



IMS SOA support and the IMS Enterprise Suite



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IMS is SOA Enabled with Solutions for Distributed, Integrated Access

- **Protecting customer investments by enabling access to IMS transactions and data**
 - Designed to support open integration technologies
 - Modernize IMS transactions and data
- **Fully integrating with WebSphere and Tools and utilizing a common programming model for a service-oriented architecture (SOA) based on standards**
- **Encouraging new application development by supporting standards**
 - **Java for rapid application development**
 - **XML for clean/structured documents with powerful views/search**
 - **SOAP for structured info exchange in loosely-coupled distributed environment**

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Key Message: IMS is SOA Enabled.

IMS distributed, integrated on demand solutions protect customer investments by enabling access to IMS transactions and data. These solutions are designed to support open, integrated technologies and modernize use of IMS transactions and data.

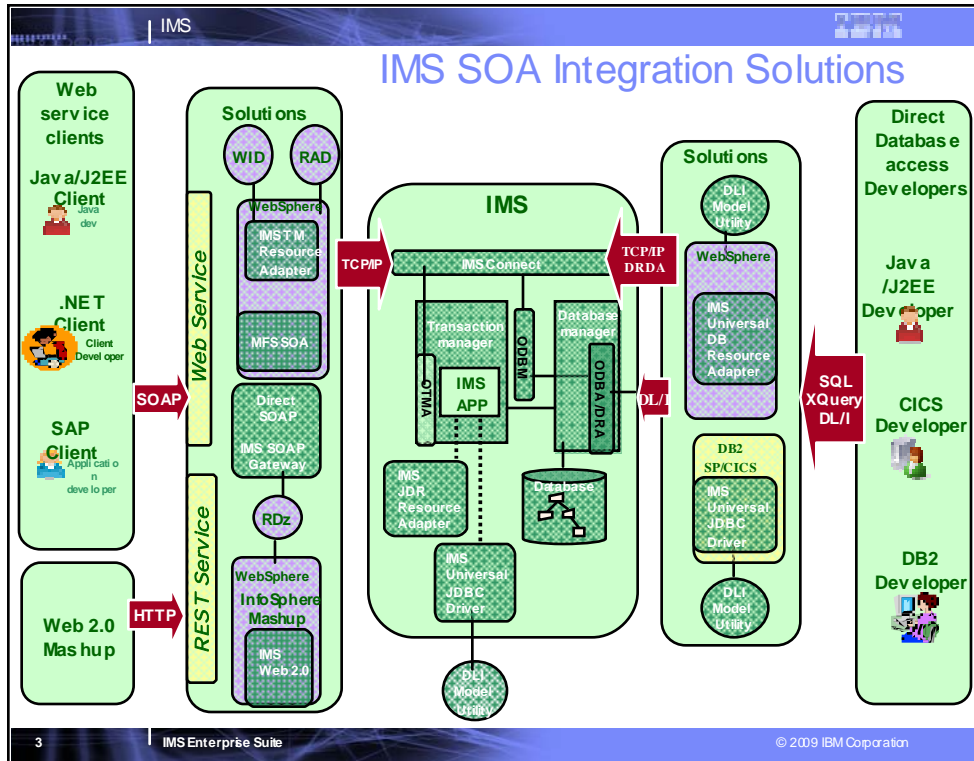
These solutions fully integrate with WebSphere and industry tooling. They utilize a common programming model for a service-oriented architecture (SOA), based on standards, such as XML, SOAP, Java, JDBC, etc., and new ones as they develop.

- Java can be used for rapid application development of new applications that access IMS transactions and data, and for new applications that run under IMS control. It offers reuse of applications in a variety of environments. And it leverages standards, such as Java Connectivity Architecture (JCA) for enhanced IMS application access and JDBC for enhanced IMS data access.

- XML allows us to create clean, structured documents with powerful views and search capabilities. It can be used for data exchange of documents containing structured and non-structured information from a variety of sources. And it is hierarchical, a natural fit for IMS, ensuring the ultimate performance our clients expect.

- SOAP (simple object access protocol) is an XML based standard for exchanging structured information in a loosely coupled distributed environment. It is platform-neutral and can communicate with and take advantage of individual functions of distributed applications

Support of this advanced technology would then encourage new application development and new application developers.



IMS applications and data are plugging in, using standard interfaces. Support is also being provided along with development tools to enable new application development in IMS and for access to/from IMS applications

These solutions leverage IMS Connect (they are all IMS Connect clients) which is the TCP/IP gateway to IMS TM and IMS DB. The IMS TM resource adapter is a JCA resource adapter that offers support to access existing IMS transactions (in any language by the way – including the new Java technology we have introduced in IMS) as either callable web services, EJBs, or even from html pages and servlets. The tooling used in this solution is either RAD or WID and it will take a definition of the input/output messages in either MFS, COBOL, C, or PL/I and generate all of the necessary artifacts and code. The IMS SOAP gateway offers direct SOAP access to existing IMS transactions. It is a non-WebSphere based solution so doesn't require any sort of J2EE container. There is tooling specific to this solution in RDz that will consume input/output message definitions and once again generate all of the necessary artifacts for exposing an IMS transaction as a callable SOAP service. In addition to these solutions, IMS now provides an API for direct access to IMS Connect which simplifies the development process for customers to write their own applications to access IMS through IMS Connect.

We have also introduced several solutions for the DB side of IMS. The DB based solutions are focused on new IMS application development. These solutions offer direct IMS database access from a variety of environments. IMS needed to allow J2EE (WebSphere), CICS, DB2, and even IMS developers the ability to access IMS database assets using industry standard programming models and APIs. As much of the new technology is centered on Java as the programming language it was imperative for IMS to also provide support for new application development using Java. The Java libraries offer a JDBC driver for IMS capable of processing both SQL and XQuery expressions. JDBC is an industry standard database API and SQL and XQuery are industry standard query languages.

Continuing on with Emerging Technologies...

Addressing IMS SOA Requirements

- Extend access to IMS applications/data
- Enhanced IMS application development/deployment
- Provide easier to use interfaces, APIs
- Continue to enrich functionality in SOAP, XML, and IMS WS*
- Provide additional support with WebSphere/Rational tools
- Simplify Installation

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We are continuing to extend access to IMS applications and data to enable IMS as the SOA integration focal point for you with:

- Enhance access and encouraging the growth of new client applications for IMS
- MashupHub support for IMS data (in addition to the Transaction access provided earlier)
- IMS Connect Enhancements of availability, usability and scalability.
- Open Transaction Manager Access (OTMA) enhancements to improve storage utilization, reduce dependency on RRS, enhanced Security.
- Open Database Access

SOAP, XML, and IMS Web Services and other standards support, enhanced MFS BPEL support for WebSphere Integration Developer (WID) and Websphere Process Servers (WPS).

We also plan to continue to provide enhanced **WebSphere and Rational** Tools for IMS application development and enablement.

And we are continuing to simplify installation

IMS Enterprise Suite Version 1 Release 1
 Announce Oct 27, 2009 for General Availability Nov 6, 2009
 Product ID 5655-T60 (\$0), S&S 5655-T61(\$0)
 Also downloadable from IMS SOA Integration Suite

Base Content

Lowering Costs, Opening Up IMS Applications and Data with innovation through:

Business Flexibility.

- Expand Java Application Development with Java Callout
- Ease access with Connect API for Java and for C
- Extended Standards and Tools for SOA with SOAP Gateway
 - WS-Security
 - Business Event support for WebSphere Business Events and WebSphere Business Monitoring tools
- Ease Application Development and Data Administration with DLI Model Utility plug-in
- Expanded Graphical Data Functionality

Simplification:

- Ease Installation with SMPe and Installation Manager support
- Simplify Interface with GUI Eclipse PlugIn
- Streamline open source access

Migration

Upgrade/Coexistence for IMS Enterprise Suite from
 IMS 10 DLI Model Utility plug in
 IMS SOAP Gateway 10

Publications

Announce Letters:

- o 209-350 (US)
- o A09-1196 (Canada)
- o ZP09-0409 (EMEA)
- o AP09-0339 (AP)

IMS Enterprise Suite Program Directory (G110-8816-00)
 IMS Enterprise Suite License Information (GC19-2807-00)

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Key Message: IBM continues to enhance IMS, addressing customer requirements, with the IMS Enterprise Suite

IMS Enterprise Suite Version 1 Release 1 (V1.1) with product numbers 5655-T60, and 5655-T61 (for service and support) announces on 10/27/09 its General Availability of 11/6/09. It features independent components that extend IMS access and use industry standard tools/interfaces to modernize/speed application development/deployment, enrich functionality and ease installation and use.

IMS Enterprise Suite V1R1 is a separate, no charge, product that provides enhanced IMS application development and integration. It is a collection of IMS middleware functions and tools that support your IMS on demand systems and your distributed IMS application environment. IMS Enterprise Suite V1.1 components are designed to enhance your use of IMS applications and data. In this initial release of the suite, components deliver innovative new capabilities for your IMS environment that enhance connectivity, expand application development, extend standards and tools for a Service Oriented Architecture (SOA), ease installation, and provide simplified interfaces. It includes the JMS API open source used for IMS Java application callout, the Connect API for Java and for C (though C support is being provided through the service process), the IMS SOAP Gateway for enhanced connectivity to/from IMS applications and data along with its open source and enhancements for WS-Security and Business Events, and the DLI Model Utility plug in, with its enhancements, and required open source. Also provided is the Installation Manager and SMP/E support to ease installation on the distributed and z/OS platforms.

IBM is providing IMS solutions that ease integration with new technology for a service oriented architecture – focusing on open, distributed connectivity, expanded application development access support, extended Web Services and connectivity for SOA. We are also providing solutions that help simplify installation and management.

Migration support is provided to the IMS Enterprise Suite from both the IMS SOAP Gateway 10 and the IMS 10 DLI Model Utility. Migration support will be provided for z/OS and AIX environments. For Windows environments, instructions will be provided.

The following publications are provided for IMS Enterprise Suite V1.1:

- IMS Enterprise Suite Program Directory (G110-8816-00)
- IMS Enterprise Suite License Information (GC19-2807-00)

IMS Enterprise Suite V1.1 has installs-based pricing. It is a no-cost product for unlimited installs.

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IMS Enterprise Suite Version 1 Release 1

Hardware Requirements	Software Requirements
<p>Any 64-bit IBM processors capable of running z/OS V1.9 for functions running on z/OS.</p> <p>Workstations capable of running Linux, AIX, or Windows XP for functions running on these operating systems</p>	<ul style="list-style-type: none"> ➤ z/OS V1.9 (5694-A01) or later is required, for those functions running on z Servers. ➤ Connect API for Java runs on Windows and z/OS, with IMS 10 or later and requires JDK/JRE V5 or later ➤ Connect API for C runs on Windows, with IMS 10 or later and is being delivered through the service process ➤ JMS API open source runs on z/OS with IMS 10 or later ➤ SOAP Gateway runs on z/OS, zLinux, AIX, or Windows and with RDz 7.6 or later. <ul style="list-style-type: none"> ○ Base function runs with IMS 10 or later ○ WS-Security runs with IMS 11 or later ○ Business Events runs with IMS 11 or later and with WebSphere Business Events 6.2 or WebSphere Business Monitor 6.2 ➤ DLIModel utility plug-in runs on Windows XP and Red Hat Linux, with IMS 10 or later.

Additional line item requirement information in the IMS Enterprise Suite Program Directory

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Hardware requirements

IMS Enterprise Suite V1.1 (5655-T60, 5655-T61) operates on the following hardware:

Any 64-bit IBM processors that are capable of running the required z/OS V1.9 for functions that are to run on z/OS.

Workstations capable of running Linux, AIX, or Windows XP for functions that are to run on these operating systems.

Additional line item requirement information is provided in the IMS Enterprise Suite Program Directory

Software requirements

IMS Enterprise Suite V1.1 (5655-T60, 5655-T61) component function operates with IMS Version 10 (5635-A01) and/or IMS Version 11 (5635-A02), with the following software requirements:

z/OS V1.9 (5694-A01) or later is required, for those functions running on z Servers.

IMS Enterprise Suite DLIModel utility runs on Windows XP, and Red Hat Linux with IMS Version 10 or later.

IMS Enterprise Suite JMS API open source runs on z/OS with IMS Version 10 or IMS Version 11 or later.

IMS Enterprise Suite SOAP Gateway runs on z/OS, zLinux, AIX, or Windows.

Base function runs with IMS Version 10 or later.

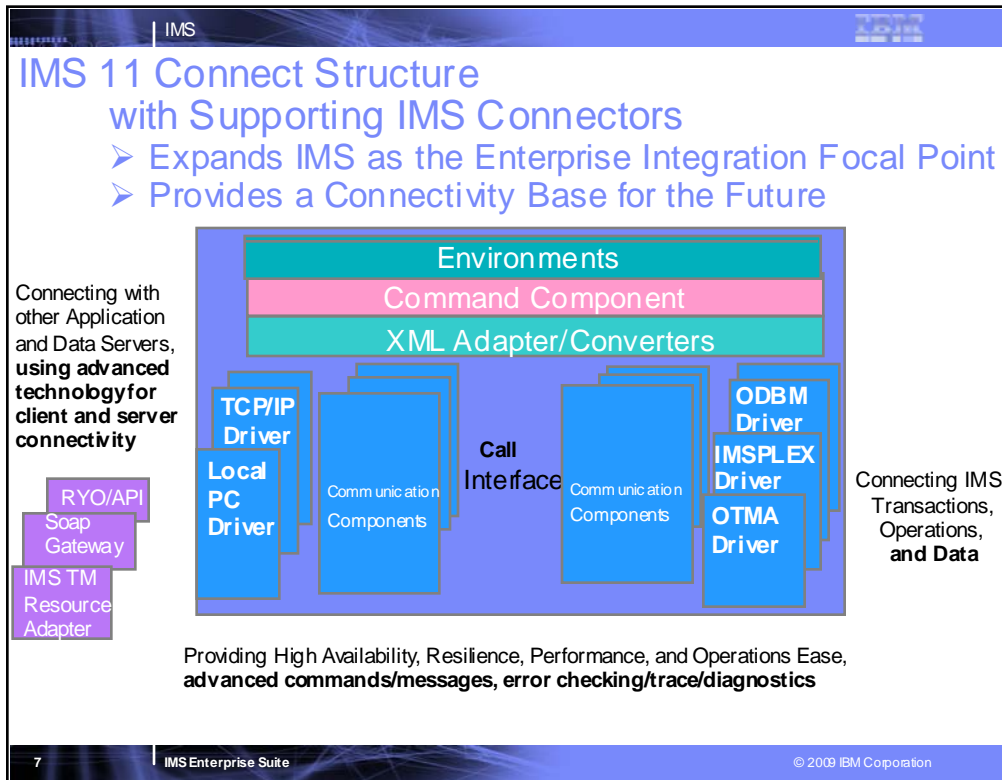
WS-Security runs with IMS Version 11 or later.

Business Events runs with WebSphere Business Events Version 6.2 or WebSphere Business Monitor Version 6.2 and IMS Version 11 or later.

IMS Enterprise Suite Connect API for Java runs on Windows and z/OS, with IMS Version 10 or later and JDK/JRE Version 5 or later.

IMS Enterprise Suite Connect API for C runs on Windows, with IMS Version 10 or later.

Additional line item requirement information is provided in the IMS Enterprise Suite Program Directory



Key Message: IMS provides and continues to enhance the integrated IMS Connect function.

IMS Connect function is part of the overall restructure of IMS for the 21st Century and is architected as the base for all future IMS Connectivity. Much of the function of IMS Connect can also be used with earlier IMS Versions so you can start to take advantage of it before migrating your networks/applications/databases to IMS V9. The structure of IMS Connect is designed such that drivers can be interchangeable. That is, alternatives for the TCP/IP front end or OTMA back end interfaces are already being provided. These are allowing IMS to exploit newer, additional, and enhanced protocols and/or interfaces. Along with IMS Connect is provided the IMS Connector for Java for access from Java applications, SOAP Gateway and parsers, and samples for other language access as well.

With IMS Version 8, IMS extended its use of XCF for use by other IBM subsystems, such as IMS Connect, for distributed operations access through the Structured Call Interface to the Operations Manager from the DB2 Version 8 Control Center as a single point of control.

With IMS Version 9 this function was integrated in.

With this structure IMS 11 Connect is evolving to address other connectivity requirements -- distributed database access to IMS DB, enhanced client connections,

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IMS Enterprise Suite V1R1 Connect API

- Provides simplified way to interact with IMS Connect and IMS
 - API for Java provided initially; API for C being delivered through service stream in future (can also be used by C++ applications)
 - Internally creates IRM header for request messages and interprets non-data information in responses
 - Automatically opens socket connections to target IMS Connect as needed
 - Allows client applications to provide data in a variety of ways
 - Byte array for single- or multi-segment data
 - Two-dimensional byte array for multi-segment data
 - String for single-segment data
 - Array of Strings for multi-segment data
 - Re-usable profiles provide easy way for applications to specify target IMS Connect and IMS as well as describe interaction to be performed
 - Lower-level calls provided
 - connect, send, receive
 - Lose benefit of API creating and interpreting message and managing IMS Connect message protocol
 - High-level execute call provided which opens connection if needed and performs interaction on behalf of client
 - Applications must call disconnect() on all connections before termination
 - Supports IMS Connect PING and RACF password change commands
 - Supports all OTMA-supported IMS commands

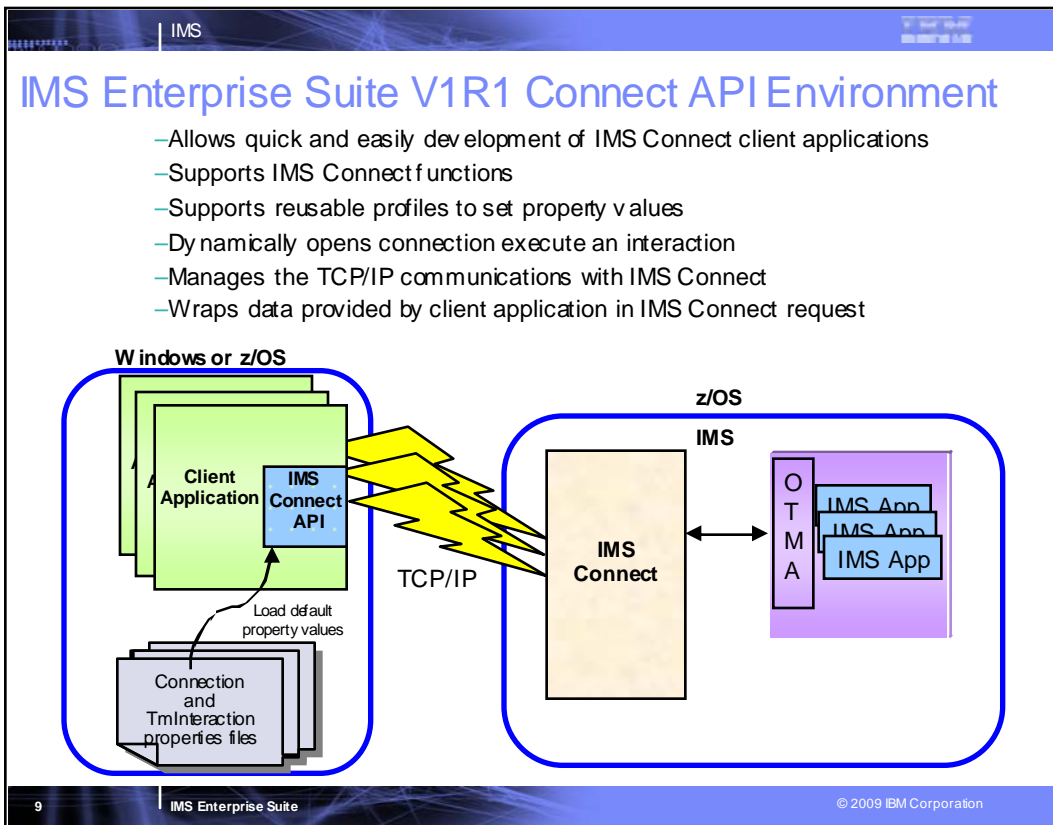
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Key Message: IBM is enhancing IMS Connect use with the IMS Enterprise Suite Connect API

The IMS Enterprise Suite Connect API simplifies design, development, and test of IMS access for client TCP/IP applications. Support for Java applications in Windows and z/OS environments is provided initially with support for C applications in Windows environments being delivered in the future through the service process. The API provides a customizable set of profiles that define the connections and types of interactions to be performed and high- and low-level methods for performing these interactions. This simple API allows user-developed applications to interact with IMS Connect while shielding the applications from the complexities of the IMS Connect protocols by automatically generating the IMS Request Message header, interpreting the non-data portions of response messages and opening socket connections on behalf of the applications. Using the reusable profiles, the API provides a simple way to describe the TCP/IP socket connections needed and the interaction to be performed. In addition, it gives the client application flexible ways to provide the data to be sent including 1- and 2-dimensional byte arrays, Strings and arrays of Strings. For more direct control of an interaction by a client application, limited, more granular, lower-level calls are provided which allow the client application to explicitly open a socket connection and send and receive data to IMS Connect. The disadvantage of using the lower-level send and receive calls is that you lose the benefit of the API creating the message for you and interpreting the non-data portions of the response.

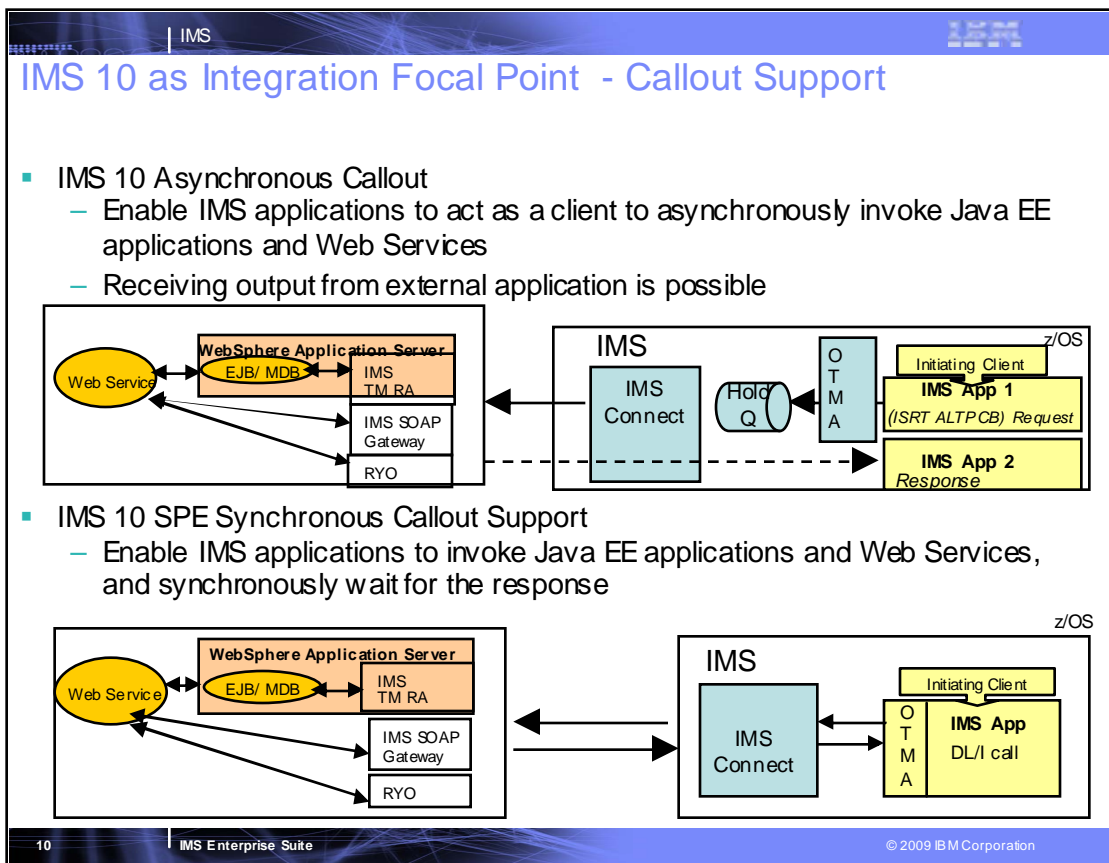
The API will communicate with IMS Connect on behalf of the client. Upon request by the client application, for example in an execute() or connect() call, the API will create a connection for use by that application. The client application does not need to deal directly with the connection, other than to keep track of it through the Connection object so that the client can call disconnect() on the Connection object before exiting. Of course in Java, orphaned connections would eventually be cleaned whenever there are no longer any references to those connection objects or when the application terminates. However, failure to explicitly disconnect a socket before an application shuts down may lead to warning messages being displayed on the IMS Connect console when TCP/IP closes a connection without the application or the API sending a disconnect request to IMS Connect.

In addition to IMS transactions, the initial release of the IMS Connect API will support the IMS Connect user message exit-supported PING and RACF password change commands along with all IMS commands supported by OTMA.



This figure shows the environment in which the IMS Connect API can be used. It also depicts the fact that multiple client applications that use the IMS Connect API can be invoked simultaneously. The API will communicate with IMS Connect on behalf of the client applications.

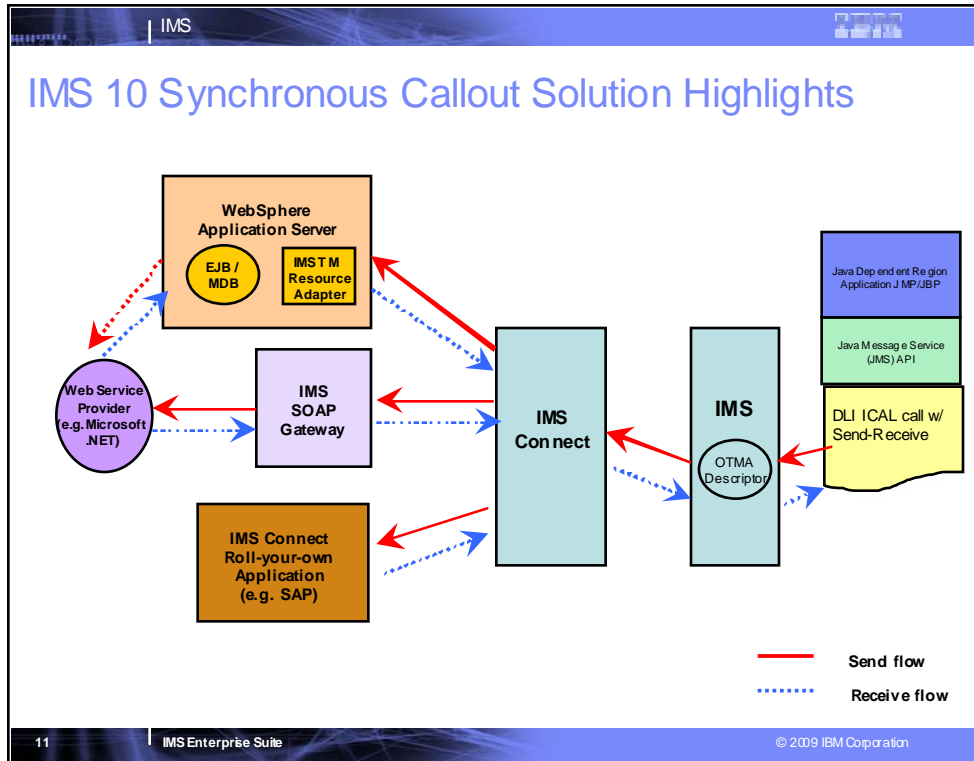
- User comments included '*application size was cut in half*' and '*development time was reduced dramatically*'
- most existing connections supported: send-receive, send-only, resumeTpipe, Commit modes 0 and 1, sync levels none and confirm, and much more.
- Profiles describe connections and interactions, error handling and tracing
- Based on Tm Interaction properties. Shields client application developer from complexities of TCP/IP sockets programming and IMS Connect message protocol



Key Message: IMS Callout support enables IMS as the Integration Focal Point

One of the key customer requirements that we have heard regarding SOA support for IMS is for Callout support, where an IMS application could call out to another application across the IMS TM Resource Adapter to WebSphere server applications or to SOAP application environments. IMS Callout support enables IMS applications as clients, interoperating with business logic outside of the IMS environment. This support includes correlation mapping between the callout request and the external application, enhanced security, and assistance on destination routing. This support allows for better integration in an SOA environment.

For example, an application may need to know the current stock price, or may need to look up the current sales tax rate. Callout support has been provided for IMS 10, first as an asynchronous transaction, and later as a synchronous call where the IMS application will wait for the response before continuing. Synchronous callout support is being provided through the service process



The synchronous callout function is a V10 SPE item that specially addresses the need for an IMS application to act as a client to go outbound synchronously to invoke external application and receive the output back. This enhancement allows your IMS application to invoke one of the following external applications and synchronously get the output back:

- (1) an J2EE application (like an Enterprise Java Bean/EJB or an Message Driven Bean (MDB)) or Web service providers running in the WebSphere Application Server using the IMS TM Resource Adapter
- (2) other Web service providers (e.g. like Microsoft .NET or SAP XI) using IMS SOAP Gateway
- (3) any other applications (like RYO, SAP apps) using the IMS Connect interfaces

This diagram gives you a very high-level overview of the synchronous callout SPE.

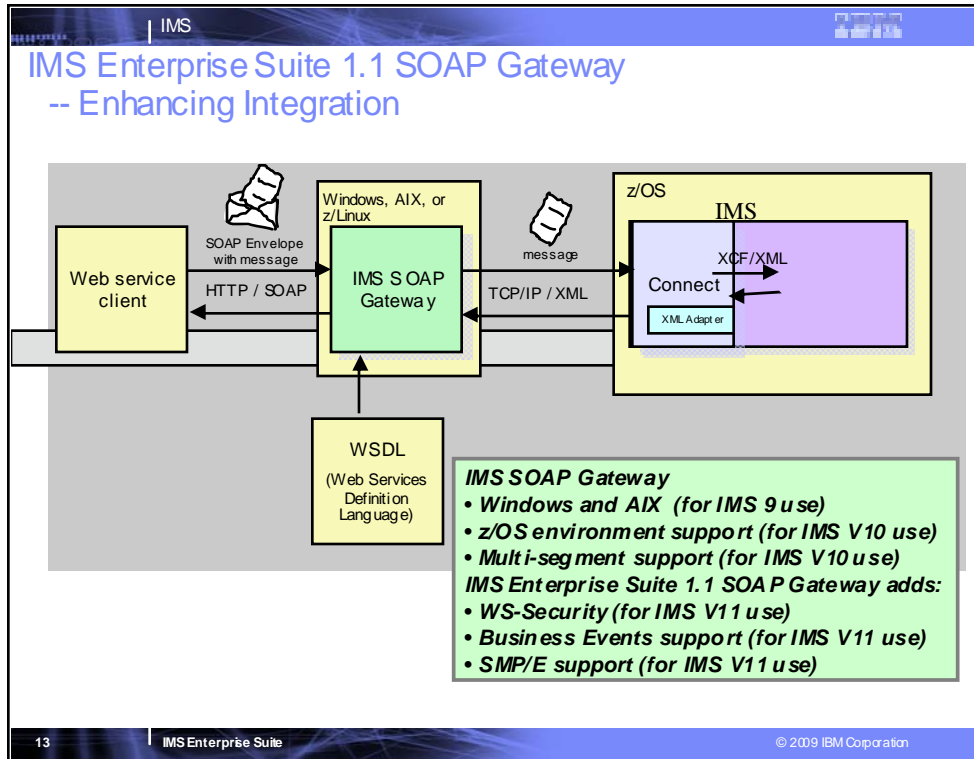
The red arrow represents the send flow. From the right hand side of the diagram, an IMS application makes a DLI call to send out a synchronous callout request. The OTMA descriptor function inside IMS routes the callout request via IMS Connect to invoke one of the outbound destination as shown in the boxes on the left – i.e. the WebSphere, Web Services or RYO applications. After the callout request has been processed, the output data would be returned back to the same IMS transaction instance as shown in the blue arrows.

IMS Enterprise Suite 1.1 JMS API Support for Synchronous Callout

- Provides Java Message Server (JMS) API for accessing IMS Synchronous Callout function.
 - Jar file containing the open source JMS API code required for sync callout functionality
 - Enables business growth -- Allows more flexibility in accessing cross enterprise data and functionality from within IMS applications to meet growth challenges.
 - Exposes core IMS functionality through a Java standard interface - Makes IMS function more accessible to application developers with modern skill sets.
 - Offers standards-based approach - Exposes IMS industry leading transaction management capability through a Java standard interface, JMS
 - Enables new application design frameworks and patterns
 - Synchronous callout support is the first IMS function to fully embrace the JMS standard in IMS application development.

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The Java Message Server (JMS) API can be used for synchronous callout from an IMS Java application. The JMS API improves programmer productivity by defining a common set of messaging concepts and programming strategies that will be supported by all JMS technology-compliant messaging systems. By making IMS a JMS provider we address the skills issue impacting client's ability to develop new applications which goes to revenue. Although heavily used by IMS customers, the DL/I API isn't an industry standard and skills may be limited. Providing modern standards based access to IMS functions reduces customer costs. Synchronous callout support is the first IMS function to fully embrace the JMS standard in IMS application development. We are considering future enhancements to front-end IMS message queue processing with the JMS interface.



Key Message: IBM is enhancing the IMS Enterprise Suite SOAP Gateway support

The IMS Enterprise Suite SOAP Gateway provides direct SOAP access to IMS transactions. The SOAP gateway is a lighter weight solution, and is for when you don't have J2EE servers. If you have J2EE servers, you would want to use the IMS Transaction Manager Resource Adapter. With the SOAP Gateway, SOAP XML format is sent. It translates back and forth without application servers. It creates WSDL and tells about the web location and correlator files. Connect calls the converter file to have the message come in as an LLz format. IMS could use the Rational Developer for z XML Adapter for COBOL with its SOAP gateway code. The SOAP Gateway has been Generally Available (GA) for IMS V10, downloadable at www.ibm.com/ims. The IMS Connect XML adapter initially provided support for COBOL and SOAP Clients. z/OS support was provided more recently, in addition to the Windows, AIX, zLinux support provided earlier. PL/I support is also being made available for generating WSDL and PLI XML Converter programs from PL/I source.

IMS Enterprise Suite V1R1 SOAP Gateway has the following additional enhancements:

- WS*Security support implements WS*Security in IMS SOAP Gateway in order to be able to authenticate the user who is executing the SOAP requests at IMS. SOAP Gateway includes the WS-Security enhancements to SOAP messaging that provide security through message integrity, message confidentiality, and message authentication. What this provides is the industry standard of WS-Security to the already existing SOAP message standard. In other words, this adds WS-Security capabilities to the SOAP Gateway's previous SOAP message now any SOAP message can take advantage of the granular security benefits. Prior to this IMS SOAP Gateway customers did not have a way to dynamically provide security information (user-id/password) at runtime on a per message basis. Lack of such support inhibited them from moving the IMS SOAP Gateway solution to production environments where they have strict security requirements. This support provides customers the ability to ship a UserID with or without a password from the requesting client all the way to IMS Connect or IMS itself, where that request in turn will be validated against SAF and allow/disallow the userID to execute the requested transaction. This offers a simplified way to inject the user ID/Password into the SOAP header/Message and use SAF to validate the requested transaction. RDZ-generated Adapter code can be used to execute the validation in order, reducing work and constraints in manually picking out the security items manually and calling SAF. With this support, users/client applications can send in requests into IMS SOAP Gateway using their own security information (for example: login id/password) instead of relying on static pre-defined security information on a web service-wide basis. This SOAP Gateway support can use tooling support from RDz V7.5+. This support enables customers to have more fine grained security authentication in place. This support will complement and beef-up the already existing security features available in IMS SOAP Gateway today (SSL, HTTPS). Customers could then send in security information on a per request basis rather than having pre-defined security information. This support will be provided for both the adapter and non-adapter scenarios. In addition, the WS-Security support will be provided only for the "provider" (inbound - both request/response) scenario and not for the "consumer" (callout) scenario; for callout this support will be a future version (need to build WS-Security compatible messages when invoking external web services). - Business Event support enables IMS users to modify their IMS application to emit business event data to WebSphere Business Events (WBE), WebSphere Business Monitor (WBM) and ILOG for business rules execution and business activities monitoring. This uses IMS callout capability, and the IMS SOAP Gateway to feed events from IMS applications to WBE, WBM and ILOG via the SOAP/Web Services protocol. IMS SOAP Gateway would be enhanced to map the events from IMS into the appropriate format for the designated events servers if needed. It also utilizes new Haifa and RDz tooling to provide assistance to customer for modifying existing IMS application to emit events. IMS support and integrate with IBM Business processing engines and monitoring dashboards (WBE, WBM and ILOG). This support helps business users and line of business owners gain insight into business activity and processing, or drive new processing to respond to business opportunities or threats and accelerating development time and reduce total cost of ownership. For example, a banking customer can use WebSphere Business Events to send an automatic alert to initiate a Fraud investigation when they detect a event sequence that there are multiple failed login attempt and followed by a large withdrawal in which these events could be detected and emitted by an IMS application. Uses RDz 7.6* IMS Business Event assistant tooling, and WBE 6.2.x*/WBM 7*/ILOG.

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IMS Enterprise Suite 1.1 SOAP Gateway WS-Security

- Applies security to Web services via the communications protocol
- Incorporates security features in the header of a SOAP message
 - Working in the application layer
- Ensures end-to-end security
- Need to build WS-Security compatible messages
- Supports
 - “provider” (inbound), not “consumer” (callout)
 - userNameToken
 - Other WS-Security standard tokens to be supported in future versions
 - Required transportation level support (SSL) to protect user id and password

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IMS Enterprise Suite SOAP Gateway WS-Security ensures end-to-end security

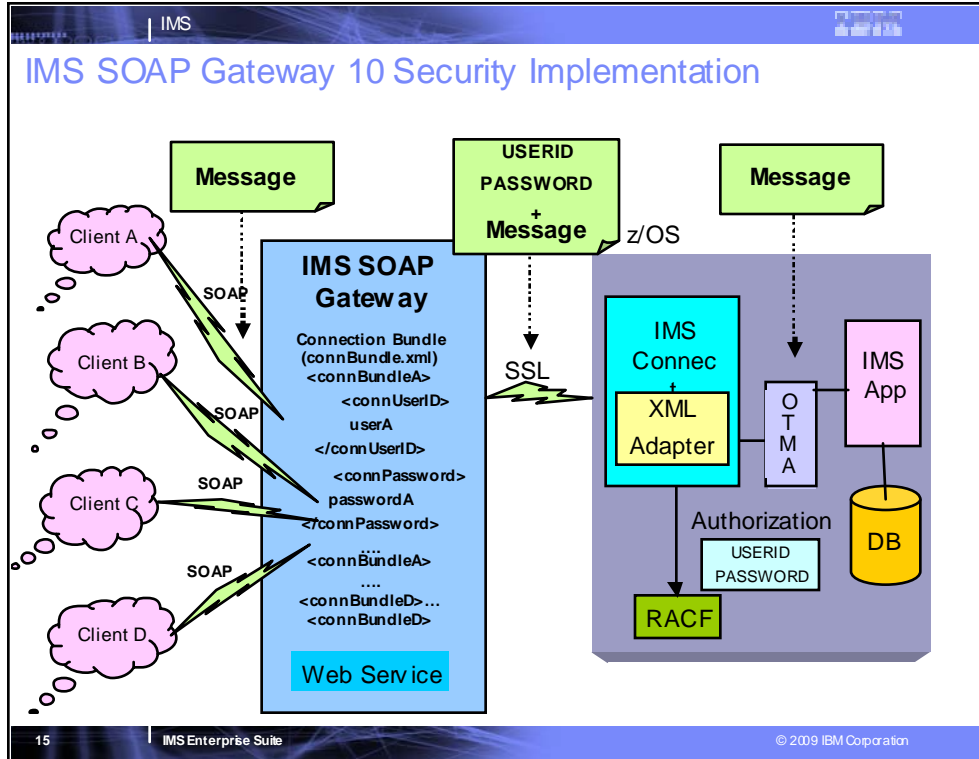
- WS-Security (Web Services Security) is a communications protocol providing a means for applying security to Web services.

- Applies security to Web services via the communications protocol

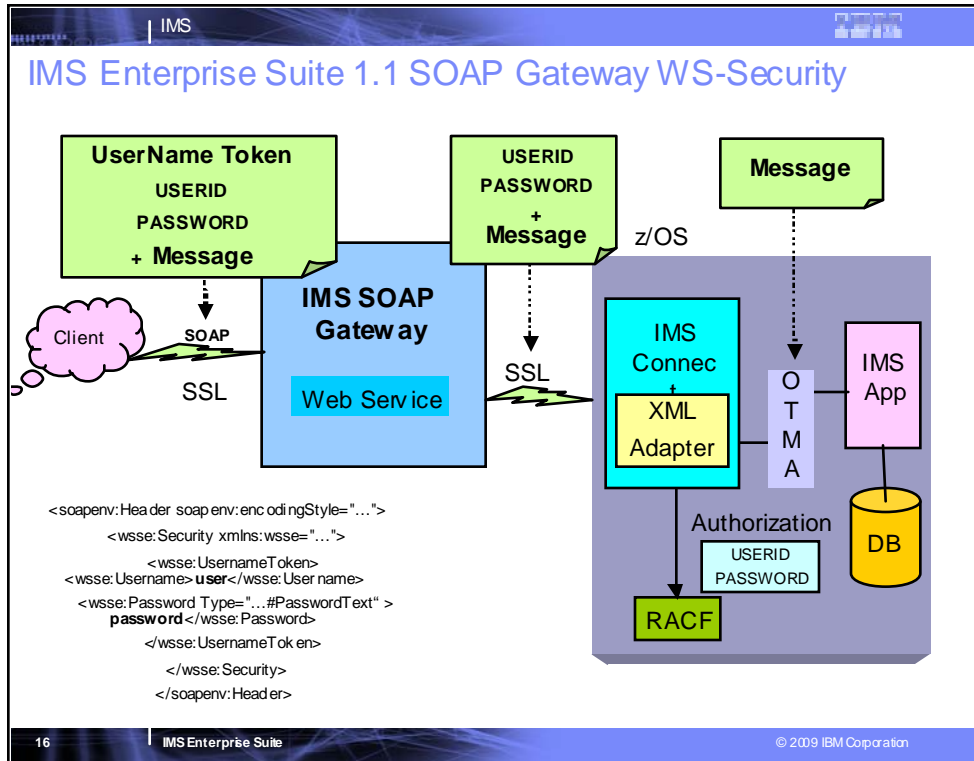
- Incorporates security features in the header of a SOAP message

-Supports userNameToken but not other WS-Security standard tokens e.g. binarySecurityToken, DigitalSignature, EncryptionKey... since no tool support currently exists to generate required binding and policy files

-Needs to have transportation level support (SSL) to protect user id and password in the SOAP header between Web client and IMS Enterprise Suite SOAP Gateway server



Earlier, the IMS SOAP Gateway for IMS 10 used the userid and password from the connection bundle for basic RACF authentication on the host. This security information was static per web service.



IMS Enterprise Suite 1.1 SOAP Gateway WS-Security

- WS-Security incorporates security features in the header of a SOAP message, working in the application layer. Thus it ensures end-to-end security.
- Adding WS-Security, the SOAP Gateway is able to support userid/password at a more granular level and customers can pass the security information on a per-message basis.
- IMS V11 Connect function is required for IMS access
- Rational Developer for System z (RDz) V7.6 is required for XML conversion.
- Use of WS-Security message-level protection to sign and encrypt the UsernameToken (or any other parts of a SOAP message) requires the use of a protection token (for example X.509, Security Context Token, Kerberos, etc.).
- Support is for “provider” (inbound) scenario and UsernameToken, but not other WS-Security standard tokens (eg. binarySecurityToken, DigitalSignature, EncryptionKey), since there is currently no tool support to generate required binding and policy files.
- Transportation level support is required. SSL is needed to protect user id and password in the SOAP Header between Web client and SOAP Gateway server.

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IMS Enterprise Suite 1.1 SOAP Gateway Business Events

- Application based Business Events
 - Leverage existing IMS assets
 - Explores Business Event processing and monitoring capability
 - Enable IMS application to emit business event data
 - To WebSphere Business Monitor (WBM) V6.2 and WebSphere Business Events (WBE) V6.2
 - Provides near real-time view of business performance and process business events and execution
 - Empower business users
 - Define and proactively manage business events with easy-to-use graphical tools
 - Accelerate application development and growth
 - Ease the maintenance and change of business rules

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IMS Enterprise suite 1.1 SOAP Gateway Business Event support provides Application-based Business Events
Leveraging existing IMS assets for Business Event processing and monitoring capability
Enabling IMS applications to emit business event data to WebSphere Business Monitor (WBM) V6.2
and WebSphere Business Events (WBE) V6.2, which provide a near real-time view of business
performance and process business events and execution
Empower business users to define and proactively manage business events with easy-to-use graphical
tools
Accelerate application development and growth, easing the maintenance and change of business rules

IMS Enterprise Suite 1.1 SOAP Gateway Business Event Support for WebSphere Business Events (WBE)

- Enable WebSphere Business Events (WBE) to receive business event data from IMS applications for business events processing and execution
- Empower business users to define and proactively manage business events with easy-to-use graphical tools
- Provide the ability to detect, decide and dynamically react to both simple and complex relationships among people, events and information

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IBM WebSphere Business Events (WBE) is a software solution representing the convergence of power and ease-of-use. WBE supports advanced event processing features for detecting, evaluating, correlating and responding to events and complex patterns of events. These capabilities are exposed through graphical, non-programming user interfaces allowing IT to manage the environment while equipping the business users to manage the event process themselves.

The requirement for IMS Business Event to support WebSphere Business Events would enable WBE to receive business event data from IMS applications for business activities monitoring. It helps IMS customer to leverage existing IMS assets to explore business event processing solutions. With the use WBE, it helps customer to:

- Make business process more efficient and increase business agility with rapid respond to business rules and market changes
- Detect and analyze business activates easily for identifying new business opportunities, mitigate risks and improve customer satisfaction
- Accelerate application growth with easy-to-use tooling and automation that can be enacted by business users

IMS Enterprise Suite 1.1 SOAP Gateway Business Event Support for WebSphere Business Monitor (WBM)

- Enable WebSphere Business Monitor (WBM) to receive business event data from IMS applications to provide business users visibility into business activities
- WBM calculates business metrics and presents key performance indicators through visual business dashboards for a near real-time view of business performance
- WBM helps if something goes wrong. Alerts can be delivered to make organization or administrators aware of potential problems and proactively take directed action.
- WBM can identify business problems, and predict future trends for improved decision making and faster reaction

The diagram illustrates the integration of IMS applications with WebSphere Business Monitor (WBM). On the left, a stack of three blue boxes labeled 'IMS Application' is shown within a grey box labeled 'IMS on z'. An arrow labeled 'Common Base Events to WBM' points from these applications to a central box labeled 'WebSphere Business Monitor'. This central box displays a dashboard with various charts and graphs. Surrounding this central box are several descriptive labels for WBM features:

- Scorecards**: Key Performance Indicators for business units
- KPI History and Prediction**: Predict future trends for improved decision making and faster reaction
- Reports & Analyses**: Understanding trends by combining real-time performance and historical information
- Mobile Dashboards**: Access from smartphone, Lotus and MS Excel
- Modeled Alerts**: Notification of situations that require response
- Dynamic Alerts**: Notifications defined by business user for agile decision making
- Visual Dashboards**: Web based easy to configure and customize dashboards

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IBM WebSphere Business Monitor (WBM) is a comprehensive business activity monitoring (BAM) solution that provides a near real-time view of your business performance

WBM provides visibility into the performance of business activities by processing events, calculating business metrics and presenting key performance indicators through business dashboards

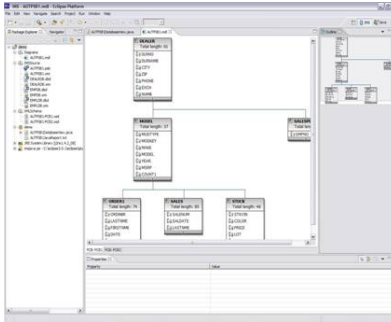

- It identifies business problems, correct exceptions, and change processes to increase business competitiveness by improving process efficiencies
- It helps when something goes wrong. Alerts can be delivered to make an organization aware of potential problems and proactively take directed action.
- It can monitor business events from any application via a variety of protocols

The requirement for IMS Business Event to support WebSphere Business Monitor would enable WBM to receive business event data from IMS applications for business activities monitoring. It helps IMS customer to leverage existing IMS assets to explore business event monitor solutions identify business problems, correct exceptions, and change processes to increase business competitiveness by improving process efficiencies

IMS

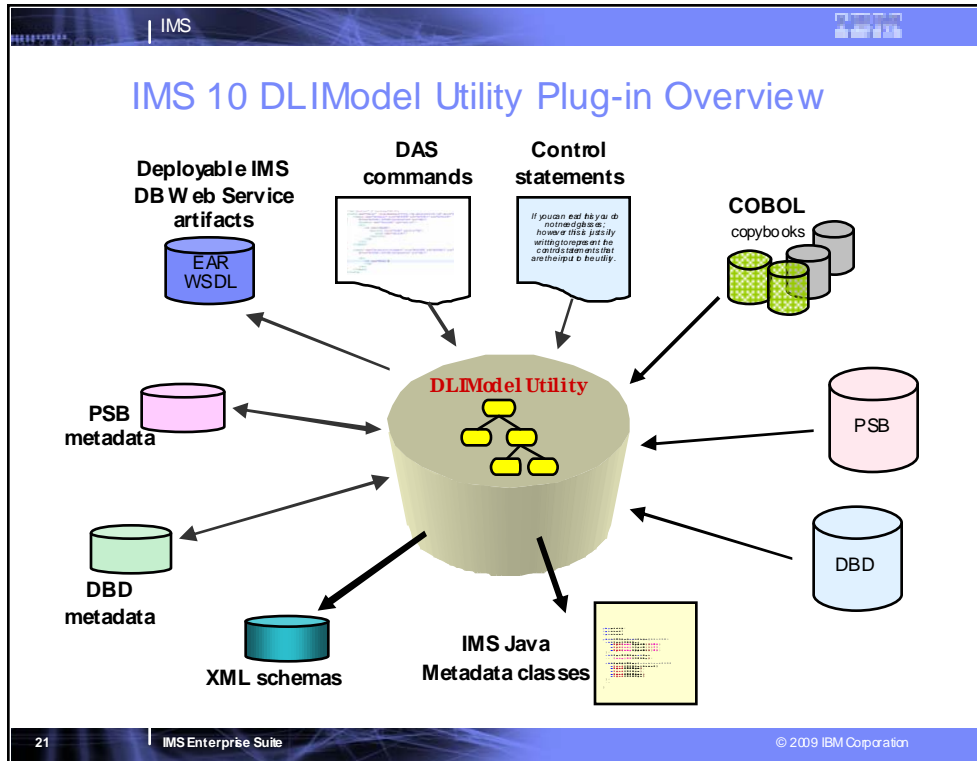
IMS 10 DLIModel Utility Plug-in

- IMS database visualization tool
 - Visualize an entire IMS PSB
 - Can view and print each PCB individually
 - Hierarchy, segments, fields, types, etc
- IMS database metadata generation tool
 - Generates the necessary metadata that is consumed at runtime by IMS JDBC driver and XML-DB support
 - Database metadata
 - XML schema
 - EAR and WSDL for IMS DB Web Services
- Bottom-up tooling approach
 - Parses PSB and DBD source
 - Optionally handles COBOL copybook definitions of segments
- An Eclipse 3.x plug-in

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The DLIModel Utility is a plug-in on top of Eclipse. You can download this eclipse plug in and it lets you visualize IMS PSBs and DBDs and generate metadata for XML DB support. With the DLIModel Utility, you are provided the metadata and a visualization of your databases in a GUI manner.



This is a graphic that shows the inputs and outputs.

IMS Enterprise Suite 1.1 DLIModel Utility Plug-in

- **Graphical User Interface (GUI)**
 - Leverage Eclipse, Eclipse Modeling Framework (EMF) and Graphical Editor Framework (GEF)
 - Can be installed as a stand-alone function or on top of other Eclipse based products (i.e. RAD 7.5, RDz 7.5, Data Studio) using **IBM Installation Manager**.
- **IMS Database Visualization Tool**
 - User can visualize an entire IMS PSB and DBD in a multi-page graphical editor.
 - Each PCB can be viewed, saved and **printed** individually. Each PCB editor shows the IMS DB hierarchy with the segments, fields, field types, etc.
 - User can also **search** an entire IMS PSB for a specific PCB, segment, or field.
- **IMS Database Metadata Generation Tool**
 - It has been used to generate the necessary metadata that is consumed at runtime by the IMS Universal driver, XML-DB, XQuery and IMS DB Web services.
 - **DLIDatabase View for IMS Universal driver**
 - XML schema for XML DB and XQuery
 - Deployable artifacts (EAR and WSDL files) for IMS DB Web services via the DAS commands in a syntax assist and syntax highlight editor.
 - This tooling currently uses a bottom-up approach, parsing PSB and DBD source using either Control statements or Wizard panels. User can optionally import COBOL copybook and **PL/I Include** definitions to define field layouts for each segment.

IMS Enterprise Suite 1.1 DLIModel Utility Plug-in additions

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DL/I Model Utility plug in provides a user friendly interface, simplifies IMS metadata generation, eases IMS Java and XML database application development and access, and offers a visual representation of IMS databases. Enhancements ease use of this utility, and its users can now import PL/I Include to redefine segment layout in IMS metadata, as well as take advantage of the new IMS Universal JDBC driver. Enhancements also include:

- Export PSB graphical view as graphic files (JPG or BMP)

- Auto select DBDs that referred by a PSB in wizard - enhancing the DLIModel utility wizard to automatically select DBDs referred to by a PSB and automatically merge existing metadata with modified PSB and DBD sources

- Support PL/I Include Import – allowing PL/I copybook import

- Add PROCOPT to the IMS metadata for the IMS JDBC driver – adding PROCOPT to the DLIDatabase View metadata class

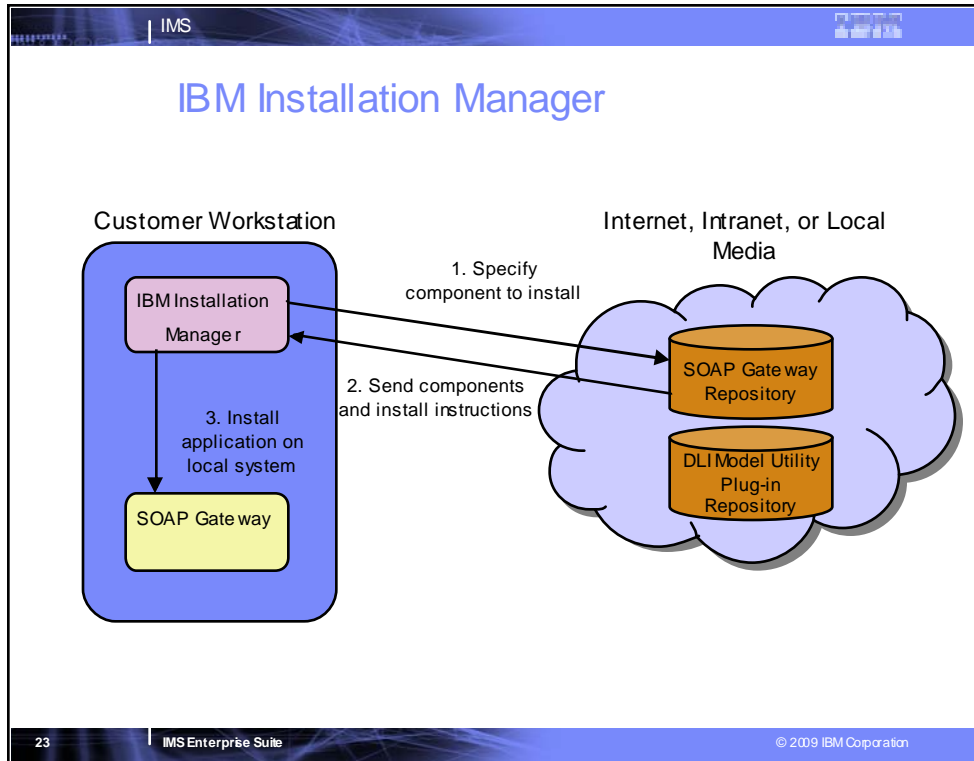
- Add Virtual Foreign Key view to the PSB graphical editor – providing graphical view of virtual foreign key fields.

- Change GUI messages to match with product messages prefixes

- Add the search capability to the PSB graphical view - Completing the graphical editor of PSB and DBD with search, save and print functions

- Update the existing metadata with newly updated PSB/DBD source

- Ship under the new IMS Enterprise Suite through IBM Installation Manager - Seamlessly shell-sharing with other Eclipse based products from IBM with IBM Installation Manager



The Installation Manager is provided for use with the IMS Enterprise Suite Soap Gateway for Windows, Linux and AIX component installs, and the IMS Enterprise Suite DLIModel utility plug-in for Windows and Linux component installs. This support eases installation of these components on these distributed platforms. It gives the administrator full control of the installation. The administrator can script these components to install on multiple machines silently, issuing a single command in a command prompt to run the installation instead of going through the GUI interface. And, since it's done through the command prompt, user-written scripts could allow the components to run on multiple machines. This also gives the administrator control of where they place the repository associated with these components. This would also give the administrator better control over what software version is installed. A repository is provided for the DLIModel Utility and also for the Soap Gateway.

To reduce the download footprint there's another free downloadable utility, called the IBM Packaging Utility, at <http://www-1.ibm.com/software/awdtools/installmanager/support/download.html>.

The Packaging utility can be used to combine our multiple repositories into one.

The customer would first install IBM Installation Manager onto their local Windows, Linux or Unix workstation. From there the customer would point the IBM Installation Manager to a repository containing the product they wish to install. These repositories can be located on the internet, intranet (private network), or on their local media (e.g., hard drives, thumb drive, dvd, etc). The IBM Installation Manager will search the repository for installable products. The repository will send the components for building the desired product as well as the build instructions. The IBM Installation Manager will then build the product on the local machine.

IMS

Ordering and Migration Considerations

Obtaining the IMS Enterprise Suite 1.1

- Through the standard order process
 - Maintenance is delivered via Shop zSeries
 - Includes RSU levels
 - As with all orderable products, registration is required
 - Via official product order and licensing
- Through the IMS SOA Integration Suite link at <http://www.ibm.com/IMS>
 - Full replace maintenance supplied from the IMS SOA Integration Suite.
 - RSU level maintenance is not applicable to the Web download version
 - SMP Maintenance requires individual PTFs be pulled from DLL

Migration Considerations

- End of service for predecessor products/components would occur along with their associated IMS versions:
 - IMS Soap Gateway for IMS 9
 - IMS 9/10 z/OS Batch Utility
 - IMS 10 DL/I Model Utility Plug-in
 - IMS Soap Gateway for IMS 10

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The IMS Enterprise Suite 1.1 can be ordered through the normal ordering process with SMP/E for full automatic service, if desired.

They can also be downloaded from the [ibm.com/ims](http://www.ibm.com/ims) website, but service for this requires either ordering individual maintenance or installing a refreshed copy.

End of Service for the predecessor products/components would occur along with their associated IMS versions.

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Additional IMS Information at <http://www.ibm.com/ims>

- Presentations, Papers, Newsletters, Fact Sheets, Announce Letters, Technical Support Information, Information Roadmap, Training and Certification, Events, and Additional Documentation, plus
 - **IMS SOA Integration Suite** -- presentations/demos/download code
Includes IMS Enterprise Suite 1.1
 - **Information Center** - enables search across IMS, DB2 and Tools documentation
 - **Examples Exchange**
 - **DeveloperWorks**
- Redbooks/Redpieces - Release Guides, Sysplex Guides, Java Guides, etc
 - **IMS Connectivity In an On Demand Environment Redbook**
 - **IMS 11 Redbook**
Includes IMS Enterprise Suite 1.1
- “An Introduction to IMS” book 
- WW IMS Conferences and Seminars
 - **IMS Seminars coming to a city near you**
 - **IMS User Groups**
 - **IMS Teleconferences, with replays available**
- Additional technical support info at www.ibm.com/support/techdocs (search on IMS)
- Migration, skills transfer, customized offerings at ibmdds@us.ibm.com



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Key Message: IMS continues to provide information and services for our clients

A wide range of IMS Information is available

The IMS solutions are generally available along with other IBM products in support of IMS.

Additional documentation and information is available from the IMS home page at <http://www.ibm.com/ims>. The Technical Support, Information Center and Information roadmap now ease search and easy link to information. Links are available for the Examples Exchange and DeveloperWorks for more technical papers. Links also exist here for training, certification and events.

The IBM International Technical Support Organization has been producing redbooks and redpieces with additional information. One of the latest is the IMS Connectivity in an On Demand Environment Redbook.

One piece of IMS literature we mentioned earlier is the new comprehensive textbook called “An Introduction to IMS”.

A number of IMS Technical Conferences are also being provided on an ongoing basis. Upcoming conferences featuring both IMS and DB2 include the Information Management conference in The Haag in May and the Information On Demand Conference in Anaheim in October. Both of these conferences provide an extensive amount of education on IMS and the transformation/Integration of IMS for On Demand environments.


We also are beginning this spring worldwide seminars/roadshows.

And we are continuing to provide IMS webcasts and teleconferences, with replays of these available afterwards

IMS

The Message

- IMS continues to be a premier server with architected standard interfaces
 - New products and tools from a variety of vendors provide access to IMS transactions and data



- SOA is revolutionizing the way businesses are being designed and run. For it to make sense:
 - *All assets must be easily accessible in a standard way*
 - *All data must be represented and manipulated in a standard way*
- Our goal is to leverage IMS as an integral part of the enterprise in the evolving business world through
 - *Addition of support for complimentary standards surrounding IMS connectivity, data representation, and application development*
- And to allow you to realize the promises of building a Service Oriented Architecture:
 - *Simplify the business environment*
 - *Respond to market changes more quickly and cheaply*

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IMS continues to be a premier server with architected standard interfaces
 New products and tools from a variety of vendors provide access to IMS transactions and data

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