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JD Edwards EnterpriseOne Tools 8.96 Interoperability Guide

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JD Edwards EnterpriseOne Tools 8.96 Interoperability Guide
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Contents

About This Documentation Preface

JD Edwards EnterpriseOne implementation guides provide you with the information that you need to implement and use JD Edwards EnterpriseOne applications from Oracle.

This preface discusses:

- JD Edwards EnterpriseOne application prerequisites.
- Application fundamentals.
- Documentation updates and printed documentation.
- Additional resources.
- Typographical conventions and visual cues.
- Comments and suggestions.
- Common fields in implementation guides.

Note. Implementation guides document only elements, such as fields and check boxes, that require additional explanation. If an element is not documented with the process or task in which it is used, then either it requires no additional explanation or it is documented with common fields for the section, chapter, implementation guide, or product line. Fields that are common to all JD Edwards EnterpriseOne applications are defined in this preface.

JD Edwards EnterpriseOne Application Prerequisites

To benefit fully from the information that is covered in these books, you should have a basic understanding of how to use JD Edwards EnterpriseOne applications.

You might also want to complete at least one introductory training course, if applicable.

You should be familiar with navigating the system and adding, updating, and deleting information by using JD Edwards EnterpriseOne menus, forms, or windows. You should also be comfortable using the World Wide Web and the Microsoft Windows or Windows NT graphical user interface.

These books do not review navigation and other basics. They present the information that you need to use the system and implement your JD Edwards EnterpriseOne applications most effectively.

Application Fundamentals

Each application implementation guide provides implementation and processing information for your JD Edwards EnterpriseOne applications.

For some applications, additional, essential information describing the setup and design of your system appears in a companion volume of documentation called the application fundamentals implementation guide. Most product lines have a version of the application fundamentals implementation guide. The preface of each implementation guide identifies the application fundamentals implementation guides that are associated with that implementation guide.

The application fundamentals implementation guide consists of important topics that apply to many or all JD Edwards EnterpriseOne applications. Whether you are implementing a single application, some combination of applications within the product line, or the entire product line, you should be familiar with the contents of the appropriate application fundamentals implementation guides. They provide the starting points for fundamental implementation tasks.

Documentation Updates and Printed Documentation

This section discusses how to:

- Obtain documentation updates.
- Order printed documentation.

Obtaining Documentation Updates

You can find updates and additional documentation for this release, as well as previous releases, on Oracle's PeopleSoft Customer Connection website. Through the Documentation section of Oracle's PeopleSoft Customer Connection, you can download files to add to your Implementation Guides Library. You'll find a variety of useful and timely materials, including updates to the full line of JD Edwards EnterpriseOne documentation that is delivered on your implementation guides CD-ROM.

Important! Before you upgrade, you must check Oracle's PeopleSoft Customer Connection for updates to the upgrade instructions. Oracle continually posts updates as the upgrade process is refined.

See Also

Oracle's PeopleSoft Customer Connection, http://www.oracle.com/support/support_peoplesoft.html

Ordering Printed Documentation

You can order printed, bound volumes of the complete line of JD Edwards EnterpriseOne documentation that is delivered on your implementation guide CD-ROM. Oracle makes printed documentation available for each major release of JD Edwards EnterpriseOne shortly after the software is shipped. Customers and partners can order this printed documentation by using any of these methods:

- Web
- Telephone
- Email

Web

From the Documentation section of Oracle's PeopleSoft Customer Connection website, access the PeopleBooks Press website under the Ordering PeopleBooks topic. Use a credit card, money order, cashier's check, or purchase order to place your order.

Telephone

Contact MMA Partners, the book print vendor, at 877 588 2525.

Email

Send email to MMA Partners at peoplebookspress@mmapartner.com.

See Also

Oracle's PeopleSoft Customer Connection, http://www.oracle.com/support/support_peoplesoft.html

Additional Resources

The following resources are located on Oracle's PeopleSoft Customer Connection website:

Resource	Navigation
Application maintenance information	Updates + Fixes
Business process diagrams	Support, Documentation, Business Process Maps
Interactive Services Repository	Support, Documentation, Interactive Services Repository
Hardware and software requirements	Implement, Optimize, and Upgrade; Implementation Guide; Implementation Documentation and Software; Hardware and Software Requirements
Installation guides	Implement, Optimize, and Upgrade; Implementation Guide; Implementation Documentation and Software; Installation Guides and Notes
Integration information	Implement, Optimize, and Upgrade; Implementation Guide; Implementation Documentation and Software; Pre-Built Integrations for PeopleSoft Enterprise and JD Edwards EnterpriseOne Applications
Minimum technical requirements (MTRs) (JD Edwards EnterpriseOne only)	Implement, Optimize, and Upgrade; Implementation Guide; Supported Platforms
Documentation updates	Support, Documentation, Documentation Updates
Implementation guides support policy	Support, Support Policy
Prerelease notes	Support, Documentation, Documentation Updates, Category, Release Notes
Product release roadmap	Support, Roadmaps + Schedules
Release notes	Support, Documentation, Documentation Updates, Category, Release Notes
Release value proposition	Support, Documentation, Documentation Updates, Category, Release Value Proposition
Statement of direction	Support, Documentation, Documentation Updates, Category, Statement of Direction

Resource	Navigation
Troubleshooting information	Support, Troubleshooting
Upgrade documentation	Support, Documentation, Upgrade Documentation and Scripts

Typographical Conventions and Visual Cues

This section discusses:

- Typographical conventions.
- Visual cues.
- Country, region, and industry identifiers.
- Currency codes.

Typographical Conventions

This table contains the typographical conventions that are used in implementation guides:

Typographical Convention or Visual Cue	Description
Bold	Indicates PeopleCode function names, business function names, event names, system function names, method names, language constructs, and PeopleCode reserved words that must be included literally in the function call.
Italics	Indicates field values, emphasis, and JD Edwards EnterpriseOne or other book-length publication titles. In PeopleCode syntax, italic items are placeholders for arguments that your program must supply. We also use italics when we refer to words as words or letters as letters, as in the following: Enter the letter *O*.
KEY+KEY	Indicates a key combination action. For example, a plus sign (+) between keys means that you must hold down the first key while you press the second key. For ALT+W, hold down the ALT key while you press the W key.
`Monospace font`	Indicates a PeopleCode program or other code example.
“ ” (quotation marks)	Indicate chapter titles in cross-references and words that are used differently from their intended meanings.

Typographical Convention or Visual Cue	Description
. . . (ellipses)	Indicate that the preceding item or series can be repeated any number of times in PeopleCode syntax.
{ } (curly braces)	Indicate a choice between two options in PeopleCode syntax. Options are separated by a pipe (|).
[ ] (square brackets)	Indicate optional items in PeopleCode syntax.
& (ampersand)	When placed before a parameter in PeopleCode syntax, an ampersand indicates that the parameter is an already instantiated object. Ampersands also precede all PeopleCode variables.

Visual Cues

Implementation guides contain the following visual cues.

Notes

Notes indicate information that you should pay particular attention to as you work with the JD Edwards EnterpriseOne system.

Note. Example of a note.

If the note is preceded by *Important!,* the note is crucial and includes information that concerns what you must do for the system to function properly.

Important! Example of an important note.

Warnings

Warnings indicate crucial configuration considerations. Pay close attention to warning messages.

Warning! Example of a warning.

Cross-References

Implementation guides provide cross-references either under the heading "See Also" or on a separate line preceded by the word *See.* Cross-references lead to other documentation that is pertinent to the immediately preceding documentation.

Country, Region, and Industry Identifiers

Information that applies only to a specific country, region, or industry is preceded by a standard identifier in parentheses. This identifier typically appears at the beginning of a section heading, but it may also appear at the beginning of a note or other text.

Example of a country-specific heading: “(FRA) Hiring an Employee”

Example of a region-specific heading: “(Latin America) Setting Up Depreciation”

Country Identifiers

Countries are identified with the International Organization for Standardization (ISO) country code.

Region Identifiers

Regions are identified by the region name. The following region identifiers may appear in implementation guides:

- Asia Pacific
- Europe
- Latin America
- North America

Industry Identifiers

Industries are identified by the industry name or by an abbreviation for that industry. The following industry identifiers may appear in implementation guides:

- USF (U.S. Federal)
- E&G (Education and Government)

Currency Codes

Monetary amounts are identified by the ISO currency code.

Comments and Suggestions

Your comments are important to us. We encourage you to tell us what you like, or what you would like to see changed about implementation guides and other Oracle reference and training materials. Please send your suggestions to Documentation Manager, Oracle Corporation, 7604 Technology Way, Denver, CO, 80237. Or email us at documentation_us@oracle.com.

While we cannot guarantee to answer every email message, we will pay careful attention to your comments and suggestions.

Common Fields Used in Implementation Guides

Address Book Number Enter a unique number that identifies the master record for the entity. An address book number can be the identifier for a customer, supplier, company, employee, applicant, participant, tenant, location, and so on. Depending on the application, the field on the form might refer to the address book number as the customer number, supplier number, or company number, employee or applicant ID, participant number, and so on.

As If Currency Code Enter the three-character code to specify the currency that you want to use to view transaction amounts. This code enables you to view the transaction amounts as if they were entered in the specified currency rather than the foreign or domestic currency that was used when the transaction was originally entered.

Batch Number Displays a number that identifies a group of transactions to be processed by the system. On entry forms, you can assign the batch number or the system can assign it through the Next Numbers program (P0002).

Batch Date Enter the date in which a batch is created. If you leave this field blank, the system supplies the system date as the batch date.

Batch Status Displays a code from user-defined code (UDC) table 98/IC that indicates the posting status of a batch. Values are:

Blank: Batch is unposted and pending approval.

A: The batch is approved for posting, has no errors and is in balance, but has not yet been posted.

D: The batch posted successfully.

E: The batch is in error. You must correct the batch before it can post.

P: The system is in the process of posting the batch. The batch is unavailable until the posting process is complete. If errors occur during the post, the batch status changes to *E*.

U: The batch is temporarily unavailable because someone is working with it, or the batch appears to be in use because a power failure occurred while the batch was open.

Branch/Plant Enter a code that identifies a separate entity as a warehouse location, job, project, work center, branch, or plant in which distribution and manufacturing activities occur. In some systems, this is called a business unit.

Business Unit Enter the alphanumeric code that identifies a separate entity within a business for which you want to track costs. In some systems, this is called a branch/plant.

Category Code Enter the code that represents a specific category code. Category codes are user-defined codes that you customize to handle the tracking and reporting requirements of your organization.

Company Enter a code that identifies a specific organization, fund, or other reporting entity. The company code must already exist in the F0010 table and must identify a reporting entity that has a complete balance sheet.

Currency Code Enter the three-character code that represents the currency of the transaction. JD Edwards EnterpriseOne provides currency codes that are recognized by the International Organization for Standardization (ISO). The system stores currency codes in the F0013 table.

Document Company Enter the company number associated with the document. This number, used in conjunction with the document number, document type, and general ledger date, uniquely identifies an original document.

If you assign next numbers by company and fiscal year, the system uses the document company to retrieve the correct next number for that company.

If two or more original documents have the same document number and document type, you can use the document company to display the document that you want.

Document Number — Displays a number that identifies the original document, which can be a voucher, invoice, journal entry, or time sheet, and so on. On entry forms, you can assign the original document number or the system can assign it through the Next Numbers program.

Document Type — Enter the two-character UDC, from UDC table 00/DT, that identifies the origin and purpose of the transaction, such as a voucher, invoice, journal entry, or time sheet. JD Edwards EnterpriseOne reserves these prefixes for the document types indicated:

P: Accounts payable documents.

R: Accounts receivable documents.

T: Time and pay documents.

I: Inventory documents.

O: Purchase order documents.

S: Sales order documents.

Effective Date — Enter the date on which an address, item, transaction, or record becomes active. The meaning of this field differs, depending on the program. For example, the effective date can represent any of these dates:

- The date on which a change of address becomes effective.
- The date on which a lease becomes effective.
- The date on which a price becomes effective.
- The date on which the currency exchange rate becomes effective.
- The date on which a tax rate becomes effective.

Fiscal Period and **Fiscal Year** — Enter a number that identifies the general ledger period and year. For many programs, you can leave these fields blank to use the current fiscal period and year defined in the Company Names & Number program (P0010).

G/L Date (general ledger date) — Enter the date that identifies the financial period to which a transaction will be posted. The system compares the date that you enter on the transaction to the fiscal date pattern assigned to the company to retrieve the appropriate fiscal period number and year, as well as to perform date validations.

JD Edwards EnterpriseOne Tools Interoperability Preface

This preface discusses Interoperability companion documentation.

Interoperability Companion Documentation

Additional, essential information describing the setup and design of Oracle's JD Edwards EnterpriseOne Tools Interoperability resides in companion documentation. The companion documentation consists of topics that apply to Interoperability models as well as other JD Edwards EnterpriseOne Tools. Depending on which interoperability model you use, you should be familiar with the information in the companion guide.

- Web Services Gateway documentation
- JD Edwards EnterpriseOne Tools Connectors guide
- JD Edwards EnterpriseOne Tools Messaging Adapters
- JD Edwards EnterpriseOne Tools Table Conversion
- JD Edwards EnterpriseOne Tools Output Stream Access

See Also

JD Edwards EnterpriseOne Tools 8.96 Web Services Gateway: Dispatcher Guide, "Using the Dispatcher," Understanding Web Service Gateway Dispatcher

JD Edwards EnterpriseOne Tools 8.96 Web Services Gateway: Configuration Editor Guide, "Using the Configuration Editor," Understanding the Configuration Editor

JD Edwards EnterpriseOne Tools 8.96 Web Services Gateway: EnterpriseOne Adapter Programmer's Guide, "Using the EnterpriseOne Adapter," Understanding the EnterpriseOne Adapter

JD Edwards EnterpriseOne Tools 8.96 Web Services Gateway: Order Promising Adapter Programmer's Guide, "Using the Order Promising Adapter," Understanding the Order Promising Adapter

JD Edwards EnterpriseOne 8.12 Applications Integrations with JD Edwards Enterprise Applications

JD Edwards EnterpriseOne 8.96 Web Services Gateway Installation and Setup Guide on Oracle | PeopleSoft Customer Connection

JD Edwards EnterpriseOne Tools Release 8.96 Transaction Server Components Installation and Upgrade Guide on Oracle | PeopleSoft Customer Connection

JD Edwards EnterpriseOne 8.12 Integration Points Installation (Microsoft Windows and Unix Systems) on Oracle | PeopleSoft Customer Connection

webMethods foundation documents on the JD Edwards EnterpriseOne Web Services Gateway software CD

JD Edwards EnterpriseOne Tools 8.96 Connectors Guide, "Getting Started with JD Edwards EnterpriseOne Tools Connectors," JD Edwards EnterpriseOne Tools Connectors Overview

JD Edwards EnterpriseOne Tools 8.96 Development Tools: Data Access Tools Guide, "Understanding Table Conversion," Table Conversions

JD Edwards EnterpriseOne Tools 8.96 Development Tools: Report Printing Administration Technologies Guide, "Working with Output Stream Access," Understanding OSA

CHAPTER 1

Getting Started with JD Edwards EnterpriseOne Tools Interoperability

This chapter discusses:

- Interoperability Overview
- Interoperability Implementation

JD Edwards EnterpriseOne Tools Interoperability Overview

Oracle's JD Edwards EnterpriseOne Tools Interoperability is used to send information into or retrieve information from JD Edwards EnterpriseOne. This document identifies the interoperability models and capabilities that JD Edwards EnterpriseOne supports. Depending on which model and capability you use, you must configure the system so that you can send information into or retrieve information from JD Edwards EnterpriseOne. The chapters in this document discuss format and set up requirements.

JD Edwards EnterpriseOne Tools Interoperability Implementation

This section provides an overview of the steps that are required to implement JD Edwards EnterpriseOne Tools Interoperability.

In the planning phase of your implementation, take advantage of all JD Edwards sources of information, including the installation guides and troubleshooting information. A complete list of these resources appears in the preface in *About This Documentation* with information about where to find the most current version of each.

Interoperability Implementation Steps

This table lists the steps for general interoperability implementation. In addition to the JD Edwards EnterpriseOne Tools and Applications installation guides, install any other EnterpriseOne tools, such as Web Services Gateway and Transaction Server, that are required for the interoperability model that you select. The JD Edwards EnterpriseOne installation guides are available on Oracle | PeopleSoft Customer Connection. Implementation steps for the model you select should be discussed in the applicable reference guide that is provided in the Understanding Interoperability chapter of this document.

Step	Reference
1. Install EnterpriseOne Tools 8.96.	*JD Edwards EnterpriseOne Tools Release 8.96 Installation Guide* on Oracle | PeopleSoft Customer Connection
2. Install JD Edwards EnterpriseOne applications.	*JD Edwards EnterpriseOne Application Release 8.12 Installation Guide* on Oracle | PeopleSoft Customer Connection

CHAPTER 2

Understanding Interoperability

This chapter discusses:

- Interoperability
- Interoperability features
- Interoperability models and capabilities
- Interoperability model selection
- Other industry standard support

Interoperability

Interoperability is most often associated with software as a way to enable disparate software applications to work together. For example, interoperability makes it possible for a company to use applications from different vendors as if they were from a single vendor. Seamless sharing of function and information becomes possible.

Interoperability reduces or eliminates the problems of islands of automation. It enables business processes to flow from one application to another. Interoperability enables one system to work with another, in near real-time fashion, to share critical business information. Interoperability options become the glue between systems and applications.

Interoperability Features

Full interoperability among systems makes the flow of data among the systems seamless to the user. Oracle's JD Edwards EnterpriseOne provides a framework to mask the complexity of interoperability with external systems, and to simplify interfacing with third-party packages.

The interoperability solution for JD Edwards EnterpriseOne meets these three important business objectives:

- Flexibility, Options, and Choice

  JD Edwards provides EnterpriseOne-legacy, best-of-breed, customer management, reporting tools, and many other types of applications and information. The developer can make the right choice for the particular environment and needs.

- Investment Preservation

  JD Edwards EnterpriseOne can interface with the existing applications or applications you plan to use in the future. You can use industry standard methods if the existing or new technologies support them, or you can use JD Edwards EnterpriseOne business logic to create this interoperability. Also, you will benefit from our ongoing upgrades and improvements to that architecture.

- Manageability

  JD Edwards EnterpriseOne is designed to make the interoperability process easily manageable.

Benefits

Interoperability offers these benefits:

- Businesses can bring together applications and systems across an enterprise, irrespective of vendors.
- Collaborations can occur between trading partners to lower the cost of doing business or to increase competitiveness.
- Multiple systems can be linked together to share information in a real-time manner, delivering time-sensitive information to those who need it.
- Disparate solutions as the result of mergers or acquisitions can be quickly incorporated into the enterprise's information technology solution.

The JD Edwards EnterpriseOne interoperability strategy includes a wide range of models and capabilities.

Interoperability Models and Capabilities

The JD Edwards EnterpriseOne Interoperability matrix provides an overview of interoperability models that are supported by JD Edwards EnterpriseOne. A model is a way for third parties to connect to or access JD Edwards EnterpriseOne. The matrix shows the models, which are further divided into types and into the capabilities that can be used with each model type. The model and model types are listed in the left-hand column. Capabilities, which are ways to send information into or retrieve information from JD Edwards EnterpriseOne, are columns in the matrix. For each model type, you can read across the table to see what capabilities can be used with that model type. JD Edwards provides both interactive and batch capabilities. The capabilities are grouped by inbound, outbound, and batch. An inbound capability is a request for data or a transaction initiated outside of JD Edwards EnterpriseOne. An outbound capability originates inside of JD Edwards EnterpriseOne.

JD Edwards EnterpriseOne Interoperability

This matrix identifies the JD Edwards EnterpriseOne models and the capabilities that each model supports:

Model	Model Type	BSFN Calls (In)	XML CallObj., XML List, XML Trans. (In)	Z Trans. (In)	Flat Files (In)	Real-Time and XAPI Events (Out)	Z Events (Out)	Generate XML Output (Out)	Flat Files (Out)	Batch (Out)
Web Services Gateway (WSG)	Enterprise One WSG	Y	List*	N	Y	Y	Y	Y	Y	N
Connectors	Dynamic Java Connector (Java Connector)	Y	CO, Trans, List*	N	N	Y	Y	Y	N	N
Connectors	JCA Resource Adapter	Y	CO, Trans, List*	N	N	N	N	N	N	N
Connectors	COM Connector	Y	CO, Trans, List*	N	N	Y	Y	Y	N	N
EnterpriseOne Messaging Adapters	Adapter for MQ WebSphere	Y	CO, Trans*	Y	N	Y	Y	Y	N	Y
EnterpriseOne Messaging Adapters	Adapter for MSMQ	Y	CO, Trans*	Y	N	Y	Y	Y	N	Y
Batch Interfaces	Interface Tables	Y	N	Y	Y	N	N	N	N	Y
Batch Interfaces	Enterprise One EDI	Y	N	Y	Y	N	N	N	Y	Y
Batch Interfaces	Table Conversions	Y	N	Y	Y	N	N	N	Y	Y
Batch Interfaces	OSA (UBE)	N	N	N	N	N	N	Y	N	Y
APAg/ Integration	APAg/ Integration	N	N	Y	N	Y	N	Y	N	Y
Open Data Access	Open Data Access (Supports business view and table inquiries)	N/A	N	N	N/A	N/A	N/A	N/A	N/A	N/A

* CO, List, and Trans indicate XML CallObj., XML List, XML Trans. from the column heading. These capabilities are XML Call Object, XML List, and XML Transaction. Each of these are discussed in detail in this document.

See Chapter 7, "Understanding XML CallObject," XML CallObject, page 49.

See Chapter 8, "Understanding XML Transaction," XML Transaction, page 59.

See Chapter 9, "Understanding XML List," XML List, page 65.

Interoperability Capabilities

A capability is a way to transfer information into JD Edwards EnterpriseOne or to retrieve information from JD Edwards EnterpriseOne. The interoperability matrix shows inbound and outbound capabilities and identifies capabilities that are appropriate for batch processing. Inbound capabilities enable you to inquire about data and update (add, change, or delete) data. With inquiry capabilities, you retrieve data for information purposes only. For example, you might want to see prices or availability of an item. You can perform update capabilities on an individual transaction basis or in a batch process, which consists of groups of transactions. An individual transaction update involves updating a single record (for example, adding a purchase order or creating an invoice). Batch processes, which are groups of transactions that typically involve updating multiple records, are usually scheduled to occur at a specific time and are non-interactive. For example, you can upload 10,000 orders to the database at the end of the day or obtain all of the pricing information that has changed and send that information to a web site at the end of the day.

The capabilities available for transferring information into and retrieving information from JD Edwards EnterpriseOne are described briefly in this chapter. Each capability is discussed in further detail in other chapters within this guide.

Business Function Calls

Business function calls are core to JD Edwards EnterpriseOne interoperability. Business functions encapsulate transaction logic to perform specific tasks, such as journal entry transactions, depreciation calculations, and sales order transactions.

JD Edwards EnterpriseOne uses regular business functions and master business functions. A regular business function performs simple tasks, such as tax calculation or account number validation. A master business function (MBF) performs complex tasks and can call several regular business functions to perform those tasks.

See *JD Edwards EnterpriseOne Tools 8.96 Development Tools: APIs and Business Functions Guide*, "Using Business Functions," Understanding Business Functions.

XML

XML provides a flexible, standards-based way of sharing information and moving data among systems. XML enables you to extend enterprise applications and collaborate with business partners and customers. You can use XML CallObject and XML Transaction to update or retrieve JD Edwards EnterpriseOne data. You can use XML List to create an XML data file in the JD Edwards EnterpriseOne system repository and then retrieve the data in small chunks to avoid network traffic. JD Edwards EnterpriseOne output is an XML document.

Z Transactions

Z transactions provide inbound capability to JD Edwards EnterpriseOne that enables you to update JD Edwards EnterpriseOne data. JD Edwards EnterpriseOne provides interface tables (Z tables) that support Z transaction capability. You also can create interface tables.

Flat Files

Flat files (also known as user-defined formats) are text files that are usually stored on the workstation or server. Flat files do not have relationships defined for them and typically use the Unicode character set. Data in a flat file usually is stored as one continuous string of information. You can use flat files to import or export data from applications that have no other means of interaction. For example, you might want to share information between JD Edwards EnterpriseOne and another system.

Events

Events are notifications to third-party applications or end-users that a JD Edwards EnterpriseOne business transaction has occurred. JD Edwards EnterpriseOne supports three kinds of events: Z events, real-time events, and XAPI events. Event data is represented as an XML document.

Z events use interface tables and a batch process to retrieve transaction information and use a Z event generator and the data export subsystem to manage the flow of the outbound data.

Real-time events can be generated from a server or a client. System calls (from a server) and client business function calls (from a client) retrieve transaction information. The transaction information is distributed to subscribers.

XAPI events are real-time events that require a response. A XAPI event is created in the same manner as a real-time event, with additional data structure information for invoking a business function when the response XML document is received.

Interoperability Models

JD Edwards EnterpriseOne supports these basic interoperability models:

- EnterpriseOne Web Services Gateway (WSG)
- Connectors
- Messaging Adapters
- Batch Interfaces

These models can be further categorized by type. Each model type supports one or more of the capabilities for sending information into or retrieving information from the JD Edwards EnterpriseOne database. The Interoperability Models and Capabilities matrix identifies the model types and the capabilities that each model type supports.

WSG

WSG provides the infrastructure that enables an enterprise to share data with JD Edwards and other applications, integrate business systems with partners, and retrieve data from legacy systems.

Some benefits of using WSG include:

- Message delivery is guaranteed.
- Graphic tools exist for creating integrations and workflows.
- Out of the box integration points provide easy integration with JD Edwards data.
- A common access point for security and permissions.
- Scalability is achieved by adding brokers and adapters.

For more information about using WSG, see the JD Edwards EnterpriseOne WSG guides, the WSG installation guides on Oracle | PeopleSoft Customer Connection, and the WSG foundation documentation on the EnterpriseOne WSG software CD. The location for these documents is addressed in the Interoperability preface.

Connectors

Connectors are point-to-point, component-based models that enable third-party applications and JD Edwards EnterpriseOne to share logic and data. JD Edwards EnterpriseOne connector architecture includes Java and COM connectors. The connectors accept inbound XML requests and expose business functions for reuse. Output from the connectors is in the form of an XML document. The connectors include:

- Java

  The JD Edwards EnterpriseOne dynamic Java and Java connectors support real-time event processing. Java is a portable language, so you can easily tie JD Edwards EnterpriseOne functionality to Java applications.

- COM

  The JD Edwards EnterpriseOne COM connector solution is fully compliant with the Microsoft component object model. You can easily tie JD Edwards EnterpriseOne functionality to Visual Basic and VC++ applications. The COM connector also supports real-time event processing.

Some benefits of using connectors include:

- Scalability
- Multi-threaded capability
- Concurrent users

  See *JD Edwards EnterpriseOne Tools 8.96 Connectors Guide*, "Getting Started with JD Edwards EnterpriseOne Tools Connectors," JD Edwards EnterpriseOne Tools Connectors Overview.

Messaging Adapters

JD Edwards EnterpriseOne provides messaging support for IBM WebSphere MQ and Microsoft Message Queuing (MSMQ). WebSphere MQ and MSMQ handle message queuing, message delivery, and transaction monitoring. JD Edwards EnterpriseOne uses these messaging systems to handle and pass requests for logic and data between JD Edwards EnterpriseOne and third-party systems.

Some of the benefits of using messaging adapters include:

- Reliable connections
- Guaranteed delivery
- Operations acknowledgement

  See Chapter 12, "Understanding Messaging Queue Adapters," JD Edwards EnterpriseOne and Messaging Queue Systems, page 91.

Batch Interfaces

Batch implies processing multiple transactions at the same time and usually involves movement of bulk information. Batch processing is often scheduled and is non-interactive. JD Edwards EnterpriseOne provides several model types for batch processing, and each model type has one or more capabilities that enable you to access JD Edwards EnterpriseOne data. The model types include:

- Interface tables
- Electronic Data Exchange

- Table conversions
- Output Stream Access
- APAg/Integration
- Open Data Access

Interface Tables

Interface tables provide point-to-point interoperability solutions for importing and exporting data. Interface tables are also called Z tables. Interface tables are working files into which you place transaction information to be processed into or out of JD Edwards EnterpriseOne. In addition to the interface tables provided by JD Edwards EnterpriseOne, you can build interface tables. If you use interfaces tables to update JD Edwards EnterpriseOne data, the format of the data must be presented in the format defined by JD Edwards EnterpriseOne. If you use interface tables to retrieve JD Edwards EnterpriseOne data, you use a batch process that extracts the data from the applications tables.

Some of the benefits of using interface tables include:

- Defined data structure
- Identifiable fields
- Customizable interface tables

EDI

Electronic Data Interchange (EDI) provides a point-to-point interoperability solution for importing and exporting data. EDI is the paperless computer-to-computer exchange of business transactions, such as purchase orders and invoices, in a standard format with standard content. As such, it is an important part of an electronic commerce strategy.

When computers exchange data using EDI, the data is transmitted in EDI standard format so it is recognizable by other systems using the same EDI standard format. Companies that use EDI must have translator software to convert the data from the EDI standard format to the format of their computer system.

The JD Edwards EnterpriseOne Data Interface for Electronic Data Interchange system acts as an interface between the JD Edwards EnterpriseOne system data and the translator software. In addition to exchanging EDI data, this data interface also can be used for general interoperability and electronic commerce needs where a file-based interface meets the business requirements.

Some benefits of using the Data Interface for Electronic Data Interchange system include:

- Shorter fulfillment cycle.
- Increased information integrity through reduced manual data entry.
- Reduced manual clerical work.

EDI is particularly effective at sending information to multiple applications simultaneously.

See *JD Edwards EnterpriseOne Data Interface for Electronic Data Interchange 8.12 Implementation Guide*

Table Conversion

Table conversion provides a point-to-point interoperability solution for importing and exporting data. Table conversion is a special form of Universal Batch Engine (UBE) that enables you to do high-speed manipulation of data in tables. JD Edwards EnterpriseOne has a table conversion utility that you can use to gather, format, import, and export data. The table conversion tool enables you to transfer and copy data. You can also delete records from tables. Table conversion enables you to use a non-JD Edwards EnterpriseOne table to process, call direct business functions, and give an output. For example, you might want to run a UBE that reads from a JD Edwards EnterpriseOne master file to populate a non-JD Edwards EnterpriseOne table.

The table conversion utility can make use of any JD Edwards EnterpriseOne table, business view, and text file, or any table that is not a JD Edwards EnterpriseOne table but resides in a database that is supported by JD Edwards EnterpriseOne, such as Oracle, Access, iSeries, or SQL Server. These non-JD Edwards EnterpriseOne tables are commonly referred to as foreign tables.

See *JD Edwards EnterpriseOne Tools 8.96 Development Tools: Data Access Tools Guide*, "Understanding Table Conversion".

OSA

OSA (Output Stream Access) provides a point-to-point interoperability solution for exporting data from UBEs. OSA enables you to set up an interface for JD Edwards EnterpriseOne to pass data to another software package, such as Microsoft Excel, for processing.

The benefits for using OSA include:

- The elimination of manually formatting output.
- The processing power of the target software program.

  See *JD Edwards EnterpriseOne Tools 8.96 Development Tools: Report Printing Administration Technologies Guide*, "Working with Output Stream Access," Understanding OSA.

APAg/Integration

The JD Edwards EnterpriseOne Advanced Planning Agent (APAg) is a tool for batch extraction, transforming, and loading enterprise data. APAg supports access to data sources in the form of relational databases, flat file format, and other data or message encoding such as XML. APAg also moves data from one place to another and initiates tasks related to the movement of the data.

Benefits of using the APAg tool include:

- Ability to copy massive amounts of table data.
- Ability to efficiently and effectively handle initial data loads.

See *JD Edwards Supply Chain Planning, Advanced Planning Agent Guide.*

ODA

ODA (Open Data Access) provides the capability for you to extract JD Edwards EnterpriseOne data (using SQL statements) so that you can summarize information and generate reports. You can use ODA with any of these desktop applications:

- Microsoft Query
- Microsoft Access
- Microsoft Excel
- ODBCTEST

- Crystal Report
- Microsoft Analysis Service

ODA sits between the front-end query and reporting applications and the JD Edwards EnterpriseOne-configured ODBC drivers.

The JD Edwards EnterpriseOne database contains object and column names, specific data types, and security rules that must be converted or applied so that the data is presented correctly. The specific data types and rules include decimal shifting, Julian date, currency, media object, security, and user defined codes. In some instances, ODA modifies the SQL SELECT statement, as well as the data, so that it appears correctly within the selected application.

Some of the benefits of using ODA include:

- Read-only access to all JD Edwards EnterpriseOne data, including the entire data dictionary.
- Use of the same security rules that you established for JD Edwards EnterpriseOne.
- Ability to extract JD Edwards EnterpriseOne data easily.

See Chapter 18, "Using Open Data Access," Understanding Open Data Access, page 155.

Interoperability Model Selection

Select an interoperability model based on the business needs. This matrix can help you determine which interoperability model best supports the interoperability requirements.

Model	Model Type	Platforms (Windows, UNIX, iSeries)	Integration Model	Best Fit Programming Languages	Critical Technical Skills for Creating Inbound Transaction	Critical Technical Skills for Creating Outbound Transactions
Web Services Gateway (WSG)	EnterpriseOne WSG	SUN, AIX, Windows	Broker	Java	WSG Toolset	WSG Toolset, Real-Time Events, XAPI Events
Connectors	Java Connector	All	Point-to-Point	Java	Java APIs, GenJava	Real-Time Events, XAPI Events
Connectors	COM Connector	Windows	Point-to-Point	C/C++/VB	COM, GenCOM	Real-Time Events, XAPI Events

Model	Model Type	Platforms (Windows, UNIX, iSeries)	Integration Model	Best Fit Programming Languages	Critical Technical Skills for Creating Inbound Transaction	Critical Technical Skills for Creating Outbound Transactions
Messaging Adapters	Adapter for MQ WebSphere	All	Integration Server	HTML, C/C++, Java	MQ WebSphere, XML	Z-Tables, Subsystem Processing (includes R00460, Data Export Controls, and so on)
Messaging Adapters	Adapter for MSMQ	Windows	Integration Server	C/C++	MSMQ, XML	Z-Tables, Subsystem Processing (includes R00460, Data Export Controls, and so on)
Batch Interfaces	Interface Tables	All	Point-to-Point	Any	Z-Tables, UBEs	Custom Code
Batch Interfaces	EnterpriseOne EDI	All	Point-to-Point	Any, Flat Files	Z-Tables, UBEs	Custom Code
Batch Interfaces	Table Conversions	All	Point-to-Point	TC	Table Conversions	Table Conversion Director/RDA
Batch Interfaces	OSA (UBE)	All	Point-to-Point	HTML, C/C++	NA	RDA, Custom Code
APAg/ Integration	APAg/ Integration	UNIX, Windows	Point-to-Point	Own Language	APAg Tool, Z Tables	APAg Tool, Z-Tables
Open Data Access	Open Data Access	All	Point-to-Point	VB	Custom code or third-party application (queries only)	Custom code or third-party application (queries only)

Other Industry Standard Support

JD Edwards EnterpriseOne has a media object function that supports other industry standard functions, such as:

- Object Linking and Embedding (OLE) for the exchange of different data types.
- Dynamic Data Exchange (DDE) for static and dynamic links across applications.

- Binary Large Object (BLOB) for media object attachments within applications.
- Extended Messaging API (MAPI) for message exchange across differing mail and groupware applications.

See Also

JD Edwards EnterpriseOne Tools 8.96 Foundation Guide, "Working with Media Object Attachments," Understanding Media Object Attachments

JD Edwards EnterpriseOne Tools 8.96 Foundation Guide, "Understanding Messages and Queues," Messages and Queues Overview

CHAPTER 3

Using Business Function Calls

This chapter provides an overview of Oracle's JD Edwards EnterpriseOne business function calls and discusses how to:

- Review API and business function documentation.
- Create business function documentation.
- Find business functions.

Understanding Business Functions

A business function is an encapsulated set of business rules and logic that can be reused by multiple applications. Business functions provide a common way to access the JD Edwards EnterpriseOne database. A business function accomplishes a specific task. Master business functions provide the logic and database calls necessary to extend, edit, and commit the full transaction to the database. Third-party applications can use master business functions for full JD Edwards EnterpriseOne functionality, data validation, security, and data integrity.

You can use master business functions to update master files (such as Address Book Master and Item Master) or to update transaction files (such as sales orders and purchase orders). Generally, master file master business functions, which access tables, are simpler than transaction file master business functions, which are specific to a program. Transaction master business functions provide a common set of functions that contain all of the necessary default values and editing for a transaction file. Transaction master business functions contain logic that ensures the integrity of the transaction being inserted, updated, or deleted from the database.

For interoperability, you can use master file master business functions instead of table input and output. Using master business functions enables you to perform updates to related tables using the master business function instead of table event rules. In this case, the system does not use multiple records; instead, all edits and actions are performed with one call.

Business functions are core for interoperability with JD Edwards EnterpriseOne. If you build custom integrations to interoperate with JD Edwards EnterpriseOne, you must know which business functions to call and how to call those business functions. You can use existing business functions, modify existing business functions, or create custom business functions. If you are creating a custom business function, JD Edwards suggests that you find an existing business function that is similar to what you want to accomplish and use the existing business function as a model.

Note. When an update or an Electronic Software Update (ESU) affects business functions, you might be required to modify the custom integration.

See Also

JD Edwards EnterpriseOne Tools 8.96 Development Tools: APIs and Business Functions Guide, "Using Business Functions," Understanding Business Functions

Reviewing API and Business Function Documentation

You can use JD Edwards EnterpriseOne business functions and APIs in custom integrations. Business functions groupings are:

- Master Business Functions

  A collection of business functions that provide the logic and database calls that are necessary to extend, edit, and commit the full transaction to the database. The design of master business functions enables them to be called asynchronously and to send coded error messages back to calling applications.

- Major Business Functions

  Components that encapsulate reusable logic common to many applications, such as date editing routines and common multicurrency functions.

- Minor Business Functions

  Components that perform complex logic for a specific instance or single application. Minor business functions are used in JD Edwards EnterpriseOne for processing that cannot be accomplished efficiently in event rules or for logic that might be required in multiple places within a single application.

Creating Business Function Documentation

Business function documentation explains what individual business functions do and how to use each business function. You can generate information for all business functions, groups of business functions, or individual business functions. The documentation for a business function includes information such as:

- Purpose.
- Parameters (the data structure).
- Explanation of individual parameter that indicate the input/output required and an explanation of return values.
- Related tables (which tables are accessed).
- Related business functions (business functions that are called from within the functions itself).
- Special handling instructions.

See Also

JD Edwards EnterpriseOne Tools 8.96 Development Tools: APIs and Business Functions Guide, "Using Business Functions," Understanding Business Function Documentation

Finding Business Functions

If you can find a JD Edwards EnterpriseOne application that is similar to what you need to do, you can use that application as a model. The JD Edwards EnterpriseOne Cross Application Development Tools menu (GH902) provides several tools that you can use to determine what business functions a JD Edwards EnterpriseOne application uses and how the business function is used in the application. From the Cross Application Development Tools menu, you can access:

- Object Management Workbench
- Cross Reference Facility
- Debug Application

Using the Object Management Workbench

You can use the Object Management Workbench (OMW) to search for the business function object and then review the C code.

See Also

JD Edwards EnterpriseOne Tools 8.96 Object Management Workbench Guide, "Working with Objects," Understanding Objects

JD Edwards EnterpriseOne Tools 8.96 Object Management Workbench Guide, "Understanding JD Edwards EnterpriseOne OMW," JD Edwards EnterpriseOne OMW Projects

Using the Cross Reference Facility

You can use the Cross Reference Facility to identify each instance for which a business function is used. The Cross Reference program (P980011) is on the Cross Application Development Tools menu (GH902).

See Also

JD Edwards EnterpriseOne Tools 8.96 Development Tools: Data Access Tools Guide, "Understanding the Cross Reference Facility," Understanding the Cross Reference Facility

Using the Debug Application

Another option that you might consider for understanding a JD Edwards EnterpriseOne application is to run a JD Edwards EnterpriseOne debugger. You can run the Event Rules Debugger to obtain named event rule and table event rule information for a JD Edwards EnterpriseOne application. You can use Microsoft Visual C++ to debug business functions that are written in C. You can use these two tools together.

See Also

JD Edwards EnterpriseOne Tools 8.96 Development Tools: Event Rules Guide, "Debugging Event Rules," Understanding the Event Rules Debugger

JD Edwards EnterpriseOne Tools 8.96 Development Tools: APIs and Business Functions Guide, "Debugging Business Functions," Understanding the Visual C++ Debugger

CHAPTER 4

Understanding XML

This chapter discusses:

- XML and JD Edwards EnterpriseOne.
- XML document format.
- XML standards.
- System environment configuration.
- XML kernel troubleshooting.

XML and JD Edwards EnterpriseOne

Oracle's JD Edwards EnterpriseOne XML solution supports well-formed XML documents. This XML solution supports UTF8 and UTF16 Unicode standards for inbound and outbound information. Outbound information is supported in UTF8 Unicode. Inbound and outbound information is supported in UTF16 Unicode. The JD Edwards EnterpriseOne XML solution includes:

XML Solution	Description
XML Transformation System (XTS)	Transforms an XML document that is not in the JD Edwards EnterpriseOne format into an XML document that can be processed by JD Edwards EnterpriseOne, and then transforms the response back to the original XML format.
XMLDispatch	Provides a single point of entry for all XML documents coming into JD Edwards EnterpriseOne and for responses.
XML CallObject	Enables you to call business functions.
XML Transaction	Enables you to use a predefined transaction type (such as JDEOPIN) to send information to or request information from JD Edwards EnterpriseOne. XML transaction uses interface table functionality.
XML List Kernel	Enables you to request and receive JD Edwards EnterpriseOne database information in chunks.
XML Service Kernel	Enables you to request events from one JD Edwards EnterpriseOne system and receive a response from another JD Edwards EnterpriseOne system.

Some of the benefits of using XML include:

- Scalable XML models that enable you to open multiple connections.
- Ability to use JD Edwards EnterpriseOne messaging adapters, providing a reliable connection and acknowledging operations.
- Exposure of business functions and interface tables.
- Ability to aggregate business function calls into one document, which reduces network traffic.
- Ability to manage session creation, validation, and tracking.

If you can create XML documents on the interoperability server, you can use XML for the interoperability solution.

See Also

World Wide Web Consortium (W3C) XML, http://www.w3.org/XML/

XML Document Format

This section provides an overview of formatting XML documents for JD Edwards EnterpriseOne and discusses these elements:

- Type Element
- Establish Session
- Expire Session
- Terminate Session
- Explicit Transaction
- Implicit Transaction
- Prepare/Commit/Rollback
- Terminate Session

Formatting XML Documents

When you send an XML document to JD Edwards EnterpriseOne for processing, the document must be in the XML format that is defined by JD Edwards EnterpriseOne. After the document reaches the JD Edwards EnterpriseOne server, the system processes the document based on the document type. All XML documents must contain these elements:

- One of these types:
  - jdeRequestType
  - jdeResponseType
- Establish Session
- Expire Session
- Terminate Session

In addition, you can use these optional elements:

- Explicit Transaction

- Implicit Transaction
- Prepare/Commit/Rollback

Type Element

The type element, which can be jdeRequest or jdeResponse, is the root element for all request documents coming into the XML infrastructure. This element contains basic information about the execution environment. These attributes form the jdeRequest and jdeResponse type element:

Attribute	Description
Type	Specifies the type of XML document request. Depending on the operation to be performed, the jdeRequest type can be one of the these: • Callmethod • List • Trans • xapicallmethod The jdeResponse type indicates an XML document coming from another JD Edwards EnterpriseOne system. The operation for jdeResponse is realTimeEvent. **Note.** The xapicallmethod and realTimeEvent types are discussed in the Events section of this document.
User	Specifies the user name for user identification and validation.
Pwd	Specifies the user password for user identification and validation.
Role	Specifies the user role. If left blank the default value is *ALL
Environment	Specifies the system environment.
Session	Specifies the session ID. This attribute is optional.
Sessionidle	Specifies the session time-out time. This attribute is optional.

Establish Session

You establish a session by setting the session attribute of the standard jdeRequest element. When the session attribute is an empty string, a new session is started. On the server, the SessionManager singleton class creates a new instance of a session object given the user name, password, and environment name. The session can be reused before it expires to avoid the overhead of session initialization. You can specify the session ID in the session attribute for an already established session in an earlier request.

```
<?xml version='1.0' ?>
<jdeRequest type='callmethod' user='steve' pwd='xyz'
environment='prod' role='*ALL' session='' sessionidle='1800'>
</jdeRequest>
```

Note. If you do not want to start a new session, then remove the session=' ' tag. This example is for starting a new session.

Expire Session

Session expiration is addressed by the sessionidle attribute of the standard jdeRequest element. This attribute, when given on a session creation request, specifies the amount of time in seconds that this session is allowed to be idle. If the SessionManager determines that a session has not had any requests processed in this amount of time, it terminates the session and frees all associated resources. The session idle default value is 30 minutes. The session idle time is defined in the XML document.

```
<?xml version='1.0'?>
<jdeRequest type='callmethod' user='steve' pwd='xyz'
environment='prod' role='*ALL' session='' sessionidle='1800'>
</jdeRequest>
```

Explicit Transaction

Explicit database transactions are supported by another element, the startTransaction tag. The startTransaction tag specifies whether transactions are to be manually or automatically committed. The startTransaction tag element is an empty element, which means that all of the information is in the attributes.

```
<?xml version='1.0'?>
<jdeRequest type='callmethod' user='steve' pwd='xyz' environment='prod'
role='*ALL' session=''>
</jdeRequest>
```

Implicit Transaction

An XML request is included in a transaction set when the name of a transaction set is referenced in its trans attribute. Implicit start transactions can be included in the request by specifying the name of a transaction set that has not previously been created. For an implicit start, the transaction set will be a manual commit set.

```
<?xml version='1.0'?>
<jdeRequest type='callmethod' user='steve' pwd='xyz' environment='prod'
role='*ALL' session=''>
<callMethod name='myfunc' app='P42101' trans='t1'>
<params>
<param name='CostCtr'>   1001</param>
</params>
</callMethod>
</jdeRequest>
```

Prepare/Commit/Rollback

Manual transaction sets can be committed or rolled back. As part of a two-phase commit, they can be prepared to commit. Prepare, commit, and rollback requests to the database are made by using the endTransaction element. The transaction set is identified by the *trans* attribute. The *action* attribute indicates the action to take on the transaction set. The value can be *prepare*, *commit*, or *rollback*. This element is always an empty element, as indicated by the forward slash.

It is recommended that you manage the session ID when doing manual commits and terminate the session after the transaction is complete.

```
<?xml version='1.0'?>
<jdeRequest type='callmethod' user='steve' pwd='xyz' environment='prod'
```



```
role='*ALL' session=''
<endTransaction trans='t1' action='commit'/>
</jdeRequest>
```

Note. If startTransaction and endTransaction are in separate documents, one of these scenarios occurs:

The session attribute is not sent in the second document. In this case, the system uses the user ID, password, and environment to match the previous session.

The session number from the response of the first document is sent in the session attribute of the documents associated with the same transaction.

Terminate Session

Session termination is done by submitting an XML document to explicitly terminate the session. You must specify the session to be terminated in the jdeRequest element tag.

```
<?xml version='1.0' ?>
<jdeRequest type='callmethod' user='steve' pwd='xyz' environment='prod'
role='*ALL' session=5665.931961929.454'>
<endSession/>
</jdeRequest>
```

XML Standards

In addition to ensuring that your XML documents have the required format elements (jdeRequest or jdeResponse Type, Establish Session, Expire Session, and Terminate Session), JD Edwards EnterpriseOne has standards for XML documents that are different from industry standards. Also, some special characters are reserved for XML and can't be used directly.

This section discusses:

- Decimal and comma separators.
- Data usage.
- Industry standards for special characters.

Decimal and Comma Separators

JD Edwards EnterpriseOne uses the decimal and thousands separators differently than XML industry standards. The decimal and thousands separators do not depend on use profile settings, jde.ini settings, or regional settings for the computer. When you write XML documents to interface with JD Edwards EnterpriseOne, you must always use the decimal character (.) (period) as a decimal separator, and a comma (,) as a thousands separator. The purpose of the separator standards is to achieve consistent interoperability policy and to prevent data corruption.

Date Usage

Different components of the XML foundation use different format codes and APIs to format these dates:

- to XML date

- from XML date
- to JDEDATE
- from JDEDATE

This table explains the formats that are used by each XML component supported by JD Edwards EnterpriseOne:

Component	Inbound Format	Inbound Outcome	Outbound Format	Outbound Outcome
XMLCallObject	F	YYYYMD	ESOSA	YYYY/MM/DD
XMLTransaction	F*	User Preference	ESOSA	YYYY/MM/DD
XMLList	B*	User Preference	NULL	User Preference

* Component ignores the format code

Industry Standards for Special Characters

In XML, some special characters are reserved for internal use, and to use these characters in data, you must replace them with entity or numeric references. This table shows the special characters that are reserved for XML along with the entity and numeric references that enable you to use a special character in your XML documents:

Character Name	Character	Entity Reference	Numeric Reference
Ampersand	&	&amp;	&#38;
Left angle bracket (less than)	<	&lt;	&#60;
Right angle bracket (greater than)	>	&gt;	&#62;
Straight quotation mark	"	&quot;	&#34;
Apostrophe	’	&apos;	&#39;
Percent	%	Not Applicable	&#37;

Another way to use special characters in your XML documents is to use the CDATA section. Any text inside a CDATA section is ignored by the parser.

System Environment Configuration

Before you can use XML with JD Edwards EnterpriseOne, you must ensure that the ICU_DATA system environment variable is correctly defined on your JD Edwards EnterpriseOne system. If the ICU_DATA variable is not correctly defined, JD Edwards EnterpriseOne produces this error message:

The default Unicode converter could not be found within the jdenet_n.log on the OneWorld Enterprise Server.

For JD Edwards EnterpriseOne, the ICU conversion table, icu_data.dat, is generally located in system/locale/xml. Use the appropriate setting for your platform.

This section discusses:

- UNIX
- iSeries
- WIN32

UNIX

For UNIX systems, the ICU_DATA path is based on the ICU_DATA environment variable. The UNIX JD Edwards EnterpriseOne user login script sets the ICU_DATA environment variable to the directory location of the ICU resource file, incudata.dat. If the user login script does not set the ICU_DATA environment variable, you must define the ICU_DATA variable with a trailing slash, for example:

```
Export ICU_DATA=$SYSTEM/locale/xml/
```

Where $SYSTEM represents your JD Edwards EnterpriseOne install directory.

To support the loading of the JVM, verify the environment variable configuration for your platform.

HPUX

Verify these environment variable configurations for a HPUX platform:

```
export LD_LIBRARY_PATH=$SYSTEM/jre/1.4/lib/PA_RISC/server:
$SYSTEM/jre/1.4/lib/PA_
RISC:${LD_LIBRARY_PATH}
export SHLIB_PATH=$SYSTEM/jre/1.4/lib/PA_RISC/server:
$SYSTEM/jre/1.4/lib/PA_RISC:${SHLIB_PATH}
```

AIX

Verify these environment variable configurations for an AIX platform:

```
export LD_LIBRARY_PATH=$SYSTEM/jre/1.4/lib/bin:
$SYSTEM/jre/1.4/lib/bin/classic:${LD_LIBRARY_PATH}
export LIBPATH=$SYSTEM/jre/1.4/lib/bin:$SYSTEM/jre/1.4/lib/bin/classic:
${LIBPATH}
export SHLIB_PATH=$SYSTEM/jre/1.4/lib/bin:
$SYSTEM/jre/1.4/lib/bin/classic:${SHLIB_PATH}
```

SUN

Verify these environment variable configurations for a SUN platform:

```
export LD_LIBRARY_PATH=$SYSTEM/jre/1.4/lib/sparc/server:
$SYSTEM/jre/1.4/lib/sparc:${LD_LIBRARY_PATH}
export SHLIB_PATH=$SYSTEM/jre/1.4/lib/sparc/SERVER:
$SYSTEM/jre/1.4/lib/sparc:${SHLIB_PATH}
```

Note. Make sure that the server directory is first. The sparc directory has a libjvm.so just like the server directory, and the libjvm.so in the server directory is the directory you want to use.

LINUX

Verify these environment variable configurations for a LINUX platform:

```
export LD_LIBRARY_PATH=$SYSTEM/jre/1.4/lib/i386/server:
$SYSTEM/jre/1.4/lib/i386L:{LD_LIBRARY_PATH}
export SHLIB_PATH=$SYSTEM/jre/1.4/lib/i386/server:
$SYSTEM/jre/1.4/lib/i386:S{SHLIB_PATH}
```

iSeries

For iSeries systems, the ICU_DATA path is set when the ICU 1.6 conversion function is first called by the system. The system looks up Data Area BUILD_VER in the system library for the System Directory setting. For example:

System Directory: B9_S

The system appends locale/xml to the path specified in the BUILD_VER, and then uses this path as the ICU_DATA path. You must ensure the BUILD_VER data area is properly set to reflect the system directory setting.

WIN32

For WIN32 systems, the ICU_DATA path is set when the ICU 1.6 conversion function is first called. This logic is used on WIN32:

1. The system looks up the environment variable `JDE_B9_ICU_DATA`. If this environment is found, it becomes the path for the conversion files.
2. The system looks for this section in the jde.ini file:

   ```
   [XML]
   ICUPath=<<install>>/system/locale/xml
   ```

   If the ICUPath setting is found, it becomes the path for the conversion files.
3. If the system cannot find the ICUPath setting in the jde.ini file, the ICU_Path is:

   ```
   EXECUTABLE_DIRECTORY/./system/locale/xml
   ```

   The EXECUTABLE_DIRECTORY must be `<<install>>/system/bin32`.

Based on this logic, you usually do not need to set the JDE_B9_ICU_DATA ENVIRONMENT variable or the jde.ini file. You need to set the jde.ini ICUPath only when the location of the icudata.dat is different from system/locale/xml.

Note. The JD Edwards EnterpriseOne client install sets the environment variable JDE_B9_ICU_DATA.

XML Kernel Troubleshooting

If one or more XML kernels are not working properly, use these troubleshooting guidelines to ensure that your system is set up correctly:

- Check the kernel definition in the server jde.ini file.

Also check that the library name is correct for the platform on which you are running. Check the entry function name.

- Check that the kernel is allowed to start.

  Check the maxNumberOfProcesses and numberOfAutoStartProcesses values for the kernel in the server jde.ini file. It is not necessary to auto start kernels. To work with a particular kernel, the allowed number of processes should be one or more.

- If you have a large number of simultaneous requests that are made to a particular kernel type, increase the number of allowed processes for that kernel.

  This will not only reduce the turnaround time for requests but will also eliminate any Queue Full errors.

- If you are using XMLList kernel, check that the LREngine section is correctly set up in the server jde.ini file and that the specified path exists.

  Also, check that the JD Edwards EnterpriseOne user has write permission to this location.

- Check that the XML document is a well-formed XML document.

  To do this, use any XML editor or open the document in Microsoft Internet Explorer and check for errors.

- Check that the root of the input XML document is jdeRequest.

  All input XML documents should have jdeRequest as their root element.

- Check that valid user ID, password, and environment are provided in the XML document.

- Check that the request type in the XML document is correct. The allowed request types are callmethod, list, and trans for XMLCallObject, XMLList, and XMLTransaction kernels, respectively.

CHAPTER 5

Understanding XML Dispatch

This chapter discusses:

- XML Dispatch.
- XML Dispatch processing.
- XML Dispatch recognizers.
- XML Dispatch transports.
- XML dispatch jde.ini file configuration.
- XML Dispatch error handling.

XML Dispatch

XML Dispatch is XML-based interoperability that runs as a JD Edwards EnterpriseOne kernel process. The XML Dispatch kernel is the central entry point for all XML documents. For incoming XML documents, XML Dispatch identifies the kind of document that comes into JD Edwards EnterpriseOne and sends the document to the appropriate kernel for processing. If XML Dispatch does not recognize the document, XML Dispatch sends the document to XTS to recognize and transform it into native JD Edwards EnterpriseOne format. After XTS transforms the document, the document is sent back to XML Dispatch to be sent to the appropriate kernel for processing. For outgoing documents, XML Dispatch remembers whether the request document was transformed into JD Edwards EnterpriseOne native format. If the incoming request was transformed, then the outgoing response document is sent to XTS for transformation from native JD Edwards EnterpriseOne format back into the format of the original request. After XTS transforms the document, the document is sent to XML Dispatch to distribute to the originator.

The XML Dispatch kernel is able to route and load balance the XML documents. For example, if you have many XML CallObject message types coming in at once, XML Dispatch tries to instantiate a new CallObject kernel. You set up the number of instances that a kernel can have in the jde.ini file. For example, if you set the number of instances for the CallObject kernel to five, if more than one CallObject document comes into JD Edwards EnterpriseOne, XML Dispatch sees that a particular kernel is busy and instantiates another one (up to five instances). XML Dispatch is able to recognize new kernel definitions (such as XAPI) if the kernel is defined in the jde.ini file. You are not required to change JDENET code when new kernels are added.

XML Dispatch is available on all platforms that are supported by JD Edwards EnterpriseOne.

XML Dispatch Processing

XML Dispatch receives standard JDENET messages (in the form of XML documents) from a transport driver or other jdenet_n. The communication between a transport and XML Dispatch is local inter-process communication (IPC) using JDENET APIs. The communication between XML Dispatch and XTS and between XML Dispatch and XML kernels can be either IPC or remote network using JDENET APIs.

XML Dispatch parses the XML document and sends the document to the appropriate JD Edwards EnterpriseOne kernel for processing.

XML Dispatch Recognizers

XML Dispatch uses recognizers to determine how to handle incoming and outgoing XML documents. If XML Dispatch recognizes an incoming XML document as being in JD Edwards EnterpriseOne native XML format, the XML document is parsed and sent to the appropriate kernel. For outgoing documents, the recognizer determines whether an XML document can be left as JD Edwards EnterpriseOne native XML format or whether it must be transformed.

You can add more than one recognizer to XML Dispatch to recognize different XML grammar. XML Dispatch recognizes the these types:

- jdeRequest
- jdeResponse
- jdeWorkflow

The XML Dispatch recognizer raises DocIsRecognized exception on document identification to stop further parsing.

You can write a recognizer that is able to recognize other types of XML documents. The specification for the type is configured in the jde.ini file.

XML Dispatch Transports

As part of XML Dispatch, you can write a transport. Transports communicate with external systems using mechanisms such as MQ WebSphere, MSMQ, HTTP, TCP/IP, and so on. Transport processes must run on the same machine as XML Dispatch. To develop a custom transport to communicate with JD Edwards EnterpriseOne, use these APIs:

- jdeTransportInit
- jdeTransportMessagePut
- jdeTransportMessageGet
- jdeTransportDoIExit

The transport APIs assume a polling model, which means calls to put or receive messages are given without a time-out.

XML Dispatch jde.ini File Configuration

The XML Dispatch kernel must be defined in the jde.ini file.

[JDENET_KERNEL_DEF22]

These settings are for a Microsoft Windows platform:

```
krnlName=XML DISPATCH KERNEL
dispatchDLLName=xmldispatch.dll
dispatchDLLFunction=_XMLDispatch@28
maxNumberOfProcesses=1
numberOfAutoStartProcesses=1
```

This table provides the different .dll extensions for other platforms.

Platform	dispatchDLLName	dispatchDLLFunction
iSeries	XMLDSPATCH	JDEK_XMLDispatch
HP9000	libxmldispatch.sl	JDEK_XMLDispatch
SUN or RS6000	libxmldispatch.so	JDEK_XMLDispatch

XML Dispatch uses the settings in the [XMLLookupInfo] section of the jde.ini file to route XML documents to the corresponding XML kernels. The system uses three keywords (XMLRequestN, XMLKernelMessageRangeN, and XMLKernelHostN) to map a pair that consists of an XML request and an XML kernel. A description of the settings in the [XMLLookupInfo] section are explained in this table:

Setting	Purpose
XMLRequestTypeN=	Identifies the type of message to be processed.
XMLKernelMessageRangeN=	A hard-coded number that identifies the kernel message range.
XMLKernelHostNameN=	The name of the host.
XMLKernelPortN=	Value is 0 or 1. To indicate a local host, enter 0. To indicate a remote host, enter 1.
XMLKernelRplyN=	Value is 0 or 1, with 1 as the default value. A value of 0 indicates no reply is required. A value of 1 indicates a reply should be returned to the originator. **Note.** XMLKernelRplyN setting is not required for list, callmethod, and trans. The reply setting is an implied 1. XMLService does not send a response, and the setting for XMLKernelReplyN should be zero (0). Where N starts with 1, and multiple groups of these keys can be in this section.

[XMLLookupInfo]

The [XMLLookupInfo] section should have six groupings, as illustrated in this example:

```
[XMLLookupInfo]
XMLRequestType1=list
XMLKernelMessageRange=5257
XMLKernelHostName1=local
XMLKernelPort1=0

XMLRequestType2=callmethod
XMLKernelMessageRange2=920
XMLKernelHostName2=local
XMLKernelPort2=0

XMLRequestType3=trans
XMLKernelMessageRange3=5001
XMLKernelHostName3=local
XMLKernelPort3=0

XMLRequestType4=JDEMSGWFINTEROP
XMLKernelMessageRange4=4003
XMLKernelHostName4=local
XMLKernelPort4=0
XMLKernelReply4=0

XMLRequestType5=xapicallmethod
XMLKernelMessageRange5=14251
XMLKernelHostName5=local
XMLKernelPort5=0
XMLKernelReply5=0

XMLRequestType6=realTimeEvent
XMLKernelMessageRange6=14251
XMLKernelHostName6=local
XMLKernelPort6=0
XMLKernelReply6=0
```

The XML Dispatch kernel uses these two additional settings:

```
[XML DISPATCH]
PollIntervalMillis=3000

[XTS]
ResponseTimeout=600
```

The PollIntervalMillis setting is the number of milliseconds that the XML Dispatch kernel sleeps during inactivity when it is waiting on responses from other XML kernels such as XML CallObject. The lower this value, the more CPU cycles the XML Dispatch kernel uses when waiting for responses.

The ResponseTimeout setting is the number of seconds that the XML Dispatch kernel waits for a response from other XML kernels, such as CallObject) before giving up on the response.

XML Dispatch Error Handling

XML Dispatch handles three types of errors. This table identifies the errors and how XML Dispatch handles the error:

XML Dispatch Error	How XML Dispatch Handles the Error
An error occurs while XML dispatch, XTS, and the XL kernel processes are exchanging data. For example, communication is broken.	XML Dispatch generates an error report, which is an XML document that describes the error.
An error occurs while the parser or XTS is processing an XML document. For example, a syntax error, an invalid request, and so on.	XML Dispatch generates an error report that is based on the error message that is generated by either the parser or XTS.
An error occurs while an XML kernel is processing an XML document. For example, the user name is invalid, the transaction is rolled back, and so on.	XML Dispatch uses XTS to transform the XML kernel generated error report when necessary.

XML Dispatch sends generated error reports to the corresponding transport process.

CHAPTER 6

Understanding XML Transformation Service

This chapter discusses:

- XML Transformation Service. (XTS)
- XTS process.
- Custom selectors.
- XTS jde.ini file configuration.

XML Transformation Service

The JD Edwards EnterpriseOne XML transformation system (XTS) uses extensible stylesheet language (XSL) to transform XML documents to the format that is required by JD Edwards EnterpriseOne. XTS also transforms JD Edwards EnterpriseOne response XML documents back to the XML format of the original request.

XTS is a multi-threaded Java process that runs as a JD Edwards EnterpriseOne kernel process. Upon system startup, the XTS kernel library loads a Java virtual machine (JVM). Once the JVM is loaded, the server proxy is started. Java Runtime Environment (JRE) v. 1.4 is included with the JD Edwards EnterpriseOne software.

XTS is available on all platforms that JD Edwards EnterpriseOne supports.

XTS Process

When the JD Edwards EnterpriseOne XML Dispatch kernel receives an XML document that it does not recognize, it sends the document to XTS for transformation. XTS reads the XSL, transforms the document to a format that is compatible with JD Edwards EnterpriseOne, and sends the document back to the XML Dispatch kernel for processing. When the JD Edwards EnterpriseOne response comes into XML Dispatch, XML Dispatch remembers that the document needs to be transformed from the JD Edwards EnterpriseOne XML format and sends the document to XTS for transformation. XTS transforms the JD Edwards EnterpriseOne XML document back to your original XML format and sends the document to XML Dispatch for distribution to you.

Native XML format is the XML format that is defined by JD Edwards EnterpriseOne and is documented in this guide. All XML documents coming into JD Edwards EnterpriseOne must be in native XML format. The JD Edwards EnterpriseOne kernel processes (such as, XML CallObject, XML trans, XML list, and so on) can only process XML documents that are in native format. As part of the XTS solution, JD Edwards EnterpriseOne provides a selector that determines whether a non-JD Edwards EnterpriseOne XML document can be transformed. A selector is code that looks at an XML document to see if it recognizes the document. If the selector recognizes the XML document, the selector is able to associate the XML document with a stylesheet that is provided for transformation. The selector is able to transform Version 1 XML format into JD Edwards EnterpriseOne native XML format. Version 1 XML format is XML format that is defined by JD Edwards EnterpriseOne but has been modified to be tool friendly. Native XML format uses a field name that is preceded by param name. Version 1 XML format uses just the field name.

Example: JD Edwards EnterpriseOne Native XML Format

This sample code shows JD Edwards EnterpriseOne native XML format:

```
<xml version='1.0'?>
<jdeRequest pwd='mike' type='callmethod' user='mike' environment='DV810'>
<callMethod app='test' name='GetPhone'>
<params>
<param name='mnAddressnumber'>4242a</param>
<param name= 'mnLinenumberid'></param>
<param name= 'cIncludeexcludecode2'></param>
<param name= 'szPhonenumber'>/param>
<param name= 'szPhoneareacode1'></param>
<param name= 'mnOKtoDelete'></param>
<param name= 'szPhonenumberType'></param>
</params>
</callMethod>
</jdeRequest>
```

Example: JD Edwards EnterpriseOne Version 1 XML Format

This sample code shows Version 1 XML format:

```
<?xml version=1.0 ?>
<intBPAPI>
<dsControl>
 <dsLogin>
  <User>JDESVR</User>
  <Password>JDESVR</Password>
  <Environment>ADEVNIS2</Environment>
  <Session />
 </dsLogin>
 <dsAPI>
  <Noun>jdeSalesOrder</Noun>
  <Verb>Create</Verb>
  <Version>1.1</Version>
 </dsAPI>
 <dsTranslation>
  <InMap />
  <OutMap />
 </dsTranslation>
```



```
</dsControl>
<dsData>
 <callMethod_GetLocalComputerId app="NetComm" runOnError="no">
  <szMachineKey id="2" />
  <onError_GetLocalComputerId abort="yes" />
 </callMethod_GetLocalComputerId>
<callMethod_F4211FSBeginDoc app="NetComm" runOnError="no">
 <mnCMJobNumber id="1" />
 <cCMDocAction>A</cCMDocAction>
 <cCMProcessEdits>1</cCMProcessEdits>
 <szCMComputerID idref="2" />
 <cCMUpdateWriteToWF>2</cCMUpdateWriteToWF>
 <szCMProgramID>NetComm</szCMProgramID>
 <szCMVersion>NetComm</szCMVersion>
 <szOrderType>SQ</szOrderType>
 <szBusinessUnit>M30</szBusinessUnit>
 <mnAddressNumber>4242</mnAddressNumber>
 <szReference>2</szReference>
 <cApplyFreightYN>Y</cApplyFreightYN>
 <szCurrencyCode>CAD</szCurrencyCode>
 <cWKSourceOfData />
 <cWKProcMode>1</cWKProcMode>
 <mnWKSuppressProcess>0</mnWKSuppressProcess>
 <onError_F4211FSBeginDoc abort="yes">
  <callMethod_F4211ClearWorkFile app="NetComm" runOnError="yes">
   <mnJobNo idref="1" />
   <szComputerID idref="2" />
   <mnFromLineNo>0</mnFromLineNo>
   <mnThruLineNo>0</mnThruLineNo>
   <cClearHeaderWF>2</cClearHeaderWF>
   <cClearDetailWF>2</cClearDetailWF>
   <szProgramID>NetComm</szProgramID>
   <szCMVersion>ZJDE0001</szCMVersion>
  </callMethod_F4211ClearWorkFile>
 </onError_F4211FSBeginDoc>
</callMethod_F4211FSBeginDoc>
 <callMethod_F4211FSEditLine app="NetComm" runOnError="yes">
  <mnCMJobNo idref="1" />
  <cCMLineAction>A</cCMLineAction>
  <cCMProcessEdits>1</cCMProcessEdits>
  <cCMWriteToWFFlag>2</cCMWriteToWFFlag>
  <szCMComputerID idref="2" />
  <mnLineNo>1</mnLineNo>
  <szItemNo>1001</szItemNo>
  <mnQtyOrdered>5</mnQtyOrdered>
  <cSalesTaxableYN>N</cSalesTaxableYN>
  <szTransactionUOM>EA</szTransactionUOM>
  <szCMProgramID>1</szCMProgramID>
  <szCMVersion>ZJDE0001</szCMVersion>
  <cWKSourceOfData />
```

```
  <onError_F4211FSEditLine abort="no" />
 </callMethod_F4211FSEditLine>
 <callMethod_F4211FSEndDoc app="NetComm" runOnError="no">
  <mnCMJobNo idref="1" />
  <szCMComputerID idref="2" />
  <szCMProgramID>NetComm</szCMProgramID>
  <szCMVersion>ZJDE0001</szCMVersion>
  <cCMUseWorkFiles>2</cCMUseWorkFiles>
  <mnSalesOrderNo id="3" />
  <szKeyCompany id="4" />
  <mnOrderTotal id="5" />
  <onError_F4211FSEndDoc abort="no">
   <callMethod_F4211ClearWorkFile app="NetComm" runOnError="yes">
    <mnJobNo idref="1" />
    <szComputerID idref="2" />
    <mnFromLineNo>0</mnFromLineNo>
    <mnThruLineNo>0</mnThruLineNo>
    <cClearHeaderWF>2</cClearHeaderWF>
    <cClearDetailWF>2</cClearDetailWF>
    <szProgramID>NetComm</szProgramID>
    <szCMVersion>ZJDE0001</szCMVersion>
   </callMethod_F4211ClearWorkFile>
  </onError_F4211FSEndDoc>
 </callMethod_F4211FSEndDoc>
 <returnParams failureDestination="error" successDestination="success"
runOnError="yes">
  <mnOrderNo idref="3" />
  <szOrderCo idref="4" />
  <mnWKOrderTotal idref="5" />
 </returnParams>
 <onError abort="yes">
  <callMethod_F4211ClearWorkFile app="NetComm" runOnError="yes">
   <mnJobNo idref="1" />
   <szComputerID idref="2" />
   <mnFromLineNo>0</mnFromLineNo>
   <mnThruLineNo>0</mnThruLineNo>
   <cClearHeaderWF>2</cClearHeaderWF>
   <cClearDetailWF>2</cClearDetailWF>
   <szProgramID>NetComm</szProgramID>
   <szCMVersion>ZJDE0001</szCMVersion>
  </callMethod_F4211ClearWorkFile>
 </onError>
</dsData>
</intBPAPI>
```

Custom Selectors

You can build a selector to transform your XML format into JD Edwards EnterpriseOne native XML format. If you write a custom selector, include both request and response extensible stylesheet language transformation (XSLT) documents.

Inside the Java file, the system uses two APIs to select templates. Use the boolean fetchTemplates API to fetch the appropriate XSLT document for the request document. Public boolean fetchTemplates throws IXTSMTemplateSelector.TemplateFetchException, XTSXMLParseException. This sample shows how to use this API:

```
fetchTemplates(XTSDocument  inXML,  IXTSMSelectionInfo  info)
```

Use the Public void fetchTemplates to fetch the appropriate XSLT document for the response document. Public void fetchTemplates throws IXTSMTemplateSelector.TemplateFetchException.

```
fetchTemplates(IXTSMSelectionInfo  info)
```

Note. Ensure that your custom selector is accessible in the ClassPath.

XTS APIs

When you write a custom selector, you can use these APIs to interface with JD Edwards EnterpriseOne:

- IXTSMTemplateSelector
- IXTSMTemplateSelector.TemplateFetchException

Example: Creating a Selector

This code was written by JD Edwards EnterpriseOne to build the Version 1 XML selector. This sample code uses the XTS.jar file. You can use this code as a sample for creating your selector:

```
File: XTSMJDETemplateSelector.java
//
////////////////////////////////////////////////////////////////////////////
package com.jdedwards.xts.xtsm;
import com.jdedwards.xts.xtsr.IXTSRepository;
import com.jdedwards.xts.xtsr.IXTSRKey;
import com.jdedwards.xts.xtsr.XTSRException;
import com.jdedwards.xts.xtsr.XTSRInvalidKeyStringException;
import com.jdedwards.xts.xtsr.XTSRInvalidKeyFieldException;
import com.jdedwards.xts.xtsr.XTSRKeyNotFoundException;
import com.jdedwards.xts.XTSDocument;
import com.jdedwards.xts.XTSFactory;
import com.jdedwards.xts.XTSLog;
import com.jdedwards.xts.XTSConfigurationException;
import com.jdedwards.xts.XTSXMLParseException;
import com.jdedwards.xts.xtsm.IXTSMTemplateSelector;
import com.jdedwards.xts.xtse.IXTSEngine;
import com.jdedwards.xts.xtse.IXTSECompiledProcessor;
import java.util.List;
import org.w3c.dom.*;
```

```
/**
* This class is the  Template Selector. It recognizes
* JD Edwards EnterpriseOne standard XML documents and returns the
* appropriate XSL stylesheets necessary for transformation.
*/
public class XTSMJDETemplateSelector implements IXTSMTemplateSelector
{
 /** Class constructor. */
 public XTSMJDETemplateSelector()
 {
  XTSLog.trace(XTSMJDETemplateSelector()'', 3);
  // get repository reference
  XTSFactory factory = XTSFactory.getInstance();
  m_repository = factory.createXTSRepository();
 }

 /**
 * Fetch the appropriate XSLT documents and IXTSECompiledProcessors as
 * indicated by the TPT stored in the <code>info</code> parameter.
 * @param info - Selection Info that contains TPI and should be modified
 * by the selector to specify transformation information.
 * @exception IXTSMTemplateSelector.TemplateFetchException - thrown
 * if an error occurs when extracting information from the
 * inclement.
 */
 public void fetchTemplates(IXTSMSelectionInfo info)
    throws IXTSMTemplateSelector.TemplateFetchException
 {
  XTSLog.trace("XTSMJDETemplateSelector.fetchTemplates(XTSMSelectionResult)",
3);
  NodeList nodes = info.getTPIElement().getElementsByTagName(JDE_TS_XTSR_KEY);
  int numNodes = nodes.getLength();
  for(int i = 0; i < numNodes; i++)
  {
    // extract key info & create a key
    IXTSRKey key = createKeyFromNode((Element)nodes.item(i));

    // fetch the doc and add it to the list
    try
    {
     info.getXSLList().add(m_repository.fetch(key));
    }
    catch (XTSRKeyNotFoundException e)
    {
     throw new IXTSMTemplateSelector.TemplateFetchException(
        "Selected XTSRKey not found in repository: "
        + JDE_TS_XTSR_KEY);
    }
    catch (XTSRException e)
    {
```



```
    throw new IXTSMTemplateSelector.TemplateFetchException(
       "Unable to fetch the XSL document specified within '"
       + JDE_TS_XTSR_KEY +
       "' from the XTSRepository");
   }
 }
}

/**
* Fetch the appropriate XSLT documents and compiled processors for
* the given document.
* @param inXML - the XTSDocument to try to recognize.
* @param info - Selection Info object to be modified by selector to
* indicate transformation information.
* @return - <code>true</code> if the selector has recognized the
* document and specified the appropriate selection info using
* <code>info</code>, <code>false</code> otherwise.
* @exception TemplateFetchException - thrown when an error occurs
* when trying to recognize the DOM.
* @exception XTSXMLParseException - thrown if <inXML> could not be
* parsed.
*/
public boolean fetchTemplates(XTSDocument inXML,
               IXTSMSelectionInfo info)
 throws IXTSMTemplateSelector.TemplateFetchException,
     XTSXMLParseException
{
 XTSLog.trace("XTSMJDETemplateSelector.fetchTemplates(Document, Element)", 3);
 boolean recognized = false;
 Document inDOM = inXML.getDOM();
 // see if an XTSR key is specified within the document:
 NodeList nodeList = inDOM.getElementsByTagName(JDE_XTSR_KEY);
 if (nodeList.getLength() > 0)
 {
   try
   {

    // extract key info & create a key
    IXTSRKey key = createKeyFromNode((Element)nodeList.item(0));

    // add transformation path information to outElement
    createNodeChildFromKey(info.getTPIElement(), key);

    // fetch the doc and add it to the list
    info.getXSLList().add(m_repository.fetch(key));

    info.setResultXML(true);
    info.setPathInfoStored(false);
    recognized = true;
   }
```

```
    catch (XTSRException e)
    {
     throw new IXTSMTemplateSelector.TemplateFetchException(
          "Unable to fetch the XSL document specified within '"
          + JDE_XTSR_KEY +
          "' from the XTSRepository");
    }
    catch (XTSRKeyNotFoundException e)
    {
     throw new IXTSMTemplateSelector.TemplateFetchException(
          "Key specified in TPI not found in repository"
          + JDE_XTSR_KEY);
    }
  }
  else // no XTSR key, so look for JDE information:
  {
    nodeList = inDOM.getElementsByTagName(JDE_INT_BPAPI);
    if (nodeList.getLength() != 0)
    {
     // add transformation path information to outElement
     createNodeChildFromKey(info.getTPIElement(), getVersion1toNativeKey());

     // fetch the doc and add it to the list
     info.getXSLList().add(getVersion1toNativeXSL());

     info.setResultXML(true);
     info.setPathInfoStored(true);
     recognized = true;
    }
  }
  return recognized;
}
/**
* Extracts XTSRKey information from the given node, and creates an
* instance of IXTSRKey based on that information.
* @return - the new IXTSRKey.
* @param element - Element that contains the key information.
* @exception XTSMUnrecognizedElementException - thrown if the
* Element format is unrecognized.
*/
protected IXTSRKey createKeyFromNode(Element element)
     throws XTSMUnrecognizedElementException
{
  XTSLog.trace("XTSMJDETemplateSelector.createKeyFromNode(Element)", 4);
  IXTSRKey key = null;
  boolean request = false;
  boolean response = false;
  if (element.getNodeName().equals(JDE_XTSR_KEY))
  {
    request = true;
```



```
 }
 else if (element.getNodeName().equals(JDE_TS_XTSR_KEY))
 {
   response = true;
 }
 if (request || response)
 {
   key = m_repository.createKey();
   try
   {
    String keyString = element.getAttribute(JDE_XTSR_KEY_ATTRIBUTE);
    key.setFieldsFromString(keyString);
    if (key.getFieldValue(SUBTYPE_FIELD).length() == 0)
    {
      if (request)
      {
       key.setFieldValue(SUBTYPE_FIELD, SUBTYPE_REQUEST);
      }
      else
      {
       key.setFieldValue(SUBTYPE_FIELD, SUBTYPE_RESPONSE);
      }
    }
   }
   catch (XTSRInvalidKeyStringException e)
   {
    throw new XTSMUnrecognizedElementException(
         "Specified '" + JDE_XTSR_KEY +
         "' element format is invalid for this XTSRepository");
   }
   catch (XTSRInvalidKeyFieldException e)
   {
    throw new XTSConfigurationException(
         "Specified '" + SUBTYPE_FIELD +
         "' field name not supported by repository key");
   }
 }
 return key;
}
/**
* Creates a node that contains the key fields values and appends it
* to the given parentNode.
* @param parentNode - Node to which the key information should be
* appended.
* @param key - Key information to store in the node.*/

protected void createNodeChildFromKey(Node parentNode, IXTSRKey key)
{
 XTSLog.trace("XTSMJDETemplateSelector.createKeyFromNode(Node,IXTSRKey)", 4);
 try
```

```
  {
    IXTSRKey keyClone = key.getRepository().createKey();
    keyClone.setFieldsFromString(key.getFieldsString());

    // Do not store the sub type, clear it here:
    keyClone.setFieldValue(SUBTYPE_FIELD, "");

    // create new node and append it to the provided element:
    Element element = (Element)parentNode.getOwnerDocument().createElement
(JDE_TS_XTSR_KEY);
    element.setAttribute(JDE_XTSR_KEY_ATTRIBUTE, keyClone.getFieldsString());
    parentNode.appendChild(element);
  }
  catch (XTSRInvalidKeyStringException e)
  {
    XTSLog.log("Unexpected ");
    XTSLog.log(e);
    throw new RuntimeException("Unexpected Exception: " + e.toString());
  }
 }

 /**
 * Returns the key of the stylesheet to use in converting
 * JD Edwards EnterpriseOne version 1 documents into EnterpriseOne native
 * documents.
 * @return - The key for the XSL stylesheet.
 */
 protected IXTSRKey getVersion1toNativeKey()
 {
  XTSLog.trace("XTSMJDETemplateSelector.getVersion1toNativeKey()", 5);
  if (null == m_version1ToNativeKey)
  {
    try
    {
     // create standard xsl XTSRKey:
     m_version1ToNativeKey = m_repository.createKey();
     m_version1ToNativeKey.setFieldsFromString(V1_TO_NATIVE_KEY);
    }
    catch (XTSRInvalidKeyStringException e)
    {
     String error = "XTSRKey necessary for JDE template selection is invalid: "
           + V1_TO_NATIVE_KEY;
     XTSLog.log(error);
     XTSLog.log(e);
     throw new XTSConfigurationException(error);
    }
  }
  return m_version1ToNativeKey;
 }
```



```
/**
* Returns the XTSDocument which contains the XSL stylesheet for
* converting JD Edwards EnterpriseOne version 1 documents into JD Edwards
* EnterpriseOne native documents.
* @return - XTSDocument containing the XSL stylesheet.
*/
protected IXTSECompiledProcessor getVersion1toNativeXSL()
{
 XTSLog.trace("XTSMJDETemplateSelector.getVersion1toNativeXSL()", 5);
 if (null == m_version1ToNativeXSL)
 {
   XTSDocument xsl = null;
   Try
   {
    xsl = m_repository.fetch(getVersion1toNativeKey());
    IXTSEngine engine = XTSFactory.getInstance().createXTSEngine();
    m_version1ToNativeXSL = engine.createCompiledProcessor(xsl);
   }
   catch (XTSRException e)
   {
    String error = "Unable to fetch selected template from the repository:";
    XTSLog.log(error);
    XTSLog.log(e);
    throw new XTSConfigurationException(error + e.toString());
   }
   catch (XTSRKeyNotFoundException knfe)
   {
    String error = "Selected template XTSRKey not found in repository:";
    XTSLog.log(error);
    XTSLog.log(knfe);
    throw new XTSConfigurationException(error + knfe.toString());
   }
   catch (XTSXMLParseException pe)
   {
    String error = "Invalid XSL document in repository";
    XTSLog.log(error);
    XTSLog.log(pe);
    throw new XTSConfigurationException(error + pe.toString());
   }
 }
 return m_version1ToNativeXSL;
}

/** Reference to the XTSRepository */
private IXTSRepository m_repository = null;

/** Key for converting version 1 documents to native documents. */
private IXTSRKey m_version1ToNativeKey = null;

/** Compiled XSL Stylesheet for converting version 1 docs to
```

```
 *  native docs. */
private IXTSECompiledProcessor m_version1ToNativeXSL = null;

/** Field Value for the XTSRKey that indicates the document is an XSL doc */
private static final String DOC_TYPE_XSL = "XSL";

/** Element name that indicates the DOM is a Version 1 document */
private static final String JDE_INT_BPAPI = "intBPAPI";

/** Element name that indicates the DOM is a request and not a
 *  response or error. */
private static final String JDE_REQUEST = "jdeRequest";

/** Element name that indicates the DOM is a response */
private static final String RESPONSE = "jdeResponse";

/** Element name that specifies an XTSRKey to use in transforming
 *  the document. */
private static final String JDE_XTSR_KEY = "jdeXTSRKey";

/** The attribute of the <code>JDE_XTSR_KEY</code> element that
 *  stores the XTSRKey string value */
private static final String JDE_XTSR_KEY_ATTRIBUTE = "key";

/** XTSRKey field name that specifies the sub-type of the XML
 * document. Normal values for the sub-type are defined by
 * <code>SUBTYPE_REQUEST</code> and <code>SUBTYPE_RESPONSE</code> */
private static final String SUBTYPE_FIELD = "SUB_TYPE";

/** XTSRKey field name which specifies the type of the XML document.
 *  The normal value is defined by <code>DOC_TYPE_XSL</code> */
private static final String FIELD_TYPE = "TYPE";

/** XTSRKey field name which specifies the format (or owner) of the
 *  XML document. The normal value recognized by this selector is
* 'JDE' */
private static final String FIELD_FORMAT = "FORMAT";

/** XTSRKey field name that specifies the particular transformation
 *  that the XSL document will perform. This selector uses
 *  'V1_NATIVE' for transformations between JD Edwards EnterpriseOne Version 1
 *  XML documents and JD Edwards EnterpriseOne native version documents. */
private static final String FIELD_ID = "ID";

/** The string representation of the XTSRKey for the XSL document to
 *  format JD Edwards EnterpriseOne version 1 request documents into
 *  JD Edwards EnterpriseOne native request documents. */
private static final String V1_TO_NATIVE_KEY = "XSL-JDE-V1_NATIVE-REQUEST";

/** XTSRKey field <code>SUBTYPE_FIELD</code> value that indicates
```



```
     *  the XSL document will transform jdeRequest documents. */
    private static final String SUBTYPE_REQUEST = "REQUEST";

    /** XTSRKey field <code>SUBTYPE_FIELD</code> value that indicates
     *  the XSL document will transform jdeResponse documents. */
    private static final String SUBTYPE_RESPONSE = "RESPONSE";

    /** Element name stored within the Transformation Path Information
     * (TPI)that specifies the XTSRKey used to transform the document. */
    private static final String JDE_TS_XTSR_KEY = "XTSJDETemplateKey";

    private static class XTSMUnrecognizedElementException
        extends IXTSMTemplateSelector.TemplateFetchException
    {
     public XTSMUnrecognizedElementException(String text)
     {
       super(text);
     }
    }
   }
```

XTS jde.ini File Configuration

The XTS Kernel must be defined in the server jde.ini file. The name of the configuration file is retrieved from the config_file system variable in the JVM. These property settings are part of a configuration file other than jde.ini. The jde.ini file does not require any special configurations other than to define the XTS Kernel.

[JDENET_KERNEL_DEF23]

These setting are for a Microsoft Windows platform:

```
krnlName=JDEXTS KERNEL
dispatchDLLName=xtskrnl.dll
dispatchDLLFunction=_JDEK_DispatchXTSMessage@28
maxNumberOfProcesses=1
numberOfAutoStartProcesses=0
```

This table provides the different .dll extensions for other platforms:

Table Column Heading	Dispatch DLL Name	Dispatch DLL Function
iSeries	XTSKRNL	JDEK_DispatchXTS
HP9000B	libxtskrnl.sl	JDEK_DispatchXTS
SUN or RS6000	libxtskrnl.so	JDEK_DispatchXTS

Other jde.ini File settings include:

- [JDENET]

- [XTSRepository]
- [XTS]

[JDENET]

Configure this setting:

```
maxKernelRanges=24
```

Note. For the XTS kernel to run, set the maxKernelRanges setting to 23 or higher.

[XTSRepository]

Configure these settings

```
XSL-JDE-V1_NATIVE-REQUEST=ml.xsl
XSL-JDE-V1_NATIVE-RESPONSE=lm.xsl
```

Note. The first setting is the JD Edwards EnterpriseOne default value that enables XSL to transform the request document from Version 1 to native. The second settings is the JD Edwards EnterpriseOne default value that enables XSL to transform the response document from native to version 1.

You can provide your XSL files either at this location or any other location as long as your selector can find and access your XSL. To add your XSL files to this location, use these naming convention, where Filename is the name of your XSL documents:

XSL-JDE-Filename-REQUEST=

XSL-JDE-Filename-RESPONSE=

[XTS]

This is an example setting:

```
XTSTemplateSelector1=com.jdedwards.xts.xtsm.XTSMJDETemplateSelector
XTSTraceLevel=2
```

Note. The XTSTemplateSelector1 setting is the JD Edwards EnterpriseOne default template selector for providing XSL to transform between Version 1 and native format.

You can add your custom template selector to this section. For example, your template selector setting could be defined as follows:

XTSTemplateSelector2=com.customer.CustomTemplateSelector

The XTSTraceLevel=2 setting defines the level of XTS logging.

CHAPTER 7

Understanding XML CallObject

This chapter discusses:

- XML CallObject.
- XML CallObject templates.
- XML CallObject process.
- XML CallObject document format.
- XML CallObject jde.ini file configuration.
- XML CallObject return codes.

XML CallObject

XML CallObject is XML-based interoperability that runs as a JD Edwards EnterpriseOne kernel process. You can also use XML CallObject with a messaging adapter. Some features of XML CallObject include:

- The ability to make business function calls to JD Edwards EnterpriseOne using XML documents.
- Business function templates and the ability to create your own templates.
- The ability to call multiple business functions using a single XML document.
- A simpler way of interfacing with JD Edwards EnterpriseOne as compared to using COM or Java APIs.

XML CallObject Templates

XML CallObject provides a blank template that you can complete to make CallObject requests for a given business function. You also have the option of creating your own custom XML documents.

To request an XML template for a given business function, you create an XML document that is a callMethod request type. When you make a CallObject template request, the response is the template that has information about all of the function parameters but is not populated with data values. The user, password, and session attribute values are blank so that you can cache the response for later use.

A CallObject template request is an exception to the convention that a jdeRequest returns a jdeResponse. Instead of data, you receive the template, which you use to make another CallMethod request. When you request a CallObject template, the request for the template is the only request that can be made in the XML document. The XML document must include the business function.

This example illustrates a request for a CallObject template:

```
<?xml version='1.0' ?>
<jdeRequest type='callmethod' user='steve' pwd='xyz' environment='prod'
role="*ALL" session=''>
<callMethodTemplate name='myfunc' app='P42101'/>
</jdeRequest>
```

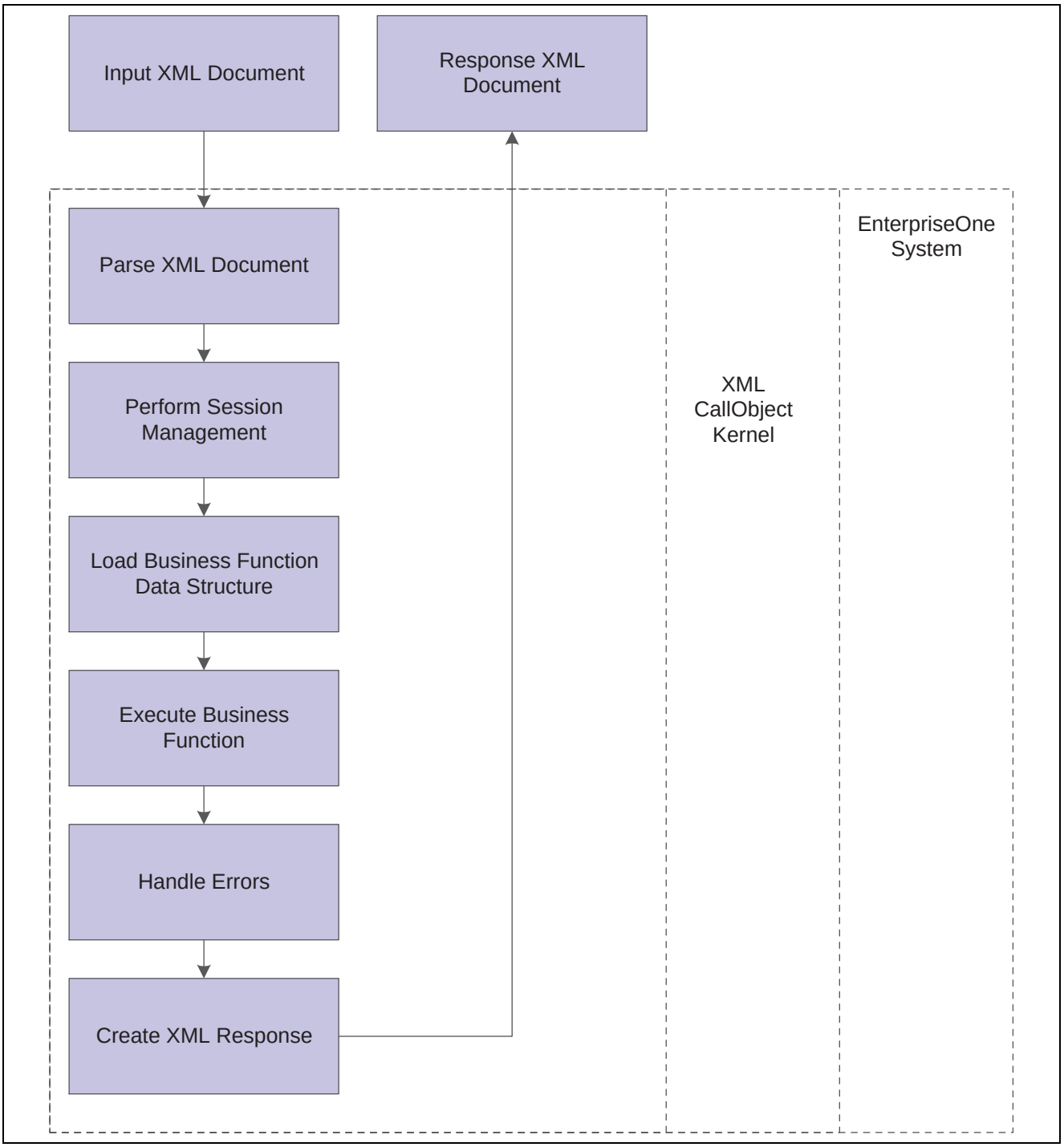
This example illustrates a response to a CallObject template request. This response can then be filled in with the appropriate information and sent back as a request.

```
<?xml version='1.0' ?>
<jdeRequest type='callmethod' user='' pwd='' environment='prod' role='*ALL'
session=''>
<callMethod name='myfunc' app='P42101'>
<params>
<param name='CostCtr'></param>
<param name='ExpDate'></param>
<param name='Quantity'></param>
</params>
</callMethod>
</jdeRequest>
```

See Appendix G: XML Format Examples (All Parameters)

XML CallObject Process

This diagram illustrates XML CallObject processing:



XML CallObject process flow

In summary:

- The JD Edwards EnterpriseOne server receives an XML document.
- XML CallObject processes the message by parsing the XML document.
- The session manager validates the user and password.
- Each requested business function is called separately or within requested transaction boundaries until all calls are processed.

- Output data and error messages are merged with the data from the input XML document and a new response document is created and sent to the originator.

XML CallObject Document Format

This section provides an overview for formatting XML CallObject documents and discusses these elements:

- Call Object
- OnError Handling
- Call Object Error Handling
- Error Text
- Multiple Requests per Document
- ID/IDREF Support
- Return NULL Values

XML CallObject Formatting Documents

Your XML document must have these elements at the beginning of the document:

- jdeRequest Type
- Establish Session
- Expire Session

Your XML document must end with Terminate Session.

Your XML CallObject document can also have these optional elements:

- Call Object
- On Error Handling
- Call Object Error Handling
- Error Text
- Multiple Requests per Document
- ID/IDREF Support
- Return NULL Values

Call Object

Tags are used to call business functions on the server.

This sample code shows how to use callObject:

```
<?xml version='1.0' ?>
<jdeRequest type='callmethod' user='steve' pwd='xyz' role='*ALL'
environment='prod'>
<callMethod name='myfunc' app='P42101'>
```



```
<params>
<param name='CostCtr'>    1001</param>
<param name='ExpDate'>1999/10/31</param>
<param name='Quantity'>12</param>
</params>
</callMethod>
</jdeRequest>
```

The callMethod element details which function to call and in what context it is being called. The name attribute specifies which business function to call, and the app attribute enables the business function to know who is calling it.

The params and param elements define the data structure of the business function. Each param element describes one data structure member. The caller is only required to give the name attribute.

If no param element value is given for an input data structure member, then the value will be treated as if it were NULL or zero.

OnError Handling

You can add an onError element to the callMethod request to take a specific action if an error occurs. The onError tag can specify an abort attribute that specifies whether all subsequent requests should be skipped. The allowed values are *yes* or *no* . A global onError tag can be specified as a child of the jdeRequest tag, which will be executed if errors were encountered and no other onError tag with *abort='yes'* was executed. The global onError tag should be the last request in the document.

```
<?xml version='1.0' ?>
<jdeRequest type='callmethod' user='steve' pwd='xyz' role='*ALL'
environment='prod' session=''>
<callMethod name='myfunc' app='P42101' trans='t1' runOnError='yes'>
<params>
<param name='CostCtr'>    1001</param>
</params>
<onError abort='no'>
<endTransaction trans='t1' action='rollback'/>
</onError>
</callMethod>
</jdeRequest>
```

Call Object Error Handling

System errors on a call object are reported in the returnCode element. The numeric code is returned in the code attribute, and the corresponding text is returned as a child text node of the returnCode element. The standard jdeCallObject return codes are used for the code attribute.

```
<?xml version='1.0' ?>
<jdeResponse type='callmethod' user='steve' pwd='xyz' role='*ALL'
environment='prod' session=''>
<callMethod name='myfunc' app='P42101' trans='t1'>
<params>
<param name='CostCtr'>    1001</param>
</params>
<returnCode code='0'>Success</returnCode>
```

```
</callMethod>
</jdeResponse>
```

Error Text

Business function error messages are returned in the errors element. Within the errors element, there can be zero or more error elements that contain a code attribute for the error code and a child text node that contains the error text. The name attribute describes the param element that is referred to by the error.

```
<?xml version='1.0' ?>
<jdeResponse type='callmethod' user='steve' pwd='xyz' role='*ALL'
environment='prod' session=''>
<callMethod name='myfunc' app='P42101' trans='t1'>
<params>
<param name='CostCtr'>    1001</param>
</params>
<returnCode code='2'>Errors</returnCode>
<errors>
 <error code='192' name='CostCtr'>Cost Center not valid</error>
</errors>
</callMethod>
</jdeResponse>
```

Multiple Requests per Document

You can include multiple requests in the XML document. Requests are not run if there have been any errors on previous requests. If a request should be run, even if errors have occurred, then you can override the default behavior by using the runOnError attribute on the request with a value of *yes*.

```
<?xml version='1.0' ?>
<jdeRequest type='callmethod' user='steve' pwd='xyz' role='*ALL'
environment='prod' session=''>
<callMethod name='myfunc' app='P42101' trans='t1' runOnError='yes'>
<params>
<param name='CostCtr'>    1001</param>
</params>
</callMethod>
</jdeRequest>
```

ID/IDREF Support

ID type attributes uniquely identify, by a string value, elements in a XML document. IDREF attributes enable other elements to reference the specified element. An IDREF attribute must not be used in a document before the ID it references is defined.

A param element can specify an ID attribute so that its output value from the callMethod request will be saved and referred to later in another param element by an IDREF attribute. If a param element contains an IDREF attribute, the value of the given parameter is used as the input value for the param element. For example, the output value from referenced parameter is used instead of the value in the XML.

```
<?xml version='1.0' ?>
<jdeRequest type='callmethod' user='steve' pwd='xyz' role='*ALL'
```



```
environment='prod' session=''>
<callMethod name='myfunc' app='P42101' trans='t1' runOnError='yes'>
<params>
<param name='CostCtr'>    1001</param>
<param name='Company1' id='c1'></param>
<param name='Company2' id='c2'></param>
</params>
</callMethod>
<callMethod name='myfunc2' app='P42101' trans='t1' runOnError='yes'>
<params>
<param name='Company1' idref='c1'></param>
</params>
<returnParams><param idref='c2'/></returnParams>
</callMethod>
</jdeRequest>
```

You can specify a special request tag called returnParams that can contain one or more param elements. If the param elements contain IDREF attributes, then the referenced values are copied into the response.

Return NULL Values

If a parameter was not specified in the request document, it will not be returned in the response document unless its value is non-blank or non-zero. This behavior can be modified by specifying the returnNullData attribute on the callMethod element with a value of yes.

```
<?xml version='1.0' ?>
<jdeRequest type='callmethod' user='' pwd='' role='*ALL' environment='prod'
session=''>
<callMethod name='myfunc' app='P42101' returnNullData='yes'>
<params>
<param name='CostCtr'></param>
<param name='ExpDate'></param>
<param name='Quantity'></param>
</params>
</callMethod>
</jdeRequest>
```

XML CallObject jde.ini File Configuration

The XML CallObject kernel must be defined in the jde.ini file.

[JDENET_KERNEL_DEF6]

This examples illustrates settings for a Microsoft Windows platform:

```
krnlName=CALL OBJECT KERNEL
dispatchDLLName=XMLCallObj.dll
dispatchDLLFunction=_XMLCallObjectDispatch@28
maxNumberOfProcesses=1
```

```
numberOfAutoStartProcesses=1
```

This table provides the different .dll extensions for other platforms:

Platform	dispatchDLLName	dispatchDLLFunction
iSeries	XMLCALLOBJ	XMLCallObjectDispatch
HP9000	libxmlcallobj.sl	XMLCallObjectDispatch
SUN or RS6000	libxmlcallobj.so	XMLCallObjectDispatch

Example: CallObject Request

This code sample shows a CallObject request:

```
<?xml version="1.0" encoding="utf-8" ?>
<jdeRequest pwd="JDE" type="callmethod" user="JDE" role="*ALL"
 session="" environment="M7333NIS2" sessionidle="1800">
<callMethod app="XMLTest" name="AddressBookMasterMBF">
 <params>
  <param name="cActionCode">A</param>
  <param name="cUpdateMasterFile">1</param>
  <param name="mnAddressBookNumber" idref="ABNumber" />
  <param name="szSearchType">C</param>
  <param name="szAlphaName">bobs</param>
  <param name="szMailingName">Bob's Shrimp boats</param>
  <param name="szAddressLine1">One Technology Way</param>
  <param name="szPostalCode">80237</param>
  <param name="szCity">Denver</param>
  <param name="szCounty">Denver</param>
  <param name="szState">CO</param>
  <param name="szCountry">US</param>
  <param name="cPayablesYNM">N</param>
  <param name="cReceivablesYN">Y</param>
  <param name="cEmployeeYN">N</param>
  <param name="cUserCode">N</param>
  <param name="cARAPNettingY">N</param>
  <param name="jdDateEffective">01/23/2001</param>
  <param name="szProgramId">EP01012</param>
  <param name="mnAddNumParentOriginal">0</param>
  <param name="szVersionconsolidated" idref=Version />
  <param name="szCountryForPayroll">US</param>
 </params>
</callMethod>
</jdeRequest>
```

Example: CallObject Response

This code sample shows a CallObject response:

```
<?xml version="1.0" encoding="UTF-8" ?>
```



```
<jdeResponse pwd="JDE" role="*ALL" type="callmethod" user="JDE"
session="2360.1049473980.6" environment="PDEVNIS2" sessionidle="1800">
<callMethod app="XMLTest" name="AddressBookMasterMBF">
<returnCode code="0" />
 <params>
  <param name="cActionCode">A</param>
  <param name="cUpdateMasterFile">1</param>
  <param name="mnAddressBookNumber">57322</param>
  <param name="szSearchType">C</param>
  <param name="szAlphaName">bobs</param>
  <param name="szMailingName">Bob's Shrimp boats</param>
  <param name="szBusinessUnit">1</param>
  <param name="szAddressLine1">One Technology Way</param>
  <param name="szPostalCode">80237</param>
  <param name="szCity">Denver</param>
  <param name="szState">CO</param>
  <param name="szCountry">US</param>
  <param name="cPayablesYNM">N</param>
  <param name="cReceivablesYN">Y</param>
  <param name="cEmployeeYN">N</param>
  <param name="cUserCode">N</param>
  <param name="cARAPNettingY">N</param>
  <param name="cAddressType3YN">N</param>
  <param name="cAddressType4YN">N</param>
  <param name="cAddressType5YN">N</param>
  <param name="jdDateEffective"/>
  <param name="szProgramId">EP01012</param>
  <param name="szVersionconsolidated">ZJDE0001</param>
  <param name="cEdiSuccessfullyProcess">0</param>
  <param name="szCountryForPayroll">US</param>
 </params>
</callMethod>
</jdeResponse>
```

XML CallObject Return Codes

This table provides XML CallObject return codes that can be returned from ThinNet APIs:

Code	Description
0	XML request OK.
1	Root XML element is not a jdeRequest or jdeResponse.

Code	Description
2	The jdeRequest user identification is unknown. Check the user, password, and environment attributes. or A callmethod request is missing the session attribute.
3	An XML parse error exists at line.
4	A fatal XML parse exists error at line.
5	An error occurred during parser initialization; the server is not configured correctly.
6	There is an unknown parse error.
7	The request session attribute is invalid.
8	The request type attribute is invalid.
9	The request type attribute is not given.
10	The request session attribute is invalid; the referenced process 'processid' no longer exists.
11	The jdeRequest child element is invalid or unknown.
12	The environment 'Env name' could not be initialized for user. Check user, password, and environment attribute values.
13	The jdeXMLRequest parameter is invalid.
14	The connection to JD Edwards EnterpriseOne failed.
15	The jdeXMLRequest send failed.
16	The jdeXMLResponse receive failed.
17	The jdeXMLResponse memory allocation failed.
99	An invalid BSFN name exists.

CHAPTER 8

Understanding XML Transaction

This chapter discusses:

- XML Transaction.
- XML Transaction update process.
- XML Transaction data request.
- XML Transaction jde.ini file configuration.

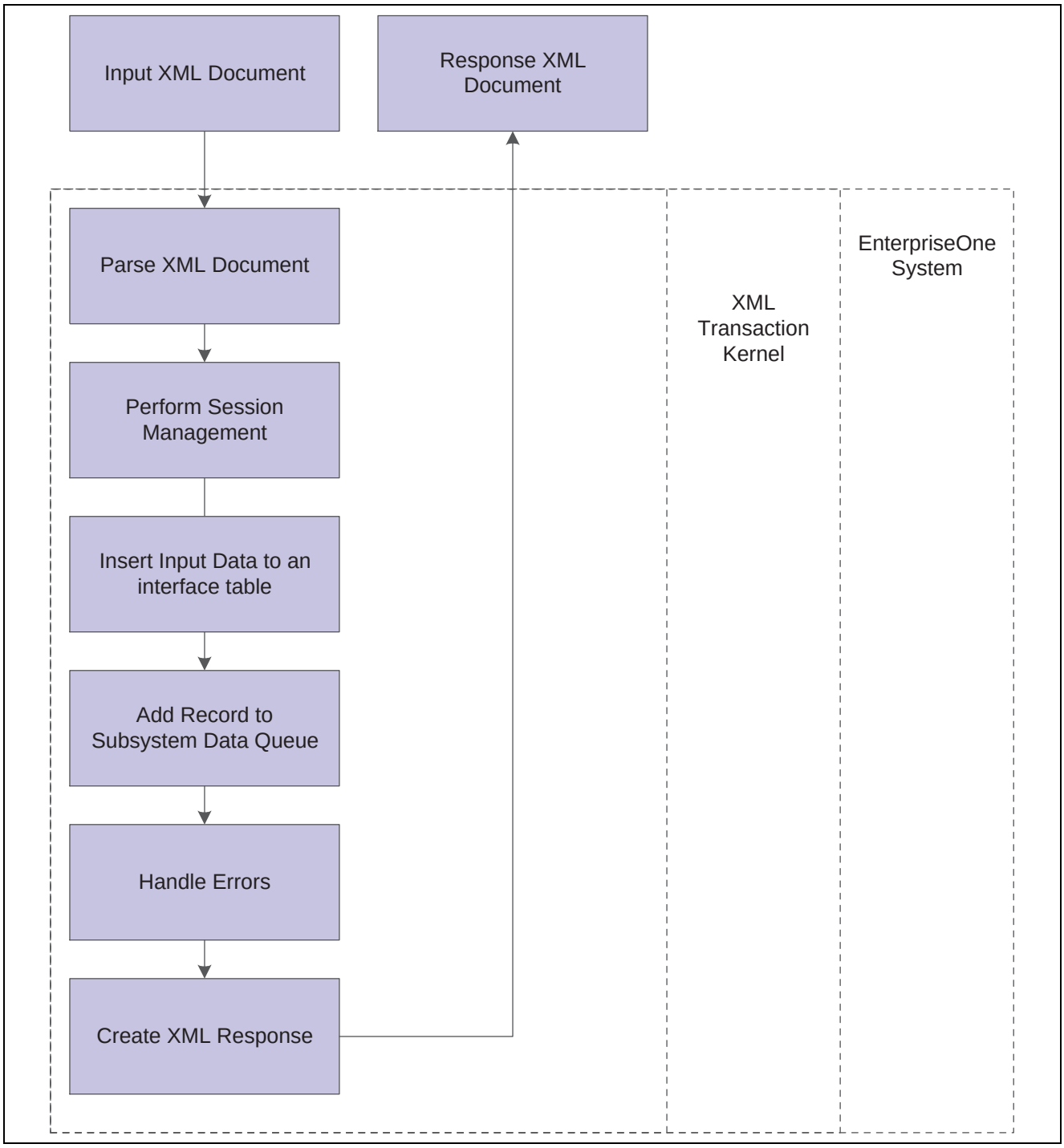
XML Transaction

XML Transaction is XML-based interoperability that runs as a JD Edwards EnterpriseOne kernel process. You also can use XML Transaction with a messaging adapter. XML Transaction interacts with interface tables (Z tables) to update the database or to retrieve data. You can create one XML document that includes both updates to and retrieval of data from JD Edwards EnterpriseOne.

XML Transaction Update Process

To insert data into JD Edwards EnterpriseOne, you use a formatted XML document. The XML document includes a predefined transaction type, such as JDEOPIN. The XML document identifies one or more JD Edwards EnterpriseOne interface tables and lists all of the data (data type and actual data values) to be updated.

This illustration shows the XML Transaction update process.



XML Transaction data update process flow

In summary:

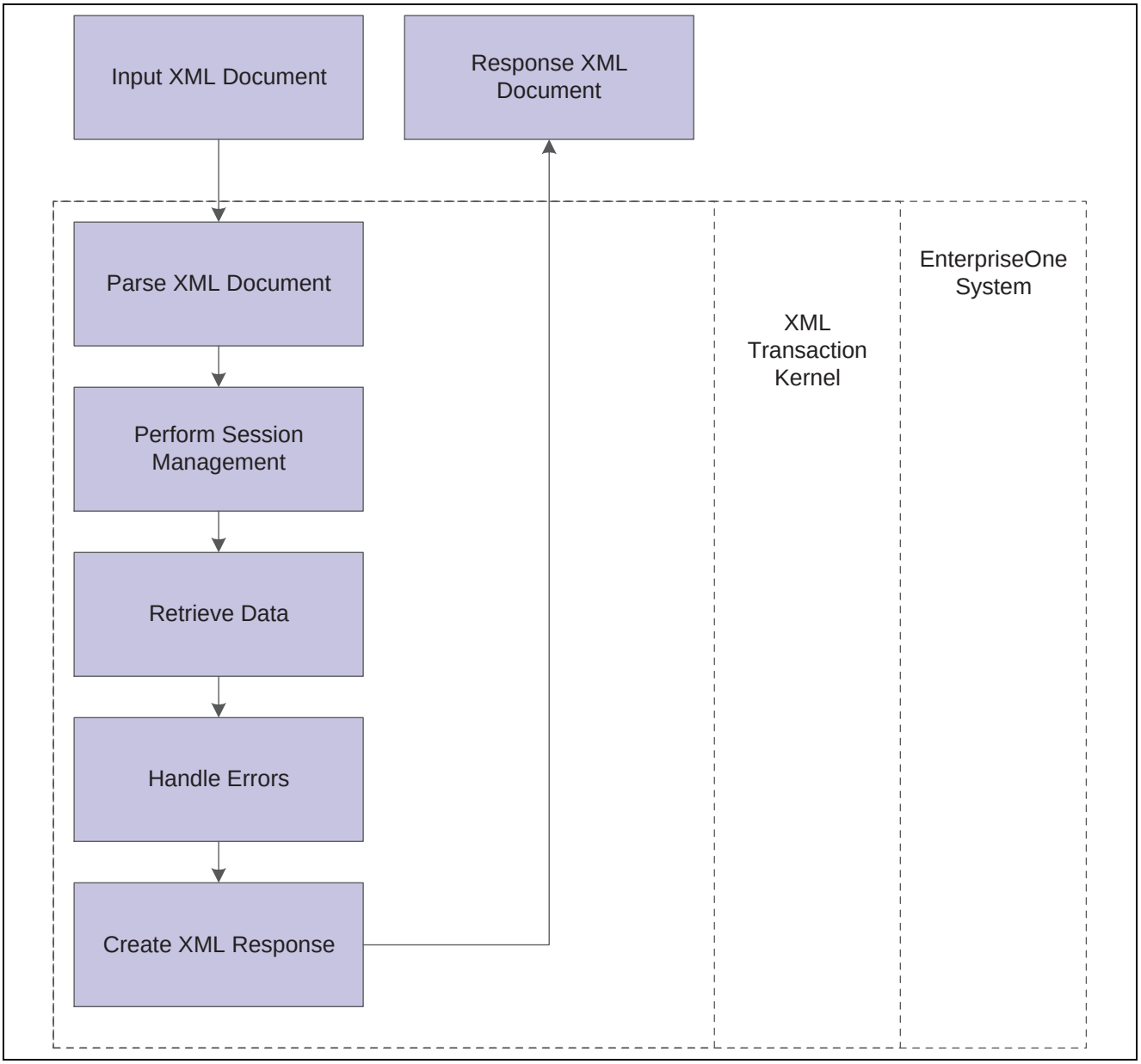
- A request in the form of an XML document contains a list of the data for a predefined transaction type.
- XML Transaction parses the XML inbound document and inserts the data into a JD Edwards EnterpriseOne inbound interface table.
- XML Transaction adds a subsystem data queue record to inform the JD Edwards EnterpriseOne subsystem to process the added record.

- The system sends a response to the requestor indicating whether the insertion into the interface table and the subsystem data queue addition were successful.

XML Transaction Data Request

To request data from JD Edwards EnterpriseOne, you use a formatted XML document. The XML document contains a transaction type, such as JDESOUT, and an index that identifies the data to be retrieved from the interface tables. You supply a template to retrieve the specific data.

This illustration shows the XML Transaction data request and response process:



XML Transaction data request process flow

In summary:

- A request in the form of an XML document contains the transaction type and an index of the requested data.
- XML Transaction parses the XML inbound document to get the transaction type and the index.
- XML Transaction retrieves the data from JD Edwards EnterpriseOne and inserts the data into interface tables.
- XML Transaction creates a response in the form of an XML document.

  The response is comprised of the interface table data records that match the transaction type and index. The response also contains any error messages that might have occurred.

XML Transaction jde.ini File Configuration

The XML Transaction kernel must be defined in the jde.ini file.

[JDENET_KERNEL_DEF15]

These settings re for a Microsoft Windows platform:

```
krnlName=XML TRANSACTION KERNEL
dispatchDLLName=XMLTransactions.dll
dispatchDLLFunction=_XMLTransactionDispatch@28
maxNumberOfProcesses=1
numberOfAutoStartProcesses=1
```

This table provides the different .dll extensions for other platforms:

Platform	dispatchDLLName	dispatchDLLFunction
iSeries	XMLTRANS	XMLTransactionDispatch
HP9000	libxmltransactions.sl	XMLTransactionDispatch
SUN or RS6000	libxmltransactions.so	XMLTransactionDispatch

Example: Outbound Order Status XML Request & Response Format

The XML transaction data request is created by the outbound function and sent to the XML transaction API. These code samples illustrate a sales order request and response.

The format in this XML Transaction request code sample returns all columns for the sales order header and detail lines:

```
<?xml version='1.0' ?>
<jdeRequest type='trans' user='user' pwd='password' environment='environment'
role='*ALL' session='' sessionidle='300'
<transaction action='transactionInfo' type='JDESOOUT'>
<key>
<column name='EdiUserId'>value</column>
<column name='EdiBatchNumber'>value</column>
<column name='EdiTransactNumber'>value</column>
</key>
</transaction>
```



```
</jdeRequest>
```

This code sample shows the XML Transaction response:

```
<?xml version='1.0' encoding='utf-8' ?>
<jdeResponse type='trans' user='user' role='*ALL' session='session1'
environment='env'>
 <transaction type='JDESOOUT' action='transactionInfo'>
    <returnCode code='0'>XML Request OK</returnCode>
    <key>
        <column name='EdiUserId'></column>
        <column name='EdiBatchNumber'></column>
        <column name='EdiTransactNumber'></column>
    </key>
    <table name='F4201Z1' type='header'>
        <column name='EdiUserId'></column>
        <column name='EdiBatchNumber'></column>

    </table>
    <table name='F4211Z1' type='detail'>
        <column name='EdiUserId'></column>
        <column name='EdiBatchNumber'></column>

    </table>
    <table name='F49211Z1' type='additionalHeader'>
        <WARNING>No record found</WARNING>
    </table>
 </transaction>
</jdeResponse>
```


CHAPTER 9

Understanding XML List

This chapter discusses:

- XML List.
- List-Retrieval Engine table conversion wrapper.
- XML List process.
- XML List requests.
- XML List Retrieval Engine jde.ini file configuration.
- XML List jde.ini file configuration

XML List

XML List is XML-based interoperability that runs as a JD Edwards EnterpriseOne kernel process. XML List provides List/GetNext functionality that enables you to collect a list of records from JD Edwards EnterpriseOne. XML List is built on the JD Edwards EnterpriseOne table conversion (TC) engine. XML List takes an XML document as a request and returns an XML document with the requested data. A list can represent data in a table, a business view, or data from a table conversion. Using data from a table conversion enables you to use multiple tables. By sending an XML document, you can retrieve metadata for a list, create a list, retrieve a chunk of data from a list, or delete a list. You can send the request through JDENet or third-party software to perform any of the these operations:

- CreateList
- GetTemplate
- GetGroup
- DeleteList

XML List provides both trivial and non-trivial List/GetNext APIs. A trivial List/GetNext API performs simple gets such as selecting data from a single table. A non-trivial API uses additional functionality such as event rules. Each non-trivial List/GetNextBPAPI must have a table conversion designed for it. The data selection and data sequencing can be defined in an XML request at runtime.

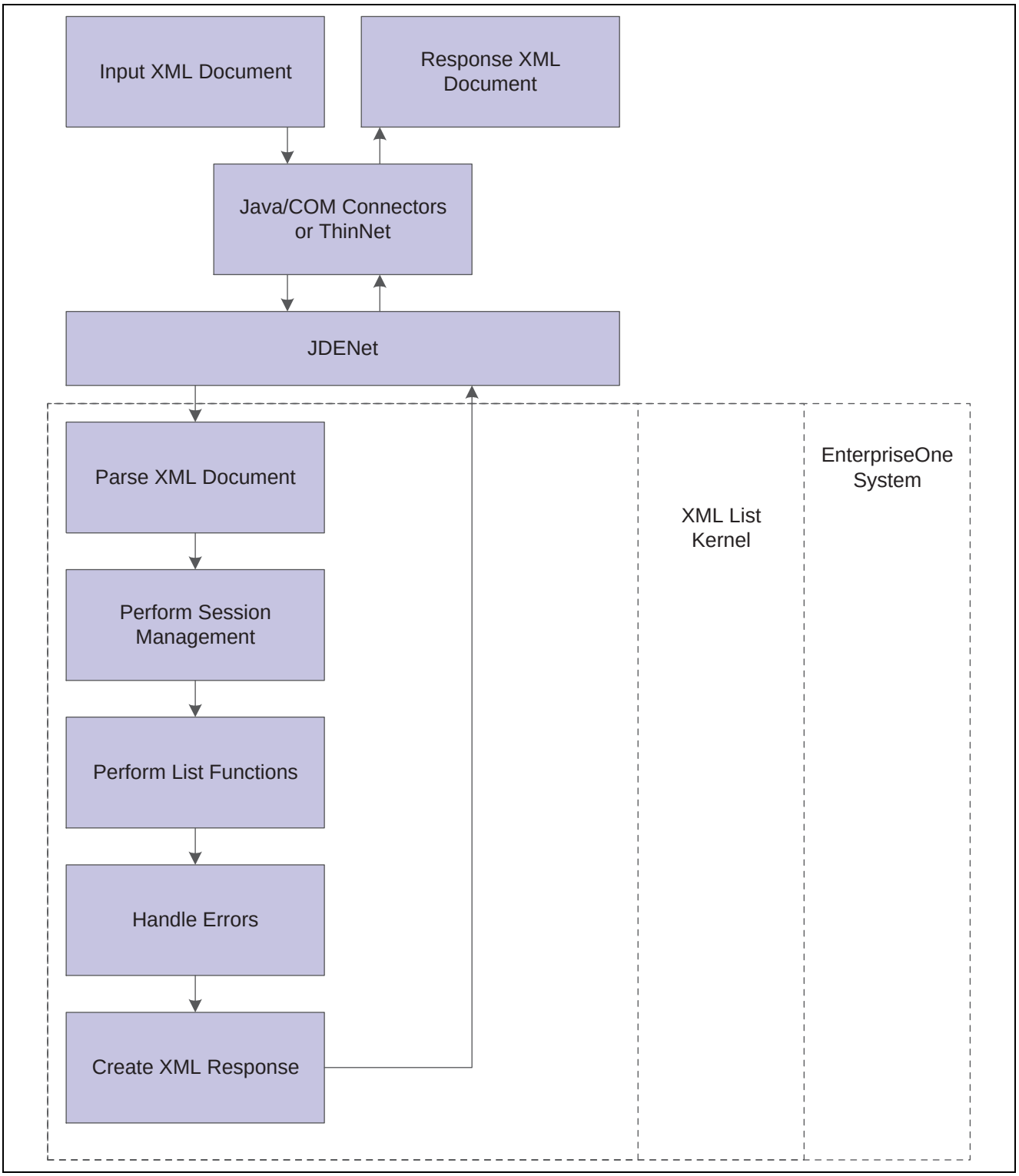
XML List provides a list-retrieval engine that enables you to create an XML data file in the system repository and then retrieve the data in small chunks.

List-Retrieval Engine Table Conversion Wrapper

A list-retrieval engine is an optimized database engine that provides and manages access to XML repository files. Each XML list repository file is a pair of index and data files with *.idb and *.ddb extensions. The .idb file keeps an index that is generated on a data file, and the .ddb file keeps data that is generated by the table conversion engine. TCWrapper is a system module that aggregates list-retrieval and list-processing APIs from TCEngine and list-retrieval engine and provides a uniform access to the data for XML List.

XML List Process

This illustration shows the XML List process for both a trivial and non-trivial XML List request:



XML List process flow

In summary:

- JDENet receives the XML document.
- JDENet passes the XML document to the XML List kernel.

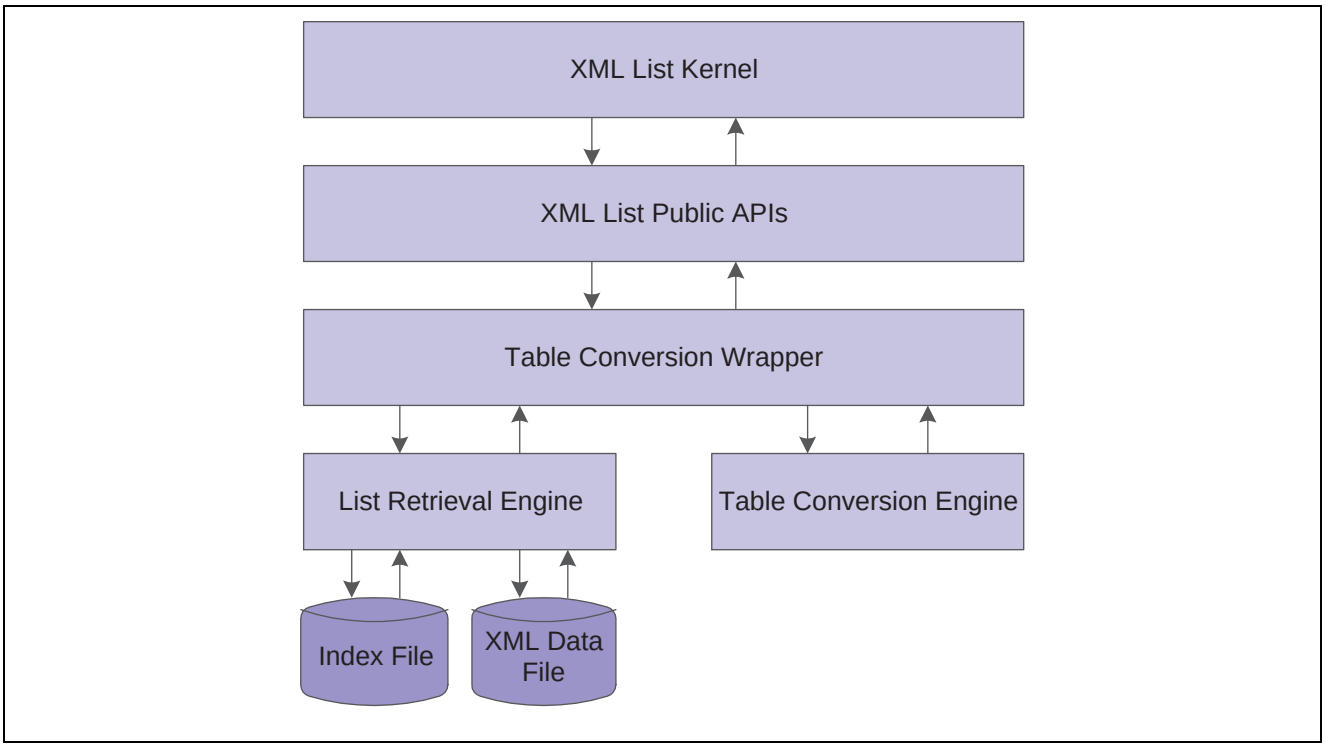
- If the request is for CreateList or GetTemplate, XML List creates a session.
- If the request is a trivial request, XML List retrieves the data and creates a response message to send to the requestor.
- If the request is a non-trivial request, XML List kernel passes the request to the appropriate API:
  - GetTemplate
  - CreateList
  - GetGroup
  - DeleteList
- A table conversion wrapper processes data retrieved as a result of a non-trivial request. The table conversion wrapper aggregates list-retrieval and list-processing APIs from the table conversion engine and the list-retrieval engine to provide a uniform access to the data.

XML List Requests

You can make any of these requests using XML List:

XML List Request	Description
GetTemplate	Send a request to retrieve metadata information for a list so that you can add data selection and data sequencing to the CreateList request.
CreateList	Send a request with TC/Table name along with data selection and sequencing. The response is an XML document that has a handle and size that is associated with the created list in the repository.
GetGroup	Send a request to retrieve data from the generated list by the previous CreateList request. GetGroup passes the handle value and range of records to be retrieved.
DeleteList	Send a request to delete a list from the repository.

This illustration shows the various components in list operations:



XML List operations components

Creating a List

This code example illustrates using CreateList for an XML request with the TC Name/Table Name and data selection and sequencing. The system returns an XML response with a handle that is associated with the created list:

```
<?xml version="1.0"?>
<jdeRequest type="list" user="JDE" pwd="JDE" environment="PRODHP01"
role='*ALL' session="" sessionidle="">
 <ACTION TYPE="CreateList">
  <TC_NAME VALUE=""/>
  <TC_VERSION VALUE=""/>
  <FORMAT VALUE="UT"/>
    <RUNTIME_OPTIONS>
    <DATA_SELECTION>
     <CLAUSE TYPE="WHERE">
       <COLUMN NAME="" TABLE="" INSTANCE="" ALIAS=""/>
       <OPERATOR TYPE="EQ"/>
       <OPERAND>
        <COLUMN NAME="" TABLE="" INSTANCE="" ALIAS=""/>
        <LITERAL VALUE=""/>
        <LIST>
          <LITERAL VALUE=""/>
        </LIST>
        <RANGE>
          <LITERAL_FROM VALUE=""/>
          <LITERAL_TO VALUE=""/>
        </RANGE>
```

```
        </OPERAND>
      </CLAUSE>
<CLAUSE TYPE="OR">
        <COLUMN NAME="" TABLE="" INSTANCE="" ALIAS=""/>
        <OPERATOR TYPE="EQ"/>
        <OPERAND>
         <COLUMN NAME="" TABLE="" INSTANCE="" ALIAS=""/>
         <LITERAL VALUE=""/>
         <LIST>
           <LITERAL VALUE=""/>
         </LIST>
         <RANGE>
           <LITERAL_FROM VALUE=""/>
           <LITERAL_TO VALUE=""/>
         </RANGE>
        </OPERAND>
      </CLAUSE>
     </DATA_SELECTION>
     <DATA_SEQUENCING>
      <DATA SORT="ASCENDING">
        <COLUMN NAME="Product Code" TABLE="F0004" INSTANCE="" ALIAS=""/>
      </DATA>
     </DATA_SEQUENCING>
   </RUNTIME_OPTIONS>
  </ACTION>
</jdeRequest>
```

Either TC_NAME and TC_VERSION or TABLE_NAME and TABLE_TYPE must be defined in the request. TABLE_TYPE can be one of these:

- OWTABLE
- OWVIEW
- FOREIGN_TABLE

The CLAUSE can be WHERE, OR, or AND to simulate an SQL statement.

You can specify the COLUMN NAME with any meaningful name to help recognize the real column name in the table, which should be defined in ALIAS. The values of TABLE, INSTANCE, and ALIAS should be the same as those in the XML response that is returned by a GetTemplate request. For example, if Column X is in the data selection, it should be <COLUMN NAME=My column TABLE=F9999 INSTANCE=0 ALIAS=X/> because information is returned by a GetTemplate request and is similar to this example:

```
<COLUMN NAME="X" ALIAS="X" TYPE="String" LENGTH="32" TABLE="F9999" INSTANCE="0">
```

The OPERATOR uses values of EQ, NE, LT, GT, LE, GE, IN, NI, BW (between) or NB.

The OPERAND node can contain one of the these supported element types:

- Column
- Literal
- List
- Range

This XML node, which is a template fragment that should be used with only *one* of the supported elements, shows the supported elements in the OPERAND node (in bold type):

```
<CLAUSE TYPE="WHERE">
 <COLUMN NAME="UserDefinedCodes" TABLE="F0005" INSTANCE="" ALIAS="RT"/>
 <OPERATOR TYPE="EQ"/>
 <OPERAND>
    <COLUMN NAME="" TABLE="" INSTANCE="" ALIAS="null"/>
    <LITERAL VALUE="P4"/>
    <RANGE>
    </RANGE>
 </OPERAND>
</CLAUSE>
```

These sample XML nodes show the operator type and the operand using the different supported elements.

If the operand is a COLUMN, populate the COLUMN element. For example:

```
<CLAUSE TYPE="WHERE">
 <COLUMN NAME="DRSY" TABLE="F0005" INSTANCE="0" ALIAS="SY"/>
 <OPERATOR TYPE="EQ"/>
 <OPERAND>
    <COLUMN NAME="DRRT" TABLE="F0005" INSTANCE="0" ALIAS="RT"/>
 </OPERAND>
</CLAUSE>
```

If the operand is a LITERAL, populate the LITERAL element. For example:

```
<CLAUSE TYPE="WHERE">
 <COLUMN NAME="DRSY" TABLE="F0005" INSTANCE="0" ALIAS="SY"/>
 <OPERATOR TYPE="EQ"/>
 <OPERAND>
    <LITERAL VALUE="08"/>
 </OPERAND>
</CLAUSE>
```

If the operand is a LIST, populate the element LIST. LIST should be used with IN or NI. For example:

```
<CLAUSE TYPE="WHERE">
 <COLUMN NAME="DRSY" TABLE="F0005" INSTANCE="0" ALIAS="SY"/>
 <OPERATOR TYPE="IN"/>
 <OPERAND>
    <LIST>
        <LITERAL VALUE="08"/>
        <LITERAL VALUE="09"/>
    </LIST>
 </OPERAND>
</CLAUSE>
```

If the operand is a RANGE, populate the element RANGE. RANGE should be used with BW or NB. For example:

```
<CLAUSE TYPE="WHERE">
 <COLUMN NAME="DRSY" TABLE="F0005" INSTANCE="0" ALIAS="SY"/>
 <OPERATOR TYPE="BW"/>
 <OPERAND>
    <RANGE>
```

```
        <LITERAL_FROM VALUE="08"/>
        <LITERAL_TO VALUE="10"/>
    </RANGE>
 </OPERAND>
</CLAUSE>
```

The XML response for a CreateList request is similar to this:

```
<?xml version="1.0"?>
<jdeResponse type="list" session="5665.931961929.454">
<returnCode code="0">XMLRequest OK</returnCode>
 <ACTION TYPE="CreateList">
          <TABLE_NAME VALUE="F0005">
    <HANDLE>"1r4670001"</HANDLE>
    <SIZE>773</SIZE>
 </ACTION>
</jdeResponse>
```

The value of HANDLE can be published and referenced in a GetGroup or DeleteList request.

Retrieving Data from a List

You can retrieve data from a list generated by a previous CreateList request by using a GetGroup request. The HANDLE, FROM VALUE, and TO VALUE can be defined in the request:

```
<?xml version="1.0"?>
<jdeRequest type="list" user="JDE" pwd="JDE" role="*ALL" environment="PRODHP01">
 <ACTION TYPE="GetGroup">
  <HANDLE VALUE="lr4670001"/>
  <FROM VALUE="10"/>
  <TO VALUE="50"/>
 </ACTION>
</jdeRequest>
```

The XML response lists records falling into the range specified. The default FROM value is the first record and the default TO value is the last record in the list. For a GetGroup request for the whole list, no FROM and TO values need to be specified. In this sample code, the response returns the records in the list from #10 to #50:

```
<?xml version="1.0"?>
<jdeResponse type="list">
<returnCode code="0">XMLRequest OK</returnCode>
<ACTION TYPE="GetGroup">
<HANDLE VALUE="lr4670001"/>
   <FROM VALUE="10"/>
   <TO VALUE="50"/>
 <Format name="Standard"><Column name="X">abc</Column><Column name="Y">
edf</Column></Format>
 00
 </ACTION>
</jdeResponse>
```

Deleting a List

A list can be deleted if all GetGroup requests are done:


```
<?xml version="1.0"?>
<jdeRequest type="list" user="JDE" pwd="JDE" role="*ALL" environment="PRODHP01">
 <ACTION TYPE="DeleteList">
   <HANDLE VALUE="lr4670001"/>
 </ACTION>
</jdeRequest>
```

The list result defined in the HANDLE is deleted from the storage and a response with the status is returned to the caller:

```
<?xml version="1.0"?>
<jdeResponse type="list">
<returnCode code="0">XMLRequest OK</returnCode>
 <ACTION TYPE="DeleteList">
<HANDLE VALUE="lr4670001"/>
   <STATUS>OK</STATUS>
 </ACTION>
</jdeResponse>
```

Getting Column Information for a List

You can send a GetTemplate request to get the column information for a list so that data selection and sequencing can be added to the CreateList request. If OUTPUT is defined in the TEMPLATE_TYPE, the response is only for those columns in the XML output generated by a CreateList request based on the table conversion. For a trivial table conversion, both templates should be the same. The default template type is INPUT if no tag is specified.

```
<?xml version="1.0"?>
<jdeRequest type="list" user="JDE" pwd="JDE" role="*ALL"
environment="PRODHP01" session="" sessionidle="">
 <ACTION TYPE="GetTemplate">
  <TABLE_NAME VALUE="F0004"/>
  <TABLE_TYPE VALUE="OWTABLE"/>
  <TEMPLATE_TYPE VALUE="OUTPUT"/>
 </ACTION>
</jdeRequest>
```

The response for the input template lists all of the columns with alias name, type and the length of the data type, even though the length is only meaningful for the string type.

```
<?xml version="1.0"?>
<jdeResponse type="list" session="5665.931961929.454">
<returnCode code="0">XMLRequest OK</returnCode>
 <ACTION TYPE="GetTemplate">
  <TABLE_NAME VALUE="F0004"/>
  <TABLE_TYPE VALUE="OWTABLE"/>
  <TEMPLATE_TYPE VALUE="INPUT"/>
  <COLUMN Name="Address" Alias="X" TYPE="String" LENGTH="32" TABLE="F9999"
INSTANCE="0">
 </ACTION>
</jdeResponse>
```

List-Retrieval Engine jde.ini File Configuration

The list-retrieval engine uses a predefined folder as its system directory to keep and manage repository files. This system directory should be configured in jde.ini file as follows:

```
[LREngine]
System=C:\output
Repository_Size=20 (allocates percentage of disk free space for XML list
repository)
Disk_Monitor=Yes (monitors free space on the disk)
```

Note. The engine uses the IFS file system on iSeries, so a corresponding system subsection must be set up.

The [SECURITY] section of the jde.ini file should also be configured. The default environment, password, and user settings should be filled in for the engine to validate the default user and to initialize the default environment.

XML List jde.ini File Configuration

The XML List kernel must be defined in the jde.ini file.

[JDENET_KERNEL_DEF16]

Use these settings for a Microsoft Windows platform:

```
krnlName=XML LIST
dispatchDLLName=xmllist.dll
dispatchDLLFunction=_XMLListDispatch@28
maxNumberOfProcesses=3
beginningMsgTypeRange=5257
endingMsgTypeRange=5512
newProcessThresholdRequest=0
numberOfAutoStartProcesses=1
```

This table provides the different .dll extensions for other platforms:

Platform	dispatchDLLName	dispatchDLLFunction
iSeries	XMLLIST	XMLListDispatch
HP9000	libxmllist.sl	XMLListDispatch
SUN or RS6000	libxmllist.so	XMLListDispatch

CHAPTER 10

Processing Z Transactions

This chapter provides an overview of Z Transactions and discusses how to:

- Name the transaction.
- Add records to the inbound interface table.
- Run an update process.
- Check for errors.
- Confirm the update (option, user supplied).
- Purge data from the interface table.

Understanding Z Transactions

Z transactions are non-JD Edwards EnterpriseOne information that is properly formatted in the interface tables (Z tables) for updating to the JD Edwards EnterpriseOne database. Interface tables are working tables that mirror JD Edwards EnterpriseOne applications tables. JD Edwards EnterpriseOne provides predefined interface tables for some application transactions. You also can create your own interface tables as long as they are formatted according to JD Edwards EnterpriseOne standards.

You can process Z transactions into JD Edwards EnterpriseOne one transaction at a time (referred to as a batch of one), or you can place a large number of transactions into the interface table and then process all of the transactions at one time (referred to as a true batch).

See Also

Appendix F, "Interoperability Interface Table Information," Interoperability Interface Table Information, page 247

Naming the Transaction

Z transaction types are defined in user-defined code 00/TT. If you create a new transaction, you must define the transaction in user-defined code 00/TT. When you name a new transaction type, the name must start with JDE and can be up to eight characters in length. These examples illustrate a proper transaction name:

- JDERR for Receipt Routing Transaction.
- JDEWO for Work Order Header Transaction.

Adding Records to the Inbound Interface Table

When you write your transaction to the appropriate interface table, you make the information available to JD Edwards EnterpriseOne for processing. Z transactions may be written directly to interface tables that are already in the EnterpriseOne database format. This list shows some of the ways that you can add records to the inbound interface tables:

- Create a flat file and then convert the flat file data into records in the interface table.

  See Chapter 11, "Using Flat Files," Understanding Flat Files, page 81.

- Write an Application Programming Interface (API) using JD Edwards EnterpriseOne-published APIs to update the interface table.

  See *JD Edwards EnterpriseOne Tools 8.96 Development Tools: APIs and Business Functions Guide*, "Working with APIs," API Fundamentals.

- Use Electronic Data Interchange (EDI) to update the interface table.

  See *JD Edwards EnterpriseOne Data Interface for Electronic Data Interchange 8.12 Implementation Guide.*

- Place a message in a WebSphere MQ or MSMQ messaging adapter.

  See Chapter 12, "Understanding Messaging Queue Adapters," JD Edwards EnterpriseOne and Messaging Queue Systems, page 91.

- Use Structured Query Language (SQL) or stored procedures. You must be able to convert your records to the JD Edwards EnterpriseOne interface table format.

Important! If you are using a flat file to add records to the JD Edwards EnterpriseOne interface tables, verify that a version of the Inbound Flat File Conversion (R47002C) program exists for the transaction you are trying to create.

Running an Update Process

You can process Z transactions in one of these ways:

- Run an input batch process, which enables you to place a large number of transactions into the interface table and then process all of the transactions at one in batch mode.
- Run a subsystem job, which enables you to send transactions to JD Edwards EnterpriseOne one at a time without having to wait for completion to continue processing using the subsystem.

JD Edwards EnterpriseOne provides input batch and input subsystem processes for some applications.

Running an Input Batch Process

The input batch process enables you to place one or more records in an interface table and then run a UBE to process all of the records at one time. You initiate the input batch process for an application that supports inbound interoperability processing. When you select the input batch program, the program displays a version list of report features. You can use an existing report version, change an existing report version, or add a report version. You can change the processing options and data selection when you use a report version. The input batch process program generates an audit report that lists the transactions that were processed, totals for the number of processed transactions, and errors that occurred during processing.

Running a Subsystem Job

Subsystem jobs are continuous jobs that process records from a data queue and run until you terminate the job. Subsystem jobs read records one at a time for a subsystem table, retrieve information from that particular record, and run a UBE or table conversion for each record. This triggers the inbound processor batch process that processes that specific key. If required, a preprocessor runs from the inbound processor batch process to establish key information that matches the interface table record to the original application record (for example, the key to a cash receipt or purchase receipt). After processing the last record, instead of ending the job, subsystem jobs wait for a specific period and then attempt to retrieve a new record. For each subsystem job, multiple records can exist in the subsystem table.

You can schedule subsystem jobs.

You initiate a subsystem job in one of these ways:

Ways to Initiate Subsystem Jobs	Explanation
Use a business function	You can use the generic subsystem business function, Add Inbound Transaction to Subsystem Queue (B0000175), for inbound transactions. This function writes a record to the F986113 table to specify a batch process that needs to be awakened in the subsystem. The business function also passes keys to the subsystem data queue. The business function then starts processing the transaction.
Use the Solution Explorer	You can use the Solution Explorer to initiate the input subsystem batch process for an application that supports inbound interoperability processing. You start the subsystem job as you would a regular batch job. Unlike other batch jobs, subsystem jobs can only run on a server. Before processing, JD Edwards EnterpriseOne makes sure that limits for the subsystem job on the particular server have not been exceeded. If limits have been exceeded, the subsystem job will not be processed. To process your Z transaction in near real-time mode, start the subsystem when you start your system. You will need to place your request in the data queue before you write your transaction to the interface table.

Important! Instead of ending the job after the records have been processed, subsystem jobs look for new data in the data queue. Subsystem jobs run until you terminate them.

See Also

JD Edwards EnterpriseOne Tools 8.96 System Administration Guide, "Using the Scheduler Application," Understanding the Scheduler Application

JD Edwards EnterpriseOne Tools 8.96 System Administration Guide, "Working with Servers," Understanding JD Edwards EnterpriseOne Subsystems

Checking for Errors

The input batch process uses the data in the interface tables to update the appropriate JD Edwards EnterpriseOne application tables as dictated by the business logic. If the process encounters an error for the transaction, the record is flagged in the processor audit trail report and error messages are sent to the employee work center in the form of action messages. These action messages, when invoked, call a revision application that enables you to make corrections to the interface table.

When you review the errors in the work center, you can link directly to the associated transaction in the interface table to make corrections. You use a revision application to resubmit individual corrected transactions for immediate processing, or you can correct all transaction errors and then resubmit them all at once in a batch process.

The system flags all transactions that have been successfully updated to the live files as successfully processed in the interface tables.

See Also

Chapter 17, “Using Batch Interfaces,” Using the Revision Application, page 152

Confirming the Update

This step is optional. If you use a business function, you can provide a confirmation function to alert you that a transaction you sent into the JD Edwards EnterpriseOne system been processed. When processing is complete, JD Edwards EnterpriseOne calls the function that is specified in the request to notify you of the status of your process. The confirmation functions are written to your specifications, but you must use the JD Edwards EnterpriseOne defined data structure. Interoperability inbound confirmation functions are called from the inbound processor batch program through the Call Vendor-Specific Function - Inbound business function.

The confirmation function is specific to a process and must accept these parameters:

User ID	11 characters
Batch Number	16 characters
Transaction Number	23 characters
Line Number	Double
Successfully Processed	1 characters

The first four parameters are the keys (EDUS, EDBT, EDTN, EDLN) to the processed transaction. The last full path of the library containing the function must be passed to the subsystem batch process that processes the transaction. This information is passed through the inbound transaction subsystem data structure.

After the subsystem batch process finishes processing the transaction, it calls the inbound confirmation function, passing the keys to the processed transaction and the notification about whether the transaction was successfully processed. You include logic in your function to take appropriate action based on the success or failure of the transaction.

If you create a transaction confirmation function, you can also use the function to perform any of these tasks:

Task	Explanation
Update your original transaction	By creating a cross-reference between the original transaction and the transaction written to the interoperability table, you can access the original transaction and update it as completed or at an error status. Using the key returned to this function, you can access the transaction that is written to the interoperability interface table and retrieve any calculated or default information to update your original transaction.
Run other non-JD Edwards EnterpriseOne business processes	If your transaction is complete, you might want to run a business process that completes the transaction in the non-JD Edwards EnterpriseOne software.
Send messages to users	You might want to inform your users of the status of their original transactions.

Purging Data from the Interface Table

You should periodically purge records that have been successfully updated to the JD Edwards EnterpriseOne database from the interface tables.

See Also

Appendix F, “Interoperability Interface Table Information,” Interoperability Interface Table Information, page 247

Chapter 17, “Using Batch Interfaces,” Purging Interface Table Information, page 152

CHAPTER 11

Using Flat Files

This chapter provides an overview of flat files and discusses how to:

- Format flat files.
- Set up flat files.
- Convert flat files using the Flat File Conversion program.
- Import flat files using a business function.
- Convert flat files using APIs.

Understanding Flat Files

Flat files (also known as user-defined formats) are usually text files that are stored on your workstation or server and typically use the ASCII character set. Because data in a flat file is stored as one continuous string of information, flat files do not have relationships defined for them as relational database tables do. Flat files can be used to import or export data from applications that have no other means of interaction. For example, you might want to share information between JD Edwards EnterpriseOne and another system. If the non-JD Edwards EnterpriseOne system does not support the same databases that JD Edwards EnterpriseOne supports, then flat files might be the only way to transfer data between the two systems.

When you use flat files to transfer data to JD Edwards EnterpriseOne, the data must be converted to JD Edwards EnterpriseOne format before it can be updated to the live database. You can use JD Edwards EnterpriseOne interface tables along with a conversion program, electronic data interface (EDI), or table conversion to format the flat file data. You can use EDI or table conversion to retrieve JD Edwards EnterpriseOne data for input to a flat file.

WSG and some JD Edwards EnterpriseOne batch interfaces, such as the batch extraction programs, can accept flat files and parse the information to data format. Typically, WSGI uses the File I/O Adapter for flat file processing.

Note. JD Edwards EnterpriseOne supports flat file conversion on the Windows platform only.

See Also

Chapter 17, “Using Batch Interfaces,” JD Edwards EnterpriseOne Interface Tables, page 149

Appendix F, “Interoperability Interface Table Information,” Interoperability Interface Table Information, page 247

JD Edwards EnterpriseOne Tools 8.96 Development Tools: Data Access Tools Guide, “Setting Up Table Conversions”

JD Edwards EnterpriseOne Data Interface for Electronic Data Interchange 8.12 Implementation Guide

Formatting Flat Files

When you import data using JD Edwards EnterpriseOne interface tables, the format for flat files can be user-defined or character-delimited. This example illustrates a single database character record that has a user-defined format with five columns (Last, First, Addr (address), City, and Phone):

Last	First	Addr	City	Phone	Table Column Heading
Doe	John	123 Main	Any town	5551234	← database record

The user-defined format example is a fixed-width column format in which all of the data for each column starts in the same relative position in each row of data.

This is an example of the same data in a character-delimited format:

"Doe", "John", "123 Main", "Anytown", "5551234"

Setting Up Flat Files

The format of the record in the flat file must follow the format of the interface table. This means that every column in the table must be in the flat file record and the columns must appear in the same order as the interface table. Every field in the interface tables must be written to, even if the field is blank. Each field must be enclosed by a symbol that marks the start and end of the field. Typically, this symbol is a double quotation mark (“ “). In addition, each field must be separated from the next field with a field delimiter. Typically, this separator value is a coma (,). However, any field delimiter and text qualifier may be used as long as they do not interfere with the interpretation of the fields. You set the processing options on the conversion program to define the text qualifiers and field delimiters. If you are receiving documents with decimal numbers, you must use a placeholder (such as a period) to indicate the position of the decimal. You define the placeholder in the User Preference table.

The first field value in a flat file record indicates the record type. In other words, the first field value indicates into which interface table the conversion program should insert the record. Record type values are defined and stored by the record type user defined code table (00/RD). The hard-coded values are:

- 1: Header
- 2: Detail
- 3: Additional Header
- 4: Additional Detail
- 5: SDQ
- 6: Address
- 7: Header Text
- 8: Detail Text

For example, suppose a record in the header table has this information (this example ignores table layout standards):

Record Type	Name	Address	City	Zip Code
1	Joe	<Blank>	Denver	80237

This is how the record in the flat file appears:

```
1, Joe,,Denver,80237
```

Note that "1" corresponds to a header record type, and the blank space corresponds to the <Blank> in the Address column.

Dates must be in the format MM/DD/YY. Numeric fields must have a decimal as the place keeper. A comma cannot be used.

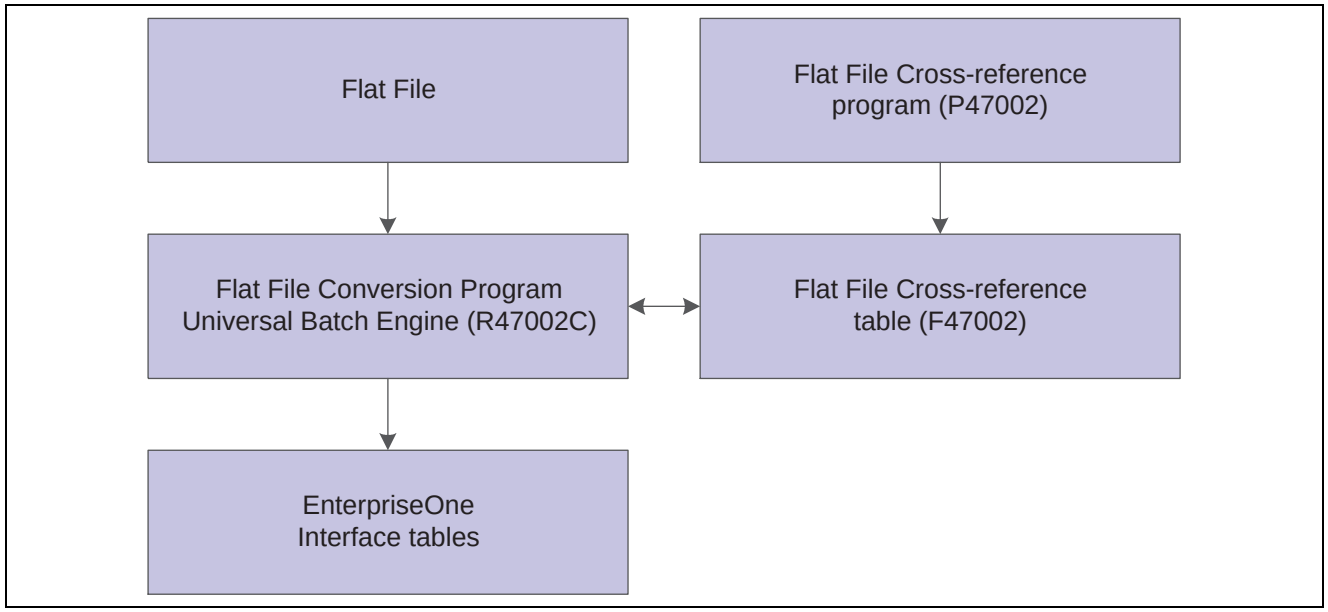
Converting Flat Files Using the Flat File Conversion Program

If you have a Windows platform, you can use the Inbound Flat File Conversion program (R74002C) or the Import Flat File To JDE File (B4700240) business function.

If you are on a Windows platform, you can use the Inbound Flat File Conversion program (R47002C) to import flat files into JD Edwards EnterpriseOne interface tables. You create a separate version of the Inbound Flat File Conversion program for each interface table.

Note. To use the Inbound Flat File Conversion program, you must map a drive on your PC to the location of the flat file.

This diagram shows the process for updating JD Edwards EnterpriseOne interface tables using flat files:



Flat file conversion program process flow

You use the Flat File Cross-Reference program (P47002) to update the F47002 table. The conversion program uses the F47002 table to determine which flat file from which to read based on the transaction type that is being received. This list identifies some of the information that resides in the F47002 table:

- Transaction Type

  The specific transaction type. The transaction type must be defined in UDC 00/TT.

- Direction Indicator

  A code that indicates the direction of the transaction. The direction indicator code must be defined in UDC 00/DN.

- Flat File Name

  The path to the flat file on your Windows PC.

- Record Type

  An identifier that marks transaction records as header, detail, and so on. The record type indicator must be defined in UDC 00/RD.

- File Name

  A valid JD Edwards EnterpriseOne interface table.

The conversion program uses the Flat File Cross-Reference table to convert the flat file to the JD Edwards EnterpriseOne interface tables. The conversion program recognizes both the flat file it is reading from and the record type within that flat file. Each flat file contains records of differing lengths based on the corresponding interface table record.

The conversion program reads each record in the flat file and maps the record data into each field of the interface table based on the text qualifiers and field delimiters specified in the flat file. All fields must be correctly formatted for the conversion program to correctly interpret each field and move it to the corresponding field in the appropriate inbound interface table.

The conversion program inserts the field data as one complete record in the interface table. If the conversion program encounters an error while converting data, the interface table is not updated. Because the flat file is an external object that is created by third-party software, the conversion program is not able to determine which flat file data field is formatted incorrectly. You must determine what is wrong with the flat file. When the conversion program successfully converts all data from the flat file to the interface tables, the conversion program automatically deletes the flat file after the conversion. After the data is successfully converted and if you set the processing option to start the next process in the conversion program, the conversion program automatically runs the inbound processor batch process for that interface table. If you did not set up the processing option to start the inbound processor batch program, you must manually run the Flat File Conversion (R47002C) batch process.

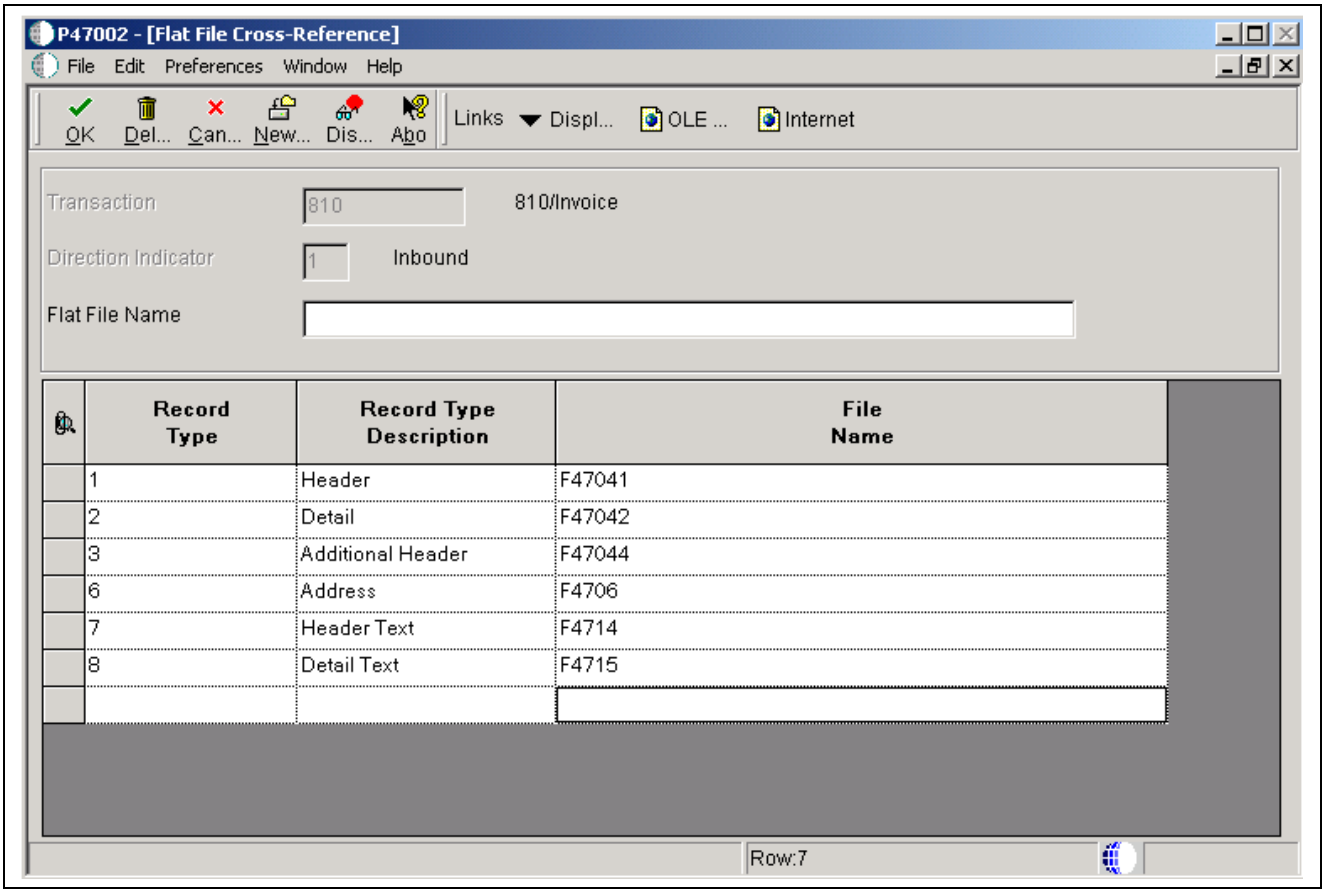
If the flat file was not successfully processed, you can review the errors in the Employee Work Center, which you can access from the Workflow Management menu (G02). After you correct the error condition, run R47002C again.

Forms Used to Convert Flat File Information

Form Name	FormID	Navigation	Usage
Work With Flat File Cross-Reference	W47002A	From an application that supports flat file conversion, open the Flat File Cross-Reference Program.	Identify the transaction type.
Flat File Cross-Reference	W47002B	On Work With Flat File Cross Reference, select the appropriate transaction in the detail area and then select Define from the Row menu.	Enter the name of the flat file, define the record types, and indicate the JD Edwards EnterpriseOne destination file.

Defining the Flat File Cross Reference Table

Access the Flat File Cross Reference form.



Flat File Cross Reference form

Flat File Cross Reference

Flat File Name The name of the flat file. This includes the directory path where the flat file exists.

Record Type The identifier that marks EDI transaction records as header and detail information. This is an EDI function only.

Record Type Description	A user-defined name or remark.
File Name	The number of a specific table. For example, the Account Master table name is F0901. See the Standards Manual on the programmers' menu for naming conventions.

Importing Flat Files Using a Business Function

If you are on a Windows platform, you can use the business function named Import Flat File To JDE File (B4700240). Because of changes to server operating systems and the various ways that operating systems store files, JD Edwards EnterpriseOne only supports the business function when run from a Windows platform. If you use the Import Flat File To JDE File (B4700240) business function, note these constraints:

- Transaction Type and Flat File Name fields must contain data.
- Only one character is allowed in the Record Type field.
- The maximum length per line is 4095 characters.
- The maximum record types are 40.
- Every line must have a record.
- The text qualifier cannot be the same as the column delimiter.

To ensure that flat file data is properly formatted before it is inserted into interface tables, the business function uses the F98713 table to obtain primary index key information. Normally, the F98713 table is located under the Default Business Data table mapping in the Object Configuration Manager. So that the business function can find the F98713 table, you must take one of these actions:

- Map the F98713 table in the system data source.
- Ensure the F98713 table exists in the business data source.

Map the F98713 table in the System Data Source

To map the table in the system data source, add an OCM mapping that points the F98713 table to the central objects data source.

Ensure the F98713 table Exists in the Business Data Source

If you generate the F98713 table in the business data source, you must ensure that file extensions on your PC are hidden. To hide file extensions, complete these steps:

1. From Start/Settings/Control Panel/Folder Options, click the View tab.
2. Select the Hide file extension for known file types option, and then click OK.

You must also ensure that the Flat File Name field in the F47002 table has a file extension. For example: C:\flatfiles\850.txt.

Flat File Conversion Error Messages

These two errors might occur when you use the business function to convert flat files:

- 4363 Null Pointer
- 4377 Invalid Input Parameter

Both of the errors are internal problems within the business function.

These errors might occur as a result of problems with user setup or with the configurable network computing (CNC) implementation:

- 0073 Invalid File Name
- 128J (filename) Insert Failed
- 3003 Open of File Unsuccessful
- 4569 Invalid Format

Converting Flat Files Using APIs

In addition to the existing flat file APIs, JD Edwards EnterpriseOne provides APIs for non-Unicode flat files. The Unicode APIs are required when flat file data is written to or read by a process outside of JD Edwards EnterpriseOne. The JD Edwards EnterpriseOne APIs, such as jdeFWrite() and jdeFRead(), do not convert flat file data, which means that the default flat file I/O for character data is in Unicode. If you use JD Edwards EnterpriseOne-generated flat files and the recipient system is not expecting Unicode data, you will not be able to read the flat file correctly. For example, if the recipient system is not Unicode enabled and the system is expecting data in the Japanese Shift_JIS code page (or encoding), you will not be able to read the flat file correctly. To enable the creation of the flat file in the Japanese Shift_JIS page, the application that creates the flat file must be configured using the Unicode Flat File Encoding Configuration program (P93081). If the flat file is a work file or debugging file and will be written and read by JD Edwards EnterpriseOne only, the existing flat file APIs should be used. For example, if the business function is doing some sort of caching in a flat file, that flat file data does not need to be converted.

The JD Edwards EnterpriseOne conversion to Unicode uses UCS-2 encoding in memory, or two bytes per character (JCHAR), for representation of all character data. The character data that is passed to the output flat file APIs needs to be in JCHAR (UCS-2). The input flat file APIs converts the character data from a configured code page to UCS-2 and returns the character in JCHAR (or JCHAR string). The flat file conversion APIs enable you to configure a code page for the flat file at runtime. You use P93081 to set up the flat file code page. Flat file encoding is based on attributes such as application name, application version name, user name, and environment name.

If no code page is specified in the configuration application, the APIs perform flat file I/O passing through the data as it was input to the specific function. For example, jdeFWriteConvert() writes Unicode data and no conversion is performed.

See Also

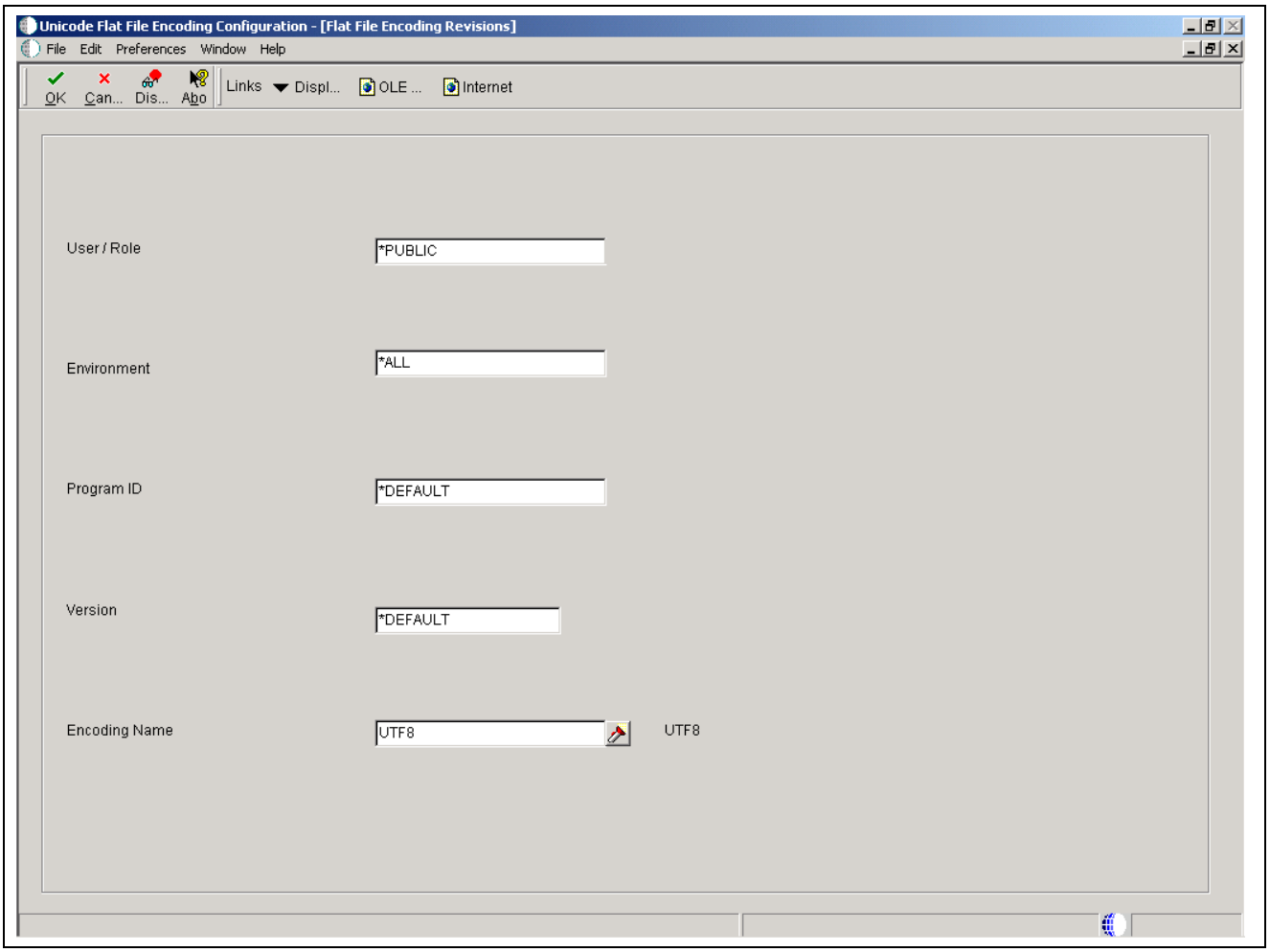
JD Edwards EnterpriseOne Tools 8.96 Development Tools: Data Access Tools Guide, "Preparing Foreign Tables for Table Conversion," Understanding Foreign Tables

Forms Used to Convert Flat File Information

Form Name	FormID	Navigation	Usage
Work With Flat File Encoding	W93081A	From the fat client, select System Administration Tools (GH9011), System Administration Tools, User Management, User Management Advanced and Technical Operations, Unicode Flat File Encoding Configuration	Locate and review existing Unicode flat file encoding configurations.
Flat File Encoding Revision	W93081B	On Work With Flat File Encoding, click Add	Add or change Unicode flat file encoding configuration information.
Work With Flat File Encoding	W93081A	On Work With Flat File Encoding, click Find, select your newly added Unicode configuration record in the detail area, and then select Change Status from the Row menu.	Activate or deactivate a Unicode configuration record.

Setting Up Flat File Encoding

Access the Unicode Flat File Encoding Configuration form from the fat client.



Unicode Flat File Encoding Configuration form

Flat File Encoding Configuration

User / Role

A profile that classifies users into groups for system security purposes. You use group profiles to give the members of a group access to specific programs.

Some rules for creating a profile for a user class or group include:

- The name of the user class or group must begin with an asterisk (*) so that it does not conflict with any system profiles.
- The User Class/Group field must be blank when you enter a new group profile.

Environment

For install applications, the environment name is also called the Plan Name and uniquely identifies an upgrade environment for install/reinstall.

For environment or version applications, this is the path code that identifies the location of the application or version specification data.

Program ID

The number that identifies the batch or interactive program (batch or interactive object). For example, the number of the Sales Order Entry interactive program is P4210, and the number of the Print Invoices batch process report is R42565.

The program ID is a variable length value. It is assigned according to a structured syntax in the form TSSXXX, where:

- T is an alphabetic character and identifies the type, such as P for Program, R for Report, and so on.

  For example, the value P in the number P4210 indicates that the object is a program.

- SS are numeric characters and identify the system code.

  For example, the value 42 in the number P4210 indicates that this program belongs to system 42, which is the Sales Order Processing system.

- XXX (the remaining characters) are numeric and identify a unique program or report.

  For example, the value 10 in the number P4210 indicates that this is the Sales Order Entry program.

Version A user-defined set of specifications that control how applications and reports run. You use versions to group and save a set of user-defined processing option values and data selection and sequencing options. Interactive versions are associated with applications (usually as a menu selection). Batch versions are associated with batch jobs or reports. To run a batch process, you must select a version.

Encoding Name A code that indicates the name of the encoding that the system uses to produce or consume flat files.

CHAPTER 12

Understanding Messaging Queue Adapters

This chapter discusses:

- JD Edwards EnterpriseOne and Messaging Queue systems.
- Data exchange between JD Edwards EnterpriseOne and a Messaging Queue Adapter.
- Management of the Messaging Queue Adapter queues.
- Configuration of the jde.ini file to support Messaging Queue Adapters.

JD Edwards EnterpriseOne and Messaging Queue Systems

JD Edwards EnterpriseOne supports both Microsoft and IBM message queueing systems. If your system can implement the messaging protocols and produce and consume XML documents using the formats discussed in this document, you can use a messaging queue adapter to send information to and receive information from JD Edwards EnterpriseOne. The messaging adapters for JD Edwards EnterpriseOne are Oracle products that can be licensed and installed independently from JD Edwards EnterpriseOne.

Data Exchange Between JD Edwards EnterpriseOne and a Messaging Queue Adapter

The JD Edwards EnterpriseOne messaging adapters, adapter for MSMQ and adapter for WebSphere MQ, enable you to connect any third-party application to JD Edwards EnterpriseOne for sending and receiving messages. The messaging adapter monitors an inbound queue for request and reply messages, performs the requested services, and places the results on outbound queues. The messaging adapter also monitors JD Edwards EnterpriseOne for specified activities and then publishes the results in an outbound message queue. All messages transported through the messaging system are in the form of XML documents. The required elements for formatting XML documents are discussed in the Using XML chapter.

See Chapter 4, “Understanding XML,” Formatting XML Documents, page 20.

Sending Information to JD Edwards EnterpriseOne

Third-party applications can send information to JD Edwards EnterpriseOne. These inbound transactions are called Z transactions. XML CallObject is used for processing Z transactions. The XML CallObject process flow, jde.ini file configuration, and elements specific to XML CallObject formatting are discussed in the XML CallObject chapter.

See Chapter 7, “Understanding XML CallObject,” XML CallObject, page 49.

Z Transaction Process Flow

A typical flow for processing Z transactions is:

- The adapter picks up a message in XML format from the message queue.
- The XML document is passed into the jdeXMLCallObject Application Programming Interface (API).
- The session manager validates user and password.
- The JD Edwards EnterpriseOne server processes the message by parsing the XML document.
- Each requested business function is called separately or within requested transaction boundaries until all calls are processed.
- Transactions are added to the JD Edwards EnterpriseOne database.
- Output data and error messages are merged back into the XML document and a new response document is created.
- The adapter places the response XML document in the queue.

  The response can be an error or success XML document.

See Chapter 10, “Processing Z Transactions,” Understanding Z Transactions, page 75.

Retrieving Information from JD Edwards EnterpriseOne

Third-party applications can retrieve information from JD Edwards EnterpriseOne. These outbound transactions are called events. You can use a message queuing system (MSMQ or WebSphere MQ) to receive events. The messaging queue adapter provides a layer over existing functionality. JD Edwards EnterpriseOne supports these three kinds of events:

- Real-time events
- XAPI events
- Z events

To receive guaranteed real-time and XAPI events, you must set up a real-time event queue. In addition, you must set up your events and configure your system to receive guaranteed events. The Using Guaranteed Events chapter discusses how the system processes events and provides information for configuring your system to receive guaranteed events. The Realtime Events Reference guide provides information for creating real-time and XAPI events. You can create custom XML documents. To create custom XML documents, you can find or create a business function to accomplish the required task, or you can retrieve an XML template.

See Chapter 8, “Understanding XML Transaction,” XML Transaction, page 59.

See Appendix I, “XML Format Examples (Events),” page 265.

See Chapter 13, “Using Guaranteed Events,” Understanding Guaranteed Events, page 97.

See Chapter 13, “Using Guaranteed Events,” Creating MSMQ Queues, page 110.

See Chapter 13, “Using Guaranteed Events,” Creating WebSphere MQ Queues, page 112.

See *JD Edwards EnterpriseOne 8.12 Application Realtime Events Implementation Guide*

Using JD Edwards Classic Event System

You can use the JD Edwards EnterpriseOne Classic Event Delivery system to receive reliable real-time, XAPI, and Z events. The JD Edwards EnterpriseOne system includes an Event Notification (EVN) Kernel that manages subscribers and notifies them when an event (Z, real-time, or XAPI) occurs. The EVN Kernel can distribute events through WebSphere MQ or MSMQ transport drivers to the messaging queue system. You must set up the system so that the appropriate event type is generated. Real-time and XAPI events must be defined in the F90701 table.

Use the setup features described in the Classic Events chapters of this guide and the Realtime Events Reference guide to receive reliable real-time, XAPI, and Z events. The sample code for requests and responses, and jde.ini file configuration are discussed in detail in the XML Transaction chapter.

See Chapter 4, “Understanding XML,” page 19.

See Chapter 8, “Understanding XML Transaction,” XML Transaction, page 59.

See Appendix A, “Classic Events,” Understanding Classic Events, page 169.

See Appendix B, “Using Classic Real-Time Events,” Understanding Real-Time Events - Classic, page 185.

See Appendix C, “Using Classic XAPI Events,” Understanding XAPI Events - Classic, page 197.

See Appendix D, “Using Classic Z Events,” Understanding Z Events - Classic, page 233.

See *JD Edwards EnterpriseOne 8.12 Application Realtime Events Implementation Guide*

Classic Z Event Processing

A typical flow for processing classic Z events is:

- An outbound message is triggered by an event, for example entry of a sales order.
- Subsystem processing starts processing the transaction and calls the outbound notification function.
- The outbound notification function sends a net message, and the kernel picks up the message and calls the outbound function for the event type.
- The messaging adapter reads the message and calls the appropriate API.
- The adapter uses the record key from the JDENET message.
- An XML response document is created.
- The XML document is placed in the outbound queue.

Enabling Z Events Interface Table Processes

To send JD Edwards EnterpriseOne transactions to a messaging queue system such as IBM’s WebSphere MQ or Microsoft’s Message Queuing systems, you can use JD Edwards EnterpriseOne Z event functionality. An interface table (also called Z table) is a working table where data is collected for sending to a third-party application or system.

Outbound Table Adapter Function

You use the OutboundZTableAdapter function to send a message from an outbound interface table to a messaging adapter queue. The function is invoked from the kernel dispatch function, which then sends the net message data that contains the parameters from the interface table subsystem Universal Batch Engine (UBE). This example shows the outbound table adapter function:

```
Void OutboundZTableMessageAdapter(MsgData *pMsgData)
```

The parameters define the records and the transaction type to be used to cross-reference the tables that contain the data to populate the message that is sent to the message adapter queue. The messaging-specific OutboundZTableAdapter parses the net message data and calls the XML Interface Table Inquiry API to fetch the records from the interface table and format the results into an XML string.

You must set up JD Edwards EnterpriseOne to initiate the outbound interface table process. The format of the outbound interface table message has an XML based format.

Outbound Notification

The outbound notification function is called by the standard generic Outbound Subsystem batch process UBE and provides notification that records have been placed in the interface tables.

This function passes the key fields for a record in the JD Edwards EnterpriseOne Outbound Transaction interface tables to the outbound adapter. With these key fields, you can process the information from the database record into a message queue. This example shows an outbound notification message:

```
void MessageNotificationName(char *szUserID, char *szBatchNumber,
char *szTransactionNumber, double mnLineNumber,char *szTransactionType,
char *szDocumentType, double mnSequenceNumber )
```

This list provides the required input parameters:

- User ID - 11 characters.
- Batch Number - 16 characters.
- Transaction Number - 23 characters.
- Line Number - double.
- Transaction Type - 9 characters.
- Document Type - 3 characters.
- Sequence Number - double.

This information is sent in a JDENET message:

- Environment Name - use JD Edwards EnterpriseOne APIs to retrieve environment from the subsystem batch process.
- User ID - key to interface table record.
- Batch Number - key to interface table record.
- Transaction Number - key to interface table record.
- Line Number - key to interface table record.
- Transaction Type - tie to an interface table.
- Document Type - (optional).
- Sequence Number - (optional).

The key information in the JDENET message packets is used by the outbound adapter to retrieve the record from the interface table. The transaction type enables the adapter to be generic and enables the adapter to process other transactions in the future. The transaction type maps to the F47002 table to determine the interface tables.

XML Interface Table Inquiry API

The XML interface table inquiry API (jdeRetrieveTransactionInfo) receives an XML string that includes the table record key and returns an XML string for outbound processing.

The messaging adapter calls the API. The API parses the XML string. Based on the transaction type, the API goes to the F47002 table to determine from which interface to fetch records. The F47002 table has a record for each table associated with the transaction type. Using JDB database APIs, XML Interface Table Inquiry then uses the index found in the XML string to fetch records from the interface table and returns the results in an XML string.

Management of the Messaging Queue Adapter Queues

The messaging adapters accept input and produce output by reading and writing to messaging queues. You create specific queues for the messaging adapter to use. You must specify the names of these queues in the jde.ini file on the JD Edwards EnterpriseOne server so that the messaging adapter can find them. The adapter configuration specifications are defined within the jde.ini initialization file that is read upon startup of the JD Edwards EnterpriseOne server. Typically, the system administrator configures the jde.ini file settings, but you might need to change the settings or verify that the settings are correct.

When you install a message adapter, you are asked to create several message queues. This table lists the queues and platforms that reside on the JD Edwards EnterpriseOne server and provides recommended names based on the platform:

Queue	MSMQ Platform and Recommended Name	iSeries Platform and Recommended Name	NT Platform and Recommended Name	UNIX Platform and Recommended Name
Inbound	<computer name> \inbound	INBOUND.Q	INBOUND.Q	INBOUND.Q
Outbound	<computer name> \outbound	OUTBOUND.Q.XMIT	OUTBOUND.Q.XMIT	OUTBOUND.Q.XMIT
Success	Not applicable	SUCCESS.Q	SUCCESS.Q	SUCCESS.Q
Error	<computer name> \error	ERROR.Q	ERROR.Q	ERROR.Q
Default Response	Not applicable	DEFRES.Q	DEFRES.Q	DEFRES.Q

Important! Queue names for IBM Websphere Message Queue must be all upper case.

Note. The queue names in the jde.ini file must correspond to the queue names on the server.

Inbound Queue

The inbound queue stores all inbound messages to JD Edwards EnterpriseOne. After the message is processed, it is removed from the queue. The install suggests calling the queue INBOUND.Q. You must specify the queue name in the QInboundName setting in the jde.ini file.

Outbound Queue

The outbound queue stores the outbound messages from JD Edwards EnterpriseOne. The install suggests calling the queue OUTBOUND.Q. You must specify the queue name in the QOutboundName setting in the jde.ini file.

Success Queue

The success queue stores successfully processed messages in JD Edwards EnterpriseOne. These messages contain return code information for the business function calls and default or calculated parameter information. The messages remain in the queue until you remove them. The install suggests calling the queue SUCCESS.Q. You must specify the queue name in the XML document within the returnParms tag. If you do not specify a success destination queue within the XML document and you leave the QErrorName blank in the jde.ini, the message is not written to any queue.

Error Queue

The error queue stores processed messages that are in error in JD Edwards EnterpriseOne. These messages contain return code information for the business function calls, default and calculated parameter information, and error information. These messages remain in the queue until you remove them. The install suggests calling the queue ERROR.Q. You must specify the queue name in the XML document within the returnParms tag. If you do not specify a failure destination queue within the XML document and you leave the QErrorName blank in the jde.ini, the message is not written to any queue.

Default Response Queue

The default response queue stores the processed messages into JD Edwards EnterpriseOne. These messages may be in error or successfully processed. The messages contain return code information for the business function calls, default or calculated parameter information, and possibly error information. These messages remain in the queue until you remove them. The install suggests calling the queue DEFRES.Q. You must specify the queue name in the QErrorName setting in the jde.ini file. If you do not specify a success or failure destination queue in the XML document, the queue you set in the jde.ini file is used as the default queue for the message. If the QErrorName setting is also blank, the message is not written to any queue.

Note. The commands for creating these queues along with a discussion of other queues are provided in the applicable configuration document.

Configuration of the jde.ini File to Support Messaging Queue Adapters

The JD Edwards EnterpriseOne messaging adapters use settings in the MQSI section (for IBM) or the MSMQ section (for Microsoft) of the jde.ini file to start, to monitor queues, and to send error messages. The names of queues are case-sensitive. The jde.ini file can be modified for messaging queues and for JD Edwards EnterpriseOne UBE queues. Refer to the appropriate Messaging Adapter Installation documentation for more information about setting up queues and the jde.ini file settings. The queue names you use must correspond with the queue names you have set up on the server.

CHAPTER 13

Using Guaranteed Events

This chapter provides an overview of JD Edwards EnterpriseOne events and discusses how to:

- Process events.
- Set up OCM for guaranteed events.
- Select the guaranteed events delivery system.
- Define events.
- Establish subscriber and subscription information.
- Create MSMQ queues.
- Create WebSphere MQ queues.

Note. This chapter is applicable only if you use guaranteed events delivery. Guaranteed event delivery is available when you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.11 or JD Edwards EnterpriseOne Tools 8.95 and later Tools releases with JD Edwards EnterpriseOne Applications 8.9, 8.10, 8.11, and later Applications releases.

Refer to the Classic Events chapters if you use JD Edwards EnterpriseOne Tools 8.93 or earlier releases, or if you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.10 or 8.9.

Understanding Guaranteed Events

Oracle JD Edwards EnterpriseOne event functionality provides an infrastructure that can capture JD Edwards EnterpriseOne transactions in various ways and provide real-time notification to third-party software, end users, and other Oracle systems, such as Web Services Gateway (WSG) and Customer Relationship Management (CRM).

JD Edwards EnterpriseOne notifications are called events. The JD Edwards EnterpriseOne event system implements a publish and subscribe model. Events are delivered to subscribers in XML documents that contain detailed information about the event. For example, when a sales order is entered into the system, the sales order information can be automatically sent to a CRM or supply chain management (SCM) application for further processing. If your system is IBM, you can use the WebSphere MQ messaging system to receive events. If your system is Microsoft, you can use the MSMQ messaging system to receive events. WebSphere MQ and MSMQ provide a point-to-point interface with JD Edwards EnterpriseOne.

JD Edwards EnterpriseOne supports these three kinds of events:

Event Category	Purpose	Generation Mechanism	Response Capability
Real-Time Event	Provides requested notification to third-party software, end-users, and other Oracle systems when certain transactions occur.	System calls	No
XAPI Event	Provides requested notification to third-party software, end-users, and other Oracle systems when certain transactions occur and to provide a response.	System calls	Yes
Z Event	Provides requested notification to third-party software, end-users, and other Oracle systems when certain transactions occur.	Interface tables and system calls	No

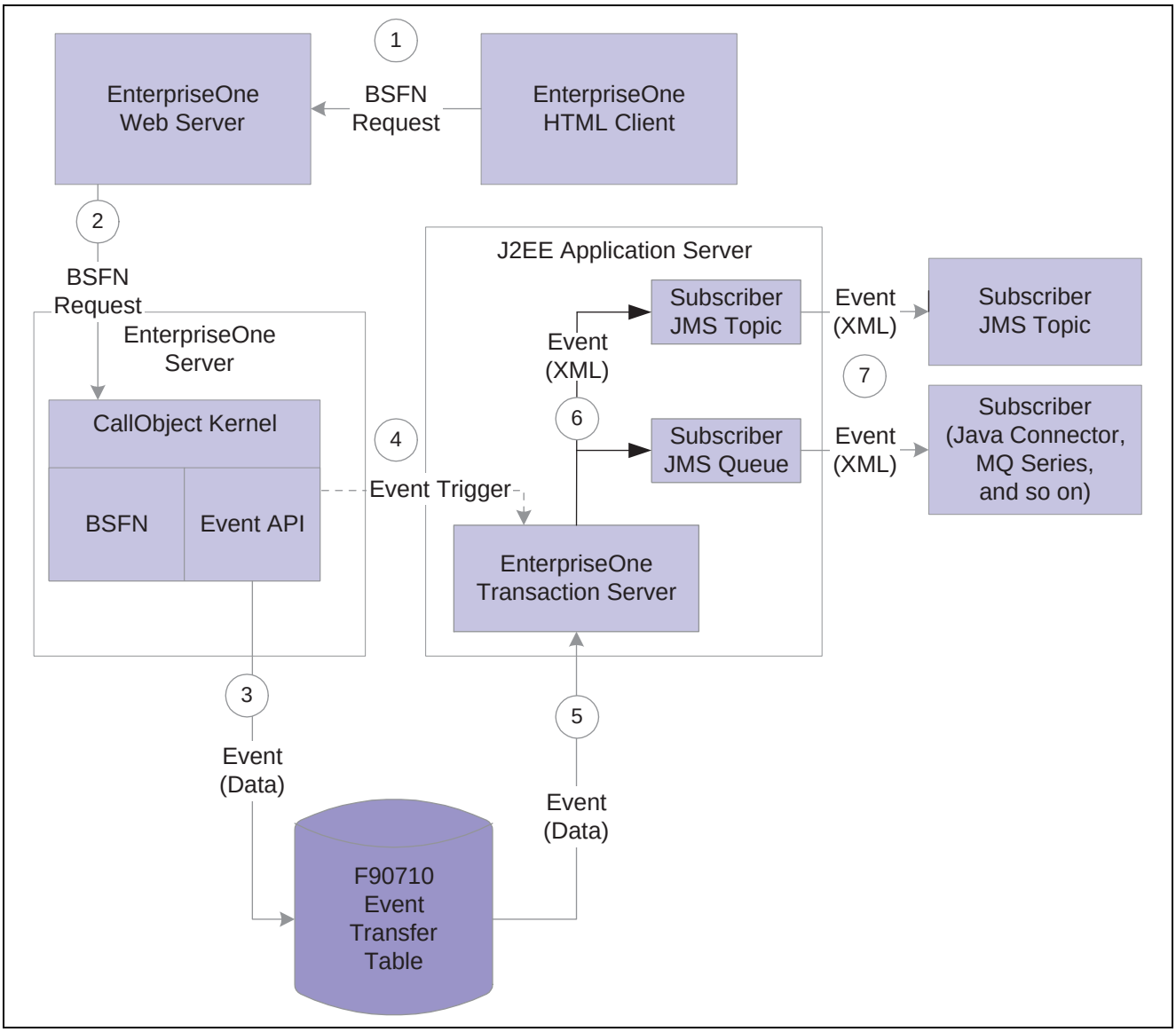
Processing Guaranteed Events

This section provides an overview of the architecture for processing events and discusses:

- Aggregating events
- Logging events
- Configuring the transaction server

Understanding Guaranteed Events Processing

This diagram provides an overview of the JD Edwards EnterpriseOne events architecture:



Guaranteed Events architecture overview

In summary, this is the general sequence that happens for an event to be published:

1. An HTML client user executes a business function request that is sent to the JD Edwards EnterpriseOne Web server.
2. The request is forwarded to a CallObject kernel on the JD Edwards EnterpriseOne server.
3. The CallObject kernel executes the business function, which calls the Event API to send the event data to the F90710 table.

   If the event is a Z event, the data sent to the F90710 table is in its final XML format.
4. A trigger message is sent to the JD Edwards EnterpriseOne Transaction server that indicates that a new event is in the F90710 table.
5. The transaction server retrieves the event data from the F90710 table and, for real-time and XAPI events, converts the event data to an XML document in the appropriate format
6. The transaction server routes the event to the subscriber queues and subscriber topics for each subscriber that has established an active subscription for that event.

7. When a subscriber connects to the transaction server, the subscriber receives all the events that exist in its subscription queue and subscription topic at that time.

Note. XAPI and Z events require additional information for event processing, which is discussed in the respective XAPI and Z event chapters.

Aggregating Events

Events are classified as either a single event or a container event. A single event can contain a single data structure. A container event can contain one or more single events *or* one or more data structures. You cannot define a container event using both single events and data structures for that specific container event. For example, RTSOHDR and RTSODTL are usually defined as single real-time events that represent the data structures in the header and detail areas of a sales order. RTSOOUT is usually defined as a container real-time event that contains both RTSOHDR and RTSODTL.

Logging Events

Real-time and XAPI events do not exist in their XML form until they are processed by the transaction server. Therefore, it is not possible to log the XML event on the JD Edwards EnterpriseOne server. However, if debugging is selected, the debug log file for the CallObject kernel that generates the event displays `jdeIEO_EventFinalize called for XX`, where XX is an integer that represents the number of times that jdeIEO_EventFinalize has been called in that kernel.

If you select debug logging for the transaction server, the transaction server debug log file displays this message`Sending event:` followed by the event data, including the full XML content of the event when the transaction server processes an event. There is one of these messages for every active subscriber that has an active subscription to the event.

If you use the dynamic Java connector graphical subscription application, you have the capability of sending the XML content of all received events to a specified directory.

See *JD Edwards EnterpriseOne Tools 8.96 Connectors Guide*, "Using Java Connector Events - Guaranteed Events," Understanding Java Connector Events.

Configuring the Transaction Server

The transaction server uses Java Message Service (JMS) queues and topics to guarantee event delivery. When an event occurs in JD Edwards EnterpriseOne, the transaction server retrieves the event information and routes the information to subscriber JMS queues and topics for each subscriber that has established an active subscription for that event.

When you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.11, you must configure these settings in the jde.ini file on your enterprise server so that the transaction server can find the event system:

- RunningHost
- RunningPort

Note. When you install the transaction server components, host and port information is written to a readme.txt file that is typically located at `c:\Program Files\JD Edwards\E1TranSvr\EventProcessor` on the transaction server.

See *JD Edwards EnterpriseOne Tools Release 8.96 Transaction Server Components Installation and Upgrade Guide*

When you use JD Edwards EnterpriseOne Tools 8.95 or a later Tools release with JD Edwards EnterpriseOne Applications 8.9, 8.10, 8.11, or a later JD Edwards EnterpriseOne Applications release, you must configure the Object Configuration Manager (OCM) so that the transaction server can find the event system. You must access OCM from the Interoperability Event Definition program (P90701A).

Note. The ptf.log file contains Transaction server version information. The ptf.log file is located in EventProcessor_WAR.war and JDENETServer_WAR.war.

Setting Up OCM for Guaranteed Events

This section provides an overview of setting up OCM for guaranteed events and discusses how to set up OCM.

Understanding OCM Setup for Guaranteed Event Delivery

When you use JD Edwards EnterpriseOne Tools 8.95 and later releases with JD Edwards EnterpriseOne Applications 8.9 and later releases, you must define the transaction server and transaction server port settings in OCM so that the transaction server can find the event system. You use the must access OCM from the Interoperability Event Definition program (P90701A). Once you access OCM from the Interoperability Event Definition program, you much select the appropriate machine name and data source combination. This information should already be set up. If it is not, check with your System Administrator or refer to the Configurable Network Computing Implementation Guide for information about setting up the OCM.

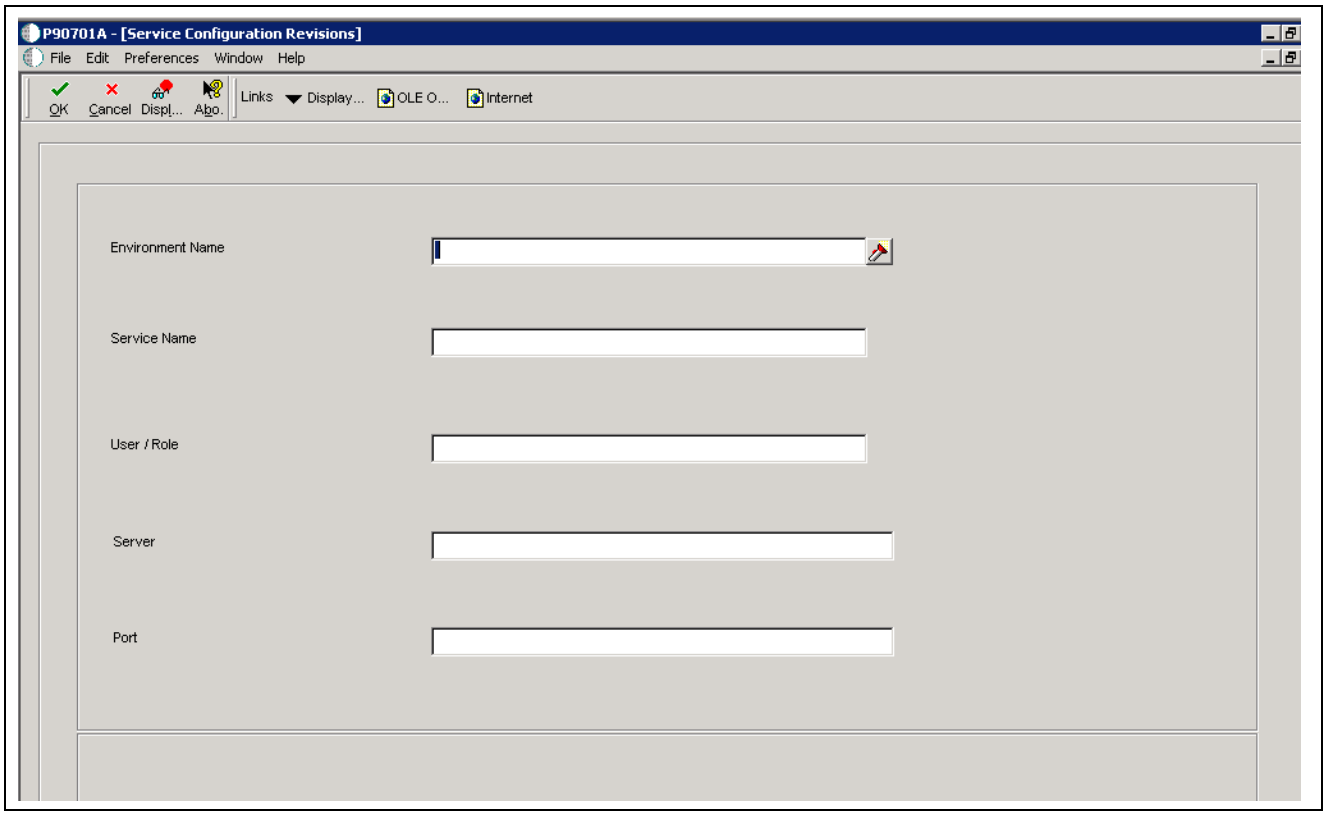
See *JD Edwards EnterpriseOne Tools 8.96 Configurable Network Computing Implementation Guide*, "Understanding Object Configuration Manager," Object Configuration Manager.

Forms Used to Set Up OCM for Guaranteed Event Delivery

Form Name	FormID	Navigation	Usage
Event Definition Workbench	W90701AA	Enter *P90701A* in the Fast Path Command Line.	Configure the OCM so the transaction server can find the event system.
Machine Search and Select	W986110D	From the Form menu on Event Definition Workbench, select Configure Servers.	Select the appropriate machine name and data source combination.
Work with Service Configurations	W986110J	On Machine Search and Select, select the machine name and data source combination and then click Select.	Find and select an existing configuration for the transaction server and server port or to access the Work with Service Configurations form to add a new configuration record for your transaction server.
Service Configuration Revisions	W986110K	On Work with Service Configurations, click Add.	Configure the OCM with the J2EE Transaction server and port.

Setting Up the OCM for Guaranteed Event Delivery

Access the Service Configuration Revisions form.



Service Configuration Revisions

Environment Name	A name that uniquely identifies the environment.
Service Name	A name that identifies the type of server. For example, RTE identifies the Transaction server.
User / Role	A profile that classifies users into groups for system security purposes. Use group profiles to give the members of a group access to specific programs.
Server	The name of the Transaction server.
Port	The port number of the Transaction server. This is the JDENET listening port.

Selecting the Guaranteed Events Delivery System

This section provides an overview of selecting the Guaranteed Events Delivery system and discusses how to select guaranteed events delivery.

Understanding Guaranteed Events Selection

JD Edwards EnterpriseOne Tools software is delivered with this functionality deselected. You perform this task only if you use JD Edwards EnterpriseOne Tools 8.95 with JD Edwards EnterpriseOne Tools 8.9 or 8.10, and you want guaranteed event delivery. Typically this task is performed by a system administrator. Use the Activate/Deactivate Guaranteed Event Delivery program (P90701A) to select or deselect the Guaranteed Events Delivery system.

Warning! Perform this task *only* if you use JD Edwards EnterpriseOne Tools 8.95 *with* JD Edwards EnterpriseOne Applications 8.9 or 8.10, *and* you want to use the Guaranteed Event Delivery system.

When you use JD Edwards EnterpriseOne Tools 8.95 and later tools releases with JD Edwards EnterpriseOne Applications 8.11 and later applications releases, the Guaranteed Event Delivery system is automatically available, and you do not perform this task. You are ready to define your events.

If you use JD Edwards EnterpriseOne Tools 8.95 with JD Edwards EnterpriseOne Tools 8.10 or 8.9 and do not perform this task, your events will be generated using the Classic Event Delivery System.

See Appendix A, "Classic Events," Understanding Classic Events, page 169.

Forms Used to Select Guaranteed Events Delivery System

Form Name	FormID	Navigation	Usage
Event Definition Workbench	W90701AA	Type P90701A on the Fast Path.	Locate and review existing single and container events.
Activate Guaranteed Delivery	W90701AK	On Event Definition Workbench, select Guaranteed Events from the Form menu.	To select or deselect Guaranteed Events Delivery.

Selecting Guaranteed Events Delivery

Access the Activate Guaranteed Delivery form.

Activate Guaranteed Delivery An option that enables you to select the Guaranteed Event Delivery system when you use JD Edwards EnterpriseOne Tools 8.95 with JD Edwards EnterpriseOne Applications 8.10 or 8.9.

Defining Events

This section provides an overview of entering events in the F90701 table and discusses how to define and activate single and container events.

Understanding Events Definition

You use the Interoperability Event Definition program (P90701A) to define each real-time and XAPI event in JD Edwards EnterpriseOne. You use a separate process to define Z events, which is documented in the *Guaranteed Z Events* chapter.

Every real-time or XAPI event that you use in your system must have an associated record in the F90705 table. The F90705 table enables each event to be activated or deactivated for each environment in your system. When you create a new event, select the Create Activation Record option. When you add a new environment to your system, you must run the Populate Event Activation Status Table UBE (R90705) to create event activation records for existing events. The Populate Event Activation Status Table UBE is described in the JD Edwards EnterpriseOne Server Installation Guide.

After you define a new event, you must refresh the cache of active events on the transaction server. You can refresh the active events cache while the transaction server is running. If the transaction server is not running when this operation is performed, it automatically refreshes its cache when it is brought back to operational status.

See Also

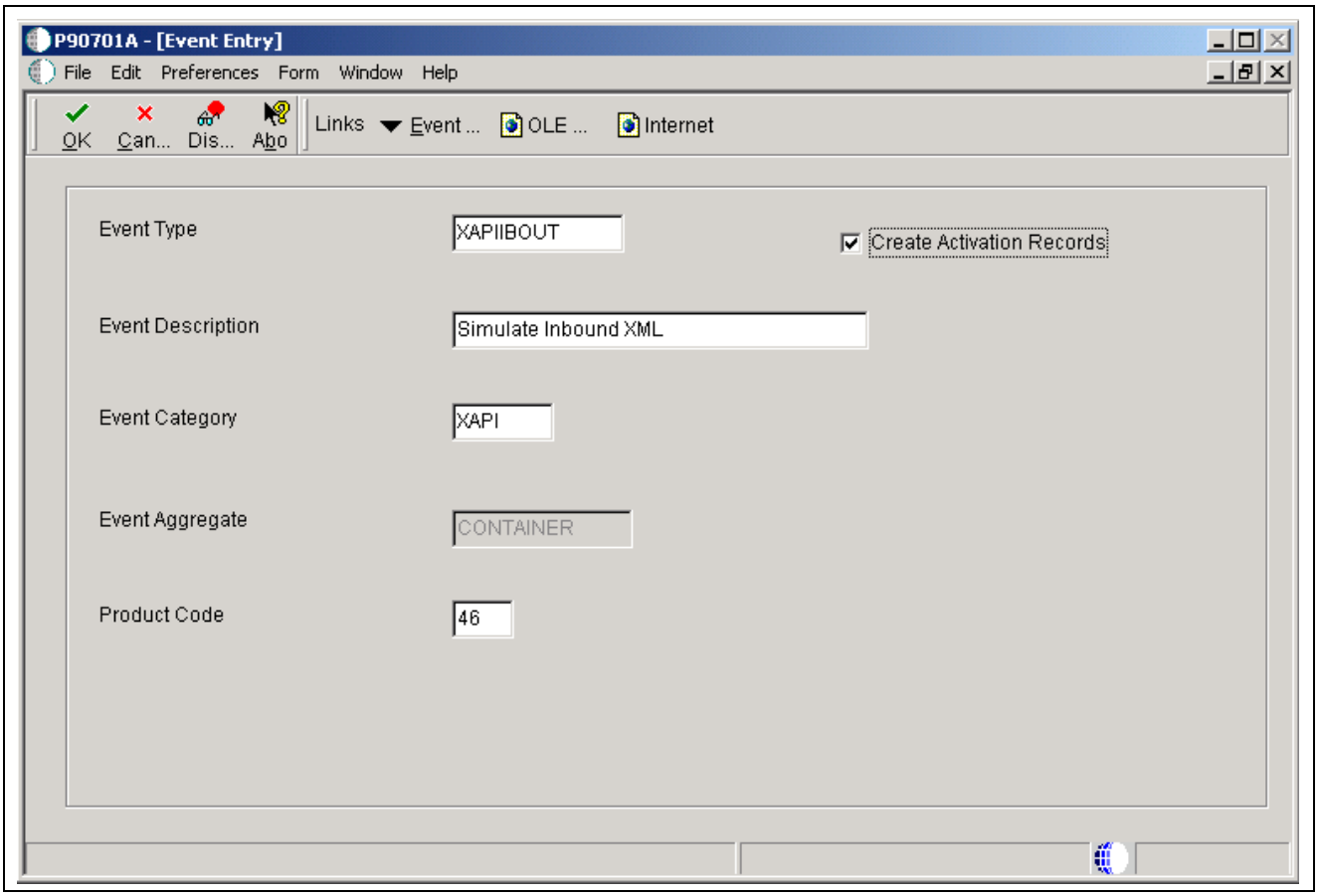
Chapter 16, "Using Z Events - Guaranteed," Understanding Z Events - Guaranteed, page 143

Forms Used to Enter Events

Form Name	FormID	Navigation	Usage
Event Definition Workbench	W90701AA	Type P90701A on the Fast Path.	Locate and review existing single and container events.
Event Entry	W90701AD	On Event Definition Workbench, click Add.	Add or change a single or container event.
Event Definition Detail	W90701AC	Automatically appears when you click OK on the Event Entry form if you entered *Container* in the Event Category field for a real-time event or if you entered *XAPI* in the Event Type field.	Link single events or data structures to a container event.
Event Activation by Environment	W90701AG	On Event Definition Workbench, select Event Activation from the Form menu.	Locate and review existing environments and event types.
Add Event Activation by Environment	W90701AH	On Event Activation by Environment, click Add.	To activate an event on a specific environment.

Adding a Single or Container Event

Access the Event Entry form.



Event Entry form

Event Type The name of the event (for example RTSOOUT, which is the usual event type for a real-time sales order event).

Create Activation Records An option that causes newly defined events to have an associated record in the F90705 table, which enables each event to be activated or deactivated for each environment in your system. You must select this option for every event that you intend to use in your system.

Event Description The description of an event.

Event Category A value that represents the name of the event type. Use RTE for real-time events or XAPI for XAPI events.

Event Aggregate Indicates whether an event is a single event or a container event.

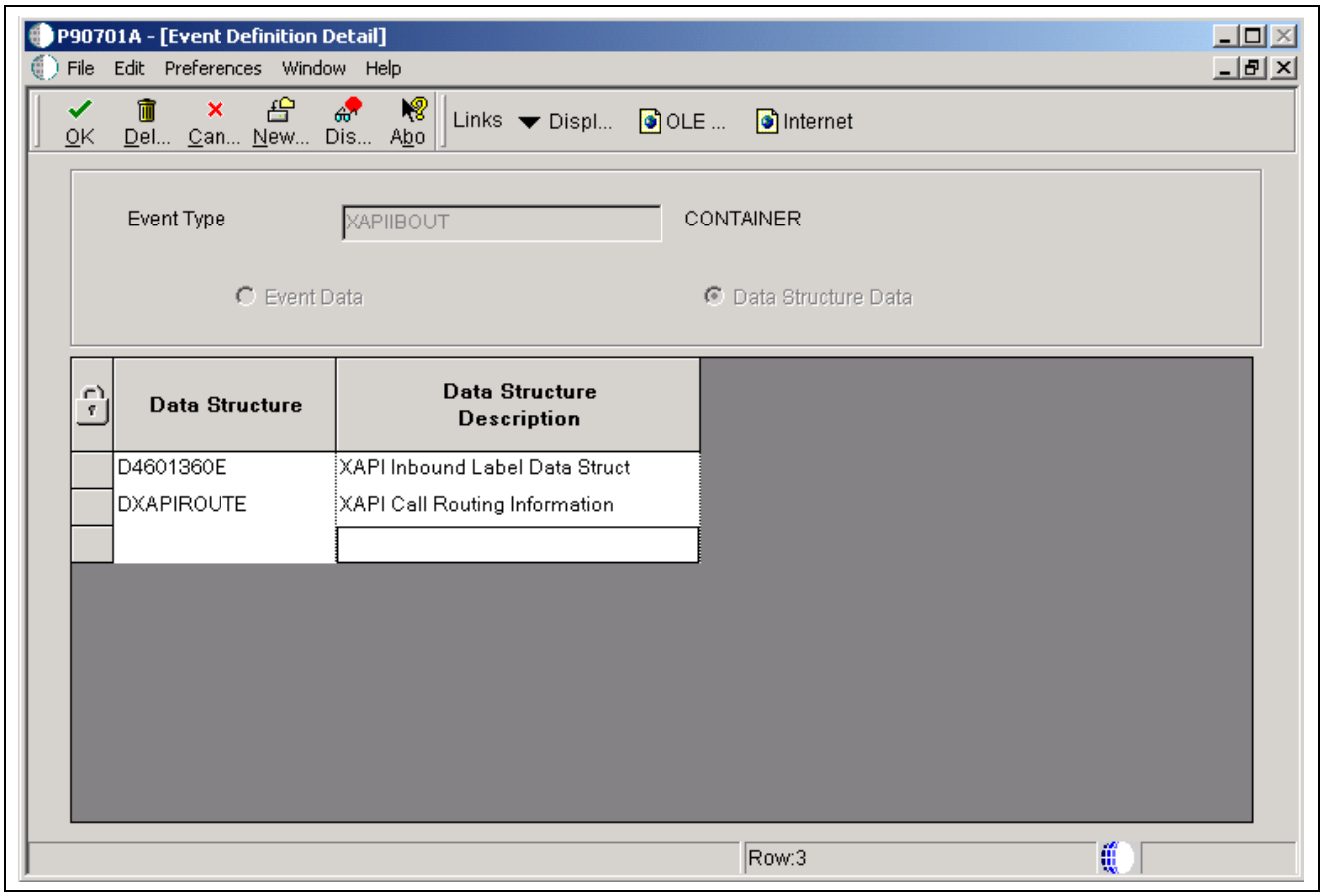
Product Code An optional field that indicates to which JD Edwards EnterpriseOne system the event is associated.

Data Structure The name of the data structure that passes event information.

This field disappears if *Container* is the value of the Event Aggregate field; however, when you click OK, the Event Definition Detail form automatically appears for you to enter data structure information.

Event Definition Detail

Access the Event Definition Detail form.



Event Definition Detail form

Event Data An option that enables you to define single individual events for a container event.

Data Structure Data An option that enables you to define aggregate events for the container event. For XAPI events, you must select the Data Structure Data option.

Activating an Event

Access the Add Event Activation by Environment form

Environment Your operating environment, such as Windows 2000, Windows NT, UNIX, iSeries, and so on.

Refreshing the Transaction server cache of active events

Access the Event Definition Workbench form.

To refresh the cache of active events with the Transaction server running, select Refresh Event Cache from the Form menu.

Establishing Subscriber and Subscription Information

This section provides an overview of subscriber and subscription information and discusses how to:

- Add a subscriber.
- Add subscription information.
- Associating a subscription with subscribed events.
- Associating a subscription with subscribed environments.

Understanding Subscribers and Subscriptions

You use the Interoperability Event Subscription program (P90702A) to establish subscribers and to add subscriptions. After you add a subscriber, you must activate it. If your subscriber is inactive, you will not receive any events even if you have active subscriptions. You activate subscribers on the Event Subscribers form by selecting the subscriber, and then selecting Change Status from the Row menu.

Each subscriber can have one or more subscriptions. Each subscription can be associated with one or more subscribed events and subscribed environments. Each subscription that you want to use must be activated. You activate subscriptions on the Event Subscriptions form by selecting the subscription, and then selecting Change Status from the Row menu.

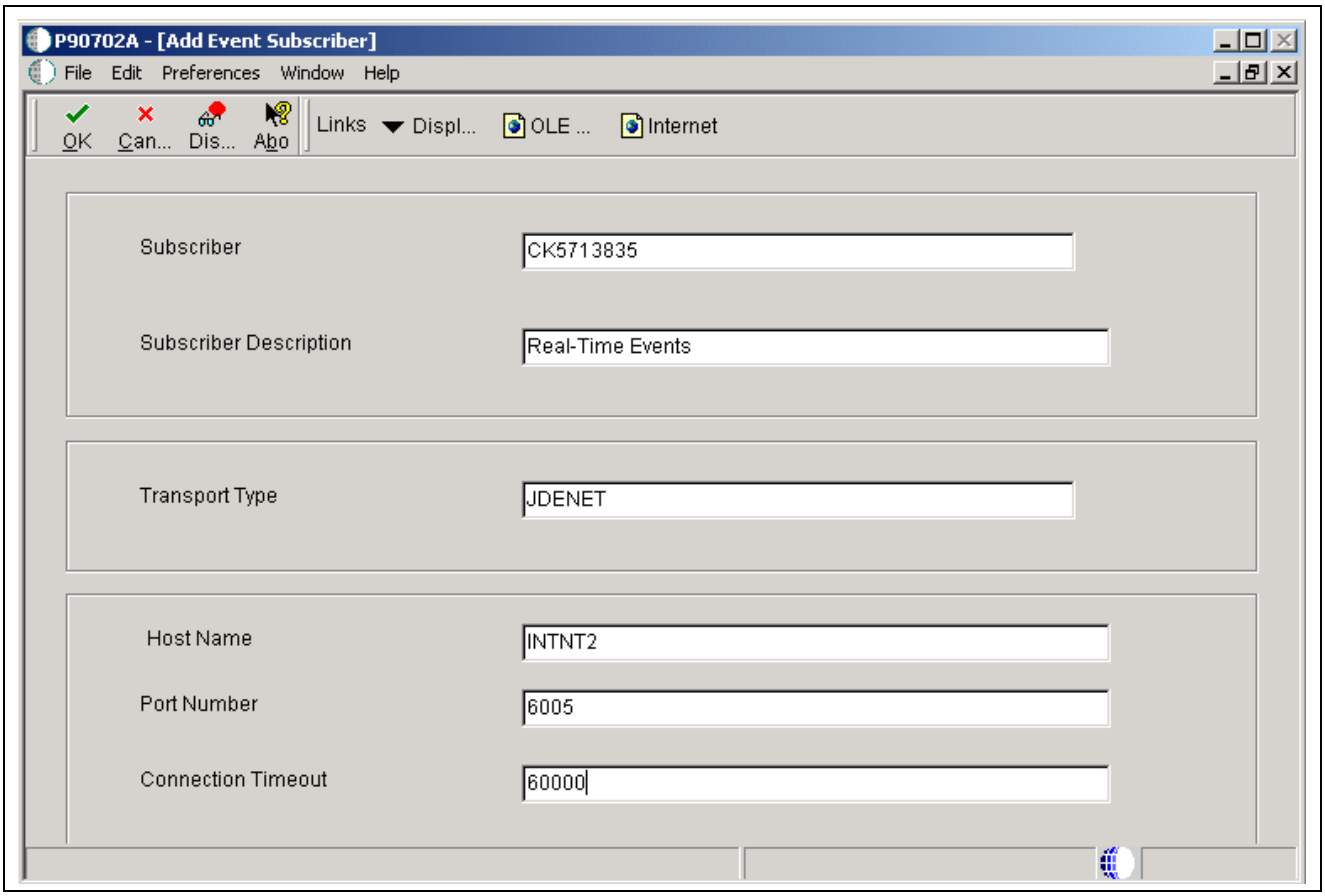
Any time you make a change to a subscriber, including the associated subscriptions, you must refresh the subscriber cache on the JD Edwards EnterpriseOne and the Transaction servers for the changes to become effective. You can refresh your running system from the Event Subscribers form by selecting Refresh Sub Cache from the Form menu.

Forms Used to Add a Subscriber and Subscription Information

Form Name	FormID	Navigation	Usage
Event Subscribers	W90702AA	Type P90702A on the Fast Path.	Locate and review existing subscribers.
Add Event Subscriber	W90702AB	On Event Subscribers, click Add.	Add or change a subscriber.
Event Subscriptions	W90702AD	Select a subscriber in the detail area of the Event Subscribers form, and then select Event Subscriptions from the Row menu.	Locate and review existing subscriptions for a subscriber.
Add Event Subscription	W90702AE	On Event Subscriptions, click Add.	Add new subscription information.
Subscribed Events	W90702AG	On the Event Subscriptions form, select the subscription information in the detail area, and then select Subscribed Events from the Row menu.	Associate a subscription with an event.
Subscribed Environments	W90702AF	On the Event Subscriptions form, select the subscription information in the detail area, and then select Subscribed Env from the Row menu.	Associate a subscription with an environment.

Adding a Subscriber

Access the Add Event Subscriber form.



Add Event Subscriber form

Subscriber The JD Edwards EnterpriseOne user ID for the user who is to receive the subscribed events.

Subscriber Description A description of the subscriber.

Transport Type Describes through which mechanism the subscriber receives events. Valid transport types are:

- COMCONN: COM Connector
- JAVACONN: Java Connector (including WSG)
- JDENET: For XAPI requests

  Additional fields appear on the Add Subscriber Event form. In the Host Name field, enter the name of the server that processes events for the subscriber. In the Port Number field, enter the port where the subscriber service is running. In the Connection Timeout field, enter the time in milliseconds after which the event connection is considered timed out.
- JMSTOPIC: JMS Topic

  Additional fields appear on the Add Subscriber Event form. In the Connection Factory JNDI field, enter the JMS Topic Connection Factory JNDI name. In the Topic Name field, enter the JMS Topic name for your subscriber.

Important! The values that you enter in the Connection Factory JNDI Name field and the Topic Name field must be the same values that you configured on the WebSphere Application Server

See *JD Edwards EnterpriseOne Transaction Server Components Installation and Upgrade Guide*, Configuring JMS Topic

- MQSQ: IBM MQSeries

  Additional fields appear on the Add Subscriber Event form. In the Connection Factory JNDI field, enter the WebSphere MQ Connection Factory JNDI name. In the Queue Name field, enter the WebSphere MQ queue name for your subscriber

  See Configuring WebSphere – in Using Events — Guaranteed, Creating WebSphere MQ Queues

- MSMQ: Microsoft Message Queue

  Additional fields appear on the Add Subscriber Event form. In the Queue Label field, enter the MSMQ Queue Label. In the Queue Name field, enter the MSMQ Queue Name

Adding a Subscription

Access the Add Event Subscription form.

Subscriber The JD Edwards EnterpriseOne user ID for the user who is to receive the subscribed events.

Subscription Name A unique name for the subscription.

Subscription Description A description of the subscription.

Associating a Subscription with Subscribed Events

Access the Subscribed Events form.

Event Type The name of the event.

Associating a Subscription with Subscribed Environments

Access the Subscribed Environments form.

Environment The JD Edwards EnterpriseOne environment with which the subscription is associated. Each subscription can be associated with any number of valid environments.

Creating MSMQ Queues

This section provides an overview about MSMQ and discusses:

- Creating an MSMQ real-time event queue.
- Verifying event delivery.

Prerequisites

Before you complete this task:

- MSMQ is installed on your system.
- WebSphere is installed on your system.

Understanding MSMQ

You can use Microsoft message queueing to subscribe to and receive events. After you create the events queue for MSMQ, you must add the queue name as a subscriber, using the Interoperability Event Subscription program (P90702A). The queue name must be in MSMQ direct format, which includes your machine name or IP address, depending on which protocol you use. Naming conventions for MSMQ direct format queue names are discussed on Microsoft's web page.

After you create the queue and set up the subscriber information, you should verify event delivery. MSMQ RTEII, a server-only feature, is an extension of COMConnector.

See Also

Microsoft Message Queuing,http://www.microsoft.com/windowsserver2003/technologies/msmq/default.mspx

Creating an MSMQ Real-Time Event Queue

Use these steps to configure MSMQ:

1. From the Control Panel, select Administrative Tools, and then select Computer Manage.
2. On the Computer Management Console, navigate to Services and Applications, and then open Message Queuing.
3. Open Private Queue, right-click the Private Queue folder, select New, and then Private Queue.

   Note. You can create the events queue under Public Queue if you prefer. These steps apply to creating the events queue regardless of whether you create it in the Private Queue folder or the Public Queue folder.

4. In Queue Name, select a meaningful queue name, for example, RTE-TEST.
5. If the events queue is used in a transactional environment, select the Transactional option, and then click OK.

   Your new queue appears in the Private or Public Queue folder.
6. Right-click your newly created events queue and select properties.
7. In the Label field, enter a meaningful queue label name; for example, E1Outbound, and then click OK.

Verifying Event Delivery

Use these steps to verify event delivery:

1. Start your COMConnector on your enterprise server.

Note. Do not start your COMConnector on your client.

2. On your enterprise server, in MSMQ Computer Management, select the queue that you configured to receive JD Edwards EnterpriseOne events.
3. To see if any events are in the queue, click the queue messages under queue name and select Action then Refresh in the Computer Management menu.
4. Double-click any messages that are in the queue.

   A menu displays the message content up to the first 256 bytes.

Creating WebSphere MQ Queues

This section provides an overview about WebSphere MQ and discusses:

- Creating a WebSphere MQ real-time event queue.
- Configuring WebSphere.
- Verifying event delivery.

Prerequisites

Before you complete this task:

- WebSphere MQ is installed on your system with PTF CSD06.
- WebSphere is installed on your system.

Understanding WebSphere MQ

You can use IBM's message queueing to subscribe to and receive events. After you create the events queue for WebSphere MQ, you must add the queue name as a subscriber, using the Interoperability Event Subscription program (P90702A).

After you create the queue and set up the subscriber information, you should verify event delivery.

Creating a WebSphere MQ Real-Time Event Queue

Use these steps to configure WebSphere MQ:

1. Open the WebSphere MQ Explorer and navigate to the Queue Manager

   The default queue manager is typically named QM_<hostname>, where <hostname> is the machine name where WebSphere MQ is installed.

   Note. If the QM_<hostname> queue is not created, then manually create the queue. Right-click Queue Managers, select New, and then select Queue Manager. Complete the data fields on each successive screen.

2. Under Queue Manager, select the Queues folder.

   This shows any existing queues hosted by this queue manager.

3. To create the queue for delivery of JD Edwards EnterpriseOne events, select New then Local Queue from the Action menu on the WebSphere MQ Explorer.

   Note. On Create Local Queue, enter a meaningful queue name, for example, RTE_TEST_QUEUE.

4. To make the queue persistent, select the Persistent option for the Default Persistence field.

   The default settings should be sufficient for the remaining configuration values.

Important! When entering queue names for IBM Websphere MQ, the queue name *must* be all upper case.

Configuring WebSphere

Use these steps to configure WebSphere:

1. Log on to the WebSphere Administration Console.
2. Create a Queue Connection Factory by selecting WebSphere MQ JMS Provider under Resources.

   Enter a meaningful connection factory name along with a JNDI name; for example, jms/mq/rte/QueueConnectionFactory.

   Note. When you add a WebSphere MQ subscriber in JD Edwards EnterpriseOne, enter this name in the Connection Factory JNDI field.

3. Create a queue destination by selecting WebSphere MQ JMS Provider under Resources.
   a. In the Name and Base Queue Name field, enter the same queue name that you used when you created the queue in the WebSphere MQ Explorer; for example RTE_TEST_QUEUE.
   b. Enter a meaningful JNDI name; for example, jms/mq/rte/TestQueue01.

      Note. When you add a WebSphere MQ subscriber in JD Edwards EnterpriseOne, enter this name in the Queue Name field.

   c. Enter the Queue Manager name; for example, QM_DENNF13.
4. Save these changes in the WebSphere console.

Verifying Event Delivery

Use these steps to verify event delivery:

1. In the WebSphere MQ Explorer, select the queue you configured to receive JD Edwards EnterpriseOne events.

   Note. To see if any events are in the queue, click the refresh button on the Explorer window. The Current Depth column shows the number of messages in the queue. You might have to scroll right in the explorer window to see this column.

2. If there are messages in the queue, right-click the queue.
3. To see the messages in the queue, select Browse Messages in the pop-up menu.

Note. JD Edwards EnterpriseOne sends the event XML to an WebSphere MQ queue, not the serialized object sent to subscriber queues serviced by the Java connector.

CHAPTER 14

Using Real-Time Events - Guaranteed

This chapter provides overviews about real-time events and generating real-time events.

Note. This chapter is applicable only if you use guaranteed events delivery. Guaranteed event delivery is available when you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.11 or JD Edwards EnterpriseOne Tools 8.95 and later tools releases with JD Edwards EnterpriseOne Applications 8.9, 8.10, 8.11, and later EnterpriseOne Applications releases.

Refer to the Classic Events chapters if you use JD Edwards EnterpriseOne Tools 8.93 or earlier releases, or if you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.10, or 8.9.

Understanding Real-Time Events - Guaranteed

A real-time event is a notification that a business transaction has occurred in JD Edwards EnterpriseOne. You can use a JD Edwards EnterpriseOne HTML client to generate a real-time event on the JD Edwards EnterpriseOne server. Real-time events can be used for both synchronous and asynchronous processing.

An example of synchronous processing is to use real-time events to update an auction site that uses JD Edwards EnterpriseOne as a back-end. A user enters a new item for auction, which triggers a transaction into the JD Edwards EnterpriseOne system. The system captures the transaction and sends a notification to an interoperability server that communicates the information to a web engine to update the HTML pages so that all of the auction users can see the new item.

You can also use real-time event generation for asynchronous processing. For example, an online store sends orders to different vendors (business to business), captures the transactions, and enters the orders into the vendors' systems. A user buys a book. The vendor enters a purchase order to the book publisher and sends a notification to the shipping company to pick up the book and deliver it. The book order can be completed as a purchase order transaction with JD Edwards EnterpriseOne, but the shipping request requires that the data is packaged into a commonly agreed-upon format for the shipping company to process.

Generating Real-Time Events

This section provide an overview about generating real-time events and discusses:

- Real-time event APIs.
- Example code for creating events.

Understanding Real-Time Event Generation

Events can be one of these:

- Single Event

  Contains one partial event. A single event is useful if the receiver requires that events be generated per system call. You can also use single events with different event types.

- Aggregate Event

  Contains multiple partial events. An aggregate event is useful if the receiver requires a document that contains multiple events. For example, a supply chain solution might want the complete sales order provided as one event that contains multiple partial events.

- Composite Event

  Contains only single events. Composite events are useful if the customer has multiple receivers, some requiring single events and some requiring a complete event similar to an aggregate event.

Using Real-Time Event APIs

These APIs are available for you to generate real-time events:

- jdeIEO_EventInit
- jdeIEO_EventAdd
- jdeIEO_EventFinalize
- jdeIEO_CreateSingleEvent
- jdeIEO_IsEventTypeEnabled

Interoperability Event Interface Calls Sample Code

These steps and the accompanying example code illustrate how to create a single event:

1. Design the data structure for the real-time event.

```
typedef struct tagDSD55RTTEST
   {
   char    szOrderCo[6];
   char    szBusinessUnit[13];
   char    szOrderType[3];
   MATH_NUMERIC   mnOrderNo;
   MATH_NUMERIC   mnLineNo;
   JDEDATE     jdRequestDate;
   char    szItemNo[27];
   char    szDescription1[31];
   MATH_NUMERIC   mnQtyOrdered;
   MATH_NUMERIC   mnUnitPrice;
   MATH_NUMERIC   mnUnitCost;
   char    szUserID[11];
   } DSD55RTTEST, *LPDSD55RTTEST;
```

2. Define the data structure object in the business function header file.
3. Modify the business function source to call jdeIEO_CreateSingleEvent.

```
JDEBFRTN(ID) JDEBFWINAPI RealTimeEventsTest (LPBHVRCOM lpBhvrCom,
LPVOID lpVoid, LPDSD55REALTIME lpDS)
```



```
{
/* Define Data Structure Object */
DSD55RTTEST  zRTTest   = {0};
   IEO_EVENT_RETURN  eEventReturn   = eEventCallSuccess;
IEO_EVENT_ID  szEventID   ={0};
()Populate required members

/* Now call the API */
   szEventID = jdeIEO_CreateSingleEvent { lpBhvrCom,
      "RealTimeEventsTest",
      "JDERTOUT",
      "SalesOrder",
      "D55RTTEST",
   &zRTTest,
   sizeof(zRTTest),
   0,
   &eEventReturn   };

/* Error in jdeFeedCallObjectEvent is not a critical error
and should only be treated as a warning */
   if( eEventReturn != eEventCallSuccess )
{
   /* LOG the Warning and return */
   return ER_WARNING;
```

This sample code illustrates how to create an aggregate event:

```
DSD55RTTEST zD55TEST01 = {0};
DSD55RTTEST zD55TEST02 = {0};
DSD55RTTEST zD55TEST03 = {0};
IEO_EVENT_RETURN eEventReturn = eEventCallSuccess;
IEO_EVENT_ID szEventID;

szEventID = jdeIEO_EventInit (lpBhvrCom, eEventAggregate, "MyFunction1",
 "JDESOOUT", "EventScope1", 0, &eEventReturn);
eEventReturn = jdeIEO_EventAdd (lpBhvrCom, szEventID, "MyFunction2", NULL,
 "D55TEST01", &zD55TEST01, sizeof(zD55TEST01),0);
eEventReturn = jdeIEO_EventAdd (lpBhvrCom, szEventID, "MyFunction3", NULL,
 "D55TEST02", &zD55TEST02, sizeof(zD55TEST02),0);
eEventReturn = jdeIEO_EventAdd (lpBhvrCom, szEventID, "MyFunction3", NULL,
 "D55TEST03", &zD55TEST03, sizeof(zD55TEST03),0);
eEventReturn = jdeIEO_EventFinalize (lpBhvrCom, szEventID,"MyFunction4",0);
```

This sample code illustrates how to create a composite event:

```
IEO_EVENT_RETURN    eEventReturn    = 0;
    IEO_EVENT_ID szEventID;


   eEventReturn = eEventCallSuccess;
   szEventID = jdeIEO_EventInit (lpBhvrCom, eEventComposite, "MyFunction1",
 "JDESOOUT","EventScope1",0,&eEventReturn,0);
```

```
  eEventReturn = jdeIEO_EventAdd ( lpBhvrCom, szEventID, "MyFunction2",
"SODOCBEGIN", "D55TEST01", &zD55TEST01, sizeof(zD55TEST01),0);
  eEventReturn = jdeIEO_EventAdd ( lpBhvrCom, szEventID, "MyFunction3",
"SOITEMADD", "EventScope3", "D55TEST02", &zD55TEST02, sizeof(zD55TEST02),0);
  eEventReturn = jdeIEO_EventFinalize (lpBhvrCom, szEventID, "MyFunction4",0);
```

Errors that are returned by the system calls might not be critical enough to stop the business process. the system flags non-critical errors as warnings and logs them in the log file.

CHAPTER 15

Using XAPI Events - Guaranteed

This chapter provides an overview of XAPI events and discusses how to:

- Use JD Edwards EnterpriseOne as a XAPI originator.
- Use JD Edwards EnterpriseOne as a XAPI executor.
- Work with JD Edwards EnterpriseOne and third-party systems.
- Use JD Edwards EnterpriseOne-to-EnterpriseOne connectivity.
- Map a business function.

Note. This chapter is applicable only if you use guaranteed events delivery. Guaranteed event delivery is available when you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.11 or JD Edwards EnterpriseOne Tools 8.95 and later tools releases with JD Edwards EnterpriseOne Applications 8.9, 8.10, 8.11, and later EnterpriseOne Applications releases.

Refer to the Classic Events chapters if you use JD Edwards EnterpriseOne Tools 8.93 or earlier releases, or if you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.10 or 8.9.

Understanding XAPI Events - Guaranteed

XAPI is a JD Edwards EnterpriseOne service that captures transactions as the transaction occurs and then calls third-party software, end users, and other JD Edwards systems to obtain a return response. A XAPI event is very similar to a real-time event and uses the same infrastructure to send an event. The difference between a real-time event and a XAPI event is that the subscriber to a XAPI event returns a reply to the originator. The XAPI event contains a set of structured data that includes a unique XAPI event name and a business function to be invoked upon return. Like real-time events, XAPI events can be generated on a JD Edwards EnterpriseOne server using a JD Edwards EnterpriseOne HTML client. XAPI events also can be generated by a third-party system and sent to a JD Edwards EnterpriseOne system for a response.

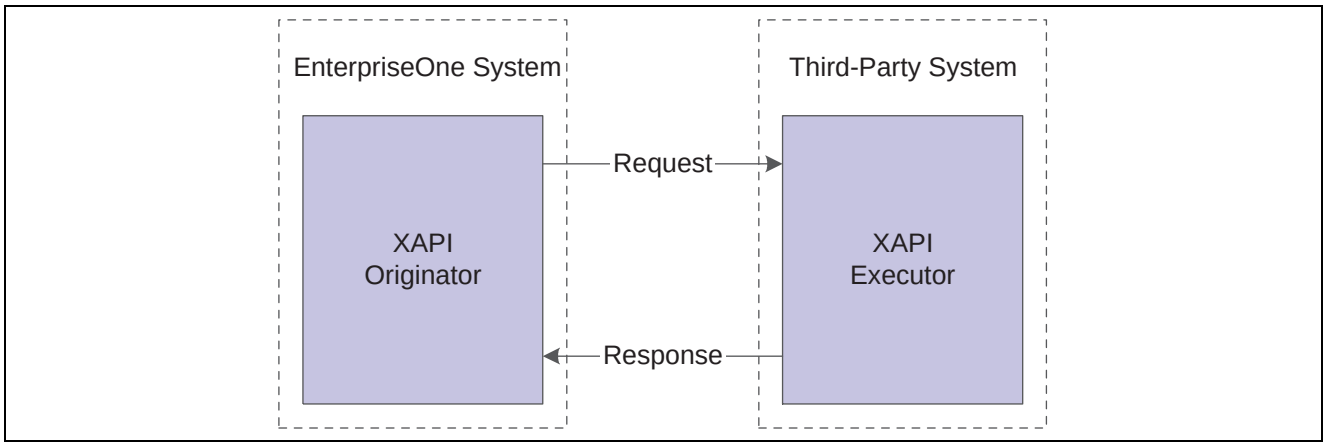
The XAPI structure sends outbound events and receives replies. An event is first generated by the XAPI originator and then sent to a separate system, the XAPI executor, for processing. The XAPI executor then sends a response back to the XAPI originator. The XAPI structure provides for these three possibilities of originator and executor combinations:

- JD Edwards EnterpriseOne to third-party.
- Third-party to JD Edwards EnterpriseOne.
- JD Edwards EnterpriseOne to JD Edwards EnterpriseOne.

When you use JD Edwards EnterpriseOne-to-EnterpriseOne events processing, you must map business functions and APIs.

JD Edwards EnterpriseOne to Third-Party

This diagram shows a logical representation of the XAPI process from JD Edwards EnterpriseOne to a third-party system:



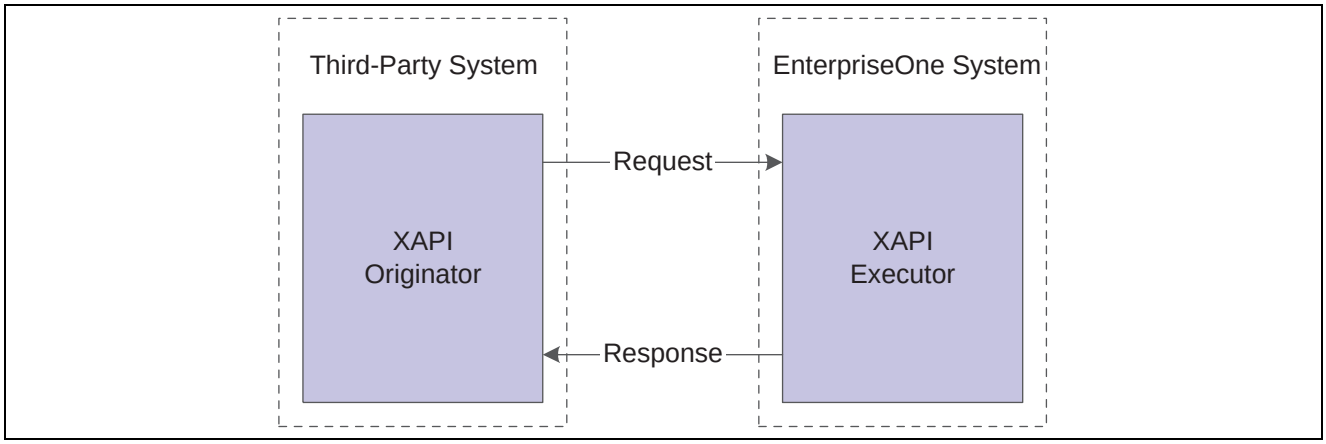
JD Edwards EnterpriseOne to a third-party system XAPI even

In summary:

1. JD Edwards EnterpriseOne (XAPI originator) sends a request.
2. The request is sent to a third-party system.
3. The third-party system (XAPI executor) processes the request and sends a response back to the XAPI originator.

Third-Party to JD Edwards EnterpriseOne

This diagram shows a logical representation of the XAPI process from a third-party system to JD Edwards EnterpriseOne:



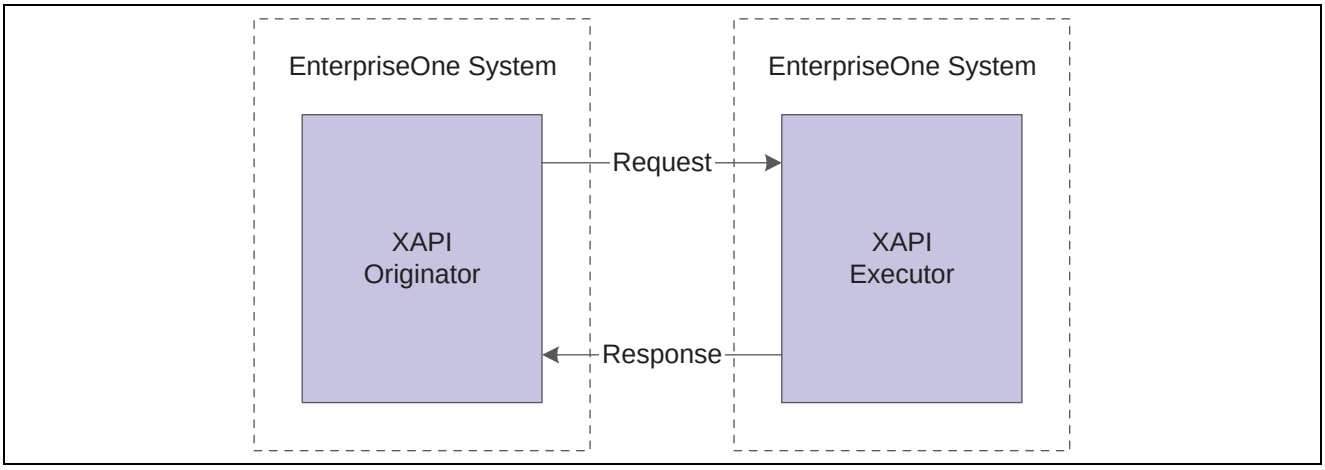
Third-party system to JD Edwards EnterpriseOne XAPI event

In summary:

1. The third-party system (XAPI originator) sends a request using the JD Edwards EnterpriseOne XAPI request form.
2. The request is sent to JD Edwards EnterpriseOne.
3. JD Edwards EnterpriseOne (XAPI executor) processes the request and sends a response back to the XAPI originator.

JD Edwards EnterpriseOne-to-EnterpriseOne

This diagram shows a logical representation of the XAPI process from one JD Edwards EnterpriseOne system to another JD Edwards EnterpriseOne system:



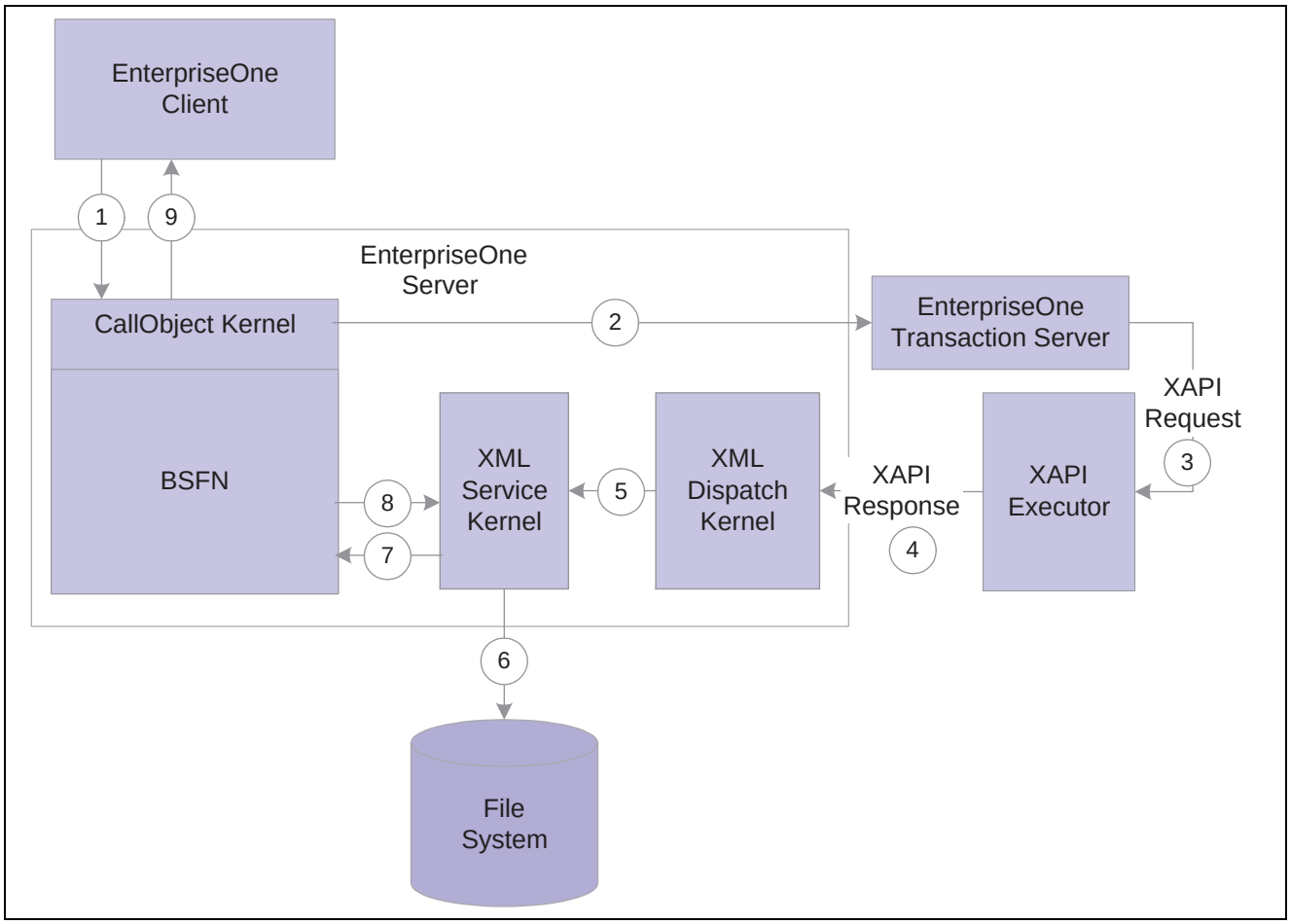
JD Edwards EnterpriseOne-to-EnterpriseOne XAPI event

In summary:

1. The first JD Edwards EnterpriseOne system (XAPI originator) sends a request.
2. The request is sent to a second JD Edwards EnterpriseOne system, which might share the same or different environment as the first JD Edwards EnterpriseOne system.
3. The second JD Edwards EnterpriseOne system (XAPI executor) processes the request and sends a response back to the first JD Edwards EnterpriseOne system (XAPI originator).
4. The first JD Edwards EnterpriseOne system (XAPI originator) processes the response.

Using JD Edwards EnterpriseOne as a XAPI Originator

This diagram illustrates the flow of a XAPI event when JD Edwards EnterpriseOne functions as the XAPI originator:



JD Edwards EnterpriseOne as XAPI originator

In summary:

1. Within the Sending the XAPI Request area in the illustration, a JD Edwards EnterpriseOne client calls a business function on the JD Edwards EnterpriseOne server.
2. The business function uses XAPI APIs to create the XAPI request.

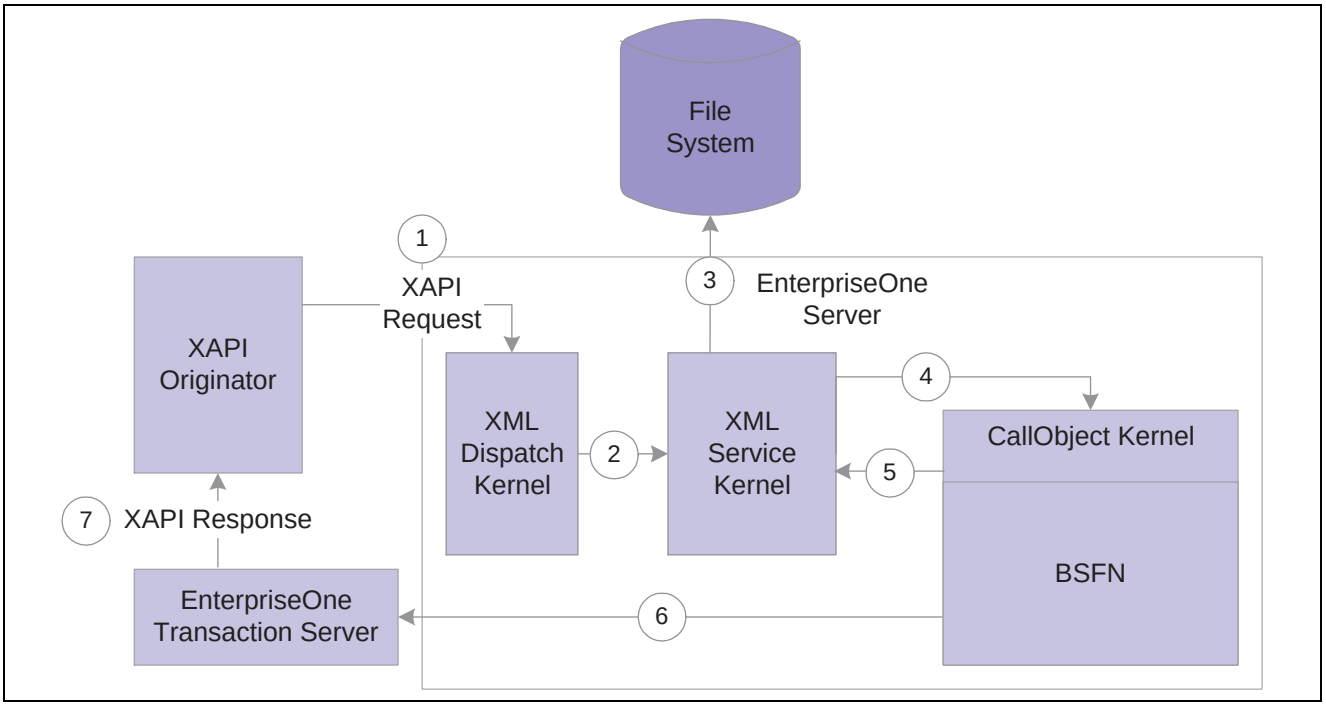
   The CallObject kernel in which the XAPI APIs are executing creates the XAPI request data, adding the callback function. If the XAPI executor is another JD Edwards EnterpriseOne system, the host and port of the JD Edwards EnterpriseOne server that is functioning as the XAPI originator is added to the data. The data is then sent to the Transaction server.
3. The Transaction server sends the document to the subscriber, which is the XAPI executor.

   If the XAPI executor is another JD Edwards EnterpriseOne system, the document is sent through JDENET.
4. Within the Receiving the XAPI Response area in the illustration, the XAPI XML response document is sent by the XAPI executor through JDENET to the XML Dispatch kernel of the XAPI executor.
5. The XML Dispatch kernel receives the response XML document and sends the response to the XML Service kernel.
6. The XML Service kernel stores the response document and creates a file handle.
7. The XML Service kernel invokes the callback business function with the file handle.
8. The business function parses the response document using XAPI APIs, which use the XML Service kernel to load the document into memory.

9. The business function uses XAPI APIs to process the response and send it to the JD Edwards EnterpriseOne client.

Using JD Edwards EnterpriseOne as a XAPI Executor

This diagram illustrates the flow of a XAPI event when JD Edwards EnterpriseOne functions as the XAPI executor.



JD Edwards EnterpriseOne as XAPI executor

In summary:

1. Within the Receiving the XAPI Request area of the illustration, the XAPI originator sends the XAPI XML request document to the XML Dispatch kernel through JDENET.
2. The XML Dispatch kernel receives the document and sends the event request and routing information to the XML Service kernel.
3. The XML Service kernel stores the document and creates a file handle for the XAPI request.

   The XML kernel also creates XML-based routing information. The XML Service kernel uses the F907012 table to find the business function that will process the request.
4. The XML Service kernel invokes the business function with the XML request handle and the routing information handle.
5. The business function uses XAPI APIs to parse and process the document. XAPI APIs load the XAPI XML request document into memory.
6. The business function processes the XAPI event request.

   The business function also creates a XAPI response. The message type for the response must be `xapicallmethod`. The business function also passes the routing information handle.

7. Within the Sending the XAPI Response area of the illustration, the business function uses XAPI APIs to send the XAPI response data including the routing information, to the Transaction server.
8. The Transaction server creates the XAPI XML response document and uses the routing information to send the response document to the XAPI originator.

   If the XAPI originator is another JD Edwards EnterpriseOne system, the document is sent through JDENET.

Working with JD Edwards EnterpriseOne and Third-Party Systems

This section provides an overview of XAPI processing and discusses:

- XAPI outbound request APIs.
- XAPI outbound request API usage code samples.
- XAPI Inbound response APIs.
- XAPI inbound response API usage code samples.

See Also

JD Edwards EnterpriseOne Tools 8.96 Development Tools: APIs and Business Functions Guide, "JD Edwards EnterpriseOne APIs"

Understanding XAPI Processing between JD Edwards EnterpriseOne and Third-Party Systems

You can use XAPI processing to capture JD Edwards EnterpriseOne transactions as the transaction occurs, and then call third-party software to obtain a return response. In this scenario, JD Edwards EnterpriseOne is the originator, and the third-party system is the executor.

XAPI Outbound Request APIs

These APIs are available for you to generate a XAPI outbound request:

- jdeXAPI_Init
- jdeXAPI_Add
- jdeXAPI_Finalize
- jdeXAPI_Free
- jdeXAPI_SimpleSend
- jdeXAPI_ISCallTypeEnabled
- jdeXAPI_CALLS_ENABLED

XAPI Outbound Request API Usage Code Sample

This code sample illustrates how to create a XAPI outbound request:

```
/* Header files required */
```



```
#include <B4205010.h>

/************************/
 BOOL bXAPIInUse, bExit;
#ifdef jdeXAPI_CALLS_ENABLED
 XAPI_CALL_ID ulXAPICallID = 0;
 XAPI_CALL_RETURN eXAPICallReturn = eEventCallSuccess;
#endif
 DSD4205010A dsD4205010A = {0}; /*Query Header*/
 DSD4205010B dsD4205010B = {0}; /*Query Detail*/
#ifdef jdeXAPI_CALLS_ENABLED
 if(jdeXAPI_IsCallTypeEnabled("XAPIOPOUT") && jdeXAPI_IsCallTypeEnabled
("XAPIOPIN") )
 {
  bXAPIInUse = TRUE;
 }
#endif
 /*-----------------------------------------------------*/
 /* Call XAPIInit */
#ifdef jdeXAPI_CALLS_ENABLED
 if(bXAPIInUse == TRUE)
 {
  ulXAPICallID = jdeXAPI_Init( lpBhvrCom, "SendOrderPromiseRequest",
 "XAPIOPOUT", NULL, &eXAPICallReturn);
  if (eXAPICallReturn != eEventCallSuccess)
  {
   bExit = TRUE;
  }
 }
#endif
 /*-------------------------------------------------*/
 /* Adding Header Information */
#ifdef jdeXAPI_CALLS_ENABLED
 if(bXAPIInUse == TRUE)
 {
  eXAPICallReturn = jdeXAPI_Add( lpBhvrCom, ulXAPICallID,
"SendOrderPromiseRequest", "D4205010A", &dsD4205010A,
sizeof(DSD4205010A));
  if (eXAPICallReturn != eEventCallSuccess)
  {
   bExit = TRUE;
  }
 }
#endif
 /*-------------------------------------------------*/
 /* Loading Detail Information */
#ifdef jdeXAPI_CALLS_ENABLED
 if(bXAPIInUse == TRUE)
 {
```

```
  eXAPICallReturn = jdeXAPI_Add( lpBhvrCom, ulXAPICallID,
"SendOrderPromiseRequest", "D4205010B", &dsD4205010B,
sizeof(DSD4205010B));
  if (eXAPICallReturn != eEventCallSuccess)
  {
   bExit = TRUE;
  }
 }
#endif
#ifdef jdeXAPI_CALLS_ENABLED
 if(bXAPIInUse == TRUE)
 /*-------------------------------------------------*/
 /* Finalize */
 {
  eXAPICallReturn = jdeXAPI_Finalize( lpBhvrCom, ulXAPICallID,
"SendOrderPromiseRequest", "OrderPromiseCallback");
  if (eXAPICallReturn != eEventCallSuccess)
  {
   bExit = TRUE;
  }
 }
#endif
#ifdef jdeXAPI_CALLS_ENABLED
 if (eXAPICallReturn != eEventCallSuccess)
 {
 /*-------------------------------------------------*/
 /* CleanUp */
  if(bXAPIInUse == TRUE)
  {
   jdeXAPI_Free( lpBhvrCom, ulXAPICallID, "SendOrderPromiseRequest");
  }
 }
#endif
```

XAPI Inbound Response APIs

These APIs are available for you to read an inbound XAPI response:

- jdeXML_GetDSCount
- jdeXML_GetDSName
- jdeXML_ParseDS
- jdeXML_DeleteXML

XAPI Inbound Response API Usage Code Sample

This code sample illustrates how the business function uses the XML Service APIs to read and parse the XML data:

```
#include <B4205030.h>
```



```
 int iCurrentRecord;
 int iHeaderCount;
 int iRecordCount;
 NID nidDSName;
 DSD4205030A dsD4205030A = {0};
 DSD4205030B dsD4205030B = {0};
#ifdef jdeXAPI_CALLS_ENABLED
 if(jdeXAPI_IsCallTypeEnabled("XAPIOPOUT") && jdeXAPI_IsCallTypeEnabled
("XAPIOPIN") )
 {
  iRecordCount = jdeXML_GetDSCount(lpDS->szXMLHandle);
  if (iRecordCount > 0)
  {
   for (iCurrentRecord = 0; iCurrentRecord < iRecordCount; iCurrentRecord++)
   {
    jdeXML_GetDSName(lpDS->szXMLHandle,iCurrentRecord,nidDSName);
    if (jdestrcmp(nidDSName,(const char*)"D4205030A") == 0)//mod
    {
     jdeXML_ParseDS( lpDS->szXMLHandle,iCurrentRecord,&dsD4205030A,
sizeof(DSD4205030A));
    }
    else
    {
     jdeXML_ParseDS( lpDS->szXMLHandle,iCurrentRecord,&dsD4205030B,
sizeof(DSD4205030B));

    }
   }
  }
  if (iCurrentRecord == iRecordCount)
  {
   jdeXML_DeleteXML(lpDS->szXMLHandle);
  }
 }
#endif
```

Using JD Edwards EnterpriseOne-to-Enterprise One Connectivity

This section provides an overview of the JD Edwards EnterpriseOne-to-EnterpriseOne connectivity for XAPI events and discusses:

- XAPI outbound request handling APIs.
- XAPI outbound request parsing API usage sample code.
- XAPI inbound response generation APIs.
- XAPI inbound response parsing API usage sample code.

- XAPI error handling APIs.

See Also

JD Edwards EnterpriseOne Tools 8.96 Development Tools: APIs and Business Functions Guide, "JD Edwards EnterpriseOne APIs"

Understanding JD Edwards EnterpriseOne-to-EnterpriseOne Connectivity

The XAPI structure provides the capability for two different JD Edwards EnterpriseOne systems to communicate with each other. The first JD Edwards EnterpriseOne system (XAPI originator) generates a XAPI request (event). Instead of the request being distributed to a third-party system, JDENET sends the request to a second JD Edwards EnterpriseOne system. A JD Edwards EnterpriseOne to JD Edwards EnterpriseOne XAPI event must be sent through a subscriber with the JDENET transport type. The second JD Edwards EnterpriseOne system (XAPI executor) processes the event and returns a response to the first JD Edwards EnterpriseOne system (XAPI originator).

Modify Element Name for XML Documents

Before XAPI event processing, any document that was sent from JD Edwards EnterpriseOne was considered to be a response document, and any document coming in to JD Edwards EnterpriseOne was considered to be a request document. However, with XAPI, request documents are generated by the JD Edwards EnterpriseOne originating system and can be sent to a JD Edwards EnterpriseOne executor system. Response documents are generated and sent out by the JD Edwards EnterpriseOne executor system and received by the JD Edwards EnterpriseOne originating system. To support XAPI and to enable the XML dispatch kernel to be able to distinguish between a response and reply, JD Edwards created these type attributes to be used with the jdeResponse element:

Element and Type Attribute	Description
jdeResponse=RealTimeEvent	Use this element and attribute to identify a XAPI request that is sent from the JD Edwards EnterpriseOne originating system and sent to the JD Edwards EnterpriseOne executor system.
jdeResponse=xapicallmethod	Use this element and attribute to identify a XAPI response that is sent from the JD Edwards EnterpriseOne executor system and sent to the JD Edwards EnterpriseOne originating system.

When the XML Dispatch kernel receives a document with the jdeResponse element and a RealTimeEvent or xapicallmethod type attribute, XML Dispatch sends the document to the XML Service kernel. XML Service can distinguish a response or a reply based on the type attribute that is associated with the jdeResponse element and then processes the document appropriately.

Security for Originator and Executor

Access to the JD Edwards EnterpriseOne originator and JD Edwards EnterpriseOne executor systems is based on:

- Security token
- Environment
- Role

The JD Edwards EnterpriseOne originating system verifies that the security information is valid and creates an hUser object with an encrypted token to send to the JD Edwards EnterpriseOne executor. Encryption APIs (jdeEncypher and jdeDecypher) are used to encrypt and decode the password. The security information is sent in the XAPI request XML document.

Note. The user ID, password, environment, and role must be the same on both JD Edwards EnterpriseOne systems (originator and executor).

Error Processing for Originator and Executor

You might encounter these two errors during XAPI error processing between two JD Edwards EnterpriseOne systems:

Type of Error	Explanation
Business-related errors	The business function or the business function specs cannot be found.
System errors	These errors occur in other parts of the system (for example, message delivery failure).

The system handles XAPI error processing for business-related errors in these ways:

- XAPI logs business-related errors in the JD Edwards EnterpriseOne server log, and the errors are delivered as part of the XAPI reply
- XAPI APIs parse business errors from the response document.
- XAPI logs all information that is available about the error in the JD Edwards EnterpriseOne server log.

XAPI Outbound Request Handling APIs

These outbound request handling APIs are available for you to generate a JD Edwards EnterpriseOne-to-EnterpriseOne XAPI outbound request:

- jdeXMLRequest_GetDSCount
- jdeXMLRequest_GetDSName
- jdeXMLRequest_ParseDS
- jdeXMLRequest_DeleteXML
- jdeXMLRequest_ParseNextDSByName
- jdeXMLRequest_PrepareDSListForIterationByName

XAPI Outbound Request Parsing API Usage Sample Code

This code sample shows the API usage for parsing an outbound request by the JD Edwards EnterpriseOne XAPI executor:

```
#include <jde.h>

#define b0000310_c


/**************************************************************************
*    Source File:  b0000310
```



```
*
*    Description:  Company Real Time Notification Outbound Wrapper Source File
*
****************************************************************************/

#include <b0000310.h>
#include <B4206030.h>
#include <B4206000.h>
/****************************************************************************
*  Business Function:  CompanyRealTimeWrapper
*
*        Description:  Company Real Time Notification Outbound Wrapper
*
*         Parameters:
*           LPBHVRCOM           lpBhvrCom    Business Function Communications
*           LPVOID              lpVoid       Void Parameter - DO NOT USE!
*           LPDSD0000310A        lpDS         Parameter Data Structure Pointer
*
****************************************************************************/

 int iXMLRecordCount = 0;
 int iCurrentRecord = 0;
 NID nidDSName;
 ID idReturnValue = ER_SUCCESS;
 ID idSORecordCount = ER_ERROR; /*Return Code*/
 LPDSD4206000A lpDS;
 int lpmnJobNumber;

 MATH_NUMERIC mnBatchNumber = {0};
 unsigned long lBatchNumber = {0};
 DSD4206030A dsD4206030A = {0};

 /* CacheProcessInboundDemandRequest B4206030.c */
 DSD4206000I dsD4206000I = {0};

 /* Demand scheduling inbound DSTR */
 iXMLRecordCount = jdeXMLRequest_GetDSCount(lpDS->szXMLHandle);
 if( iXMLRecordCount > 0)
 {
  for ( iCurrentRecord = 0; iCurrentRecord < iXMLRecordCount; iCurrentRecord++)
  {
   memset((void *)(&dsD4206000I), (int)(_J('\0')), sizeof(DSD4206000I));
   memset((void *)(nidDSName), (int)(_J('\0')), sizeof(NID));
   if(jdeXMLRequest_GetDSName(lpDS->szXMLHandle,iCurrentRecord,nidDSName))
   {
    /* Retrieving data*/
    if (jdeStricmp(nidDSName, (const JCHAR *)_J("D40R0180B")) == 0)
    {
     if (jdeXMLRequest_ParseDS(lpDS->szXMLHandle,iCurrentRecord,
&dsD4206000I,sizeof(DSD4206000I)))
```



```
     {
      /* Get next number for the batch number of the inbound INVRPT
record*/
      if ( dsD4206000I.cInventoryAdvisement == _J('1'))
      {
       lBatchNumber = JDB_GetInternalNextNumber();
       LongToMathNumeric(lBatchNumber, &mnBatchNumber);
       FormatMathNumeric(dsD4206000I.szBatch,&mnBatchNumber);
      }
      /* Setup cancel flag for pending delete record */
      if ( dsD4206000I.cPendingDelete == _J('1'))
      {
       /* Flag set as 1 for any cancel demand record */
       dsD4206000I.cCancelFlag = _J('1');
      }
      else
      { /* Flag set as 9 for any non cancel demand record */
       dsD4206000I.cCancelFlag = _J('9');
      }
      /* Load parms for cache */
      //memset((void *)(&dsD4206030A), (int)(_J('\0')),
sizeof(DSD4206030A));
      I4206000_LoadParmsToCache(&dsD4206000I, &dsD4206030A);
      MathCopy(&dsD4206030A.mnJobnumberA, lpmnJobNumber);
      /* Add the DSTR to cache */
      idReturnValue = jdeCallObject( _J("CacheProcessInboundDemand
Request") ,(LPFNBHVR)NULL ,lpBhvrCom ,lpVoid ,(LPVOID)&dsD4206030A,
(CALLMAP *)NULL, (int)0,(JCHAR*)NULL ,(JCHAR*)NULL ,(int)0 );
      /* Write XML DSTR to cache fail */
      if (idReturnValue == ER_ERROR)
      {
       jdeErrorSet(lpBhvrCom, lpVoid, (ID)0, _J("032E"), (LPVOID)NULL);
      }
     }
     else
     { /* warning XML parse fail */
      jdeErrorSet(lpBhvrCom, lpVoid, (ID)0, _J("40R46"), (LPVOID) NULL);
     }
    } /* end if */
   }/* end if DS name */
  }/* end for - looping all matching XML DSTR */
  /* Ensure there is at least one record */
  idSORecordCount = ER_SUCCESS;
 }/*if( iXMLRecordCount > 0) */
 return idSORecordCount;
```

XAPI Inbound Response Generation APIs

These outbound request handling APIs are available for you to generate a JD Edwards EnterpriseOne-to-EnterpriseOne XAPI outbound request:

- jdeXAPIResponse_SimpleSend
- jdeXAPIResponse_Init
- jdeXAPIResponse_Add
- jdeXAPIResponse_Finalize
- jdeXAPIResponse_Free

XAPI Inbound Response Parsing API Usage Sample Code

This code sample shows the API usage for generating an inbound response from the JD Edwards EnterpriseOne XAPI executor to the JD Edwards EnterpriseOne originator:

```
JDEBFRTN (ID) JDEBFWINAPI SendOrderPromiseRequest (LPBHVRCOM lpBhvrCom,
LPVOID lpVoid, LPDSD4205010 lpDS)
{
/************************************************************
 * Variable declarations
************************************************************/
  char    cPromisableLine          = ' ';
  int     nHeaderBackOrderAllowed  = ' ';
  HUSER   hUser;
  ID      JDEDBResult              = JDEDB_PASSED;
  BOOL    bExit                    = FALSE;
  BOOL    bB4001040Called          = FALSE;
  BOOL    bXAPIInUse               = FALSE;
  BOOL    bAtLeastOneDetail        = FALSE;

  #ifdef jdeXAPI_CALLS_ENABLED
  XAPI_CALL_ID ulXAPICallID        = 0;
  XAPI_CALL_RETURN eXAPICallReturn = eEventCallSuccess;
  #endif
/************************************************************
 * Declare structures
************************************************************/
  DSD4001040   dsD4001040     = {0};
  DSD4205020   dsD4205020     = {0};
  DSD4205040   dsD4205040     = {0}; /* Header Info */
  DSD4205050   dsD4205050     = {0}; /* Detail Info */
  DSD4205010A   dsD4205010A   = {0}; /* Query Header */
  DSD4205010B   dsD4205010B   = {0} /* Query Detail */
  DSD0100042   dsD0100042     = {0};
  LPDSD4205040H  lpDSD4205040H    = (LPDSD4205040H) NULL;
  LPDSD4205050D  lpDSD4205050D    = (LPDSD4205050D) NULL;

/************************************************************
 * Declare pointers
************************************************************/
/************************************************************
 * Check for NULL pointers
************************************************************/
```

```
if ((lpBhvrCom == (LPBHVRCOM) NULL) ||
 (lpVoid == (LPVOID)  NULL) ||
 (lpDS == (LPDSD4205010) NULL))
{
jdeErrorSet (lpBhvrCom, lpVoid, (ID) 0, "4363", (LPVOID) NULL);
return ER_ERROR;
}

/* Retrieving hUser */
JDEDBResult = JDB_InitBhvr (lpBhvrCom, &hUser, (char *)NULL,
JDEDB_COMMIT_AUTO ) ;

if ( JDEDBResult == JDEDB_FAILED )
{
jdeSetGBRError ( lpBhvrCom, lpVoid, (ID) 0, "4363" ) ;
return ER_ERROR ;
}
/*****************************************************************
 * Set pointers
*****************************************************************/
/*****************************************************************
 * Main Processing
*****************************************************************/
 /*-------------------------------------------------------*/
 /* Setting Up ErrorCode
      */
 lpDS->cErrorCode = '0';
 /*-------------------------------------------------------*/
 /* Determining if XAPI is ready to be used             */

 bXAPIInUse = FALSE;

 #ifdef jdeXAPI_CALLS_ENABLED
 if(jdeXAPI_IsCallTypeEnabled("XAPIOPOUT") &&
     jdeXAPI_IsCallTypeEnabled("XAPIOPIN") )
 {
     bXAPIInUse = TRUE;
 }
 #endif

 /*-------------------------------------------------------*/
 /* Data validation and default values.                  */
 /* When Display Before Accept Mode is on, validate Key  */
 /* Information. Otherwise retrieve it from Header Record*/

 if((lpDS->cDisplayBeforeAcceptMode == '1')   &&
      ((MathZeroTest(&lpDS->mnOrderNumber) == 0) ||
       (IsStringBlank(lpDS->szOrderType))   ||
       (IsStringBlank(lpDS->szOrderCompany))))
 {
```

```
     bExit = TRUE;
}
else
{
    MathCopy(&dsD4205040.mnOrderNumber,&lpDS->mnOrderNumber);
    strncpy(dsD4205040.szOrderType,
      lpDS->szOrderType,
       sizeof(dsD4205040.szOrderType));
    strncpy(dsD4205040.szComputerID,
      lpDS->szOrderCompany,
       sizeof(dsD4205040.szOrderCompany));
    dsD4205040.cUseCacheOrWF = lpDS->cUseCacheOrWF;
    strncpy(dsD4205040.szComputerID,
      lpDS->szComputerID,
       sizeof(dsD4205040.szComputerID));
    MathCopy(&dsD4205040.mnJobNumber,&lpDS->mnJobNumber);
    jdeCallObject( "GetSalesOrderHeaderRecord",
         NULL,
         lpBhvrCom, lpVoid,
         (LPVOID)&dsD4205040,
         (CALLMAP *) NULL,
         (int) 0,
         (char *) NULL,
         (char *) NULL,
         (int) 0 ) ;

    lpDSD4205040H = (LPDSD4205040H)jdeRemoveDataPtr(hUser,
(ulong)dsD4205040.idHeaderRecord);

    if (lpDSD4205040H == NULL)
    {
         bExit = TRUE;
    }
}

/*-------------------------------------------------------*/
/* Set error if exiting at this point                    */
if (bExit == TRUE)
{
    lpDS->cErrorCode = '1';
    /* Sales Order Header Not Found */
    strncpy(lpDS->szErrorMessageID,
       "072T",
         sizeof(lpDS->szErrorMessageID));
    if (lpDS->cSuppressError != '1')
    {
       jdeErrorSet (lpBhvrCom, lpVoid, (ID) 0, "072T", (LPVOID) NULL);
    }
}
```

```
/*-----------------------------------------------------*/
/* Default Promising Flag is always 1                  */
lpDS->cDefaultPromisingFlags = 1;
if (bExit == FALSE)
{
 /*-----------------------------------------------------*/
 /* Call XAPIInit   */
 #ifdef jdeXAPI_CALLS_ENABLED
 if(bXAPIInUse == TRUE)
 {
    ulXAPICallID = jdeXAPI_Init( lpBhvrCom,
                   SendOrderPromiseRequest,
                "XAPIOPOUT",
                NULL,
                &eXAPICallReturn);
    if (eXAPICallReturn != eEventCallSuccess)
    {
         bExit = TRUE;
    }
 }
 #endif
 if (bExit == FALSE)
 {

    /*-----------------------------------------------*/
    /* Loading Header Information                    */
    I4205010_PopulateQueryHeader(lpDS,&dsD4205010A
      lpDSD4205040H,&dsD0100042,hUser,lpVoid,lpBhvrCom);
    nHeaderBackOrderAllowed = dsD4205010A.nAllowBackorders;

    /*-----------------------------------------------*/
    /* Adding Header Information                     */
    #ifdef jdeXAPI_CALLS_ENABLED
    if(bXAPIInUse == TRUE)
    {
       eXAPICallReturn = jdeXAPI_Add( lpBhvrCom,
                  ulXAPICallID,
                  "SendOrderPromiseRequest",
                  "D4205010A",
                  &dsD4205010A,
                  sizeof(DSD4205010A));
       if (eXAPICallReturn != eEventCallSuccess)
       {
          bExit = TRUE;
       }
    }
    #endif
 }
}
if (bExit == FALSE)
```

```
{

 /*-----------------------------------------------------*/
 /* Loading Detail Information                          */
 MathCopy(&dsD4205050.mnOrderNumber,&lpDS->mnOrderNumber);
 strncpy(dsD4205050.szOrderType,lpDS->szOrderType,
            sizeof(dsD4205050.szOrderType));
 strncpy(dsD4205050.szOrderCompany,lpDS->szOrderCompany,
            sizeof(dsD4205050.szOrderCompany));
 dsD4205050.cUseCacheOrWF = lpDS->cUseCacheOrWF;
 strncpy(dsD4205050.szComputerID,lpDS->szComputerID,
            sizeof(dsD4205050.szComputerID));
 MathCopy(&dsD4205050.mnJobNumber,&lpDS->mnJobNumber);
 if (lpDSD4205040H->cActionCode != 'A')
 {
    dsD4205050.cCheckTableAfterCache = '1';
 }
 else
 {
    dsD4205050.cCheckTableAfterCache = '0';
 }
 jdeCallObject( "GetSalesOrderDetailRecordOP",
    NULL,
    lpBhvrCom, lpVoid,
    (LPVOID)&dsD4205050,
    (CALLMAP *) NULL,
    (int) 0, (char *) NULL,
    (char *) NULL, (int) 0 ) ;

 if (dsD4205050.cRecordFound != '1')
 {
    bExit = TRUE;
    lpDS->cErrorCode = '1';

    /* Sales Order Detail Not Found */
    strncpy(lpDS->szErrorMessageID,"4162",
            sizeof(lpDS->szErrorMessageID));
    if (lpDS->cSuppressError != '1')
    {
       jdeErrorSet (lpBhvrCom, lpVoid, (ID) 0, "4162", (LPVOID) NULL);
    }
 }
 while ((dsD4205050.cRecordFound == '1') && (bExit == FALSE))
 {
    lpDSD4205050D = (LPDSD4205050D)jdeRemoveDataPtr( hUser,
(ulong)dsD4205050.idDetailRecord);
    /* Reset flags */
    cPromisableLine = '0';
    bB4001040Called = FALSE;
```

```
/*-------------------------------------------------*/
/* Evaluate the Record from F4211 (cDataSource = 2)*/
/*  to find out if we should promise the line      */
/*  else find out from Order Promising Detail.     */

if(dsD4205050.cDataSource == '1')
{
   if (lpDSD4205050D->cOPPromiseLineYN == 'Y')
   {
      cPromisableLine = '1';
   }
}
else if(dsD4205050.cDataSource == '2')
{
   MathCopy ( &dsD4001040.mnShortItemNumber,
        &lpDSD4205050D->mnShortItemNumber);
   strncpy ( dsD4001040.szBranchPlant,
      lpDSD4205050D->szBusinessUnit,
         sizeof(dsD4001040.szBranchPlant));

   jdeCallObject  ( "GetItemMasterDescUOM",
            NULL,
            lpBhvrCom, lpVoid,
             (LPVOID)&dsD4001040,
             (CALLMAP *) NULL,
             (int) 0, (char *) NULL,
             (char *) NULL, (int) 0 ) ;

   bB4001040Called = TRUE;

   cPromisableLine = I4205010_IsLinePromisable(lpBhvrCom,lpVoid,
              hUser,lpDS,lpDSD4205050D, dsD4001040.cStockingType);
}
if (cPromisableLine == '1')
{

  /* Set this flag if at least one promisable */
  /*   detail record exists.                  */
  bAtLeastOneDetail = TRUE;

  if (bB4001040Called == FALSE)
  {
    MathCopy (&dsD4001040.mnShortItemNumber,
         &lpDSD4205050D->mnShortItemNumber);
    strncpy ( dsD4001040.szBranchPlant,
         lpDSD4205050D->szBusinessUnit,
         sizeof(dsD4001040.szBranchPlant));

  jdeCallObject  ( "GetItemMasterDescUOM",
           NULL,
```

```
            lpBhvrCom, lpVoid,
            (LPVOID)&dsD4001040,
            (CALLMAP *) NULL,
            (int) 0, (char *) NULL,
            (char *) NULL, (int) 0 ) ;
  }

  I4205010_PopulateQueryDetail( lpDS,&dsD4205010B,
               lpDSD4205050D,
            &dsD4001040,
            &dsD4205010A,
               &dsD0100042,
            cPromisableLine,
               hUser,
               lpVoid,
            lpBhvrCom);

  #ifdef jdeXAPI_CALLS_ENABLED
  if(bXAPIInUse == TRUE)
  {
    eXAPICallReturn = jdeXAPI_Add( lpBhvrCom,
               ulXAPICallID,
               "SendOrderPromiseRequest",
               "D4205010B",
               &dsD4205010B,
               sizeof(DSD4205010B));
    if (eXAPICallReturn != eEventCallSuccess)
    {
         bExit = TRUE;
    }
  }
  #endif
}

/*-------------------------------------------------*/
/* Fetching the next Detail Record         */
MathCopy(&dsD4205050.mnOrderNumber,&lpDS->mnOrderNumber);
strncpy(dsD4205050.szOrderType,lpDS->szOrderType,
          sizeof(dsD4205050.szOrderType));
strncpy(dsD4205050.szOrderCompany,lpDS->szOrderCompany,
         sizeof(dsD4205050.szOrderCompany));
dsD4205050.cUseCacheOrWF = lpDS->cUseCacheOrWF;
strncpy(dsD4205050.szComputerID,lpDS->szComputerID,
         sizeof(dsD4205050.szComputerID));
MathCopy(&dsD4205050.mnJobNumber,&lpDS->mnJobNumber);
if (lpDSD4205040H->cActionCode != 'A')
{
   dsD4205050.cCheckTableAfterCache = '1';
   }
   else
```

```
    {
        dsD4205050.cCheckTableAfterCache = '0';
    }
    jdeCallObject( "GetSalesOrderDetailRecordOP",
            NULL,
            lpBhvrCom, lpVoid,
            (LPVOID)&dsD4205050,
            (CALLMAP *) NULL,
            (int) 0, (char *) NULL,
            (char *) NULL, (int) 0 ) ;
}
if (!bAtLeastOneDetail)
{
   bExit = TRUE;
   lpDS->cErrorCode = '1';
   /* Sales Order Detail Not Found */
   strncpy(lpDS->szErrorMessageID,"4162",
           sizeof(lpDS->szErrorMessageID));
   if (lpDS->cSuppressError != '1')
   {
      jdeErrorSet (lpBhvrCom, lpVoid, (ID) 0, "4162", (LPVOID) NULL);
   }
}
if (bExit == FALSE)
{
   #ifdef jdeXAPI_CALLS_ENABLED
   if(bXAPIInUse == TRUE)
   {
      eXAPICallReturn = jdeXAPI_Finalize( lpBhvrCom,
              ulXAPICallID,
              "SendOrderPromiseRequest",
              "OrderPromiseCallback)";
      if (eXAPICallReturn != eEventCallSuccess)
      {
         bExit = TRUE;
      }
   }
   #endif
}

/*-------------------------------------------------*/
/* Call B4205020 in Add Mode                       */
if((bExit == FALSE) &&
    (lpDS->cDisplayBeforeAcceptMode != '1') &&
    (lpDS->cUseCacheOrWF == '2'))
{
    MathCopy(&dsD4205020.mnOrderNumber,&lpDS->mnOrderNumber);
    strncpy(dsD4205020.szOrderType,lpDS->szOrderType,
         sizeof(dsD4205020.szOrderType));
    strncpy(dsD4205020.szOrderCompany,lpDS->szOrderCompany,
```

```
                sizeof(dsD4205020.szOrderCompany));
        strncpy(dsD4205020.szComputerID,lpDS->szComputerID,
                sizeof(dsD4205020.szComputerID));
        MathCopy(&dsD4205020.mnJobNumber,&lpDS->mnJobNumber);

        jdeCallObject( MaintainOPWorkFile,
            NULL,
            lpBhvrCom, lpVoid,
            (LPVOID)&dsD4205020,
            (CALLMAP *) NULL,
            (int) 0, (char *) NULL,
            (char *) NULL, (int) 0 ) ;
     }
  }

/************************************************************
 * Function Clean Up
************************************************************/
  #ifdef jdeXAPI_CALLS_ENABLED
  if (eXAPICallReturn != eEventCallSuccess)
  {
   /*-------------------------------------------------------*/
   /* CleanUp */
   if(bXAPIInUse == TRUE)
   {
    jdeXAPI_Free( lpBhvrCom,
        ulXAPICallID,
        "SendOrderPromiseRequest");
   }

   lpDS->cErrorCode = '1';
   /* System Error - no reasonable error messages exist. */
   strncpy(lpDS->szErrorMessageID,"018Y",
               sizeof(lpDS->szErrorMessageID));
   if (lpDS->cSuppressError != '1')
   {
       jdeErrorSet (lpBhvrCom, lpVoid, (ID) 0, "018Y", (LPVOID) NULL);
   }
  }
  #endif

  if(lpDSD4205040H != (LPDSD4205040H)NULL)
  {
     jdeFree((void *)lpDSD4205040H);
  }
  if(lpDSD4205050D != (LPDSD4205050D)NULL)
  {
     jdeFree((void *)lpDSD4205050D);
  }
 return (ER_SUCCESS);
```



```
}
```

XAPI Error Handling APIs

These APIs are used for error handling in the XAPI executor system.

- jdeXML_CheckSystemError

  The check system error API is for system errors. It tells the JD Edwards EnterpriseOne originator system that a system error occurred in the JD Edwards EnterpriseOne executor system:

- jdeXML_GetErrorCount
- jdeXML_SetErrors

  The get error count and set errors APIs are for business errors. These two APIs, when used together, find the number of business errors and then send the errors to the BHVRCOM structure for you to resolve.

Mapping a Business Function

This section provides an overview of mapping business functions and discusses how to add mapping information.

Understanding how to Map a Business Function

When the JD Edwards EnterpriseOne executor system receives an event from the JD Edwards EnterpriseOne originator, the JD Edwards EnterpriseOne executor needs to know what business function or system API to invoke to process the request. You must map the business function or system API to the XAPI event name. You map business functions and system APIs in the F907012 table. You use the Event Request Definition program (P907012) to map business functions and APIs.

If you are mapping business functions, you enter the name of the business function. If you are mapping APIs, you must enter the name of the API and the library where it is defined. In addition, the signature of the API must be made common, similar to the business function.

Mapping business functions enables you to point a XAPI event to a business function or system API that you wrote. You do not need to modify source code of a business function that JD Edwards delivered to you.

Forms Used to Add Mapping Information

Form Name	FormID	Navigation	Usage
Work With Definition	W907012A	Enter *P907012* in the Fast Path Command Line.	Locate and review existing mappings.
Request Definition	W907012B	On Work With Definition, click Add	Add or change business function or API mapping for the XAPI event.

Adding Mapping Information

Access the Request Definition form.

Event Name The name of the event (for example JDERTSOOUT). Some events are part of other events.

BSFN Definition An option that specifies the type of processing for an event.

API Definition An option that specifies the type of processing for an event.

When you select the API definition option, the DLL Name field appears on the form.

Function Name The actual name of the function. It must follow standard ANSI C naming conventions (for example, no space between words).

DLL Name Specifies the name of the database driver file. This file is specified in the [DB SYSTEM SETTINGS] section of the enterprise server jde.ini file. The file you specify depends upon the platform and the database. Values for specific machines and databases are:

DBDR: AS/400 to DB2/400

JDBNET: AS/400 to any other server DBMS

libjdbnet.sl: HP9000 to DB2/400

libjdbnet.sl: HP9000 to Microsoft SQL Server

libora80.sl: HP9000 to Oracle (Version 8.0) UNIX

libjdbnet.so: RS6000 to DB2/400

libjdbnet.so: RS6000 to Microsoft SQL Server

libora73.so: RS6000 to Oracle (Version 7.3) UNIX

libora80.so: RS6000 to Oracle (Version 8.0) UNIX

jdbodbc.dll: Intel to AS/400 =

jdboci32.dll: Intel to Oracle (Version 7.2) NT

jdboci73.dll: Intel to Oracle (Version 7.3) NT

dboci80.dll: Intel to Oracle (Version 8.0) NT

dbodbc.dll: Intel to SQL Server NT

jdbnet.dll: Digital Alpha to AS/400

jdboci32.dll: Digital Alpha to Oracle (Version 7.2)

dboci73.dll: Digital Alpha to Oracle (Version 7.3)

jdboci80.dll: Digital Alpha to Oracle (Version 8.0)

jdbodbc.dll: Digital Alpha to SQL Server NT

CHAPTER 16

Using Z Events - Guaranteed

This chapter provides overviews of Z events, the Z event process, and vendor-specific outbound functions, and discusses how to work with Z events.

Note. This chapter is applicable only if you use guaranteed events delivery. Guaranteed event delivery is available when you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.11 or JD Edwards EnterpriseOne Tools 8.95 and later tools releases with JD Edwards EnterpriseOne Applications 8.9, 8.10, 8.11, and later EnterpriseOne Applications releases.

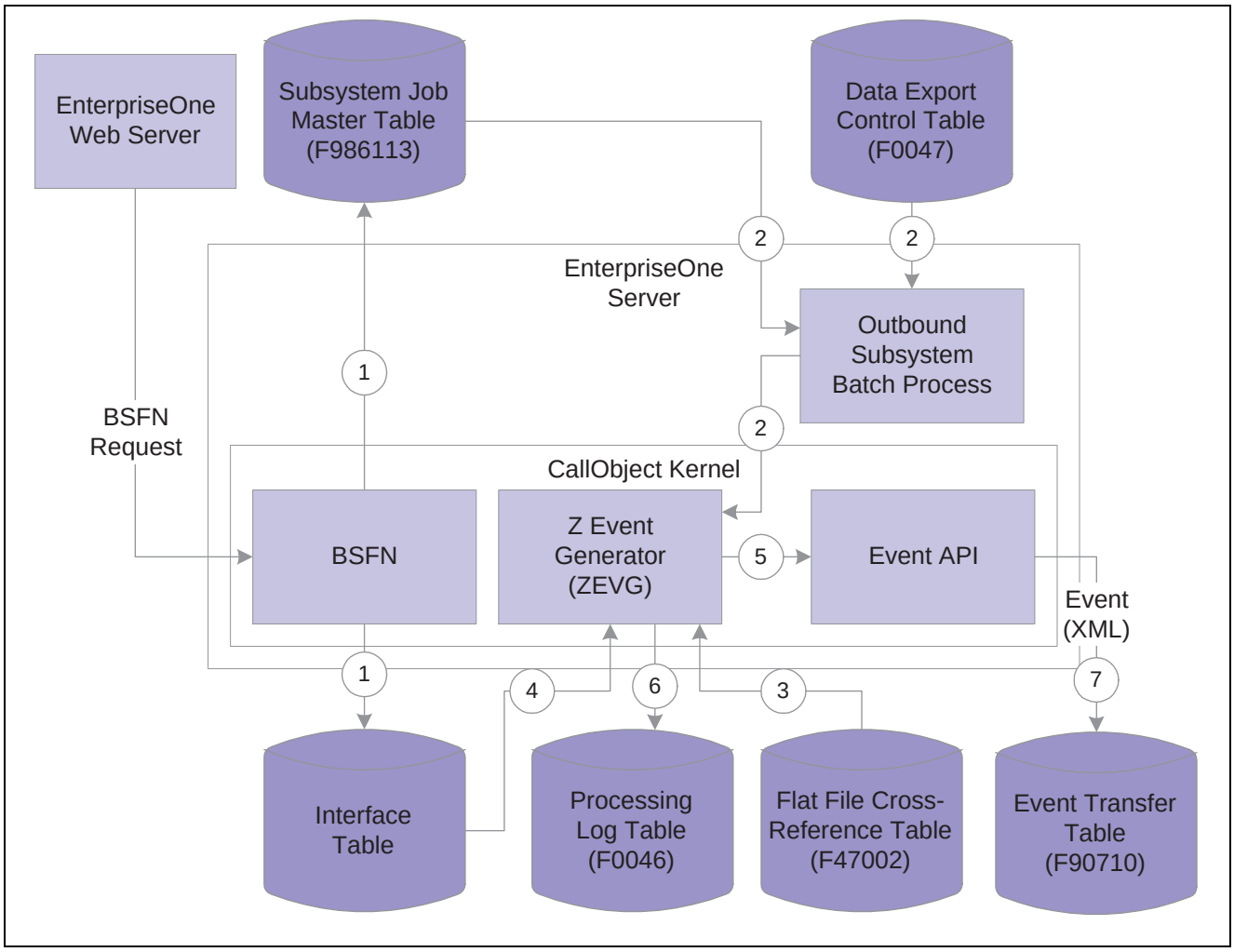
Refer to the Classic Events chapters if you use JD Edwards EnterpriseOne Tools 8.93 or earlier releases, or if you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.10 or 8.9.

Understanding Z Events - Guaranteed

A *Z* event is near real-time notification that an interoperability transaction has occurred. To generate Z events, JD Edwards EnterpriseOne uses the Z event generator and the existing interface table infrastructure. You can use the existing JD Edwards EnterpriseOne interface tables, or you can build customized interface tables as long as the tables are created using JD Edwards EnterpriseOne standards.

Z Event Process Flow

This diagram shows Z event processing. The diagram expands on the system diagram provided in the Using Events - Guaranteed Overview chapter. This diagram details the processing that the CallObject kernel does during Z event processing. In the System Overview diagram, the BSFN uses the Event API, all within the CallObject kernel and in turn place the event data into the F90710 table. For Z events, additional processing occurs within the CallObject kernel before the event is placed into the F90701 table. Z events that are placed in the F90710 table are already in XML format (unlike real-time and XAPI events, which only have raw event data in the table).



Z event processing

In summary:

1. When a JD Edwards EnterpriseOne transaction occurs, the master business function writes the transaction information in the appropriate interface table and sends an update record to the F986113 table.
2. A batch process monitors the F986113 table. When the batch process finds a W status in the F986113 table, it notifies the Z Event Generator (ZEVG), which is part of the CallObject kernel. The batch process looks in the F0047 table to determine which Z-event generator to call.
3. The F47002 table provides a cross-reference between the transaction and the interface table where the record is stored. This information is used by the Z-event generator.
4. The Z-event generator retrieves the transaction information from the interface table and converts the transaction information into an XML document using a JD Edwards EnterpriseOne DTD.
5. The Z-event generator sends the event (in the form of an XML document) to the event API for distribution.
6. After an event is successfully generated, the successfully generated column in the F0046 table is updated. A UBE purges information in the interface table based on information in the F0046 table.
7. The Event API sends the XML document to the F90710 table, where it is retrieved by the Transaction server and routed to a subscriber.

Vendor-Specific Outbound Functions

The purpose of the vendor-specific outbound function is to pass the key fields for a record in the outbound interface tables to a third-party system. With these keys, you can process information from the database record into your third-party system. The generic outbound subsystem batch process calls the function.

Each vendor-specific function is specific to the transaction being processed. You must decide how the function actually uses the database record information. Although the functions are written to your specifications, and most likely are written outside of JD Edwards EnterpriseOne, these functions must use the required JD Edwards EnterpriseOne defined data structure:

Data Item	Required	I/O	Description
szUserId	Y	I	User ID - 11 characters
szBatchNumber	Y	I	Batch Number - 16 characters
szTransactionNumber	Y	I	Transaction Number - 23 characters
mnLineNumber	Y	I	Line Number - double
szTransactionType	Y	I	Transaction Type - 9 characters
szDocumentType	Y	I	Document Type - 3 characters
mnSequenceNumber	Y	I	Sequence Number - double

Working With Z Events

This section provides an overview about Z event configuration and discusses how to add a data export control record.

Configuring Z Events

To generate Z events, complete these tasks:

- Enable the Z event.
- Update the Flat File Cross-Reference table.
- Update the Processing Log table.
- Verify the subsystem job is running.
- Purge data fro the interface table.
- Synchronize F47002 records with F90701 records.
- Set up data export controls.

Enabling Z Event Processing

You can enable or disable master business functions to write transaction information into interface tables and the F986113 table when a transaction occurs. All outbound master business functions that have the ability to create interoperability transactions have processing options that control how the transaction is written. On the Processing Options Interop tab, the first processing option is the transaction type for the interoperability transaction. If you leave this processing option blank, the system does not perform outbound interoperability processing. The second processing option controls whether the *before* image is written for a change transaction. If this processing option is set to 1, before and after images of the transaction are written to the interface table. If this processing option is not set, then only an *after* image is written to the interface table.

Updating Flat File Cross-Reference

When you enable Z events, you also update the F47002 table. The transaction type that you entered in the processing option maps to the F47002 table to determine in which interface tables to store the information from the transaction. You use the Flat File Cross-Reference program (P47002) to update the F47002 table.

Updating the Processing Log Table

The Z event generator uses the F0046 table. The F0046 table contains the keys to the interoperability transaction along with a successfully processed column. The sequence number, transaction type, order type, function name, and function library are obtained from the F0047 table. A vendor-specific record is sequentially created in the F0046 table for every transaction processed by the Interoperability Generic Outbound Subsystem (R00460) UBE or the Interoperability Generic Outbound Scheduler UBE (R00461). For example, if three vendors have subscribed to a transaction using the F0047 table, three records are created in the F0046 table, one record for each transaction. If the vendor-specific object successfully processed the transaction, the Processing Log record is updated with a Y in the successfully processed column. You can use the Processing Log (P0046) program to determine whether a vendor-specific object processed the interoperability transaction correctly.

A purging UBE that purges the interfaces tables runs based on information in the processing log table.

Data in the Processing Log table cannot be changed.

Verifying that the Subsystem Job is Running

When the application master business function adds a record to the F986113 table, a subsystem job is started. Subsystem jobs are continuous jobs that process records from the Subsystem Job Master table. You should verify that the subsystem job is running.

Note. After the records are processed, instead of ending the job, subsystem jobs look for new data in the data queue. Subsystem jobs run until you terminate them.

You can schedule subsystem jobs.

See *JD Edwards EnterpriseOne Tools 8.96 System Administration Guide*, “Working with Servers,” Understanding JD Edwards EnterpriseOne Subsystems.

See *JD Edwards EnterpriseOne Tools 8.96 System Administration Guide*, “Using the Scheduler Application,” Understanding the Scheduler Application.

Purging Data from the Interface Table

After you receive the Z event, you should purge the data from the interface table. You can enter a purge UBE in the Processing Log table to purge the interface table.

See Appendix F, "Interoperability Interface Table Information," Interoperability Interface Table Information, page 247.

See Chapter 17, "Using Batch Interfaces," Purging Interface Table Information, page 152.

Synchronizing F47002 Records with F90701 Records

Z events that are automatically created write records to the F90701 table. If you have existing Z events defined and are upgrading to an 8.11 or later release, you can run the Populate Event Activation Status Table UBE (R90705) to create the associated F90701 table records for the pre-existing Z event definitions.

Setting Up Data Export Controls

This section provides an overview of setting up data export controls and discusses setting up the record.

Understanding Data Export Controls Records

The generation of outbound data is controlled through the F0047 table. You use the Data Export Controls program (P0047) to update the F0047 table. For each transaction type and order type, you must designate the Z event generator that will process the outbound data. To send a given transaction type to more than one third-party application, you associate the transaction type with each of the individual destinations by making separate entries in the F0047 table for each destination. JD Edwards suggests that you specify the name of a third-party function that is called for each transaction as it occurs. Enough information is provided to notify you of the transaction and give you the key values so that you can retrieve the transaction.

Forms Used to Add a Data Export Controls Record

Form Name	FormID	Navigation	Usage
Work with Data Export Controls	W0047A	From an application that supports event generation, open the Data Export Controls program An alternate way to access the Data Export Controls Program is to enter P0047 in the Fast Path command line	View existing data export control records.
Data Export Control Revisions	W0047C	On Work with Data Export Controls, click Add.	Add a new data export control record.

Adding a Data Export Control Record

Access the Data Export Control Revisions form.

To set up Data Export Controls :

1. Complete these fields:
   - Transaction
   - Order Type

2. For each detail row, enter one of these, depending on your platform:
   - Function Name

     Windows NT: _CallOnUpdate@36

     UNIX: CallOnUpdate

     iSeries: CallOnUpdate
   - Function Library

     Windows NT: EnterpriseOne Bin32 Path\zevg.dll

     UNIX(HP): EnterpriseOne Bin32 Path\libzevg.sl

     UNIX(AIX, SUN): EnterpriseOne Bin32 Path\libzevg.so

     iSeries: EnterpriseOne Bin32 Path\ZEVG
   - Enter 1 in the Execute For Add column to generate an event for an add or insert.

     Complete the same process as appropriate for update, delete, and inquiry.
   - Enter 1 in the Launch Immediately column to launch the object from the Outbound Subsystem batch process.

     This column does not affect the Outbound Scheduler batch process.

     The system automatically increments the Sequence field for each line.

CHAPTER 17

Using Batch Interfaces

This chapter discusses:

- JD Edwards EnterpriseOne interface tables.
- Electronic Data Interface.
- Table conversions.
- Output Stream Access UBEs
- Advanced Planning Agent integration

JD Edwards EnterpriseOne Interface Tables

An interface table (also called a Z table) is a working table where non-JD Edwards EnterpriseOne information can be stored and then processed into JD Edwards EnterpriseOne. You can also use interface tables to retrieve JD Edwards EnterpriseOne data. JD Edwards EnterpriseOne interface tables mirror JD Edwards EnterpriseOne application tables.

JD Edwards EnterpriseOne provides predefined interface tables for some applications. You can also create your own interface tables as long as your interface table is formatted in accordance with JD Edwards EnterpriseOne standards.

If you receive an error message when the interface table is processed, you can use a revision application to make corrections to the data and then reprocess the data in batch or transaction mode. After you have successfully processed the data in the interface table, you should run a purge application to remove all records from the interface table and to any remove secondary interface tables from the system.

Note. You usually use a batch interface to collect transactions over a period of time and then process all of the transactions at once.

Structuring Interface Tables

Each JD Edwards EnterpriseOne transaction uses a set of interface tables. Some files share a common set of interface tables. The interface table name is based on the JD Edwards EnterpriseOne application table name and has Z1 as a suffix. For example, if the application table is the F4211 table, the interface table is the F4211Z1 table.

Use the these guidelines to determine the based-on table:

- Inbound is based on the application table that is updated with data from the interface table.
- Outbound is based on the application table that has data extracted from it and placed in the interface table.

Both the inbound and outbound directions of an internal transaction within a system use a single set of interface tables. For example, for a sales order in the Sales Order system, the inbound customer order (850) and the outbound order acknowledgment (855) share a set of interface tables.

If the interface table is used for both inbound and outbound transactions, the based-on table should be the same application table. In the Sales Order example with an inbound customer order and an outbound order acknowledgment, the detail interface table is based on the F4211 table.

If the interface table exceeds 250 columns or has a record length greater than 1968, an additional interface table is needed for the remaining columns. Columns in the additional interface table should contain infrequently used data. The additional interface table is named after the primary interface table with a letter, starting with A, after the Z1 suffix. For example, if the primary interface table is F4211Z1, the additional table is F4211Z1A.

The beginning of the table has these columns, which act as control fields:

- User ID (EDUS) (key field)
- Batch Number (EDBT) (key field)
- Transaction Number (EDTN) (key field)
- Line Number (EDLN) (key field)
- Document Type (EDCT)
- Transaction Type (TYTN)
- Translation Format (EDFT)
- Transmission Date (EDDT)
- Direction Indicator (DRIN)
- Number of Detail Lines (EDDL)
- Processed (EDSP)
- Trading Partner ID (PNID)
- Action Code (TNAC)

You must use the key structure previously discussed.

The end of the table has the these columns, which are reserved for user and audit fields:

- User Reserved Code (URCD)
- User Reserved Date (URDT)
- User Reserved Amount (URAT)
- User Reserved Number (URAB)
- User Reserved Reference (URRF)
- Transaction Originator (TORG)
- User ID (USER)
- Program ID (PID)
- Work Station ID (JOBN)
- Date Updated (UPMJ)
- Time of Day (TDAY)

The middle of the table has all of the columns from the based-on application table, excluding user reserved and audit field columns. An exception to this is when the interface table is near the 250-column limit or the 1968-record length limit. In this case, columns from the application table that most likely will not be needed should be excluded.

Prefixes for the table columns are SY for the header and SZ for the detail.

Change or match interface tables, such as a cash receipt or purchase receipt, might require additional columns that correspond to user input capable controls on an interactive form.

A header table is not required for every transaction.

Note. If you create custom interface tables, use the structure and format described in this chapter.

Updating JD Edwards EnterpriseOne Records

You use interface tables to import non-JD Edwards EnterpriseOne transactions into the live JD Edwards EnterpriseOne database. These non-JD Edwards EnterpriseOne transactions are referred to as Z transactions. Inbound interface tables are based on the JD Edwards EnterpriseOne application table where the transaction is stored. Once records are correctly updated to the appropriate interface table, you can update the record to the JD Edwards EnterpriseOne database.

See Also

Chapter 10, “Processing Z Transactions,” Understanding Z Transactions, page 75

Retrieving JD Edwards EnterpriseOne Records

You can use interface tables to retrieve information from JD Edwards EnterpriseOne. Outbound interface tables are based on the JD Edwards EnterpriseOne application table from where the data is extracted. You can retrieve records from JD Edwards EnterpriseOne by running an extraction batch process, by using a subsystem business function, or by generating a Z event.

Running an Extraction Batch Process

You copy the records from the JD Edwards EnterpriseOne application tables to the JD Edwards EnterpriseOne outbound interface tables using the extraction batch process that is specifically set up for the type of document you are sending.

You initiate the extraction batch process for applications that support extraction batch processing. The extraction batch process displays a version list of report features. You can run an existing version, change an existing version, or add a version. You can also change the processing options and data selection options for that version to fit your needs.

When you run the extraction batch process, the program retrieves data from the JD Edwards EnterpriseOne application tables for the transaction and copies the data into the outbound interface tables. The system also generates an audit report that lists the records that completed successfully. Errors are placed on the audit report and also sent to the employee work center. You can use a revisions application to correct errors in the interface table records.

Subsystem Business Function

You can use the generic outbound subsystem business function, Add Transaction To Subsystem Queue (B0000176), to write a record to the subsystem data queue to specify a batch process that needs to be awakened in the subsystem. This business function starts processing of a batch of one (single transaction). The business function also passes keys to the subsystem data queue.

The data structure for the outbound transaction is:

- Line Number (EDLN)
- Transaction Type (TYTN)
- Document Type (DCTO)
- Action Code (TNAC)

See Also

Chapter 16, “Using Z Events - Guaranteed,” Understanding Z Events - Guaranteed, page 143

Appendix D, “Using Classic Z Events,” Understanding Z Events - Classic, page 233

Using the Revision Application

You use the revision application to add, delete, edit, and review transactions in the interface tables. You can use a revision application to correct the record in error. After you make a change to the interface table, you run the process again. You can continue to make corrections and rerun the transaction process until the program completes without errors. The name is based on the detail interface table. For example, if the tables for Sales Order Entry are F4201Z1 and F4211Z1, the revision application is P4211Z1. The revisions application can call the appropriate purge named event rule to delete records from the interface table.

Purging Interface Table Information

You should run a purge batch process periodically after you have successfully processed the data in the interface tables. The purge batch process should have one or two sections; the number of sections depends on the interface tables. The purge batch process calls the purge named event rule (NER). The name of the purge batch process is based on the revisions application with a P suffix. For example, if the revisions application is P4211Z1, the purge batch process is R4211Z1P.

Purge NERs have two modes:

- Header mode, which deletes the header record and all associated records in independent tables.
- Detail mode, which deletes the detail record and all associated records in dependent tables.

The purge NER is named after the purge batch process. Only eight characters are allowed for the NER name. If the name has nine characters using these standards, remove the P suffix. For example, if the purge batch process is R4211Z1P, the purge NER is N4211Z1P.

When a before image for net change is deleted, the corresponding after image is also deleted. When an after image is deleted, the corresponding before image is also deleted.

Electronic Data Interface

The JD Edwards EnterpriseOne Data Interface for Electronic Data Interchange (EDI) system acts as an interface between the JD Edwards EnterpriseOne system data and the translator software. In addition to exchanging EDI data, this data interface can also be used for general interoperability and electronic commerce needs where a file-based interface meets the business requirements.

See Also

JD Edwards EnterpriseOne Data Interface for Electronic Data Interchange 8.12 Implementation Guide

Table Conversion

Table conversion is a special form of Universal Batch Engine (UBE) that enables you to do high-speed manipulation of data in tables. JD Edwards EnterpriseOne has a table conversion utility that you can use to gather, format, export, and import enterprise data. The table conversion tool enables you to transfer and copy data and to delete records from tables.

See Also

JD Edwards EnterpriseOne Tools 8.96 Development Tools: Data Access Tools Guide, "Understanding Table Conversion"

Output Stream Access UBEs

If you have set up an Output Stream Access (OSA) interface, you can pass JD Edwards EnterpriseOne data to another software program for processing and formatting. OSA can use its own set of commands or it can use an XML library.

See Also

JD Edwards EnterpriseOne Tools 8.96 Development Tools: Report Printing Administration Technologies Guide, "Working with Output Stream Access," Understanding OSA

Advanced Planning Agent Integration

The JD Edwards EnterpriseOne Advanced Planning Agent (APAg) is a tool for batch extracting, transforming, and loading of data. APAg supports access to data sources in the form of relational databases, flat file format, and other data or message encoding, such as XML. APAg also moves data from one place to another and initiates tasks related to the movement of the data.

See JD Edwards Supply Chain Planning, Advanced Planning Agent Guide.

CHAPTER 18

Using Open Data Access

This chapter provides an overview of the Open Data Access (ODA) ODBC driver and discusses how to:

- Install ODA.
- Work with data sources.
- Work with ODA.
- Manage ODA error messages.

Understanding Open Data Access

The JD Edwards EnterpriseOne Open Data Access ODBC driver is a read-only driver that is compliant with version 2.5 or higher. Front-end Windows query and reporting tools can use ODA to access the JD Edwards EnterpriseOne database. ODA supports these front-end tools:

- Microsoft Query
- Microsoft Access
- Microsoft Excel
- ODBCTEST
- Crystal Reports
- Microsoft Analysis Service (not certified)

ODA sits between the front-end Query and Reporting tool and the JD Edwards EnterpriseOne-configured ODBC drivers.

Installing ODA

To access JD Edwards EnterpriseOne data with the ODA ODBC driver, your system must meet the minimum technical requirements (MTR) for JD Edwards EnterpriseOne. MTRs are updated for each release and are available on Customer Connect. Before you install ODA, ensure that your system meets the specified hardware and software requirements.

Hardware Requirements

Hardware requirements include:

- IBM-compatible personal computer.

- Hard disk with 6 MB of free disk space.
- At least 16 MB of random access memory (RAM).

Software Requirements

Software requirements include:

- JD Edwards EnterpriseOne.
- JD Edwards EnterpriseOne Open Data Access driver (JDEOWODA.dll).
- The 32-bit ODBC Driver Manager, version 3.0 or later (ODBC32.dll).

  This file is included with the ODBC Database Drivers.
- Microsoft Windows 95 or later, or Windows NT 4.0 or later

Note. The use of the ODA ODBC driver by 16-bit applications on Windows 95 is not supported.

ODBC Component Files

The JD Edwards EnterpriseOne installation installs the components required by ODBC database drivers. You might also find these additional files:

File	File Name
ODA Driver	JDEOWODA.DLL
ODA Driver Help	JDEOWODA.HLP
Release Notes	README.TXT

Note. OLEDB is a driver for SQL Server. However, OLEDB data source is not supported for ODA. If you are using ODA with SQL Server, use ODBC to set up your data source.

ODA Driver Architecture

The JD Edwards EnterpriseOne ODA ODBC driver architecture has five components:

Component	Description
Application	A front-end Query and Reporting tool that calls the ODA driver to access data from the JD Edwards EnterpriseOne database.
Manager	Loads and unloads drivers on behalf of an application. Processes ODBC calls or passes them to the ODA driver.
JD Edwards EnterpriseOne ODA Driver	Passes some of the ODBC requests directly to the vendor's ODBC driver. If specific data types for JD Edwards EnterpriseOne are used, then the SQL SELECT statement is modified before sending it to the vendor's ODBC driver. After the data is returned from the vendor's ODBC driver, the JD Edwards EnterpriseOne ODA ODBC driver might need to manipulate the data so that it displays correctly in the application.

Component	Description
Vendor Driver	Processes ODBC function calls and submits SQL requests to the specific data source. If necessary, the driver modifies an application's request so that the request conforms to the syntax supported by the associated DBMS.
Data Source	The data that you want to access, as well as the operating system, DBMS, and network platform for the data.

Working with Data Sources

This section provides an overview of data sources and discusses how to

- Add a data source.
- Modify a data source.
- Delete a data source.
- Configure a data source.
- Connect a data source.

Although the ODA driver is automatically registered as part of the installation process, you might need to add a driver data source. You can also add a file data source or a system data source. A system data source can be used by more than one user on the same machine. A system data source is a data source that you have set up with a system data source name (DSN). The system DSN can also be used by a system-wide service, which can then gain access to the data source even if no user is logged on to the machine. You can delete any of the data sources.

After you add a data source, you must configure and connect it. You can modify the configuration and connection setting for an existing data source. For example, you can configure the ODA driver so that you can view currency data in the correct format.

If you use Oracle, you must create another ODBC DSN, named OneWorld ODA Ora, so that you can access the Oracle data source through ODA. Specific information for doing this is included in the online release notes.

You can customize the list of functions that are enabled in ODA. Advanced configuration is optional. If you choose not to customize the list of functions enabled in ODA, the system uses a default list of settings.

You access the ODBC button from the Control Panel on your Windows workstation. When you click the ODBC button, a User Data Sources dialog box appears.

Adding a Data Source

After you add the data source, you must configure it and connect it. This table explains how to navigate on the User Data Sources dialog box to add a data source:

Function	Navigation on User Data Sources dialog box
Add an ODA Driver Data Structure	On the User Data Sources dialog box, click Add. On Add Data Source, select the JD Edwards EnterpriseOne Open Data Access driver from the Installed ODBC Drivers list, and then click Finish.
Add a File Data Source	On the User Data Sources dialog box, click the DSN tab. On File Data Sources, click Add. On Add Data Source, select the JD Edwards EnterpriseOne Open Data Access driver from the Installed ODBC Drivers list, and then click Finish.
Add a System Data Source	On the User Data Sources dialog box, click the System DSN tab, and then click Add. On system Data Sources, click Add. On Add Data Source, select the JD Edwards EnterpriseOne Open Data Access driver from the Installed ODBC Drivers list, and then click Finish.

Modifying a Data Source

You can modify an existing data source. After you access the appropriate data source, select Configure and then modify the existing configuration settings.

Deleting a Data Source

To delete a data source, access the appropriate data source, select remove, and click Yes to confirm the delete.

Configuring a Data Source

To modify an existing data source, access the appropriate data source type and then select a data source from the available list. Click Configure. When you add a data structure, the Configure Data Source tab appears. Enter this information, and then click O:.

Field Name	Description
Data Source Name	Specify the name for the JD Edwards EnterpriseOne Open Data Access driver.
Description	Specify the description of the driver that you are adding. The Description entry cannot exceed 79 characters.

Connecting a Data Source

After the data source is configured, the Connect form appears. You can also select one or more table and business view display Options. On the Connect form, select one or more of these options:

Option Name	Description
Convert User Defined Codes	Select this option to return the associated description of the user-defined field instead of the user-defined code. The associated description is more descriptive because it is a text description instead of a code that is used for the user-defined code. The default option is to display the associated description instead of the user-defined code.
Convert Currency Values	Select this option to convert currency fields to the correct values.
Use Long Table or Business View Names	Select this option to view long table or view names.
Use Long Column Names	Select this option to view long column names
Tables Only	Select this option to view only JD Edwards EnterpriseOne tables.
Business Views Only	Select this option to view only JD Edwards EnterpriseOne business views.
Tables and Business Views	Select this option to view both JD Edwards EnterpriseOne tables and JD Edwards EnterpriseOne business views.

Working with ODA

This section discusses how to:

- Manipulate data.
- Use keywords in the connection string.
- Run a query using Microsoft Excel.

Manipulating Data

The JD Edwards EnterpriseOne database contains object and column names, specific data types and security rules that must be converted or applied so that the data is presented correctly. The specific data types and rules include decimal shifting, Julian date, currency, media object, security, and user-defined codes. In some instances, ODA modifies the SQL SELECT statement, as well as the data, so that it appears correctly within the chosen tool. Once the ODA driver is properly installed and an ODBC data source is established, you can use the functionality of the ODA driver. When a SQL connection is established, the environment of the current connection is stored in the system as the database name. SQLGetInfo can access this value later or it can be used for future connections.

You can use these specific JD Edwards EnterpriseOne features with JD Edwards EnterpriseOne ODA:

Feature	Description
Long Table and Business View Names	Long table and business view names enable you to see a descriptive name when you view an object list. You can use either the descriptive names or the original JD Edwards EnterpriseOne object name in the SELECT statement. Note: This option might not be available for all third-party products (for example, ShowCase STRATEGY products prior to the 2.0 release or Crystal Reports) because the long names contain special characters that are not handled correctly by these tools.
Long Column Names	Long column names enable you to see a descriptive name when viewing any columns list. You can still use either the descriptive names or the original JD Edwards EnterpriseOne column name. For example, you can use either of these statements to retrieve information from the F0101 table: • SELECT ABAN8 from the F0101 table. • SELECT AddressNumber from the F0101 table.
Julian Date	Julian date modifies all references to Julian date columns to convert the date to an SQL-92 standard date. The JD Edwards EnterpriseOne Julian date is converted to a standard date value that can be used in date calculations. This feature enables you to use duration or other date calculations in both the SELECT (result data), WHERE, and HAVING clauses and the ORDER BY clause. The SQL SELECT statement is modified to before a data calculation to convert the JD Edwards EnterpriseOne Julian date column to a standard date. The modification to the SQL SELECT statement is based on the data source that is being accessed because of driver differences in handling date calculations. If the original column value is zero, the date conversion results in a date value of 1899-12-31. To remove these values, this condition should be added to the WHERE clause in the SELECT statement, where DATECOL is the JD Edwards EnterpriseOne Julian date column: `DATECOL <> {d '1899-12-31'}`
Decimal Shifting	All references to decimal-shifted columns are modified to shift the decimal point to cause the result data to be correct. This feature enables SQL statements that contain complex expressions, aggregates, and filtering to run and return accurate results. The SQL SELECT statement is modified to divide the column by the appropriate number of decimal places so that the data is returned correctly and to make compare operators work for filtering.

Feature	Description
Currency	Currency columns are limited to single-column references in the selected columns list. Returned data is converted using the standard JD Edwards EnterpriseOne currency conversion routines. All other references to the currency column in the SQL statement are passed through to the native driver. You must understand how the currency column is used to make effective use of filtering. Before selected columns are returned, the JD Edwards EnterpriseOne Open Data Access driver converts any currency columns to the correct value. Currency columns used in the WHERE or HAVING clause are processed based on the non-converted currency value. Currency columns in the GROUP BY or ORDER BY clause are grouped and sorted by the non-converted currency value.
Media Object	The Media object column, TXVC, in the F00165 table storage is limited to single-column references in the selected columns list. ODA returns media data in plain text or rich text format (RTF) and truncates other binary data, such as an image. The size limitation of the text or RTF is 30,000 characters, and text will be truncated when it reaches this limitation.
Column Security	When column security is active, any reference to restricted columns causes an error to be returned when the SELECT statement is examined, including the use of * (asterisk-selecting all columns) in the select clause, as defined by the SQL-92 standards. You will receive an error if you are not authorized for all of the columns in the table.
Row Security	When row security is active, the statement is modified to include the appropriate WHERE clause for filtering secured rows. You will only see rows that you are authorized to access along with getting accurate results using aggregate functions-for example, SUM or AVG.
User Defined Codes	When user-defined codes (UDCs) are enabled, you see the associated description instead of the internal code when the column data is returned. This processing affects only the returned data and has no effect on the other parts of the Select statement (for example, Where, Order By and so on). This is an optional setting that can be configured when you set up the driver. Before the UDC is returned to you, the JD Edwards EnterpriseOne Open Data Access driver converts the code to the associated description. The UDC columns used in the WHERE or HAVING clause are selected based on the non-converted code and the UDC columns referenced in the GROUP BY and ORDER BY clause are grouped and sorted by the non-converted code.

Using Keywords in the Connection String

This section discusses keywords that you can use in a connection string when you write your own database applications.

You can use C programming language to write database applications that directly invoke SQL APIs that are supported by ODA, such as SQLDriverConnect and SQLBrowseConnect. This table lists keywords that you use in the connection string when you write your own database applications:

Key	Value	Description	Input Connection String	Output Connection String
CONVERTUDC	Y or N (default value is N)	Convert UDC or not	Optional. If not in the connection string, load from INI/registry settings (JD Edwards EnterpriseOne ODA DSN settings).	From the input string or INI/registry settings.
CONVERT CURRENCY	Y or N (default value is N)	Convert currency or not	Optional. If not in the connection string, load from INI/registry settings (JD Edwards EnterpriseOne ODA DSN settings).	From the input string or INI/registry settings.
SHIFTDECIMALS	Y or N (default value is Y)	Use decimal shift or not	Optional. If not in the connection string, load from INI/registry settings (JD Edwards EnterpriseOne ODA DSN settings).	From the input string or INI/registry settings.
CONVERTJULIAN DATES	Y or N (default value is Y)	Convert Julian dates or not	Optional. If not in the connection string, load from INI/registry settings (JD Edwards EnterpriseOne ODA DSN settings).	From the input string or INI/registry settings.
DISPLAYOPTIONS	0/1/2 (no default value)	Display TBLE, BSFN or both	Optional. If not in the connection string, load from INI/registry settings (JD Edwards EnterpriseOne ODA DSN settings).	From the input string or INI/registry settings.
LONGTABLE NAMES	Y or N (default value is Y)	Use long names for tables or not	Optional. If not in the connection string, load from INI/registry settings (JD Edwards EnterpriseOne ODA DSN settings).	From the input string or INI/registry settings.
LONGCOLUMN NAMES	Y or N (default value is Y)	Use long names for columns or not	Optional. If not in the connection string, load from INI/registry settings (JD Edwards EnterpriseOne ODA DSN settings).	From the input string or INI/registry settings.
UID	<string>	User ID	Required by JDEDriverConnect (SQL_DRIVER_ NOPROMPT).	The same as the input if not overwritten by OW login.

PWD	<string>	Password	Required by JDEDriverConnect (SQL_DRIVER_ NOPROMPT).	The same as the input if not overwritten by OW login.
ENVIRONMENT	<string>	Environment	Required by JDEDriverConnect (SQL_DRIVER_ NOPROMPT).	The same as the input if not overwritten by OW login.
DBQ	<string>	The same as the ENVIRONMENT	Work as ENVIRONMENT, if ENVIRONMENT not specified.	Removed if ENVIRONMENT exists.
DSN	<string>	Data source	Optional. Uses DEFAULT if invalid.	Overwritten by login.

If you use the Microsoft Analysis Service tool, you can use connection string keywords to create a new data source. Use this example to write a connection string:

```
DSN=OneWorld ODA;DBQ=ADEVHP02;
```

Running a Query Using Microsoft Excel

This section discusses how to use Microsoft Excel to create and run a query.

To run a query using Microsoft Excel:

1. From the Data menu, select Get External Data.
2. Select Create New Query.
3. On the Databases tab, select the appropriate data source (for example, JD Edwards EnterpriseOne Local or JD Edwards EnterpriseOne ODA).

   Because Excel uses file data sources, the ODA data source you set up in the 32-bit ODBC Administrator does not appear on the list of databases. You should create a File-type Data Source by selecting *New Data Source* and then follow the procedures for setting up a data source.

   When you select the ODA data source, you might need to log on to JD Edwards EnterpriseOne to use the ODA driver. Once you log on, you will not see the Solution Explorer because it is only activated so that the ODA driver can check security and environment mappings.

   The Excel Query Wizard displays a list of available tables in the JD Edwards EnterpriseOne data source. Expanding any table name shows the available columns or fields in each table. If you are using the ODA driver, you see long descriptions of each field (for example, DateUpdated). If not, you see the alpha codes for the fields (for example ABUPMJ).
4. To translate field and column names from the JD Edwards EnterpriseOne alpha codes, use the F9202 table. Select all rows and sort (on FRDTAI) to create a cross-reference.

   The first two letters of all JD Edwards EnterpriseOne column names are the application code, and the remaining letters are in this table as a suffix.
5. Finish building your query with Query Wizard and save the query.
6. Run your query and review it in Excel or MicroSoft Query.

After you run a query from Excel, if you view the results using Microsoft Query, results are returned quickly. MicroSoft Query selects a page at a time. If you are working with a large result set, you should close JD Edwards EnterpriseOne and any applications that require a lot of memory so that you can more quickly navigate through the records. If you convert the query results directly into a spreadsheet instead of into Microsoft Query, the process might take significantly longer, and you cannot view the results until the entire file builds.

To verify the outcome of each query, you should run each one first using the non-ODA JD Edwards EnterpriseOne data source and then use the ODA data source and compare the results.

Managing ODA Error Messages

This section discusses error messages that you might receive.

JD Edwards EnterpriseOne Open Data Access driver sends error messages. The messages are placed in the ODBC error message queue where the application can retrieve them using the standard ODBC error mechanism. The JD Edwards EnterpriseOne messages look like this:

```
[J.D. Edwards][OneWorldODA Driver]MESSAGE TEXT
```

This is a list of the errors that you can receive from the driver:

Error Message	Description
Configuration Request Error	This error might occur when you add a new data source if you do not provide enough information for the driver and it cannot show a configuration dialog. You must either pass enough information to the driver or allow the driver to prompt for more information.
Option Value Changed	This is an informational message that occurs when you attempt to set a connection or statement option to a value that the driver does not accept. The driver then changes the value to an acceptable default value and uses this message to let you know that the value has changed. The JD Edwards EnterpriseOne Open Data Access driver changes values in these areas: Setting the row set size to a value other than one. The driver currently only supports single-row row sets. Setting the login time out to a value other than zero. The driver currently only supports zero in this option, which means, timeout disabled.
Data Source Name Is Not Valid	The data source you entered is not a valid ODBC data source name. This error occurs when you are adding a new data source or configuring an existing data source. You must enter a name that follows the ODBC data source naming convention.

Data Source Does Not Exist	This error occurs when you attempt to use a data source that does not exist. You must enter the name of an existing data source. If you get this error when you attempt to connect to a data source, you might need to create a default data source.
Unable to Allocate Memory	The JD Edwards EnterpriseOne Open Data Access driver was not able to allocate enough memory to continue. You must close some applications and try the operation again. Make sure that you meet the minimum system requirements.
Invalid Type of Request	You attempted to use a configuration option that is unknown to the driver. The driver supports these options when configuring data sources: • Adding a data source • Configuring a data source • Removing a data source
Data Truncated	The conversion of column data resulted in a truncation of the value. You should allocate more room for the column data to avoid this informational message.
Syntax Error or Access Violation	The statement contained a syntax error and no further information is available.
Unable to Display Connection Dialog	The driver encountered an error when attempting to display the connection dialog.
Cross System Joins Not Supported	This error occurs in one of two situations: • You referenced tables that are contained on multiple systems in the JD Edwards EnterpriseOne environment. The JD Edwards EnterpriseOne Open Data Access driver currently supports tables that are referenced on a single system. • You referenced a business view that contains multiple tables that reside on multiple systems. You must make sure that you are referencing tables on a single system or a business view that contains tables on a single system.
Unable to Connect to the JD Edwards EnterpriseOne Environment	The driver could not establish a connection to the JD Edwards EnterpriseOne environment. This connection is required before a successful connection can be made to this driver.
Internal Data Conversion Error	The driver encountered an unknown error during data conversion.
Internal Execution Error	The driver experienced an unexpected error during a statement execution.

User Defined Code Columns Can Only Be in Simple Column References	A user attempted to use a User Defined Code column in a complex expression. The JD Edwards Enterprise Open Data Access driver only allows such columns to be simple references.
Currency Columns Can Only Be in Simple Column References	A user attempted to use a Currency column in a complex expression. The JD Edwards EnterpriseOne Open Data Access driver only allows such columns to be simple references.
Media Object Columns Can Only Be in Simple Column References	A user attempted to use a Media Object column in a complex expression. The JD Edwards EnterpriseOne Open Data Access driver only allows such columns to be simple references.
Column Security Violation	You attempted to use a column you are not authorized to use. You must remove references to those columns that are secured.
Invalid Cursor State	You attempted an operation that was not valid for the state that the driver is in, for example: • You attempted to bind a column prior to preparing or executing a statement. • You attempted to execute a statement while there are pending results. • You attempted to get data from the driver prior to preparing or executing a statement. • You attempted to prepare a statement while there are pending results.
Invalid Column Number	You attempted to access a column that was not part of the statements results.
Driver Does Not Support the Requested Conversion	An attempt was made to convert a column to a data type not supported by the JD Edwards EnterpriseOne Open Data Access driver.
Invalid Date or Time String	An attempt to convert a character column to a date, time, or timestamp value failed because the character column did not contain a valid format.
Invalid Numeric String	An attempt to convert a character column to a numeric value failed because the character column did not contain a valid numeric value.
Numeric Value Out of Range	An attempt to convert a column to a numeric value failed because the output data type could not accommodate the value in the column. You should use the default data type or select a data type that can accommodate the column value.

Data Returned for One or More Columns was Truncated	An attempt to convert a column to a numeric value caused a truncation of decimal digits. The output data type could not accommodate the value in the column. You should use the default data type or select a data type that can accommodate the column value.
The Data Cannot be Converted	An attempt to convert a column value failed because the input type could not be converted to output type. You should use the default data type.
Statement Must Be a SELECT	The JD Edwards EnterpriseOne Open Data Access driver is read-only and allows only SELECT statements.
Attempt to Fetch Before the First Row	An attempt was made to fetch before the beginning of results. The attempt resulted in the first row set being fetched.
Option Value Changed	An attempt was made to set a connection, statement, or scroll options to a value that was not allowed. The JD Edwards EnterpriseOne Open Data Access driver substituted a similar value.
Fractional Truncation	An attempt to convert a column to a numeric value succeeded with a loss of fractional digits because the output data type could not accommodate the value in the column. You should use the default data type or select a data type that can accommodate the column value.
Driver Not Capable	An attempt was made to set a connection, statement, or scroll option that the driver does not allow.
Multiple Business Views Referenced	An attempt was made to reference more than one business view in a single SELECT statement. The JD Edwards EnterpriseOne Open Data Access driver restricts the SELECT statement to contain only one business view.
Unable to Open Table or Business View	The JD Edwards EnterpriseOne Open Data Access driver was unable to locate the table or business view in the JD Edwards EnterpriseOne database or could not get information pertaining to the table or business view.
Server Connection Failed	The JD Edwards EnterpriseOne Open Data Access driver was unable to establish a connection to the server referenced by the tables or business view in the SELECT statement.
Business View Contains Invalid Join	The Business View definition contains a join condition that could not be processed by the JD Edwards EnterpriseOne Open Data Access driver.
Business View Contains Unsupported UNION Operator	The Business View definition contains the UNION operator, which could not be processed by the JD Edwards EnterpriseOne Open Data Access driver.

APPENDIX A

Classic Events

This chapter provides an overview of JD Edwards EnterpriseOne events and discusses how to:

- Define events.
- Subscribe to events.
- Configure the jde.ini file for events.
- Use reliable event delivery.
- Enter events.
- Add logical subscriber records.
- Enter subscription information.

Note. This chapter is applicable only if you use classic events delivery. Classic event delivery is available when you use JD Edwards EnterpriseOne Tools 8.93 or earlier releases, or if you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.10 or 8.9.

Refer to the Guaranteed Events chapters if you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.11 or JD Edwards EnterpriseOne Tools 8.95 and later tools releases with JD Edwards EnterpriseOne Applications 8.9 and later Applications releases.

Understanding Classic Events

JD Edwards event functionality provides an infrastructure that can capture JD Edwards EnterpriseOne transactions in various ways and provide real-time notification to third-party software, end users, and other JD Edwards systems, such as WSG and CRM.

JD Edwards EnterpriseOne notifications are called events. The JD Edwards EnterpriseOne event system implements a publish/subscribe model. Events are delivered to subscribers in XML documents that contain detailed information about the event. For example, when you enter a sales order into the system, the system can automatically send the sales order information to a CRM or supply chain management application for further processing. If your system is IBM, you can use MQSeries messaging to receive events. If your system is Microsoft, you can use MSMQ messaging to receive events. MQSeries and MSMQ provide a point-to-point interface with JD Edwards EnterpriseOne. JD Edwards EnterpriseOne supports three kinds of events, as described in the table:

Type of Event	Description
Z Events	A service that uses interface table functionality to capture JD Edwards EnterpriseOne transactions and provide notification to third-party software, end-users, and other JD Edwards systems that have requested to be notified when certain transactions occur.

Type of Event	Description
Real-Time Events	A service that uses system calls to capture JD Edwards EnterpriseOne transactions as they occur and provide notification to third-party software, end users, and other JD Edwards systems that have requested notification when certain transactions occur.
XAPI Events	A service that uses system calls to capture JD Edwards EnterpriseOne transactions as they occur and then calls third-party software, end users, and other JD Edwards systems that have requested notification when the specified transactions occur to return a response. XAPI events can be from JD Edwards EnterpriseOne to a third-party system, from a third-party system to JD Edwards EnterpriseOne, or between two JD Edwards EnterpriseOne systems.

The JD Edwards EnterpriseOne event system consists of these modules:

- Event distributor
- Event generators
- Transport drivers

The event distributor is a JD Edwards EnterpriseOne kernel process called the event notification (EVN) kernel. The EVN kernel manages the subscribers and notifies them when an event occurs. The EVN kernel is shared by Z events, real-time events, and XAPI events.

Event generators are processes or libraries capable of generating events. JD Edwards EnterpriseOne provides three default event generators:

- Z event generator, which generates Z events.
- Real-time event generator, which generates real-time events.
- XAPI event generator, which generates XAPI events.

Z events, real-time events, and XAPI events have slightly different XML documents.

The event distributor uses a transport driver to send events. JD Edwards EnterpriseOne provides a default transport driver that uses JDENET. The event distributor can also send event documents to designated MQSeries or MSMQ outbound queues using MQSeries or MSMQ transport drivers. If you use MQSeries or MSMQ transport drivers to receive events, you receive all events that are defined in the F90701 table.

Defining Events

When an event is generated, the IEO kernel reads the F90701 table for that event. If the specified event category is different from the event category configured in the database, the system writes an error to the IEO log file. If the database definition of the event is not found, the system writes this message to the IEO log.

```
Warning: table F90701 doesn't exist. Some features will be turned off.
```

Note. When you update or modify the F90701 table, you must restart the server for the changes to become effective.

Reducing Network Traffic

To reduce network traffic, real-time event processing sends only active events. If a single event is identified as inactive in table F90701 and is part of an active container event, the CallObject kernel sends the active container event and the active single events to the IEO and EVN kernels to create the XML and to distribute to subscribers. Inactive single events that have been disabled by the CallObject kernel are embedded in the container event but are not sent as separate single events.

The CallObject kernel debug log contains information about the inactive single events that are not created. This is an example CallObject Kernel debug log message:

```
Inactive container event <event name> is not added to prevent bursting
```

This scenario illustrates the process:

- RTABHDR and RTABPHOUT are inactive single events.
- RTABEAOUT is an active single event.
- RTABOUT is an active container event that contains RTABHDR, RTABPHOUT, and RTABEAOUT.
- The business function creates these events:
  - 1 RTABHDR event
  - 2 RTABPHOUT events
  - 5 RTABEAOUT events
- The RTABOUT container event and the five RTABEAOUT events are sent from the CallObject kernel to the IEO and EVN kernels for processing and distribution to the subscriber. Inactive single events, RTABHDR and RTABPHOUT, are not sent.
- The subscriber receives:
  - 1 RTABOUT container event with all of the subdata structures that are defined in the single events RTABHDR, RTABPHOUT, and RTABEAOUT.
  - 5 RTABEAOUT single events.

Subscribing to Events

For XAPI events, you must update the F90702 table so that you can receive a response to your XAPI event. Each XAPI event must have a logical subscriber, which you might have to set up. For Z and real-time events, the system dynamically updates this table when the event is created. You can use the F90702 table to view the persistent subscriptions for your Z and real-time events.

If the database table is missing, the system writes these messages to the IEO log:

```
CheckTableExists failed: invalid hEnv or hUser.
Warning: table F90702 doesn't exist. Some features will be turned off.
```

Configuring the jde.ini file for Events

The JD Edwards EnterpriseOne server jde.ini file must be properly configured to support Z, real-time, and XAPI event generation. You use a text editor to manually edit and verify specific settings in the JD Edwards EnterpriseOne server jde.ini file.

Note. If your enterprise contains more than one JD Edwards EnterpriseOne server, you must ensure that each server has the same settings for all logic, batch, and interoperability sections.

Use these kernel and [JDEITDRV] settings to configure the jde.ini file on your JD Edwards EnterpriseOne server. Configure the kernels that are appropriate for the type of event (Z, real-time, or XAPI) that you want to generate.

Note. To determine which kernels you need to set and for other jde.ini settings for each specific type of event, refer to the Configure the jde.ini File topics in the Events section of the Interoperability Guide.

[JDENET_KERNEL_DEF19]

Use these settings for a Windows Microsoft platform:

```
krnlName=EVN KERNEL
dispatchDLLName=jdeie.dll
dispatchDLLFunction=_JDEK_DispatchITMessage@28
maxNumberOfProcesses=2
numberOfAutoStartProcesses=2
```

[JDENET_KERNEL_DEF20]

Use these settings for a Microsoft Windows platform:

```
krnlName=IEO KERNEL
dispatchDLLName=jdeieo.dll
dispatchDLLFunction=_JDEK_DispatchIEOMessage@28
maxNumberOfProcesses=2
numberOfAutoStartProcesses=2
```

Important! If you use JD Edwards EnterpriseOne 8.10 or a release prior to JD Edwards EnterpriseOne 8.10, the maxNumberOfProcesses and the numberOfAutoStartProcesses settings for both the EVN kernel (JDENET_KERNEL_DEF19) and the IEO kernel (JDENET_KERNEL_DE20) should have the same value. For example, maxNumberOfProcesses=3 and numberOfAutoStartProcesses=3. This causes the processes to be automatically started and avoids the cyclic dependency of the three-way request message from the IEO to the EVN kernel with the Get Event List message from the EVN to the IEO kernel.

[JDENET_KERNEL_DEF22]

Use these settings for a Microsoft Windows platform:

```
krnlName=XML Dispatch KERNEL
dispatchDLLName=xmldispatch.dll
dispatchDLLFunction=_XMLDispatch@28
```



```
maxNumberOfProcesses=1
numberOfAutoStartProcesses=0
```

[JDENET_KERNEL_DEF24]

Use these settings for a Microsoft Windows platform:

```
krnlName=XML Service KERNEL
dispatchDLLName=xmlservice.dll
dispatchDLLFunction=_XMLServiceDispatch@28
maxNumberOfProcesses=1
numberOfAutoStartProcesses=0
```

[JDEITDRV]

Use these settings for a Microsoft Windows platform:

```
DrvCount=5
Drv1=Z:zdrv.dll
Drv2=RT:rtdrv.dll
Drv3=JDENET:jdetrdrv.dll
Drv4=MSMQ:msmqrtdrv.dll
Drv5=MQS:mqsrtdrv.dll
```

Note. You set event generation and transport drivers in the [JDEITDRV] section of the jde.ini file. You are not required to set all of these drives. For example, if you do not use messaging transports, you would not use the MSMQ and MQS settings. Be sure that you define DrvCount with the number of settings that you are using.

[JDENET]

This setting specifies the maximum number of JDENET kernels:

```
MaxKernelRanges=27
```

Note. You must set this value to encompass the total number of kernels that you defined.

This table shows the DLL and DRV settings for other platforms:

Table Column Heading	iSeries	HP9000	Sun or RS6000
EVN (19) dispatchDLLName	JDEIE	libjdeie.sl	libjdeie.so
EVN (19) dispatchDLLFunction	JDEK_DispatchITMessage	JDEK_DispatchITMessage	JDEK_DispatchITMessage
IEO (20) dispatchDLLName	JDEIEO	libjdeieo.sl	libjdeieo.so
IEO (20) dispatchDLLFunction	JDEK_ DispatchIEOMessage	JDEK_ DispatchIEOMessage	JDEK_ DispatchIEOMessage

Table Column Heading	iSeries	HP9000	Sun or RS6000
XML Dispatch (22) dispatchDLLName	XMLDSPATCH	libxmldispatch.sl	libxmldispatch.so
XML Dispatch (22) dispatchDLLFunction	JDEK_XMLDispatch	JDEK_XMLDispatch	JDEK_XMLDispatch
XML Service (24) dispatchDLLName	XMLSERVICE	libxmlservice.sl	libxmlservice.so
XML Service (24) dispatchDLLFunction	JDEK_ XMLServiceDispatch	JDEK_ XMLServiceDispatch	JDEK_ XMLServiceDispatch
Drv1	RTDRV	librtdrv.sl	librtdrv.so
Drv2	ZDRV	libzdrv.sl	libzdrv.so
Drv3	JDETRDRV	libjdetrdrv.sl	libjdstrdrv.so
Drv4	MSMQRTDRV	libmsmqrtdrv.sl	libmsmqrtdrv.so
Drv5	MQSRTDRV	libmqsrtdrv.sl	libmqsrtdrv.so

Using Reliable Event Delivery

This section provides an overview of reliable event delivery and discusses:

- Reliable event delivery system configuration.
- Reliable event delivery error messages.
- Minimizing duplicate and lost events.
- Increasing performance.

Understanding Reliable Event Delivery

Reliable event delivery supports Z events, real-time events, and XAPI events. To use the Reliable Event Delivery feature, you must define your events in database tables. You cannot define your events in the jde.ini file.

The JDENET transport delivers Z events, real-time events, and XAPI events. Reliable event delivery ensures recovery and delivery of an event when transport problems arise, including some network problems. These scenarios identify circumstances for which events might be lost, but can be recovered and delivered:

- The JDENET process is down.
- JDENET fails to deliver because the network link between sender and receiver is permanently down.
- JDENET fails to deliver because the IPC buffer of the receiving kernel is full (sender and receiver are on different boxes).

Note. Reliable delivery covers failures that are related only to the transport of the events. Reliable delivery does not provide a once-and-only-once type of guarantee. Events might be lost and not recovered (or duplicates might be redelivered) in the presence of process failures (client and server).

Real-time event delivery is reliable for transportation failures between the real-time API and the Java connector, which includes IEO and EVN kernels. XAPI outbound event delivery is reliable for transportation failures between the XAPI API and the Java connector, including the IEO and EVN kernels. Z event delivery is reliable for transportation failures between the Z event generator and the Java connector.

The level of reliability is configurable based on whether the event is reliable or volatile. Volatile events are events that might be lost if the network or process fails and delivery is not reliable. Reliable events could be lost in the case of process failures only. You can configure the level of reliability for every event type. The level of reliability depends on whether the event is a business critical event. For example, you might configure an inquiry as volatile, because an inquiry is not a critical business event and you do not want the system to continually look for the event should the event fail. You might configure a purchase order as reliable, because this is a critical business event and you do want the system to continually look for the event and make the transaction update. Volatile events offer better performance than reliable events, but delivery is not reliable if the event is lost during transportation.

Real-time and XAPI events can be single, aggregate, or composite events. A composite event consists of single events. The composite event and the single events that make up the composite event can have different levels of reliability. For example, you register composite events as RTSOOUT with a level of reliability as reliable, and you register single events as RTSOLINE with a level of reliability as volatile. The level of reliability configured for RTSOOUT will not override the level of reliability that is configured for RTSOLINE. The rationale for this is that the reliability of events is based on the event type. If you decide that single event types are not important enough to configure as reliable delivery, then the single events that are created during composite event creation should have the same level of reliability as other single events.

The APIs you use to create real-time and XAPI events are not affected by the level of reliability.

Configuring Your System for Reliable Event Delivery

To use the reliable event delivery feature, you must define your events in the F90701 table. Use the Interoperability Event Definition (P90701) program to accomplish this task. On the Event Entry form, you must set up the Threshold Timeout field and set the Reliable Delivery field to reliable (either *Y* or *1*). The Timeout Threshold field is in seconds and applies only to the reliable events for which an initial delivery attempt fails. This field determines the maximum amount of time that has to pass from the event creation to the time when the event is going to be discarded if not delivered successfully. Events with a threshold of zero never expire.

Two database tables, the F90704 table and the F90703 table, enable communication between the sender and receiver. Event Protocol stores information that is associated with the protocol that delivers an event. Event Link stores information that is associated with the reliable event for which initial delivery failed. These tables are updated by the system when an event is created.

Note. Both the sender and receiver must access the same instances (the data sources are the same) of the interoperability database tables.

Reliable Event Error Message

If the reliable event is not found, this message might be generated in the client, Callobject, IEO, and EVN logs:

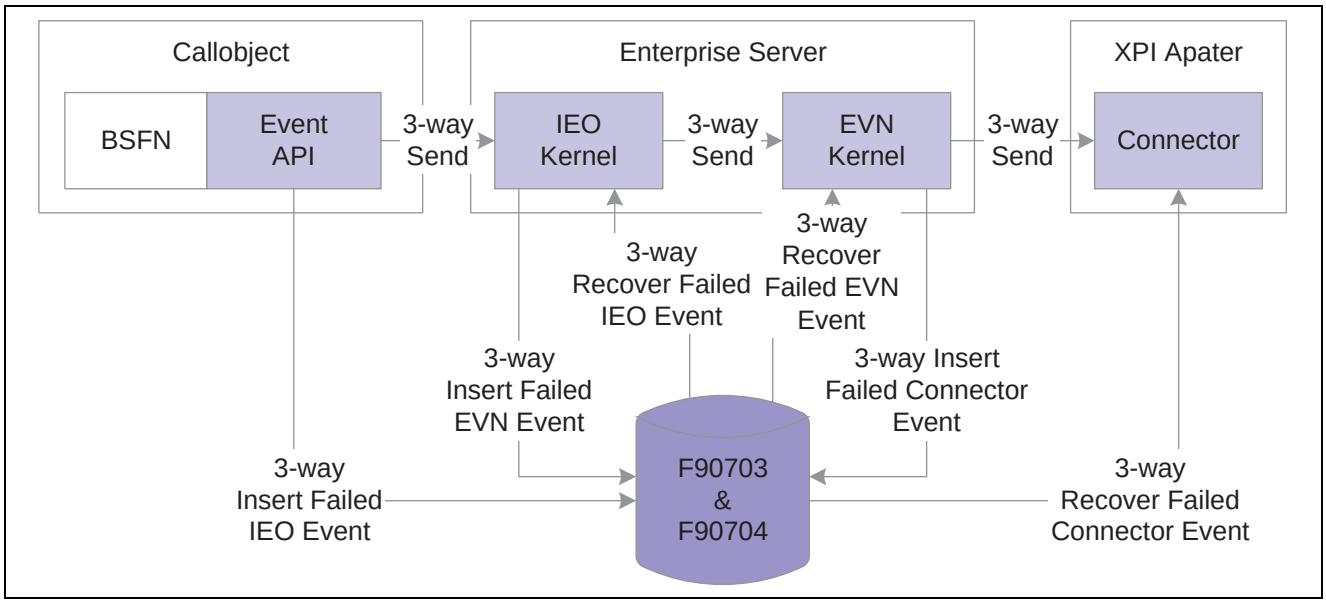
```
RDEL0000045 - Could not open tables for reliable event delivery
(F90703 and F90704). Reliable event delivery will be disabled.
```

If you receive this error message, verify your events are defined in the F90701 table, that the Reliable Delivery and Threshold Time fields are set up correctly, and that the Event Protocol and Event Link tables exist.

Minimizing Duplicate and Lost Events

The architecture for real-time events processing is changed from a fast request reply (FRR) protocol to a three-way protocol. The three-way protocol enables the storage of event information in the F90703 and F90704 tables. Also, both the Java connector and the COM connector can receive and recover real-time events.

This diagram shows the architecture for real-time event recovery using the three-way protocol:



Three-way architecture for processing events

If the CallObject kernel is unable to communicate with the IEO kernel, the event API inserts the event information into the F90703 and F90704 tables. The IEO kernel recovers the event information from the tables.

If communication between the IEO and EVN kernels fails, the IEO kernel inserts the information into the F90703 and F90704 tables. The EVN kernel recovers the event information from the F90703 and F90704 tables.

If a communication failure between the EVN kernel and the connector occurs, event information is stored in the F90703 and F90704 tables. Both the Java connector and the COM connector have the ability to recover event information from the F90703 and F90704 tables.

Increasing Performance

To increase performance, the concept of a black list is introduced. The black list is a list of subscribers that are not responding to the event message. The black list concept helps to increase performance by not retransmitting to non-responsive subscribers.

If the EVN kernel cannot send an event to a subscriber, the subscriber is placed on the black list. When a subscriber is placed on the black list, the EVN kernel inserts the event information to the F90703 and F90704 tables until the subscriber is removed from the black list. When the subscriber is removed from the black list, the subscriber receives new event information from the EVN kernel and the connector recovers existing event information from the F90703 and F90704 tables and sends this event information to the subscriber.

Subscribers can be placed on the black list in one of two ways:

- Voluntary
- Forced

Voluntary Black List

When a subscriber goes down and sends an unsubscribe message, the EVN kernel adds the subscriber to the black list. No event information is sent to the subscriber until the user re-subscribes. The EVN kernel inserts the event information into the F90703 and F90704 tables, and the information is recovered by the connector once the subscriber re-subscribes. Information about adding and removing the subscriber from the black list can be found in the EVN kernel debug log. These are example EVN kernel debug log messages:

- Added receiver <host name>:<port> to black list.
- Removed receiver <host name>:<port> from black list.

Forced Black List

When the EVN kernel sends an event that is defined as reliable to a subscriber, and the subscriber fails to reply to the EVN kernel, the EVN kernel adds that subscriber to the forced black list, and inserts the event information to the F90703 and F90704 tables. Settings that you configure in the jde.ini file determine how many times the EVN kernel sends an event with no response from the subscriber before the subscriber is placed on the black list, and the event information is stored in the database tables. You also configure jde.ini settings that determine how often the system tries to revisit the subscriber to remove that subscriber from the black list.

Information about adding, revisiting, and removing a subscriber can be found in the EVN kernel error log. These are example EVN kernel error log messages:

- Added receiver <host name>:<port> to force black list.
- Revisit receiver <host name>:<port> in force black list.
- Removed receiver <host name>:<port> from force black list.

  More detail information about adding the subscriber to the black list can be found in the EVN kernel debug log. This is an example EVN kernel debug log message: `Added receiver <host name>:<port> to forced black list, after 2 retries with 15 seconds of wait time.`

Configuring the jde.ini File

For reliable event delivery, you must configure these sections and settings in the jde.ini File. These settings are in addition to the settings discussed in the real-time and XAPI events chapters.

[INTEROPERABILITY]

Setting	Typical Value	Purpose
EnableBlacklist=	1	A value of 1 enables black list capabilities. The default value is 0 (zero). If you use a value of 0 and your system breaks, your system performance can be affected.

Setting	Typical Value	Purpose
MaxFailedAllowed=	1	Defines the number of failed attempts that the EVN kernel makes to the subscriber before placing the subscriber on the black list. The default value is 3.
ForceBlackListRevisitTime=	60	Defines how often the EVN kernel will attempt to communicate with the failed subscriber once the subscriber is placed on the black list. The default value is 300 seconds.

[NETWORK QUEUE SETTINGS]

Setting	Typical Value	Purpose
JDENETTimeout=	60	Defines the time that the EVN kernel waits for a response. **Note.** You should have the same number of JDENET processes as EVN kernels.

Entering Events

This section provides an overview of entering events in the Interoperability Event Definition table and discusses how to enter single and container events.

Understanding Entering Events

You use the Event Request Definition program (P90701) to add new single and container events and to review your existing events. You add single events by event name. When you add a single event, you must include a data structure. A container event contains either single events, aggregate events, or both. When you add a container event, you define events, single events to be used individually, or data structures, single events to be aggregated. You can change the information for single and container events. You can delete single and container events. You can change the status of an event to active or non-active. If your system has multiple environments, the event status is the same in all environments. You can use menu options to access the subscriber information.

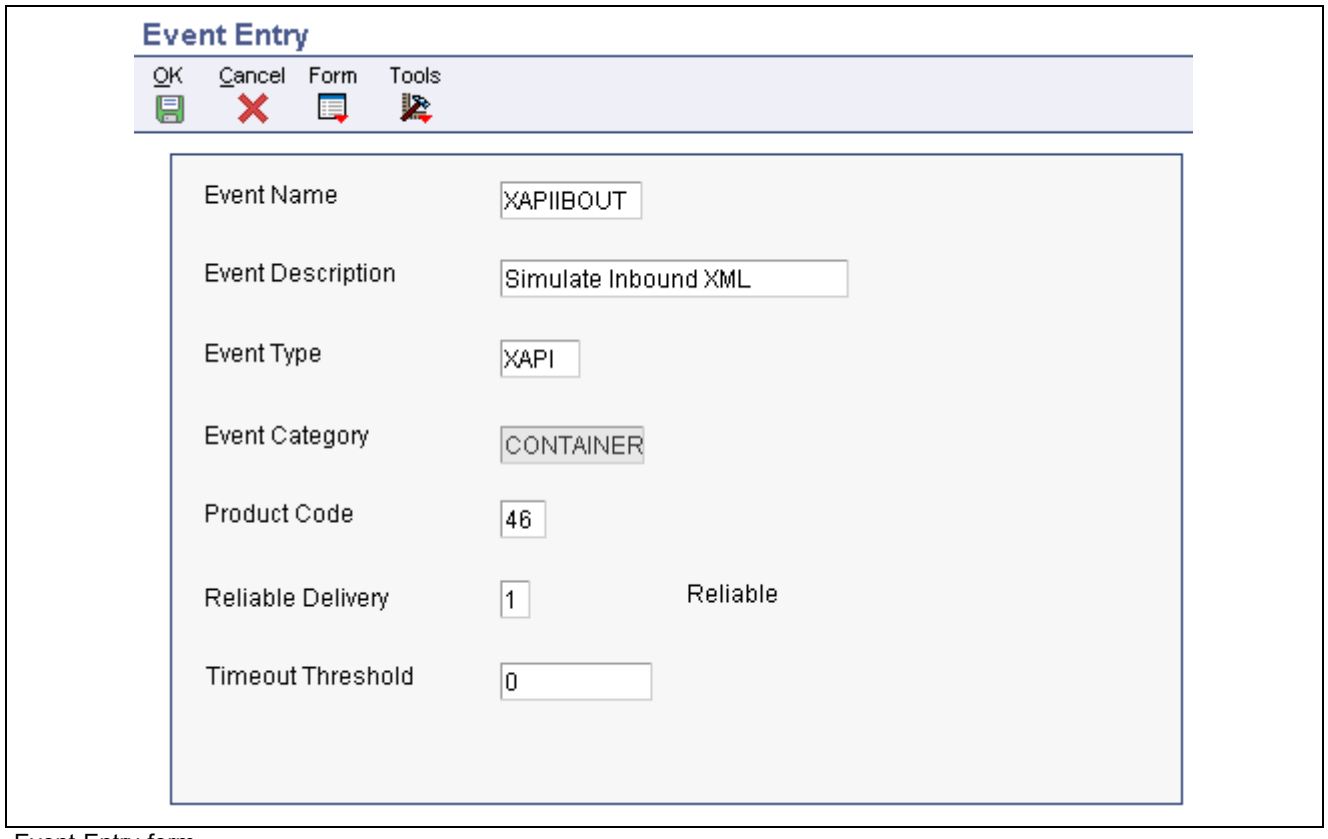
Note. A XAPI event is always a container event, and you must define data structures for XAPI events.

Forms Used to Add Events

Form Name	FormID	Navigation	Usage
Event Definition Workbench	W90701A	Enter P90701 in the Fast Path.	Locate and review existing single and container events.
Event Entry	W90701D	On Event Definition Workbench, click Add.	Add or change a single or container event.
Event Definition Detail	W90701C	Automatically appears when you click OK on the Event Entry form if you entered Container in the Event Category field for a real-time event or if you entered XAPI in the Event Type field.	Link single events to a container event.

Adding a Single or Container Event

Access the Event Entry form.



Event Entry form

Event Name The name of the event (for example, JDERTSOOUT). Single events can be part of other events.

Event Description The description of an event.

Event Type A value that represents the name of the event type (for example, the value RTE denotes Real Time Event; the value ZFILE denotes Batch Upload Event).

If you are adding XAPI events, the system automatically completes the Event Category field with Container and after you click OK, the Event Definition Detail form appears. Complete the Data Structure and Data Description fields, and then click OK.

Event Category The category of the event, for example, single event or event container.

Product Code A user defined code (98/SY) that identifies a system. Values include:

01: Address Book

03B: Accounts Receivable

04: Accounts Payable

09:: General Accounting

11: Multicurrency

Reliable Delivery An option that specifies whether the system retransmits and stores failed events. If you clear this option, the system does not retransmit or store failed events. When you select this option, the additional processing might negatively impact system performance. Values are:

1 or Y: Retransmit and store failed events.

0 or N: Do not retransmit or store failed events.

If you are using the Reliable Event Delivery feature, you must set the Reliable Delivery field to reliable (*1* or *Y*) and the Timeout Threshold field must be set.

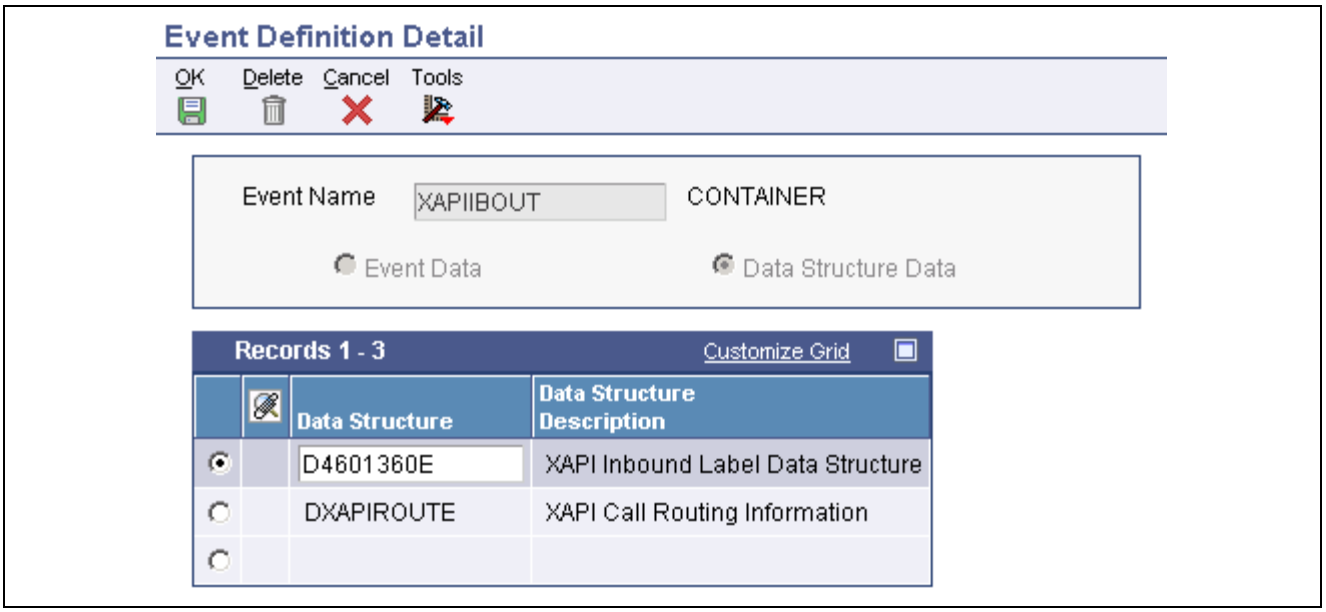
Timeout Threshold The Timeout Threshold field is in seconds and applies only to the reliable events for which an initial delivery attempt fails. This field determines the maximum amount of time that has to pass from the event creation to the time when the event will be discarded if not delivered successfully. Events with a threshold of zero never expire.

Data Structure The name of the data structure that passes event information.

This field disappears if Container is the value of the Event Category field; however, when you click OK, the Event Definition Detail form automatically appears for you to enter data structure information.

Event Definition Detail

Access the Event Definition Detail form.



Event Definition Detail form

Event Data An option that enables you to define single, individual (composite) events for a container event.

Data Structure Data An option that enables you to define aggregate events for the container event. For XAPI events you must select the Data Structure Data option.

Changing the Status of an Event

Access the Event Definition Workbench form.

To change the status of an event:

1. Complete these fields:
   - Event Name
   - Description
   - Event Type
   - Product Code
2. Click the All Statuses option, and then click Find to display existing events.
3. In the detail area, select the event for which you want to change the status.
4. From the Row menu, select Change Status.
5. To view the status change, click Find.

Note. The status of the event is the same for all environments. If the event is active, that event is active for all environments. If the event is non-active, that event is non-active for all environments.

Adding Logical Subscriber Records

This section provides an overview of the logical subscriber and discusses how to add a logical subscriber record.

Understanding Logical Subscribers

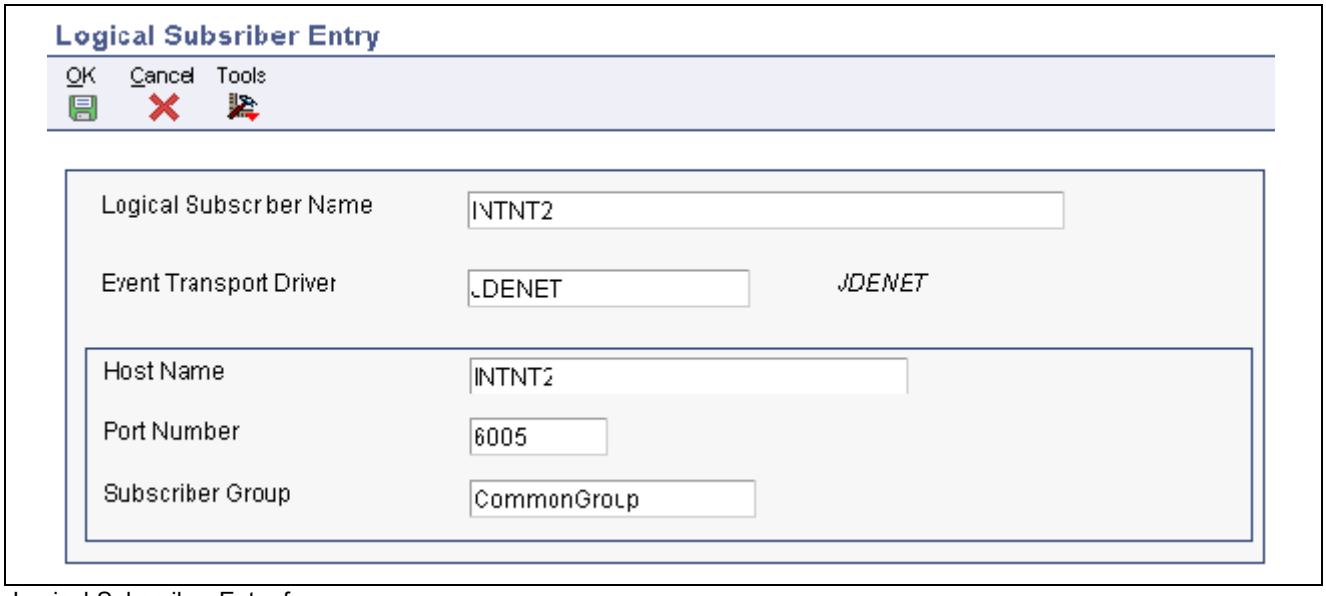
Use the Interoperability Event Subscription program (P90702) to add a logical subscriber. You can also view and modify existing logical subscribers. The Interoperability Event Subscription table contains subscriber information, such as the machine name and port number, and is read by EVN. If subscriber information is missing for the XAPI event, the system generates the event but cannot deliver it.

Forms Used to Add a Logical Subscriber

Form Name	FormID	Navigation	Usage
Subscriber Workbench	W90702A	Enter P90702 in the Fast Path.	Locate and review existing subscription information.
Work With Logical Subscriber	W90702D	On Subscriber Workbench, select Logical Subscriber from the Form menu.	Review existing logical subscribers.
Logical Subscriber Entry	W90702B	On Work With Logical Subscriber, click Add.	Add a logical subscriber.

Adding a Logical Subscriber

Access the Logical Subscriber Entry form.



Logical Subscriber Entry form

Logical Subscriber Name A value that uniquely identifies a subscriber.

Do not use spaces in the logical subscriber name.

Event Transport Driver The name of the transport driver that delivers events to the subscriber (for example, JDENET).

Host Name The name of the server that processes events for the subscriber.

Port Number A number that identifies the port where the subscriber service is running.

Subscriber Group A user-defined name that specifies how to deliver events for the subscriber. For example, if you are using a WSG adapter, enter the name of the adapter.

Entering Subscription Information

This section provides an overview about subscription information and discusses how to:

- Add subscription records.
- Change the status of a subscription record.

Understanding Subscription Records

You use the Interoperability Event Subscription program (P90702) to add new subscription information for XAPI events and to review and change existing subscription information. You can also add a subscription by copying and then modifying an existing subscription, and you can delete subscriptions. You can access and view your real-time and XAPI event definitions by selecting Event Definition from the Form menu. You can also access and view Z events when you click the Z File Events button on the Subscriber Workbench form or by selecting the Z File Events option on the Form menu.

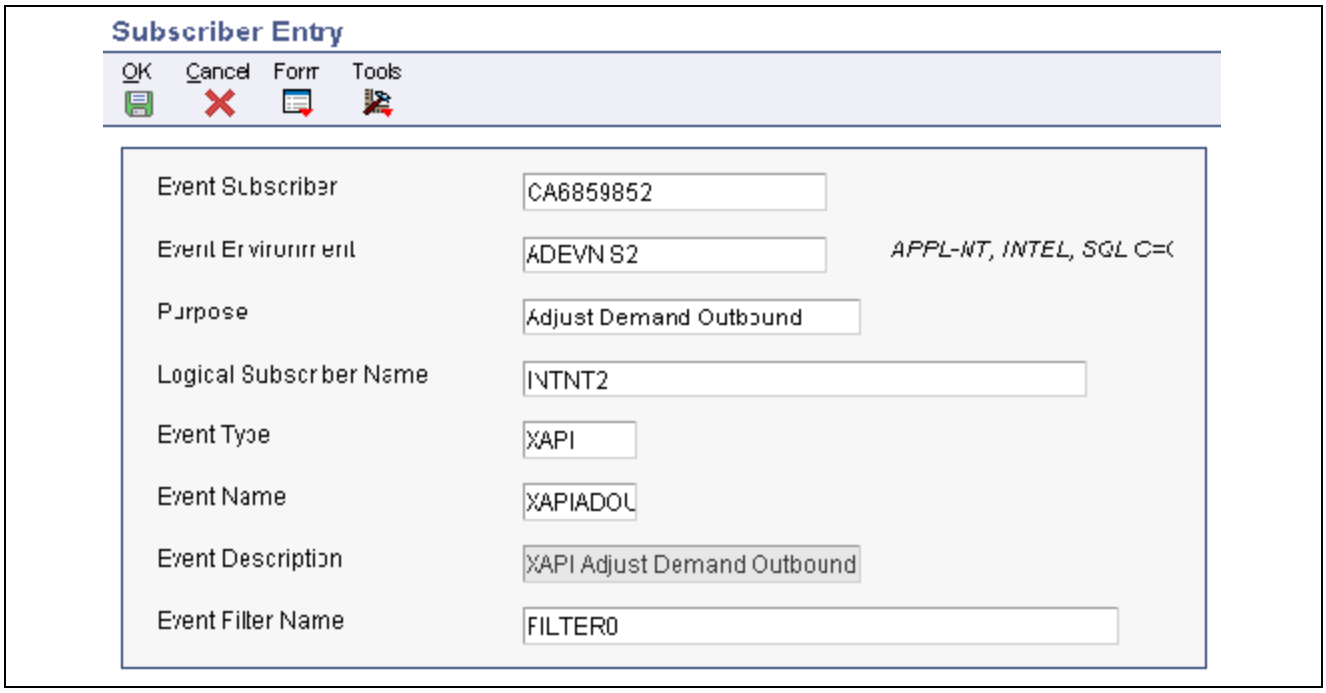
Note. When you add to or modify the F90702 table, you must restart the server for the changes to become effective.

Forms Used to Enter Subscription Information

Form Name	FormID	Navigation	Usage
Subscriber Workbench	W90702A	Enter P90702 in the Fast Path.	Locate and review existing subscription information.
Subscriber Entry	W90702F	On Subscriber Workbench, click Add.	Add a subscription.

Entering a Subscription Record

Access the Subscriber Entry form.



Subscriber Entry form

Event Subscriber The user ID for a subscriber.

Event Environment A value that identifies the environment that the event is executed in.

Purpose A user defined name or remark.

Logical Subscriber Name A value that uniquely identifies a subscriber.

Event Type A value that represents the name of the event type (for example, the value RTE denotes Real Time Event and the value ZFILE denotes Batch Upload Event).

Event Name The name of the event (for example, JDERTSOOUT). Single events are part of other events.

Event Filter Name The system automatically enters Filter0.

Changing the Status of a Subscription

Access the Subscriber Workbench form.

To change the status of a subscription:

1. Complete these fields:
   - Subscriber Name
   - Purpose
2. Select the All Statuses option, and then click Find to display existing subscriptions.
3. In the detail area, select the event for which you want to change the status.
4. From the Row menu, select Change Status.
5. To view the status change, click Find.

APPENDIX B

Using Classic Real-Time Events

This chapter provides an overview about real-time events and discusses how to:

- Process real-time events.
- Define real-time events.
- Use event sequencing.
- Use journaling.
- Configure the jde.ini file for real-time events.
- Generating real-time events
- Setting up the OCM for real-time events.

Note. This chapter is applicable only if you use classic events delivery. Classic event delivery is available when you use JD Edwards EnterpriseOne Tools 8.93 or earlier releases, or if you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.10 or 8.9.

Refer to the Guaranteed Events chapters if you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.11 or JD Edwards EnterpriseOne Tools 8.95 and later tools releases with JD Edwards EnterpriseOne Applications 8.9 and later Applications releases.

Understanding Real-Time Events - Classic

A real-time event is notification that a business transaction has occurred in JD Edwards EnterpriseOne. You can generate real-time events on the JD Edwards EnterpriseOne server using an interface, such as HTML, WIN32, and terminal servers. You can use real-time events for either synchronous and asynchronous processing.

An example of synchronous processing is an auction site that uses JD Edwards EnterpriseOne as a back-end solution can use real-time events to immediately update the database. For example, a user enters a new item for auction, which triggers a transaction into JD Edwards EnterpriseOne. The system captures the transaction and sends a notification to an interoperability server, such as a Java connector, that communicates the information to a web engine to update HTML pages so that all of the auction users can see the new item.

You can also use real-time event generation for asynchronous processing. For example, an online store sends orders to different vendors (business to business), captures the transactions, and enters the orders into the vendors' systems. A user buys a book. Vendors enter a purchase order to the book publisher and send a notification to the shipping company to pick up the book and deliver it. The book order itself can be completed as a purchase order transaction with JD Edwards EnterpriseOne, but the shipping request requires that the data is packaged into a commonly agreed-upon format for the shipping company to process.

Prerequisites

Before you complete the tasks in this section:

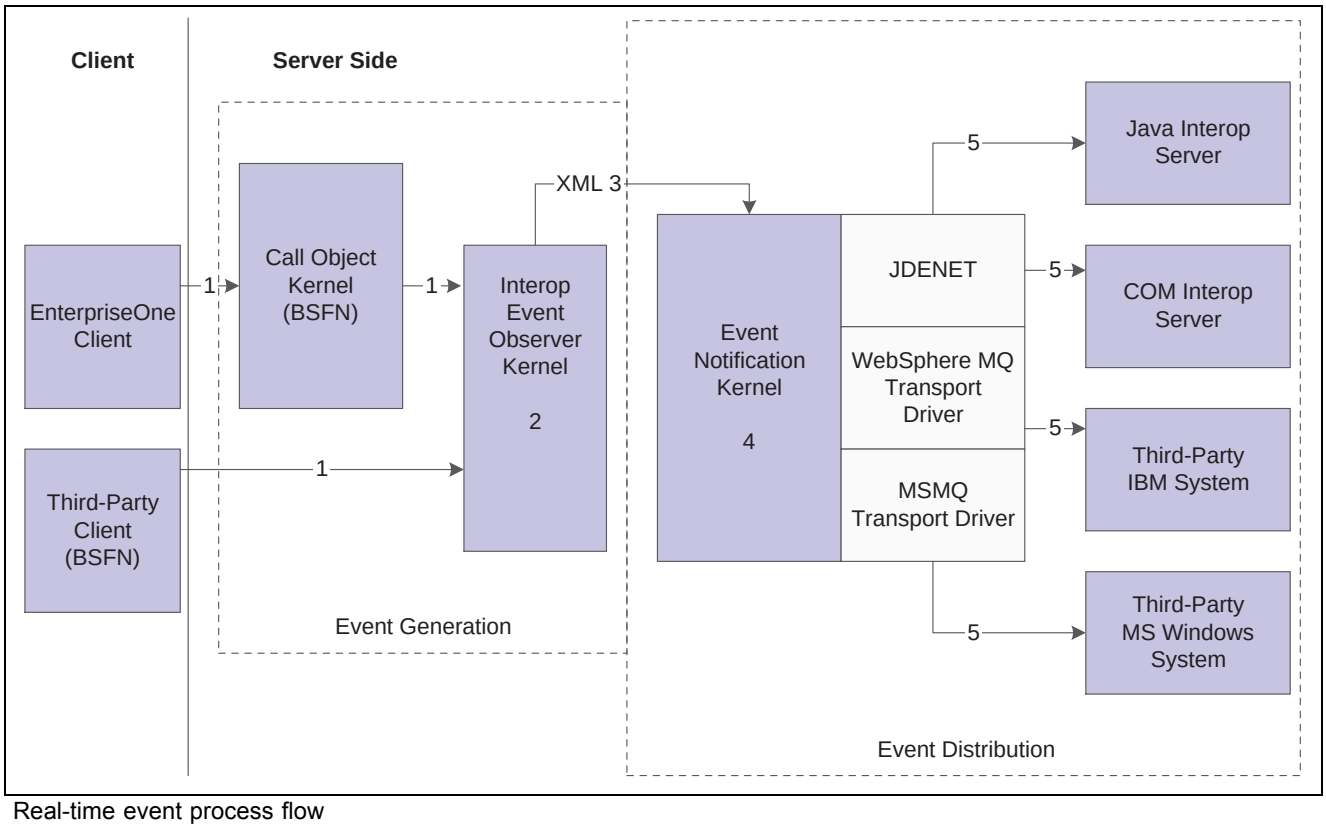
- Enable security for the JD Edwards EnterpriseOne server.
- Ensure that the default user under the [SECURITY] section of the JD Edwards EnterpriseOne server jde.ini file has a valid security record (that is, that the user is a valid JD Edwards EnterpriseOne user).

Processing Real-Time Events

Real-time events use system calls that receive data from business functions that use JD Edwards EnterpriseOne data structures. Each real-time event has a unique ID that includes the JD Edwards EnterpriseOne session ID.

Real-time event generation from a client consists of client business functions that call APIs and interfaces with the server interoperability event observer (a kernel). Real-time event generation on the server side includes an event observer interface (a set of system APIs) that triggers real-time events and an interoperability event observer (a kernel). Then, the event observer kernel generates XML documents of the triggered real-time events and sends them to an event distribution component. The event distribution component is the same one that the system uses to send XML document notification to subscribers.

This diagram is a logical representation of the processes and data for real-time event generation:



Real-time event process flow

In summary:

1. Event generation is triggered by business functions.

You use the Object Configuration Manager (OCM) to map business functions to run on the JD Edwards EnterpriseOne server or to run locally. When a business function is mapped to run on the JD Edwards EnterpriseOne server, the business function calls the Interoperability Event Interface within the CallObject kernel. The CallObject kernel sends the information to the Interoperability Event Observation (IEO). When a real-time event is generated from a client, the client business function calls the appropriate API. The API performs OCM lookup to determine where the IEO kernel is located, validates, filters, and formats the data, and then sends the information to the IEO kernel.

2. The IEO kernel creates the real-time event and produces an XML document when the real-time event is finalized.
3. The IEO kernel packages the XML document and passes the document to the Event Notification (EVN) kernel.
4. The EVN kernel determines which transport driver should handle the event.
5. The transport driver distributes the event.

Note. If you use MQSeries or MSMQ transports, the transport drive writes system and function errors to the JDE error log. The driver writes error messages and adds the error codes if available.

Defining Real-Time Events

You use the Interoperability Event Definition program (P90701) to define real-time events. After you define your real-time event, be sure to activate the event by changing the status to active. If the event is not defined in the F90701 table, the system call returns an error message.

Using Event Sequencing

When you define your real-time events, you indicate whether the event is reliable or volatile. If you define the event as volatile, the system automatically provides event sequencing to guarantee that events are delivered in the correct order. Volatile events are stamped using JD Edwards EnterpriseOne Next Numbers features.

For sequencing of real-time events, the system call, jdeIEO_EventFinalize, retrieves the event number from the real-time events sequencing bucket, and sends the number to the IEO kernel. The IEO kernel includes the event number as part of the generated event. The IEO kernel sends the event to the EVN kernel. The EVN kernel remembers the last shipped event and bases sequencing on the event number that is contained in the received event.

Event sequencing does impact performance. You can clear events sequencing. You can also define a timeout value to tell the system to stop looking for a missed event when events are out of sequence. The flag and timeout settings are in the [INTEROPERABILITY] section of the jde.ini file.

Using Journaling

Real-time events are journaled using the trace feature for the JDEDEBUG log files. You can select journaling in the jde.ini file. Journaling occurs in two instances:

- A system call logs the parameter received and the APIs called.

- During the interoperability event observer process, the kernel logs additional debugging information.

  The logging is controlled with the LEVEL key in the [INTEROPERABILITY] section.

[INTEROPERABILITY]

These are some possible values for the LEVEL key:

Key	Section	Description
LEVEL=	N/A	The system writes specified interoperability event data to the debug log file. You can specify one or more of the allowable logging settings. Separate multiple values with a comma. For example: [INTEROPERABILITY] LEVEL=EVENTS,DATA **Note.** As with any logging operation, enabling any of these settings can impact performance and cause extensive amounts of data to be written.
N/A	EVENTS	Use this value to log the flow of events in the IEO kernel. Receiving event data and sending events are logged, but the values of the event data are not logged. This is the default level. If the LEVEL key is not present, it is identical to LEVEL= EVENTS.
N/A	DATA	Log values of the event data and flow of the events in the IEO kernel. This level also includes all data logged with the EVENTS switch.
N/A	PERF	Log statistics about the number of events received and the time period in which they are processed.

Key	Section	Description
N/A	DOC	Outbound XML documents are written in the temporary file on disk. If the debug log is enabled, the document location is written in the debug log. The location of the document depends on the key value: • If the value of the key TempFileDir in the Interoperability section is set, the file is written to that location. For example: • [INTEROPERABILITY] TempFileDir=C:\XML_ DOCUMENTS • If the key TempFileDir is not set, files are written in the same directory where JDE logs and debug logs are written. **Note.** Setting the LEVEL=DOC key causes all real-time events to be written to the disk, which can cause a significant performance impact on the JD Edwards EnterpriseOne server. JD Edwards suggests that you not use the LEVEL=DOC setting in a production environment or for stress testing of the quality assurance environment.
N/A	TRACE	This switch traces execution of the IEO kernel and writes data in the debug log. Because of the large amount of data that is logged, use this level only for debugging purposes.

Note. The LEVEL=DOC setting is not affected by whether debug logs are enabled or disabled. All other values under the LEVEL key (for example, TRACE) are affected by the debug log enable or disable setting.

You can also journal EVN documents by setting the SaveEVNDoc key in the [INTEROPERABILITY] section of the jde.ini file. SaveEVNDoc is similar to LEVEL=DOC but applies to the EVN kernel instead of the IEO kernel. The default value for SaveEVNDoc is zero (0), which means that EVN documents are not saved. To save EVN documents, change the value to one (1). EVN documents are saved to the directory where JDE logs and debug logs are written unless you specify a different directory. You can use TempFileDir to specify a directory.

[INTEROPERABILITY]

You can configure these settings to log documents:

```
SaveEVNDoc=1
TempFileDir=C:\XML_Documents
```

Configuring the jde.ini for Real-Time Events

To generate real-time events, these sections of the JD Edwards EnterpriseOne server jde.ini file must be configured:

- [JDENET_KERNEL_DEF19]
- [JDENET_KERNEL_DEF20]
- [JDEITDRV]

- [JDENET]
- [INTEROPERABILITY]

Note. The settings for the kernels, [JDEITDRV], and [JDENET] are defined in the Using Events - Classic section of the Interoperability Guide.

See Appendix A, "Classic Events," Configuring the jde.ini file for Events, page 172.

[INTEROPERABILITY]

Configure these settings:

```
SequenceTimeOut=XX
XMLElementSkipNullOrZero=x
```

The SequenceTimeOut setting is for sequencing of volatile events. The default value is 10 seconds.

Null strings and zeros are trimmed from real-time events. You can clear this feature by entering a value of 0 (zero) for the XMLElementSkipNullOrZero settings.

Generating Real-Time Events

This section provides overview of real-time event generation, real-time event APIs, and example code for events, and discusses how to set up the OCM for real-time events.

Understanding Real-Time Event Generation

Events can be one of these:

- Single event

  Contains one partial event. Single events are useful if the receiver requires that events be generated per system call. Can also be used with different event types.

- Aggregate event

  Contains multiple partial events. Aggregate events are useful if the receiver requires a document that contains multiple events. For example, a supply chain solution might want to provide the complete sales order as one event that contains multiple partial events.

- Composite event

  Contains only single events. Aggregate events are useful if the customer has multiple receivers, some that require single events and some that require a complete event that is similar to an aggregate event.

Real-Time Event APIs

The system APIs are able to determine whether a system call is from a server or client. These APIs are available for you to generate real-time events:

- jdeIEO_EventInit()
- jdeIEO_EventAdd()
- jdeIEO_EventFinalize()

- jdeIEO_CreateSingleEvent()
- jdeIEO_IsEventTypeEnabled()

Example: Interoperability Event Interface Calls

This sample code illustrates how to create a single event:

1. Design the data structure to decide what values to provide to the real-time event.

```
typedef struct tagDSD55RTTEST
   {
   char    szOrderCo[6];
   char    szBusinessUnit[13];
   char    szOrderType[3];
   MATH_NUMERIC   mnOrderNo;
   MATH_NUMERIC   mnLineNo;
   JDEDATE     jdRequestDate;
   char    szItemNo[27];
   char    szDescription1[31];
   MATH_NUMERIC   mnQtyOrdered;
   MATH_NUMERIC   mnUnitPrice;
   MATH_NUMERIC   mnUnitCost;
   char    szUserID[11];
   } DSD55RTTEST, *LPDSD55RTTEST;
```

2. Define the data structure object in the business function header file.
3. Modify the business function source to call jdeIEO_CreateSingleEvent.

```
JDEBFRTN(ID) JDEBFWINAPI RealTimeEventsTest (LPBHVRCOM lpBhvrCom,
   LPVOID lpVoid,
   LPDSD55REALTIME lpDS)
{
/* Define Data Structure Object */
DSD55RTTEST  zRTTest   = {0};
   IEO_EVENT_RETURN  eEventReturn   = eEventCallSuccess;
IEO_EVENT_ID  szEventID   ={0};

()Populate required members

/* Now call the API */
   szEventID = jdeIEO_CreateSingleEvent { lpBhvrCom,
      "RealTimeEventsTest",
      "JDERTOUT",
      "SalesOrder",
      "D55RTTEST",
   &zRTTest,
   sizeof(zRTTest),
   0,
   &eEventReturn   };

   /* Error in jdeFeedCallObjectEvent is not a critical error
```

```
            and should only be treated as a warning */
        if( eEventReturn != eEventCallSuccess )
{
        /* LOG the Warning and return */
        return ER_WARNING;
```

This sample code illustrates how to create an aggregate event:

```
DSD55RTTEST zD55TEST01 = {0};
 DSD55RTTEST zD55TEST02 = {0};
 DSD55RTTEST zD55TEST03 = {0};
 IEO_EVENT_RETURN eEventReturn = eEventCallSuccess;
 IEO_EVENT_ID szEventID;

 szEventID = jdeIEO_EventInit (lpBhvrCom, eEventAggregate, "MyFunction1",
 "JDESOOUT", "EventScope1", 0, &eEventReturn);
 eEventReturn = jdeIEO_EventAdd (lpBhvrCom, szEventID, "MyFunction2", NULL,
 "D55TEST01", &zD55TEST01, sizeof(zD55TEST01),0);
 eEventReturn = jdeIEO_EventAdd (lpBhvrCom, szEventID, "MyFunction3", NULL,
 "D55TEST02", &zD55TEST02, sizeof(zD55TEST02),0);
 eEventReturn = jdeIEO_EventAdd (lpBhvrCom, szEventID, "MyFunction3", NULL,
 "D55TEST03", &zD55TEST03, sizeof(zD55TEST03),0);
 eEventReturn = jdeIEO_EventFinalize (lpBhvrCom, szEventID,"MyFunction4",0);
```

This sample code illustrates how to create a composite event:

```
IEO_EVENT_RETURN    eEventReturn    = 0;
    IEO_EVENT_ID szEventID;

   eEventReturn = eEventCallSuccess;
   szEventID = jdeIEO_EventInit (lpBhvrCom, eEventComposite, "MyFunction1",
"JDESOOUT","EventScope1",0,&eEventReturn,0);
   eEventReturn = jdeIEO_EventAdd ( lpBhvrCom, szEventID, "MyFunction2",
"SODOCBEGIN", "D55TEST01", &zD55TEST01, sizeof(zD55TEST01),0);
   eEventReturn = jdeIEO_EventAdd ( lpBhvrCom, szEventID, "MyFunction3",
"SOITEMADD", "EventScope3", "D55TEST02", &zD55TEST02, sizeof(zD55TEST02),0);
   eEventReturn = jdeIEO_EventFinalize (lpBhvrCom, szEventID, "MyFunction4",0);
```

Errors that are returned by the system calls might not be critical enough to stop the business process. The system flags non-critical errors as warnings and logs them in the log file. If the business function is on the server, the warning is logged in the CallObject kernel log. If the business function is on a client, the warning is logged in the client log file.

This sample code illustrates an XML file that shows a composite real-time event that consists of a call to the business function F4211FSEditLine on 12/31/2000, arriving about noon, with the real-time event generated at 12:00:01.000:

```
<?xml version='1.0' encoding='utf-8'  ?>
<jdeResponse type='realTimeEvent' user='JDE1214225' session='1234.786321234'
role='*ALL' environment='XDEVNIS2'>
 <header>
   <eventVersion>1.0</eventVersion>
   <type>JDESOOUT</type>
```



```
   <scope>SalesOrder</scope>
   <user>JDE1214225</user>
   <application>P0101</application>
   <version>XJDE101</version>
   <sessionID>1234.786321234</sessionID>
   <environment>XDEVNIS2</environment>
   <host>HP9000B</host>
   <eventID>HP9000B-1234-1231200012000100-JDE1214225-FFA123ECBBA123EC</eventID>
   <date>12312000</date>
   <time>120001000</time>
 </header>

<body elementCount='1'>
   <PartialEvent name='F4211FSEditLine' type='SOEDITLINE' executionOrder='1'
parameterCount='12'>
 szOrderCo type='String'>JD Edwards</szOrderCo>
     <szBusinessUnit type='String'>Mountain Region</szBusinessUnit>
     <szOrderType type='String'>SO</szOrderType>
     <mnOrderNo type='MATH_NUMERIC'>13209847</mnOrderNo>
     <mnLineNo type='MATH_NUMERIC'>122</mnLineNo>
     <jdRequestedDate type='Date'>12312000</jdRequestedDate>
     <szItemNo type='String'12243234</szItemNo>
     <szDescription type='String'>Bicycle</szDescription>
     <mnQtyOrdered type='MATH_NUMERIC'>1</mnQtyOrdered>
     <mnUnitPrice type='MATH_NUMERIC'>249.99</mnUnitPrice>
     <mnUnitCost type='MATH_NUMERIC'>213.23</mnUnitCost>
     <szUserID type='String'>JDE1214225</szUserID>
   </PartialEvent>
 </body>
</jdeResponse>
```

Setting Up the OCM for Real-Time Events

This section provides an overview about OCM for real-time events and discusses how to set up the OCM.

Understanding the OCM for Real-Time Events

You configure the Object Configuration Manager (OCM) so that the system call can find the IEO kernel. If the business function is mapped to a client, an error is returned to the client by the system call if the IEO kernel is not found. If the business function is mapped to the server, the error is logged in the Callobject kernel jde.log.

When you configure the OCM, include a specific environment and ensure that no two duplicate mappings are in active status at the same time.

If the OCM mapping is not correctly configured on the client, this message is written in the jde.log, and the event is not be generated:

```
RT0000011 jdeIEO_EventInit: Unable to find the server
```

If the OCM mapping is not correctly configured on the server, no error message is generated. The system call uses the local server as the location of the IEO kernel.

If the IEO kernel is not found on the machine that is configured in the OCM, this error might occur:

```
RT0000004 jdeIEO_EventInit: ReceiveMsg failed. Error = <error test>
```

See *JD Edwards EnterpriseOne Tools 8.96 Configurable Network Computing Implementation Guide*, "Working with Object Configuration Manager," Understanding Object Configuration Manager.

Forms Used to Set Up the OCM

Form Name	FormID	Navigation	Usage
Machine Search and Select	W986110D	Enter *OCM* in the Fast Path Command Line.	Select the appropriate machine name.
Work With Object Mappings	W986110B	On Machine Search and Select, select the appropriate active environment.	Find and select the appropriate environment.
Object Mapping Revisions	W986110C	On Work With Object Mappings, select the appropriate active environment in the detail area.	Enter RTE in the Object Type field.

Setting Up the OCM for Real-Time Events

Access the Object Mapping Revisions form.

Environment Name A name that uniquely identifies the environment.

Object Name The JD Edwards EnterpriseOne object that you want to map. To create a default map for all of an object type, enter the literal value *DEFAULT* into this field and then enter an object type into the Object Type field.

Primary Data Source The name that identifies the data source.

Data sources are the building blocks that you use to set up a JD Edwards EnterpriseOne configuration. Data sources define all of the required databases (where your tables reside) and all of the logic machines (where JD Edwards EnterpriseOne executes logic objects for your enterprise).

If JD Edwards EnterpriseOne cannot find your primary data source or cannot find the data item I your primary data source, it attempts to connect to your secondary data source.

System Role A profile that classifies users into groups for system security purposes. You use group profiles to give the members of a group access to specific programs.

On this form you can enter an individual user, a group name or the literal value *PUBLIC.

Object Type The type of object with which you are working. For real-time events, the object type is RTE. For XAPI events the object type is XAPI.

Data Source Mode Indicates whether to use the primary or secondary data source.

Allow QBE Use this flag to select row-level record locking for the data source.

You should have this flag turned on to help prevent database integrity issues.

JDEBASE middleware uses this flag to determine whether to use row-level record locking.

APPENDIX C

Using Classic XAPI Events

This chapter provides an overview of XAPI events and discusses how to:

- Define XAPI events.
- Subscribe to XAPI events.
- Set up the OCM for XAPI events.
- Work with JD Edwards EnterpriseOne and third-party XAPI events.
- Work with JD Edwards EnterpriseOne-to-EnterpriseOne XAPI events.

Note. This chapter is applicable only if you use classic events delivery. Classic event delivery is available when you use JD Edwards EnterpriseOne Tools 8.93 or earlier releases, or if you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.10 or 8.9.

Refer to the Guaranteed Events chapters if you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.11 or JD Edwards EnterpriseOne Tools 8.95 and later tools releases with JD Edwards EnterpriseOne Applications 8.9 and later Applications releases.

Understanding XAPI Events - Classic

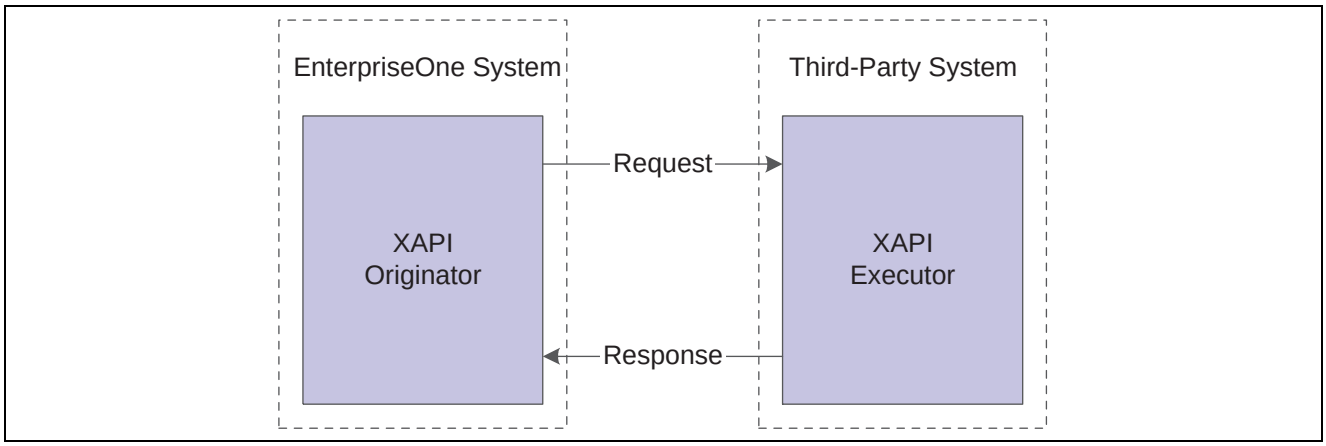
XAPI is a JD Edwards EnterpriseOne service that captures transactions as the transaction occurs, and then calls third-party software, end-users, and other JD Edwards systems to obtain a return response. A XAPI event is very similar to a real-time event and uses the same infrastructure to send an event. The difference between a real-time event and a XAPI event is that the subscriber to a XAPI event returns a reply to the originator. The XAPI event contains a set of structured data that includes a unique XAPI event name and a business function to be invoked upon return. Like real-time events, XAPI events can be generated on the JD Edwards EnterpriseOne server using any interface, such as HTML, WIN32, and terminal servers.

The XAPI structure sends outbound events and receives a reply from third-party systems. An event is generated in JD Edwards EnterpriseOne and sent to a third-party system for processing. The JD Edwards EnterpriseOne system is called the originator. The third-party system sends a response back to JD Edwards EnterpriseOne. The third-party system is called the executor.

The XAPI structure also provides complete request-reply connectivity between two JD Edwards EnterpriseOne systems. The JD Edwards EnterpriseOne system that generates the event is called the Originator. The JD Edwards EnterpriseOne system that responds to the event is called the Executor.

JD Edwards EnterpriseOne to Third-Party

This diagram shows a logical representation of the XAPI process from JD Edwards EnterpriseOne to a third-party system:



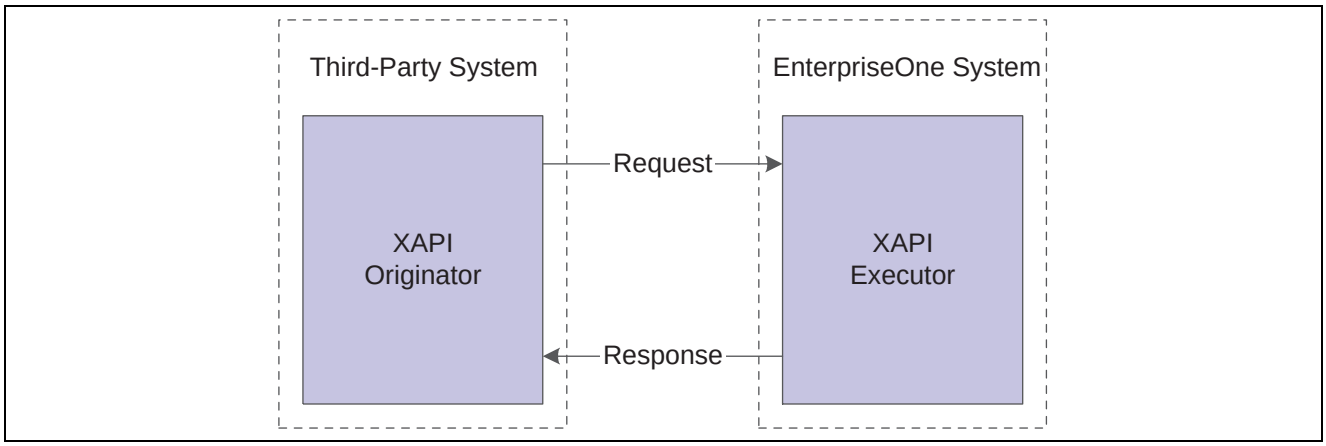
JD Edwards EnterpriseOne to a third-party system XAPI event

In summary:

1. JD Edwards EnterpriseOne, (XAPI originator) sends a request.
2. The request is sent to a third-party system.
3. The third-party system (XAPI executor) processes the request and sends a response back to the XAPI originator.

Third-Party to JD Edwards EnterpriseOne

This diagram shows a logical representation of the XAPI process from a third-party system to JD Edwards EnterpriseOne:



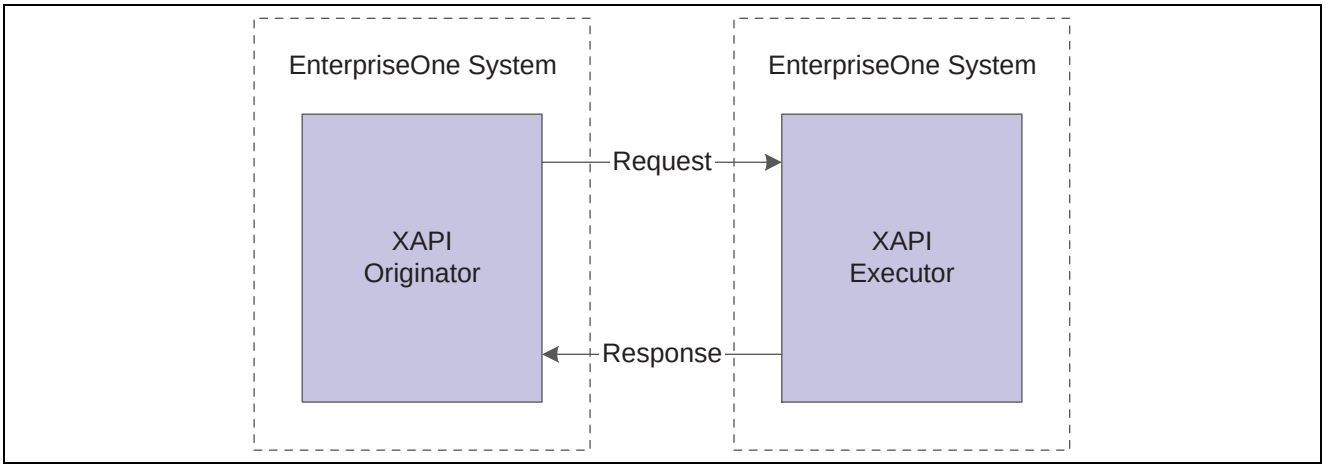
Third-party system to JD Edwards EnterpriseOne XAPI event

In summary:

1. The third-party system (XAPI originator) sends a request using the JD Edwards EnterpriseOne XAPI request form.
2. The request is sent to JD Edwards EnterpriseOne.
3. JD Edwards EnterpriseOne (XAPI executor) processes the request and sends a response back to the XAPI originator.

JD Edwards EnterpriseOne-to-JD Edwards EnterpriseOne

This diagram shows a logical representation of the XAPI processing for two different JD Edwards EnterpriseOne systems communicating with each other:



JD Edwards EnterpriseOne-to-EnterpriseOne XAPI event

In summary:

1. The first JD Edwards EnterpriseOne system (XAPI originator) sends a request.
2. The request is sent to a second JD Edwards EnterpriseOne system, which may share the same or different environment as the first JD Edwards EnterpriseOne system.
3. The second JD Edwards EnterpriseOne system (XAPI executor) processes the request and sends a response back to the first JD Edwards EnterpriseOne system (XAPI originator).
4. The first JD Edwards EnterpriseOne system (XAPI originator) processes the response.

Prerequisites

Before you complete the tasks in this section:

- Enable security for the JD Edwards EnterpriseOne server.
- Ensure that the default user has a valid security record under the [SECURITY] section of the JD Edwards EnterpriseOne server jde.ini file (that is, that the user is a valid JD Edwards EnterpriseOne user).

Defining XAPI Events

You use the Interoperability Event Definition (P90701) program to define XAPI events. When you define XAPI events, the system automatically updates the Event Category field to Container. All XAPI events use the data structure option. The system automatically adds the DXAPIROUTE data structure, which is required for XAPI events. The DXAPIROUTE data structure contains the routing information that is to be returned to the originating system. The jdeXAPI_Finalize API appends DXAPIROUTE data execution. After you define your XAPI event, be sure to activate the event by changing the status.

See Appendix A, “Classic Events,” Defining Events, page 170.

Subscribing to XAPI Events

If you generate XAPI events, you must define a logical subscriber and set up XAPI event subscriber information. The logical subscriber must exist before you can add XAPI event subscriber information. If subscriber information is missing, the system generates the XAPI event but does not deliver it. You use the Interoperability Event Subscription program (P90702) to define the logical subscriber and to set up XAPI subscriber information. After you set up the XAPI subscriber, be sure to activate the subscriber by changing the status.

See Appendix A, "Classic Events," Subscribing to Events, page 171.

Setting Up the OCM for XAPI Events

If your interface to JD Edwards EnterpriseOne is not a JD Edwards EnterpriseOne client, you must configure the OCM so that the system call can find the IEO kernel. When you configure the OCM, include a specific environment and ensure that no two duplicate mappings are in active status at the same time.

To configure the OCM, access the Object Mapping Revisions form and enter XAPI in the Object Type field. Configuring the OCM with the XAPI entry enables the system call to find the IEO kernel. If the OCM is not properly configured, the system generates an error message. OCM error messages for XAPI events are the same as the OCM error messages for real-time events.

See Appendix B, "Using Classic Real-Time Events," Understanding the OCM for Real-Time Events, page 193.

See *JD Edwards EnterpriseOne Tools 8.96 Configurable Network Computing Implementation Guide*, "Working with Object Configuration Manager," Understanding Object Configuration Manager.

Working with JD Edwards EnterpriseOne and Third-Party XAPI Events

This section provides an overview of the XAPI event generation and response and discusses:

- XAPI outbound request process flow.
- XAPI outbound request APIs.
- XAPI outbound request API usage code sample.
- XAPI outbound request XML code sample.
- XAPI outbound request jde.ini file configuration.
- XAPI inbound response process flow.
- XAPI inbound response parsing APIs.
- XAPI inbound response parsing API usage code sample.
- XAPI inbound response sample code.
- XAPI inbound response jde.ini file configuration.
- XAPI client jde.ini file configuration.

Understanding XAPI Event Generation and Third-Party Response

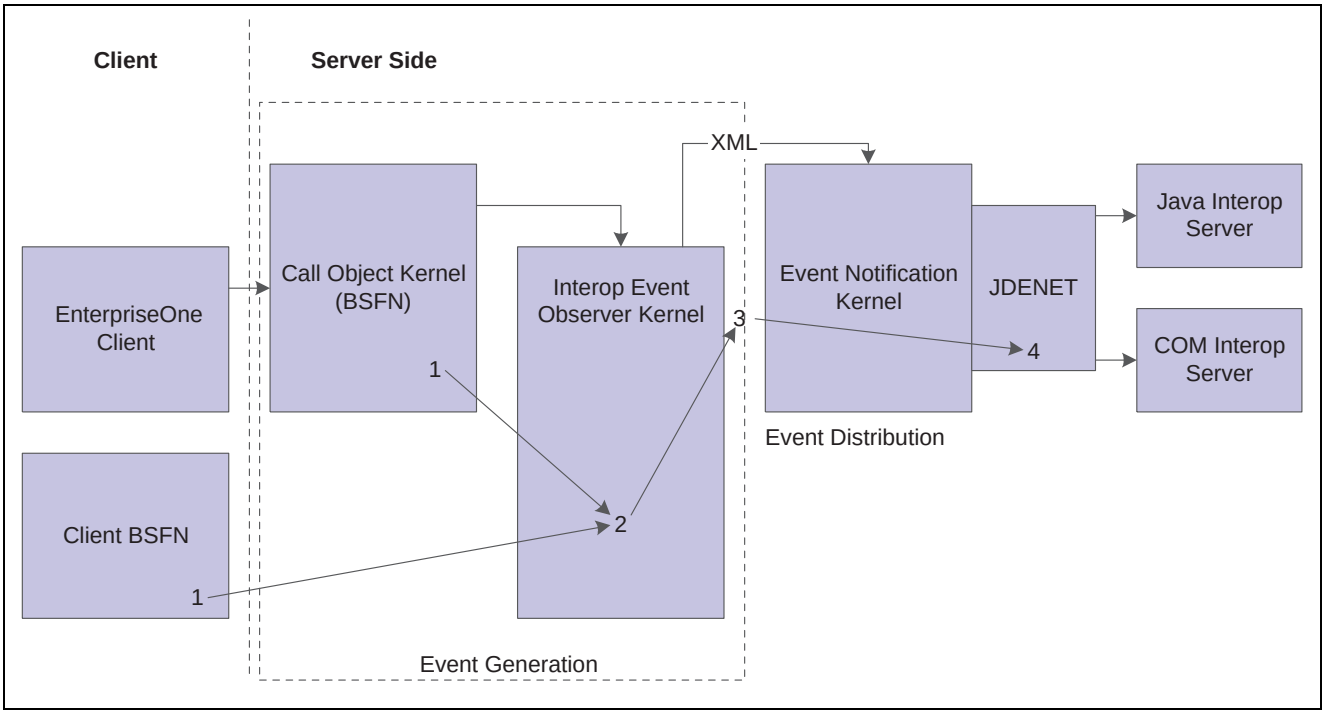
The XAPI structure supports XAPI outbound event generation. XAPI outbound events are generated by the XAPI originator exactly the same as real-time events.

The XAPI structure also provides for an inbound response. The XAPI inbound response happens after a XAPI event is generated. The XAPI inbound response is handled by the third-party system. The third-party system, the XAPI executor, processes the request (event) and returns a reply to the XAPI originator.

When the return XML document is received, it is routed to the XML Service kernel. The XML Service kernel saves the XML document to disk, creates a unique handle, and then calls the callback business function that is provided in the DXAPIROUTE XAPI method ID element in the XML document.

XAPI Outbound Request Process Flow

This diagram illustrates the flow for a XAPI outbound request that is sent to a third-party system:



XAPI request to a third-party system

In summary:

1. When a XAPI event is generated from a JD Edwards EnterpriseOne client, the client business function calls the appropriate API.

   This API does an OCM lookup to determine where the IEO kernel is located. The API validates, filters, and formats the data. When a XAPI event is generated from a JD Edwards EnterpriseOne server, the business function calls the interoperability event interface within the CallObject kernel. The data is sent as a partial event to the IEO kernel.

2. The IEO kernel creates the XAPI event and produces an XML document when the XAPI event is finalized.
3. The IEO kernel packages the XML document and passes the document to the EVN kernel.
4. The EVN kernel determines the transport driver that should handle the event, and JDENET distributes the information to the subscribers.

Note. XAPI currently does not use MQSeries or MSMQ. All events that are defined in the F90701 table are sent to you if you configure your system to receive events using MQSeries and MSMQ transport drivers.

XAPI Outbound Request APIs

These APIs are available for you to generate a XAPI call:

- jdeXAPI_Init
- jdeXAPI_Add
- jdeXAPI_Finalize
- jdeXAPI_Free
- jdeXAPI_SimpleSend
- jdeXAPI_ISCallTypeEnabled
- jdeXAPI_CALLS_ENABLED

XAPI Outbound Request API Usage Sample Code

This code sample illustrates how to create a XAPI outbound request:

```
/* Header files required */

#include <B4205010.h>

/************************/
 BOOL bXAPIInUse, bExit;
#ifdef jdeXAPI_CALLS_ENABLED
 XAPI_CALL_ID ulXAPICallID = 0;
 XAPI_CALL_RETURN eXAPICallReturn = eEventCallSuccess;
#endif
 DSD4205010A dsD4205010A = {0}; /*Query Header*/
 DSD4205010B dsD4205010B = {0}; /*Query Detail*/
#ifdef jdeXAPI_CALLS_ENABLED
 if(jdeXAPI_IsCallTypeEnabled("XAPIOPOUT") && jdeXAPI_IsCallTypeEnabled⇒
("XAPIOPIN") )
 {
  bXAPIInUse = TRUE;
 }
#endif
 /*-----------------------------------------------------*/
 /* Call XAPIInit */
#ifdef jdeXAPI_CALLS_ENABLED
 if(bXAPIInUse == TRUE)
 {
  ulXAPICallID = jdeXAPI_Init( lpBhvrCom, "SendOrderPromiseRequest",
"XAPIOPOUT", NULL, &eXAPICallReturn);
  if (eXAPICallReturn != eEventCallSuccess)
  {
```



```
   bExit = TRUE;
  }
 }
#endif
 /*-------------------------------------------------*/
 /* Adding Header Information */
#ifdef jdeXAPI_CALLS_ENABLED
 if(bXAPIInUse == TRUE)
 {
  eXAPICallReturn = jdeXAPI_Add( lpBhvrCom, ulXAPICallID,
"SendOrderPromiseRequest", "D4205010A", &dsD4205010A, sizeof(DSD4205010A));
  if (eXAPICallReturn != eEventCallSuccess)
  {
   bExit = TRUE;
  }
 }
#endif
 /*-------------------------------------------------*/
 /* Loading Detail Information */
#ifdef jdeXAPI_CALLS_ENABLED
 if(bXAPIInUse == TRUE)
 {
  eXAPICallReturn = jdeXAPI_Add( lpBhvrCom, ulXAPICallID,
"SendOrderPromiseRequest", "D4205010B", &dsD4205010B, sizeof(DSD4205010B));
  if (eXAPICallReturn != eEventCallSuccess)
  {
   bExit = TRUE;
  }
 }
#endif
#ifdef jdeXAPI_CALLS_ENABLED
 if(bXAPIInUse == TRUE)
 /*-------------------------------------------------*/
 /* Finalize */
 {
  eXAPICallReturn = jdeXAPI_Finalize( lpBhvrCom, ulXAPICallID,
"SendOrderPromiseRequest", "OrderPromiseCallback");
  if (eXAPICallReturn != eEventCallSuccess)
  {
   bExit = TRUE;
  }
 }
#endif
#ifdef jdeXAPI_CALLS_ENABLED
 if (eXAPICallReturn != eEventCallSuccess)
 {
 /*-------------------------------------------------*/
 /* CleanUp */
  if(bXAPIInUse == TRUE)
  {
```

```
   jdeXAPI_Free( lpBhvrCom, ulXAPICallID, "SendOrderPromiseRequest");
  }
 }
#endif
```

XAPI Outbound Request XML Code Sample

This code example shows the XML template for a XAPI outbound request:

```
xml version=1.0 encoding="utf-8" ?>
<jdeResponse type="realTimeEvent" user="KL5449350" role='*ALL'
session="22558100.1004460662" subtype="XAPICall" environment="DV7333">
<event>
<header>
<eventVersion>1.0</eventVersion>
<type>XAPIOPOUT</type>
<user>KL5449350</user>
<application>APIDRV</application>
<version />
<sessionID>22558100.1004460662</sessionID>
<environment>DV7333</environment>
<host>DEN-PP6954083</host>
<sequenceID>DEN-PP6954083_1540_10302001095648_KL5449350_1</sequenceID>
<date>10302001</date>
<time>095649</time>
<scope />
<codepage>utf-8</codepage>
</header>
<body elementCount="3">
<detail date="10302001" name="APIDRVFunction" time="9:56:48" type= ""
DSTMPL="D4205010A" executionOrder="1" parameterCount="23">
<szRequestId type="String">1234567</szRequestId>
<szUserId type="String">TestUser</szUserId>
<szQueryMode type="String">Test</szQueryMode>
<szCustomerName type="String">John Doe</szCustomerName>
<mnCustomerId type="Double">12345</mnCustomerId>
<szCustomerGroup type="String">Group 1</szCustomerGroup>
<szAddress1 type="String">Line 1</szAddress1>
<szAddress2 type="String">Suite 1</szAddress2>
<szAddress3 type="String">123 E. Main</szAddress3>
<szPostalCode type="String">50001</szPostalCode>
<szCity type="String">Centennial</szCity>
<szCounty type="String">Arap</szCounty>
<szStateProvince type="String">CO</szStateProvince>
<szCountry type="String">US</szCountry>
<szBusinessObjective type="String" />
<mnTraceDepth type="Double">0</mnTraceDepth>
<mnPenaltyCostAdjustment type="Double">0</mnPenaltyCostAdjustment>
<szOrderNumber type="String">1000</szOrderNumber>
<nAllowBackorders type="Int">49</nAllowBackorders>
```



```
<nAllowSubstitution type="Int">48</nAllowSubstitution>
<nAllowPartialLineShip type="Int">49</nAllowPartialLineShip>
<nAllowPartialOrderShip type="Int">49</nAllowPartialOrderShip>
<nAllowMultisource type="Int">49</nAllowMultisource>
</detail>
<detail date="10302001" name="APIDRVFunction" time="9:56:49" type= ""
DSTMPL="D4205010B" executionOrder="2" parameterCount="17">
<mnLineNumber type="Double">1</mnLineNumber>
<mnCacheLineNumber type="Double">1</mnCacheLineNumber>
<mnItemNumber type="Double">2222</mnItemNumber>
<sz2ndItemNumber type="String">1234567</sz2ndItemNumber>
<sz3rdItemNumber type="String">2234567</sz3rdItemNumber>
<szOrderUnit type="String">123</szOrderUnit>
<mnOrderQuantity type="Double">12</mnOrderQuantity>
<szPlanningUnit type="String">ECL</szPlanningUnit>
<mnPlanningQuantity type="Double">12</mnPlanningQuantity>
<mnPlanningMultiple type="Double">1</mnPlanningMultiple>
<mnPlanningUnitPrice type="Double">1234</mnPlanningUnitPrice>
<jdRequestDate type="Date">10302001</jdRequestDate>
<szShippingGroup type="String">Ship Group</szShippingGroup>
<szMultiSource type="String">MS</szMultiSource>
<nAllowPartialLineShip type="Int">49</nAllowPartialLineShip>
<nAllowBackorders type="Int">49</nAllowBackorders>
<nAllowSubstitution type="Int">48</nAllowSubstitution>
</detail>

/* DXAPIROUTE Routing Information */
<detail date="10302001" name="XAPICall time="09:56:49" type=""
DSTMPL="DXAPIROUTE"
executionOrder="3" parameterCount="4">
<ClientPort type="Int">6009</ClientPort>
<ClientIP type="Int">167810863</ClientIP>
<ClientMagicNumber type="Int">32781408</ClientMagicNumber>
<XAPIMethodID type="String">GetComputerID</XAPIMethodID>
</detail>
/* End of DXAPIROUT Routing Information */

</body>
</event>
</jdeResponse>
```

Routing Information

All XAPI events must include DXAPIROUTE in the XML file, as noted near the end of the XML code sample. DXAPIROUTE contains the routing information that is to be returned to the originating client. The jdeXAPI_Finalize API appends DXAPIROUTE data execution.

XAPI Outbound Request jde.ini File Configuration

To generate XAPI events, these sections of the JD Edwards EnterpriseOne server jde.ini file must be configured:

- [JDENET_KERNEL_DEF19]
- [JDENET_KERNEL_DEF20]
- [JDEITDRV]

If the jde.ini file is not properly configured for XAPI events, this error message is written to the jde.log file:

```
XAPI Event [Event Name] cannot be subscribed. Must have XAPI Definition in the
INI file.
```

Make sure the XAPI event is defined in the F90701 table and that XAPI Executor information is defined in the jde.ini file.

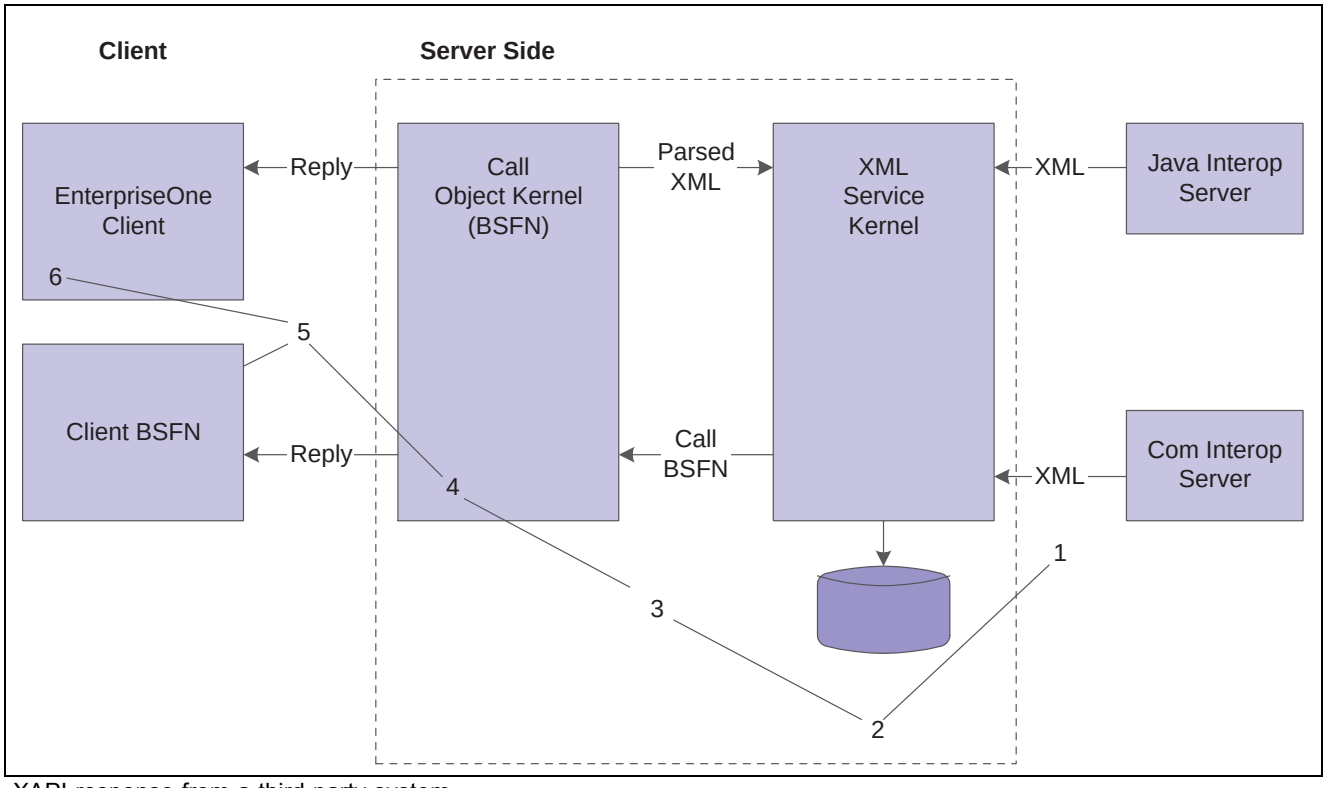
You can ignore this error message because XAPI subscription is persisted and cannot be unsubscribed:

```
Cannot unsubscribe XAPI event.
```

See Appendix A, "Classic Events," Configuring the jde.ini file for Events, page 172.

XAPI Inbound Response Process Flow

This diagram illustrates the flow for a XAPI inbound response from a third-party system to the JD Edwards EnterpriseOne originating system:



XAPI response from a third-party system

In summary:

1. An inbound XML document is passed from a third-party system to the XML Service kernel.
2. The XML Service kernel creates a unique XML handle and stores the document on disk.
3. The XML Service kernel reads the XAPICallMethod attribute from the XML document and passes the XML handle as the parameter to the specified business function.

4. The business function (XAPICallMethod) uses XML service APIs to read and parse the XML data into JD Edwards EnterpriseOne data.
5. The business function (XAPICallMethod) uses XML CallObject to send the reply to the originator.
6. A JD Edwards EnterpriseOne client can poll for the XAPI response from the JD Edwards EnterpriseOne server.

XAPI Inbound Response Parsing APIs

These APIs are available for you to generate an inbound XAPI response:

- jdeXML_GetDSCount
- jdeXML_GetDSName
- jdeXML_ParseDS
- jdeXML_DeleteXML

XAPI Inbound Response Parsing API Usage Code Sample

This code example illustrates how the business function uses the XML service APIs to read and parse the XML data:

```
#include <B4205030.h>

 int iCurrentRecord;
 int iHeaderCount;
 int iRecordCount;
 NID nidDSName;
 DSD4205030A dsD4205030A = {0};
 DSD4205030B dsD4205030B = {0};
#ifdef jdeXAPI_CALLS_ENABLED
 if(jdeXAPI_IsCallTypeEnabled("XAPIOPOUT") && jdeXAPI_IsCallTypeEnabled
("XAPIOPIN") )
 {
  iRecordCount = jdeXML_GetDSCount(lpDS->szXMLHandle);
  if (iRecordCount > 0)
  {
   for (iCurrentRecord = 0; iCurrentRecord < iRecordCount; iCurrentRecord++)
   {
    jdeXML_GetDSName(lpDS->szXMLHandle,iCurrentRecord,nidDSName);
    if (jdestrcmp(nidDSName,(const char*)"D4205030A") == 0)//mod
    {
     jdeXML_ParseDS( lpDS->szXMLHandle,iCurrentRecord,&dsD4205030A,
sizeof(DSD4205030A));
    }
    else
    {
     jdeXML_ParseDS( lpDS->szXMLHandle,iCurrentRecord,&dsD4205030B,
sizeof(DSD4205030B));

    }
```

```
   }
  }
  if (iCurrentRecord == iRecordCount)
  {
   jdeXML_DeleteXML(lpDS->szXMLHandle);
  }
 }
#endif
```

XAPI Inbound Response Code Sample

This sample code shows an inbound XAPI response:

```
<?xml version="1.0" encoding="utf-8" ?>
<jdeRequest pwd="JDE" type="xapicallmethod" user="JDE" role='*ALL'
session= "" ⇒
environment="DV7333" sessionidle="">
<header>
<eventVersion>1.0</eventVersion>
<type>XAPIOPIN</type>
<user>JDE</user>
<application>XPI</application>
<version />
<sessionID />
<environment>DEVXPINT</environment>
<host>denxpi7</host>
<sequenceID />
<date>09122001</date>
<time>094951</time>
<scope />
<codepage>utf-8</codepage>
</header>
<body elementCount="3">
<params type="D4205030A" executionOrder="1" parameterCount="24">
<param name="type" />
<param name="dateStamp" />
<param name="timeStamp" />
<param name="szRequestId">1|ZJDE0001</param>
<param name="szBusinessObjective">Maximize_Service</param>
<param name="mnResultNumber">0.0</param>
<param name="mnTotalCost">0.0</param>
<param name="mnTotalDeliveryCost">0.0</param>
<param name="mnTotalPrice">0.0</param>
<param name="mnTotalProfit">0.0</param>
<param name="mnTotalMargin">0.0</param>
<param name="mnTotalValue">0.0</param>
<param name="mnLatestLineDate">0.0</param>
<param name="mnNumberOfBackorders">0.0</param>
<param name="mnNumberOfSubstitutions">0.0</param>
<param name="mnOrderFillRate">0.0</param>
```



```
<param name="szErrorCode" />
<param name="szErrorDescription" />
<param name="szOrderNumber">3115|SO|00200</param>
<param name="nAllowPartialOrderShip">0</param>
<param name="nAllowMultisource">0</param>
<param name="nAllowBackorders">0</param>
<param name="nAllowSubstitution">0</param>
<param name="nAllowPartialLineShip">0</param>
</params>
<params type="D4205030B" executionOrder="2" parameterCount="28">
<param name="type" />
<param name="dateStamp" />
<param name="timeStamp" />
<param name="mnLineNumber">1.0</param>
<param name="mnOriginalLineNumber">1.0</param>
<param name="mnCacheLineNumber">1.0</param>
<param name="mnRequestedItem">60011.0</param>
<param name="mnAvailableItem">60011.0</param>
<param name="mnAvailableAmount">25.0</param>
<param name="jdAvailableDate">09/12/2001 00:00:00</param>
<param name="jdRequestedDate">09/10/2001 00:00:00</param>
<param name="jdPickDate">09/11/2001 00:00:00</param>
<param name="jdShipDate">09/11/2001 00:00:00</param>
<param name="szShipLocation" />
<param name="mnCost">0.0</param>
<param name="mnDeliveryCost">0.0</param>
<param name="mnPrice">0.0</param>
<param name="mnProfit">0.0</param>
<param name="mnMargin">0.0</param>
<param name="mnValue">0.0</param>
<param name="mnSubstitutionRatio">0.0</param>
<param name="szShippingGroup" />
<param name="szMultiSource" />
<param name="szErrorCode" />
<param name="szSuspectedCause" />
<param name="nAllowPartialOrderShip">0</param>
<param name="nAllowBackorders">0</param>
<param name="nAllowSubstitution">0</param>
</params>
<params type="DXAPIROUTE" executionOrder="3" parameterCount="7">
<param name="type" />
<param name="dateStamp">09/05/2001 00:00:00</param>
<param name="timeStamp">13:54:04</param>
<param name="ClientPort">6009</param>
<param name="ClientIP">168045665</param>
<param name="ClientMagicNumber">3</param>
<param name="XAPIMethodID">OrderPromiseCallback</param>
</params>
</body>
</jdeRequest>
```

XAPI Inbound Response jde.ini File Configuration

These sections of the JD Edwards EnterpriseOne server jde.ini file must be configured for the XAPI response portion of the XAPI structure:

- [JDENET_KERNEL_DEF22]
- [JDENET_KERNEL_DEF24]
- [XAPI]
- [XMLLookupInfo]

[XAPI]

Configure this setting:

```
XMLDirectory=c:\builds\bdev\log\
```

Note. The XML document directory (XMLDirectory) must be registered in the jde.ini file on the server under the [XAPI] section in the XMLDirectory key. The key contains the directory on the server where XML documents are to be stored.

[XMLLookupInfo]

Configure these settings:

```
XMLRequestType5=realTimeEvent
XMLKernelMessageRange5=14251
XMLKernelHostName5=local
XMLKernelPort5=0
XMLKernelReply5=0
```

See Appendix B, "Using Classic Real-Time Events," Understanding the OCM for Real-Time Events, page 193.

XAPI Client jde.ini File Configuration

If you are using a JD Edwards EnterpriseOne client to generate XAPI events, you must define the Client Dispatch kernel and [JDENET] sections of the client jde.ini file. If your interface to the JD Edwards EnterpriseOne server is other than a JD Edwards EnterpriseOne client, these two settings are not required. The settings enable the JD Edwards EnterpriseOne client to poll for the XAPI response message from the JD Edwards EnterpriseOne server.

Use these settings to configure your JD Edwards EnterpriseOne client jde.ini file.

[JDENET_KERNEL_DEF27]

Configure these settings:

```
krnlName=CLIENT DISPATCH KERNEL
dispatchDLLName=jdeuser.dll
dispatchDLLFunction=_JDENET_ClientDispatch
maxNumberOfProcesses=0
numberOfAutoStartProcesses=0
```

[JDENET]

Configure these settings


```
serviceNameListen=6004
serviceNameConnect=6004
maxKernelRanges=27
netTrace=0
```

Note. The serviceNameListen and serviceNameConnect settings must be the same as the server's settings. For example, if your server jde.ini file has serviceNameListen=6005 and serviceNameConnect=6005, then your JD Edwards EnterpriseOne client jde.ini file must be serviceNameListen=6005 and serviceNameConnect=6005.

The value for maxKernelRanges setting should be the same value as the server.

Working with JD Edwards EnterpriseOne-to-EnterpriseOne XAPI Events

This section provides an overview of the JD Edwards EnterpriseOne-to-EnterpriseOne XAPI events and discusses:

- XAPI JD Edwards EnterpriseOne-to-EnterpriseOne process flow.
- XAPI outbound request generation APIs.
- XAPI outbound request handling APIs.
- XAPI outbound request parsing API usage sample code.
- XAPI JD Edwards EnterpriseOne originator XML sample code.
- XAPI inbound response generation APIs.
- XAPI inbound response parsing API usage sample code.
- XAPI response from originator system sample code.
- XAPI inbound response handling APIs.
- XAPI error handling APIs.
- XAPI JD Edwards EnterpriseOne-to-EnterpriseOne jde.ini file configuration.

Understanding JD Edwards EnterpriseOne-to-EnterpriseOne XAPI Events

The XAPI structure provides the capability for two different JD Edwards EnterpriseOne systems to communicate with each other. The first JD Edwards EnterpriseOne system (XAPI originator system) generates a XAPI request (event). Instead of the request being distributed to a third-party system, JDENET sends the request to a second JD Edwards EnterpriseOne system.

You can use the reliable event delivery feature to process XAPI events.

Modifying Element Name for XML Documents

Before XAPI event processing, any document that was sent from JD Edwards EnterpriseOne was considered to be a response document, and any document coming in to JD Edwards EnterpriseOne was considered to be a request document. However, with XAPI, request documents are generated by the JD Edwards EnterpriseOne originating system and can be sent to a JD Edwards EnterpriseOne executor system. Response documents are generated and sent by the JD Edwards EnterpriseOne executor system and received by the JD Edwards EnterpriseOne originating system. To support XAPI and to enable the XML dispatch kernel to distinguish between a response and reply, JD Edwards created these type attributes to be used with the jdeResponse element:

Attribute Type	Explanation
jdeResponse=RealTimeEvent	Use this element and attribute to identify a XAPI request from the JD Edwards EnterpriseOne originating system and sent to the JD Edwards EnterpriseOne executor system.
jdeResponse=xapicallmethod	Use this element and attribute to identify a XAPI response from the JD Edwards EnterpriseOne executor system and sent to the JD Edwards EnterpriseOne originating system.

When the XMLDispatch kernel receives a document with the jdeResponse element and a RealTimeEvent or xapicallmethod type attribute, XMLDispatch sends the document to the XML Service kernel. XML Service can distinguish a response or a reply based on the type attribute that is associated with the jdeResponse element and then processes the document appropriately.

Security for Originator and Executor

Access to the JD Edwards EnterpriseOne originator and JD Edwards EnterpriseOne executor systems is based on:

- User ID
- Password
- Environment
- Role

The JD Edwards EnterpriseOne originating system verifies that the security information is valid and creates an hUser object with an encrypted password to send to the JD Edwards EnterpriseOne executor. Encryption APIs (jdeEnchyper and jdeDecypher) are used to encrypt and decode the password. The security information is sent in the XAPI request XML document.

Note. The user ID, password, environment, and role must be the same on both JD Edwards EnterpriseOne systems (originator and executor).

Error Processing for Originator and Executor

You might encounter these two types of errors during XAPI error processing between two JD Edwards EnterpriseOne systems:

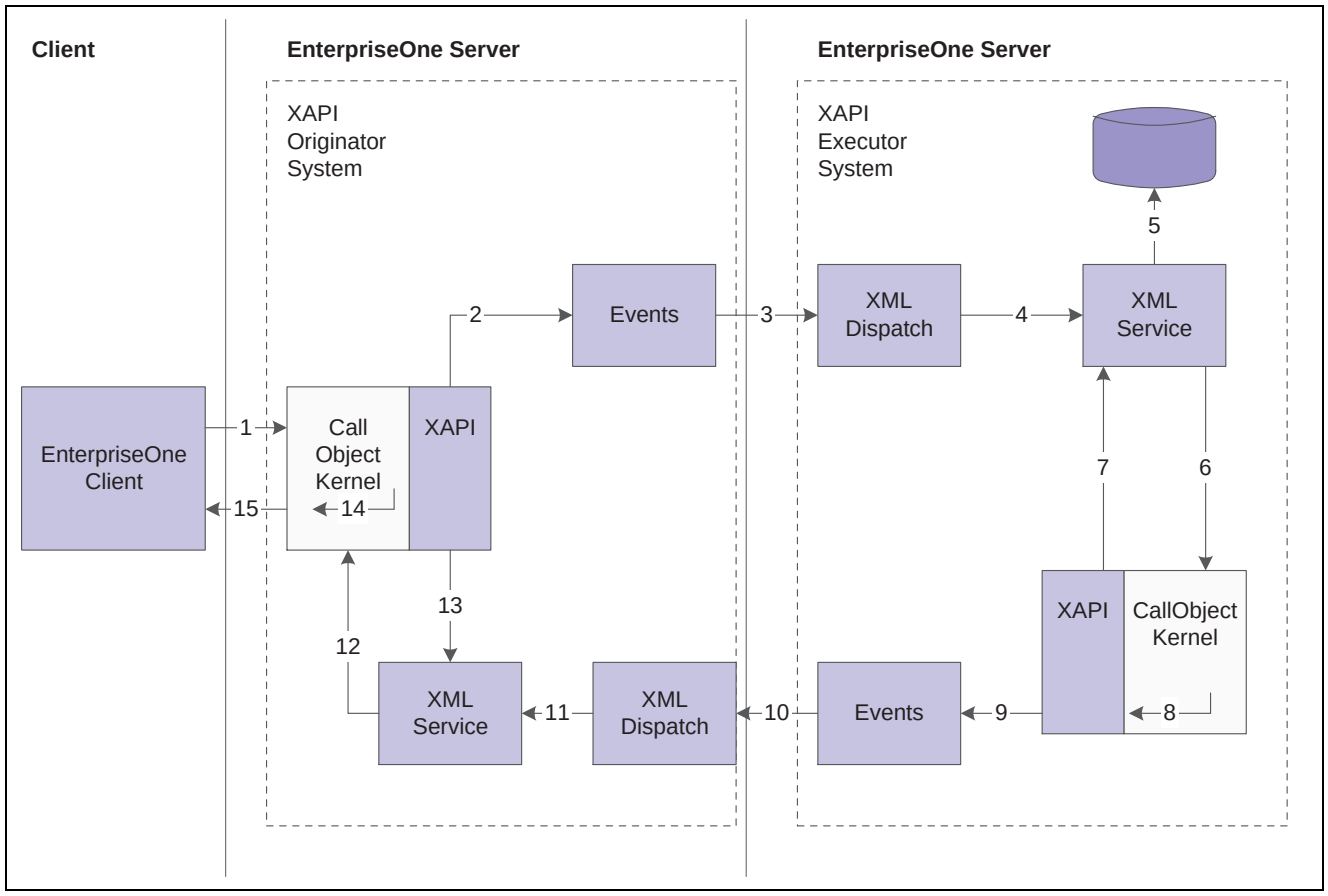
Type of Error	Explanation
Business-related errors	The business function or the business function specifications cannot be found.
System errors	These errors occur in other parts of the system (for example, message delivery failure).

The system handles XAPI error processing for business-related errors in this manner:

- XAPI logs the business-related errors in the JD Edwards EnterpriseOne server log and these errors are delivered as part of the XAPI reply.
- XAPI APIs parse business errors from the response document.
- XAPI logs all information available about the error in the JD Edwards EnterpriseOne server log.

XAPI EnterpriseOne-to-EnterpriseOne Process Flow

This illustration shows a logical representation of the JD Edwards EnterpriseOne-to-EnterpriseOne XAPI process flow:



JD Edwards EnterpriseOne-to-EnterpriseOne process flow

In summary:

1. For the XAPI Originator System in the illustration, a business function calls the Interoperability Event Interface within the CallObject kernel to send a request.

2. The business function uses XAPI APIs to create the XAPI request.

   XAPI adds the callback function and sends the request to the events structure.

3. The IEO kernel creates the XAPI event in XML format and sends the XML document to the EVN kernel.

   The EVN kernel ships the XML document to the XML Dispatch kernel of the second JD Edwards EnterpriseOne system. The XML document is shipped through JDENET using persistent subscription information. A routing token that contains the sender's server and port information is added. The message type for the event must be *RealTimeEvent*.

4. For the XAPI Executor System in the illustration, the XML Dispatch kernel receives the XML package and sends the event request and routing information to the XML Service kernel.

5. The XML Service kernel stores the XAPI request and creates a file handle for the XAPI request.

   The XML kernel also creates XML based routing information, stores the routing information, and creates a file handle for the routing information. The XML Service kernel uses the F907012 table to find the business function that processes the request.

6. The XML Service kernel invokes the business function (in CallObject) with the XML request handle and the routing information handle.

7. The business function uses XAPI APIs to parse and process the request. XAPI APIs load the XML request into memory.

8. The business function processes the XAPI event request.

   The business function also creates a XAPI response. The message type for the response must be *xapicallmethod*. The XAPI response is in XML format. The business function also passes the routing information handle.

9. The XAPI response originator sends the response and the routing information to the events structure.

10. The IEO kernel formats the XAPI response in XML format and sends the XML document to the EVN kernel.

    The EVN kernel uses direct routing to send the response and routing information to the XML Dispatch kernel of the first JD Edwards EnterpriseOne system (XAPI originator system). Direct routing means sending the XAPI reply to the same request-originating server.

11. For the XAPI Originator System in the illustration, the XML Dispatch kernel receives the response XML document and sends the response to the XML Service kernel.

12. The XML Service kernel stores the response document, creates a file handle, and invokes the callback business function with the file handle.

13. The business function parses the response document using XAPI APIs (XAPI response handler).

    XAPI APIs use the XML Service kernel to load the document into memory.

14. The business function uses XAPI APIs (CallObject kernel) to process the response.

15. The business function can poll for the XAPI response from the JD Edwards EnterpriseOne server.

Note. You can send a request from one JD Edwards EnterpriseOne system to another JD Edwards EnterpriseOne system for processing with no return reply. If you do not want a response, use the steps through step 8 without processing the request. No response is generated.

XAPI Outbound Request Generation APIs

You use APIs to generate a XAPI request from the originator system. These APIs are the same as the APIs that are identified in the XAPI Outbound Events section.

- jdeXAPI_SimpleSend
- jdeXAPI_Init
- jdeXAPI_Add
- jdeXAPI_Finalize
- jdeXAPI_Free

XAPI Outbound Request Handling APIs

The mapped business function use these APIs in the JD Edwards EnterpriseOne executor system to retrieve XML data from the outbound XAPI request document:

- jdeXMLRequest_GetDSCount
- jdeXMLRequest_GetDSName
- jdeXMLRequest_ParseDS
- jdeXMLRequest_DeleteXML
- jdeXMLRequest_ParseNextDSByName
- jdeXMLRequest_PrepareDSListForIterationByName

XAPI Outbound Request Parsing API Usage Sample Code

This code example shows the API usage for generating a outbound request from the JD Edwards EnterpriseOne originator to the JD Edwards EnterpriseOne executor:

```
#include <jde.h>

#define b0000310_c


/**************************************************************************
*    Source File:  b0000310
*
*    Description:  Company Real Time Notification Outbound Wrapper Source File
*
**************************************************************************/

#include <b0000310.h>
#include <B4206030.h>
#include <B4206000.h>
/**************************************************************************
*  Business Function:  CompanyRealTimeWrapper
*
*        Description:  Company Real Time Notification Outbound Wrapper
*
*         Parameters:
*           LPBHVRCOM           lpBhvrCom    Business Function Communications
*           LPVOID              lpVoid       Void Parameter - DO NOT USE!
*           LPDSD0000310A        lpDS         Parameter Data Structure Pointer
```

```
*
*****************************************************************************/

 int iXMLRecordCount = 0;
 int iCurrentRecord = 0;
 NID nidDSName;
 ID idReturnValue = ER_SUCCESS;
 ID idSORecordCount = ER_ERROR; /*Return Code*/
 LPDSD4206000A lpDS;
 int lpmnJobNumber;

 MATH_NUMERIC mnBatchNumber = {0};
 unsigned long lBatchNumber = {0};
 DSD4206030A dsD4206030A = {0};

 /* CacheProcessInboundDemandRequest B4206030.c */
 DSD4206000I dsD4206000I = {0};

 /* Demand scheduling inbound DSTR */
 iXMLRecordCount = jdeXMLRequest_GetDSCount(lpDS->szXMLHandle);
 if( iXMLRecordCount > 0)
 {
  for ( iCurrentRecord = 0; iCurrentRecord < iXMLRecordCount; iCurrentRecord++)
  {
   memset((void *)(&dsD4206000I), (int)(_J('\0')), sizeof(DSD4206000I));
   memset((void *)(nidDSName), (int)(_J('\0')), sizeof(NID));
   if(jdeXMLRequest_GetDSName(lpDS->szXMLHandle,iCurrentRecord,nidDSName))
   {
    /* Retrieving data*/
    if (jdeStricmp(nidDSName, (const JCHAR *)_J("D40R0180B")) == 0)
    {
     if (jdeXMLRequest_ParseDS(lpDS->szXMLHandle,iCurrentRecord,
&dsD4206000I,sizeof(DSD4206000I)))
     {
      /* Get next number for the batch number of the inbound INVRPT
record*/
      if ( dsD4206000I.cInventoryAdvisement == _J('1'))
      {
       lBatchNumber = JDB_GetInternalNextNumber();
       LongToMathNumeric(lBatchNumber, &mnBatchNumber);
       FormatMathNumeric(dsD4206000I.szBatch,&mnBatchNumber);
      }
      /* Setup cancel flag for pending delete record */
      if ( dsD4206000I.cPendingDelete == _J('1'))
      {
       /* Flag set as 1 for any cancel demand record */
       dsD4206000I.cCancelFlag = _J('1');
      }
      else
      { /* Flag set as 9 for any non cancel demand record */
```



```
       dsD4206000I.cCancelFlag = _J('9');
      }
      /* Load parms for cache */
      //memset((void *)(&dsD4206030A), (int)(_J('\0')),
sizeof(DSD4206030A));
      I4206000_LoadParmsToCache(&dsD4206000I, &dsD4206030A);
      MathCopy(&dsD4206030A.mnJobnumberA, lpmnJobNumber);
      /* Add the DSTR to cache */
      idReturnValue = jdeCallObject( _J("CacheProcessInboundDemand
Request") ,(LPFNBHVR)NULL ,lpBhvrCom ,lpVoid ,(LPVOID)&dsD4206030A,(CALLMAP *)
NULL, (int)0,(JCHAR*)NULL ,(JCHAR*)NULL ,(int)0 );
      /* Write XML DSTR to cache fail */
      if (idReturnValue == ER_ERROR)
      {
       jdeErrorSet(lpBhvrCom, lpVoid, (ID)0, _J("032E"), (LPVOID)NULL);
      }
     }
     else
     { /* warning XML parse fail */
      jdeErrorSet(lpBhvrCom, lpVoid, (ID)0, _J("40R46"), (LPVOID) NULL);
     }
    } /* end if */
   }/* end if DS name */
  }/* end for - looping all matching XML DSTR */
  /* Ensure there is at least one record */
  idSORecordCount = ER_SUCCESS;
 }/*if( iXMLRecordCount > 0) */
 return idSORecordCount;
```

XAPI EnterpriseOne Originator XML Sample Code

This sample code illustrates the XAPI request document from the JD Edwards EnterpriseOne originator system to the JD Edwards EnterpriseOne executor system:

```
<?xml version="1.0" encoding="UTF-16" ?>
<jdeRequest pwd="4f3e65076f446c5d20666f4172536518435c" role="*ALL"
type="xapicallmethod" user="PP6954083" session="" environment="DV9NIS2"
responseCreator="XAPI">
   <header>
      <eventVersion>1.0</eventVersion>
       <type>XAPIDEMO</type>
       <user>PP6954083</user>
       <role>*ALL</role>
       <application />
       <version />
       <sessionID>35087181.1050101193</sessionID>
       <environment>DV9NIS2</environment>
       <host>DEN-PP6954083B</host>
       <sequenceID>DEN-PP6954083B_3112_041120031647161</sequenceID>
       <date>04112003</date>
```

```
         <time>164716</time>
         <scope />
         <codepage>utf-8</codepage>
         <instanceInfo>
            <host>DEN-PP6954083B</host>
            <port>6025</port>
            <type>JDENET</type>
         </instanceInfo>
      </header>
      <body elementCount="3">
         <errors errorCount="4">
            <error code="041H" type="BSFN ERROR" />
            <error code="041I" type="BSFN ERROR" />
            <error code="2597" type="BSFN ERROR" />
            <error code="4136" type="BSFN ERROR" />
         </errors>
         <params type="D907001A" executionOrder="0" parameterCount="14">
            <param name="szXMLHandle">DEN-PP6954083B_||_C:\builds\B9_SP0\log\
J3E9745EE032D-00000C28-00000001-00000000000000000000FFFF0A0396A3.xml</param>
            <param name="mnAddressNumber">55617</param>
            <param name="szNameAlpha">Pradip Pandey</param>
            <param name="szNameMailing">Pradip K Pandey</param>
            <param name="szAddressLine1" />
            <param name="szAddressLine2" />
            <param name="szZipCodePostal">80237</param>
            <param name="szCity>Denver"</param>
            <param name="szState">CO</param>
            <param name="szCountry" />
            <param name="mnAmountGross">100.00</param>
            <param name="mnUnits">100.00</param>
            <param name="jdDtForGLAndVouch1">2001/01/01</param>
            <param name="cDefaultAddressLine1">9</param>
         </params>
         <params type="DXAPIROUTE" executionOrder="1" parameterCount="4">
            <param name="ClientPort">6024</param>
            <param name="ClientIP">168007331</param>
            <param name="ClientMagicNumber">1</param>
            <param name="XAPIMethodID">XAPITestResponse</param>
         </params>
      </body>
   </jdeRequest>
```

XAPI Inbound Response Generation APIs

The JD Edwards EnterpriseOne executor system uses these APIs to generate a response:

- jdeXAPIResponse_SimpleSend
- jdeXAPIResponse_Init
- jdeXAPIResponse_Add

- jdeXAPIResponse_Finalize
- jdeXAPIResponse_Free

XAPI Inbound Response Parsing API Usage Sample Code

This code example shows the API usage for generating an inbound reply from the JD Edwards EnterpriseOne executor to the JD Edwards EnterpriseOne originator:

```
JDEBFRTN (ID) JDEBFWINAPI SendOrderPromiseRequest (LPBHVRCOM lpBhvrCom,
LPVOID lpVoid, LPDSD4205010 lpDS)
{
/************************************************************
Variable declarations
************************************************************/
  char    cPromisableLine          = ' ';
  int    nHeaderBackOrderAllowed   = ' ';
  HUSER   hUser    ;
  ID     JDEDBResult               = JDEDB_PASSED;
  BOOL    bExit                    = FALSE;
  BOOL    bB4001040Called          = FALSE;
  BOOL    bXAPIInUse               = FALSE;
  BOOL    bAtLeastOneDetail        = FALSE;

  #ifdef jdeXAPI_CALLS_ENABLED
  XAPI_CALL_ID     ulXAPICallID   = 0;
  XAPI_CALL_RETURN   eXAPICallReturn  = eEventCallSuccess;
  #endif
/************************************************************
* Declare structures
************************************************************/
  DSD4001040   dsD4001040     = {0};
  DSD4205020   dsD4205020     = {0};
  DSD4205040   dsD4205040     = {0}; /* Header Info */
  DSD4205050   dsD4205050     = {0}; /* Detail Info */
  DSD4205010A   dsD4205010A   = {0}; /* Query Header */
  DSD4205010B   dsD4205010B   = {0} /* Query Detail */
  DSD0100042   dsD0100042     = {0};
  LPDSD4205040H  lpDSD4205040H    = (LPDSD4205040H) NULL;
  LPDSD4205050D  lpDSD4205050D    = (LPDSD4205050D) NULL;

/************************************************************
** Declare pointers
************************************************************/
/************************************************************
* Check for NULL pointers
************************************************************/
if ((lpBhvrCom == (LPBHVRCOM) NULL) ||
 (lpVoid  == (LPVOID)  NULL) ||
 (lpDS   == (LPDSD4205010) NULL))
{
```

```
jdeErrorSet (lpBhvrCom, lpVoid, (ID) 0, "4363", (LPVOID) NULL);
return ER_ERROR;
}

/* Retrieving hUser */
JDEDBResult = JDB_InitBhvr (lpBhvrCom, &hUser, (char *)NULL,
JDEDB_COMMIT_AUTO ) ;

if ( JDEDBResult == JDEDB_FAILED )
{
jdeSetGBRError ( lpBhvrCom, lpVoid, (ID) 0, "4363" ) ;
return ER_ERROR ;
}
/*************************************************************
* Set pointers
*************************************************************/
/*************************************************************
* Main Processing
*************************************************************/
 /*-------------------------------------------------------*/
 /* Setting Up ErrorCode
      */
 lpDS->cErrorCode = '0';

 /*-------------------------------------------------------*/
 /* Determining if XAPI is ready to be used        */

 bXAPIInUse = FALSE;

 #ifdef jdeXAPI_CALLS_ENABLED
 if(jdeXAPI_IsCallTypeEnabled("XAPIOPOUT") &&
     jdeXAPI_IsCallTypeEnabled("XAPIOPIN") )
 {
     bXAPIInUse = TRUE;
 }
 #endif

 /*-------------------------------------------------------*/
 /* Data validation and default values.            */
 /* When Display Before Accept Mode is on, validate Key */
 /* Information. Otherwise retrieve it from Header Record*/

 if((lpDS->cDisplayBeforeAcceptMode == '1')   &&
      ((MathZeroTest(&lpDS->mnOrderNumber) == 0) ||
       (IsStringBlank(lpDS->szOrderType))   ||
       (IsStringBlank(lpDS->szOrderCompany))))
 {
      bExit = TRUE;
 }
 else
```



```
{
    MathCopy(&dsD4205040.mnOrderNumber,&lpDS->mnOrderNumber);
    strncpy(dsD4205040.szOrderType,
      lpDS->szOrderType,
       sizeof(dsD4205040.szOrderType));
    strncpy(dsD4205040.szComputerID,
      lpDS->szOrderCompany,
       sizeof(dsD4205040.szOrderCompany));
    dsD4205040.cUseCacheOrWF = lpDS->cUseCacheOrWF;
    strncpy(dsD4205040.szComputerID,
      lpDS->szComputerID,
       sizeof(dsD4205040.szComputerID));
    MathCopy(&dsD4205040.mnJobNumber,&lpDS->mnJobNumber);
    jdeCallObject( "GetSalesOrderHeaderRecord",
         NULL,
         lpBhvrCom, lpVoid,
         (LPVOID)&dsD4205040,
         (CALLMAP *) NULL,
         (int) 0,
         (char *) NULL,
         (char *) NULL,
         (int) 0 ) ;

    lpDSD4205040H = (LPDSD4205040H)jdeRemoveDataPtr(hUser,
(ulong)dsD4205040.idHeaderRecord);

    if (lpDSD4205040H == NULL)
    {
         bExit = TRUE;
    }
}

/*-------------------------------------------------------*/
/* Set error if we're exiting at this point      */
if (bExit == TRUE)
{
    lpDS->cErrorCode = '1';
    /* Sales Order Header Not Found */
    strncpy(lpDS->szErrorMessageID,
       "072T",
         sizeof(lpDS->szErrorMessageID));
    if (lpDS->cSuppressError != '1')
    {
       jdeErrorSet (lpBhvrCom, lpVoid, (ID) 0, "072T", (LPVOID) NULL);
    }
}

/*-------------------------------------------------------*/
/* Default Promising Flag is always 1      */
lpDS->cDefaultPromisingFlags = 1;
```

```
if (bExit == FALSE)
{

 /*-------------------------------------------------*/
 /* Call XAPIInit   */
 #ifdef jdeXAPI_CALLS_ENABLED
 if(bXAPIInUse == TRUE)
 {
    ulXAPICallID = jdeXAPI_Init( lpBhvrCom,
                   SendOrderPromiseRequest,
                "XAPIOPOUT",
                NULL,
                &eXAPICallReturn);
    if (eXAPICallReturn != eEventCallSuccess)
    {
         bExit = TRUE;
    }
 }
 #endif
 if (bExit == FALSE)
 {

    /*-------------------------------------------------*/
    /* Loading Header Information           */
    I4205010_PopulateQueryHeader(lpDS,&dsD4205010A
      lpDSD4205040H,&dsD0100042,hUser,lpVoid,lpBhvrCom);
    nHeaderBackOrderAllowed = dsD4205010A.nAllowBackorders;

    /*-------------------------------------------------*/
    /* Adding Header Information     */
    #ifdef jdeXAPI_CALLS_ENABLED
    if(bXAPIInUse == TRUE)
    {
       eXAPICallReturn = jdeXAPI_Add( lpBhvrCom,
                  ulXAPICallID,
                  "SendOrderPromiseRequest",
                  "D4205010A",
                  &dsD4205010A,
                  sizeof(DSD4205010A));
       if (eXAPICallReturn != eEventCallSuccess)
       {
          bExit = TRUE;
       }
    }
    #endif
 }
}
if (bExit == FALSE)
{
```



```
   /*-------------------------------------------------*/
   /* Loading Detail Information   */
   MathCopy(&dsD4205050.mnOrderNumber,&lpDS->mnOrderNumber);
   strncpy(dsD4205050.szOrderType,lpDS->szOrderType,
               sizeof(dsD4205050.szOrderType));
   strncpy(dsD4205050.szOrderCompany,lpDS->szOrderCompany,
               sizeof(dsD4205050.szOrderCompany));
   dsD4205050.cUseCacheOrWF = lpDS->cUseCacheOrWF;
   strncpy(dsD4205050.szComputerID,lpDS->szComputerID,
               sizeof(dsD4205050.szComputerID));
   MathCopy(&dsD4205050.mnJobNumber,&lpDS->mnJobNumber);
   if (lpDSD4205040H->cActionCode != 'A')
   {
      dsD4205050.cCheckTableAfterCache = '1';
   }
   else
   {
      dsD4205050.cCheckTableAfterCache = '0';
   }
   jdeCallObject( "GetSalesOrderDetailRecordOP",
      NULL,
      lpBhvrCom, lpVoid,
      (LPVOID)&dsD4205050,
      (CALLMAP *) NULL,
      (int) 0, (char *) NULL,
      (char *) NULL, (int) 0 ) ;

   if (dsD4205050.cRecordFound != '1')
   {
      bExit = TRUE;
      lpDS->cErrorCode = '1';
      /* Sales Order Detail Not Found */
      strncpy(lpDS->szErrorMessageID,"4162",
               sizeof(lpDS->szErrorMessageID));
      if (lpDS->cSuppressError != '1')
      {
         jdeErrorSet (lpBhvrCom, lpVoid, (ID) 0, "4162", (LPVOID) NULL);
      }
   }
   while ((dsD4205050.cRecordFound == '1') && (bExit == FALSE))
   {
      lpDSD4205050D = (LPDSD4205050D)jdeRemoveDataPtr( hUser,
(ulong)dsD4205050.idDetailRecord);
      /* Reset flags */
      cPromisableLine = '0';
      bB4001040Called = FALSE;

      /*-------------------------------------------------*/
      /* Evaluate the Record from F4211 (cDataSource = 2)*/
      /*  to find out if we should promise the line */
```

```
/*  else find out from Order Promising Detail.*/

if(dsD4205050.cDataSource == '1')
{
   if (lpDSD4205050D->cOPPromiseLineYN == 'Y')
   {
      cPromisableLine = '1';
   }
}
else if(dsD4205050.cDataSource == '2')
{
   MathCopy ( &dsD4001040.mnShortItemNumber,
        &lpDSD4205050D->mnShortItemNumber);
   strncpy ( dsD4001040.szBranchPlant,
      lpDSD4205050D->szBusinessUnit,
         sizeof(dsD4001040.szBranchPlant));

   jdeCallObject  ( "GetItemMasterDescUOM",
            NULL,
            lpBhvrCom, lpVoid,
             (LPVOID)&dsD4001040,
             (CALLMAP *) NULL,
             (int) 0, (char *) NULL,
             (char *) NULL, (int) 0 ) ;

   bB4001040Called = TRUE;

   cPromisableLine = I4205010_IsLinePromisable(lpBhvrCom,lpVoid,
              hUser,lpDS,lpDSD4205050D, dsD4001040.cStockingType);
}
if (cPromisableLine == '1')
{

  /* Set this flag if at least one promisable */
  /*   detail record exists. */
  bAtLeastOneDetail = TRUE;

  if (bB4001040Called == FALSE)
  {
    MathCopy (&dsD4001040.mnShortItemNumber,
         &lpDSD4205050D->mnShortItemNumber);
    strncpy ( dsD4001040.szBranchPlant,
         lpDSD4205050D->szBusinessUnit,
         sizeof(dsD4001040.szBranchPlant));

  jdeCallObject  ( "GetItemMasterDescUOM",
           NULL,
           lpBhvrCom, lpVoid,
           (LPVOID)&dsD4001040,
           (CALLMAP *) NULL,
```

```
            (int) 0, (char *) NULL,
            (char *) NULL, (int) 0 ) ;
  }

  I4205010_PopulateQueryDetail( lpDS,&dsD4205010B,
             lpDSD4205050D,
            &dsD4001040,
            &dsD4205010A,
             &dsD0100042,
            cPromisableLine,
             hUser,
             lpVoid,
            lpBhvrCom);

  #ifdef jdeXAPI_CALLS_ENABLED
  if(bXAPIInUse == TRUE)
  {
    eXAPICallReturn = jdeXAPI_Add( lpBhvrCom,
              ulXAPICallID,
              "SendOrderPromiseRequest",
              "D4205010B",
              &dsD4205010B,
              sizeof(DSD4205010B));
    if (eXAPICallReturn != eEventCallSuccess)
    {
         bExit = TRUE;
    }
  }
  #endif
}

/*-------------------------------------------------*/
/* Fetching the next Detail Record         */
MathCopy(&dsD4205050.mnOrderNumber,&lpDS->mnOrderNumber);
strncpy(dsD4205050.szOrderType,lpDS->szOrderType,
          sizeof(dsD4205050.szOrderType));
strncpy(dsD4205050.szOrderCompany,lpDS->szOrderCompany,
         sizeof(dsD4205050.szOrderCompany));
dsD4205050.cUseCacheOrWF = lpDS->cUseCacheOrWF;
strncpy(dsD4205050.szComputerID,lpDS->szComputerID,
         sizeof(dsD4205050.szComputerID));
MathCopy(&dsD4205050.mnJobNumber,&lpDS->mnJobNumber);
if (lpDSD4205040H->cActionCode != 'A')
{
   dsD4205050.cCheckTableAfterCache = '1';
   }
   else
   {
       dsD4205050.cCheckTableAfterCache = '0';
   }
```

```
   jdeCallObject( "GetSalesOrderDetailRecordOP",
           NULL,
           lpBhvrCom, lpVoid,
           (LPVOID)&dsD4205050,
           (CALLMAP *) NULL,
           (int) 0, (char *) NULL,
           (char *) NULL, (int) 0 ) ;
}
if (!bAtLeastOneDetail)
{
   bExit = TRUE;
   lpDS->cErrorCode = '1';
   /* Sales Order Detail Not Found */
   strncpy(lpDS->szErrorMessageID,"4162",
           sizeof(lpDS->szErrorMessageID));
   if (lpDS->cSuppressError != '1')
   {
      jdeErrorSet (lpBhvrCom, lpVoid, (ID) 0, "4162", (LPVOID) NULL);
   }
}
if (bExit == FALSE)
{
   #ifdef jdeXAPI_CALLS_ENABLED
   if(bXAPIInUse == TRUE)
   {
      eXAPICallReturn = jdeXAPI_Finalize( lpBhvrCom,
              ulXAPICallID,
              "SendOrderPromiseRequest",
              "OrderPromiseCallback)";
      if (eXAPICallReturn != eEventCallSuccess)
      {
         bExit = TRUE;
      }
   }
   #endif
}

/*-------------------------------------------------*/
/* Call B4205020 in Add Mode   */
if((bExit == FALSE) &&
    (lpDS->cDisplayBeforeAcceptMode != '1') &&
    (lpDS->cUseCacheOrWF == '2'))
{
    MathCopy(&dsD4205020.mnOrderNumber,&lpDS->mnOrderNumber);
    strncpy(dsD4205020.szOrderType,lpDS->szOrderType,
         sizeof(dsD4205020.szOrderType));
    strncpy(dsD4205020.szOrderCompany,lpDS->szOrderCompany,
         sizeof(dsD4205020.szOrderCompany));
   strncpy(dsD4205020.szComputerID,lpDS->szComputerID,
         sizeof(dsD4205020.szComputerID));
```



```
        MathCopy(&dsD4205020.mnJobNumber,&lpDS->mnJobNumber);

        jdeCallObject( MaintainOPWorkFile,
            NULL,
            lpBhvrCom, lpVoid,
            (LPVOID)&dsD4205020,
            (CALLMAP *) NULL,
            (int) 0, (char *) NULL,
            (char *) NULL, (int) 0 ) ;
     }
  }

/************************************************************
Function Clean Up
************************************************************/
  #ifdef jdeXAPI_CALLS_ENABLED
  if (eXAPICallReturn != eEventCallSuccess)
  {
   /*-----------------------------------------------------*/
   /* CleanUp */
   if(bXAPIInUse == TRUE)
   {
    jdeXAPI_Free( lpBhvrCom,
        ulXAPICallID,
        "SendOrderPromiseRequest");
   }

   lpDS->cErrorCode = '1';
   /* System Error - no reasonable error messages exist. */
   strncpy(lpDS->szErrorMessageID,"018Y",
               sizeof(lpDS->szErrorMessageID));
   if (lpDS->cSuppressError != '1')
   {
       jdeErrorSet (lpBhvrCom, lpVoid, (ID) 0, "018Y", (LPVOID) NULL);
   }
  }
  #endif

  if(lpDSD4205040H != (LPDSD4205040H)NULL)
  {
     jdeFree((void *)lpDSD4205040H);
  }
  if(lpDSD4205050D != (LPDSD4205050D)NULL)
  {
     jdeFree((void *)lpDSD4205050D);
  }
 return (ER_SUCCESS);
}
```

XAPI Inbound Response from Originator System Sample Code

The sample code illustrates the XAPI response document from the JD Edwards EnterpriseOne executor system to the JD Edwards EnterpriseOne originator system:

```
<?xml version="1.0" encoding="UTF-16" ?>
<jdeResponse pwd="4f3e65076f446c5d20666f4172536518435c" role="*ALL"
type="realTimeEvent" user="PP6954083" session="35087181.1050101193"
environment="DV9NIS2" responseCreator="XAPI">
   <event>
      <header>
         <eventVersion>1.0</eventVersion>
         <type>XAPIDEMO</type>
         <user>PP6954083</user>
         <role>*ALL</role>
         <application>P90701XT</application>
         <version />
         <sessionID>35087181.1050101193</sessionID>
         <environment>DV9NIS2</environment>
         <host>DEN-PP6954083B</host>
         <sequenceID>DEN-PP6954083B_2864_041120031636402</sequenceID>
         <date>04112003</date>
         <time>164646</time>
         <scope />
         <codepage>utf-8</codepage>
         <instanceInfo>
            <host>DEN-PP6954083B</host>
            <port>6025</port>
            <type>JDENET</type>
         </instanceInfo>
      </header>
      <body elementCount="2">
         <detail date="04112003" name="XAPITestFunctionInitiateRequest"
time="16:39:54" type="" DSTMPL="D907001A" executionOrder="0"
parameterCount="14">
         <szXMLHandle type="String" />
         <szNameAlpha type="String">Pradip Pandey</szNameAlpha>
         <szNameMailing type="String">Pradip K Pandey</szNameMailing>
         <szAddressLine1 type="String" />
         <szAddressLine2 type="String" />
         <szZipCodePostal type="String">80237</szZipCodePostal>
         <szCity type="String">Denver</szCity>
         <szState type="String">CO</szState>
         <szCountry type="String" />
         <mnAmountGross type="Double">100.00</mnAmountGross>
         <mnUnits type="Double">100.00</mnUnits>
         <jdDtForGLAndVouch1 type="Date">2001/01/01</jdDtForGLAndVouch1>
         <cDefaultAddressLine1 type="Character" />
      </detail>
      <detail date="04112003" name="XAPITestFunctionInitiateRequest"
```



```
time="16:39:54" type="" DSTMPL="DXAPIROUTE" executionOrder="1"
parameterCount="4">
         <ClientPort type="Int">6024</ClientPort>
         <ClientIP type="Int">168007331</ClientIP>
         <ClientMagicNumber type="Int">1</ClientMagicNumber>
         <XAPIMethodID type="String">XAPITestResponse</XAPIMethodID>
      </detail>
   </body>
  </event>
</jdeResponse>
```

XAPI Inbound Response Handling APIs

The JD Edwards EnterpriseOne originator system uses these APIs to retrieve XML data from the inbound XAPI document and generate an inbound XAPI response:

- jdeXML_GetDSCount
- jdeXML_GetDSName
- jdeXML_ParseDS
- jdeXML_DeleteXML
- jdeXML_ParseNextDSByName
- jdeXML_PrepareDSListForIterationByName

XAPI Error Handling APIs

The JD Edwards EnterpriseOne executor system uses these error handling APIs:

- jdeXML_CheckSystemError

  The check system error API is for system errors. It tells the JD Edwards EnterpriseOne originator system that a system error happened in the JD Edwards EnterpriseOne executor system.

- jdeXML_GetErrorCount
- jdeXML_SetErrors

  The get error count and set errors APIs are for business errors. These two APIs, when used together, find the number of business errors and then send the errors to the BHVRCOM structure for you to resolve.

XAPI EnterpriseOne-to-EnterpriseOne jde.ini File Configuration

To generate XAPI events, these sections of the JD Edwards EnterpriseOne server jde.ini file must be configured:

- [JDENET_KERNEL_DEF19]
- [JDENET_KERNEL_DEF20]
- [JDENET_KERNEL_DEF22]
- [JDENET_KERNEL_DEF24]
- [JDEITDRV]
- [XAPI] - XMLDirectory setting

- [XMLLookupInfo]
- [INTEROPERABILITY] - LEVEL setting

[XAPI]

Configure this setting:

```
XMLDirectory=c:\builds\bdev\log\
```

[XMLLookupInfo]

Configure these settings:

```
XMLRequestType5=XAPICallMethod
XMLKernelMessageRange5=14251
XMLKernelHostName5=local
XMLKernelPort5=0
XMLKernelReply5=0
XMLRequestType6=realTimeEvent
XMLKernelMessageRange6=14251
XMLKernelHostName6=local
XMLKernelPort6=0
XMLKernelReply6=0
```

[INTEROPERABILITY]

Configure this setting:

```
LEVEL=DOC
```

Note. The LEVEL setting is for logging the Event XML document in the JD Edwards EnterpriseOne server for debugging purposes.

Setting the LEVEL=DOC key causes all real-time events to be written to the disk, which can cause a significant performance impact on the host server. JD Edwards suggests that you not use the LEVEL=DOC setting in a production environment or for stress testing of the QA environment.

If you are using a JD Edwards EnterpriseOne client to generate XAPI events, you must define the Client Dispatch kernel and [JDENET} sections of the client jde.ini file.

See Also

Appendix B, “Using Classic Real-Time Events,” Configuring the jde.ini for Real-Time Events, page 189

Appendix C, “Using Classic XAPI Events,” XAPI Client jde.ini File Configuration, page 210

Mapping the Business Function

This section provides an overview about mapping business functions and APIs for JD Edwards EnterpriseOne-to-EnterpriseOne XAPI events, and discusses how to enter the mapping information.

Understanding Business Function Mapping

When the JD Edwards EnterpriseOne executor system receives an event from the JD Edwards EnterpriseOne originator, it needs to know what business function or system API to invoke to process the request. You must map the business function or system API to the XAPI event name. You map business functions and system APIs in the F907012 table. You use the Event Request Definition program (P907012) to map business functions and APIs.

If you are mapping business functions, you enter the name of the business function. If you map APIs, you must enter the name of the API and the library where it is defined. In addition, the signature of the API must be made common, similar to the business function.

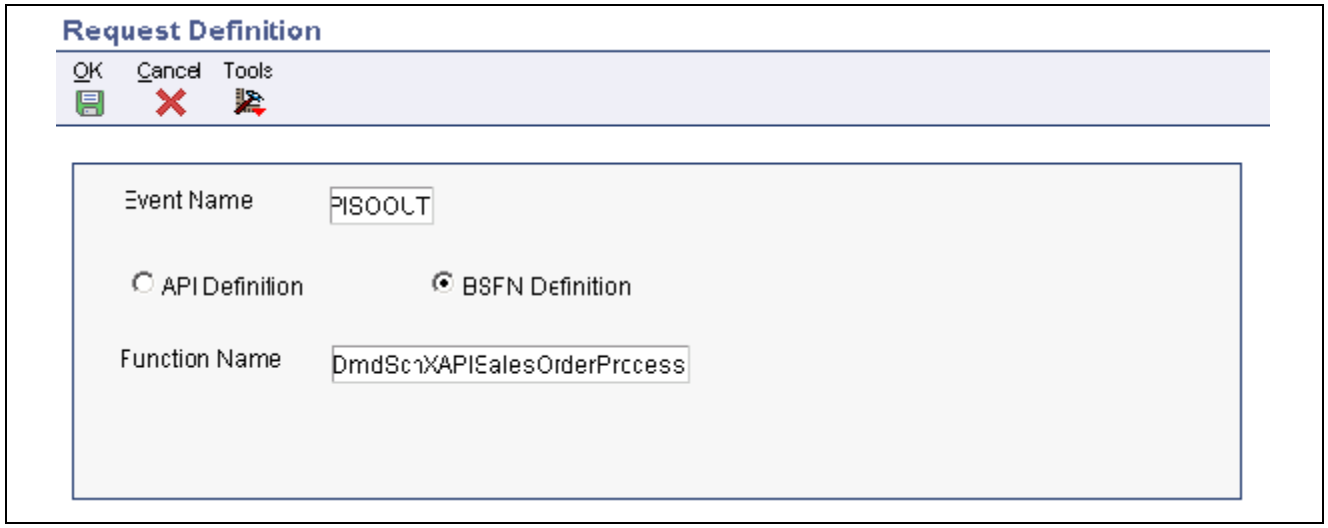
Mapping business functions enables you to point a XAPI event to a business function or system API that you wrote. You do not need to modify source code of a business function that JD Edwards delivered to you.

Forms Used to Map a Business Function or API

Form Name	FormID	Navigation	Usage
Work With Definition	W907012A	Enter P907012 in the Fast Path Command Line.	Locate and review existing mappings.
Request Definition	W907012B	On Work With Definition, click Add.	Add or change business function or API mapping for a XAPI event.

Mapping a business function or API

Access the Request Definition form.



Request Definition form

Event Name The name of the event (for example, JDERTSOOUT). Single events are part of other events.

BSFN Definition An option that specifies the type of processing for an event.

API Definition An option that specifies the type of processing for an event.

When you select the API definition option, the DLL Name field appears on the form.

Function Name The actual name of the function. It must follow standard ANSI C naming conventions (for example, no space between words).

DLL Name Specifies the name of the database driver file. This file is specified in the [DB SYSTEM SETTINGS] section of the enterprise server jde.ini file. The file that you specify depends upon the platform and the database. Values for specific machines and databases are:

DBDR: AS/400 to DB2/400

JDBNET: AS/400 to any other server DBMS

ibjdbnet.sl: HP9000 to DB2/400

libjdbnet.sl: HP9000 to Microsoft SQL Server

libora80.sl: HP9000 to Oracle (Version 8.0) UNIX

libjdbnet.so: RS6000 to DB2/400

libjdbnet.so: RS6000 to Microsoft SQL Server

libora73.so: RS6000 to Oracle (Version 7.3) UNIX

libora80.so: RS6000 to Oracle (Version 8.0) UNIX

jdbodbc.dll: Intel to AS/400

jdboci32.dll: Intel to Oracle (Version 7.2) NT

jdboci73.dll: Intel to Oracle (Version 7.3) NT

jdboci80.dll: Intel to Oracle (Version 8.0) NT

dbodbc.dll: Intel to SQL Server NT

jdbnet.dll: Digital Alpha to AS/400

jdboci32.dll: Digital Alpha to Oracle (Version 7.2) NT

jdboci73.dll: Digital Alpha to Oracle (Version 7.3) NT

jdboci80.dll: Digital Alpha to Oracle (Version 8.0) NT

dbodbc.dll: Digital Alpha to SQL Server NT

APPENDIX D

Using Classic Z Events

This chapter provides overviews of the Z event process, Z event sequencing, vendor-specific outbound functions, and discusses how to work with Z events.

Note. This chapter is applicable only if you use classic events delivery. Classic event delivery is available when you use JD Edwards EnterpriseOne Tools 8.93 or earlier releases, or if you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.10 or 8.9.

Refer to the Guaranteed Events chapters if you use JD Edwards EnterpriseOne Tools 8.94 with JD Edwards EnterpriseOne Applications 8.11 or JD Edwards EnterpriseOne Tools 8.95 and later tools releases with JD Edwards EnterpriseOne Applications 8.9 and later Applications releases.

Understanding Z Events - Classic

A *Z* event is near real-time notification that an interoperability transaction has occurred. To generate Z events, JD Edwards EnterpriseOne uses the Z event generator and the existing interface table infrastructure. You can use the existing JD Edwards EnterpriseOne interface tables, or you can build customized interface tables as long as the tables are created using JD Edwards EnterpriseOne standards.

Z event XML documents use the JD Edwards EnterpriseOne XML Response format. An example of the Z event XML document can be found in Appendix E, XML Format Examples (Events). Different events can have different table names and column names.

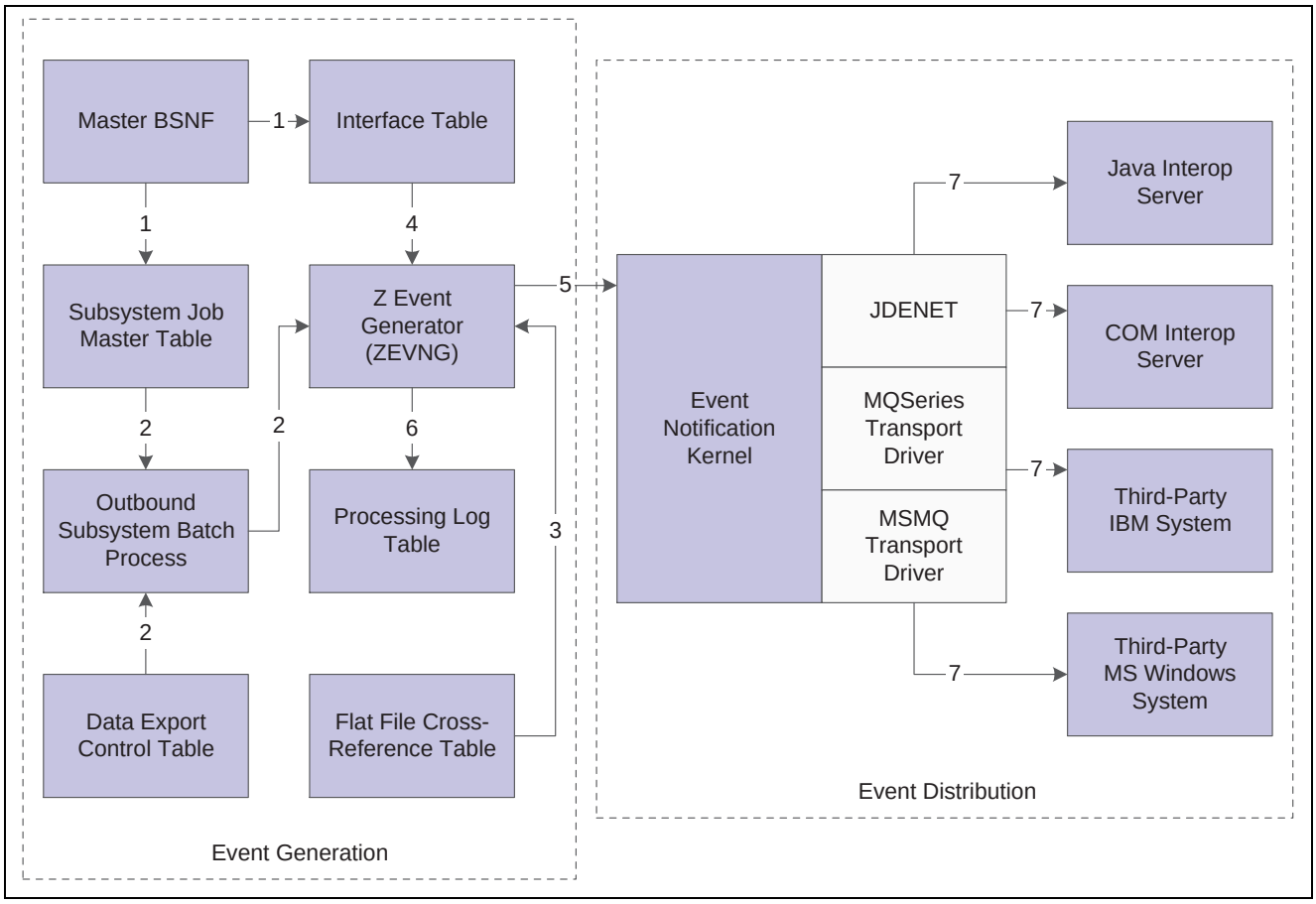
Prerequisites

Before you complete the tasks in this section:

- You must enable security for the JD Edwards EnterpriseOne server.
- You must have a valid security record for the default user under the [SECURITY] section of the JD Edwards EnterpriseOne server jde.ini file (that is, the user must be a valid JD Edwards EnterpriseOne user).

Z Event Process Flow

This diagram depicts a logical representation of the processes and data for Z event generation:



Z event process flow

In summary:

1. When a JD Edwards EnterpriseOne transaction occurs, the master business function writes the transaction information in the appropriate interface table and sends an update record to the F986113 table.
2. A batch process monitors the F986113 table.

   When the batch process finds a W status in the F986113 table, it notifies the Z event generator. The batch process accesses the F0047 table to determine which Z-event generator to call.
3. The F47002 table provides a cross-reference between the transaction and the interface table where the record is stored.

   This information is used by the Z-event generator.
4. The Z-event generator retrieves the transaction information from the interface table and converts the transaction information into an XML document using a JD Edwards EnterpriseOne DTD.
5. The Z-event generator sends the event (in the form of an XML document) to the event notification kernel for distribution.
6. After an event is successfully generated, the system updates the F0046 table.

   A UBE purges information in the interface table based on information in the Processing Log table.
7. The event notification kernel sends the XML document to all subscribers.

Note. If you use MQSeries or MSMQ transports, the transport driver writes system and function errors to the JDE error log. The driver writes error messages and adds the error codes, if available.

Z Event Sequencing

When you define your Z events, you indicate whether the event is reliable or volatile. If you define the event as volatile, the system automatically provides event sequencing to guarantee that events are delivered in the correct order. Volatile events are stamped using features of JD Edwards EnterpriseOne Next Numbers.

For sequencing of Z events, ZEVG, the Z event generator, retrieves the next number from the Z event sequencing bucket and sends the number to the EVN kernel for sequencing purposes. It is important to note that JD Edwards only guarantees the sequence for the particular type of event generator. This is due to the inherent delays that are involved in the Z event processing; an event that occurred earlier can get a later sequence number.

Event sequencing does affect performance. You can clear events sequencing. You can also define a timeout value to tell the system to stop looking for a missed event when events are out of sequence. The flag and timeout settings are in the [INTEROPERABILITY] section of the jde.ini file.

Vendor-Specific Outbound Functions

The purpose of the vendor-specific outbound function is to pass the key fields for a record in the outbound interface tables to a third-party system. With these keys, you can process information from the database record into your third-party system. The generic Outbound Subsystem batch process calls the function.

Each vendor-specific function is specific to the transaction being processed. You must decide how the function actually uses the database record information. Although the functions are written to your specifications, and most likely are written outside of JD Edwards EnterpriseOne, these functions must use the required JD Edwards EnterpriseOne defined data structure as illustrated in this table:

Data Item	Required	I/O	Description
szUserId	Y	I	User ID - 11 characters
szBatchNumber	Y	I	Batch Number - 16 characters
szTransactionNumber	Y	I	Transaction Number - 23 characters
mnLineNumber	Y	I	Line Number - double
szTransactionType	Y	I	Transaction Type - 9 characters
szDocumentType	Y	I	Document Type - 3 characters
mnSequenceNumber	Y	I	Sequence Number - double

Working With Z Events

This section provides an overview of Z event processing and discusses how to set up a data export control record.

Understanding Z Event Processing

To use Z events to retrieve information from JD Edwards EnterpriseOne, perform these tasks:

- Enable the Z event.
- Update the Flat File Cross-Reference table.
- Update the Processing Log table.
- Verify that the subsystem job is running.
- Configure the jde.ini file for Z events.
- Purge data from the interface table.
- Set up data export controls.

Enabling Z Event Processing

You can enable or disable master business functions to write transaction information into interface tables and the F986113 table. when a transaction occurs. All outbound master business functions that have the ability to create interoperability transactions have processing options that control how the transaction is written. On the Processing Options Interop tab, the first processing option is the transaction type for the interoperability transaction. If you leave this processing option blank, the system does not perform outbound interoperability processing. The second processing option controls whether the *before* image is written for a change transaction. If this processing option is set to *1*, the system writes before and after images of the transaction to the interface table. If this processing option is not set, then the system writes only an *after* image to the interface table.

See Appendix F, "Interoperability Interface Table Information," Interoperability Interface Table Information, page 247.

Updating Flat File Cross-Reference

When you enable Z events, you also update the F47002 table. The transaction type that you entered in the processing option maps to the F47002 table to determine which interface tables to use to retrieve the information. You use the Flat File Cross-Reference program (P47002) to update the F47002 table.

Updating the Processing Log Table

The Z event generator uses the F0046 table. The F0046 table contains the keys to the interoperability transaction along with a successfully processed column. The sequence number, transaction type, order type, function name, and function library are obtained from the F0047 table. A vendor-specific record is sequentially created in the F0046 table for every transaction that is processed by the Interoperability Generic Outbound Subsystem (R00460) UBE or the Interoperability Generic Outbound Scheduler UBE (R00461).

For example, if three vendors have subscribed to a transaction using the F0047 table, the system creates three records in the F0046 table, (one record for each transaction). If the vendor-specific object successfully processed the transaction, the Processing Log record is updated with a *Y* in the successfully processed column. You can use the Processing Log (P0046) program to determine whether a vendor-specific object correctly processed the interoperability transaction.

A purging UBE that purges the interfaces tables runs based on information in the processing log table.

Data in the Processing Log table cannot be changed.

Verifying that the Subsystem Job is Running

When the application master business function adds a record to the F986113 table, the system starts a subsystem job. Subsystem jobs are continuous jobs that process records from the F986113 table. You should verify that the subsystem job is running.

Note. After the records are processed, instead of ending the job, subsystem jobs look for new data in the data queue. Subsystem jobs run until you terminate them.

You can schedule subsystem jobs.

See *JD Edwards EnterpriseOne Tools 8.96 System Administration Guide*, "Working with Servers," Understanding JD Edwards EnterpriseOne Subsystems.

See *JD Edwards EnterpriseOne Tools 8.96 System Administration Guide*, "Using the Scheduler Application," Understanding the Job Scheduler.

Purging Data from the Interface Table

After you receive the Z event, you should purge the data from the interface table. You can enter a purge UBE in the F0046 table to purge the interface table.

See Chapter 17, "Using Batch Interfaces," Purging Interface Table Information, page 152.

See Appendix F, "Interoperability Interface Table Information," Interoperability Interface Table Information, page 247.

Configuring the jde.ini File for Z Events

To generate Z events, you must configure these sections of the JD Edwards EnterpriseOne server jde.ini file:

- [JDENET_KERNEL_DEF19]
- [JDEITDRV]
- [JDENET]
- [INTEROPERABILITY]

The settings for the EVN kernel, [JDEITDRV], and [JDENET] are defined in the jde.ini File Configurations for Events section of this guide. You must configure settings for [INTEROPERABILITY].

[INTEROPERABILITY]

Configure these settings:

```
SequenceTimeOut=XX
```



```
XMLElementSkipNullOrZero=X
```

The SequenceTimeOut setting is for sequencing of volatile events. The value is in seconds.

Null strings and zeros are trimmed off Z events. You can clear this feature by entering a value of 0 (zero) for the XMLElementSkipNullOrZero setting.

Setting Up Data Export Controls

This section provides an overview of setting up data export controls and discusses how to set up the record.

Understanding Data Export Controls Records

The generation of outbound data is controlled through the F0047 table. You use the Data Export Controls program (P0047) to update the F0047 table. For each transaction type and order type, you must designate the Z event generator that processes the outbound data. To send a given transaction type to more than one third-party application, you associate the transaction type with each of the individual destinations by making separate entries for each destination in the F0047 table. JD Edwards suggests that you specify the name of a third-party function that is called for each transaction as it occurs. Enough information is provided to notify you of the transaction and give you the key values so that you can retrieve the transaction.

Forms Used to Add a Data Export Controls Record

Form Name	FormID	Navigation	Usage
Work with Data Export Controls	W0047A	From a application that supports event generation, open the Data Export Controls Program An alternative way to access the Data Export Controls Program is to enter P0047 in the Fast Path command line	View existing data export control records.
Data Export Control Revisions	W0047C	On Work with Data Export Controls, click Add.	Add a new data export control record.

Adding a Data Export Control Record

Access the Data Export Control Revisions form.

To set up Data Export Controls:

1. Complete these fields:
   - Transaction
   - Order Type
2. For each detail row, enter one of these, depending on your platform:

- Function Name

  Windows NT: _CallOnUpdate@36

  UNIX: CallOnUpdate

  iSeries: CallOnUpdate

- Function Library

  Windows NT: EnterpriseOne Bin32 Path\zevg.dll

  UNIX(HP): EnterpriseOne Bin32 Path\libzevg.sl

  UNIX(AIX, SUN): EnterpriseOne Bin32 Path\libzevg.so

  iSeries: EnterpriseOne Bin32 Path\ZEVG

- Enter 1 in the Execute For Add column to generate an event for an add/insert.

  Complete the same process as appropriate for update, delete, and inquiry.

- Enter 1 in the Launch Immediately column to launch the object from the Outbound Subsystem batch process.

  This column does not affect the Outbound Scheduler batch process.

  The system automatically increments the Sequence field for each line.

APPENDIX E

Events Self-Diagnostic Utility Tool

This appendix provides overviews of the Events Self-Diagnostic Utility Tool process, tool component, tool customization, and tool execution.

Understanding the Events Self-Diagnostic Utility Tool

The Events Self-Diagnostic Utility Tool supports Z events and real-time events. Normally, your system administrator runs the Self-Diagnostic Utility Tool to verify that your events infrastructure features are functional. The Self-Diagnostic Utility Tool can be used on these platforms:

- Windows 2000 and NT
- iSeries
- HP
- Sun
- AIX

The Events Self-Diagnostic Utility Tool analyzes the infrastructure of an event and reports configuration, kernel, and network problems that are detected as the event is processed through your system. You can use the tool to perform a comprehensive analysis, or you can configure the tool to perform an analysis that is specific for your needs. The Events Self-Diagnostic Tool uses the XML comparator to compare XML documents to detect the presence of any data corruption in event information. The tool also suggests actions that you can take to resolve problems. You can run this tool on either a server or a client or both.

Events Self-Diagnostic Utility Tool Process

After an event is generated at the call object API on the server or the application API on the client, problems that cause the event to fail can occur. This list identifies problems that might occur:

- The jde.ini file has a configuration error.
- The ZEVG library is unavailable or the IEO or EVN kernel process is down.
- Subscribers and supported events have not loaded successfully.
- One or more of the kernels involved in the event delivery is corrupting the event information.
- The network link between any or all of the components involved in this infrastructure is permanently down.

When the Events Self-Diagnostic Tool detects a problem, the tool sends messages to you explaining the problem and suggesting resolutions and also logs the error in the appropriate log files. The message that is sent to you indicates which log files you should review. This list provides some examples of how the Events Self-Diagnostic Tool detects problems:

- Performs an in-depth interoperability-oriented analysis of the jde.ini file.
- Reads the F90701 table to determine whether the event is defined.
- Reads the F90702 to determine whether the persistent subscription/unsubscription request, which is sent to the EVN kernel by the tool, is successful.
- Reads the Object Configuration Manager to find the location of the IEO kernel.

  In this process, the tool ensures there is only one active entry for the RTE object.
- Checks inter-connectivity within events infrastructure by sending self-diagnostic connectivity message calls.
- Generates self-diagnostic events to test different services that are offered by the infrastructure and to verify event information against possible data corruption.

Note. This list is general and not all-inclusive.

Events Self-Diagnostic Utility Tool Components

The Events Self-Diagnostic Utility Tool consists of three components:

- Event generator
- Event receiver
- XML comparator

Event Generator

The Events Self-Diagnostic Utility Tool starts with an event generator process. During startup, the event generator performs basic background analysis of the events infrastructure, which include:

- Verification of interoperability specific sections of the jde.ini file.
- Verification of real-time events definition.
- Inter-component connectivity check within the events infrastructure.

If startup is successful, the event generator tests different features offered by the events infrastructure. These features include generating and testing different types of events, listing the valid events, checking the event template, and testing subscription information. You can run one or more of these tests by using one of these methods:

- Running the test against an existing configuration file that you previously set up.
- Running the test against a new configuration file, which you will set up.
- Selecting options and executing the test from the command line menu of the tool.

After successful generation of a self-diagnostic event, the event is passed through the event infrastructure system. To test the accuracy of the event information that is being conveyed through the system, the event generator attaches an additional packet, in the form of XML stream, to the event. The diagnostic XML packet contains information about the event. At each stage of communication, each kernel (or component) verifies the event information by comparing standard message packets with the self-diagnostic XML packet. The kernel (or component) logs the result of this comparison at each point of comparison in respective log files. The accuracy of the information in template requests is tested the same way.

Event Receiver

The event receiver acts as a NULL transport driver that subscribes itself for self-diagnostic events during EVN kernel startup. The event receiver compares and verifies the XML documents contained in the received self-diagnostic events. The event receiver logs the result of this comparison in the EVN kernel log file.

XML Comparator

The event generator uses the XML comparator tool to test the accuracy of event information or of an event template request that is being passed through the system. The XML comparator compares any two given XML documents for equivalency, similarity, or both. To perform the comparison, the XML comparator requires three XML documents. Two of the documents are the actual XML documents to be compared. The third document is an exclusion XML document that contains nodes that are to be ignored during the comparison of the two given XML documents.

Customizing the Tool

When you select the Customize Tool option from the Interface menu, the tool prompts you to provide a new file name or to use an existing configuration file (one that you previously created using this tool). The tests (actions) and options for each test are the same tests that are discussed previously.

To use an existing configuration file (an XML file that you previously created), type the filename at the prompt and press Enter or Return. This action starts the diagnosis against your previously built configuration file.

To create a new configuration file, type a filename using XML as the extension, and then press Enter or Return. The tool offers the same tests that are on the Command Line Execution menu. You can select one or more tests by using a comma to separate the test numbers.

Executing the Events Self-Diagnostic Tool

This section provides overviews of each of the self-diagnostic tests that you can run when you execute the Events Self-Diagnostic Tool

Executing the Event Self-Diagnostic Tool

To use the Event Self-Diagnostic Tool, you must have a valid JD Edwards EnterpriseOne user ID, password, environment, and role. If you are using the tool from a JD Edwards EnterpriseOne server and you do not supply this information as parameters, the user name, password, environment, and role information is read from the security section of the server jde.ini file. If you are using a client, you must enter a valid JD Edwards EnterpriseOne user name, password, environment, and role. If you do not enter this information, the tool stops. If you are generating events from a client, you must also have a valid OCM mapping for RTE or Z events to a valid server. Before you run the Events Self-Diagnostic Tool:

- Ensure PORTTEST runs successfully on your system.
- Ensure that one instance of the IEO and EVN kernel is running.
- Ensure self-diagnostic events are defined in the F90701) table.

Start the Tool

To start the Events Self-Diagnostic Tool on the JD Edwards EnterpriseOne Server, double-click the executable file at this location: `$system\bin32\sdtool.exe`

Or you can pass parameters, for example:
`$system\bin32\sdtool.exe username password environment role`

To start the tool from the client side, you must include these parameters: `$system\bin32\sdtool.exe username password environment role`

Note. $system refers to the path where the application is installed on your system.

The Events Self-Diagnostic Tool accesses the Security section of the jde.ini file for a valid user name, password, environment, and role. Upon startup, the tool analyzes the jde.ini file, verifies that events are defined, and checks the inter-component connectivity within the events infrastructure. As the tool analyzes each of these areas, it provides you with feedback about what is being analyzed and whether the analysis was successful.

If the tool detects a problem in any one of the startup areas, the tool terminates the diagnosis and sends you a message that explains the problem encountered and suggesting actions for resolving the problem.

After successful startup, you have a choice of creating and using a customized configuration file or using the command line of the tool to run the diagnosis. The Customized Tool option enables you to build and save a diagnostic test to a file so that you can run that test as often as needed without having to reenter information into the tool. When you use the Command Line Execution option, you must enter the test information when the tool prompts you. When you run tests from the command line, the Interface menu always follows the results statements so that you can run another test or exit the tool.

Whether you select Option 1, Customize(d) Tool, or Option 2, Command Line Execution, the tests that the tool performs are the same.

You can select one or more tests by typing the number that is associated with the test at the prompt and then pressing Enter or Return. For multiple tests, separate the number of the test with a comma (,). Some of the tests provide further options. At the prompt, you enter one or more options, using a comma to separate multiple options. The tool performs the test and provides feedback to you indicating success or failure. If the test failed, the tool provides feedback that tells you that the test failed and identifies the logs you should review for more information.

Generate/Test Real-Time Event

When you select Action 1, Generate/Test Real Time Event(s), the tool displays the real-time event types from which you select one or more real-time event types to test.

The tool generates the real-time event you requested and attaches a self-diagnostic XML document to the event. The event contents are verified for any data corruption against the attached XML document at each kernel in the events infrastructure and event receiver transport driver. You receive a message indicating whether the event was successfully generated. You also receive this feedback message: `Please see log files corresponding to IEO and EVN for any present event data corruption`. This message tells you to look at the log files to determine whether an XML document mismatch occurred. The tool also provides a final message that indicates that the tool has completed the analysis for that action, and then it returns you to the tool interface menu.

Generate/Test Z Event

When you select Action 2, Generate/Test Z Event, the tool displays another set of options. You can test a simulated Z event and you can test a Z event that uses the actual interface tables (Z tables). If you test a simulated Z event, the tool generates a simulated Z event and attaches a self-diagnostic XML document to the event. The event contents are verified for any data corruption against the attached XML document at the EVN kernel and event receiver transport driver. You receive a message indicating whether the event was successfully generated. You also receive this feedback message: `Please see log files corresponding to EVN for any present data corruption`. This message tells you to look at the EVN log file to determine whether an XML document mismatch occurred. The tool also provides a final message that indicates that the self-diagnostic tool has completed the analysis for the action, and then it returns you to the tool interface menu.

If you generate an actual Z event, you must have a valid UBE and you must set up the appropriate interface tables. The tool asks you for your user name, batch number, transaction number, line number, transaction type, document type, and sequence number. The tool uses the live interface tables (Z tables) for this test. When you request an actual Z event, the tool generates the Z event but does not include a self-diagnostic XML document. The EVN kernel returns a message that indicates whether the event was successful. Because no self-diagnostic XML document exists, the tool cannot diagnose data corruption.

Test All Types of Events

When you select Action 3 (Test all types of events) from the Execution menu, the tool tests all of the real-time events (single, aggregate, and composite) and both Z events (simulated and actual). Action 3 is the same as Action 1 (all three options) and Action 2 (both options) combined. For the real-time events and the simulated Z event, the tool generates the event and attaches a self-diagnostic XML document to the event so that any data corruption can be detected. If you select this action, you must have a valid UBE and you must set up appropriate interface tables. If you run this test but do not have actual Z event data, you can abort that portion of the test by entering Exit when the tool asks for the Z event information.

The tool sends the event information to the IEO and EVN kernels, and the kernels return messages indicating whether each event was successful.

Get Event List

When you select Action 4, Get Event List (List of events supported) from the Execution menu, the tool immediately runs the test.

The tool sends a getEventList request to the EVN kernel. The EVN kernel responds with the list of event names that you have defined. To validate that the list is complete, the tool checks the list for the presence of self-diagnostic event names. The tool provides a list of the events to you along with a message indicating whether the test was successful.

Get Event Template

When you select Action 5, Get Event Template, the tool displays the real-time event types that have a template associated with them.

The tool generates the template request and attaches a self-diagnostic XML document to the request. The template request is verified for any data corruption against the attached XML document at each kernel in the events infrastructure and event generator. The tool provides feedback that the template request was successful and that the template data was validated against the XML packet. If the test fails, the tool provides a message that indicates the reason for the failure.

Subscription Services

When you select Action 6, Subscription Services, the tool displays a set of options for the type of subscription service to be tested.

When you select the Persistent Subscribe option, the tool sends a persistent subscription request for a registered self-diagnostic event to the EVN kernel. The tool verifies the list of subscribers that are maintained in a file or from the database table (depending on how your system is configured), and then sends you a message indicating whether the test was successful.

When you chose the Persistent Unsubscribe option, the tool sends a persistent unsubscription request for a registered self-diagnostic event to the EVN kernel. The tool verifies that the subscription is no longer in the file or database table (depending on how your system is configured), and then sends you a message indicating whether the test was successful.

When you select the Non-Persistent Subscribe option, the tool sends a non-persistent subscription request for a registered self-diagnostic event to the EVN kernel. The tool verifies the list of subscribers that is kept by the EVN kernel, and then sends you a message indicating whether the test was successful.

When you select the Non-Persistent Unsubscribe option, the tool sends a non-persistent unsubscription request for a registered self-diagnostic event to the EVN kernel. The tool verifies the subscription is no longer in EVN, and then sends you a message indicating whether the test was successful.

Comprehensive System Analysis

When you select Action 7, Comprehensive System Analysis, the tool performs all of the tests and provides messages to you indicating whether each test was successful.

APPENDIX F

Interoperability Interface Table Information

This appendix provides information about JD Edwards EnterpriseOne applications that have interoperability features.

Interoperability Interface Table Information

This section provides a table that lists applications that have interoperability features.

Program	Interface Table (Z table)	Input Subsystem Batch Process	Input Processor Batch Process	Extraction Batch Process	Revisions Program	Purge Batch Process	Program with POs
Financials	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Address Book	F0101Z2	R01010Z - ZJDE0002	R01010Z - ZJDE0001	N/A	P0101Z1	R0101Z1P	P0100041
Customer Master	F03012Z1	R03010Z - ZJDE0002	R03010Z - ZJDE0001	N/A	P0301Z1	R0101Z1P	P0100042
Supplier Master	F0401Z1	R04010Z - ZJDE0002	R04010Z - ZJDE0001	N/A	P0401Z1	R0101Z1P	P0100043
A/R Invoice	F03B11Z1, F0911Z1, F0911Z1T	R03B11Z1I	R03B11Z1I - ZJDE0001	N/A	P03B11Z1	R03B11Z1P	N/A
A/P Invoice	F0411Z1, F0911Z1	R04110Z - ZJDE0002	R04110Z - ZJDE0001	N/A	P0411Z1	R0411Z1P	N/A
Payment Order with Remittance	F0413Z1, F0414Z1	N/A	N/A	N/A	P0413Z1	R0413Z1	P0413M
Journal Entry	F0911Z1, F0911Z1T	R09110Z - ZJDE0005	R09110Z - ZJDE0002	N/A	P0911Z1	R0911Z1P	N/A
Fixed Asset Master	F1201Z1, F1217Z1	R1201Z1I - XJDE0002	R1201Z1I - XJDE0001	R1201Z1X	P1201Z1	R1201Z1P	P1201
Account Balance	F0902Z1	N/A	N/A	N/A	P0902Z1	R0902ZP	N/A

Program	Interface Table (Z table)	Input Subsystem Batch Process	Input Processor Batch Process	Extraction Batch Process	Revisions Program	Purge Batch Process	Program with POs
Batch Cash Receipts	F03B13Z1	N/A	R03B13Z1I - ZJDE0001	N/A	N/A	N/A	N/A
HRM	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Payroll Time Entry	F06116Z1	R05116Z1I	R05116Z1I - ZJDE0001	N/A	P05116Z1	R05116Z1P	N/A
Distribution	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Purchase Order	F4301Z1, F4311Z1	R4311Z1I - XJDE0002	R4311Z1I - XJDE0001	N/A	P4311Z1	R4301Z1P	P4310
Outbound Purchase Receipts	F43121Z1	N/A	N/A	N/A	P43121Z1	R43121Z1P	P4312
Receipt Routing	F43092Z1	R43092Z1I - XJDE0002	R43092Z1I - ZJDE0001	N/A	P43092Z1	R43092Z1P	P43250
Outbound Sales Order	F4201Z1, F4211Z1, F49211Z1	N/A	N/A	N/A	P4211Z1	R4211Z1P	P4210
Outbound Shipment Confirmation	F4201Z1, F4211Z1, F49211Z1	N/A	N/A	N/A	P4211Z1	R4211Z1P	P4205
Logistics	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cycle Counts	F4141Z1	R4141Z1I	R4141Z1I - ZJDE0001	N/A	P4141Z1	R4141Z1P	N/A
Item Master	F4101Z1, F4101Z1A	R4101Z1I	R4101Z1I - ZJDE0001	N/A	P4101Z1	N/A	P4101
Item Cost	F4105Z1	N/A	R4105Z1I - XJDE0001	N/A	P4105Z1	R4105Z1P	P4105
Warehouse Confirmations (Suggestions)	F4611Z1	R4611Z1I	R4611Z1I - ZJDE0001	N/A	P4611Z1	R4611Z1P	N/A
Manufacturing	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Work Order Header	F4801Z1	Use Work Order Completions	Use Work Order Completions	R4101Z1O	P4801Z1	R4801Z1P	P48013

Program	Interface Table (Z table)	Input Subsystem Batch Process	Input Processor Batch Process	Extraction Batch Process	Revisions Program	Purge Batch Process	Program with POs
Work Order Parts List	F3111Z1	Use Planning Messages	Use Planning Messages	N/A	P4801Z1	R3111Z1P	P3111
Work Order Routing	F3112Z1	Use Planning Messages	Use Planning Messages	R4801Z2X	P4801Z1	R3112Z1P	P3112
Work Order Employee Time Entry	F31122Z1	R31122Z1I - XJDE0002	R31122Z1I - XJDE0001	N/A	P31122Z1	R31122Z1	P311221
Work Order Inventory Issues	F3111Z1	R31113Z1I - ZJDE0002	R31113Z1I - ZJDE0001	N/A	P3111Z1	R3111Z1P	N/A
Work Order Completions	F4801Z1	R31114Z1I - XJDE0002	R31114Z1I - XJDE0001	N/A	P4801Z1	R4801Z1P	N/A
Super Backflush	F3112Z1	R31123Z1I	R31123Z1I - ZJDE0001	N/A	P3112Z1	R3112Z1P	N/A
Bill of Material	F3002Z1	R3002Z1I - ZJDE0002	R3002Z1I - ZJDE0001	N/A	P3002Z1	R3002Z1P	P3002
Routing Master	F3003Z1	R3003Z1I - ZJDE0002	R3003Z1I - ZJDE0001	N/A	P3003Z1	R3003Z1P	P3003
Work Center Master	F30006Z1	R30006Z1I - ZJDE0002	R30006Z1I - ZJDE0001	N/A	P30006Z1	R30006Z1P	P3006
Work Day Calendar	F0007Z1	R0007Z1I - XJDE0002	R0007Z1I - XJDE0001	N/A	P0007Z1	R0007Z1P	P00071
Planning Messages	F3411Z1	R3411Z1I - ZJDE0002	R3411Z1I - ZJDE0001	N/A	P3411Z1	R3411Z1P	N/A
Detail Forecast	F3460Z1	R3460Z1I - XJDE0002	R3460Z1I - XJDE0001	N/A	P3460Z1	R3460Z1P	P3460, R3465, R34650 (Each done individually)
Kanban Transactions	F30161Z1	R30161Z1I - XJDE0002	R30161Z1I - XJDE0001	N/A	P30161Z1	R30161Z1P	N/A

APPENDIX G

XML Format Examples (All Parameters)

The appendix provides XML code examples for specific formats for:

- Inbound sales order.
- Outbound customer request and response.

Inbound Sales Order XML Format (All Parameters)

This section provides example code for an inbound sales order. This sample code shows the XML format with all of the parameters.

```
"<?xml version='1.0'?>
<jdeRequest type='callmethod' user='userid' pwd='password'
environment='environment' role='*ALL'>
<callMethod name='GetLocalComputerId' app='NetCommerce' runOnError='no'>
<params>
<param name='szMachineKey'id='2'></param>
<params>
   <callMethod>
<callMethod name='F4211FSBeginDoc' app='NetCommerce' runOnError='no'>
<params>
   <param name='mnCMJobNumber' id='j1'></param>
 <param name='cCMDocAction'>A</param>
 <param name='cCMProcessEdits'>1</param>          ( 1 = Full)
 <param name='szCMComputerID' idref='c2'></param>
 <param name='cCMErrorConditions'>value</param>  (1=Warnings, 2=Errors)
 <param name='cCMUpdateWriteToWF'>value</param>  (1=wf,2=cache)
 <param name='szCMProgramID'>value</param>
 <param name='szCMVersion'>value</param>
 <param name='szOrderCo'<value</param>
 <param name='mnOrderNo'>value</param>
 <param name='szOrderType'>value</param>         (If blank def Proc Opt)
 <param name='szBusinessUnit'>value</param>      (If blank def Proc Opt)
 <param name='szOriginalOrderCo'>value</param>   (used copy/blanket function)
 <param name='szOriginalOrderNo'>value</param>   (used copy/blanket function)
 <param name='szOriginalOrderType'>value</param> (used copy/blanket function)
 <param name='mnAddressNumber'>value</param>     (Required if ship to = 0)
 <param name='mnShipToNo'>value</param>          (Required if sold to = 0)
 <param name='jdRequestedDate'>value</param>
 <param name='jdOrderDate'>value</param>
```

```
<param name='jdPromisedDate'>value</param>
<param name='jdCancelDate'>value</param>
<param name='szReference'>value</param>
<param name='szDeliveryInstructions1'>value</param>
<param name='szDeliveryInstructions2'>value</param>
<param name='szPrintMesg'>value</param>
<param name='szPaymentTerm'>value</param>
<param name='cPaymentInstrument'>value</param>
<param name='szAdjustmentSchedule'>value</param>
<param name='mnTradeDiscount'>value</param>
<param name='szTaxExplanationCode'>value</param>
<param name='szTaxArea'>value</param>
<param name='szCertificate'>value</param>
<param name='cAssociatedText'>value</param>
<param name='szHoldOrdersCode'>value</param>
<param name='cPricePickListYN'>value</param>
<param name='mnInvoiceCopies'>value</param>
<param name='mnBuyerNumber'>value</param>
<param name='mnCarrier'>value</param>
<param name='szRouteCode'>value</param>
<param name='szStopCode'>value</param>
<param name='szZoneNumber'>value</param>
<param name='szFreightHandlingCode'>value</param>
<param name='cApplyFreightYN'>value</param>
<param name='mnCommissionCode1'>value</param>
<param name='mnCommissionRate1'>value</param>
<param name='mnCommissionCode2'>value</param>
<param name='mnCommissionRate2'>value</param>
<param name='szWeightDisplayUOM'>value</param>
<param name='szVolumeDisplayUOM'>value</param>
<param name='szAuthorizationNo'>value</param>
<param name='szCreditBankAcctNo'>value</param>
<param name='jdCreditBankExpiredDate'>value</param>
<param name='cMode'>value</param>
<param name='szCurrencyCode'>value</param>
<param name='mnExchangeRate'>value</param>
<param name='szOrderedBy'>value</param>
<param name='szOrderTakenBy'>value</param>
<param name='szUserReservedCode'>value</param>
<param name='jdUserReservedDate'>value</param>
<param name='mnUserReservedAmnt'>value</param>
<param name='mnUserReservedNo'>value</param>
<param name='szUserReservedRef'>value</param>
<param name='jdDateUpdated'>value</param>
<param name='szUserID'>value</param>
<param name='szWKBaseCurrency'>value</param>
<param name='cWKAdvancedPricingYN'>value</param>
<param name='szWKCreditMesg'>value</param>
<param name='szWKTempCreditMesg'>value</param>
<param name='cWKInvalidSalesOrderNo'>value</param>
```



```
 <param name='cWKSourceOfData'>blank</param>  (Required, blank = parms )
 <param name='cWKProcMode'>blank</param>      (blank = reg order)
 <param name='mnWKSuppressProcess'>0</param>  (0 = def, 2=P/O)
 <param name='mnSODDocNo'>value</param>
 <param name='szSODDocType'>value</param>
 <param name='szSODOrderCo'>value</param>
 <param name='mnTriangulationRateFrom'>value</param>
 <param name='mnTriangulationRateTo'>value</param>
 <param name='cCurrencyConversionMethod'>value</param>
 <param name='cRetrieveOrderNo'>value</param>
 <param name='szPricingGroup'>value</param>
 <param name='cCommitInvInED'>value</param>
 <param name='cSpotRateAllowed'>value</param>
 <param name='cGenericChar2_EV02'>value</param>
 <param name='szGenericString1_DL01'>value</param>
 <param name='szGenericString2_DL02'>value</param>
 <param name='mnGenericMathNumeric1_MATH01'>value</param>
 <param name='mnGenericMathNumeric2_MATH02'>value</param>
 <param name='szLongAddressNumberShipto'>value</param>
 <param name='szLongAddressNumber'>value</param>
 <param name='mnProcessID'>value</param>
 <param name='mnTransactionID'>value</param>
</params>
<onError abort='yes'>\
 <callMethod name='F4211ClearWorkFile' app='NetCommerce' runOnError='yes'>
  <params>
  <param name='mnJobNo' idref='j1'></param>
  <param name='szComputerID' idref='c2'></param>
  <param name='mnFromLineNo'>value</param>
  <param name='mnThruLineNo'>value</param>
  <param name='cClearHeaderWF'>value</param>
  <param name='cClearDetailWF'>value</param>
  <param name='szProgramID'>value</param>
  <param name='mnWKRelatedOrderProcess'>value</param>
  <param name='szCMVersion'>value</param>
  <param name='cGenericChar1_EV01'>value</param>
  <param name='szGenericString1_DL01'>value</param>
  <param name='mnSODRelatedJobNumber'>value</param>
  <param name='mnProcessID' >value</param>
  <param name='mnTransactionID'>value</param>
  </params>
 </callMethod>
</onError>
</callMethod>
<callMethod name='F4211FSEditLine'app='NetCommerce' runOnError='yes'> (each line)
 <params>
  <param name='mnCMJobNo' idref='j1'></param>
  <param name='cCMLineAction'>value</param>
  <param name='cCMProcessEdits'>value</param>
  <param name='cCMWriteToWFFlag'>value</param>
```

```
<param name='cCMRecdWrittenToWF'>value</param>
<param name='szCMComputerID' idref='c2'></param>
<param name='cCMErrorConditions'>value</param>
<param name='szOrderCo'>value</param>
<param name='mnOrderNo'>value</param>
<param name='szOrderType'>value</param>
<param name='mnLineNo'>value</param>
<param name='szBusinessUnit'>value</param>
<param name='mnShipToNo'>value</param>
<param name='jdRequestedDate'>value</param>
<param name='jdPromisedDate'>value</param>
<param name='jdCancelDate'>value</param>
<param name='jdPromisedDlvryDate'>value</param>
<param name='szItemNo'>value</param>
<param name='szLocation'>value</param>
<param name='szLotNo'>value</param>
<param name='szDescription1'>value</param>
<param name='szDescription2'>value</param>
<param name='szLineType'>value</param>
<param name='szLastStatus'>value</param>
<param name='szNextStatus'>value</param>
<param name='mnQtyOrdered'>value</param>
<param name='mnQtyShipped'>value</param>
<param name='mnQtyBackordered'>value</param>
<param name='mnQtyCanceled'>value</param>
<param name='mnExtendedPrice'>value</param>
<param name='mnExtendedCost'>value</param>
<param name='szPrintMesg'>value</param>
<param name='cPaymentInstrument'>value</param>
<param name='szAdjustmentSchedule'>value</param>
<param name='cSalesTaxableYN'>value</param>
<param name='cAssociatedText'>value</param>
<param name='szTransactionUOM'>value</param>
<param name='szPricingUOM'>value</param>
<param name='mnItemWeight'>value</param>
<param name='szWeightUOM'>value</param>
<param name='mnForeignUnitPrice'>value</param>
<param name='mnForeignExtPrice'>value</param>
<param name='mnForeignUnitCost'>value</param>
<param name='mnForeignExtCost'>value</param>
<param name='szPricingCategoryLevel'>value</param>
<param name='mnDiscountFactor'>value</param>
<param name='mnCMLineNo'>value</param>
<param name='szCMProgramID'>value</param>
<param name='szCMVersion'>value</param>
<param name='mnSupplierNo'>value</param>
<param name='szRelatedKitItemNo'>value</param>
<param name='mnKitMasterLineNo'>value</param>
<param name='mnComponentLineNo'>value</param>
<param name='mnRelatedKitComponent'>value</param>
```



```
<param name='mnNoOfCpntPerParent'>value</param>
<param name='cOverridePrice'>value</param>
<param name='cOverrideCost'>value</param>
<param name='szUserID'>value</param>
<param name='jdDateUpdated'>value</param>
<param name='mnWKOrderTotal'>value</param>
<param name='mnWKForeignOrderTotal'>value</param>
<param name='mnWKTotalCost'>value</param>
<param name='mnWKForeignTotalCost'>value</param>
<param name='cWKProcessingType'>value</param>
<param name='cWKSourceOfData'>value</param>
<param name='cWKCheckAvailability'>value</param>
<param name='mnLastLineNoAssigned'>value</param>
<param name='cStockingType'>value</param>
<param name='szOriginalOrderKeyCo'>value</param>
<param name='szOriginalOrderNo'>value</param>
<param name='szOriginalOrderType'>value</param>
<param name='mnOriginalOrderLineNo'>value</param>
<param name='cParentItmMethdOfPriceCalcn'>value</param>
<param name='szLandedCost'>value</param>
<param name='mnWKSuppressProcess'>value</param>
<param name='mnShortItemNo'>value</param>
<param name='mnWKRelatedOrderProcess'>value</param>
<param name='mnSODLineNo'>value</param>
<param name='mnPriceAdjRevLevel'>value</param>
<param name='szSalesOrderFlags'>value</param>
<param name='mnSODDocNo'>value</param>
<param name='szSODDocType'>value</param>
<param name='szSODOrderCo'>value</param>
<param name='szTransferOrderToBranch'>value</param>
<param name='mnDomesticDetachedAdj'>value</param>
<param name='mnForeignDetachedAdj'>value</param>
<param name='mnSODWFLineNo'>value</param>
<param name='szGeneric2CharString'>value</param>
<param name='mnTOEPOExchangeRate'>value</param>
<param name='szTOEPOCurrencyCode'>value</param>
<param name='mnDRPKeyId'>value</param>
<param name='mnSoldToCust'>value</param>
<param name='szF4201BranchPlant'>value</param>
<param name='szSoldToCurrencyCode'>value</param>
<param name='cConsolidationFlag'>value</param>
<param name='jdPriceEffectiveDate'>value</param>
<param name='mnWOWFLineNo'>value</param>
<param name='mnLineNoIncrement'>value</param>
<param name='mnParentWFLineNo'>value</param>
<param name='cStatusInWarehouse'>value</param>
<param name='cBypassCommitments'>value</param>
<param name='szProductSource'>value</param>
<param name='szProductSourceType'>value</param>
<param name='mnSequenceNumber'>value</param>
```

```
  <param name='szAgreementNumber'>value</param>
  <param name='mnAgreementSupplement'>value</param>
  <param name='mnAgreementsFound'>value</param>
  <param name='szModeOfTransport'>value</param>
  <param name='szDutyStatus'>value</param>
  <param name='szLineofBusiness'>value</param>
  <param name='jdPromisedShip'>value</param>
  <param name='szEndUse'>value</param>
  <param name='mnTOEPOExchangeRate'>value</param>
  <param name='szPriceCode1'>value</param>
  <param name='szPriceCode2'>value</param>
  <param name='szPriceCode3'>value</param>
  <param name='szItemFlashMessage'>value</param>
  <param name='szCompanyKeyRelated'>value</param>
  <param name='szRelatedPoSoNumber'>value</param>
  <param name='szRelatedOrderType'>value</param>
  <param name='mnRelatedPoSoLineNo'>value</param>
  <param name='cGenericChar3'>value</param>
  <param name='mnProfitMargin'>value</param>
  <param name='mnQuantityAvailable'>value</param>
  <param name='cRequestScheduleFlag'>value</param>
  <param name='cOrderProcessType'>value</param>
  <param name='cGenericChar2'>value</param>
  <param name='mnSODRelatedJobNumber'>value</param>
  <param name='szGenericString'>value</param>
  <param name='mnCarrier'>value</param>
  <param name='szGenericString2_DL02'>value</param>
  <param name='mnGenericMathNumeric1_MATH01'>value</param>
  <param name='mnGenericMathNumeric2_MATH02'>value</param>
  <param name='mnItemVolume_ITVL'>value</param>
  <param name='szVolumeUOM_VLUM'>value</param>
  <param name='szRevenueBusinessUnit'>value</param>
  <param name='szCustomerPO_VR01'>value</param>
  <param name='szReference2Vendor_VR02'>value</param>
  <param name='mnProcessID'>value</param>
  <param name='mnTransactionID'>value</param>
 </params>
  <onError abort='no'>\
 </onError>
</callMethod>
<callMethod name='F4211FSEndDoc' app='NetCommerce' runOnError='no'>
 <params>
  <param name='mnCMJobNo' idref='j1'></param>
  <param name='mnSalesOrderNo'>value</param>
  <param name='szCMComputerID' idref='2'></param>
  <param name='cCMErrorCondition'>value</param>
  <param name='szOrderType'>value</param>
  <param name='szKeyCompany'>value</param>
  <param name='mnOrderTotal'>value</param>
  <param name='mnForeignOrderTotal'>value</param>
```



```
  <param name='szBaseCurrencyCode'>value</param>
  <param name='szProgramID'>value</param>
  <param name='szWorkstationID'>value</param>
  <param name='szCMProgramID'>value</param>
  <param name='szCMVersion'>value</param>
  <param name='mnTimeOfDay'>value</param>
  <param name='mnTotalCost'>value</param>
  <param name='mnForeignTotalCost'>value</param>
  <param name='cSuppressRlvBlnktFlag'>value</param>
  <param name='cWKSkipProcOptions'>value</param>  (Skip Proc Opt, 1="Yes")
  <param name='mnWKRelatedOrderProcess'>value</param>
  <param name='cCMUseWorkFiles'>value</param>(Req,Work File="1", Cache ="2")
  <param name='mnEDIDocNo'>value</param>
  <param name='szEDIKeyCo'>value</param>
  <param name='szEDIDocType'>value</param>
  <param name='cCMProcessEdits'>value</param>
  <param name='cGenericChar2'>value</param>
  <param name='mnSODRelatedJobNumber'>value</param>
  <param name='cGenericChar1_EV01'>value</param>
  <param name='mnGenericMathNumeric2_MATH02'>value</param>
  <param name='szGenericString1_DL01'>value</param>
  <param name='szGenericString2_DL02'>value</param>
  <param name='mnProcessID'>value</param>
  <param name='mnTransactionID'>value</param>
 <params/>
 <onError abort='no'>\
  <callMethod name='F4211ClearWorkFile' app='NetCommerce' runOnError='yes'>
   <params>
    <param name='mnJobNo' idref='j1'></param>
    <param name='szComputerID' idref='2'></param>
    <param name='mnFromLineNo'>value</param>
    <param name='mnThruLineNo'>value</param>
    <param name='cClearHeaderWF'>value</param>
    <param name='cClearDetailWF'>value</param>
    <param name='szProgramID'>value</param>
    <param name='mnWKRelatedOrderProcess'>value</param>
    <param name='szCMVersion'>value</param>
    <param name='cGenericChar1_EV01'>value</param>
    <param name='szGenericString1_DL01'>value</param>
    <param name='mnSODRelatedJobNumber'>value</param>
    <param name='mnProcessID'>value</param>
    <param name='mnTransactionID'>value</param>
   </params>
  </callMethod>
 </onError>
</callMethod>
<returnParams version='value' messagetype='messsage name'
failureDestination='queuename' successDestination='queuename>
  <param name='long description' idref='value'/param>
</returnParams>
```

```
<onError>
 <callMethod name='F4211ClearWorkFile' app='NetCommerce' runOnError='yes'>
  <params>
    <param name='mnJobNo' idref='j1'></param>
    <param name='szComputerID' idref='2'></param>
    <param name='mnFromLineNo'>value</param>
    <param name='mnThruLineNo'>value</param>
    <param name='cClearHeaderWF'>value</param>
    <param name='cClearDetailWF'>value</param>
    <param name='szProgramID'>value</param>
    <param name='mnWKRelatedOrderProcess'>value</param>
    <param name='szCMVersion'>value</param>
    <param name='cGenericChar1_EV01'>value</param>
    <param name='szGenericString1_DL01'>value</param>
    <param name='mnProcessID'>value</param>
    <param name='mnTransactionID'>value</param>
  </params>
 </callMethod>
</onError>
</jdeRequest>
```

Outbound XML Request and Response Format (All Parameters)

This section provides example request and response code that illustrate the outbound XML Format with all of the parameters.

Request

This format returns all columns for the F0101Z2 table:

```
<?xml version='1.0' ?>
<jdeRequest type='trans' user='user' pwd='password' environment='environment'
role='*ALL' session='' sessionidle='300'>
  <transaction action='transactionInfo' type='JDEAB'>
            <key>
                <column name='EdiUserId'>value</column>
                <column name='EdiBatchNumber'>value</column>
                <column name='EdiTransactNumber'>value</column>
            </key>
  </transaction>
</jdeRequest>
```

Response

This sample code shows the response for the request:

```
<?xml version='1.0' encoding='utf-8' ?>
<jdeResponse type='trans' user='user' session='session'  environment='env'>
```



```
<transaction type='JDEAB' action='transactionInfo'>
     <returnCode code='0'>XML Request OK</returnCode>
    <key>
              <column name='EdiUserId'></column>
              <column name='EdiBatchNumber'></column>
    </key>
    <table name='F0101Z2' type='detail'>
      <column name='EdiUserId'></column>
      <column name='EdiBatchNumber'></column>
      <column name='EdiTransactNumber'></column>
      <column name='EdiLineNumber'></column>
      <column name='EdiDocumentType'></column>
      <column name='TypeTransaction'></column>
      <column name='EdiTranslationFormat'></column>
      <column name='EdiTransmissionDate'></column>
      <column name='DirectionIndicator'></column>
      <column name='EdiDetailLinesProcess'></column>
      <column name='EdiSuccessfullyProcess'></column>
      <column name='TradingPartnerId'></column>
      <column name='TransactionAction'></column>
      <column name='AddressNumber'></column>
      <column name='AlternateAddressKey'></column>
      <column name='TaxId'></column>
      <column name='NameAlpha'></column>
      <column name='DescripCompressed'></column>
      <column name='CostCenter'></column>
      <column name='StandardIndustryCode'></column>
      <column name='LanguagePreference'>< /column>
      <column name='AddressType1'></column>
      <column name='CreditMessage'></column>
      <column name='PersonCorporationCode'></column>
      <column name='AddressType2'></column>
      <column name='AddressType3'></column>
      <column name='AddressType4'></column>
      <column name='AddressTypeReceivables'></column>
      <column name='AddressType5'></column>
      <column name='AddressTypePayables'></column>
      <column name='AddTypeCode4Purch'></column>
      <column name='MiscCode3'></column>
      <column name='AddressTypeEmployee'></column>
      <column name='SubledgerInactiveCode'></column>
      <column name='DateBeginningEffective'></column>
      <column name='AddressNumber1st'></column>
      <column name='AddressNumber2nd'></column>
      <column name='AddressNumber3rd'></column>
      <column name='AddressNumber4th'></column>
      <column name='AddressNumber6th'></column>
      <column name='AddressNumber5th'></column>
      <column name='ReportCodeAddBook001'></column>
      <column name='ReportCodeAddBook002'></column>
```

```
<column name='ReportCodeAddBook003'></column>
<column name='ReportCodeAddBook004'></column>
<column name='ReportCodeAddBook005'></column>
<column name='ReportCodeAddBook006'></column>
<column name='ReportCodeAddBook007'></column>
<column name='ReportCodeAddBook008'></column>
<column name='ReportCodeAddBook009'></column>
<column name='ReportCodeAddBook010'></column>
<column name='ReportCodeAddBook011'></column>
<column name='ReportCodeAddBook012'></column>
<column name='ReportCodeAddBook013'></column>
<column name='ReportCodeAddBook014'></column>
<column name='ReportCodeAddBook015'></column>
<column name='ReportCodeAddBook016'></column>
<column name='ReportCodeAddBook017'></column>
<column name='ReportCodeAddBook018'></column>
<column name='ReportCodeAddBook019'></column>
<column name='ReportCodeAddBook020'></column>
<column name='CategoryCodeAddressBook2'></column>
<column name='CategoryCodeAddressBk22'></column>
<column name='CategoryCodeAddressBk23'></column>
<column name='CategoryCodeAddressBk24'></column>
<column name='CategoryCodeAddressBk25'></column>
<column name='CategoryCodeAddressBk26'></column>
<column name='CategoryCodeAddressBk27'></column>
<column name='CategoryCodeAddressBk28'></column>
<column name='CategoryCodeAddressBk29'></column>
<column name='CategoryCodeAddressBk30'></column>
<column name='GlBankAccount'></column>
<column name='TimeScheduledIn'></column>
<column name='DateScheduledIn'></column>
<column name='ActionMessageControl'></column>
<column name='NameRemark'></column>
<column name='CertificateTaxExempt'></column>
<column name='TaxId2'></column>
<column name='Kanjialpha'></column>
<column name='UserReservedCode'></column>
<column name='UserReservedDate'></column>
<column name='UserReservedAmount'></column>
<column name='UserReservedNumber'></column>
<column name='UserReservedReference'></column>
<column name='NameMailing'></column>
<column name='SecondaryMailingName'></column>
<column name='AddressLine1'></column>
<column name='AddressLine2'></column>
<column name='AddressLine3'></column>
<column name='AddressLine4'></column>
<column name='ZipCodePostal'></column>
<column name='City'></column>
<column name='Country'></column>
```



```
            <column name='State'></column>
            <column name='CountyAddress'></column>
            <column name='PhoneAreaCode1'></column>
            <column name='PhoneNumber'></column>
            <column name='PhoneNumberTyp1'></column>
            <column name='PhoneAreaCode2'></column>
            <column name='PhoneNumber1'></column>
            <column name='PhoneNumberTyp2'></column>
            <column name='TransactionOriginator'></column>
            <column name='UserId'></column>
            <column name='ProgramId'></column>
            <column name='WorkStationId'></column>
            <column name='DateUpdated'></column>
            <column name='TimeOfDay'></column>
            <column name='TimeLastUpdated'></column>
        </table>
    </transaction>
</jdeResponse>
```

APPENDIX H

Minimum Required Values Sample Code

This appendix provides XML sample code for a sales order entry.

Sales Order Minimum Required Values

This sales order entry example shows the minimum required parameters. JD Edwards EnterpriseOne recommends that you start with the minimum required values and test them to ensure your system is working. After you are confident the minimum required values are working properly, you can add other values.

```
<?xml version="1.0" encoding="utf-8" ?>
  <jdeRequest type="callmethod" user="JDE" pwd="JDE" role="*ALL"
environment="PRD733">
   <callMethod name="GetLocalComputerId" app="NetComm" runOnError="no">
   <params>
     <param name="szMachineKey" id="2" />
   </params>
   <onError abort="yes"/>
   </callMethod>
   <callMethod name="F4211FSBeginDoc" app="NetComm" runOnError="no">
   <params>
     <param name="szCMComputerID" idref="2"/>
     <param name="szOrderType">S4</param>
     <param name="szBusinessUnit">M30</param>
     <param name="mnAddressNumber">4242</param>
   </params>
   <onError abort="yes">
   <callMethod name="F4211ClearWorkFile" app="NetComm" runOnError="yes">
   <params>
     <param name="mnJobNo" idref="1"/>
     <param name="szComputerID" idref="2"/>
     <param name="cClearHeaderWF">2</param>
     <param name="cClearDetailWF">2</param>
   </params>
   </callMethod>
   </onError>
   </callMethod>
   <callMethod name="F4211FSEditLine" app="NetComm" runOnError="yes">
   <params>
     <param name="mnCMJobNo" idref="1"/>
     <param name="szCMComputerID" idref="2"/>
```

```
      <param name="szBusinessUnit">M30</param>
      <param name="szItemNo">1001</param>
    </params>
    <onError abort="no"/>
    </callMethod>
    <callMethod name="F4211FSEndDoc" app="NetComm" runOnError="no">
    <params>
      <param name="mnCMJobNo" idref="1"/>
      <param name="szCMComputerID" idref="2"/>
    </params>
    <onError abort="no">
    <callMethod name="F4211ClearWorkFile" app="NetComm" runOnError="yes">
    <params>
      <param name="mnJobNo" idref="1"/>
      <param name="szComputerID" idref="2"/>
      <param name="mnFromLineNo">0</param>
      <param name="mnThruLineNo">0</param>
      <param name="cClearHeaderWF">2</param>
      <param name="cClearDetailWF">2</param>
      <param name="szProgramID">NetComm</param>
      <param name="szCMVersion">ZJDE0001</param>
    </params>
    </callMethod>
    </onError>
    </callMethod>
    <returnParams failureDestination="ERROR.Q" successDestination="SUCCESS.Q"
runOnError="yes"/>
<onError abort="yes">
    <callMethod name="F4211ClearWorkFile" app="NetComm" runOnError="yes">
    <params>
      <param name="mnJobNo" idref="1"/>
      <param name="szComputerID" idref="2"/>
      <param name="mnFromLineNo">0</param>
      <param name="mnThruLineNo">0</param>
      <param name="cClearHeaderWF">2</param>
      <param name="cClearDetailWF">2</param>
      <param name="szProgramID">NetComm</param>
      <param name="szCMVersion">ZJDE0001</param>
    </params>
    </callMethod>
</onError>
</jdeRequest>
```

APPENDIX I

XML Format Examples (Events)

This appendix provides sample code for:

- Z Events XML format.
- Real-time events template.

Example: Z Events XML Format

This section illustrates a Z file event XML document.

```
<?xml version='1.0' encoding='utf-8'>
<jdeResponse type='trans' user='JDE' role='*ALL' environment='XDEVNIS2'>
 <transaction type='JDESC' action='transactionInfo'>
  <returnCode code='0'>XML Request OK</returnCode>
  <key>
    <EdiUserId>KW6803955</EdiUserId>
    <EdiBatchNumber>16319</EdiBatchNumber>
    <EdiTransactNumber>106053</EdiTransactNumber>
  </key>
  <F4201Z1 type='header'>
    <EdiUserId>KW6803955</EdiUserId>
    <EdiBatchNumber>16319</EdiBatchNumber>
    <EdiTransactNumber>106053</EdiTransactNumber>
    <EdiLineNumber>1.000</EdiLineNumber>
    <EdiDocumentType>SO</EdiDocumentType>
    <TypeTransaction>JDESC</TypeTransaction>
    <EdiTranslationFormat> </EdiTranslationFormat>
    <EdiTransmissionDate> </EdiTransmissionDate>
    <DirectionIndicator>2</DirectionIndicator>
    <EdiDetailLinesProcess>0</EdiDetailLinesProcess>
    <EdiSuccessfullyProcess>Y</EdiSuccessfullyProcess>
    <TradingPartnerId> </TradingPartnerId>
    <TransactionAction>UA</TransctionAction>
    <CompanyKeyOrderNo>00200</CompanyKeyOrderNo>
    <DocumentOrderInvoiceF>6559</DocumentOrderInvoiceF>
    <OrderType>SO</OrderType>
    <OrderSuffix>000</OrderSuffix>
    <CostCenter>  M30</CostCenter>
    <Company>00200</Company>
```

```
<CompanyKeyOriginal> </CompanyKeyOriginal>
<OriginalPoSoNumber> </OriginalPoSoNumber>
<OriginalOrderType> </OriginalOrderType>
<CompanyKeyRelated> </CompanyKeyRelated>
<RelatedPoSoNumber> </RelatedPoSoNumber>
<RelatedOrderType> </RelatedOrderType>
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```

```
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<DescriptionLine2> </DescriptionLine2>
<LineType>S</LineType>
```



```
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<StatusCodeLast>520</StatusCodeLast>
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<LineNumberKitMaster>.000</LineNumberKitMaster>
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<SalesReportingCode2> </SalesReportingCode2>
<SalesReportingCode3> </SalesReportingCode3>
<SalesReportingCode4> </SalesReportingCode4>
<SalesReportingCode5> </SalesReportingCode5>
<PurchasingReportCode1> </PurchasingReportCode1>
<PurchasingReportCode2> </PurchasingReportCode2>
<PurchasingReportCode3> </PurchasingReportCode3>
<PurchasingReportCode4> </PurchasingReportCode4>
<PurchasingReportCode5> </PurchasingReportCode5>
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<UnitsQuantityFuture>0</UnitsQuantityFuture>
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<UnitsSecondaryQtyOr>3</UnitsSecondaryQtyOr>
<UnitOfMeasurePricing>EA</UnitOfMeasurePricing>
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  <AmtForPricePerUnit>1521.4745</AmtForPricePerUnit>
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  <AmountForeignUnitCost>1085.5597</AmountForeignUnitCost>
  <AmountForeignExtCost>3256.68</AmountForeignExtCost>
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  <UserReservedReference> </UserReservedReference>
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<F49211Z1 type='additionalHeader'>
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  <EdiBatchNumber>16319</EdiBatchNumber>
  <EdiTransactNumber>106053<EdiTransactNumber>
  <EdiLineNumber>1.000</EdiLineNumber>
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  <TypeTransaction>JDESC</TypeTransaction>
  <EdiTranslationFormat> </EdiTranslationFormat>
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  <EdiDetailLinesProcess>0</EditDetailLinesProcess>
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  <AmountDeferredRevenue>.0000</AmountDeferredRevenue>
```



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<Origin> /Orign>
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```

```
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    <ClosingReading1>0</ClosingReading1>
    <MeterTicket2> </MeterTicket2>
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    <ClosingReading2>0</ClosingReading2>
    <MeterTicket3> </MeterTicket3>
    <UnitsBeginningThroughpu3>0</UnitsBeginningThroughpu3>
    <ClosingReading3>0</ClosingReading3>
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    <TimeArrival>0</TimeArrival>
    <DateDeparture></DateDeparture>
    <TimeDeparture>0</TimeDeparture>
    <DateStartJobJulian></DateStartJobJulian>
    <TimeBeginningHHMM>0</TimeBeginningHHMM>
    <DateEnding></DateEnding>
    <TimeStopHHMM>0</TimeStopHHMM>
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    <FutureUse02> </FutureUse02>
    <FutureUse03> </FutureUse03>
    <FutureUse04> </FutureUse04>
    <FutureUse05> </FutureUse05>
    <FutureUseCode> </FutureUseCode>
    <FutureUseQuantity>0</FutureUseQuantity>
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    <FutureUseUnitofMeasure> </FutureUseUnitofMeasure>
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    <UserReservedDate> </UserReservedDate>
    <UserReservedAmount>00</UserReservedAmount>
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    <ProgramId>XMLtest</ProgramId>
    <WorkStationId>ST15</WorkStationId>
    <DateUpdated>2000/08/22</DateUpdated.
    <TimeOfDay>134435</TimeOfDay>
  </F49211Z1>
 </transaction>
</jdeResponse>
```


Real-Time Events Template

This section provides an example of the real-time events template. The example template might not correspond to the exact event that your application uses. Your event might include values that are not in the example template.

The event must be described in the jdeResponse type element. The attribute type is always realTimeEvent. The attributes for user and environment always correspond to the user name and environment that generated the event.

```
<?xml version="1.0" encoding="utf-8" ?>
<jdeResponse type="realTimeEvent" user="" role="*ALL"
session="28980548.1019684006" environment="">
<event>
<header>
```

Code for the header information follows. <eventVersion> is always 1.0, <type> corresponds to the event type, <application> corresponds to the application that created the event, and <version> to the version of the application. The <session ID> is unique for every event. The <scope> is the value of the argument scope that was sent to the real-time event API during creation of the event. The <codepage>element is for encoding of the elements. In the sample, utf-8 is used. The remaining header elements are self-explanatory.

```
<eventVersion>1.0</eventVersion>
<type>RTSOOUT</type>
<user />
<application />
<version />
<sessionID />
<environment />
<host />
<sequenceID />
<date />
<time />
<scope />
<codepage>utf-8</codepage>
</header>
```

The body contains details that describe one data structure for each element. The body contains the date of creation, the name of the file that is creating the data structure, time of creation, and the DSTMPL name of the JD Edwards EnterpriseOne data structure. Type is type of partial event (added as an argument to jdeIEO-EventAdd), executionOrder increases in the real generated event from 1 to elementCount, and parameterCount is the number of fields in the data structure. In this example code, there are three data structures: D34A1050C, D4202150C, and D4202150B. Each data structure is followed by detail elements. When you create an event, the element value is the value of the field, for example: <szNameAlpha type=String>ABC</szNameAlpha >

```
<body elementCount="3">
<detail date="" name="" time="" type="" DSTMPL="D34A1050C"
  executionOrder="" parameterCount="25">
<szNameAlpha type="String"/>
<mnParentAddressNumber type="Double"/>
<szSecondItemNumber type="String"/>
```

```
<szThirdItemNumber type="String"/>
<cPriorityProcessing type="Character"/>
<cBackOrdersAllowed type="Character"/>
<cOrderShippedFlag type="Character"/>
<cTransferDirectShipFlag type="Character"/>
<cCommitted type="Character"/>
<mnDaysBeforeExpiration type="Double"/>
<szPurchaseCategoryCode1 type="String"/>
<szPurchaseCategoryCode2 type="String"/>
<szPurchaseCategoryCode3 type="String"/>
<szPurchaseCategoryCode4 type="String"/>
<szRelatedOrderNumber type="String"/>
<szRelatedOrderType type="String"/>
<szRelatedOrderKeyCompany type="String"/>
<szPlanningUnitOfMeasure type="String"/>
<mnPlanningQuantity type="Double"/>
<cAPSFlag type="Character"/>
<cAPSSupplyDemandFlag type="Character"/>
<jdDateUpdated type="Date"/>
<mnTimeUpdated type="Double"/>
<szShipComplete type="String"/>
<mnRelatedOrderLineNumber type="Double"/>
</detail>
<detail date="" name="" time="" type="" DSTMPL="D4202150C"
  executionOrder="" parameterCount="94">
<cOrderAction type="Character"/>
<szOrderType type="String"/>
<szOrderCompany type="String"/>
<mnLineNumber type="Double"/>
<szDetailBranchPlant type="String"/>
<mnShipToAddressNumber type="Double"/>
<jdTransactionDate type="Date"/>
<jdRequestedDate type="Date"/>
<jdScheduledPickDate type="Date"/>
<jdPromisedShipDate type="Date"/>
<jdPromisedDeliveryDate type="Date"/>
<jdCancelDate type="Date"/>
<jdPriceEffectiveDate type="Date"/>
<mnQuantityOrdered type="Double"/>
<mnQuantityShipped type="Double"/>
<mnQuantityBackOrdered type="Double"/>
<mnQuantityCanceled type="Double"/>
<szTransactionUnitOfMeasure type="String"/>
<mnUnitPrice type="Double"/>
<mnExtendedPrice type="Double"/>
<mnForeignUnitPrice type="Double"/>
<mnForeignExtPrice type="Double"/>
<cPriceOverrideCode type="Character"/>
<cTaxableYN type="Character"/>
<szPriceAdjustmentSchedule type="String"/>
```



```
<mnDiscountPercentage type="Double"/>
<szPaymentTerms type="String"/>
<cPaymentInstrument type="Character"/>
<szCurrencyCode type="String"/>
<szItemNumber type="String"/>
<mnShortItemNumber type="Double"/>
<szDescriptionLine1 type="String"/>
<szDescriptionLine2 type="String"/>
<szLineType type="String"/>
<szLastStatus type="String"/>
<szNextStatus type="String"/>
<szLocation type="String"/>
<szLot type="String"/>
<szLineofBusiness type="String"/>
<szEndUse type="String"/>
<szDutyStatus type="String"/>
<szPrintMessage1 type="String"/>
<szFreightHandlingCode type="String"/>
<mnItemWeight type="Double"/>
<szWeightUnitOfMeasure type="String"/>
<szModeOfTransport type="String"/>
<mnCarrier type="Double"/>
<szSubledger type="String"/>
<cSubledgerType type="Character"/>
<szPriceCode1 type="String"/>
<szPriceCode2 type="String"/>
<szPriceCode3 type="String"/>
<szSalesReportingCode1 type="String"/>
<szSalesReportingCode2 type="String"/>
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<szInvoiceDocType type="String"/>
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<jdPromisedShipDate type="Date"/>
<jdOriginalPromisdDate type="Date"/>
<cCurrencyMode type="Character"/>
<szShipToDescriptive type="String"/>
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</detail>
</body>
</event>
</jdeResponse>
```

This table shows the mapping between JD Edwards EnterpriseOne types and events:

JD Edwards EnterpriseOne	Event
CHAR	Character
STRING	String

JD Edwards EnterpriseOne	Event
MATH_numeric	Double
JDEDATE	Dat
SHORT	Int
INT	Int
USHORT	Int
LONG	Long
ULONG	Long
ID	Long
ID2	Long
BOOL	BOOL

Glossary of JD Edwards EnterpriseOne Terms

activity A scheduling entity in JD Edwards EnterpriseOne tools that represents a designated amount of time on a calendar.

activity rule The criteria by which an object progresses from one given point to the next in a flow.

add mode A condition of a form that enables users to input data.

Advanced Planning Agent (APAg) A JD Edwards EnterpriseOne tool that can be used to extract, transform, and load enterprise data. APAg supports access to data sources in the form of rational databases, flat file format, and other data or message encoding, such as XML.

application server A server in a local area network that contains applications shared by network clients.

as if processing A process that enables you to view currency amounts as if they were entered in a currency different from the domestic and foreign currency of the transaction.

alternate currency A currency that is different from the domestic currency (when dealing with a domestic-only transaction) or the domestic and foreign currency of a transaction.

In JD Edwards EnterpriseOne Financial Management, alternate currency processing enables you to enter receipts and payments in a currency other than the one in which they were issued.

as of processing A process that is run as of a specific point in time to summarize transactions up to that date. For example, you can run various JD Edwards EnterpriseOne reports as of a specific date to determine balances and amounts of accounts, units, and so on as of that date.

back-to-back process A process in JD Edwards EnterpriseOne Supply Management that contains the same keys that are used in another process.

batch processing A process of transferring records from a third-party system to JD Edwards EnterpriseOne.

In JD Edwards EnterpriseOne Financial Management, batch processing enables you to transfer invoices and vouchers that are entered in a system other than JD Edwards EnterpriseOne to JD Edwards EnterpriseOne Accounts Receivable and JD Edwards EnterpriseOne Accounts Payable, respectively. In addition, you can transfer address book information, including customer and supplier records, to JD Edwards EnterpriseOne.

batch server A server that is designated for running batch processing requests. A batch server typically does not contain a database nor does it run interactive applications.

batch-of-one immediate A transaction method that enables a client application to perform work on a client workstation, then submit the work all at once to a server application for further processing. As a batch process is running on the server, the client application can continue performing other tasks.

See also direct connect and store-and-forward.

business function A named set of user-created, reusable business rules and logs that can be called through event rules. Business functions can run a transaction or a subset of a transaction (check inventory, issue work orders, and so on). Business functions also contain the application programming interfaces (APIs) that enable them to be called from a form, a database trigger, or a non-JD Edwards EnterpriseOne application. Business functions can be combined with other business functions, forms, event rules,

	and other components to make up an application. Business functions can be created through event rules or third-generation languages, such as C. Examples of business functions include Credit Check and Item Availability.
business function event rule	See named event rule (NER).
business view	A means for selecting specific columns from one or more JD Edwards EnterpriseOne application tables whose data is used in an application or report. A business view does not select specific rows, nor does it contain any actual data. It is strictly a view through which you can manipulate data.
central objects merge	A process that blends a customer's modifications to the objects in a current release with objects in a new release.
central server	A server that has been designated to contain the originally installed version of the software (central objects) for deployment to client computers. In a typical JD Edwards EnterpriseOne installation, the software is loaded on to one machine—the central server. Then, copies of the software are pushed out or downloaded to various workstations attached to it. That way, if the software is altered or corrupted through its use on workstations, an original set of objects (central objects) is always available on the central server.
charts	Tables of information in JD Edwards EnterpriseOne that appear on forms in the software.
connector	Component-based interoperability model that enables third-party applications and JD Edwards EnterpriseOne to share logic and data. The JD Edwards EnterpriseOne connector architecture includes Java and COM connectors.
contra/clearing account	A general ledger account in JD Edwards EnterpriseOne Financial Management that is used by the system to offset (balance) journal entries. For example, you can use a contra/clearing account to balance the entries created by allocations in JD Edwards EnterpriseOne Financial Management.
Control Table Workbench	An application that, during the Installation Workbench processing, runs the batch applications for the planned merges that update the data dictionary, user-defined codes, menus, and user override tables.
control tables merge	A process that blends a customer's modifications to the control tables with the data that accompanies a new release.
cost assignment	The process in JD Edwards EnterpriseOne Advanced Cost Accounting of tracing or allocating resources to activities or cost objects.
cost component	In JD Edwards EnterpriseOne Manufacturing, an element of an item's cost (for example, material, labor, or overhead).
cross segment edit	A logic statement that establishes the relationship between configured item segments. Cross segment edits are used to prevent ordering of configurations that cannot be produced.
currency restatement	The process of converting amounts from one currency into another currency, generally for reporting purposes. You can use the currency restatement process, for example, when many currencies must be restated into a single currency for consolidated reporting.
database server	A server in a local area network that maintains a database and performs searches for client computers.
Data Source Workbench	An application that, during the Installation Workbench process, copies all data sources that are defined in the installation plan from the Data Source Master and Table and Data Source Sizing tables in the Planner data source to the system-release number data source. It also updates the Data Source Plan detail record to reflect completion.

date pattern A calendar that represents the beginning date for the fiscal year and the ending date for each period in that year in standard and 52-period accounting.

denominated-in currency The company currency in which financial reports are based.

deployment server A server that is used to install, maintain, and distribute software to one or more enterprise servers and client workstations.

detail information Information that relates to individual lines in JD Edwards EnterpriseOne transactions (for example, voucher pay items and sales order detail lines).

direct connect A transaction method in which a client application communicates interactively and directly with a server application.

See also batch-of-one immediate and store-and-forward.

Do Not Translate (DNT) A type of data source that must exist on the iSeries because of BLOB restrictions.

dual pricing The process of providing prices for goods and services in two currencies.

edit code A code that indicates how a specific value for a report or a form should appear or be formatted. The default edit codes that pertain to reporting require particular attention because they account for a substantial amount of information.

edit mode A condition of a form that enables users to change data.

edit rule A method used for formatting and validating user entries against a predefined rule or set of rules.

Electronic Data Interchange (EDI) An interoperability model that enables paperless computer-to-computer exchange of business transactions between JD Edwards EnterpriseOne and third-party systems. Companies that use EDI must have translator software to convert data from the EDI standard format to the formats of their computer systems.

embedded event rule An event rule that is specific to a particular table or application. Examples include form-to-form calls, hiding a field based on a processing option value, and calling a business function. Contrast with the business function event rule.

Employee Work Center A central location for sending and receiving all JD Edwards EnterpriseOne messages (system and user generated), regardless of the originating application or user. Each user has a mailbox that contains workflow and other messages, including Active Messages.

enterprise server A server that contains the database and the logic for JD Edwards EnterpriseOne.

EnterpriseOne object A reusable piece of code that is used to build applications. Object types include tables, forms, business functions, data dictionary items, batch processes, business views, event rules, versions, data structures, and media objects.

EnterpriseOne process A software process that enables JD Edwards EnterpriseOne clients and servers to handle processing requests and run transactions. A client runs one process, and servers can have multiple instances of a process. JD Edwards EnterpriseOne processes can also be dedicated to specific tasks (for example, workflow messages and data replication) to ensure that critical processes don't have to wait if the server is particularly busy.

Environment Workbench An application that, during the Installation Workbench process, copies the environment information and Object Configuration Manager tables for each environment from the Planner data source to the system-release number data source. It also updates the Environment Plan detail record to reflect completion.

escalation monitor A batch process that monitors pending requests or activities and restarts or forwards them to the next step or user after they have been inactive for a specified amount of time.

event rule A logic statement that instructs the system to perform one or more operations based on an activity that can occur in a specific application, such as entering a form or exiting a field.

facility An entity within a business for which you want to track costs. For example, a facility might be a warehouse location, job, project, work center, or branch/plant. A facility is sometimes referred to as a "business unit."

fast path A command prompt that enables the user to move quickly among menus and applications by using specific commands.

file server A server that stores files to be accessed by other computers on the network. Unlike a disk server, which appears to the user as a remote disk drive, a file server is a sophisticated device that not only stores files, but also manages them and maintains order as network users request files and make changes to these files.

final mode The report processing mode of a processing mode of a program that updates or creates data records.

FTP server A server that responds to requests for files via file transfer protocol.

header information Information at the beginning of a table or form. Header information is used to identify or provide control information for the group of records that follows.

interface table See Z table.

integration server A server that facilitates interaction between diverse operating systems and applications across internal and external networked computer systems.

integrity test A process used to supplement a company's internal balancing procedures by locating and reporting balancing problems and data inconsistencies.

interoperability model A method for third-party systems to connect to or access JD Edwards EnterpriseOne.

in-your-face-error In JD Edwards EnterpriseOne, a form-level property which, when enabled, causes the text of application errors to appear on the form.

IServer service This internet server service resides on the web server and is used to speed up delivery of the Java class files from the database to the client.

jargon An alternative data dictionary item description that JD Edwards EnterpriseOne appears based on the product code of the current object.

Java application server A component-based server that resides in the middle-tier of a server-centric architecture. This server provides middleware services for security and state maintenance, along with data access and persistence.

JDBNET A database driver that enables heterogeneous servers to access each other's data.

JDEBASE Database Middleware A JD Edwards EnterpriseOne proprietary database middleware package that provides platform-independent APIs, along with client-to-server access.

JDECallObject An API used by business functions to invoke other business functions.

jde.ini A JD Edwards EnterpriseOne file (or member for iSeries) that provides the runtime settings required for JD Edwards EnterpriseOne initialization. Specific versions of the file or member must reside on every machine running JD Edwards EnterpriseOne. This includes workstations and servers.

JDEIPC Communications programming tools used by server code to regulate access to the same data in multiprocess environments, communicate and coordinate between processes, and create new processes.

jde.log The main diagnostic log file of JD Edwards EnterpriseOne. This file is always located in the root directory on the primary drive and contains status and error messages from the startup and operation of JD Edwards EnterpriseOne.

JDENET A JD Edwards EnterpriseOne proprietary communications middleware package. This package is a peer-to-peer, message-based, socket-based, multiprocess communications middleware solution. It handles client-to-server and server-to-server communications for all JD Edwards EnterpriseOne supported platforms.

Location Workbench An application that, during the Installation Workbench process, copies all locations that are defined in the installation plan from the Location Master table in the Planner data source to the system data source.

logic server A server in a distributed network that provides the business logic for an application program. In a typical configuration, pristine objects are replicated on to the logic server from the central server. The logic server, in conjunction with workstations, actually performs the processing required when JD Edwards EnterpriseOne software runs.

MailMerge Workbench An application that merges Microsoft Word 6.0 (or higher) word-processing documents with JD Edwards EnterpriseOne records to automatically print business documents. You can use MailMerge Workbench to print documents, such as form letters about verification of employment.

master business function (MBF) An interactive master file that serves as a central location for adding, changing, and updating information in a database. Master business functions pass information between data entry forms and the appropriate tables. These master functions provide a common set of functions that contain all of the necessary default and editing rules for related programs. MBFs contain logic that ensures the integrity of adding, updating, and deleting information from databases.

master table See published table.

matching document A document associated with an original document to complete or change a transaction. For example, in JD Edwards EnterpriseOne Financial Management, a receipt is the matching document of an invoice, and a payment is the matching document of a voucher.

media storage object Files that use one of the following naming conventions that are not organized into table format: Gxxx, xxxGT, or GTxxx.

message center A central location for sending and receiving all JD Edwards EnterpriseOne messages (system and user generated), regardless of the originating application or user.

messaging adapter An interoperability model that enables third-party systems to connect to JD Edwards EnterpriseOne to exchange information through the use of messaging queues.

messaging server A server that handles messages that are sent for use by other programs using a messaging API. Messaging servers typically employ a middleware program to perform their functions.

named event rule (NER) Encapsulated, reusable business logic created using event rules, rather that C programming. NERs are also called business function event rules. NERs can be reused in multiple places by multiple programs. This modularity lends itself to streamlining, reusability of code, and less work.

nota fiscal In Brazil, a legal document that must accompany all commercial transactions for tax purposes and that must contain information required by tax regulations.

nota fiscal factura In Brazil, a nota fiscal with invoice information.

See also *nota fiscal.*

Object Configuration Manager (OCM) In JD Edwards EnterpriseOne, the object request broker and control center for the runtime environment. OCM keeps track of the runtime locations for business functions, data, and batch applications. When one of these objects is called, OCM directs access to it using defaults and overrides for a given environment and user.

Object Librarian A repository of all versions, applications, and business functions reusable in building applications. Object Librarian provides check-out and check-in capabilities for developers, and it controls the creation, modification, and use of JD Edwards EnterpriseOne objects. Object Librarian supports multiple environments (such as production and development) and enables objects to be easily moved from one environment to another.

Object Librarian merge A process that blends any modifications to the Object Librarian in a previous release into the Object Librarian in a new release.

Open Data Access (ODA) An interoperability model that enables you to use SQL statements to extract JD Edwards EnterpriseOne data for summarization and report generation.

Output Stream Access (OSA) An interoperability model that enables you to set up an interface for JD Edwards EnterpriseOne to pass data to another software package, such as Microsoft Excel, for processing.

package JD Edwards EnterpriseOne objects are installed to workstations in packages from the deployment server. A package can be compared to a bill of material or kit that indicates the necessary objects for that workstation and where on the deployment server the installation program can find them. It is point-in-time snapshot of the central objects on the deployment server.

package build A software application that facilitates the deployment of software changes and new applications to existing users. Additionally, in JD Edwards EnterpriseOne, a package build can be a compiled version of the software. When you upgrade your version of the ERP software, for example, you are said to take a package build.

Consider the following context: "Also, do not transfer business functions into the production path code until you are ready to deploy, because a global build of business functions done during a package build will automatically include the new functions." The process of creating a package build is often referred to, as it is in this example, simply as "a package build."

package location The directory structure location for the package and its set of replicated objects. This is usually \\deployment server\release\path_code\package\package name. The subdirectories under this path are where the replicated objects for the package are placed. This is also referred to as where the package is built or stored.

Package Workbench An application that, during the Installation Workbench process, transfers the package information tables from the Planner data source to the system-release number data source. It also updates the Package Plan detail record to reflect completion.

planning family A means of grouping end items whose similarity of design and manufacture facilitates being planned in aggregate.

preference profile The ability to define default values for specified fields for a user-defined hierarchy of items, item groups, customers, and customer groups.

print server The interface between a printer and a network that enables network clients to connect to the printer and send their print jobs to it. A print server can be a computer, separate hardware device, or even hardware that resides inside of the printer itself.

pristine environment A JD Edwards EnterpriseOne environment used to test unaltered objects with JD Edwards EnterpriseOne demonstration data or for training classes. You must have this environment so that you can compare pristine objects that you modify.

processing option A data structure that enables users to supply parameters that regulate the running of a batch program or report. For example, you can use processing options to specify default values for certain fields, to determine how information appears or is printed, to specify date ranges, to supply runtime values that regulate program execution, and so on.

production environment A JD Edwards EnterpriseOne environment in which users operate EnterpriseOne software.

production-grade file server A file server that has been quality assurance tested and commercialized and that is usually provided in conjunction with user support services.

program temporary fix (PTF) A representation of changes to JD Edwards EnterpriseOne software that your organization receives on magnetic tapes or disks.

project In JD Edwards EnterpriseOne, a virtual container for objects being developed in Object Management Workbench.

promotion path The designated path for advancing objects or projects in a workflow. The following is the normal promotion cycle (path):

11>21>26>28>38>01

In this path, *11* equals new project pending review, *21* equals programming, *26* equals QA test/review, *28* equals QA test/review complete, *38* equals in production, *01* equals complete. During the normal project promotion cycle, developers check objects out of and into the development path code and then promote them to the prototype path code. The objects are then moved to the productions path code before declaring them complete.

proxy server A server that acts as a barrier between a workstation and the internet so that the enterprise can ensure security, administrative control, and caching service.

published table Also called a master table, this is the central copy to be replicated to other machines. Residing on the publisher machine, the F98DRPUB table identifies all of the published tables and their associated publishers in the enterprise.

publisher The server that is responsible for the published table. The F98DRPUB table identifies all of the published tables and their associated publishers in the enterprise.

pull replication One of the JD Edwards EnterpriseOne methods for replicating data to individual workstations. Such machines are set up as pull subscribers using JD Edwards EnterpriseOne data replication tools. The only time that pull subscribers are notified of changes, updates, and deletions is when they request such information. The request is in the form of a message that is sent, usually at startup, from the pull subscriber to the server machine that stores the F98DRPCN table.

QBE An abbreviation for query by example. In JD Edwards EnterpriseOne, the QBE line is the top line on a detail area that is used for filtering data.

real-time event A service that uses system calls to capture JD Edwards EnterpriseOne transactions as they occur and to provide notification to third-party software, end users, and other JD Edwards EnterpriseOne systems that have requested notification when certain transactions occur.

refresh A function used to modify JD Edwards EnterpriseOne software, or subset of it, such as a table or business data, so that it functions at a new release or cumulative update level, such as B73.2 or B73.2.1.

replication server A server that is responsible for replicating central objects to client machines.

quote order In JD Edwards Procurement and Subcontract Management, a request from a supplier for item and price information from which you can create a purchase order.

	In JD Edwards Sales Order Management, item and price information for a customer who has not yet committed to a sales order.
selection	Found on JD Edwards EnterpriseOne menus, a selection represents functions that you can access from a menu. To make a selection, type the associated number in the Selection field and press Enter.
Server Workbench	An application that, during the Installation Workbench process, copies the server configuration files from the Planner data source to the system-release number data source. It also updates the Server Plan detail record to reflect completion.
spot rate	An exchange rate entered at the transaction level. This rate overrides the exchange rate that is set up between two currencies.
Specification merge	A merge that comprises three merges: Object Librarian merge, Versions List merge, and Central Objects merge. The merges blend customer modifications with data that accompanies a new release.
specification	A complete description of a JD Edwards EnterpriseOne object. Each object has its own specification, or name, which is used to build applications.
Specification Table Merge Workbench	An application that, during the Installation Workbench process, runs the batch applications that update the specification tables.
store-and-forward	The mode of processing that enables users who are disconnected from a server to enter transactions and then later connect to the server to upload those transactions.
subscriber table	Table F98DRSUB, which is stored on the publisher server with the F98DRPUB table and identifies all of the subscriber machines for each published table.
supplemental data	Any type of information that is not maintained in a master file. Supplemental data is usually additional information about employees, applicants, requisitions, and jobs (such as an employee's job skills, degrees, or foreign languages spoken). You can track virtually any type of information that your organization needs. For example, in addition to the data in the standard master tables (the Address Book Master, Customer Master, and Supplier Master tables), you can maintain other kinds of data in separate, generic databases. These generic databases enable a standard approach to entering and maintaining supplemental data across JD Edwards EnterpriseOne systems.
table access management (TAM)	The JD Edwards EnterpriseOne component that handles the storage and retrieval of use-defined data. TAM stores information, such as data dictionary definitions; application and report specifications; event rules; table definitions; business function input parameters and library information; and data structure definitions for running applications, reports, and business functions.
Table Conversion Workbench	An interoperability model that enables the exchange of information between JD Edwards EnterpriseOne and third-party systems using non-JD Edwards EnterpriseOne tables.
table conversion	An interoperability model that enables the exchange of information between JD Edwards EnterpriseOne and third-party systems using non-JD Edwards EnterpriseOne tables.
table event rules	Logic that is attached to database triggers that runs whenever the action specified by the trigger occurs against the table. Although JD Edwards EnterpriseOne enables event rules to be attached to application events, this functionality is application specific. Table event rules provide embedded logic at the table level.
terminal server	A server that enables terminals, microcomputers, and other devices to connect to a network or host computer or to devices attached to that particular computer.

three-tier processing The task of entering, reviewing and approving, and posting batches of transactions in JD Edwards EnterpriseOne.

three-way voucher match In JD Edwards Procurement and Subcontract Management, the process of comparing receipt information to supplier's invoices to create vouchers. In a three-way match, you use the receipt records to create vouchers.

transaction processing (TP) monitor A monitor that controls data transfer between local and remote terminals and the applications that originated them. TP monitors also protect data integrity in the distributed environment and may include programs that validate data and format terminal screens.

transaction set An electronic business transaction (electronic data interchange standard document) made up of segments.

trigger One of several events specific to data dictionary items. You can attach logic to a data dictionary item that the system processes automatically when the event occurs.

triggering event A specific workflow event that requires special action or has defined consequences or resulting actions.

two-way voucher match In JD Edwards Procurement and Subcontract Management, the process of comparing purchase order detail lines to the suppliers' invoices to create vouchers. You do not record receipt information.

User Overrides merge Adds new user override records into a customer's user override table.

variance In JD Edwards Capital Asset Management, the difference between revenue generated by a piece of equipment and costs incurred by the equipment.

In JD Edwards EnterpriseOne Project Costing and JD Edwards EnterpriseOne Manufacturing, the difference between two methods of costing the same item (for example, the difference between the frozen standard cost and the current cost is an engineering variance). Frozen standard costs come from the Cost Components table, and the current costs are calculated using the current bill of material, routing, and overhead rates.

Version List merge The Versions List merge preserves any non-XJDE and non-ZJDE version specifications for objects that are valid in the new release, as well as their processing options data.

visual assist Forms that can be invoked from a control via a trigger to assist the user in determining what data belongs in the control.

vocabulary override An alternate description for a data dictionary item that appears on a specific JD Edwards EnterpriseOne form or report.

wchar_t An internal type of a wide character. It is used for writing portable programs for international markets.

web application server A web server that enables web applications to exchange data with the back-end systems and databases used in eBusiness transactions.

web server A server that sends information as requested by a browser, using the TCP/IP set of protocols. A web server can do more than just coordination of requests from browsers; it can do anything a normal server can do, such as house applications or data. Any computer can be turned into a web server by installing server software and connecting the machine to the internet.

Windows terminal server A multiuser server that enables terminals and minimally configured computers to display Windows applications even if they are not capable of running Windows software themselves. All client processing is performed centrally at the Windows

terminal server and only display, keystroke, and mouse commands are transmitted over the network to the client terminal device.

workbench A program that enables users to access a group of related programs from a single entry point. Typically, the programs that you access from a workbench are used to complete a large business process. For example, you use the JD Edwards EnterpriseOne Payroll Cycle Workbench (P07210) to access all of the programs that the system uses to process payroll, print payments, create payroll reports, create journal entries, and update payroll history. Examples of JD Edwards EnterpriseOne workbenches include Service Management Workbench (P90CD020), Line Scheduling Workbench (P3153), Planning Workbench (P13700), Auditor's Workbench (P09E115), and Payroll Cycle Workbench.

work day calendar In JD Edwards EnterpriseOne Manufacturing, a calendar that is used in planning functions that consecutively lists only working days so that component and work order scheduling can be done based on the actual number of work days available. A work day calendar is sometimes referred to as planning calendar, manufacturing calendar, or shop floor calendar.

workflow The automation of a business process, in whole or in part, during which documents, information, or tasks are passed from one participant to another for action, according to a set of procedural rules.

workgroup server A server that usually contains subsets of data replicated from a master network server. A workgroup server does not perform application or batch processing.

XAPI events A service that uses system calls to capture JD Edwards EnterpriseOne transactions as they occur and then calls third-party software, end users, and other JD Edwards EnterpriseOne systems that have requested notification when the specified transactions occur to return a response.

XML CallObject An interoperability capability that enables you to call business functions.

XML Dispatch An interoperability capability that provides a single point of entry for all XML documents coming into JD Edwards EnterpriseOne for responses.

XML List An interoperability capability that enables you to request and receive JD Edwards EnterpriseOne database information in chunks.

XML Service An interoperability capability that enables you to request events from one JD Edwards EnterpriseOne system and receive a response from another JD Edwards EnterpriseOne system.

XML Transaction An interoperability capability that enables you to use a predefined transaction type to send information to or request information from JD Edwards EnterpriseOne. XML transaction uses interface table functionality.

XML Transaction Service (XTS) Transforms an XML document that is not in the JD Edwards EnterpriseOne format into an XML document that can be processed by JD Edwards EnterpriseOne. XTS then transforms the response back to the request originator XML format.

Z event A service that uses interface table functionality to capture JD Edwards EnterpriseOne transactions and provide notification to third-party software, end users, and other JD Edwards EnterpriseOne systems that have requested to be notified when certain transactions occur.

Z table A working table where non-JD Edwards EnterpriseOne information can be stored and then processed into JD Edwards EnterpriseOne. Z tables also can be used to retrieve JD Edwards EnterpriseOne data. Z tables are also known as interface tables.

Z transaction Third-party data that is properly formatted in interface tables for updating to the JD Edwards EnterpriseOne database.

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