

iWay

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Contents

This documentation describes how to configure and use the iWay Integration Solution for SWIFT. It is intended for developers to enable them to parse, transform, validate, store, and integrate information into the existing enterprise and pass information electronically to partners in Society for Worldwide Interbank Financial Telecommunication (SWIFT) mandated format.

How This Manual Is Organized

	Chapter/Appendix	Contents
1	Introducing the iWay Integration Solution for SWIFT	Describes the Society for Worldwide Interbank Financial Telecommunication (SWIFT) and how the components of the iWay Integration Solution for SWIFT streamline the flow of information.
2	Deployment Information for Your iWay Integration Solution	Describes the iWay products used with your iWay Integration Solution for SWIFT and provides a roadmap to full information on those products. Introduces the concept of a channel for the construction of a message flow in iWay Service Manager.
3	Configuring the EDI Activity Driver	Describes how to configure the EDI Activity Driver using iWay Service Manager.
4	Working With SWIFT Inbound and Outbound Sample Applications Using iWay Integration Tools	Describes how to work with SWIFT inbound and outbound sample applications using iWay Integration Tools (iIT).
5	Inbound Processing: SWIFT to XML	Includes an overview of the iWay business components and processing steps in a basic inbound message flow. The message flow converts a SWIFT FIN formatted message to an XML transaction. Also includes instructions for configuring a basic inbound message flow.

This manual includes the following chapters:

	Chapter/Appendix	Contents
6	Outbound Processing: XML to SWIFT	Includes an overview of the iWay business components and processing steps in a basic outbound message flow. The message flow converts a document from XML format to SWIFT format. Also includes instructions for configuring a basic outbound message flow.
A	Ebix-Supported Transaction Sets	Describes the SWIFT FIN messages supported by the iWay Integration Solution for SWIFT in the Ebix files supplied with the product.
В	Using iWay Integration Tools to Configure an Ebix for SWIFT	Describes how to use iWay Integration Tools (iIT) to configure an e-Business Information Exchange (Ebix) file for SWIFT.
С	Sample SWIFT Documents	Includes sample SWIFT MT950 (Statement of Cash), MT535 (Statement of Holding), and MT541 (Receive Against Payment) documents.

Documentation Conventions

The following table describes the documentation conventions that are used in this manual.

Convention	Description
THIS TYPEFACE or this typeface	Denotes syntax that you must enter exactly as shown.
this typeface	Represents a placeholder (or variable), a cross-reference, or an important term. It may also indicate a button, menu item, or dialog box option that you can click or select.
underscore	Indicates a default setting.
Key + Key	Indicates keys that you must press simultaneously.
{}	Indicates two or three choices. Type one of them, not the braces.
	Separates mutually exclusive choices in syntax. Type one of them, not the symbol.

Convention	Description
	Indicates that you can enter a parameter multiple times. Type only the parameter, not the ellipsis ().
· ·	Indicates that there are (or could be) intervening or additional commands.

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Help Us to Serve You Better

To help our consultants answer your questions effectively, be prepared to provide specifications and sample files and to answer questions about errors and problems.

The following tables list the environment information our consultants require.

	-
Platform	
Operating System	
OS Version	
JVM Vendor	
JVM Version	

The following table lists the deployment information our consultants require.

Adapter Deployment	For example, JCA, Business Services Provider, iWay Service Manager
Container	For example, WebSphere
Version	
Enterprise Information System (EIS) - if any	
EIS Release Level	
EIS Service Pack	
EIS Platform	

The following table lists iWay-related information needed by our consultants.

iWay Adapter	
iWay Release Level	
iWay Patch	

The following table lists additional questions to help us serve you better.

Request/Question	Error/Problem Details or Information
Did the problem arise through a service or event?	
Provide usage scenarios or summarize the application that produces the problem.	
When did the problem start?	
Can you reproduce this problem consistently?	
Describe the problem.	
Describe the steps to reproduce the problem.	
Specify the error message(s).	
Any change in the application environment: software configuration, EIS/database configuration, application, and so forth?	
Under what circumstance does the problem <i>not</i> occur?	

The following is a list of error/problem files that might be applicable.

- □ Input documents (XML instance, XML schema, non-XML documents)
- Transformation files
- Error screen shots
- Error output files
- □ Trace files

Service Manager package to reproduce problem

- Custom functions and agents in use
- Diagnostic Zip
- Transaction log

For information on tracing, see the *iWay* Service Manager User's Guide.

User Feedback

In an effort to produce effective documentation, the Technical Content Management staff welcomes your opinions regarding this document. Please use the Reader Comments form at the end of this document to communicate your feedback to us or to suggest changes that will support improvements to our documentation. You can also contact us through our website, *http://documentation.informationbuilders.com/connections.asp.*

Thank you, in advance, for your comments.

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Introducing the iWay Integration Solution for SWIFT

The iWay Integration Solution for SWIFT transforms Society for Worldwide Interbank Financial Telecommunication (SWIFT) documents into XML format, or transforms XML representations into SWIFT format.

This section provides an overview of SWIFT FIN and describes the features that are provided by the iWay Integration Solution for SWIFT.

In this chapter:

- A Brief History of SWIFT
- Features of the iWay Integration Solution for SWIFT
- Information Roadmap

A Brief History of SWIFT

Society for Worldwide Interbank Financial Telecommunication (SWIFT) is a set of standards for formatting information that is electronically exchanged between one financial or corporate entity and another.

By specifying a standardized, computer-readable format for transferring data, SWIFT enables the automation of financial transactions around the world. It provides a common, uniform language through which computers can communicate for fast and efficient transaction processing.

Early Standardization Efforts

Society for Worldwide Interbank Financial Telecommunication (SWIFT) provides secure messaging services and interface software to more than 11,000 financial institutions in more than 212 countries.

SWIFT was founded in 1973 by 239 banks in 15 countries to create a unified international transaction processing and transmission system. In 1977, Prince Albert of Belgium sent the first SWIFT message and there were in excess of 513 member banks in more than 15 countries. In 1987, SWIFT membership expanded to include financial institutions operating in securities and money markets.

The SWIFT FIN Standard

Development of the SWIFT FIN standards have progressed since its inception. Each year members of the SWIFT community meet in order to review their current SWIFT FIN standards and present ideas relating to the addition of new transactions, modification of existing transactions and the removal of no longer needed transactions. This is all driven by the financial and corporate user community.

The International Organization for Standardization (ISO) is a worldwide federation of national standards bodies (ISO member bodies).

International Standard ISO 15022 was prepared by Technical Committee ISO/TC68, Banking, Securities and Related Financial Services, Sub-Committee SC4, Securities and Related Financial Instruments. It replaced the previous standards for electronic messages exchanged between securities industry members, ISO 7775 - Scheme for message types and ISO 11521 -Scheme for interdepository message types. The current SWIFT FIN standard is based on ISO 15022.

ISO 15022 sets the principles necessary to provide the different communities of users with the tools to design message types to support their specific information flows. These tools consist of a set of syntax and message design rules, a dictionary of data fields and a catalog for present and future messages built by the industry with the above mentioned fields and rules.

To address the evolving needs of the industry as they arise, the Data Field Dictionary and Catalog of Messages have been kept outside the standard. They are made available by the Registration Authority which maintains them as necessary upon the request of industry participants.

To protect investments already made by the industry, the syntax proposed in this standard, referred to as "Enhanced ISO 7775 syntax", is based on the syntax used for the previous ISO 7775 and ISO 11521.

ISO 15022 has been designed to incorporate and be upwards compatible with the previous securities message standards ISO 7775 and ISO 11521, as updated in ISO TR 7775. As a result, the initial Data Field Dictionary and Catalogue of Messages accommodate ISO TR7775 data fields and messages. However, some of the previous fields and messages are not fully compliant with the Enhanced ISO 7775 syntax. In addition the initial Data Field Dictionary incorporates the Industry Standardization for Institutional Trade Communications (ISITC) DSTU 1/1995 and the Securities Standards Advisory Board (SSAB) data dictionaries.

The ISO 15022 standard is described in the document "ISO 15022 Securities - Scheme for Messages (Data Field Dictionary), Part 1 - Data Field and Message Design Rules and Guidelines and Part 2 - Maintenance of the Data Field Dictionary and Catalogue of Messages".

Orders for ISO 15022 and other International Standards or ISO publications should be addressed to the ISO member bodies which are normally the primary sales agents in their country. For customers in countries where there is no member body, the order should be addressed to the ISO Central Secretariat.

Features of the iWay Integration Solution for SWIFT

The standards-based iWay Integration Solution for SWIFT reduces the amount of effort it takes to integrate SWIFT documents with your internal enterprise applications and third-party trading partners. It includes conversion and validation of documents from SWIFT to XML format, making it easy to include SWIFT documents in your XML-based integration projects.

Features of the iWay Integration Solution for SWIFT include:

- Integration with iWay Service Manager to provide bi-directional conversion of SWIFT formats and XML between application servers, integration brokers, third-party software packages, and messaging services.
- Integration with more than 200 other information assets, including J2EE-based back-office systems; data structures such as DB2, IMS, VSAM, and ADABAS; and front-office systems based on Sybase.
- Integration with leading application servers, integration brokers, and development environments. Supported software platforms include BEA WebLogic, IBM WebSphere, Sun Java Enterprise System, and Oracle Application Server.
- □ Out-of-the-box support for SWIFT FIN messages. For details on the supported messages, see *Ebix-Supported Transaction* Sets on page 89.
- Reusable framework for parsing, transforming, and validating SWIFT documents without the need to write custom code.

Information Roadmap

The following table lists the location of deployment and user information for products used with the iWay Integration Solution for SWIFT.

Product For more information, see	
iWay Service Manager	Chapters 3, 4, and 5 of this guide
	iWay Service Manager User's Guide

Product	For more information, see
iWay Integration Tools (iIT) Transformer	iWay Integration Tools Transformer User's Guide
iWay Integration Tools (iIT) Designer	iWay Integration Tools Designer User's Guide



Deployment Information for Your iWay Integration Solution

This topic describes the iWay products used with your iWay Integration Solution for SWIFT and provides a roadmap to full information on those products.

It also introduces the concept of a channel for the construction of a message flow in iWay Service Manager.

In this chapter:

- iWay Products
- Using a Channel to Construct a Message Flow
- Components of the iWay Integration Solution for SWIFT

iWay Products

Your iWay integration solution works in conjunction with one or more of the following products:

- □ iWay Service Manager
- □ iWay Integration Tools (iIT) Transformer
- □ iWay Integration Tools (iIT) Designer

iWay Service Manager

iWay Service Manager is the heart of the Universal Integration Framework and is an open transport service bus. Service Manager uses graphical tools to create sophisticated integration services without writing custom integration code by:

- Using metadata from target applications
- □ Transforming and mapping interfaces
- Managing stateless processes

Its capability to manage complex integration interactions makes it ideally suited to be the foundation of a service-oriented architecture.

For more information, see the IWay Service Manager User's Guide.

iWay Integration Tools Transformer

iWay Integration Tools (iIT) Transformer is a GUI tool that is a plugin to iIT. Transformer is a rule-based data transformation tool that converts an input document of one data format to an output document of another data format or structure. The easy-to-use graphical user interface and function tool set facilitate the design of transform projects that are specific to your requirements.

For more information, see the *iWay Integration Tools Transformer User's Guide*.

iWay Integration Tools Designer

The capability of graphically visualizing a business process is a powerful and necessary component of any e-Business offering. iWay Integration Tools (iIT) Designer is a GUI tool that is a plugin to iIT. iIT Designer provides a visual and user-friendly method of creating a business process flow. Through a process flow, you control the sequence in which tasks are performed and the destination of the output from each task.

For more information, see the *iWay Integration Tools Designer User's Guide*.

Using a Channel to Construct a Message Flow

The use of iWay Service Manager is centered on a channel. A channel is a container for all the iWay business components used in an SWIFT message flow.

At a high level, a channel accepts input data via an **inlet**, processes the data via a **route**, and outputs the resulting data via an **outlet**. Another component in the process is an e-Business Information Exchange (**Ebix**).

The following diagram shows the channel components available in the construction of a message flow.

In the following diagram, the value **n** underneath a component name indicates how many instances of that component you can have in a channel configuration—zero, one, or more than one. For example, n = 1 for Inlet means that you can have only one inlet on the channel.



Required components are in boldface type.

Components of a Channel

A channel consists of:

- □ An inlet, which defines how a message enters a channel.
- A route, which defines the path a message takes through a channel.
- Outlets, which define how transformed messages leave a channel.
- ❑ An e-Business Information Exchange (Ebix), which is a collection of metadata that defines the structure of data.

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iWay Service Manager provides a design-time repository called the Registry, where you assemble and manage the components in a channel.

An inlet can contain:

- A listener (required), which is a protocol handler responsible for picking up an incoming message on a channel.
- □ A decryptor, which applies a decryption algorithm to an incoming message and verifies the security of the message.
- ❑ A preparser, which is a logical process that converts an incoming message into a processable document. The preparsed document then passes through the standard transformation services to reach the designated processing service.
- A route can contain:
- An *in* transformer, which is an exit sequence that is applied to a message before processing occurs.
 - ❑ A reviewer, which is either the first exit to receive a document after parsing (inbound), or the last exit to receive a document prior to the actual emit operation (outbound). These exits are intended for envelope handling but can be used for any desired purpose.
 - ❑ Validation rules, which apply validation using the rules validation engine. Rules are provided when the iWay Integration Solution for SWIFT is installed.
 - ❑ A transform, which is a transformation definition file that contains sets of rules, interpreted and executed by a transformation engine. Transformation is the process by which data is transformed from one structure/format to another.
- ❑ A process, which is a stateless, lightweight, short-lived microflow that is executed by iWay Service Manager on a message as it passes through the system. Processes that are published using iIT Designer are available in the Registry and can be bound to channels as routes.
 - A process flow.
 - An agent list.
 - ❑ A service, which is an executable Java procedure that handles the business logic of a message.

- □ An adapter, which refers to a target that represents a specific instance of a connection to a back-end system.
- An *out* transformer, which is an exit sequence that is applied to a message after processing occurs.
 - ❑ A transform, which is a transformation definition file that contains sets of rules, interpreted and executed by a transformation engine. Transformation is the process by which data is transformed from one structure/format to another.
 - ❑ Validation rules, which apply validation using the rules validation engine. Rules are provided when the iWay Integration Solution for SWIFT is installed.
 - ❑ A reviewer, which is either the first exit to receive a document after parsing (inbound), or the last exit to receive a document prior to the actual emit operation (outbound). These exits are intended for envelope handling but can be used for any desired purpose.
- ❑ An outlet (optional), which is responsible for all aspects of preparing a document for emission and then emitting it.
 - A preemitter, which is a logical process that handles a document immediately before transmission. Normally it converts an XML document into non-XML format.
 - □ An encryptor, which can be called to encrypt an outgoing document.
 - □ An emitter, which is a transport protocol that sends a document to its recipient.
- An outlet can contain:
- A preemitter.
- An encryptor.
- Multiple emitters.

For details on the preceding components, see the *iWay* Service Manager User's Guide.

Components of the iWay Integration Solution for SWIFT

iWay business components used in the construction of a message flow for SWIFT messages include:

- An Ebix (e-Business Information Exchange)
- A preparser
- A validation report

A preemitter

Ebix

iWay Software provides various e-Business Information Exchange (Ebix) files used in conjunction with the iWay integration solutions. In iWay Service Manager, the iWay Integration Solution for SWIFT contains several Ebix files, one for each supported SWIFT FIN year.

Ebix files for SWIFT FIN are named SWIFT_ccyy.ebx, where ccyy is the release year. For example, the Ebix file for the 2019 SWIFT FIN message is named SWIFT_2019.ebx.

For details on the supported SWIFT FIN messages, see *Ebix-Supported Transaction Sets* on page 89.

An Ebix is a collection of metadata that defines the structure of data. The Ebix supplied with the iWay Integration Solution for SWIFT defines the structure of supported SWIFT messages.

Each Ebix includes:

□ Pre-built data dictionaries. The structure of each SWIFT document is described by the dictionary, which describes the segments and elements that compose each document.

The dictionaries from the Ebix are used to transform the structure of a document per SWIFT standards.

- Pre-built XML schemas that define the structure and content of XML messages in detail.
- Pre-built SWIFT to XML transformation templates, and XML to SWIFT templates, for the supported SWIFT FIN messages.
- Pre-built rule files for each SWIFT message. The iWay Integration Solution for SWIFT uses these rule files to validate inbound and outbound documents for network rule compliance and other data checking.

Preparsers

A preparser is an iWay business component that converts incoming messages into processable documents.

Typically a preparser converts a non-XML document into XML format. The preparser for the iWay Integration Solution for SWIFT converts an incoming SWIFT message to XML format.

There are four preparsers that are provided with the iWay Integration Solution for SWIFT:

- **XDSWIFTPreParser** (com.ibi.preparsers.XDSWIFTPreParser)
 - **D** Recommended preparser to use for inbound SWIFT processing.
 - □ Processes a single SWIFT message through a SWIFT inbound channel.
 - □ Transforms system messages to XML, and will create output as any other documents.
 - Use in combination with XDSWIFTValidationReportAgent to produce a SWIFT validation report.
 - □ Channel configuration requires an Ebix attachment.

The following preparsers can be used in specific situations:

- SWIFTACKPreparser (com.ibi.preparsers.SwiftBPP)
 - Expected inbound SWIFT contains only SWIFT ACK (F21) messages.
- SUSWIFTBatchSplitter (com.ibi.preparsers.XDSWIFTBatchSplitter)
 - **L** Expected inbound SWIFT data contains multiple SWIFT messages.
 - SWIFT inbound channel should include:
 - SWIFTACKPreparser and the SWIFTPreparser.
 - □ XDSWIFTPreParser, which processes SWIFT ACK messages and standard messages.
- SWIFTSystemMessagePreParser (com.ibi.preparsers.XDSWIFTSysMsgPreParser)

L Expected inbound SWIFT data contains only SWIFT system messages.

Note: SWIFT system messages do not require any Ebix. As a result, their transformation cannot be modified.

Preemitter

A preemitter is a logical process that handles a document immediately before transmission.

Typically a preemitter is used to convert an XML document to non-XML format. The XML document is created from SWIFT input data in inbound processing. The iWay Integration Solution for SWIFT uses a preemitter in outbound processing to convert the XML-formatted SWIFT document to a SWIFT formatted document.

The XML structure must be compliant with the schema supplied in the Ebix.

The preemitter that is provided for the iWay Integration Solution for SWIFT is the XDSWIFTPreEmitter (com.ibi.preemit.XDSwiftPreEmitter). An Ebix attachment is required for the iSM channel.

The following image shows the available configuration parameters for the SWIFT preemitter in the iSM Administration Console.

Configuration parameter	s for XDSWIFTPreEmitter preemitter
SWIFT FIN Message Version *	SWIFT FIN Message Version
	2019
	Pick one T
Template *	Template for conversion
Encoding	How to encode output
	config
	Pick one T
Block 4 Delimiter	Inserts a delimiter into SWIFT Block 4
	true
	Pick one T
Timestamp	Write timestamp to log-file
	false
	Pick one

Validation Report Service

There is a validation report service that is provided with the iWay Integration Solution for SWIFT. The validation report is structured in XML format. It contains the input document, the output document, and indicates whether the message is compliant with the SWIFT defined standards.

U XDSWIFTValidationReportAgent (com.ibi.agents.XDSWIFTValidationReportAgent)

- Used for inbound and outbound SWIFT processing.
- Reports the results of structural validation from Transformer and Network Validation from Rules processing. Outputs an XML report file with the input document, the output document, and the results of validation.

 $\hfill\square$ An Ebix attachment is required for the iSM channel to invoke validation.

The following image shows the available configuration parameters for the SWIFT validation report service in the iSM Administration Console.

Configuration parame	ters for SWIFTValidationReportAgent service
Basic Header	Add Basic Header to Report
	false
	Pick one
Application Header	Add Application Header to Report
	false
	Pick one
User Header	Add User Header to Report
	false
	Pick one
Input Message	Add Input Message to Report
	false
	Pick one
Output Message	Add Output Message to Report
	false
	Pick one 👻

iWay Service Manager Channel Configuration

This section provides sample use case iSM channel configurations.

Use Case	Attac h Ebix?	iSM Components
Inbound processing with SWIFT rules validation	Yes	Preparser: XDSWIFTPreParser (com.ibi.preparsers.XDSWIFTPreparser) Service: XDSWIFTValidationReportAgent (com.ibi.agensts.XDSWIFTValidationReportAgent)
Outbound processing with SWIFT rules validation	Yes	Service: XDIWAYSWIFTXXMLTransformAgent (com.ibi.agents.XDIWAYSWIFTXMLTransformAgent) Service: SWIFTValidationReportAgent (com.ibi.agents.XDSWIFTValidationReportAgent)

SWIFT Message Structure

In the SWIFT message structure, blocks 3, 4, and 5 may contain sub-blocks or fields delimited by field tags. Block 3 is optional. Many applications, however, populate this with a reference number so that when the Acknowledgement is returned by SWIFT, it can be used for reconciliation purposes.

Basic Header Block

The basic header block has the following format:

```
{1: F 01 BANKBEBB 2222 123456}
(a) (b) (c) (d) (e) (f)
```

Note: Blank spaces have been added for readability purposes.

The basic header block has a fixed length and is continuous with no field separators:

```
a) Block ID - always '1:'
b) Application ID - F = FIN, A = GPA or L = GPA (logins, etc)
c) Service ID - 01 = FIN/GPA, 21 = ACK/NAK
d) LT address - 12 Characters, must not have 'X' in position 9
e) Session number - added by the CBT (Computer Based Terminal), padded with zeroes
f) Sequence number - added by the CBT (Computer Based Terminal), padded with zeroes
```

Application Header Block

The application header block has a different format depending on whether it is being sent to or from SWIFT.

The input structure (to SWIFT) is:

{2:	I	100	BANKDEFFXXXX	U	3	003}
(a)	(b)	(C)	(d)	(e)	(f)	(g)

Note: Blank spaces have been added for readability purposes.

This structure has a fixed length and is continuous with no field separators from user to SWIFT.

```
a) Block ID - always '2:'
b) I = Input
c) Message Type
d) Receivers address with X in position 9 and padded with X's if no branch
e) Message Priority - S = System, N = Normal, U = Urgent
f) Delivery Monitoring - 1 = Non Delivery Warning (MT010)

2 = Delivery Notification (MT011)
3 = Both Valid = Ul or U3, N2 or just N

g) Obsolescence Period - when a non delivery notification is generated Valid for U = 003 (15 minutes)
Valid for N = 020 (100 minutes)
```

The output structure (from SWIFT) is:

This structure has a fixed length and is continuous with no field separators from user to SWIFT.

```
a) Block ID - always '2:'
b) 0 = Output
c) Message Type
d) Input time with respect to the Sender
e) MIR with Senders address
f) Output date with respect to Receiver
g) Message priority
```

User Header Block

The user header block has the following structure:

```
{3: {113:xxxx} {108:abcdefgh12345678} }
(a) (b) (c)
```

Note: Blank spaces have been added for readability purposes.

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This is an optional block and is similar in structure to system messages.

```
a) Block ID - always '3:'b) Optional banking priority codec) Message User Reference MUR used by applications for reconciliation with ACK
```

Other tags exist such as 119 which can contain the code ISITC on an MT521 or 523 providing the sender and receiver are registered to do so with SWIFT. This forces additional code word and formatting rules validation of the body of the message as laid down by ISITC (Industry Standardization for Institutional Trade Communication).

113. 4 characters (SWIFT x Character Type) Banking Priority: (HYnn) H- Highly Urgent, U-Urgent, N- Normal, Y- Request Receiving, N- Do Not Request Receiving, nn- May or may not be used.

108. 16 characters (SWIFT x Character Type) MUR (Message User Reference). 1234459898ABC used to reconcile with ACKs.

119. 8 uppercase characters or numbers. Bank User Defined.

Text Block or Body

This block is where the actual MTnnn message is specified and is what most users will see. Generally the other blocks are stripped off before presentation. The format is as follows:

```
{4:
:20:123456
:25:123-456789
:28C:102
:60F:C020527EUR3723495,
:61:020528D1,2FBNK494935/DEV//67914
:61:020528D30,2NCHK78911//123464
:61:020528D250,NCHK67822//123460
:61:020528D450,S103494933/DEV//P064118
FAVOUR K. DESMID
:61:020528D500,NCH45633//123456
:61:020528D1058,47S103494931//3841188
FAVOUR H. F. JASSEN
:61:020528D2500,NCHK56728//123457
:61:020528D3840,S103494935//3841189
FAVOUR H. F. JANSSEN
:61:020528D5000,S20023/200516//47829
ORDER ROTTERDAM
:62F:C020528EUR3709865,13
- }
```

The example above is an MT950, Statement Of Cash. Fields specified are in accordance to the appropriate volume of the user handbook, there is one or more for each message category.

The format of field tags is:

The format of the data is designated thus:

n	-	Digits
d	-	Digits with decimal comma
h	-	Uppercase hexadecimal
a	-	Uppercase letters
С	-	Uppercase alphanumeric
е	-	Space
x	-	S.W.I.F.T. character set
У	-	Upper case level A ISO 9735 characters
z	-	S.W.I.F.T. extended character set

Some fields are defined as optional and if not required they must not be present as no blank fields must be present in the message.

/,word - Characters as-is
[...] - optional element

For example:

```
4!c[/30x] - fixed 4 uppercase alphanumeric, optionally followed by a
slash
and up to 30 S.W.I.F.T. characters
ISIN1!e12!c - code word followed by a space and fixed 12 uppercase
alphanumerics
```

In some message types certain fields will be defined as conditional, for example, if a certain field is present then another field may change from optional to mandatory or forbidden.

Certain fields have different formats dependant on the option which is chosen, which is designated by a letter after the tag number, for example:

```
:32A:000718GBP1000000,00 Value Date, ISO Currency and Amount
:32B:GBP1000000,00 ISO Currency and Amount
```

It is important to note that the S.W.I.F.T. standards for Amount formats are, no thousand separators and a comma for a decimal separator.

```
:58A:NWBKGB2L
:58D:NatWest Bank
Head Office
London
```

Beneficiary S.W.I.F.T. address Beneficiary full name and address

115-> 32 characters (SWIFT x Character Type)SWIFT x Character Types= 0-9,a-z, A-Z, /-?:().,'+

Trailer Block

A message always ends in a trailer with the following format:

{5: {MAC:12345678}{CHK:123456789ABC}

It contains a number of fields that are denoted by keywords such as:

- MAC: Message Authentication Code calculated based on the entire contents of the message using a key that has been exchanged with the destination and a secret algorithm. Found on message categories 1,2,4,5,7,8, Most 6's and the 304.
- CHK: Checksum calculated for all message types.
- PDE: Possible Duplicate Emission added if user thinks that they may have sent the message previously.
- □ PDM: Possible Duplicate Message added by S.W.I.F.T. if they think that a message may have been transmitted previously.
- □ DLM: Added by S.W.I.F.T. if an Urgent message has not been delivered within 15 minutes or a Normal message within 100 minutes.

Validation Report

The Validation Report service contains options that will allow the user to include or suppress the Basic, Application, and User Headers from the report.



Configuring the EDI Activity Driver

This section describes how to configure the EDI Activity Driver using iWay Service Manager.

In this chapter:

- EDI Activity Driver Overview
- Configuring the EDI Data Provider Using iWay Service Manager
- Configuring the EDI Activity Driver Using iWay Service Manager

EDI Activity Driver Overview

The EDI Activity Driver is an extension of the Activity Facility in iWay Service Manager. It is used to log events as messages are processed. Logging can occur when:

- Messages are acquired.
- □ Messages are emitted.
- Errors occur.
- Components such as a service (agent) or process flow are called.

For more information about the Activity Facility, see the iWay Service Manager User's Guide.

Using iWay Service Manager, you must first configure the EDI data provider and then the Activity Facility handler.

Configuring the EDI Data Provider Using iWay Service Manager

This section describes how to configure the EDI data provider.

Procedure: How to Configure the EDI Data Provider

To configure the EDI data provider:



1. In the left console pane of the Server menu, select *Data Provider*.

The Data Provider pane opens.

Data Provider

Listed below are the data provider definitions that are available in the base configuration of this server.

JDBC Connections - JDBC or Java Database platform and a wide range of databases listings below define JDBC connections provider as a DataSource by setting the jdbc/provider name.	Connectivity is a standar The JDBC interface provused within iWay Service I initial context factory to o	d for database-independent connec ides a call-level API for SQL-based Manager. 1Way components that us com.ibi.jndi.XDInitialContextFactory	tivity between the Java database access. The JNDI can access a JDBC and using the name
Name		Driver	
No connections have been define	d		
New JLINK			
Servers - JLINK is a technology that ca The servers listed below are defined for	an be used to access inform r use with JLINK.	nation hosted by iWay, WebFOCUS	and EDA data servers.
Name	Description		Туре
No servers have been defined			
New			

The tables that are provided list the configured JDBC and JLINK data providers that are available. By default, no data providers are configured.

2. In the JDBC area, click New to configure a new JDBC data provider.

JDBC Connection Pool Pro	operties
Name *	Enter the name of the JDBC data provider to add.
	EDI_Activity_DB
Driver Class	The JDBC driver class is the name of the class that contains the code for this JDBC Driver.
	com.mysql.jdbc.Driver
	Select a predefined database or enter your own.
Connection URL	The JDBC connection URL to use when creating a connection to the target database. The URL generally includes the server name or IP address, the port or service, the data source name, and a driver specific prefix.
	jdbc:mysql://localhost:3306/IWay
	Select a predefined connection URL template or enter your own.
User	User name with respect to the JDBC URL and driver.
	iway
Password	Password with respect to the JDBC URL and driver.
	••••
Connection Pool Properti	es
Initial Pool Size *	Number of connections to place in the pool at startup.
	1
Maximum Number of Idle Connections *	Maximum number of idle connections to retain in the pool. O means no limit except what is enforced by the maximum number of connections in the pool.
	1
Maximum Number of	Maximum number of connections in the pool. O means no limit.
Connections "	1
Login Timeout	Time in seconds to wait for a pooled connection before throwing an exception. O means wait forever.

The configuration pane for the JDBC data provider opens.

- 3. In the Name field, enter a name for the new JDBC data provider, for example, EDI_Activity_DB.
- 4. From the Driver Class drop-down list, select an appropriate driver or enter the specific driver name (class) that you are using, for example:

```
com.mysql.jdbc.Driver
```

5. From the Connection URL drop-down list, select an appropriate connection URL or enter the specific driver connection URL that you are using, for example:

```
jdbc:mysql://localhost:3306/IWay
```

- 6. In the User field, enter a user name with respect to the JDBC URL and driver.
- 7. In the Password field, enter a password with respect to the JDBC URL and driver.
- 8. In the Initial Pool Size field, enter the number of connections to place in the connection pool during startup.

9. In the Maximum Number of Idle Connections field, enter the maximum number of idle connections to retain in the connection pool.

A value of zero means that there is no limit, except what is enforced by the maximum number of connections in the connection pool.

10. In the Maximum Number of Connections field, enter the maximum number of connections in the connection pool.

A value of zero means that there is no limit.

11. Click Add.

The JDBC data provider that you configured is added to the JDBC Connections list, as shown in the following image.

Data Frovider	Data	Provider	
---------------	------	----------	--

Listed below are the data provider definitions that are available in the base configuration of this server.

JDBC Connections - JDBC or Java Database Connectivity is a standard for database-independent connectivity between the Java platform and a wide range of databases. The JDBC interface provides a call-level API for SQL-based database access. The listings below define JDBC connections used within iWay Service Manager. iWay components that use JNDI can access a JDBC provider as a DataSource by setting the initial context factory to com.ibi.jndi.XDInitialContextFactory and using the name jdbc/provider name.				
Name		Driver		
EDI_Activity_DB		com.mysql.jdbc.Driver		
New Delete Rename Cop	у			
Servers - JLINK is a technology that c The servers listed below are defined for	an be used to acce r use with JLINK.	ss information hosted by iWay, WebFOCUS	3 and EDA data servers.	
Name	Description		Туре	
No servers have been defined	- 			
New				

Configuring the EDI Activity Driver Using iWay Service Manager

This section describes how to configure the EDI Activity Driver.

Procedure: How to Configure the EDI Activity Driver

To configure the EDI Activity Driver:



1. In the left console pane of the Server menu, select Activity Facility.

The Activity Facility pane opens.

Activity Facility Listed below are the activity (sometimes called audit) handlers that have be server has to be stopped and started for any change to take effect.	en configured. You can add to this li	st or delete from it. The
Name	Туре	Active
No activity handlers have been defined		
Add		

The table that is provided lists the configured Activity Facility handlers. Initially, no handlers are shown.

2. Click Add to configure a new Activity Facility handler.

The configuration pane for the Activity Facility handler opens.

Activity		
Туре	The type is the specific class of handler in use	
	EDI Activity Logs	
Name	The handler will be known by this name in the system. Names must be unique.	
	EDI Activity Logger	
Description	Describe the purpose of this handler	
Active	Active handlers perform work in the server. Inactive handlers remain defined but are not used during this serve	
PROVIDE	run. To change the active state, after updating you must cold restart the server.	
	true	
	Pick one	

- 3. From the Type drop-down list, select EDI Activity Logs.
- 4. Enter a unique name for the EDI Activity Driver and a brief description.
- 5. From the Active drop-down list, select *true*.

6. Configure the JDBC driver for the database you are using.

Configuration Parameters		
JNDI Factory Name	JNDI initial context factory class used to access data source. Use com.ibi.jndi.XDInitialContextFactory for an iWay JDBC provider or leave blank for JVM default.	
	com.ibi.jndi.XDInitialContextFactory	
JNDI Name *	JNDI Name for the data source this driver will use. To use an iWay JDBC provider, enter the JNDI name as jdbc/provider name otherwise the defined provider's information will be used.	
	jdbc/EDI_Activity_DB	
Table *	Table name to which to write log.	
	IAM_ACTIVITY	
Compression	What form of compression, if any, should be used on the messages. Compression saves space at the expense of time.	
	none	
	Pick one	

If the database tables do not exist, they will be automatically created when the iSM is restarted.

7. Provide values for the remaining parameters, as defined in the following table.

Parameter Name	Туре	Description		
JNDI Factory Name	String	The JNDI initial context factory class that is used to access a data source. Use com.ibi.jndi.XDInitialContextFactor y for an iWay JDBC provider or leave this field blank for the JVM default.		
JNDI Name	String	The JNDI name for the data source this driver will use. To use an iWay JDBC provider, enter the JNDI name as jdbc/< <i>data provider</i> <i>name</i> >, where <i>data provider name</i> is the name of the EDI Activity Driver that was specified in step 4. Otherwise the information for the defined provider will be used.		
Table	String	Table name for the activity log. This must be a valid identifier in the database being used. If the table does not exist at startup, it will be created automatically.		
Parameter Name	Туре	Description		
--------------------------	---------------------------	--	--	--
Compression	Drop-down list	Specify whether the messages are to be compressed. Values include:		
		none (default)		
		□ smallest		
		□ fastest		
		□ standard		
		Huffman		
Start Events	Boolean Drop-down list	If set to <i>true</i> (default), the input messages will be recorded in the activity log. These values must be set to <i>true</i> for use of the audit reports in the console.		
Internal Events	Boolean Drop-down list	If set to <i>true</i> , system events are included in the activity log. System events include activities such as parsing and transformations (optional). False is selected by default.		
Security Events	Boolean Drop-down list	If set to <i>true</i> (default), security events are recorded. This includes digital signature, and so on. However, console activity is not recorded.		
Business Error Events	Boolean Drop-down list	If set to <i>true</i> , business errors are recorded, such as rules system violations. False is selected by default.		
Emit Events	Boolean Drop-down list	If set to <i>true</i> (default), output messages from emitter services will be recorded. This is required for use of the audit log reports in the console.		

Parameter Name	Туре	Description
End Events	Boolean Drop-down list	If set to <i>true</i> (default), the end of message processing will be recorded in the activity log. This is required for use of the audit log reports in the console.
Notes Table	String	Table name for the notes table, which contains log annotations. If the table does not exist at startup, it will be created automatically.
MAC Algorithm	String Drop-down list	The Message Authentication Code (MAC) algorithm. None (default) indicates a MAC should not be computed.
MAC Provider	String Drop-down list	The Message Authentication Code (MAC) provider. Not Specified indicates the default provider should be used. The remaining available value is <i>SunJCE</i> .
MAC Secret Key	String	The Message Authentication Code (MAC) secret key to use.

8. Click Update.

If necessary, start the database services.

9. Restart iSM to start the EDI Activity Driver and begin logging.

The EDI Activity Driver inserts records into the configured activity database. The records are designed for fast writing rather than for ease of later analysis. A set of inquiry service agents suitable for use in a process flow is available to assist during the analysis of the log. Users are cautioned that iWay does not guarantee the layout of the record from release to release, and this should be checked against the actual schema.

Database Field	Description
recordkey	Unique record identifier.

Database Field	Description			
recordtype	Type of this record - the event being recorded.			
	101 - Message start.			
	131 - Entry to event (see subtype codes below).			
	132 - Normal exit from event.			
	133 - Failed exit from event.			
	151 - Ancillary message (usually rules violation).			
	□ 181 - Emit.			
	191 - Message end.			
signature	Encoding of the listener name and protocol.			
protocol	Name of the protocol.			
address	Address to which an emit is to be issued. The format depends on the protocol.			
tstamp	Timestamp of record.			
correlid	The Message Control ID assigned to this message.			
tid	The Transaction ID assigned to this message.			
msg	Message appropriate to this record type. For example, an input message contains the original message received, if possible. Streaming input does not contain a record.			
context	Serialized special registers that were in the context at the time the record was written.			
text	Message text for business errors (rules system violations).			

Database Field	Description			
status	Status code recorded.			
	□ 0 - Success			
	1 - Success, message end (191 record)			
	10 - Rules error			
subtype	Event code for event records.			
	1 - Preparser			
	2 - Parser			
	□ 3 - In reviewer			
	□ 5 - In validation			
	□ 6 - In transform			
	□ 7 - Agent or flow			
	8 - Out transform			
	9 - Out validation			
	□ 11 - Preemitter			
	1000 - input record written to table before transformation			
partner_to	The name of the receiving partner.			
partner_from	The name of the sending partner.			
encoding	Encoding of the listener that obtained the document.			
mac	Not used in this version.			
Driver version	1.0 in iSM.			



Working With SWIFT Inbound and Outbound Sample Applications Using iWay Integration Tools

This chapter describes how to work with SWIFT inbound and outbound sample applications using iWay Integration Tools (iIT).

In this chapter:

- Overview
- Prerequisites
- Extracting SWIFT User Directories and Data Samples
- Importing the SWIFT Sample Application Workspace
- Deploying the iWay Integration Application for SWIFT
- Starting iWay Integration Applications in iWay Service Manager
- Testing the Sample Applications

Overview

This chapter provides instructions to import and deploy SWIFT inbound and outbound sample applications using iWay Integration Tools (iIT). The sample applications are packaged as an iWay Integration Application (iIA), which you can deploy.

The iIA will be used to transform SWIFT to XML for inbound processing and XML to SWIFT for outbound processing.

The inbound application channel creates an XML representation of a SWIFT inbound message, and an XML-formatted validation report.

The outbound application channel creates a SWIFT message from XML, and a XML-formatted validation report.

Documents are routed to designated folders based on the success or failure results of the transformation and SWIFT validation.

Prerequisites

Before you continue, ensure that the following prerequisites are met:

- You have a working knowledge of iWay Service Manager (iSM) and iWay Integration Tools (iIT).
- □ iSM Version 8.0 or higher is installed.
- □ iWay E-Business Adapter for SWIFT is installed.
- □ iIT Version 8.0 or higher is installed.

Extracting SWIFT User Directories and Data Samples

This section describes how to extract user data samples for SWIFT.

Procedure: How to Extract SWIFT User Directories and Data Samples

1. Download the eCommerce Samples for SWIFT (version 8.0.3) from the Information Builders Technical Support Center:

https://techsupport.informationbuilders.com/

□ iWay 8					
803					
eCommerce Metadata	803	Prod	Download		
eCommerce Samples	803	Prod	Download	û	
iWay Service Manager	803	Prod	Download		

- File Name File Size (bytes) Download edifact_8_0_3_052019.zip 64,430,752 FTP HTTP EDIFACT_Accelerator.zip 420,424 FTP HTTP edihl7_8_0_3_062719.zip 68,167,899 FTP HTTP EDIHL7_Accelerator.zip 85,846 FTP HTTP hipaa_8_0_3_052019.zip 18,450,114 FTP HTTP HIPAA_Accelerator.zip 608,990 FTP HTTP swift_2018_050819.zip 7,501,973 FTP HTTP swift_2019_061819.zip 9,255,445 FTP HTTP SWIFT_Accelerator.zip 46,616 FTP HTTP 6,596,358 x12 8 0 3 050819.zip FTP HTTP X12_Accelerator.zip 244,096 FTP HTTP
- 2. Download the *swift_2019_061819.zip* and *SWIFT_Accelerator.zip* files, as shown in the following image.

3. Extract the SWIFT_Accelerator.zip file to a location where you want to store your inbound and outbound data, as shown in the following image.



- 4. The SWIFT_Accelerator.zip file contains sample input and output data for SWIFT that you can use.
 - **Given Set Solution** Solution SWIFT format) is located in the following folder:

\SWIFT_Accelerator\SWIFT_in\IB_Archive**SWIFT_Data**

For example:

OS (C:) > SWIFT_Accelerator > SWIFT_in > IB_Archive	> SWIFT_Data
▲ Name	Date modified
MT535.swift	4/24/2018 2:51 PM
MT541.swift	4/24/2018 2:51 PM
MT950.swift	4/24/2018 2:51 PM
SWIFT2014_mt535good_b1b1_93b_neg.swift	4/24/2018 2:51 PM

Given Sample outbound test data (in XML format) is located in the following folder:

\SWIFT_Accelerator\SWIFT_out\OB_Archive**SWIFT_Xml**

For example:

OS	(C:) > SWIFT_Accelerator > SWIFT_o	ut > OB_Archive > SWIFT_XmI
^	Name ^	Date modified
	MT535.xml	4/24/2018 2:51 PM
	MT541.xml	4/24/2018 2:51 PM
	MT950.xml	4/24/2018 2:51 PM

Importing the SWIFT Sample Application Workspace

This section describes how to import the SWIFT sample application workspace into iWay Integration Tools (iIT).

Procedure: How to Import the SWIFT Sample Application Workspace

1. Start iWay Integration Tools (iIT).

2. Right-click anywhere inside the Application Explorer tab and select *Import...* from the context menu, as shown in the following image.



The Import dialog opens, as shown in the following image.

🖄 Import		×
Select Create new projects from an archive file or directory.	Ľ	5
Select an import wizard:		
 General Archive File Existing Projects into Workspace File System Preferences Projects from Folder or Archive Way Integration 		*
? < Back Next > Finish	Cance	:

3. Expand the General folder, select Existing Projects into Workspace, and then click Next.

The Import Projects pane opens, as shown in the following image.

💰 Import	—	
Import Projects Select a directory to search for existing Eclipse projects.		
Select root directory:	↓	Browse
Projects:	~	Browse
		Select All Deselect All
		Refresh
Options Search for nested projects Copy projects into workspace Hide projects that already exist in the workspace Working sets		
Add project to working sets		New
Working sets:	~	Select
? < Back Next > Finish		Cancel

4. Click Select archive file, and then click Browse.

^	Name
	SWIFT_Accelerator
	🔍 swift_2019_061819.zip
	SWIFT_Accelerator.zip
	🔍 SWIFT_ebxs.zip
~	<>
File name: swift_2019_061819.zip	*.jar;*.zip;*.tar;*.tar.gz;*.tgz
	Open Cancel

The Select archive import pane opens.

5. Navigate to where you saved the SWIFT 2019 archive file for the sample application (for example, *swift_2019_061819.zip*), select the file and then click *Open*.

You are returned to the Import Projects pane, as shown in the following image.

💰 Import							×
Import Projects Select a directory to sear	h for existing Eclipse projec	ts.					
 Select root directory: Select archive file: Projects: 	C:\SWIFT2019\TechSuppor	rt_Downloads\sv	vift_2019_061819.	zip	2	Browse.	
SWIFT_2019 (SWI	FT_2019/)					Select A Deselect A Refresh	11 A11
Options Search for nested pro Copy projects into w Hide projects that alr	jects orkspace eady exist in the workspace						
Working sets	ing sets			V	S	New elect	
?		< Back	Next >	Finish		Cancel	

6. Click Finish.

The SWIFT 2019 sample application and user samples are loaded into your iIT workspace, as shown in the following image.

Application Explorer 🗙	*3			
 SWIFT_2019 APIs Configurations Ebixes Ebixes SWIFTtoXML SWIFTtoXML XMLtoSWIFT Registers SWIFT_IB SWIFT_OB Resources Transforms SWIFT_2019 			4f	4

The Application Explorer tab on the left pane displays a hierarchy of all the imported application components (for example, channels, ebixes, process flows, registers, templates, and so on). The Console tab on the bottom provides a status as each channel component is imported.

The following messages are displayed in the Console tab, indicating that the import process completed successfully.



You are not required to modify any directory settings, since all of the components that read/write to the directories use the structure that is defined by the *SWIFT_Accelerator.zip* file. Review the SWIFT 2019 template, where you can see how the directories are referenced, as shown in the following image.



The SWIFT 2019 template also references specific registers for SWIFT, as shown in the following image.

Application Explorer X	SWIFT2019	SWIFT_I	B.iwr ×	
🗁 APIs	Name	Туре	Value	Description
> 🗁 Channels	ValidationRptDir	string	sreg(SWIFT_Input)\IB_Report	Validation Report Directory
> 🔁 Configurations	BadXMLDir	string	sreg(SWIFT_Input)\IB_Error	Directory for Invalid SWIFT Data
> 🔁 Ebixes	GoodXMLDir	string	sreg(SWIFT_Input)\IB_TransformGood	Directory for Good SWIFT Data
Flows	InputDir	string	sreg(SWIFT_Input)	File Input Directory
XMI toSWIET	ArchiveDir	string	sreg(SWIFT_Input)\IB_Archive	Archive Directory
Registers	DefaultDir	string	sreg(SWIFT_Input)\IB_Output	Default Output Directory
SWIFT IB	SWIFTVersion	string	2019	
SWIFT OB				
≥ Resources				
✓				
> 🐼 SWIFT2019				
🗁 Transforms				
> 🇐 SWIFT_2019				

Deploying the iWay Integration Application for SWIFT

This section describes how to deploy the iWay Integration Application (iIA) for SWIFT.

Procedure: How to Deploy the iWay Integration Application

1. In the Application Explorer tab, right-click SWIFT_2019, select *Run* As from the context menu, and then click 1 *Application Deployment*, as shown in the following image.

 Application Explo 	orer >	3 °		
 SWIFT_2019 APIs Configura Configura Ebixes Ebixes Flows Registers Resources Transform SWIFT_20 	ations s s 19	↔ ↔ @ ⊨ 4		
		New	>	
		Open With	>	
		Copy Paste Duplicate Delete		
		Rename		Properties OF Front Log E
An outline is not avai	24 24	Import Export		iIT Message Console [INFO]13:42:52 Flow 'SWIFTtoXML'
	8	Refresh		[INF0]13:42:53 Building Deploymen [INF0]13:42:54 Deployment Templat
		Validate		
		Run As	>	1 Application Deployment
		Debug As	>	Run Configurations
		Team	>	
		Replace With	>	

The Edit Configuration dialog opens, as shown in the following image.

🔏 Edit Configuration	×
Edit configuration and launch.	-
Name: deploy_SWIFT_2019	
Main	ור
Application:	^
/SWIFT_2019/SWIFT_2019.iab Browse	
Template:	
Deployment Options: Deployment Name: SWIFT_2019	
Deploy as Test Server: on/off	
Console Port:	
Description:	
Autostart Application: on/off	
Autostart Timeout: 10	
Server Environment:	•
? Run Close	

2. In the Template field, click *Browse*.

The Resource Selection dialog opens, as shown in the following image.

🔏 Resource Selection				×
 Image: Image: Im	19			
?		OK	Cancel	

Select the SWIFT2019 template and then click OK.
 You are returned to the Edit Configuration dialog.

4. Enter the user name and password for the server, as shown in the following image.

🔏 Edit Configuration X
Edit configuration and launch.
Name: deploy_SWIFT_2019
Main
Application:
/SWIFT_2019/SWIFT_2019.iab Browse
Template:
/SWIFT_2019/Templates/SWIFT2019.iwtemplate Browse
O Refresh
Deployment Options:
Deployment Name: SWIFT_2019
Deploy as Test Server: on/off
Console Port:
Description:
Autostart Application: on/off
Autostart Timeout: 10
Server Environment:
URL: http://localhost:9000 ~
User Name: iway
Password: ••••
//
Re <u>v</u> ert Appl <u>y</u>
? Close

- 5. Modify the server port if necessary.
- 6. Click Run.

The following messages are displayed in the Console tab, indicating that the SWIFT application was successfully deployed.

Properties	🥑 Error Log	Console 🗙	🕺 Problems	🖉 Terminal		B. 📑 RI 🖬
iIT Message Cons	ole					
[INF0]19:16:4 [INF0]19:16:5 [INF0]19:16:5 [INF0]19:16:5 [INF0]19:16:5 [INF0]19:17:0	0 Building App] 6 Application 7 Building Dep] 7 Deployment Te 9 Deploying app 2 Application	lication 'SWIFT SWIFT_2019' bu loyment Templat emplate 'SWIFT2 plication 'SWIF SWIFT_2019' de	_2019' ilt successfully. e 'SWIFT2019' 019' built succes T_2019' using tem ployed successful	sfully. plate 'SWIFT2019' ly.	and deployment name	e 'SWIFT_2019'

Starting iWay Integration Applications in iWay Service Manager

This section describes how to start iWay Integration Applications (iIAs) in iWay Service Manager (iSM).

Procedure: How to Start iWay Integration Applications in iWay Service Manager

1. Access the iSM Administration Console and sign in using your credentials (user name and password).

iWay Service Man	ager	Management base • 🤕 🕑 🖗 8.0.3.2645
<u>Server</u> Registry Deploy	ments Tools	Licenses About Logout
Properties General Properties	General Properties Listed below are the general properties for	the base configuration of this server.
Java Properties	General	
Settings	Name / Home	INFORMA-Q8T67IU\$ - C:/PROGRA~2/iway8/
General Settings	Version	8.0.3.2645
Console Settings	Build Date	ASGARD 04/13/2019 17:49
Java Settings	Usage	Live
Register Settings	Configuration	
Trace Settings	Name	base - C:/PROGRA~2/iway8/config/base
Log Settings	Status	Server Uptime: 2 hours, 16 minutes
Data Settings	User Security Access	Read / Write
Backup Settings	Environment	
SOAP1 Settings	OS / Hardware	Windows 10 (service) / amd64, CPUs: 2
Providence	Java Info	25.111-b14 Oracle Corporation Java HotSpot(TM) 64-Bit Server VM
Providers	Java Memory	156.98 MB of 1799.50 MB (8.7%) used
Services Provider	Classpath	[1] C:\PROGRA~2\iway8\config\base\lib
LDAP Directory Provider	Language and Locale	
Security Provider	Locale / Timezone	en / America/New_York; time zone offset is -4 hours
XML Namespace Map Provider	Language	English T Save
HTTP Pooling Providers		The server has to be stopped, and started for the language change to take effect.
Authentication Realms		

2. Select SWIFT_2019 [down] from the Management drop-down list (under Applications), as shown in the following image.

Management	base	۲
	Admin	
	base	
	Applications	
	SWIFT_2019 [down]	
	Templates	
	Test	

3. Click Server from the toolbar and then click *Register* Settings from the left pane, as shown in the following image.



A list of pre-configured system level Special Registers (SREGs) for the SWIFT 2019 application are displayed, as shown in the following image.

	Name	Value	Description	Туре
	iwayversion	8.0.3	system defined (readonly)	string
	iwayhome	C:/PROGRA~2/iway8/	system defined (readonly)	string
	iwaydata	C:/PROGRA~2/iway8/	system defined (readonly)	string
	iway.startup.time	1564090130969	system defined (readonly)	string
	iway.config	SWIFT_2019	system defined (readonly)	string
	engine	base	system defined (readonly)	string
	iwayconfig	SWIFT_2019	system defined (readonly)	string
	iwayworkdir	C:/PROGRA~2/iway8/config/SWIFT_201	e system defined (readonly)	string
	iway.workdir	C:/PROGRA~2/iway8/config/SWIFT_201	e system defined (readonly)	string
	iway.serverip	172.30.234.118	system defined (readonly)	string
	iway.serverhost	INFORMA-Q8T67IU	system defined (readonly)	string
	iway.serverfullhost	INFORMA-Q8T67IU.ibi.com	system defined (readonly)	string
	iway.pid	8248	system defined (readonly)	string
	jce.unlimited	false	system defined (readonly)	string
	SWIFT_Input	sreg(SWIFT_Installdir)\SWIFT_in		string
	SWIFT_Installdir	C:\SWIFT_Accelerator		string
	SWIFT_Output	sreg(SWIFT_Installdir)\SWIFT_out		string
D	validateSWIFT	true		string

If you did not install the data directories in this location, then click on the SREG and set your location for *SWIFT_Installdir*.

4. Click *Management*, as shown in the following image.



The Deployments pane opens where the deployed SWIFT_2019 application is listed, as shown in the following image.

iWay Service Manager Management base							
Server Registry <u>Deploy</u>	yments Tools						
Application Management	Deployments Monitor and man	age deployed	applicatior	ıs			
Deployments	Deployment	Actions	State	Since	Application	Template	Source
Templates	SWIFT_2019	💿 🗇 🗙	٢	07/25/19 19:17:01	SWIFT_2019	SWIFT2019	
Events APIs	New						
Server Management							
Servers							
Users							
Server Roles							
User Defined Permissions							
Test Servers							
Remote Servers							

The SWIFT_2019 application is down (not started), as indicted by the icon in the State column.

5. In the State column, click the deployment state icon to start the SWIFT_2019 application, as shown in the following image.

Deployments Monitor and manage deployed applications								
Deployment	Actions	State	Since	Application	Template	Source		
SWIFT_2019	😒 😒 💌	٢	07/25/19 19:17:01	SWIFT_2019	SWIFT2019			
New		Û						

A confirmation message is displayed, as shown in the following image.

Are you sure you want to start application deployment 'SWIFT_2019'?					
	ОК	Cancel			

6. Click OK.

Once the SWIFT_2019 application has successfully started, the icon in the State column changes to a check mark, as shown in the following image.

Deployments Monitor and manage deployed applications									
Deployment	Actions	State	Since	Application	Template	Source			
SWIFT_2019	🗶 🍣 💿	٢	07/25/19 19:17:01	SWIFT_2019	SWIFT2019				
New û									

- 7. Place your input data into the input location that is configured for the SWIFT_2019 application.
- 8. Select SWIFT_2019 from the Management drop-down list (under Applications), as shown in the following image.

Management	base 🔻	
	Admin	
	base	ice
	Applications	
	SWIFT_2019	
	Templates	
	Test	

9. Click *Monitoring* from the toolbar, as shown in the following image.



The deployed application channels *SWIFTtoXML* and *XMLtoSWIFT* are displayed, as shown in the following image.

Monitoring Channels	Channels Monitor, start and stop application channels									
					Messages					
	Name	Туре	State	Waiting	Active	Completed	Successful	Failed	Since Last Refresh	Description
	SWIFTtoXML:inlet	FILE	٢	NA						Accepts documents from files in directories
	XMLtoSWIFT:inlet.	FILE	0	NA						Accepts documents from files in directories

You can stop or start either channel as required by clicking the green or red icon in the State column.

Testing the Sample Applications

This section describes how to test the sample inbound (SWIFT to XML) and outbound (XML to SWIFT) applications.

Procedure: How to Test the Sample Inbound (SWIFT to XML) Application

1. Copy the sample SWIFT input test data to the following directory:

SWIFT_Accelerator\SWIFT_in

For example:



SWIFT_Accelerator\SWIFT_in\IB_TransformGood

For example:

OS (C:) > SWIFT_Accelerator > SWIFT_in > IB_TransformGood
▲ Name
 MT535_2019-07-26T04_04_17_300Z001.xml MT541_2019-07-26T04_04_17_536Z001.xml MT950_2019-07-26T04_04_17_699Z001.xml

3. Observe the reports in the following directory:

```
SWIFT_Accelerator\SWIFT_in\IB_Report
```

For example:



4. Observe the acknowledgement in the following directory:

SWIFT_Accelerator\SWIFT_in\OB_Output

5. If any error occurs during the inbound transformation process, then you can observe error data in the following directory:

SWIFT_Accelerator\SWIFT_in\IB_Error

6. After processing the input data that you place for transformation, a copy of input data will get stored in the following directory:

```
SWIFT_Accelerator\SWIFT_in\IB_Archive
```

For example:



Procedure: How to Test the Sample Outbound (XML to SWIFT) Application

1. Copy the sample XML input test data to the following directory:

SWIFT_Accelerator\SWIFT_out

For example:



2. Observe the transformed XML output in the following directory:

SWIFT_Accelerator\SWIFT_out\OB_TransformGood

For example:

OS (C:) \rightarrow SWIFT_Accelerator \rightarrow SWIFT_out \rightarrow OB_TransformGood
▲ Name
MT535.swift
MT541.swift
MT950.swift

3. Observe the Reports in the following directory:

```
SWIFT_Accelerator\SWIFT_out\OB_Report
```

For example:



4. If any error occurs during the outbound transformation process, then you can observe error data in the following directory:

SWIFT_Accelerator\SWIFT_out\OB_Error

5. After processing the input data that you place for transformation, a copy of input data will get stored in the following directory:

SWIFT_Accelerator\SWIFT_out\OB_Archive

For example:





Inbound Processing: SWIFT to XML

The iWay Integration Solution for SWIFT includes iWay Service Manager. iWay Service Manager converts a SWIFT FIN formatted message to an XML transaction, and validates it based on published SWIFT implementation guides.

This chapter provides the information you need to understand and implement a basic inbound message flow.

- □ The **inbound processing overview** describes the iWay business components and the processing steps in the basic inbound message flow.
- **I** The **sample configuration** contains the basic inbound message flow.

In this chapter:

- Inbound Processing Overview
- Sample Configuration for Inbound Processing: SWIFT to XML

Inbound Processing Overview

The inbound process converts a SWIFT FIN formatted message to an XML transaction.

In a basic message flow, inbound processing consists of the following components and steps. For an illustration of the components available in the construction of a message flow, see *Using a Channel to Construct a Message Flow* on page 18. You will define the components in the configuration instructions in *Sample Configuration for Inbound Processing: SWIFT to XML* on page 68.

Inlet

- □ The **listener** acquires the incoming SWIFT FIN message.
- □ The **preparser** obtains the message type from the message, in order to select the appropriate transformation template name. The transformation template and the version year from the preparser converts the original SWIFT FIN message to an XML representation of that document.

The preparser ensures that the message is converted to a structurally correct SWIFT XML message. The transformation templates that are provided in the **Ebix** are used to transform the structure of the document.

Set the option in the preparser to match the year of the SWIFT messages.

The iWay Integration Solution for SWIFT supports two preparsers, which are described in *Preparsers* on page 22.

Validation

□ The inbound SWIFT message is validated for structure and content. The published SWIFT FIN standards and user implementation guides define element types (for example, numeric, alpha, or date) and describe rules to apply for validation.

For example, here is a typical date segment in an inbound SWIFT message:

:98A::STAT//20190513

The Qualifier ("STAT") is validated against an allowed code list. The date is also validated. The tag is validated to insure correct structure.

Route

After validation, you can apply any additional business logic to the document. You can use a single service or multiple services, passing the output of one service to the input of the next.

In the sample inbound channel, a process flow is used to apply specific logic.

For more information on available services, see the *iWay* Service Manager User's Guide.

Outlets

Outlets define how messages leave a channel at the end of a process. In the sample inbound channel, a *Passthrough* outlet is used. All write operations are handled in the process flow.

Sample Configuration for Inbound Processing: SWIFT to XML

This topic highlights the configuration of the sample inbound message flow for the iWay Integration Solution for SWIFT. The message flow represents the movement and tasks in the conversion of a message from SWIFT FIN format to XML format.

Adding an Ebix or Registers to the Application Project

The iWay e-Business Information Exchange (Ebix) framework supplies several Ebix files for the iWay Integration Solution for SWIFT.

An Ebix file for SWIFT is named SWIFT_ccyy.ebx, where ccyy is the release year. For example, an Ebix file for the 2019 SWIFT FIN messages is named SWIFT_2019.ebx.

For more information on the supported SWIFT FIN messages, see *Ebix-Supported Transaction* Sets on page 89.

Note: You can download the latest Ebix archives from the Information Builders Technical Support Center:

https://techsupport.informationbuilders.com/

Note: The SWIFT 2019 Ebix is attached to the sample channels.

For more information on how to add (import) an Ebix to an application project, see *How to Import an Ebix* on page 93.

Procedure: How to Add Registers to the Application Project

1. Right-click the *Registers* subfolder in your application project, select *New*, and then click *Other* from the context menu, as shown in the following image.



The New (Select a wizard) dialog opens, as shown in the following image.

🔏 New	—		×
Select a wizard			-\$
Wizards:			
type filter text			
🗸 🗁 iWay Integration			^
Application (Deprecated)			
Application Project			
E Channel			
Deployment Template			
f() IFL Expression			
Integration Project (Deprecated)			
Register Set			
> 🗁 Java			~
(?) < Back Next > Finite	ish	Canc	el

2. Expand *iWay Integration*, select *Register* Set, and then click *Next*.

The New Register Set Wizard opens, as shown in the following image.

🔏 New Regist	er Set Wizard	—		×						
General Properties										
Please select a project location and choose a name for the new Register Set										
Project Folder	/SWIFT_2019/Registers		Brow	/se						
Name	SWIFT_Inbound_Registers									
Description				~						
	Create in current folder									
?	< Back Next > Finish		Cancel							

3. Enter a name for the register set and then click *Finish*.

The named register set opens as a new tab in the workspace, where you can define your registers, as shown in the following image.

-	SWIFT_Inbound_Registers.iwr ×								
					🕂 🗆 /* 🗙 😫 🗈 🙃				
	Name	Туре	Value	Description					

The following image shows a sample register set (SWIFT_IB), which is used for inbound processing.

SWIFT_IB.iwr ×			
			+ C / X 5 6 6
Name	Туре	Value	Description
ValidationRptDir	string	sreg(SWIFT_Input)\IB_Report	Validation Report Directory
BadXMLDir	string	sreg(SWIFT_Input)\IB_Error	Directory for Invalid SWIFT Data
GoodXMLDir	string	sreg(SWIFT_Input)\IB_Transform	Directory for Good SWIFT Data
InputDir	string	sreg(SWIFT_Input)	File Input Directory
ArchiveDir	string	sreg(SWIFT_Input)\IB_Archive	Archive Directory
DefaultDir	string	sreg(SWIFT_Input)\IB_Output	Default Output Directory
SWIFTVersion	string	2019	

Procedure: How to Add an Ebix and Registers to Your Channel

1. Expand the *Channels* subfolder in your application project, and double-click on a channel name.

The selected channel opens in the Channel Builder, which displays as a tab in your workspace, as shown in the following image.

SWIFTtoXML ×						
Channel Builder						
SWIFTtoXML	a	SWIFTtoXML				i 🖉
 ✓ E channel: SWIFTtoXML ✓ etc, infet: infet: 1 drg: listener: listener: 1 (File) B: preparser: preparser. 1 ✓ E: route: route. 1 (default) tro there is SWIFTtoXML ✓ B: outlet: outlet. 1 	★★★★	Tick the check-bo → Dynamic Routin Manage channel d implies it will be p. Name	x below to enable or on ng lependencies, such as ackaged within this c Attached	disable dynamic routi s Ebixes and Registers: hannel. Type	ng for this channel. Please note a resource marked "attached" Location	÷
emitter: emitter. 1 (Passthrough)	\sim	SWIFT_IB	n/a	register	/SWIFT_2019/Registers/SWIFT_IB	36
		SWIFT_2019	yes	ebix	/SWIFT_2019/Ebixes/SWIFT/SWIFT	↑

- 2. Click on the channel name in the left pane of the Channel Builder to open the dialog in the right pane, which allows you to bind Ebixes and registers to your channel.
- 3. Click the Add button (green plus sign) and add your Ebix or register sets that were defined.
Sample Listener Configuration

The following image shows a sample listener configuration for the inbound channel.

SWIFTtoXML ×	- 3
Channel Builder	
SWIFItoXML SWIFItoXML inlet: inlet: 1 inlet: inlet: 1 preparser: preparser.1 route: route.1 (default) if flow: SWIFItoXML image: state of the state	SWIFTtoXML:inlet.1:listener.1 Accepts documents from files in directories Type: File change type Filter (enter string to filter properties) Clear V Main Active true true input Path sreg(SWIFT_IB.InputDir) Destination sreg(SWIFT_IB.DefaultDir) m Removal Destination sreg(SWIFT_IB.ArchiveDir) suffix In Filter * input Path sreg(SWIFT_IB.ArchiveDir) in Suffix In Filter * in Scan subdirectories false

The following table lists and describes the available configuration parameters for the listener.

Parameter	Value
Active	Enables (set to <i>true</i> by default) or disables the listener.

Parameter	Value
Input Path	sreg(SWIFT_IB.InputDir)
	This value is a special register that uses a defined directory in which input messages are received.
	Ensure that you have created this directory; otherwise, errors will occur during deployment.
Destination	sreg(SWIFT_IB.DefaultDir)
	This value is a special register that uses a defined directory in which output files are stored after transformation.
	Ensure that you have created this directory; otherwise, errors will occur during deployment.
Removal Destination	sreg(SWIFT_IB.ArchiveDir)
	This value is a special register that uses a defined directory to which input messages are moved if they fail during transformation.
	Ensure that you have created this directory; otherwise, errors will occur during deployment. It is recommended to configure a removal destination when you are constructing a basic channel.
Suffix In Filter	*
	Input files with any file extension are allowed.
Suffix Out	xml
	The extension for output files is .xml.
Accept Zero Length Files?	true
	If true, listener expects flat (non-XML). Automatic parsing is not performed.

Sample Preparser Configuration

SWIFTtoXML ×		- 8
Channel Builder		
SWIFTtoXML	preparser.1 The SWIFT preparser. Accepts a % in the template name, which will get filled in by message type Type: XDSWIFTPreParser (com.ibi.preparsers.XDSWIFTpreParser) change type > Set Condition Filter (enter string to filter properties) Clear Main	i 🔊 🖄
	version 2019 template MT%toXML.xch timestamp true systemMessages true	

The following image shows a sample preparser configuration for the inbound channel.

The following table lists and describes the available configuration parameters for the preparser:

Parameter	Description
version	Represents the SWIFT release year you are using.
template	Represents the template to use for the SWIFT to XML transform. Enter the following:
timestamp	Writes a time stamp to the log file. Select true or false.

Parameter	Description
systemMessages	Determines whether to process system messages. If <i>true</i> is selected, the system messages are automatically parsed and directly written to a good validation report.
	If <i>false</i> is selected, the system messages are bypassed and not processed. There is also a separate preparser available if you want to set up a standalone channel to parse just system messages.

Defining a Route

A route defines the path a message takes through a channel.

Channel Builder defines the route for you automatically. Just add your process flow(s) to the route in Channel Builder.

Defining a Process Flow

Process flows (pflows) are defined and created in the process flow editor. To create a new process flow, right-click on *Flows*, select *New*, and then click *Flows*, and follow the dialog.



The following image is a sample process flow for the inbound channel.

Defining the Outlet

Outlets define how a message leaves the channel. In the sample inbound configuration, a *Passthrough* outlet is used. For details on supported protocols, which can be used as outlets, see the *iWay Service Manager Protocol Guide*.

Procedure: How to Build the Channel

To build the channel:

1. Expand your application project, right-click *Channels*, select *New*, and then click *Channel* from the context menu, as shown in the following image.

Applicatio	on Ex	plorer 🗙	» ₃					
			(> -> @	E \$	\bigtriangledown			
🗸 🔛 Swift	_201	9						
AP	ls	ale						
> 🔁 C	anne	New			>		Application Project	1
> 🗁 El		Go Into					Project	
> 🍃 Fl		Open in N	New Window			0	API	
⊳ R	D	Сору				ð	Deployment Template	
> 🗁 Ti	Ē	Paste					Channel	
11 🔁 S 📦 S	D	Duplicate	:			Φ.	Flow	
> 🖄 SWIF	×	Delete				K	Transform	
		Move				fQ	IFL Expression	
		Rename				1	Example	
	è	Import				F 9	Other	Ctrl+N
	2	Export						

The Channel Object dialog opens.

2. Enter a new channel name and then click *Next* to continue to be prompted for entry screens for components, or click *Finish* to go directly to the Channel Builder.



The following image shows a sample inbound channel displayed in the Channel Builder.

You can manually build your channel by right-clicking the bundle name, selecting *Integration Tools*, and then clicking *Build* from the context menu, as shown in the following image.

Application Ex	plorer × 3		
 SWIFT_201 APIs Channe Configi Ebixes Flows Flows Registe Resourt Templa Transfo SWIFT_ 	↔ ⇔ @ E 9 els urations rs ces tes rms 2019	j <mark>45</mark> ∧	
	New	>	
	Open		
	Open With	>	
	Сору		
Ē	Paste		
	Duplicate		
×	Delete		
	Move		
	Rename		
<u>12-1</u>	Import		
20	Export		
8	Refresh		
	Validate		
	Run As	>	
₽ Outline >	Debug As	>	
An outline is n	Team	>	
Anoutine is in	Replace With	>	
	Integration Tools	>	🍓 Build
	Library	>	Report
	Compare With	>	
	Properties		

3. Review the results of your build, as shown in the following image.



Deploying and Starting the iWay Integration Application

For more information, see:

- Deploying the iWay Integration Application for SWIFT on page 52
- Starting iWay Integration Applications in iWay Service Manager on page 57

Procedure: How to Verify the Channel

To ensure that the channel is working as expected, perform the following steps:

1. Place a SWIFT document as test data in the file directory that is defined by sreg(SWIFT_IB.InputDir).

For more information on obtaining SWIFT sample files (MT535.swift, MT541.swift, and MT950.swift) for testing purposes, see *Extracting SWIFT User Directories and Data Samples* on page 42.

2. Check for the XML file and the validation report in the file directory that is defined by *sreg*(*SWIFT_IB.DefaultDir*). This is the destination path you specified for the emitters associated with the outlets for the channel.

For example, a SWIFT input file named MT950.txt is named MT950_2019-11-27T17_17_38_932Z.xml on output.

Chapter 6

Outbound Processing: XML to SWIFT

The iWay Integration Solution for SWIFT validates an XML document based on published implementation guides for SWIFT and converts it to a document in SWIFT format.

This chapter provides the information you need to understand and implement a basic outbound message flow.

- □ The **outbound processing overview** describes the iWay business components and the processing steps in the basic outbound message flow.
- **The sample configuration** shows a basic outbound message flow.

In this chapter:

- Outbound Processing Overview
- Adding an Ebix to the Registry

Outbound Processing Overview

The standard outbound process converts an XML transaction to a SWIFT FIN message.

In a basic message flow, outbound processing consists of the following components and steps. For an illustration of the components available in the construction of a message flow, see *Using a Channel to Construct a Message Flow* on page 18.

Inlet

□ The **listener** acquires the input XML document.

Route

The following services are defined:

- **SWIFT XML Transform service**, which is used to transform SWIFT XML to SWIFT messages.
- ❑ Validation Report service, which is used to validate SWIFT messages against SWIFT defined standards.

Using iWay Integration Tools (iIT) Designer, a process flow is created which incorporates these two services.

Outlets

Outlets define how messages leave a channel at the end of a process. In the sample outbound channel, a *Passthrough* outlet is used. All write operations are handled by the process flow.

Adding an Ebix to the Registry

For more information on adding an Ebix to the registry, see *How to Add an Ebix and Registers to Your Channel* on page 72.

Tip: If you already added an Ebix to the application project for inbound processing, then you do not need to add it again for outbound processing. as described in *How to Add an Ebix and Registers to Your Channel* on page 72.

Sample Listener Configuration

The following image shows a sample listener configuration for the outbound channel.

XMLtoSWIFT ×			
hannel Builder			
<pre>KMLtoSWIFT</pre>	₽ gh)	XML toSWIFT:inlet.1:listener.1 Accepts documents from files in directories Type: File change type Filter (enter string to filter properties) Clear Value Active true Input Path sreg(SWIFT_OB.InputDir) Destination sreg(SWIFT_OB.DefaultDir) Removal Destination sreg(SWIFT_OB.ArchiveDir) Suffix In Filter xml Scan subdirectories	i 🔏 😤

The following table lists and describes the configuration parameters for the sample listener.

Parameter	Value
Active	Enables (set to <i>true</i> by default) or disables the listener.
Input Path *	sreg(SWIFT_OB.InputDir)
	This value is a special register that uses a defined directory in which input messages are received.
	Ensure that you have created this directory; otherwise, errors will occur during deployment.
Destination *	sreg(SWIFT_OB.DefaultDir)
	This value is a special register that uses a defined directory in which output files are stored after transformation.
	Ensure that you have created this directory; otherwise, errors will occur during deployment.
Removal Destination	sreg(SWIFT_OB.ArchiveDir)
	This value is a special register that uses a defined directory to which input messages are moved if they fail during transformation.
	Ensure that you have created this directory; otherwise, errors will occur during deployment. It is recommended to configure a removal destination when you are constructing a basic channel.
Suffix In Filter	xml
	Input files with the extension .xml are allowed.
Suffix Out	swift
	In this example, the extension for output files is .swift.

Sample Transformation Agent Properties

The following image shows a sample transformation agent.

Properties ×	👰 Error Log 🛛 📮 🤇	Console 🕺 Problems 🖉 Terminal
Configuration Custom Properties	Server Agent (Object
Pre-Execution Post-Execution	Agent Type: SWIF	TXMLTransformAgent {com.ibi.agents.XDIWAYSWIFTXMLTransformAgent}
General	▼ Main	
	version	2019
	template	XMLtoMT%.xch
	encoding	Encoding
	block4delimiter	Block 4 Delimiter
	timestamp	false
	block4delimiter	Block 4 Delimiter false

The following table lists and describes the available configuration parameters for the preparser.

Parameter	Description
version	Represents the SWIFT release year you are using.
template	Represents the template to use for the XML to SWIFT transform. Enter the following: XMLtoMT%.xch
encoding	Determines how to encode the output.
block4delimiter	Inserts a delimiter into SWIFT Block 4.
timestamp	Writes a time stamp to the log file. Select <i>true</i> or <i>false</i> .

Defining a Route

A route defines the path a message takes through a channel.

Channel builder defines the route for you automatically. Add your process flow(s) to the route in Channel Builder.

Defining a Process Flow

Process flows (pflow) are defined and created in the process flow editor.

To create a new process flow, right-click on *Flows*, select *New*, then click *Flows*, and follow the dialog.

The following image shows a sample process flow for the outbound channel.



Defining the Outlet

Outlets define how a message leaves a channel. In the sample inbound configuration, a *Passthrough* outlet is used. For details on supported protocols, which can be used as outlets, see the *iWay Service Manager Protocol Guide*.

Adding the Ebix to the Channel

For more information on adding an Ebix to the Channel, see *How to Add an Ebix and Registers to Your Channel* on page 72. If one Ebix is shared by both inbound and outbound channels, it must be added to each channel.

Building the Channel

For more information on building the channel, see *How to Build the Channel* on page 78.

Deploying and Starting the iWay Integration Application

For more information, see:

Deploying the iWay Integration Application for SWIFT on page 52

Starting iWay Integration Applications in iWay Service Manager on page 57

Note that an iWay Integration Application (iIA) may contain multiple channels. The entire iIA is deployed and each channel is started individually.

Procedure: How to Verify the Channel

To ensure that the channel is working as expected, perform the following steps:

1. Place an XML file as test data in the file directory that is defined by sreg(SWIFT_OB.InputDir).

For more information on obtaining sample XML input files (MT535.xml, MT541.xml, and MT950.xml) for testing purposes, see *Extracting SWIFT User Directories and Data Samples* on page 42.

- 2. Check for the SWIFT formatted output file in the file directory that is defined by *sreg*(*SWIFT_OB.DefaultDir*). This is the destination directory you specified.
- 3. Confirm that the output has been converted to SWIFT format.



Ebix-Supported Transaction Sets

This topic describes the SWIFT FIN messages supported by the iWay Integration Solution for SWIFT in the Ebix files supplied with the product.

In this appendix:

Transaction Set Support

Transaction Set Support

iWay Service Manager (iSM) Version 8.0 and higher supports SWIFT 2016, SWIFT 2017, SWIFT 2018, and SWIFT 2019. Note that many documents did not have any updates in SWIFT 2019, and some remain unchanged since SWIFT 2008. For additional information and available Ebix file downloads, go to *http://techsupport.ibi.com*.

SWIFT Version	Documents
2016	All
2017	All
2018	All
2019	All



Using iWay Integration Tools to Configure an Ebix for SWIFT

This section describes how to use iWay Integration Tools (iIT) to configure an e-Business Information Exchange (Ebix) file for SWIFT.

In this appendix:

- Overview
- Prerequisites
- Downloading and Extracting Ebix Files For SWIFT
- Working With Ebix Files Using iWay Integration Tools

Overview

You can use iWay Integration Tools (iIT) to import, edit, export, and work with e-Business Information Exchange (Ebix) files for SWIFT. The topics in this appendix describe how to:

□ Import a SWIFT 2019 MT535 Ebix into iIT.

Add a qualifier at the 19A element under the L_19A loop level to the SWIFT Ebix.

Export the edited Ebix to a physical location.

The edited Ebix can be returned and then tested with the appropriate SWIFT 2019 MT535 message.

Prerequisites

Before you continue, ensure that the following prerequisites are met:

- □ You have a working knowledge of iWay Integration Tools (iIT) and SWIFT.
- □ iWay E-Business Adapter for SWIFT is installed.
- □ iIT Version 8.0 or higher is installed.

Downloading and Extracting Ebix Files For SWIFT

To download and extract Ebix files for SWIFT:

1. Download the eCommerce Metadata samples for SWIFT (version 8.0.3) from the Information Builders Technical Support Center:

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https://techsupport.informationbuilders.com/

🖃 iWay 8				
803				
eCommerce Metadata	803	Prod	Download	
eCommerce Samples	803	Prod	Download	
iWay Service Manager	803	Prod	Download	

2. Download the SWIFT_ebxs.zip file, as shown in the following image.

File Name	File Size (bytes)	Download
EDIFACT_ebxs.zip	618,993,037	FTP HTTP
HIPAA_ebxs.zip	4,487,706	FTP HTTP
HL7_ebxs.zip	235,295,750	FTP HTTP
SWIFT_ebxs.zip	6,853,999	FTP HTTP
X12_ebxs.zip	725,457,137	FTP HTTP

3. Unzip the downloaded SWIFT_ebxs.zip file into any physical location on your local drive.

When extracted, the *SWIFT_ebxs* folder is created, which contains individual Ebix files for several SWIFT versions, as shown in the following image.

SV	SWIFT_ebxs						
^	Name ^	Date modified	Туре				
	SWIFT_2016.ebx	4/14/2019 9:23 AM	EBX File				
	SWIFT_2017.ebx	4/14/2019 9:23 AM	EBX File				
	SWIFT_2018.ebx	4/14/2019 9:23 AM	EBX File				
	SWIFT_2019.ebx	6/18/2019 3:50 AM	EBX File				

For example, the SWIFT_2019.ebx file contains the SWIFT 2019 MT535 document.

Note: Ensure all folders used for the extracted *SWIFT_ebix.zip* file do not have any blank spaces in the folder name.

Working With Ebix Files Using iWay Integration Tools

This section describes how to import, edit, and export an Ebix for SWIFT using iWay Integration Tools (iIT).

Procedure: How to Import an Ebix

- 1. Start iWay Integration Tools (iIT).
- 2. Right-click anywhere in the Application Explorer tab, click *New*, and then select *Application Project* from the context menu, as shown in the following image.

🗣 A	pplication Exp	olorer 🗙		A iWay Explorer		
					> @ 🖻	\$ ~
	New	>	١	Application Project		
P	Сору		Ċ	Project		
Ē	Paste		٥	API		
Ð	Duplicate		ð	Deployment Template		
ж	Delete			Channel		
res.	Import		۰.	Flow		
2	Export		F _2	Transform		
5	Pofrach		fQ	IFL Expression		
\$ <u></u>	Kerresii		2	Example		
				Other	Ctrl+N	

The New Application Project dialog opens, as shown in the following image.

🛷 New Application Project		×
Application Project		
Create a new Application project		
Project name SWIFT_Ebix_edit_sample_proj Project location	 	
Use default Directory C:\iIT_803\iIT-8.0.3\workspace	Browse	
Maven Option Use Maven, support for Docker and Kubernetes		
< Back Next > Finish	Cance	el

3. Enter a project name, for example, SWIFT_Ebix_edit_sample_proj, and then click Finish.

Your new project is created and is listed in the Application Explorer tab, as shown in the following image.

🖌 Applicat	ion E	xplorer 🗙	🐴 iWay Explorer	»2
> 🔄 SWIF	T_Eb	ix_edit_sam	ple_proj	<> <>
		New Go Into Open in N	lew Window	>
		Copy Paste Duplicate Delete Move Rename		
	24 24	Import Export		

4. Right-click the project in the Application Explorer tab and select *Import* from the context menu.

The Import dialog opens, as shown in the following image.

💰 Import	—		×
Select		Ľ	5
Select an import wizard:			
type filter text			
 General CVS Install iWay Integration Ebix Flow Flow IFL Expression Schema Set Schema Set Transform Maven Maven Plug-in Development Run/Debug Team XML 			
< Back Next > Finish		Cancel	

5. Expand *iWay Integration*, select *Ebix*, and then click *Next*.

The General Properties Page opens, as shown in the following image.

🔬 Import		—		×
General Prope Please enter a n ebix.	rties Page name and description for this imported			
Project Folder	/SWIFT_Ebix_edit_sample_proj/Ebixes		Brow	/se
Import				
Name				
Description				
	Create in current folder			~
? <	Back Next > Finish		Cancel	

6. Click the *ellipsis* (...) button to the right of the Import field.

The Open dialog is displayed, as shown in the following image.

🔬 Open				×
← → × ↑ 📙 « SWIFT_e	bxs	~	ට Search SWI	FT_ebxs 🔎
Organize 🔻 New folder				==
Documents	* ^	Name	^	Date modified
👆 Downloads	*	SWIFT_2016.ebx		4/14/2019 9:23 AM
Pictures	*	SWIFT_2017.ebx		4/14/2019 9:23 AM
len OneDrive		SWIFT_2018.ebx		4/14/2019 9:23 AM
		SWIFT_2019.ebx		6/18/2019 3:50 AM
	~	<		2
File name:	SWIFT_2019.ebx		✓ Ebix File (*	.ebx) 🗸
			Open	Cancel

7. Select the downloaded *SWIFT_2019.ebx* file from the physical drive location, and then click *Open*.

You are returned to the General Properties Page, as shown in the following image.

🔬 Import			×
General Prop	erties Page		
Please enter a	name and description for this imported ebix.		
Project Folder	/SWIFT_Ebix_edit_sample_proj/Ebixes	Brow	/se
Import	C:\SWIFT2019\SWIFT_ebxs\SWIFT_2019.ebx		
Name	SWIFT_2019		
Description			^
			\sim
	Create in current folder		
?	< Back Next > Finish Cancel		

8. Click Next.

The Ebix Entries pane opens, as shown in the following image.

🔏 Import	- 🗆	×
Ebix Entries		
Select ebix version to view available ebix entrie	es.	
Transform ebix are specially designed archive represents transform configuration and deper	files that contain ebix entries. Ebix entry ndencies used by iWay transform engine.	
Import as System Ebix		
Ebix	Ebix Entries	
✓ ₩ SWIFT_2019 2019	Image: Mitslage Image: Mitslage	< >
Description:		
Entry: MT535 Run Time Mode: N/A Description:		$\hat{}$
? < Back Ne	xt > Finish Cancel	

- 9. Expand the SWIFT_2019 node in the Ebix section on the left, and select the 2019 folder.
- 10. Select *MT*535 in the Ebix Entries section on the right, and then click *Finish*.

The dictionary editor opens for your selected document (for example, MT535).

Procedure: How to Edit an Ebix

1. In the SWIFT_2019.2019.MT535 tab that is opened, navigate to the 19A [Amount] element by expanding SWIFT, 535 [Statement of Holdings], C [Additional Information], and then L_19A [Loop of 19A], as shown in the following image.



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2. Under 19A [Amount], click the Qualifier composite element, then click the Properties tab in the bottom pane, as shown in the following image.



3. In the Content field of the Properties tab, add the value *STRS*, as shown in the following image.

Proper	ties 🗙 🧕 Error Log 🛛	🖹 Console 🛛 🕺 Problems 🖉 Terminal
Element		
General	_	
	Property	Value
	Name	Qualifier
	Description	
	Req	M
	Туре	:4!c
	Content	STRS,HOLP,HOLS,TOVA
	ErrorCode	T89

An asterisk (*) character appears next to the file name in the tab until you have saved the edited changes, as shown in the following image.

*SWIFT_2019.2019.MT535 ×	
 ✓ Image SWIFT ✓ Image Basic_Header Image Image Application_Identifier Image Image Service_Identifier 	

4. Save your edited Ebix by clicking the Save icon, which is located on the toolbar. If you are using a Windows platform, you can also use the shortcut key *CTRL*+S to save your work.



The Build Working Set dialog opens and displays a series of messages, as shown in the following image.

🔏 Build	l Working Set	×
?	'Rebuild entry on metadata change' is enabled. 'Preserve existing mappings' is disabled. 'Rebuild all mappings from a dictionary' is enabled. 'Rebuild schema files' is enabled. 'Rebuild rule files' is enabled.	
🗌 Do	n't show this dialog again.	
	Yes No	

5. Click Yes to confirm your changes.

Your edited Ebix in the iIT dictionary editor should now resemble the following image.



Note: The asterisk (*) character next to the file name in the tab will disappear once the edited Ebix has been saved successfully.

Procedure: How to Export an Ebix

To export an Ebix:

1. Right-click the SWIFT_2019 Ebix from the Ebixes subfolder of your application project, and select *Export* from the context menu, as shown in the following image.



The Export dialog opens, as shown in the following image.

🔬 Export		×
Select	Z	5
Select an export wizard:		
type filter text		
 > General > Install > Way Integration B Ebix > > Java > Plug-in Development > Run/Debug > Team > XML 		
Rack Next > Finish	Cance	:I

2. Expand the *iWay Integration* folder, select *Ebix*, and then click *Next*.

The Export pane opens, as shown in the following image.

🔏 Export	—		×
Export Ø Please enter a destination directory.			
 SWIFT_Ebix_edit_sample_proj APIs Channels Configurations Ebixes Ebixes SWIFT SWIFT_2019 2019 Flows Resources Templates 			
Se	lect All	Desele	ect All
? < Back Next > Finish		Cance	el sent

- 3. Expand your application project (for example, SWIFT_Ebix_edit_sample_proj), Ebixes, SWIFT, SWIFT_2019, and then select the 2019 folder in the left pane.
- 4. Select the *MT*535 check box in the right pane, and then click *Browse*.

The Export Ebix to Directory dialog opens.

5. Choose a location on your file system to store the exported Ebix, and then click OK.

You are returned to the Export pane, as shown in the following image.

💰 Export				×
Export				
Export Ebix resources to the local file system	m.			
 SWIFT_2019 SWIFT_Ebix_edit_sample_proj APIs Channels Configurations Ebixes SWIFT_v SWIFT_2019 SWIFT_2019 Plows Resources Templates 	₩ МТ535			
	Select	All	Deselec	t All
To directory: C:\temp			Brow	/se)
? < Back Next >	Finish		Cancel	

6. Click Next.
The Export Ebix pane opens, as shown in the following image.

🔏 Export	—		×
Export Ebix Create a new Ebix			
Create a new transform ebix by first specifying a name and ebix. Transform ebix are specially designed archive files that configuration and dependencies used by iWay transformati will allow you to create a new ebix and ebix entry for specifi	descrip conta on eng ed typ	otion of a n in transforr gine. This w e.	ew n vizard
Name:			
SWIFT_2019_MT535			
Ebix Type:			
SWIFT			
Runtime Mode:			
Standard			*
Description:			
			~
			~
? < Back Next > Finish		Cance	el

7. Provide a name that will be used for the exported Ebix file in the Name field, select *Standard* from the Runtime Mode drop-down list, add a description (optional), and then click *Finish*.

Your exported Ebix file is now available in the specified location on your file system.

For example:

OS (C:) > temp >		
▲ Name		
✓ EBX File (1)		
SWIFT_2019_MT535.ebx		



Sample SWIFT Documents

This appendix includes the following SWIFT sample documents:

- □ MT950 (Statement of Cash)
- MT535 (Statement of Holding)
- MT541 (Receive Against Payment)

In this appendix:

- SWIFT MT950 (Statement of Cash) Sample Document
- SWIFT MT535 (Statement of Holding) Sample Document
- SWIFT MT541 (Receive Against Payment) Sample Document

SWIFT MT950 (Statement of Cash) Sample Document

For more information on obtaining the SWIFT MT950 sample file (MT950.swift) for testing purposes, see *Extracting SWIFT User Directories and Data Samples* on page 42.

SWIFT MT535 (Statement of Holding) Sample Document

For more information on obtaining the SWIFT MT535 sample file (MT535.swift) for testing purposes, see *Extracting SWIFT User Directories and Data Samples* on page 42.

SWIFT MT541 (Receive Against Payment) Sample Document

For more information on obtaining the SWIFT MT541 sample file (MT541.swift) for testing purposes, see *Extracting SWIFT User Directories and Data Samples* on page 42.

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