



IBM Software Group

# IBM WebSphere Partner Gateway V6.1 Advanced and Enterprise Editions

## *Overview and New V6.1 Functions*



@business on demand.

© 2007 IBM Corporation  
Converted to video July 15, 2014

This presentation provides an overview and brief description of the architecture and new functions in WebSphere® Partner Gateway V6.1.

## Goals and Agenda

- Goals:
  - ▶ Provide high level overview of new features in WebSphere Partner Gateway V6.1
  - ▶ Provide a brief architecture overview
  
- Agenda
  - ▶ Overview
  - ▶ Architecture Overview
  - ▶ New V6.1 Features Overview
  - ▶ Summary and references

Note: The details of the new functions are provided in separate presentations



The goal is to provide an overview and a brief description of product architecture and to familiarize you with the new features of WebSphere Partner Gateway V6.1. The details of the new functions will be covered in other presentations. The agenda is shown here.

## Section

# *Overview*

This section provides an overview.

## WebSphere Partner Gateway: Overview

- Designed for exchange of business documents with partners
  - ▶ Supports many diverse protocol, transport, document-processing, and security requirements
- Allows integration of information
  - ▶ From community participants to back-end systems
    - For example, WebSphere Process Server or WebSphere Message Broker
- Provides a much better cost effective B2B integration environment than point to point integration
- WebSphere Partner Gateway V6.1 is the follow-on to WebSphere Partner Gateway V6.0 and WebSphere Business Integration Connect V4 product

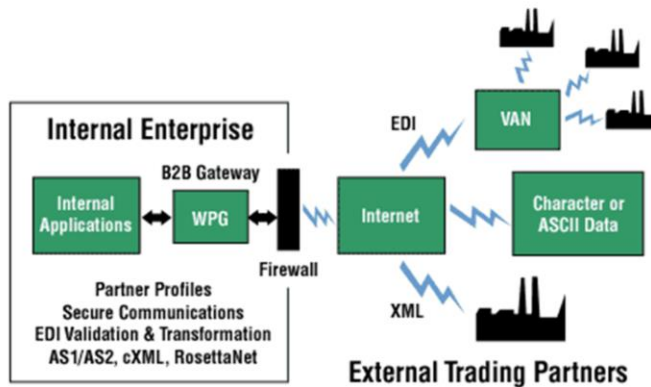


WebSphere Partner Gateway provides the hub functionality for trading electronic documents in a B2B interaction. Multiple business protocols such as applicability statement (AS), RosettaNet, and custom XML are supported and various transports, such as HTTP, FTP and JMS can be used.

Integration with back end systems such as WebSphere Message Broker or WebSphere Process Server can also be performed. In this case a trading partner (External Partner) sends a document to the hub to be processed by a back end system (Internal Partner). Likewise, a document can be sent from the back end system to an External partner. WebSphere Partner Gateway provides a better, more cost effective solution for B2B integration than that provided by point to point integration. Partner configuration for B2B exchanges are managed and security requirements enforced.

## Partner Integration

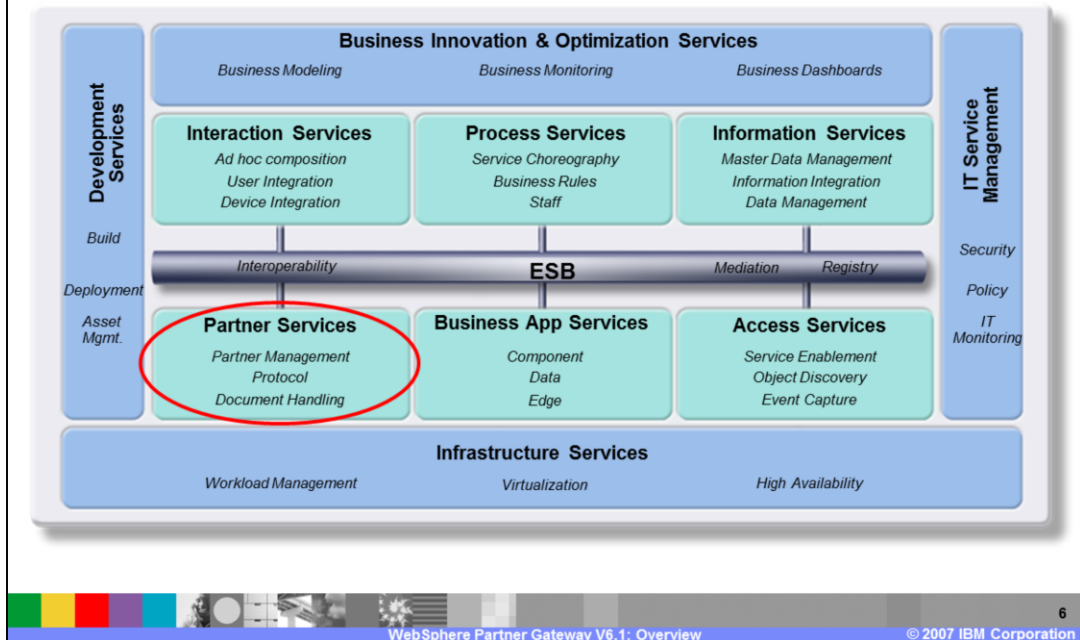
Integration of internal business processes with external partners is managed through WebSphere Partner Gateway at the enterprise edge



This graphic represents an enterprise communicating with multiple external partners, using a variety of business document types and utilizing WebSphere Partner Gateway as the B2B hub or gateway between the internal enterprise processes and external trading partners.

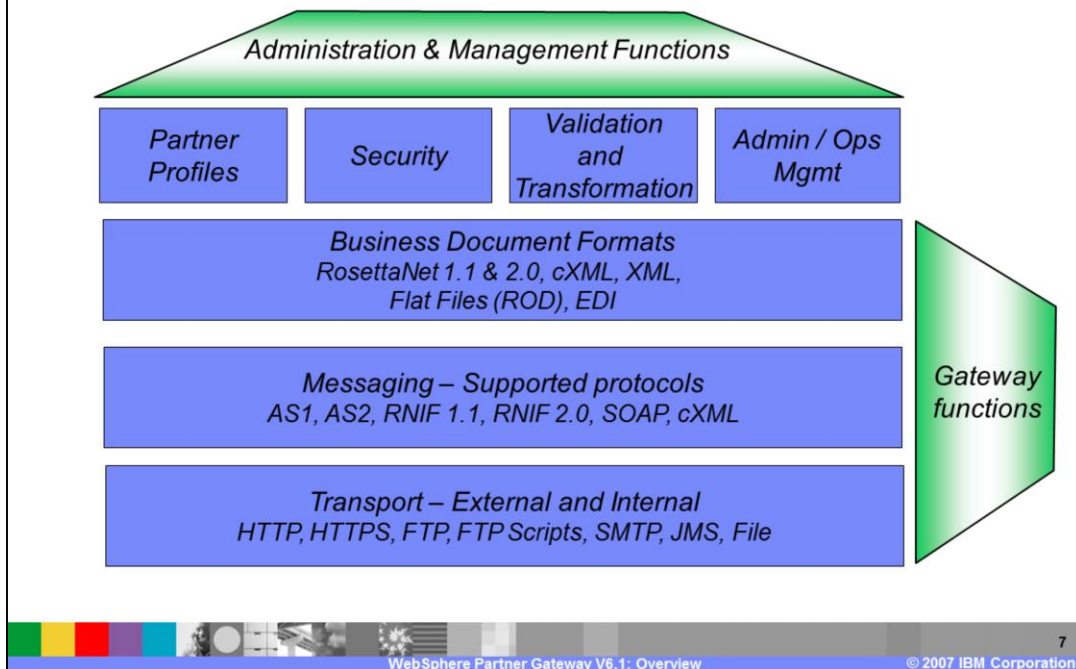
Subsequent slides provide more details on WebSphere Partner Gateway capability to provide functions needed for small to large B2B environments.

## WebSphere Partner Gateway in SOA Reference Architecture



WebSphere Partner Gateway is positioned to fill the Partner Services component of the SOA Reference Architecture, as shown in this slide.

## WebSphere Partner Gateway - Functions



This slide provides a high level view of WebSphere Partner Gateway hub Administration and management functionality.

The management function includes managing the trading partners and their profiles, including B2B capabilities, gateways, and users. Management of security includes Certificates used by the hub and the trading partners for those business protocols security, such as encryption and digital signatures, including Authentication and Authorization.

The hub also performs configuring validation and transformation of documents and other administration and operation functions for viewing processed documents and configuring alerts.

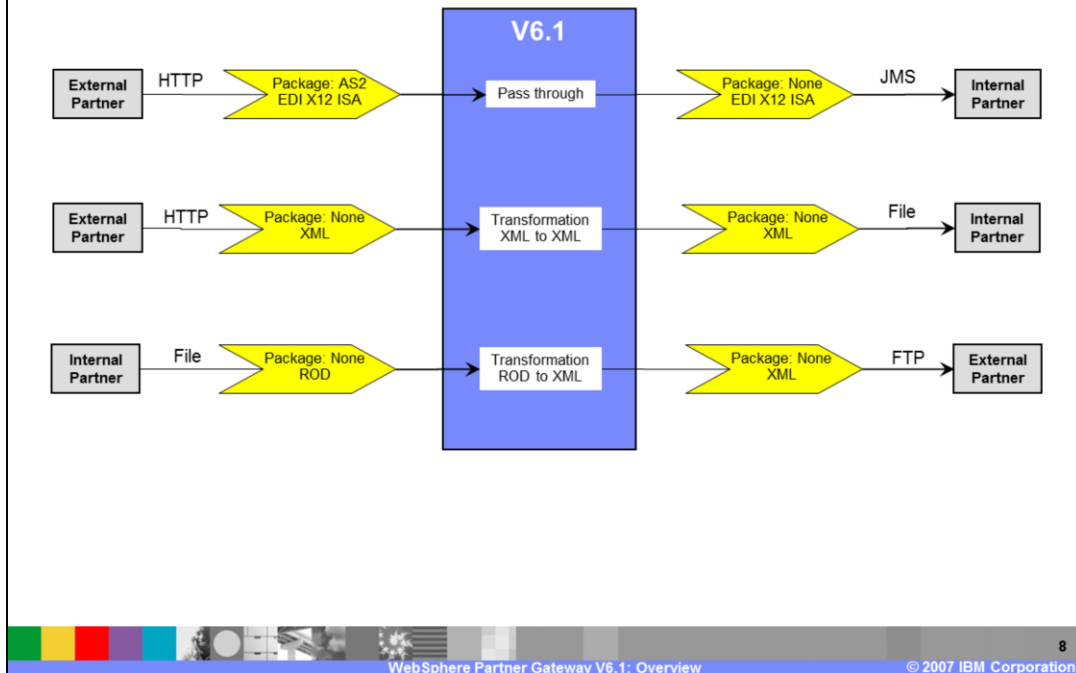
WebSphere Partner Gateway supports several business document formats, including custom XML, Flat files / Record Oriented data (ROD), and EDI. Along with native processing of EDI documents.

Several messaging protocols are supported , including AS1, AS2, RNIF, and SOAP over many transport protocols, including HTTP, HTTPS, JMS, FTP, FTP scripting and File. Support includes packaging and unpackaging, security for encryption, signatures, security for authentication and authorization, state management, retries, and non-

repudiation.



## Document Flows Examples



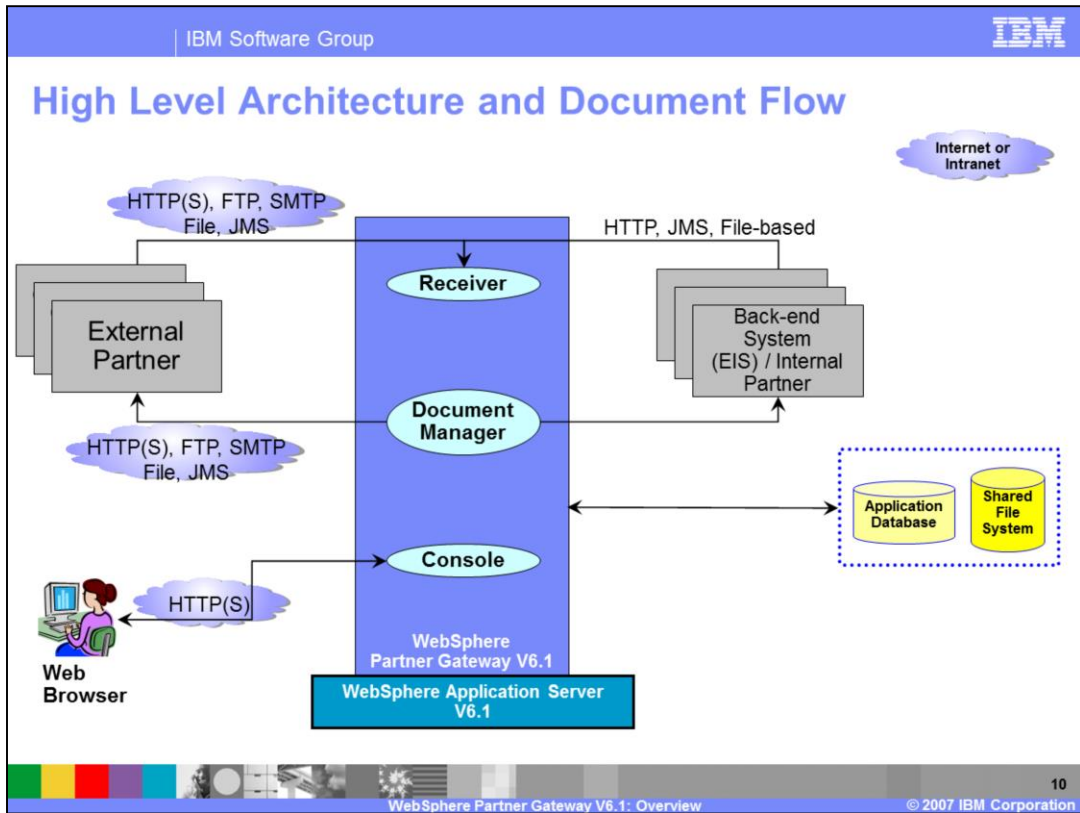
Example high level views are shown of document flows through WebSphere Partner Gateway for the ROD, XML and EDI document types. Also shown are the possible types of processing and conversion for the documents.

## Section

# ***Brief Architecture Overview***

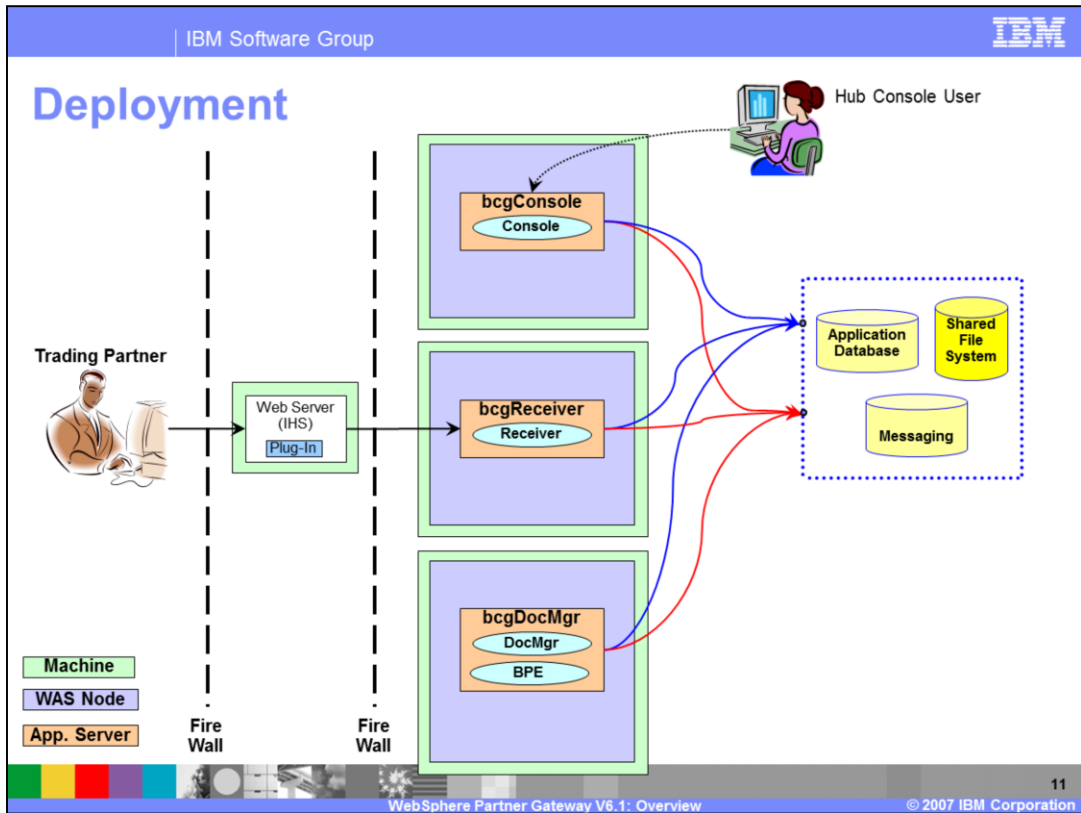


This section provides a brief overview of WebSphere Partner Gateway V6.1 architecture. A separate presentation provides more details on the architecture and components of the hub.



Shown here is a high level view of the architecture and the document flow through the WebSphere Partner Gateway hub components. This architecture is similar to V6.0, with 3 major WebSphere Partner Gateway components, the Receiver, the Document Manager and the Console. The receiver is the front end to WebSphere Partner Gateway, and it accepts and stores documents from partners or the back end system for further processing by WebSphere Partner Gateway. The document manager retrieves stored data, and processes and routes it to both partners and enterprise applications. Additionally, this component performs packaging, validation, enveloping, logging and other document related functions. The console provides a view of all B2B interactions, and allows creation and maintenance of various partner data, profiles, and certificates and provides a user interface for hub administration. WebSphere Partner Gateway requires a shared File system, such as Network Area Storage (NAS) used for common storage of documents. A Database is used to store hub configuration data, metadata, document status, activity logs, temporary store and other information. The Console and the Document manager interacts with the database to save or retrieve information. Documents can be sent by the external trading partners or internal trading partners (back end system). Once inside the hub, the document is processed based on the configuration of the hub for that type of document. The processed documents are then sent to the trading partners or to the back end systems. WebSphere Partner Gateway is a loosely coupled component architecture that enables very high scalability and high availability topologies. WebSphere Partner Gateway can be used alone to provide B2B connectivity to a partner, or you might choose to deploy it with other WebSphere Business Integration offerings to provide tighter integration with your enterprise applications. It supports JMS connectivity, HTTP/S, FTP, FTP Scripting and File-based between the gateway and external or internal partners. Not shown on this page, WebSphere Partner Gateway V6.1 also provides a graphical tool called the Data Interchange Service (DIS) client, which allows you to create the data dictionary,

validation maps, and transformation maps for the EDI, ROD and XML documents.



Hub components run within WebSphere Application Server V6.1 and can use different instances of the Application Server (as shown on this page) or share the same Application Server.

All instances share the same database, common file system and messaging. WebSphere Partner Gateway V6.1 provides some new deployment options, which are discussed later and in more detail in the Install and Topology presentation.

## Section

# ***WebSphere Partner Gateway V6.1 New Features Overview***



This section provides an overview of new features in WebSphere Partner Gateway V6.1.

## Deployment Changes

- WebSphere Partner Gateway V6.1 components (Console, Receiver and Document manager) are J2EE applications installed in single server or Network Deployment Cell of WebSphere Application Server V6.1
  - ▶ Provides several new options of having different topologies
- V6.1 can now exploit the capabilities of WebSphere Application Server Network Deployment, namely the clustering and central point of administration
- Use of embedded messaging instead of WebSphere MQ (WMQ)
  - ▶ Reduces a product dependency.
  - ▶ Distributed has separate messaging cluster, easily enabling HA.
  - ▶ Requires a separate messaging (MAS) database.
- Other – Help System is now embedded in the WebSphere Partner Gateway Console, no separate start up



WebSphere Partner Gateway V6.1 hub components, (the Receiver, Console and Document Manager) are J2EE applications running in a single server or Network Deployment cell of WebSphere Application Server V6.1. These hub components can now take better advantage of underlying WebSphere Application Server infrastructure, including the clustering capabilities and also provide several new options for your deployment topologies, which are discussed in the Install and Topology presentation. The other change is the use of embedded messaging within the WebSphere Application Server for internal messaging between the hub components. In V6.0, WebSphere MQ provided that messaging function. WebSphere Partner Gateway V6.1 does not require WebSphere MQ for internal messaging, but you can still use WebSphere MQ for external connection. The WebSphere Application Server Network Deployment messaging cluster capability provides high availability for WebSphere Partner Gateway messaging. Messaging cluster is now used for High Availability. By adding WebSphere Partner Gateway Messaging Application Servers (MAS) additional backup machines are available. Only one MAS server is actively processing messages at any given time. A separate messaging database is required for persistence and sharing among the multiple hub components. The install presentation goes into more details concerning the deployment changes.

## Install Enhancements

- Uses WebSphere Application Server V6.1 or WebSphere Application Server V6.1 Network Deployment - Embedded WebSphere Application Server is no longer used
- Three different install options available:
  - **Simple Mode** option: Hub components installed on a single server, single machine
    - ▶ Multiple machines are **not** supported
    - ▶ Meant for development, tech sales, low volumes
  - **Simple Distributed Mode** option: Hub components installed on a single cluster in a ND Cell, and multiple machines can be used for scalability
    - ▶ Similar to Simple Mode but multiple machines supported in a Network Deployment Cell
    - ▶ Hub components are installed on a cluster and hence can be scaled up
    - ▶ Messaging cluster is defined
  - **Full Distributed Mode** option: Different hub components installed on different clusters within a ND Cell and multiple servers and machines can be used for scalability
    - ▶ When not scaled, this topology most closely resembles WebSphere Partner Gateway V6.0
    - ▶ Each hub component installed in its own cluster and can be scaled independently
    - ▶ Messaging cluster is defined
- Removed RosettaNet and SMTP Server panels from install
  - ▶ Configuration now done in hub Console

WebSphere Partner Gateway V6.1 makes use of WebSphere Application Server V6.1 and WebSphere Application Server V6.1 Network Deployment (ND) infrastructure. The embedded version of WebSphere Application Server is no longer supported. Several new installation options are available in WebSphere Partner Gateway V6.1. The simplest is the Simple mode deployment option, where all the hub components are installed on a single Application Server. Multiple machines or Application Servers are not supported. This option can be used for development, technology demos and low volumes. Next is the Simple distributed mode option, which is similar to Simple mode and installs all the hub components on a single server. The difference is that the single server is part of a cluster in a Network Deployment cell. You can then scale up by adding additional servers to the cluster to run additional copies of the hub components, providing scalability and high availability. The next option is the Full Distributed mode, which provides the most flexible and scalable environment. You can install each hub component in its own cluster in a Network Deployment cell, allowing you to scale each hub component independently of the other components. This option is similar to WebSphere Partner Gateway V6.0. The Simple and Full Distributed mode creates a Messaging cluster for the internal messages that can be scaled up for high availability. These installation options provide you with the flexibility required for your environment. Another installation enhancement is the removal of the RosettaNet and SMTP Server configuration panels during installation. Instead, this configuration can be done through the hub Console.



## Supported Protocols

Business Protocols	Transport Protocols	Data Types
<ul style="list-style-type: none"> <li>▪ AS1, AS2 and ★AS3</li> <li>▪ RosettaNet 1.1 and 2.0</li> <li>▪ SOAP 1.1 (Web services) with WSDL 1.1 support</li> <li>★SOAP with Attachments</li> <li>▪ cXML</li> <li>★CIDX</li> <li>★ebXML using ebMS (messaging service)</li> </ul>	<ul style="list-style-type: none"> <li>▪ HTTP or HTTPS</li> <li>▪ FTP or FTPS</li> <li>★FTP(S) scripting (enhanced)</li> <li>▪ JMS</li> <li>▪ SMTP</li> <li>▪ File-directory-based</li> <li>★IPv6</li> </ul>	<ul style="list-style-type: none"> <li>▪ EDI X12 and EDIFACT</li> <li>▪ XML</li> <li>★Enhanced Custom XML</li> <li>▪ Flat files (used to be called Record Oriented Data or ROD)</li> </ul>

★ = New in V6.1

WebSphere Partner Gateway V6.1 supports many Business Protocols, Transport Protocols and Data types, including some new ones, as shown in the table. For the AS Business protocol, AS3 (AS over FTP) support is added. MDN search support is added to the AS Viewer to show documents by MDN status (waiting for MDN, error disposition). SOAP documents were supported in V6.0, but in V6.1, SOAP documents with attachments can be processed. Chemical Industry Data Exchange (CIDX) is now supported, using RNIF 1.1 packaging with some variations. Another new support is for ebMS and ebXML, which are Message Service mechanisms providing a standard way to exchange business Messages among ebXML Trading Partners. The ebXML Messaging Service provides a reliable means to exchange business Messages without relying on proprietary technologies and solutions. Acknowledgments, retries and security are part of the standard and an ebXML Message contains structures for a Message Header (necessary for routing and delivery) and a Payload section. Collaboration Protocol Agreement (CPA) can be imported to configure WebSphere Partner Gateway. On the new Transport Protocols, new commands are added to FTP Scripting for the sender to create temporary files and rename files. Though not a new protocol, WebSphere Partner Gateway V6.1 supports IPv6 for expanded internet protocol addressing. For the data types, Custom XML documents support has been enhanced to include better organization, full XPATH expression support, search fields, user defined attributes and synchronous support.

## Security Changes

- Support for WebSphere Application Server container based authentication for WebSphere Partner Gateway administration
  - ▶ This allows WebSphere Partner Gateway to use the WebSphere Application Server supported user registries for authentication, such as LDAP, for centralized authentication.
  - ▶ Administrator selects either to use the WebSphere Application Server container based authentication or WebSphere Partner Gateway database for authentication
  - ▶ Adds unique requirement that the user id must be unique across all partners
- New user group, “Hubadmin”, for hub administrators
  - ▶ In WebSphere Partner Gateway V6.0, there was a single “hubadmin” super user
  - ▶ WebSphere Partner Gateway V6.1 will allow multiple users to have the ability to be hub administrators
  - ▶ Resend and Gateway views expanded to allow non-hub administrator



WebSphere Partner Gateway V6.1 can now use WebSphere Application Server container-based authentication, allowing you to use a central LDAP server for centralized authentication. In this mode, WebSphere Partner Gateway lets WebSphere Application Server do the authentication. WebSphere Partner Gateway V6.1 continues to support its own authentication mechanism using the database. You can select the authentication to be either to the Application Server container-based or the WebSphere Partner Gateway database. WebSphere Application Server user registries can be OS, LDAP or custom user registry. In addition, the new federated user registry in WebSphere Application Server V6.1 can also be used. The support of WebSphere Application Server container-based authentication brings in other requirements and useful enhancements. Since users could be saved in a common LDAP directory, they must be unique across all partners. In WebSphere Partner Gateway V6.0 console, the user “hubadmin” is considered to be a super user one step above the administrator group. New in WebSphere Partner Gateway V6.1 is the addition of a “Hubadmin” group, which allows multiple users to participate in WebSphere Partner Gateway console administration. Also in WebSphere Partner Gateway V6.1, other users can be authorized by the hubadmin to perform functions that could only be done by the hubadmin in V6.0. An example of this is that the Resend and Gateway views are expanded to allow users other than hub administrators. More details are provided in the Security enhancement presentation.

## Tighter Integration with WebSphere Application Server infrastructure

- Exploitation of WebSphere Application Server Network Deployment for clustering and central point of administration for all the WebSphere Partner Gateway servers in a cell
- Central management of hub components through the WebSphere Application Server Administration console
  - ▶ For WebSphere Application Server ND, Deployment Manager is now used
- Use of WebSphere Application Server Logging and Tracing for hub components
  - ▶ Fine grain tracing (by class) using WebSphere Application Server administration console.
  - ▶ Tracing by component groups.
- Use of underlying WebSphere Application Server security container authentication for administration and inbound Web Services requests.
- WebSphere Application Server embedded messaging used for internal messaging instead of WebSphere MQ



WebSphere Partner Gateway V6.1 is more tightly integrated with the underlying WebSphere Application Server. When used with Network Deployment, WebSphere Partner Gateway V6.1 can exploit the clustering capabilities to provide a scalable and highly available environment. Hub components can now be managed through the WebSphere Application Server administrative console. WebSphere Partner Gateway V6.0 logging and tracing is replaced in V6.1 and now uses the Application Server logging and tracing capabilities, providing much more granular and integrated logging and tracing capabilities. WebSphere Partner Gateway V6.1 can use the WebSphere Application Server container-based authentication, providing the option of using a common LDAP registry. Finally, WebSphere Application Server embedded messaging is used for internal messaging between the hub components, eliminating the need of WebSphere MQ for internal messaging.

## Migration Enhancement

- Migration of WebSphere Partner Gateway artifacts using export and import of partner definitions from one WebSphere Partner Gateway configuration to another

Another useful function added to WebSphere Partner Gateway V6.1 is the partner migration from one WebSphere Partner Gateway V6.1 instance to another. Partner definitions can be exported from one instance and imported into another instance, eliminating the need to manually re-enter configuration data from a test to a production system.

## Other Enhancements

- Selective archive based on partner and document type
- Preinstalled GA02 Support pack
- Console administration of system configuration data replaces the previous method of using properties files
  - ▶ Allows for central configuration
- New Alert notification mode to all notification to all related parties (source and target participants) or all subscribed contacts
- Search and sort in AS Viewer and Document Viewer
- Document Viewer has additional User-defined search fields
- Non-repudiation by trading partner level and Document Type
- Reorganization of Document Definition attributes
- New Document Definition attributes for use with User Exits
- Consistent terminology to eliminate ambiguity

Listed on this page are some other useful enhancements, many of them covered in separate presentations. Archiving has been improved so that what is archived can be by partner and document type. WebSphere Partner Gateway V6.0 GA02 Support pack was to help automate configuration when importing data from the DIS Client (part of the WebSphere Partner Gateway V6.0 EDI support) is now included in V6.1. Previously, most of the system configuration data was stored in property files. This has now been consolidated to a central global place in the database and administered through the hub Console. You can still change configuration locally at the server. Previously, to notify all interested parties (Source partner, Target partner, and Hub owner) separate alert definitions had to be defined. Now there is an option for all interested parties, which will automatically cause alerts to be sent to all subscribers for the Source partner, Target partner, and Hub owner. Search has been enhanced, now allowing you to search and sort by the document id in both the Document Viewer and the AS Viewer. The Document Viewer has ten additional user-defined search fields. During runtime the values for these fields can be populated either through Custom XML processing or User Exits. Non-repudiation is now a document definition attribute that can be configured at the document definitions, B2B capabilities or connections. Document Definition attributes have been reorganized by function/category. New document definition attributes are added for providing configuration values to User Exits. Finally, some of the terminology has been changed to eliminate ambiguity.

## Performance Enhancements

- Increased document throughput
- Decreased memory requirements
- Reduced file I/O (Eliminated internal vmd & vhd files)
- Decreased database processor usage

Performance enhancements have been made to WebSphere Partner Gateway V6.1. Document throughput has been increased and memory requirements have been decreased, especially for installing multiple hub components on one machine by using the same Application Server. Fewer files are written to the file system and the database processor usage is reduced.

## Integration with Other WebSphere Products

- Support for WebSphere TX (Transformation Extender) through user exits
  - ▶ WebSphere TX provides the transformation engine for data transformation



WebSphere Partner Gateway V6.1 can now integrate with WebSphere Transformation Extender through user exits or handlers function. WebSphere Transformation Extender provides a very powerful engine for any to any data transformation. WebSphere Partner Gateway V6.1 contains sample user exit programs that can be used as the starting point for the integration.

In WebSphere Partner Gateway V6.0.2, there was support for integration with WebSphere Process Server and that support continues in WebSphere Partner Gateway V6.1.

## Section

# ***Summary and References***

This section contains a Summary and References.



## Summary

- Use WebSphere Partner Gateway to enable B2B communication with your business partners
- Architecture changes
  - ▶ The Receiver, Document Manager and Console are J2EE applications
  - ▶ Exploitation of WebSphere Application Server Network Deployment
  - ▶ New deployment / installation options
    - These can be installed in single server/single machine
    - Multiple instances in single server/multiple machine
    - Multiple server/ multiple machine to provide deployment flexibility
  - ▶ Data flow changes
    - Receiver performs general role of the DAE
    - VMD and VHD files eliminated
    - GW.sent folder no longer used
- New WebSphere Partner Gateway V6.1 features include:
  - ▶ Better deployment options and infrastructure management
  - ▶ Additional document support such as ebMS, CIDX, SOAP with Attachments, Custom XML and AS3
  - ▶ Enhanced Document Viewer with sorting and searching
  - ▶ Enhanced AS Viewer support for MDNs
  - ▶ Partner migration capability from Test to Production

Many new functions and enhancements have been added to WebSphere Partner Gateway V6.1.

Exploitation of WebSphere Network Deployment for scalability and high availability provides some interesting and useful deployment options.. The data flow has been changed to improve performance and reduce read/write operations on the files.

Support for new business protocols, including CIDX, ebMS, AS3 and others have expanded the overall support of different business protocols, transport protocols and data types.

There have been several usability enhancements added to WebSphere Partner Gateway V6.1

Many of these new functions are discussed in detail in other presentations.

## References

- **WebSphere Partner Gateway Documentation**
  - ▶ <http://www.ibm.com/software/integration/wspartnergateway/library/infocenter>
    - Integration Guide discusses the different deployments and migration issues.
- **WebSphere Partner Gateway Support – Technotes, Fix packs, SupportPacs**
  - ▶ <http://www.ibm.com/software/integration/wspartnergateway/support/>
- **WebSphere Application Server Documentation**
  - ▶ <http://www.ibm.com/software/webservers/appserv/was/library/>
- **WebSphere Application Server on IBM Education Assistant**
  - ▶ <http://www.ibm.com/software/info/education/assistant/>
- **Redbooks**
  - ▶ <http://www.redbooks.ibm.com/>



Some helpful references are listed on this page.