IBM Software Group

IBM WebSphere® Data Interchange V3.3

Overview

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This presentation will present an overview of the WebSphere Data Interchange product.

Agenda

- Electronic data interchange (EDI)
  - ▶ Overview
  - ▶ Evolution
  - ▶ Components
  - ▶ Business Protocol

- WebSphere Data Interchange
  - ▶ Overview
  - ▶ Components

The presentation covers the evolution and components of electronic data interchange (EDI), and business protocol. An overview of WebSphere Data Interchange (WDI), along with components will also be provided.

Section

EDI Overview

This section provides an overview of EDI.

Evolution of EDI

- Electronic data interchange (EDI)
  - ▶ Exchange of business documents
  - ▶ Common format and set of rules
  - ▶ purchase orders, shipping notices, and invoices)
  - ▶ syntax difficult to use in applications - primarily record based software.
- EDI translator
  - ▶ the conversion between the EDI syntax and record based formats
  - ▶ accepts record based data, transform it to EDI data, route the data to trading partners.

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In the exchange of business documents or business transactions, it was determined that a common format and set of rules for exchanging data (such as purchase orders, shipping notices, and invoices) would simplify the automated application interfaces with trading partners. EDI Standards evolved as the common exchange syntax. The problem was the syntax was difficult to use in applications - primarily record based software.

The need for a software tool to do the conversion between the EDI syntax and record based formats was filled by an EDI translator.

The translator would accept record based data transform it to EDI data for transfer the data to trading partners. Typically these Trading Partners would use a Value Added Network or VAN to communicate. The translator then accepted the role of routing data to a destination, sometimes a file, or a point-to-point network, or a VAN.

Electronic Data Interchange (EDI) Overview

- Components of EDI
  - ▶ Splitting of Messages / Logical Message Adapter
  - ▶ Deenveloping - handling a transaction inside an interchange
  - ▶ Validating Syntax / Syntax compliance checking
  - ▶ Rules Engine / content-based map detemination
  - ▶ Transformation
  - ▶ Functional Acknowledgment Processing
  - ▶ Enveloping - grouping transactions into interchanges
  - ▶ Parsing / Serializing
  - ▶ Message Repository - message repudiation, reconciliation
  - ▶ Trading Partner management

Overview

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WebSphere Data Interchange (WDI) is a Data Translation application: It operates on multiple hardware platforms including Windows 2000, AIX, and z/OS. It also can be used interactively in CICS on a z/OS machine.

Translation of messages, specifically EDI interchanges, involves some special processes. WDI calls these components or nodes. Splitting messages means separating interchanges. For example a file of messages may contain one or more EDI interchanges or XML documents.
Deenveloping means separating the transactions of an interchange into separate entities for processing. Validation performs a syntax check on the message or transaction to insure that the proper format and syntax is used.

WDI uses "content based routing", which means that WDI will look at the data and determine what kind of transformation has been previously defined and then use that. The Rules engine performs the determination. Transformation is the node where data is actually processed and the transformed data structure is created.

EDI has a built-in response flow. The initial response to an EDI Interchange is a Functional Acknowledgment.

Enveloping is the reverse of Deenveloping. Enveloping occurs when EDI is being created and a group of transactions destined for the same Trading Partner are wrapped with specific segments to identify the interchange.

Parsing is breaking down a message in EDI syntax to a workable structure and Serializing is taking an internal data structure and create it in EDI syntax.

EDI Documents are processed and usually stored in a Message Repository. This is done to insure that duplicates are not received or sent (repudiation) and that the Functional Acknowledgment flow has been followed (reconciliation).

Documents flow to and from Trading Partners, such as other businesses, and the specific rules of the agreement between two Trading Partners, for example delimiters to be used, is maintained in WDI.

Electronic Data Interchange (EDI) - Inbound
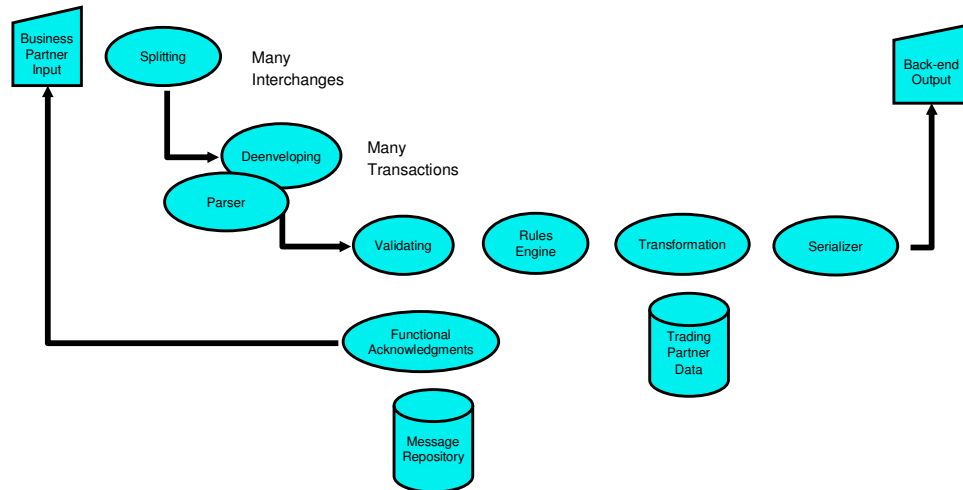
This diagram shows a flow of how typical data might flow through the EDI components. This is an inbound flow which is data coming to you from a Trading Partner external to your business.

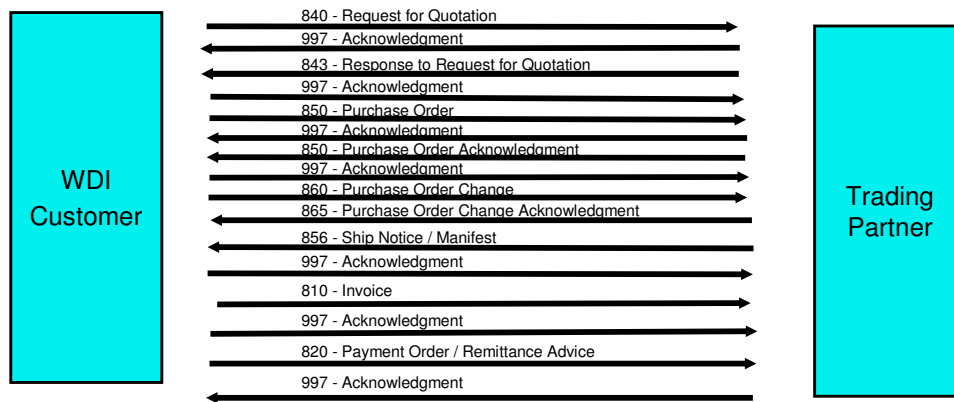A Data Mapping Tool is used to define the transformation and rules for the processing. WDI Client is used as the data mapping tool and operates on Windows platforms including WIN 98, 2000 and NT.

Electronic Data Interchange (EDI) - Outbound
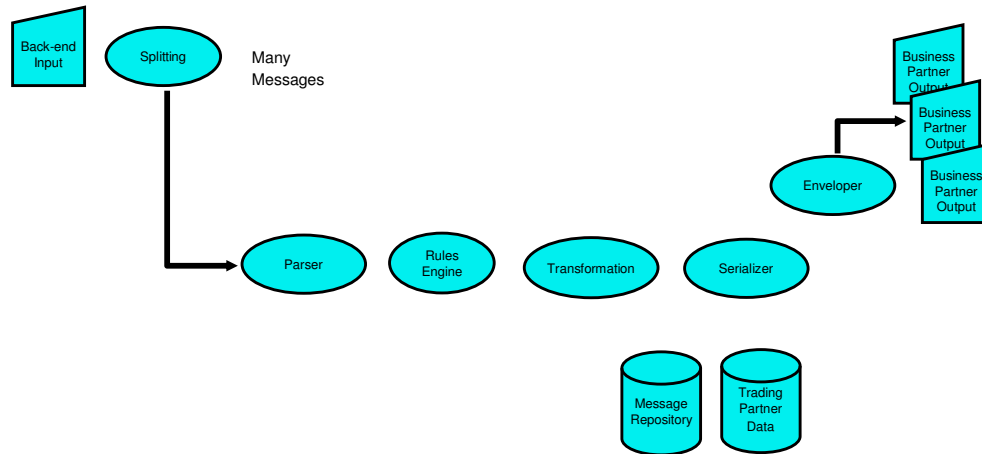
This is an example of an outbound flow. The intent is to take the data from your business processing and deliver EDI data to your external Trading Partners.

EDI Overview - Business Protocol

WDI Customer		Trading Partner
	840 - Request for Quotation →	
	← 997 - Acknowledgment	
	← 843 - Response to Request for Quotation	
	997 - Acknowledgment →	
	850 - Purchase Order →	
	← 997 - Acknowledgment	
	← 850 - Purchase Order Acknowledgment	
	997 - Acknowledgment →	
	860 - Purchase Order Change →	
	← 865 - Purchase Order Change Acknowledgment	
	← 856 - Ship Notice / Manifest	
	997 - Acknowledgment →	
	810 - Invoice →	
	997 - Acknowledgment →	
	820 - Payment Order / Remittance Advice →	
	← 997 - Acknowledgment	

The business protocol is the pattern of messages that flow back and forth between two Trading Partners to complete a business process. This is a typical flow for a Purchase Order.

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Section

WebSphere Data Interchange Overview

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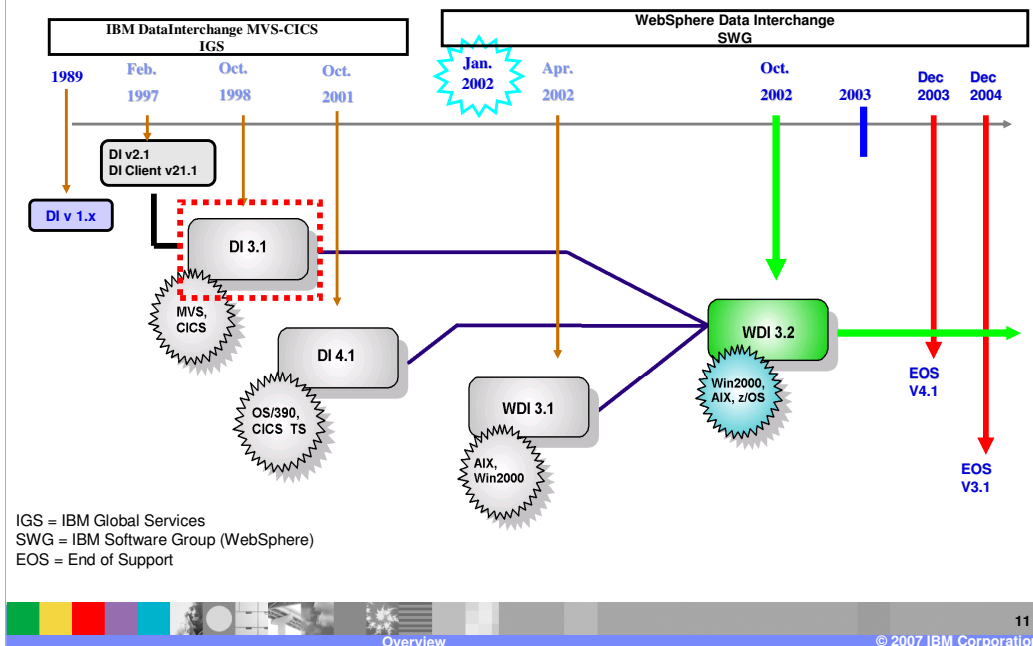This section provides an overview of WebSphere Data Interchange.

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WebSphere Data Interchange: Overview

- WDI is a Data Transformation application
- Allows for integration of EDI (electronic data interchange) into the
  - business process and
  - Internet-based Business to business (B2B) capabilities provided by the WebSphere family, for a seamless, integrated EDI Solution.

- WDI also transforms record oriented data into XML and vice-versa as part of an application integration strategy
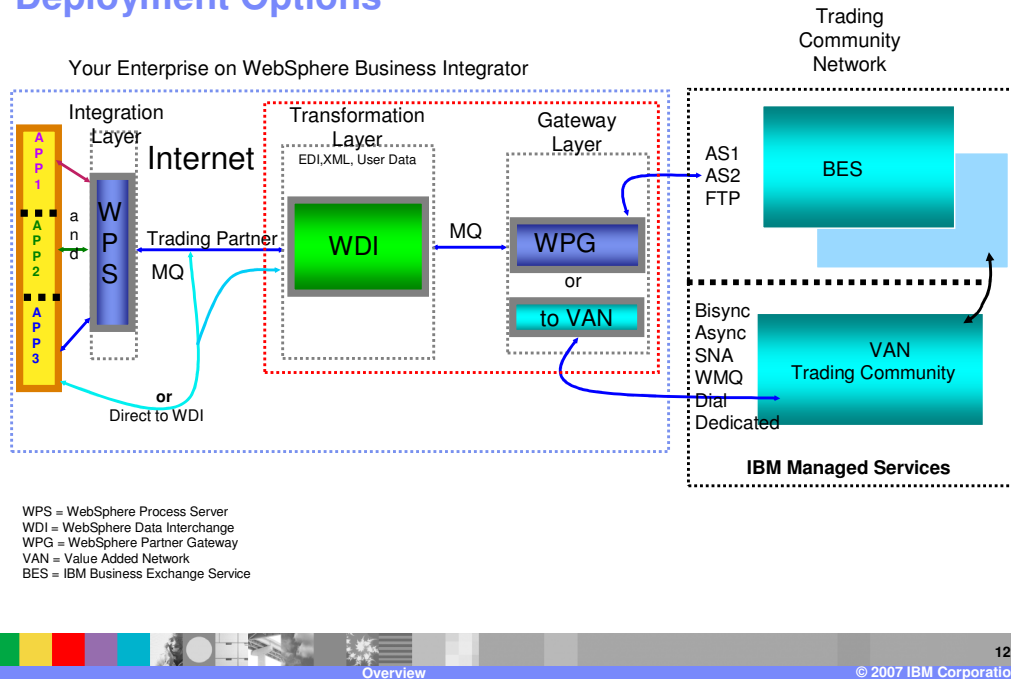
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WDI allows integration of EDI into your business process and provides a seamless, integrated EDI solution using the WebSphere family of products.

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Product Announcements: Chronology

IBM DataInterchange MVS-CICS IGS	WebSphere Data Interchange SWG

1989 Feb. 1997 Oct. 1998 Oct. 2001 Jan. 2002 Apr. 2002 Oct. 2002 2003 Dec 2003 Dec 2004

DI v2.1
DI Client v21.1

DI v 1.x

DI 3.1

MVS, CICS

DI 4.1

OS/390, CICS TS

WDI 3.1

AIX, Win2000

WDI 3.2

Win2000, AIX, z/OS

EOS V4.1

EOS V3.1

IGS = IBM Global Services
SWG = IBM Software Group (WebSphere)
EOS = End of Support

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DataInterchange MVS-CICS (DataInterchange) was first generally available (GA) in 1989 as a mainframe only, EDI translator. In January of 2002, DataInterchange became part of the Software Group which re-branding the product as WebSphere Data Interchange. Supported platforms now include Windows 2000, AIX and z/OS.

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Deployment Options

Your Enterprise on WebSphere Business Integrator

Trading
Community
Network

Integration
Layer

Internet

Transformation
Layer
EDI,XML, User Data

Gateway
Layer

APP 1
APP 2
APP 3

a n d

W P S

Trading Partner

MQ

WDI

MQ

WPG

or

to VAN

AS1
AS2
FTP

BES

Bisync
Async
SNA
WMQ
Dial
Dedicated

VAN
Trading Community

or
Direct to WDI

IBM Managed Services

WPS = WebSphere Process Server
WDI = WebSphere Data Interchange
WPG = WebSphere Partner Gateway
VAN = Value Added Network
BES = IBM Business Exchange Service

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This is an overview of WDI deployment with WebSphere Business Integrator (WBI), WebSphere Business Integration Connect (WBI-C), and legacy communications.

IBM WebSphere Business Integration Connect provides:

- Support for a wide range of industry standard protocols including RosettaNet, AS2, WebSphere MQ and XML

- Support for trading partner interactions over transports such as HTTP(S), FTP, Secure FTP and SMTP

- Support for multiple Security Standards including 3rd party certificate authorities from Verisign and Thawte, SSL support, and

- Non-repudiation as required for full AS2 compliance

- Extensible support for additional protocols and data handling

- Flexible Solution Management including support for integration with Tivoli

- Optional Community Integration services offering choices for Setup, Deployment and Management to ensure partners can be connected and integrated in a matter of days
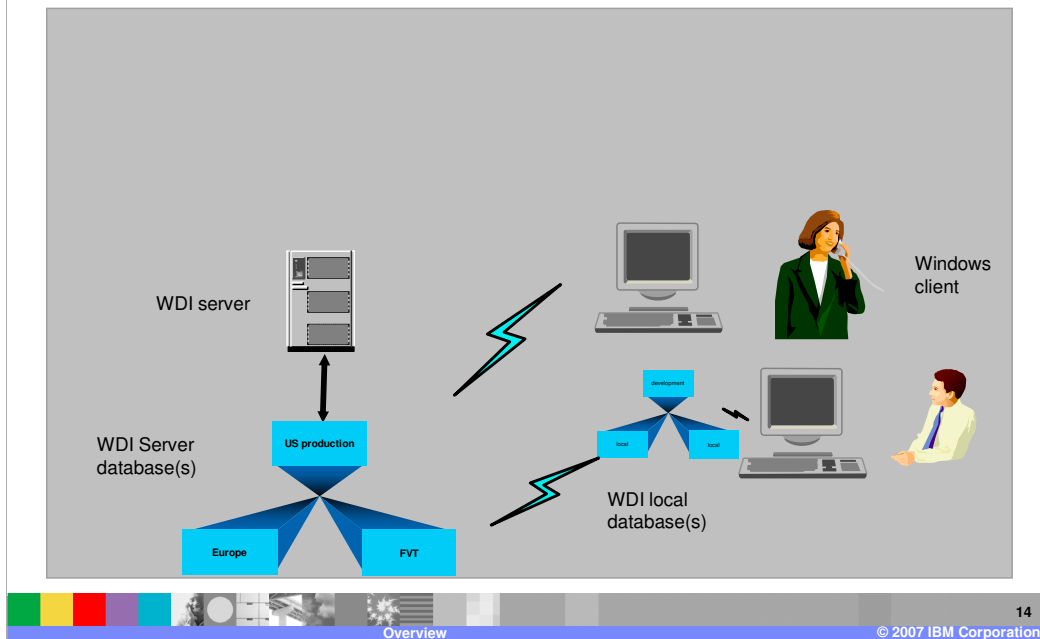
Section

WebSphere Data Interchange Components

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This section will review the WebSphere Data Interchange Components.

Components of WDI Offering

WDI server

WDI Server
database(s)

US production
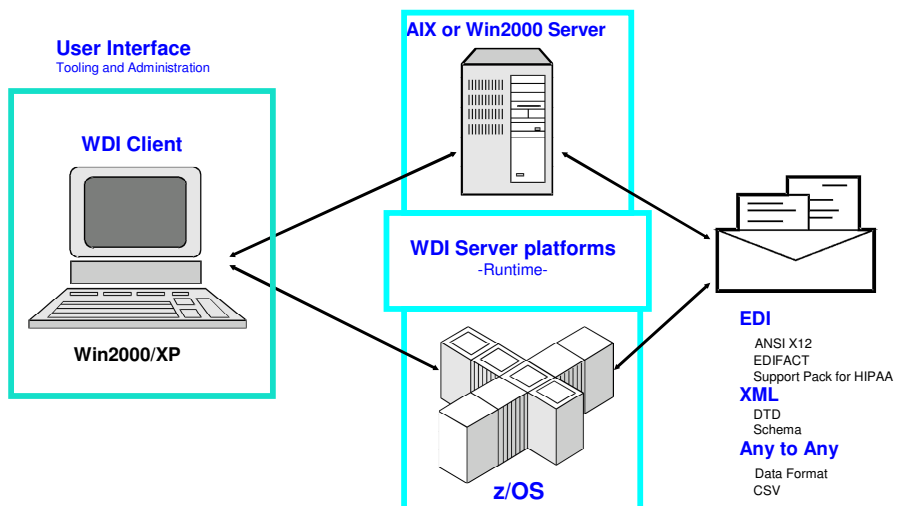
Europe

FVT

development

local

local

Windows
client

WDI local
database(s)

WDI is comprised of two loosely coupled components. The Client is a graphical user interface for specification of administrative definitions. A mapping tool for specification of the instructions used to transform data from one format to another, and a monitoring tool for viewing transformed data, used in problem determination and error resolution.

The Server is a command interpreter that interprets a command language into a series of functions to the processing, a processing engine that transforms data, and a router that moves the results of translation

WebSphere Data Interchange: Components

User Interface
Tooling and Administration

WDI Client

Win2000/XP

AIX or Win2000 Server

WDI Server platforms
-Runtime-

z/OS

EDI
ANSI X12
EDIFACT
Support Pack for HIPAA
XML
DTD
Schema
Any to Any
Data Format
CSV

The two main components of WebSphere Data Interchange are the Server (runtime) and WDI Client (tools & administration). DB2 is the required database for the server component and is included with WDI version 3.3 for Multiplatforms only.

WebSphere Data Interchange: Components
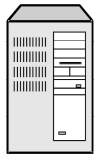
Main Components:

➢ **Data Mapping Tool**

- ► **WDI Client**
- ► *common user interface* for Multiplatforms and z/OS servers
- ► create and deploy maps, add Trading Partners

➢ **Data Translation application**

- ► **WDI Server (Windows 2000, AIX and z/OS)**
- ► Provides translation of data from one format to another i.e. EDI (X12, EDIFACT), XML or Application Data Formats (User Data)
  - ► Native application formats can be mapped directly to a standard, without intermediate formatting or programming steps
- ► Customize data standards to fit business needs
- ► Manage transactions securely and efficiently
- ► Utilize WebSphere MQ message queuing and other communications methods
- ► Integrate with existing applications such as WebSphere MQ Integrator

WDI Client

WDI Server

The data translation component operates on multiple platforms including Windows 2000, AIX, OS/390 and z/OS.

The data mapping tool, WDI Client, operates on Windows platforms including WIN 98, 2000 and NT.

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WebSphere Data Interchange: Components

- WDI Client
- Common user interface to WDI
- Windows 2000 or XP based, GUI application
  - ▶ Supports
    - Single user or multi-user environment
    - Stand-alone or client/server mode
      - – many clients can be connected concurrently to the same server
  - ▶ Features
    - – Source and Target based mapping
    - – Extensive Mapping Vocabulary
    - – Drag 'n Drop Mapping

WDI Client

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WDI Client is a cross platform, multi system user interface for WDI Server. For example: maps may be created and tested on a Window 2000 server and run in production on an AIX, OS/390 or z/OS platform.

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