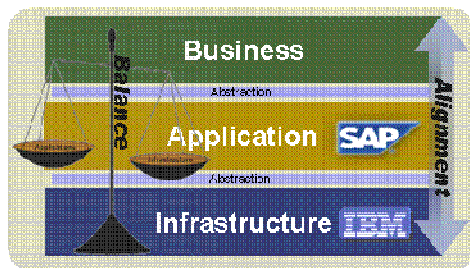# IBM BPM with SAP

Technical Intro

Budapest

02. July 2013
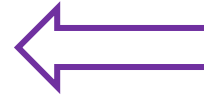
Vladimir Orlik
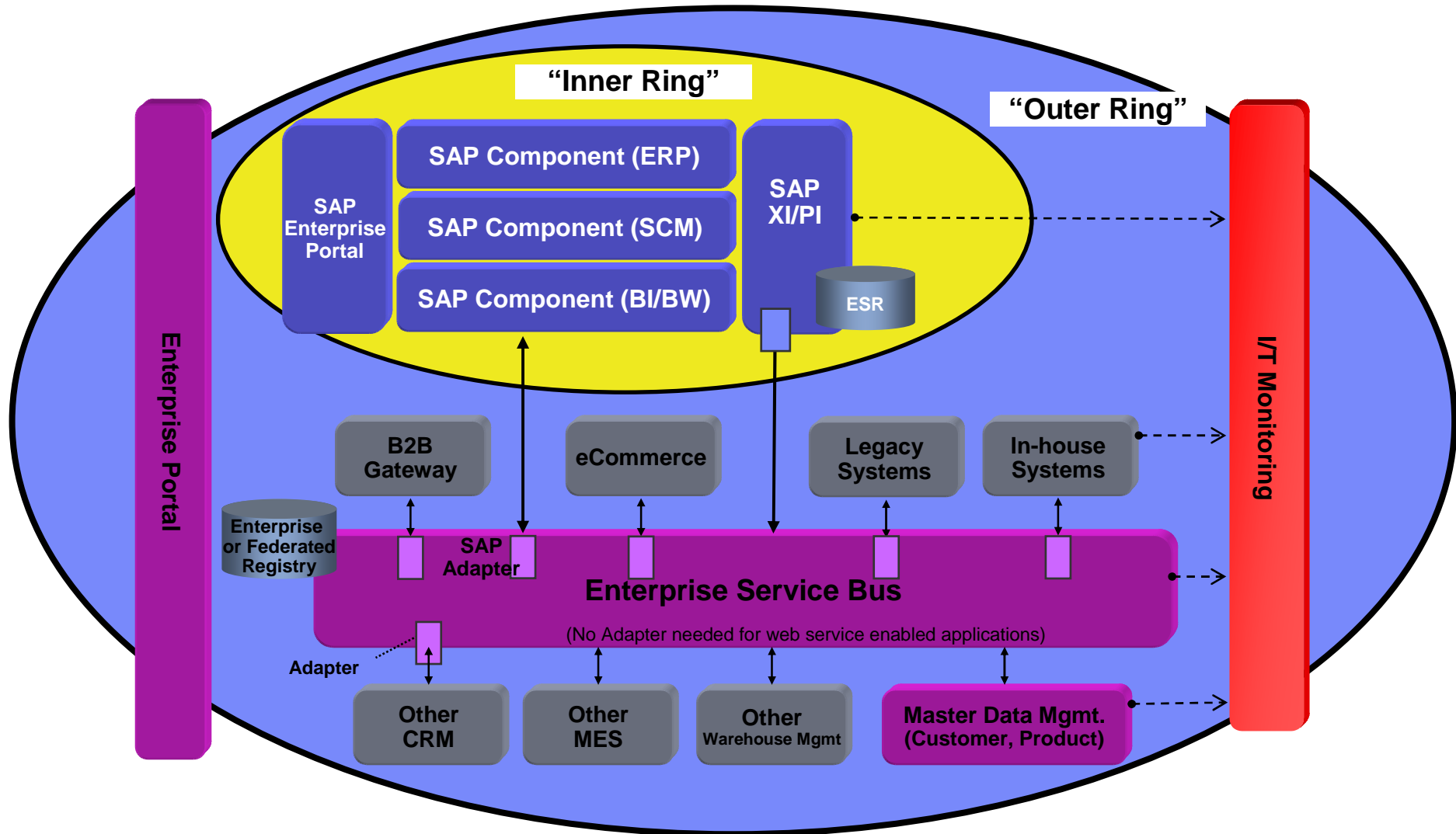**BPM Community of practice, CEE**

Agenda

- ## IBM BPM 8 Advanced overview

- ## **SAP Integration**

  - Data integration

    - SAP Adapter
    - Outbound & Inbound integration

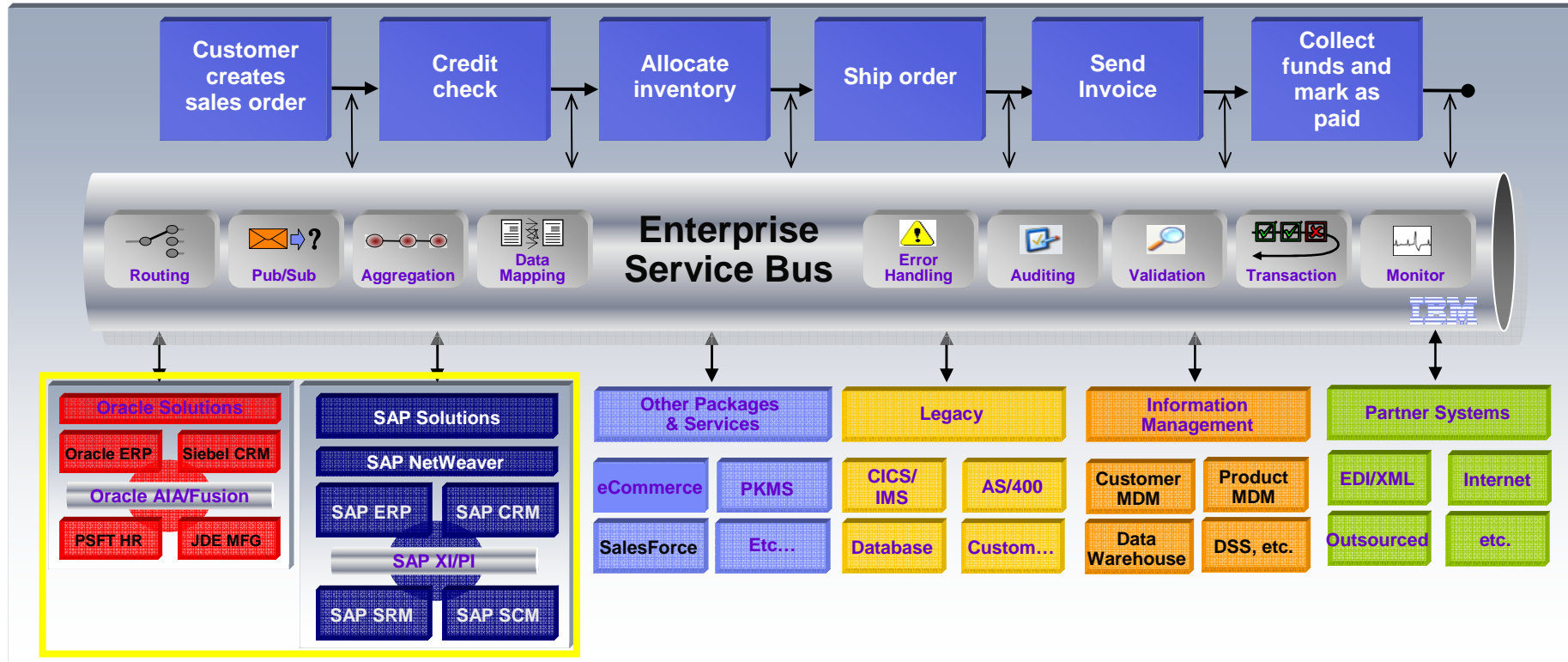 - SAP Solution Manager

  - Demo

- ## Q&A

Inner-Ring / Outer-Ring approach

Enterprise Service Bus (ESB)
Integration platform for enterprise solutions and mission-critical environments
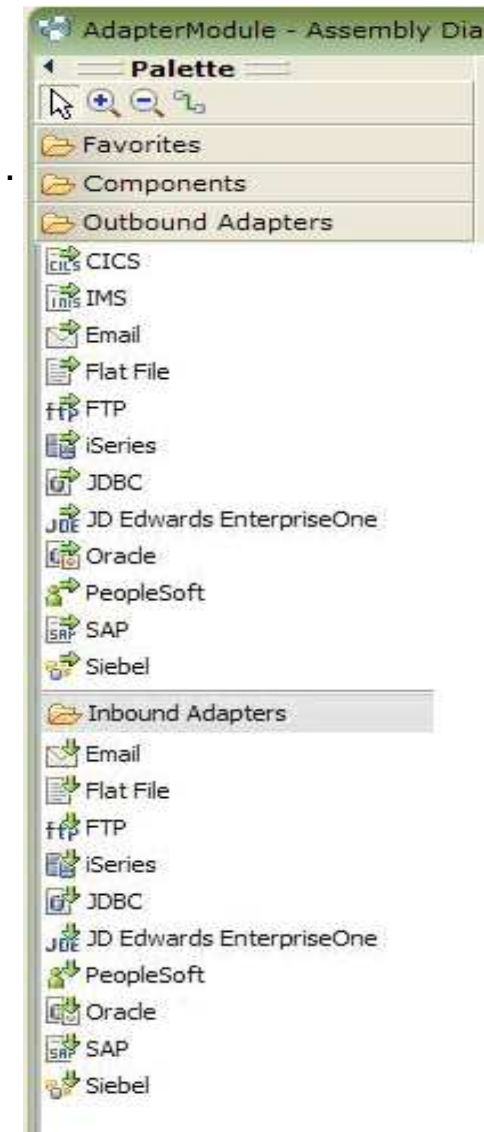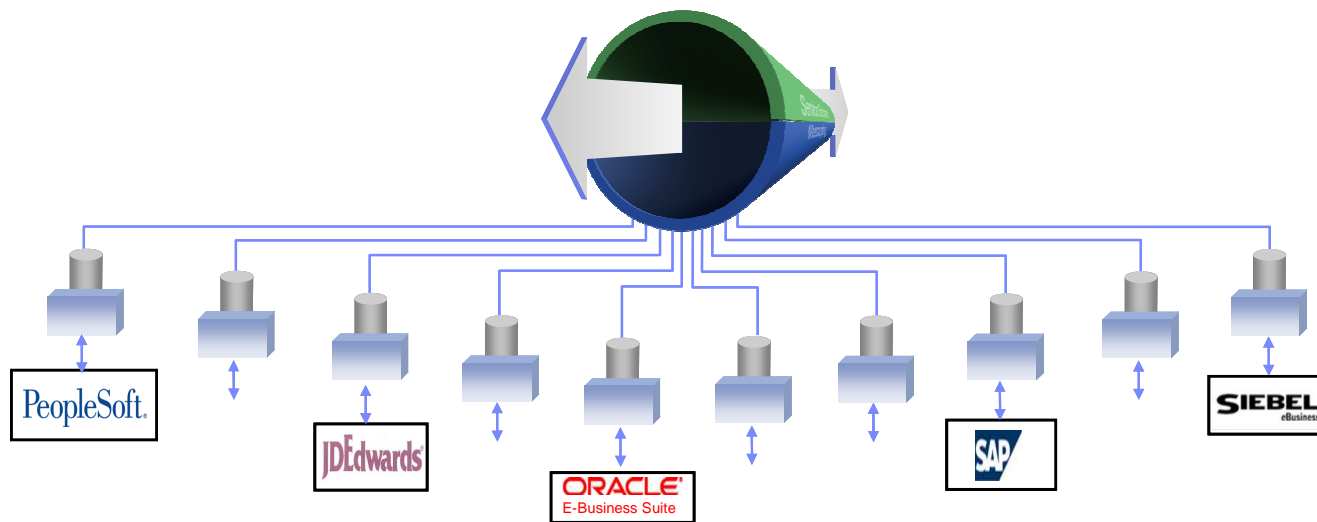

- **Leverage XI/PI……**

- For SAP-to-SAP "Intra-module" Integration

- **Leverage WebSphere**
- For SAP-to-nonSAP & all other integration

- For high-volume, mission critical requirements

- For end-to-end business process

IBM WebSphere Adapters

On WebSphere Process Server / WebSphere ESB

- Technology adapters: JDBC, FlatFile, FTP, ECM, Email, Domino …
- Application adapters: SAP, Siebel, PeopleSoft, JDE

- **Supports the full set of JCA based WebSphere Adapters**

- **JCA Adapters integrated with WebSphere Integration Developer tooling.**

Palette:

AdapterModule - Assembly Dia
Palette
- Favorites
- Components
- Outbound Adapters
  - CICS
  - IMS
  - Email
  - Flat File
  - FTP
  - iSeries
  - JDBC
  - JD Edwards EnterpriseOne
  - Oracle
  - PeopleSoft
  - SAP
  - Siebel
- Inbound Adapters
  - Email
  - Flat File
  - FTP
  - iSeries
  - JDBC
  - JD Edwards EnterpriseOne
  - PeopleSoft
  - Oracle
  - SAP
  - Siebel

WebSphere SAP Adapter

- IBM WebSphere Adapter for SAP implements the JCA version specification, enabling bi-directional connectivity to SAP Enterprise application

- SAP resource adapter communicates with the SAP applications using SAP Java Connector (sapjco) API

- The adapter supports many SAP integration interfaces including BAPI (Business Applications Programming Interface), RFC (Remote Function Modules), and ALE (Application Link Enabling)
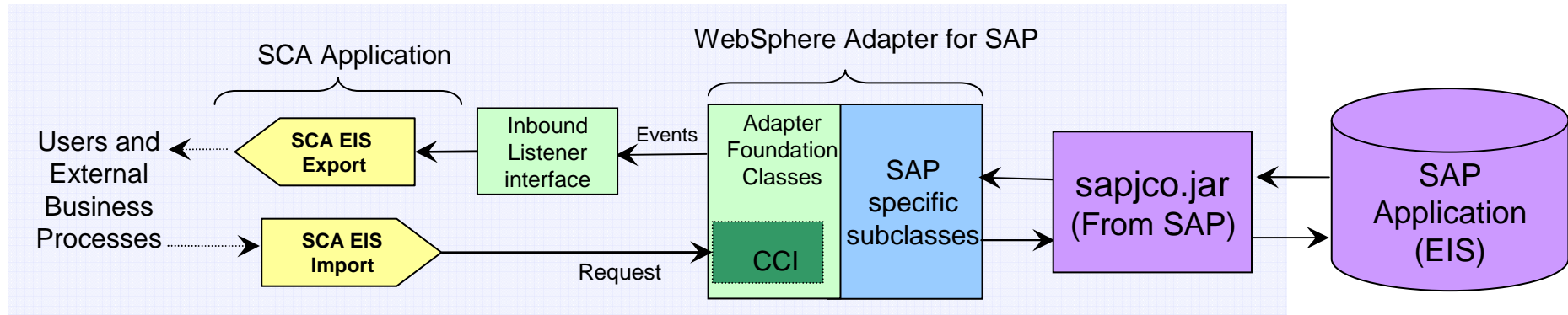
Outbound:
Managed Connection Factory
ConnectionSpec
InteractionSpec

Inbound:
ActivationSpec

provided by JCA spec

provided by foundation classes

provided by adapter developer

provided by EIS

provided by user using **IBM Integration Designer**

Key SAP Programming Models - Reference

- IDoc (SAP intermediate document)
  - IDocs represent SAP business objects as flat structures
  - Proprietary format defined by SAP for business data transmission
  - IDocs are used for asynchronous batch data transmission
- Business Application Program Interfaces (BAPI)
  - BAPI's are programming interface to access SAP Database from within SAP or other development platforms external to R/3 that support the Remote Function Call (RFC) protocol
  - The main objective of BAPI is to achieve integration between the SAP System and external applications, legacy systems, and so on.
  - BAPIs are defined in the Business Object Repository (BOR) as methods of SAP Business Objects or SAP Interface Types and enable object-oriented access to Business Components (application components) in the SAP System

- SAPJCo:
  - The SAP Java™ Connector (SAPJCo) is a toolkit that allows a Java application to communicate with any SAP system
  - The package supports both, Java to SAP system and SAP system to Java calls
- ALE (Application Link Enabling)
  - An integration interface in SAP's Business Framework Architecture.
  - Can integrate business processes between SAP Systems and external applications and between SAP Systems.
  - Application systems are loosely coupled in an ALE integrated system and the Data is exchanged asynchronously
  - Uses IDoc for data exchange

WAS SAP Adapter – Deployment options

- Stand-alone

  - One copy of adapter deployed in WAS is reused by all aplicatiions

  - Advantages

    - when moving from test to production

    - enables dynamic routing

    - reduces memory consumption

    - manageability
      - configure connection properties once for multiple modules connecting to SAP, connection pool sizes
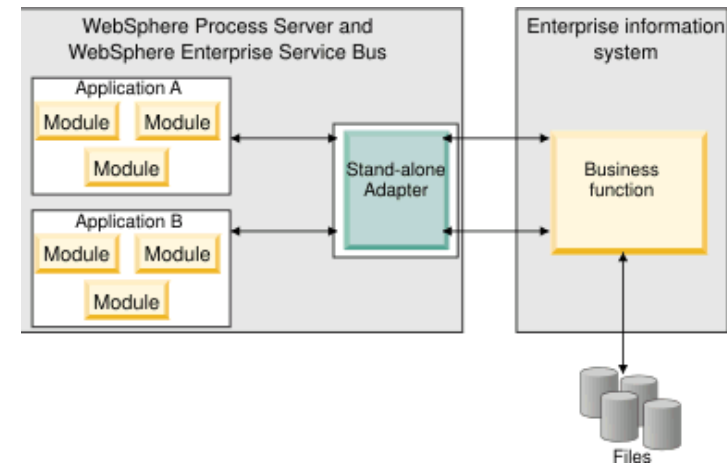
- Embedded

  - A copy of adapter deployed with application

  - Advantages

    - isolation

    - reduce dependencies between modules
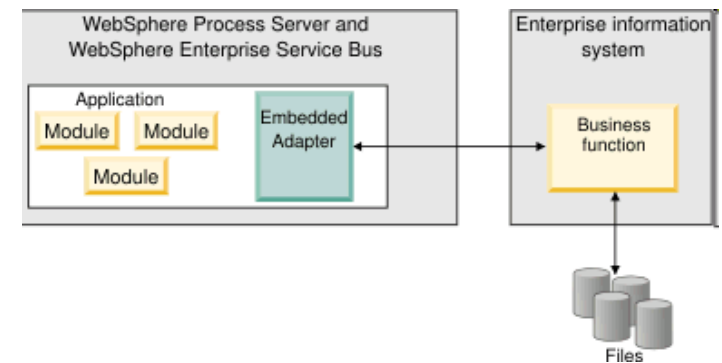
WAS SAP Adapter – Outbound interfaces

- BAPI (actually RFC)

  - Synchronous RFC

  - Asynchronous RFC (a.k.a. Transactional RFC, tRFC)

  - Queued RFC (qRFC)

- BAPI Unit of Work

- BAPI ResultSet

- Query Interface (a.k.a. SCI)

- Application Link Enablement (ALE)

  - IDOCs

  - IDOC pass-through

  - IDOC unparsed (i.e. Data record unparsed)

  - Via qRFC and tRFC

- Advanced Event Processing (AEP)
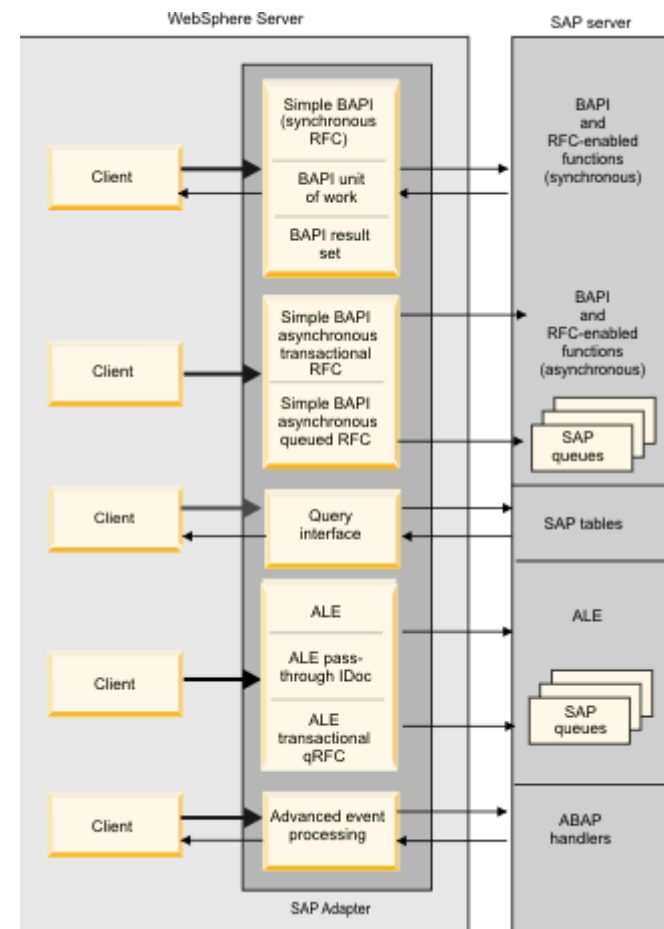
WAS SAP Adapter – Inbound interfaces

- BAPI (actually RFC)

  – Synchronous RFC

  – Asynchronous RFC
     (a.k.a. Transactional RFC, tRFC)

  – Queued RFC (qRFC)

- Application Link Enablement (ALE)

  – IDOCs

  – IDOC pass-through

  – Via qRFC and tRFC

- Advanced Event Processing (AEP)
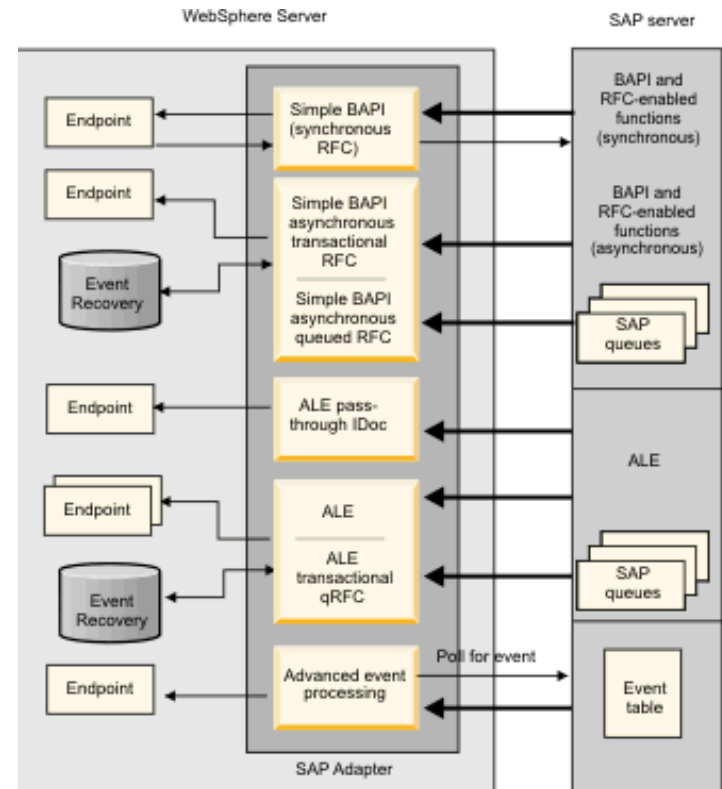
SAP Adapter Wizard - Inbound / Outbound

Agenda

- IBM BPM 8 Advanced overview

- SAP Integration

  - Data integration

    - SAP Adapter
    - Outbound & Inbound integration

  - SAP Solution Manager

  - **Demo**

- Q&A

Order Fullfilment Scenario Architecture

Order Fullfillment Scenario

IBM

Questions