When the map is created, ODBC is used on the PC for the map editor to access the database. When the map is run, JDBC is used on the iSeries for the translator to access the database.

The files that are used for ODBC mapping must be journaled. If the files are not journaled, you will receive an error during translation and nothing will be translated. For more information on setting up your journals, see the iSeries documentation at <http://publib.boulder.ibm.com/series/v5r2/ic2924/info/rzaki/rzaki.pdf>.

PC Setup

1. Install iSeries Access for Windows and configure a connection to your iSeries following the IBM documentation at <http://www-03.ibm.com/systems/power/software/i/access/windows.html>.
2. Configure an ODBC Data Source which uses the Client Access ODBC provider to connect to the iSeries database. This is done using native Windows facilities available via the Control Panel.
3. Create and compile your map using the **SQL (Database Connectivity)** option on the input and/or output sides.

iSeries Setup

The `/jtx52/translator/jdbc.properties` file must be edited, where `/jtx52` represents the directory that you specified on the **XMLINST36** command. To edit the file, you can either use the **WRKLNK** or the **EDTF** commands on the file listed above. Before modification, the file appears like this:

```
# Sample for standalone translator
# BridgeTest.driver=sun.jdbc.odbc.JdbcOdbcDriver
# BridgeTest.url=jdbc:odbc:BridgeTest
# BridgeTest.login=admin
# BridgeTest.password=byte05
ODBCCONNECT.driver=com.ibm.db2.jdbc.app.DB2Driver
ODBCCONNECT.url=jdbc:db2://localhost/library
ODBCCONNECT.catalog=boxname
ODBCCONNECT.dbname=library
ODBCCONNECT.user=userid
ODBCCONNECT.password=password
ODBCCONNECT.buffersize=500
```

```
ODBCCONNECT.maxsize=50
ODBCCONNECT.initsize=0
ODBCCONNECT.behaviour=2
ODBCCONNECT.lifespan=0
ODBCCONNECT.idletimeout=86400000
ODBCCONNECT.waittime=1000
ODBCCONNECT.schema=library
ODBCCONNECT.transaction=true
ODBCCONNECT.defaultIsolationLevel=2
ODBCCONNECT.systemPool=true
```

The lines that start with the Number sign (#) are comments. The ODBCCONNECT occurrences must be changed to match the ODBC data source name you used in your map. The following items must also be modified:

ODBCCONNECT.url=jdbc:db2://localhost/library

Change *library* to the library name where the application data resides.

ODBCCONNECT.user=userid

Change *userid* to the user that has access to the data

ODBCCONNECT.password=password

Change *password* to the password of the user id

ODBCCONNECT.dbname=library

Change *library* to the library name where the application data resides.

ODBCCONNECT.catalog=boxname

Change *boxname* to the host name of your iSeries.

For a data source named FRANK, user profile FRANKB, password SECRET, library DATALIB, and catalog BOXNAME, the properties file would be changed or replicated as follows:

```
FRANK.driver=com.ibm.db2.jdbc.app.DB2Driver
FRANK.url=jdbc:db2://localhost/DATALIB
FRANK.login=FRANKB
FRANK.password=SECRET
FRANK.catalog=BOXNAME
FRANK.dbname=DATALIB
```

Do not change the other parts of the property file entries. After making the necessary modifications, save the file in its original location.

OS/400 NetServer

The NetServer component of OS/400 enables you to set up file shares that are accessible via Windows networking. You can then map drives to these file shares which will allow PC applications such as the Sterling Integrator Map Editor to directly access data on your

iSeries file system. By using NetServer, you can store and maintain your maps and compiled maps (txo files) on your iSeries, where they ultimately need to be.

Use of NetServer is optional but recommended. The alternative is to create and maintain the maps on a PC and later transfer them to the iSeries file system using a separate file transfer facility such as FTP. Note that if FTP is used, binary transfer type must always be used for both the maps and txo objects.

Configuring NetServer

To configure your NetServer, follow these steps:

1. Open the iSeries navigator.
2. On the left, the servers that you are using are listed. Click the server the you want, and then sign on.
3. Click **Network > Servers > TCP/IP** to display information on the right side of the screen.
4. Click **i5/OS NetServer** to display different information on the left.
5. Right-click **Shared Objects**, then select **New > File**.
6. Enter a share name and a description.
7. Select either **read only** or **read/write**.
8. Click **Browse** to locate the directory in your IFS that you want to map. Then click **OK** twice.
9. Map a network drive using the share that you just created.
10. To map a network drive, right-click **My Network Places** and select **Map Network Drive**.
11. Select the Drive you want to map
12. For the Folder, enter `\\ip address` or the box name\share name
13. Click **Connect** using a different user name. Enter your iSeries user ID and password and click **OK**.

If you have additional questions or concerns regarding the configuration of your NetServer, see the iSeries Information Center at <http://www.ibm.com/systems/i/software/netserver/>

The goal is to set up a read/write file share which will be used by your PCs running the Map Editor to store the maps and txo files in the AS/400 Integrated File System (IFS) root file system.

Note: The root file system is not the same as the root directory. In general, it is a bad idea to place things in the root directory. For more information about these topics, see Information Center topic File systems and management > Integrated file system.

There is a great deal of flexibility in where you place the file share. This is up to your system administrator. You might want to have all users keep their maps in the same directory or have separate directories for different users, applications, or trading partners. You can keep the maps and txo files in the same or in separate directories.

Notes:

- Wherever you decide to store your maps, make sure that your system's backup procedures include this part of the file system.
- You might want to configure an additional read-only share to point to the `/jtx52/mapper` directory, where `/jtx52` represents the directory that you specified on the **XMLINST36** command. This will allow workstations to install the map editor and its documentation directly from your iSeries.

Configuring Sterling Integrator Map Editor

After you have created a NetServer share and created a mapped drive on your PC, you can open the `MapEditorGuide.pdf` that is located in the `/jtx52/mapper` directory for instructions on how to install the Sterling Integrator Map Editor. This Map Editor allows you to create, store and compile maps to that location. To install this application, click the `MapEditorInstall.exe` file through your mapped network drive. This launches the installation for the Map Editor. Follow through the steps referring to the `MapEditorGuide.pdf` when needed.

iSeries XML Translation Option Installation Verification

After the **XMLINST36** command completes successfully, you can run the installation verification test to verify the operation of the installed software.

Running the Installation Verification Test

You should still be signed in with the same user profile and Gentran library list that you used to run the **XMLINST36** command. To run the test, execute the **XMLVERIFY** command. The **XMLVERIFY** command takes no parameters.

Status messages might be displayed. The final message should be “VERIFICATION TEST COMPLETED SUCCESSFULLY”. If any other message is displayed, contact Customer Service for assistance to diagnose the problem.

After a Successful Verification

After receiving the “VERIFICATION TEST COMPLETED SUCCESSFULLY” message, there are a few more steps you can take to see what was accomplished and be introduced to the java translator output.

1. View the output data file
2. View the output XML report file
3. View the output files from a PC
4. Locate the output Spool files
5. View the JTXREPORT spool file
6. View the translation engine spool file

View the Output Data File

The following command allows you to view the output from the translator. The samples reference the default `/JTX52` installation directory. If you did not use the default installation directory, you must modify all of the examples in the verification tests to replace the `/JTX52` directory with your installation directory:

```
DSPF STMF('/jtx52/sample/verify.txt')
```

The display you see should be similar to the following:

```
Browse : /jtx20/sample/verify.txt
```

Record : 1 of 27 by 14 Column : 1 59 by 79
Control :

```
....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+....
*****Beginning of data*****
BIG*950510*5555555555*950512*22222222223333333333~
REF*BM*5555555555~
N1*VN*VENDOR NAM~
N3*VENDOR ADDRESS 1*VENDOR ADDRESS 2~
N4*VENDORCITY*OH*11111~
N1*ST*SHIPTO NAME~
N3*SHIPTO ADDRESS1*SHIPTO ADDRESS2~
N4*SHIPCITY*OH*22222~
REF*DP*4444~
REF*ST*LOCATIONN~
N1*RI*BILLTO NAME~
N3*BILLTO ADDRESS1*BILLTO ADDRESS2~
N4*BILLCITY*OH*33333~
ITD**0.15**30**15~
ITD**0.15**30**15~
DTM*DTM*950515~
N9*1V*55533444445555566666777778888~
MSG*TEXTTEXTTEXT~
IT1*1*100*EA*1**BP*9876543210*UI*2222222222~
QTY*OR*100~
PID*F****THIS IS THE ITEM DESCRIPTION~
ITD*XX**10~
IT1*2*50*EA*0.1**BP*9996543210*UI*2222222222~
QTY*OR*10~
PID*F****THIS IS THE 2ndITEMDESCRIPTION~
ITD*10**10~
TDS*10500~
CTT*2*150~
*****End of Data*****
```

View the Output XML Report File

The following command allows you to view the XML report file that was produced by the translation:

```
DSPF STMF('/jtx52/sample/verify.xml')
```

The display you see should be similar to the following:

Browse : /jtx52/sample/verify.xml
Record : 1 of 36 by 14 Column : 1 63 by 79
Control :

```
....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+....
*****Beginning of data*****
<?xml version="1.0" encoding="UTF-8" ?>
<?xml:stylesheet type="text/xsl" href="TranslationReport.xsl"?>
<TranslationReport>
  <Header>
    <Info>
      <Code>20</Code>
      <Info>
        <Name>20</Name>
        <Value>PET X 3030 810 Import</Value>
      </Info>
    </Info>
    <Info>
      <Code>12</Code>
      <Info>
        <Name>12</Name>
      </Info>
    </Info>
  </Header>
</TranslationReport>
```

```
        <Value>Thu Jun 03 11:44:36 UTC 2012</Value>
    </Info>
</Info>
</Header>
<Trailer>
    <Info>
        <Code>13</Code>
        <Info>
            <Name>13</Name>
            <Value>Thu Jun 03 11:44:36 UTC 2012</Value>
        </Info>
    </Info>
    <Info>
        <Code>19</Code>
        <Info>
            <Name>19</Name>
            <Value>120</Value>
        </Info>
    </Info>
</Trailer>
</TranslationReport>
*****End of Data*****
```

You should see that the time stamps in the file correspond to the time you ran the installation verification test.

View the Output Files from a PC

Although we just looked at the output from the verification test, you might also want to view the output using your PC, which results in a much better display of the XML report file. To do this, you will need a NetServer file share on the `jtxroot/sample` directory. This set up was not part of the standard installation instructions because it is not necessary for using the XML Translation Option, only for this exercise. If you want to try this exercise, have your NetServer administrator set up the share.

Once you have accessed the share, you should see that the sample directory contains the following files:

- `ibmlogo.jpg`
- `sample.in`
- `sample.map`
- `sample.txo`
- `sample.txt`
- `verify.txt`
- `verify.xml`
- `Codes.xsl`
- `Sample.class`
- `Sample.java`
- `TranslationReport.xsl`

If you double-click the `verify.xml` file, you should see the output report displayed by Internet Explorer in a much nicer looking form than we did previously. Likewise, you might use Wordpad or notepad or a utility of your choice to view the `verify.txt` file.

If you have your PC set up to View/Details, you will also see that the timestamps on the `verify.txt` and `verify.xml` files correspond to the time that the verification test was run.

Locate the Output Spool Files

Depending on how you have the message logging levels set on your job description, up to four spool files can be generated, as shown here:

```

Work with All Spooled Files

Type options, press Enter.
 1=Send   2=Change  3=Hold   4=Delete  5=Display  6=Release  7=Messages
 8=Attributes  9=Work with printing status

Opt  File          User          Device or      User Data      Sts    Total    Cur
     File          User          Queue          XMLVERIFY0     RDY    Pages   Page Copy
     JTXREPORT    MU           QPRINT         QPRINT         RDY    1        1    1
     QPRINT       MU           QPRINT         QJVACMSRV     RDY    2        1    1
     QPJOBLOG     MU           QEZJOBLOG      JTXSERV0      RDY    2        2    1
     QPJOBLOG     MU           QEZJOBLOG      JTXSERV0      RDY    2        2    1

```

View the JTXREPORT Spool File

Every translation request generates a spool file named `JTXREPORT`. The report contains the ID number identifying this particular translation request and unformatted messages from the translation engine. This report can be used for an audit trail or for diagnostics. The following example report is for a normal translation in which no errors occurred:

```

Display Spooled File
File . . . . . : JTXREPORT          Page/Line  1/1
Control . . . . .      Columns    1 - 78
Find . . . . .
*...+...1...+...2...+...3...+...4...+...5...+...6...+...7...+...
2012-06-03 12:37:57.574 UTC Translation request received:
id=0XMLVERIFY0
txo=/jtx52/sample/sample.txo
in=/jtx52/sample/sample.in
out=/jtx52/sample/verify.txt
rpt=/jtx52/sample/verify.xml
Translation Report
=====
Contains errors ? false
Contains warnings ? false
There are 4 entries in the report
Report Entry:
  Section: HEADER          Severity: INFO
  SyntaxSpecific: false    Syntax: -1          Code: 20
  Info:
    20:
    PET X 3030 810 Import
Report Entry:
  Section: HEADER          Severity: INFO
  SyntaxSpecific: false    Syntax: -1          Code: 12
  Info:
    12:
    Thu Jun 03 12:37:57 UTC 2012

```

```

Report Entry:
  Section: TRAILER          Severity: INFO
  SyntaxSpecific: false    Syntax: -1      Code: 13
  Info:
    13:
    Thu Jun 03 12:37:57 UTC 2012
Report Entry:
  Section: TRAILER          Severity: INFO
  SyntaxSpecific: false    Syntax: -1      Code: 19
  Info:
    19:
    113
2012-06-03 12:37:58.186 UTC Translation request complete

```

View the Translation Engine Spool File

Any time the translation server job shuts down, a spool file named QPRINT is generated. This also occurs after the installation verification test, and you can locate and view this file by using the **WRKSPLF** command. The QPRINT file contains messages issued by the JVM, translation engine, and translation engine harness. It contains output similar to the following:

```

Display Spooled File
File . . . . . : QPRINT          Page/Line  1/6
Control . . . . . :                Columns    1 - 78
Find . . . . . :
*...+...1...+...2...+...3...+...4...+...5...+...6...+...7...+...
2012-06-03 12:37:51.747 UTC Entering iSeries Translator v2.0.0 Harness
2012-06-03 12:37:52.447 UTC Connected to /QSYS.LIB/G3X0TSTDTA.LIB/JTXQQUEUE0.DTAQ
2012-06-03 12:37:55.35 UTC Ready to receive requests
2012-06-03 12:37:57.574 UTC Translation request received:
id=0XMLVERIFY0
txo=/jtx52/sample/sample.txo
in=/jtx52/sample/sample.in
out=/jtx52/sample/verify.txt
rpt=/jtx52/sample/verify.xml
2012-06-03 12:37:58.186 UTC Translation request complete
2012-06-03 12:37:58.517 UTC Shutdown request received
2012-06-03 12:37:58.517 UTC 1 translation requests were processed
2012-06-03 12:37:58.545 UTC Program exit
Java program completed

```

This report shows when the translation server was started and ended and every translation request processed by this instance of the server. These entries correspond to the information in the JTXREPORT spool file.

In the installation verification test, only a single translation request is processed and then the translation server is automatically ended. In actual use, the server jobs should be allowed to run to process multiple translation requests. All these requests will then be shown in the QPRINT file.

The QPRINT file is also useful when you debug a translation run that does not successfully complete. It often provides useful information that helps determine the issue.

JAVA Translation Server Operation

The translation engine runs as a separate job that services translation requests from the **JVATRN** command. The translation server processes requests one at a time in FIFO sequence. You might want to run more than one server to allow concurrent processing and/or prioritization of various application workloads. The server jobs operate and are managed independently of the jobs making the requests. The server jobs can be managed and tuned using native OS/400 work management facilities. The servers are controlled by the following commands.

STRJTX

The **STRJTX** command starts a translation server.

```
                Start Java Translation Service (STRJTX)

Type choices, press Enter.

Instance qualifier . . . . . 0                0-9, A-Z
Job Description . . . . . *USRPRF           Name, *USRPRF
  Library . . . . .                Name, *LIBL, *CURLIB
Job Queue . . . . . *JOBID                Name, *JOBID
  Library . . . . .                Name, *LIBL, *CURLIB

                Additional Parameters

RUNJVA option . . . . . *NONE              *NONE, *VERBOSE, *DEBUG...
RESET . . . . . *NO                       *NO, *YES
```

- The Instance Qualifier is a character that identifies a translation server instance. This is required to differentiate servers if you are running more than one server concurrently. The default is 0 and if you only use one server, you do not have to change the default value.
- Job Description and Job Queue are used to control how and where the server jobs are submitted. For more information, see the documentation for the **OS/400 SBMJOB** command.
- The RUNJVA option is used to activate various debugging options. This should normally be left at the default, *NONE, unless instructed otherwise by support. For more information on the meanings of the acceptable values, see the documentation for the **OS/400 RUNJVA** command.
- RESET is used when a translation server has previously crashed or been terminated outside its control, such as an **ENDJOB** command or its subsystem ending. Subsequent attempts to start the same server instance might result in a message stating that the service is already started. Clear this condition by specifying RESET(*YES).

After issuing the **STRJTX** command, the server must initialize before it is ready to service translation requests. The server is ready when the job status appears as follows:

```
                                Work with Active Jobs                                ISDDEV01
                                                                06/03/12 11:35:27
CPU %:   10.6      Elapsed time:   00:44:56      Active jobs:   149

Type options, press Enter.
  2=Change  3=Hold  4=End  5=Work with  6=Release  7=Display message
  8=Work with spooled files  13=Disconnect ...

Opt  Subsystem/Job  User      Type  CPU %  Function      Status
  QBATCH          QSYS     SBS      .0     .       DEQW
  JTXSERV0        MAZ      BCH      .0     PGM-STRJTX2  TIMW
  QJVACMSDRV      MAZ      BCI      .5     JVM-tx400m   DEQW
```

Notice there are two components to every server instance, the JTXSERVn BCH job and the QJVACMSDRV BCI job. These must be in TIMW and DEQW status, respectively, before you begin to submit requests. Depending on the speed of your system, this could take up to several minutes.

ENDJTX

The **ENDJTX** command ends a translation server. The command takes only one parameter that is used to determine the server instance that is to be ended. The default of zero matches the default instance of the **STRJTX** command. The server will attempt to complete all requests on its queue before ending.

Note: The **ENDJTX** command must always be used to end a translation server. Other methods, such as canceling the job or ending the subsystem in which it is running, must not be used to end a translation server.

Using the Sterling Integrator Map Editor

For information on using the Sterling Integrator Map Editor, refer to the Map Administrator's Guide that was provided when you performed the XMLINST36 function. This guide is in PDF format and can be viewed using Adobe Acrobat Reader. The `MapEditorGuide.pdf` file is located under the `JTX52/mapper` directory that was created during installation. `JTX52` represents the directory name that was entered when the **XMLINST36** command was performed. You can view this file using Windows Explorer provided you have mapped a network drive to this location. You can also use the online help that is provided with the Sterling Integrator Map Editor for assistance.

For convenience, you might want to change the location defaults that are used by the Map Editor to store the maps and the compiled map. To change the location defaults, open the Map Editor and select **Options > Preferences > Files**. Change the **Map Location** settings and the **Map Test** setting to point to the iSeries shared directories instead of the default installation directory of the Map Editor Application.

Additional steps are required in the Map Editor for the JAVA translator to interpret the data properly.

- After you have created the input and output portions of the map, the encoding must be set properly on both the input and output side of the map. To set the encoding, right-click the main parent item and select **Properties**. In the Properties box, select the **Encoding** tab. Select the appropriate encoding scheme that corresponds with the file you are working with. This must be done for both the input and output side of the map. Refer to the table below for proper encoding identification.

File	Encoding
IFS File	On your iSeries, enter WRKLNK from a command line and press F4. Enter the directory name where the file resides and press Enter. Locate the file, and select 8 (Display attributes) next to the file and press Enter. Locate the Code Page on the Display Attributes screen. This is what the encoding must be set to on the Map Editor.
Flat file in QSYS.LIB or GENTRAN Comm queue	On your iSeries, enter DSPSYSVAL SYSVAL (QCHRID) from the command line and press Enter. Locate the Code Page on the Display System Value screen. This is what the encoding must be set to on the Map Editor.
ODBC (Database file)	On your iSeries, enter <code>DSPFD filename</code> from the

	command line and press Enter. Scroll down until you locate the line item entitled Coded character set identifier : CCSID. This is what the encoding must be set to on the Map editor for that particular file.
--	--

- When you have completed your map, save and compile it onto your iSeries in the IFS file system. You can accomplish this by mapping a network drive. Refer to the [Configuring NetServer section](#) in the [Installation and Configuration chapter](#) of this document for further instructions on creating a file share.

Note: When you are mapping your network drive, you must click the **Connect using a different user name** option. This displays a ‘Connect as’ pop-up window. You must fill in your iSeries profile and password. If this is not done, then your Windows profile and password will be used, which causes record locks on the compiled map.

Defining JAVA Translator Links

A JAVA Translator Link provides the necessary information to perform the inbound and outbound translations using the JAVA translator. The JAVA translator requires 4 parameters when performing a translation. The JAVA translator link, which is a 10 byte alphanumeric field, points the translator to the 4 required parameters so that you do not have to enter the 4 parameters each time a translation is executed. The following 4 parameters are required:

Map name

File name of the map that defines the translation.

Input file name

Location of the data to be translated.

Output filename

Location of where the data will be placed once it has been translated.

Report name

Location of where the translator report is to be placed.

Accessing the JAVA Link Panels

To access the JAVA Link panels, enter **JVALNK** from a command line and press Enter. The Work With JAVA Link panel (EDIX462) is displayed

```
EDIX462                Work With JAVA Translator Links                MAZ 2012/06/03
FMT01                                                           16:37:26
```

```
Position to JAVA Link Name . . . . . _____
```

Type option (and Information), press Enter.

1=Create 2=Revise 3=Copy 4=Delete 5=View 30=JVATRN

Opt	JAVA Link	JAVA Link Description
—	INB850CO1	Inbound 850's for Company #1
—	INB850CO2	Inbound 850's for Company #2
—	INB856CO1	Inbound 856 for Company #1
—	OUT810CO1	Outbound Invoices for Company #1
—	OUT810CO2	Outbound Invoices for Company #2
—	OUTFILE1	Outbound Flat File Translation
—	OUTFILE2	Outbound Flat File Translation #2
—	TRNSFDATA	TRANSFER FROM IFS TO COMMQ
—	TRNSFDTA2	TRANSFER FROM IFS TO DATABASE FILE

More...

Parameters or command

===>

F1=Help F3=Exit F5=Refresh F9=Retrieve F12=Cancel F15=Sort

The JAVA Translator Link panels are used for the following tasks:

- Create a JAVA Translator Link
- Revise a JAVA Translator Link
- Copy a JAVA Translator Link
- Delete a JAVA Translator Link
- View a JAVA Translator Link
- Initiate a JAVA Translation

Create a New JAVA Translator Link

The Work with JAVA Translator Link panel (EDIX462-FMT01) is used to create and maintain JAVA Translator Link Definitions.

EDIX462 Work With JAVA Translator Links MAZ 2012/06/26
FMT01 16:37:26

Position to JAVA Link Name _____

Type option (and Information), press Enter.

1=Create 2=Revise 3=Copy 4=Delete 5=View 30=JVATRN

Opt	JAVA Link	JAVA Link Description
<u>1</u>	<u>NEWTRANS</u>	
___	INB850CO1	Inbound 850's for Company #1
___	INB850CO2	Inbound 850's for Company #2
___	INB856CO1	Inbound 856 for Company #1
___	OUT810CO1	Outbound Invoices for Company #1
___	OUT810CO2	Outbound Invoices for Company #2
___	OUTFILE1	Outbound Flat File Translation
___	OUTFILE2	Outbound Flat File Translation #2
___	TRNSFDATA	TRANSFER FROM IFS TO COMMQ
___	TRNSFDATA2	TRANSFER FROM IFS TO DATABASE FILE

More...

Parameters or command

===>

F1=Help F3=Exit F5=Refresh F9=Retrieve F12=Cancel F15=Sort

To create a JAVA Translator Link, follow these steps:

1. Enter 1 (Create) in the **Option** field.
2. Select an alphanumeric name (up to 10 bytes) to represent a JAVA Translator Link that will be used to identify the JAVA translation that is to run and press Enter.

The JAVA Link Configuration panel (EDIX463-FMT01) is displayed.

Note:The JAVA Translation Link name cannot be used more than once.

This diagram illustrates the JAVA Link Configuration panel (EDIX463-FMT01).

```
EDIX463          JAVA Link Configuration          MAZ 2012/06/12
FMT01                                     16:56:59

JAVA Link Name . . . . . NEWTRANS

JAVA Link Description. . . . . _____

Source of Input:
Inbound data will be pulled from _____ IFS, FILE, ODBC, COMMQ

Output Information:
Place translated data in. . . . . _____ IFS, FILE, ODBC, COMMQ

Processing Information:
JAVA Map name . . . . . _____
_____  

Directory for Reports. . . . . _____
_____

F1=Help F5=Refresh F8=Next F10=Update F12=Cancel
```

Enter the appropriate information in the fields and press Enter or F8 to advance to the next panel (EDIX463-FMT02).

Field Descriptions:

JAVA Link Description

A 40 byte alpha field used to describe the function this translation performs.

Source of Input:

Inbound data will be pulled from

This field identifies what type of file the input data will be coming **from**. One of the following 4 entries must be entered:

IFS

A stream file that resides on the IFS file system.

FILE

A file that resides in QSYS.LIB.

ODBC

A database file.

COMMQ

Data that resides on the Sterling Gentran Communication Queue.

Output Information:

Place translated data in

This field identifies what type of file the data will be placed **into** after it has been translated. One of the following 4 entries must be entered:

IFS

The data will be placed in a stream file that resides on the IFS file system.

FILE

The data will be mapped to an internally described file that resides in QSYS.LIB.

ODBC

The data will be mapped to a database file.

COMMQ

Data will be placed on the Sterling Gentran Communication Queue.

JAVA Map Name

Enter the file name of the map that is to be executed. This file must reside in the IFS file system and have a .TXO or .LTX extension.

Note: When compiling maps using Sterling Integrator Map Editor, the default extension is .TXO or .LTX.

Directory for Reports

Enter the directory name of where you want the reports to be placed. Do not put the trailing forward slash (/) on the directory name. The JVATRN process appends the forward slash (/) along with a unique file name. To view these reports in a browser, you must copy 3 files into this directory. Refer to the Running a JAVA Translation section for instructions.

Upon completion of panel EDIX463-FMT01, press Enter or F8 to advance to the next screen. The JAVA Link Configuration panel (EDIX463-FMT02) is displayed.

This diagram illustrates the JAVA Link Configuration panel (EDIX463-FMT01).

```
EDIX463          JAVA Link Configuration          MAZ 2012/06/03
FMT02                                     10:21:03

JAVA Link Name . . . . . NEWTRANS
JAVA Link Description. . . . . TEST FOR THE JAVA TRANSLATOR
Source of Input:
```

Receive from IFS directory . . . _____
 Remove file after translation. . . _ (Y/N)

Output Information:
 Place in Comm Queue _____
 Direction _ I - Inbound, O - Outbound

F1=Help F5=Refresh F7=Back F10=Update F12=Cancel

Enter the appropriate information in the fields and press F10 to update the JAVA Link record.

The **Source of Input** and **Output Information** fields that are displayed differ depending on the file type selections that were selected on the EDIX463-FMT01 panel.

Field Descriptions:

Source of Input:

Value from EDIX463-FMT01	Fields displayed on EDIX463-FMT02
IFS	<p>Receive from IFS directory . . . <u>/home/inbound/partner1/invoices</u></p> <p>Remove file after translation. . . <u>N</u> (Y/N)</p> <p>Receive from IFS directory</p> <p>Enter the directory where the files are located for translation. This directory must exist on the IFS file system. Do not enter the trailing '/'. The JVATRn appends the '/' when it processes a file from the directory. Remember: Each file in the directory must contain only one document.</p> <p>Remove file after translation</p> <p>Answer 'Y' if you want the JVATRn flow to remove the file after it has been translated. Answer 'N' if you want the file to remain in the directory.</p>
FILE	<p>Receive from Library/File/Member <u>MAZLIB</u> / <u>INFILE</u> / <u>*ALL</u></p> <ul style="list-style-type: none"> Enter the Library/File/Member of the file that is to be translated. The library/file must exist. When *FILE is entered for the member name, the filename will be used as the member name. When *ALL is entered for the member name. Each member in the

	file will be processed as one translation. Remember: Each file member must contain only one document.
ODBC	<p>ODBC - Data source is defined in the map.</p> <ul style="list-style-type: none"> There is no input necessary when ODBC is selected. The translator retrieves the file information that is defined in the map.
COMMQ	<p>Receive from Comm Queue. MAZID____ Direction O I - Inbound, O - Outbound</p> <ul style="list-style-type: none"> Enter the name of the Sterling Gentran communication queue where the data will be pulled from. Remember: Each batch on the queue must contain only one document. Enter 'I' to pull data from the inbound queue or enter 'O' to pull data from the outbound queue.

Output Information:

Value from EDIX463-FMT01	Fields displayed on EDIX463-FMT02
IFS	<p>IFS Directory to place output. . /home/outbound/partner1/invoices____ IFS File Extension XML____</p> <p>IFS Directory to place output</p> <p>Enter the directory where the file will be placed after translation. This directory must exist on the IFS file system. Do not enter the trailing forward slash (/). The JVATRN process will append the forward slash (/) when it executes the JAVA translator. Each translator run produces a unique file name and places it in the directory listed. The file name consists of a one byte character followed by a nine byte sequential number. The sequential number is stored in data area JVASEQ.</p> <p>IFS File Extension</p> <p>Enter the extension that you want to place at the end of your translated file; for example, TXT for a text document or XML for an XML document. Do not enter the period (.) preceding the extension. The JVATRN process inserts the period (.).</p>
FILE	Place into Library/File/Member. MAZLIB____ / OUTFILE____ / *UNIQUE____

	<ul style="list-style-type: none"> • Enter the Library/File/Member that is to hold the translated data. The library/file/member must exist. When *UNIQUE is entered for the member name, each translation generates a unique member that consists of one byte character followed by a nine byte sequential number. When *FILE is entered for the member name, the file name is used for the member name.
ODBC	<p>ODBC - Data source is defined in the map.</p> <ul style="list-style-type: none"> • There is no input necessary when ODBC is selected. The translator retrieves the file information that is defined in the map.
COMMQ	<p>Place in Comm Queue MAZID Direction O I - Inbound, O - Outbound</p> <ul style="list-style-type: none"> • Enter the name of the Sterling Gentran communication queue where the data will be placed after it has been translated. • Enter I to place data onto the inbound queue or enter O to place data onto the outbound queue.

Running a JAVA Translation

A JAVA translation takes all files from the specified input, one document at a time, translates the files as defined in the translation map, and places the translated data into the designated file or the Sterling Gentran communication queue. It continues this process until there are no more files to be translated. Each translation generates a report to identify whether the translation was successful or had errors and warnings. If there were errors and warnings, they will be detailed within the report to help identify the problem.

Currently, the JAVA Translator runs standalone and is not integrated with the Sterling Gentran subsystems. It does not envelope data when it is translated into EDI format, and there are no auditing records within the Sterling Gentran audit subsystem for the JAVA translations. However, we do provide a solution that can be used to resolve this situation. When you receive data from your trading partner that is not in standard EDI format, you can translate that data into EDI using the JVATR process and specify on the command to envelope it. On your JAVA link, you direct your translated data to your Gentran communication queue to be processed as regular EDI data. This is just one scenario of how you can use the JAVA translator to assist you.

To invoke the JAVA translator, key in JVATR and press F4. The Process JAVA Translation command will be prompted

Process JAVA Translations (JVATR)

Type choices, press Enter.

JAVA Translator Link	_____	JAVA Link
Envelope data?	<u>*YES</u>	*YES, *NO
Instance qualifier	<u>0</u>	0-9, A-Z
Run Interactively?	<u>*NO</u>	*YES, *NO

Bottom

F3=Exit F4=Prompt F5=Refresh F10=Additional parameters F12=Cancel
F13=How to use this display F24=More keys

Enter the appropriate information on the command and press Enter to execute the JAVA translator.

You can also invoke the **JVATR** command from the Work with JAVA Translator Links panel (EDIX462) by entering option 30 next to any JAVA Links, or by entering 30 and a JAVA Link on the control line.

Parameter Descriptions:

JAVA Translator link

Enter the link that you want to process. This will go out and read the database record for the JAVA Link and pull all of the required information that is stored in that link, including input information, map name, output information, and report location.

Envelope Data?

Enter *NO if you do not want the data enveloped. Enter *YES if you are translating data into an EDI format and you want it enveloped. When using the envelope feature, you must organize your data so that all of your documents are separated into individual directories, communication queues, or files by trading partner. Because the JAVA translator has no partner identification features, you must supply required information for the enveloping to occur. Those required fields are prompted on the command when *YES is selected for this parameter.

Instance qualifier

Enter the Instance Qualifier of the translation server that is to execute this specific translation.

Run Interactively?

Enter *NO if you want the translation job submitted to batch. Enter *YES if you want to run the translation job interactively.

Additional Parameters:

Partner ID to Envelope

If you entered *YES for the 'Envelope Data?' parameter, the Partner ID to Envelop, Qual, Functional Group to Envelop, and Transaction to Envelop become required parameters. You must enter the Partner ID that you want the EDI data enveloped with. The JVATRN process reads the Gentran partner file and retrieves the envelope information to create the envelopes.

Note: You have to verify that the delimiters specified on the partner entered match those that are specified on the EDI portion of the Sterling Integrator map.

Qual

Enter the Qualifier that corresponds to the Partner ID entered, if required.

Functional Group to Envelope

Enter the group that is to be enveloped. The group record entered must be defined for the partner that was entered.

Transaction to Envelope

Enter the transaction that is to be enveloped. The transaction record entered must be defined for the partner that was entered.

Schedule Job?

Enter *YES if you want to schedule this job in the Sterling Gentrans scheduler.
Enter *NO if you want the job to run when the enter key is pressed.

The report that is generated from a JAVA translation is produced in the directory that was specified on the JAVA link. Those reports are in XML format and can be viewed through Windows Explorer using a browser. We provide an XSL style sheet that allows you to view the report in a more readable format.

To view the report, you must copy three files into your reports directory. You can use Windows explorer to copy these files, or use the COPY function on the iSeries. The following 3 files are required. Note that /jtx52 represents the directory you specified on the **XMLINST36** command:

- /jtx52/sample/ibmlogo.jpg
- /jtx52/sample/TranslationReport.xsl
- /jtx52/sample/Codes.xsl

The following illustration demonstrates copying an XSL report using the **COPY** command on an iSeries:

```
Copy Object (COPY)

Type choices, press Enter.

Object . . . . . > '/jtx52/sample/TranslationReport.xsl'
-----
To directory . . . . . '.'
-----
To object . . . . . > '/your/directory/TranslationReport.xsl'
-----
Symbolic link . . . . . *NO          *NO, *YES
From Code Page . . . . . *OBJ          1-32767, *OBJ, *PCASCII
To Code Page . . . . . *OBJ          1-32767, *OBJ, *CALC...
Data Format . . . . . *BINARY       *BINARY, *TEXT
```

Bottom

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

The following graphic is an example of what the translation report looks like when the style sheet is added for viewing ease:



Translation Report

<u>Section</u>	<u>Severity</u>	<u>Msg #</u>	<u>Description</u>	<u>Data</u>
Header	Info	20	Translation object	EDI_to_XML
Header	Info	12	Translation start	Tue Jun 19 14:08:26 EDT 2012
Trailer	Info	13	Translation end	Tue Jun 19 14:08:26 EDT 2012
Trailer	Info	19	Execution time (msec)	338
				Translation completed with:
				0 error(s)
				0 warning(s)

Fields on the JAVA Translation Report:

Field Name	Description
IBM Logo	A link to the IBM website for further assistance if required.
Translation completed with:	Identifies the number of errors and warnings that have occurred during the translation.
Section	Identifies the area of the translation when the information was issued.
Severity	Lists whether the item was an informational message, warning, or error.
MSG#	Message number of the warning or error that was issued.
Description	Description of the warning or error that was issued.
Data	This area provides additional information that was available at the time the warning or error was issued. For informational messages, information such as the Map name that was used during the translation and the amount of time that it took to process the translation are listed.

Programs/Objects Added and Modified

The following programs and objects were added:

JVASEQ

Data area created in the Gentran data library. This data area holds the sequence number used in the file names created during the JVATR process.

JVALNK

Physical file created in the Gentran data library. This file holds the JAVA link information.

JVALNKL1

Logical file created in the Gentran data library that is used in the Work with JAVA Link panels.

JTXSAVE

Save file that contains the IFS object used in the JAVA translator.

XMLINST36

Command and CL program used to install the JAVA translation function.

XMLINST36V

Validity check program used for the **XMLINST** command.

ENDJTX

Command and CL program used to end a JAVA server instance.

STRJTX

Command and CL program used to start a JAVA server instance.

STRJTXV

Validity check program used for the **STRJTX** command.

STRJTX2

CL program used in starting a JAVA server instance.

REQJTX

Command and CL program used to initiate a JAVA translation.

JTXREPORT

Print file used by the JAVA translator.

JVALNK

Command and CL program used to initiate the Work with JAVA Translator Link configuration screens.

EDIX462

Program and display file. Work with JAVA Translator Link main program.

EDIX463

Program and display file. This is the configuration panels used with the JAVA Translator Link work with program.

JVATRN

Command used to invoke a JAVA translation.

JVATRNCL

Program processor for the **JVATRN** command.

JVATRNCLV

Validity check program used in the **JVATRN** command.

JVATRNCL2

CL program used to process the JAVA translation where the input is from an IFS directory.

JVATRNCL3

CL program used to process the JAVA translation where the input is an the inbound Gentran communication queue.

JVATRNCL4

CL program used to process the JAVA translation where the input is an the outbound Gentran communication queue.

JVATRNCL5

CL program used to process the JAVA translation where the input is from a physical file or an ODBC connection.

GENCHKIN

CL program used for file identification during a JAVA translation.

GENFILINFO

CL program used for file identification during a JAVA translation.

JVATRNCNT

Program used in the envelope process during a JAVA translation.

JVATRNINV

Validity check program used in the **JVATRN** command.

The following programs and objects have been modified to accommodate the new JAVA translator.

UTPHFN00

Records added for the new functionality.

UTPHFN10

Records added for the new functionality.

GENERRENU

New errors added for the new functionality.

GENLBLENU

New labels added for the new functionality.

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