From TP to Web Services:

Using BEA WebLogic Server and HP BridgeWorks to Expose Business Transactions as Web Services

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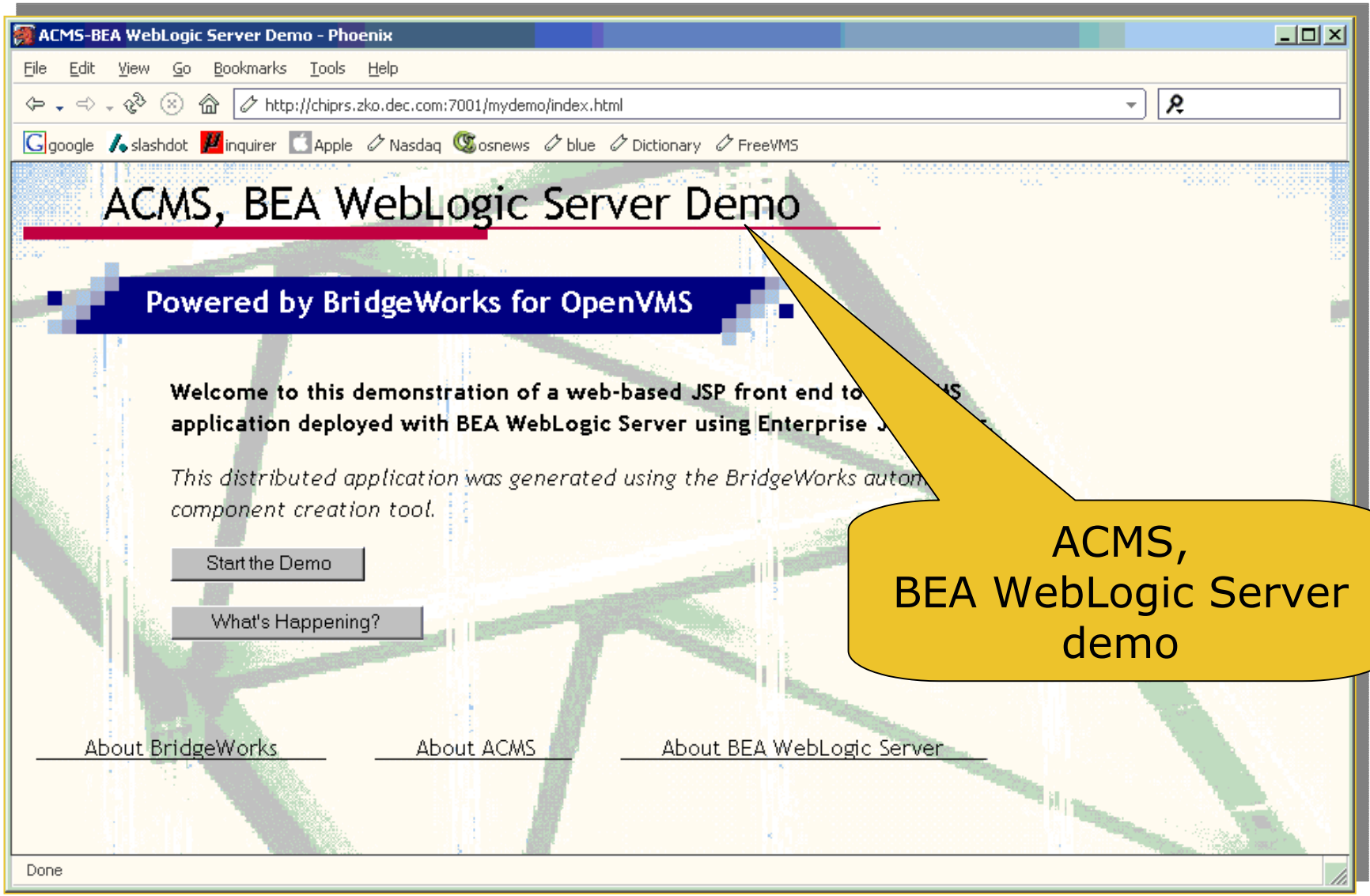
Solutions and Technology Conference & Expo

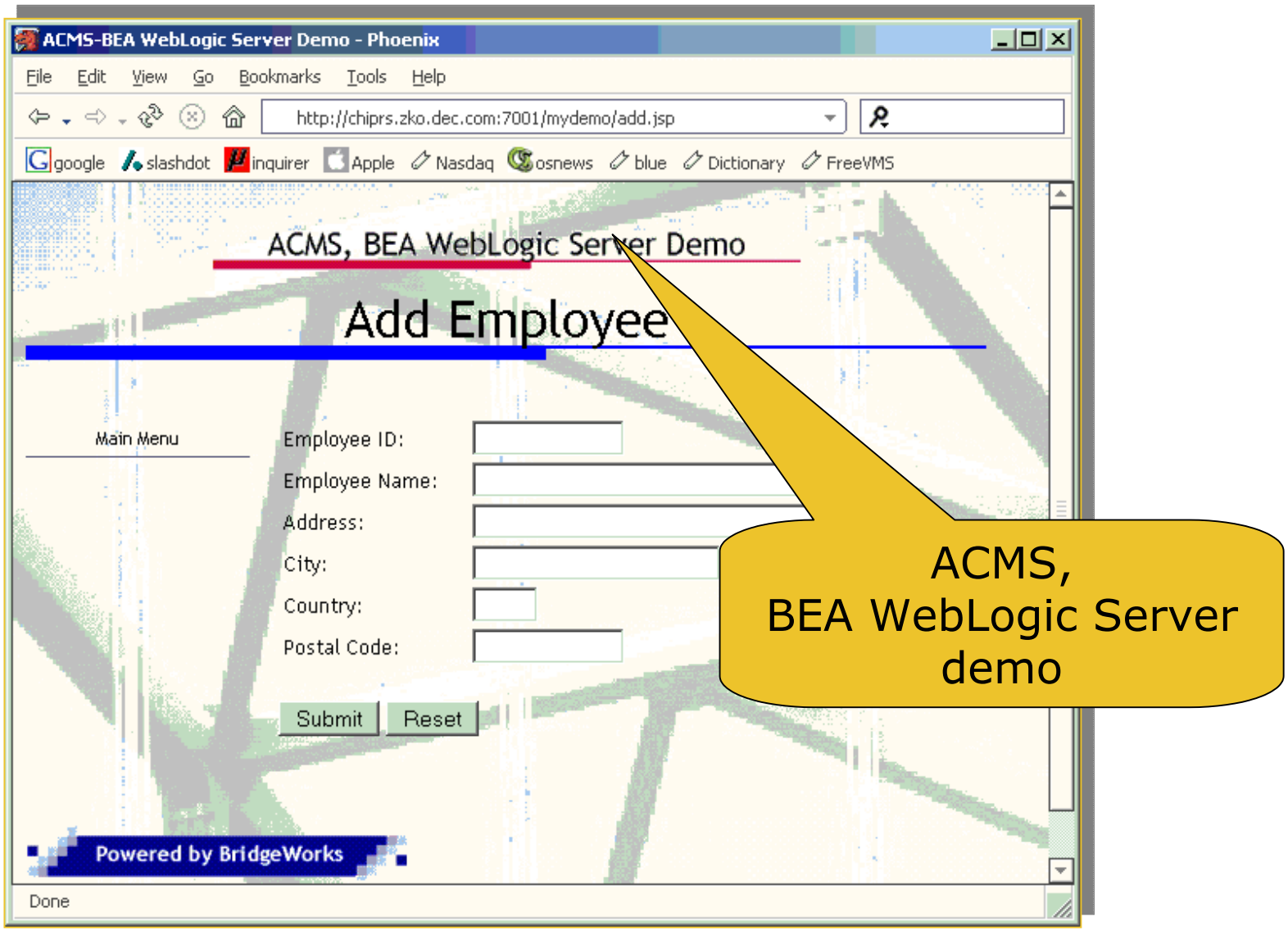
Agenda

- **From**
  - Transaction Processing
    - ACMS: Application Control and Management System
    - hp BridgeWorks
    - BEA WebLogic Platform
    - BEA WebLogic Workshop
    - BEA WebLogic Server
- **To**
  - Distributed Computing and
  - Web Services
- **Summary**

Transaction Processing



Transaction Processing

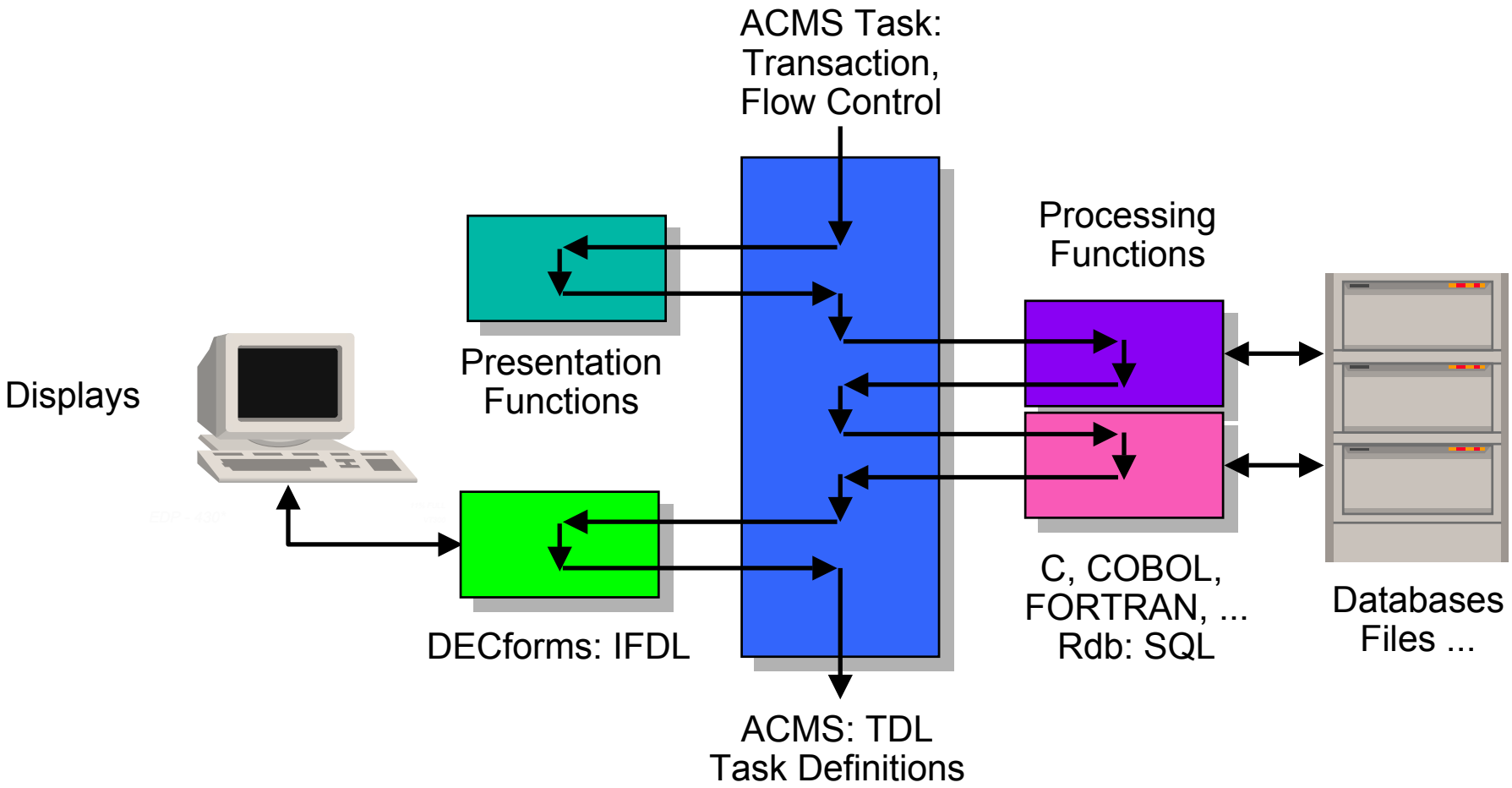


Application Control and Management System

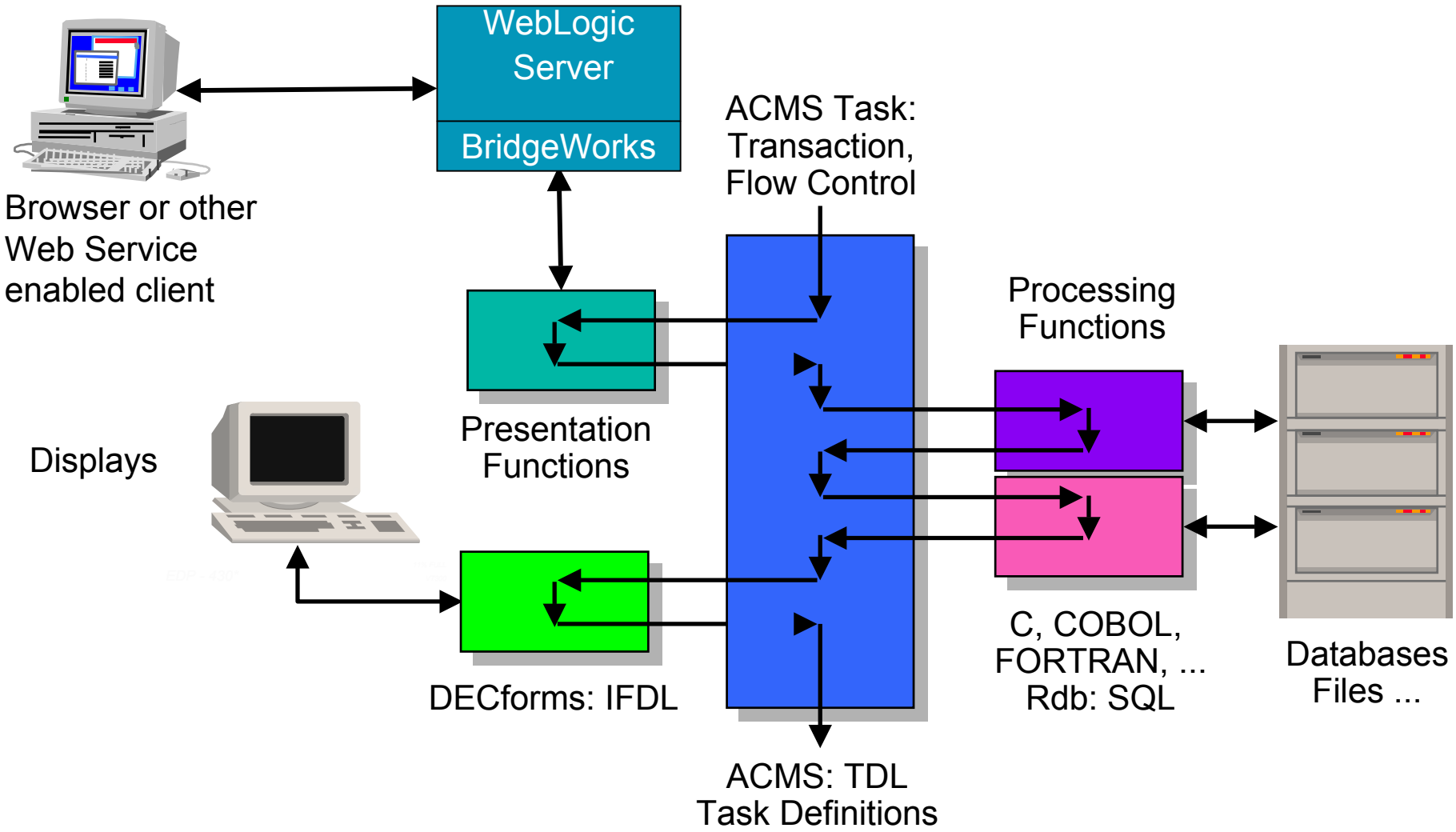
- Designed and written 1981-1984
- V1.0 – 1984 – First release, after 2 field tests
- V1.2 – 1985 – 1st client/server release
- V3.2 – 1991 – Distributed Txn (DECdtm) support
- V4.0 – 1994 – Port to OpenVMS Alpha
- V4.3 – 1998 – Remote Manager support
- V4.4B – 2002 – Current Release

- Some 15,000 systems in [mission critical] production world-wide

ACMS Application Model



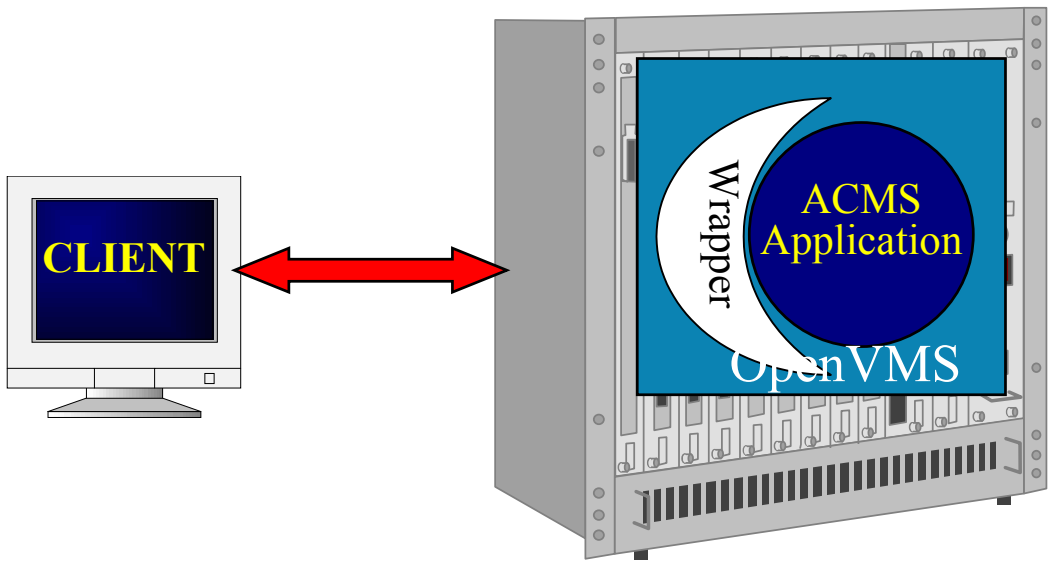
ACMS, hp BridgeWorks and BEA WebLogic Server



Modular Applications With a TP-Specific Programming Language

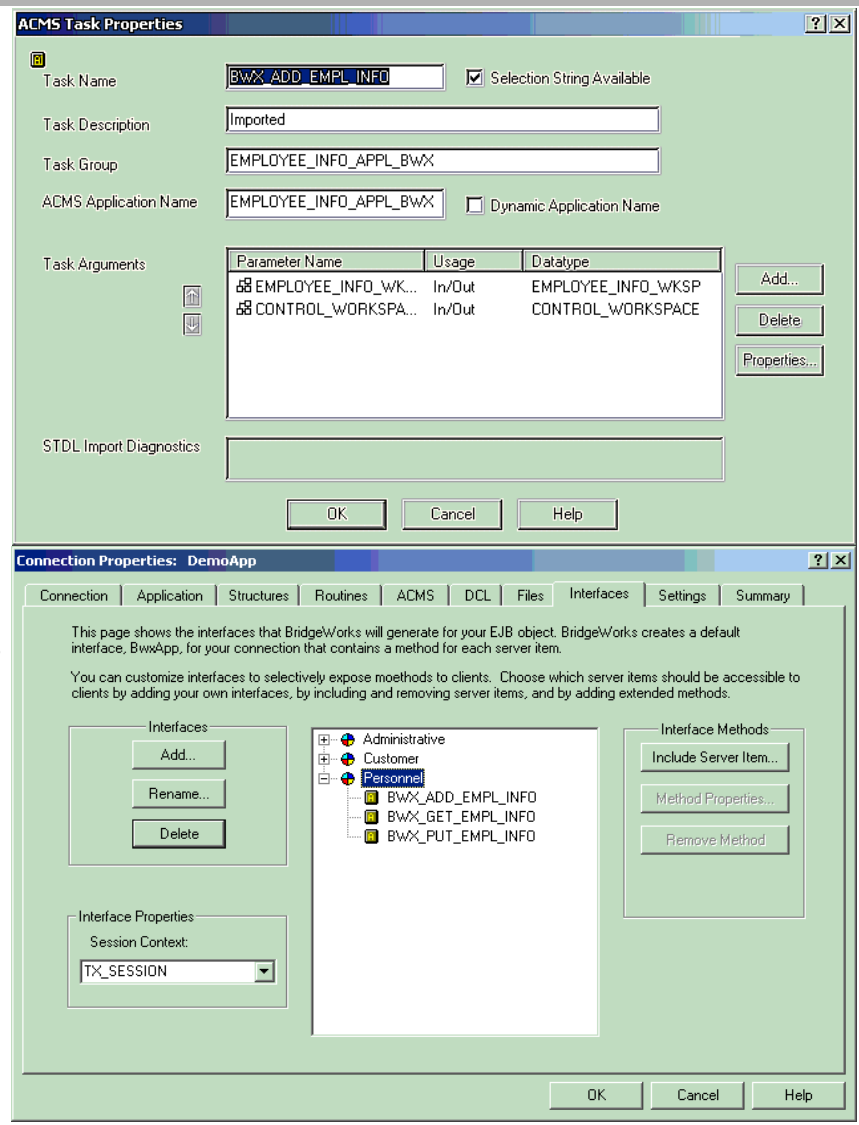
Hp BridgeWorks

- Provides
  - Wizard-style dialogs to step users through code generation
  - Easy Point & Click building of Components/Interfaces
  - Easy modification of previously generated ‘connections’



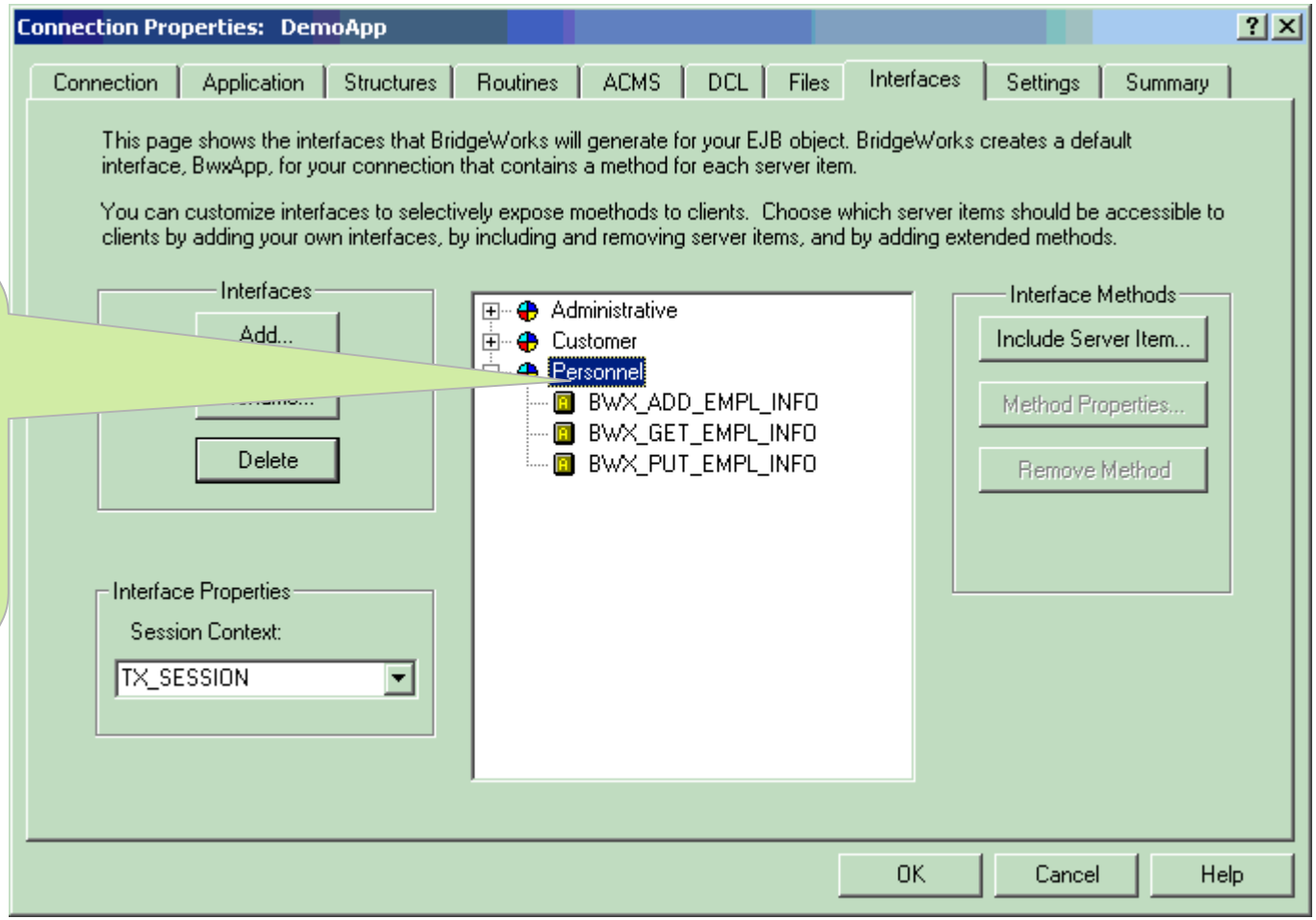
hp BridgeWorks

- Generates robust EJB Interfaces from your TP application
  - Creates J2EE Stateful SessionBeans
  - Creates 1 EJB per interface
- Generates JavaBean Interfaces from your TP application
  - Creates a single simple class per interface
  - J2EE environment not needed to build or run



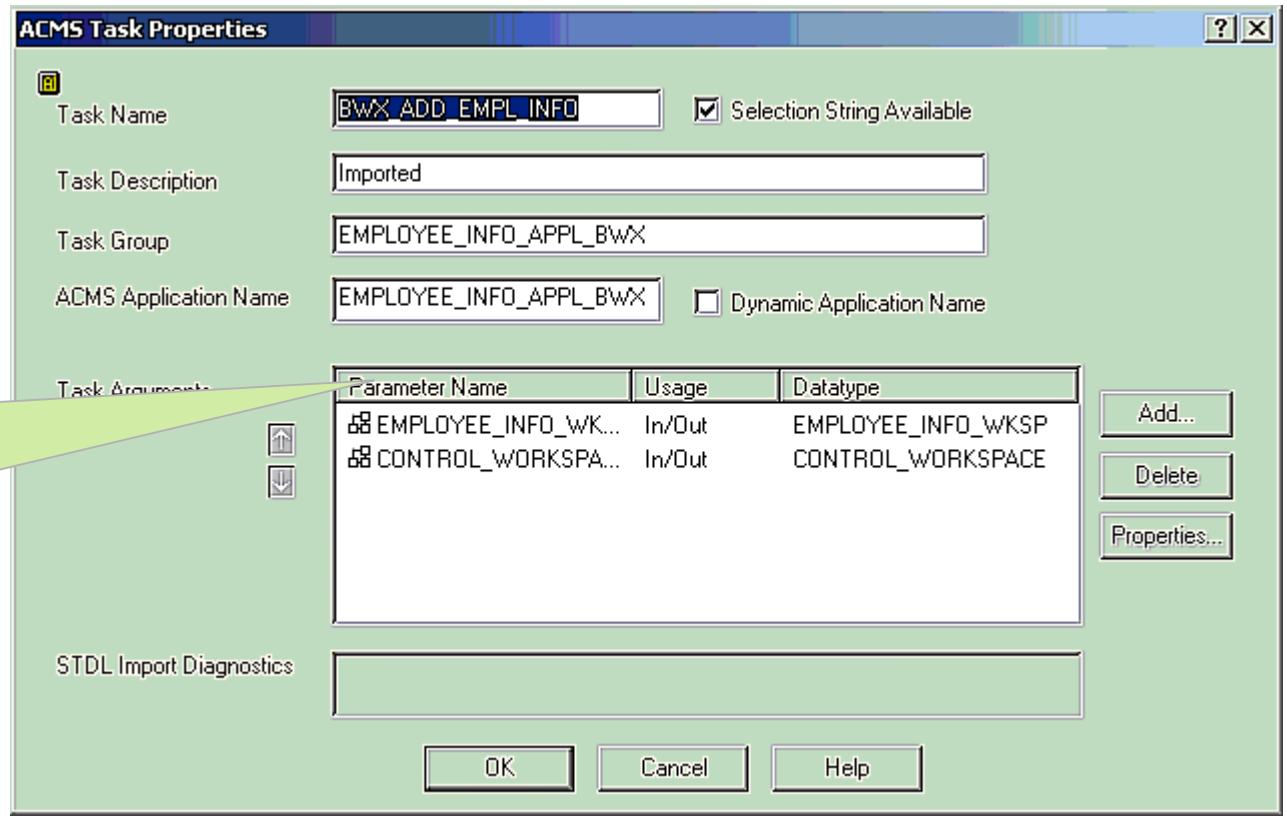
hp BridgeWorks

ACMS Task (Txn.) imported by BridgeWorks from ACMS meta-data automatically

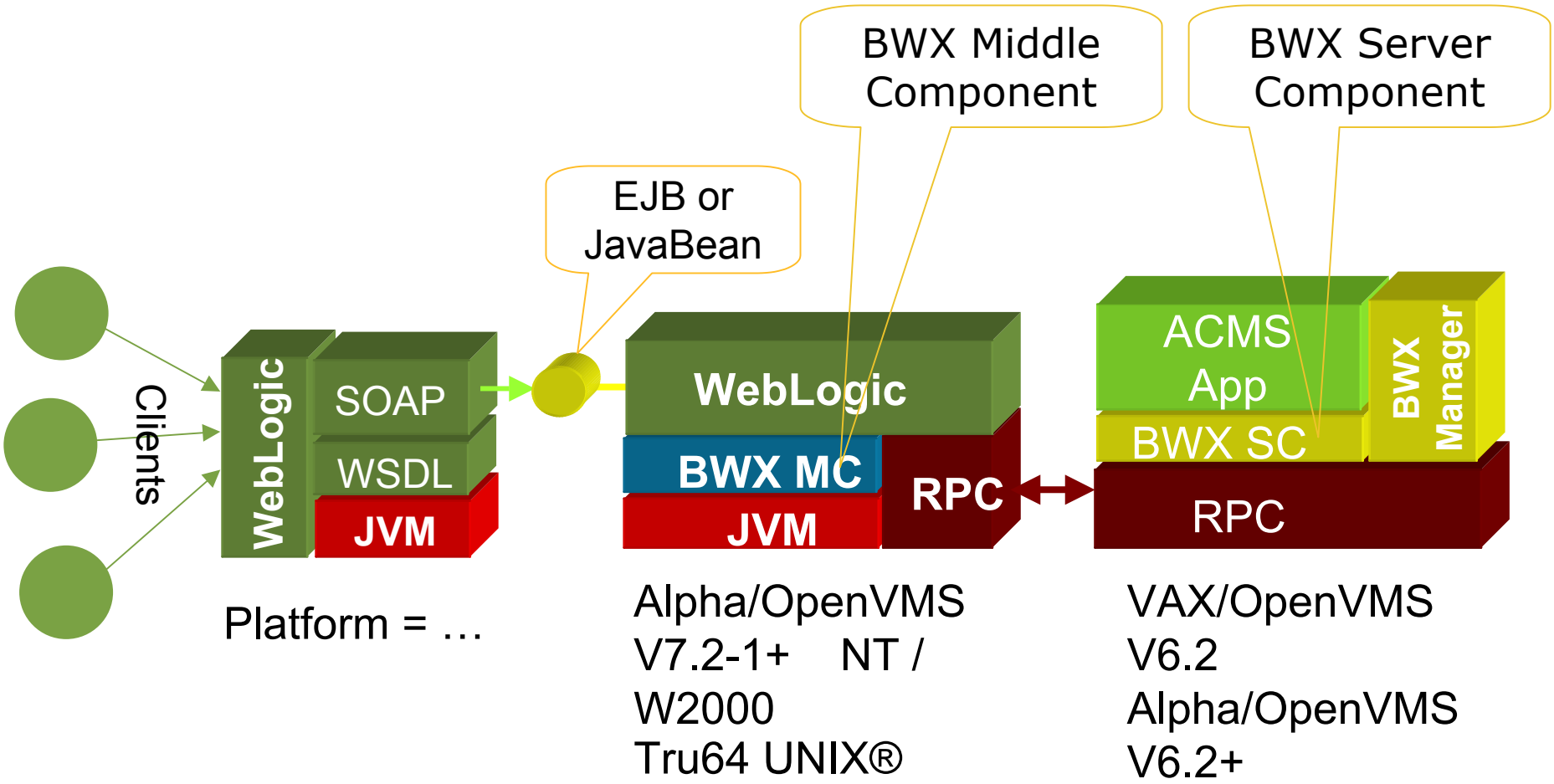


hp BridgeWorks

ACMS Task (Txn.) 'attributes' displayed by BridgeWorks



hp BridgeWorks (BWX) Components



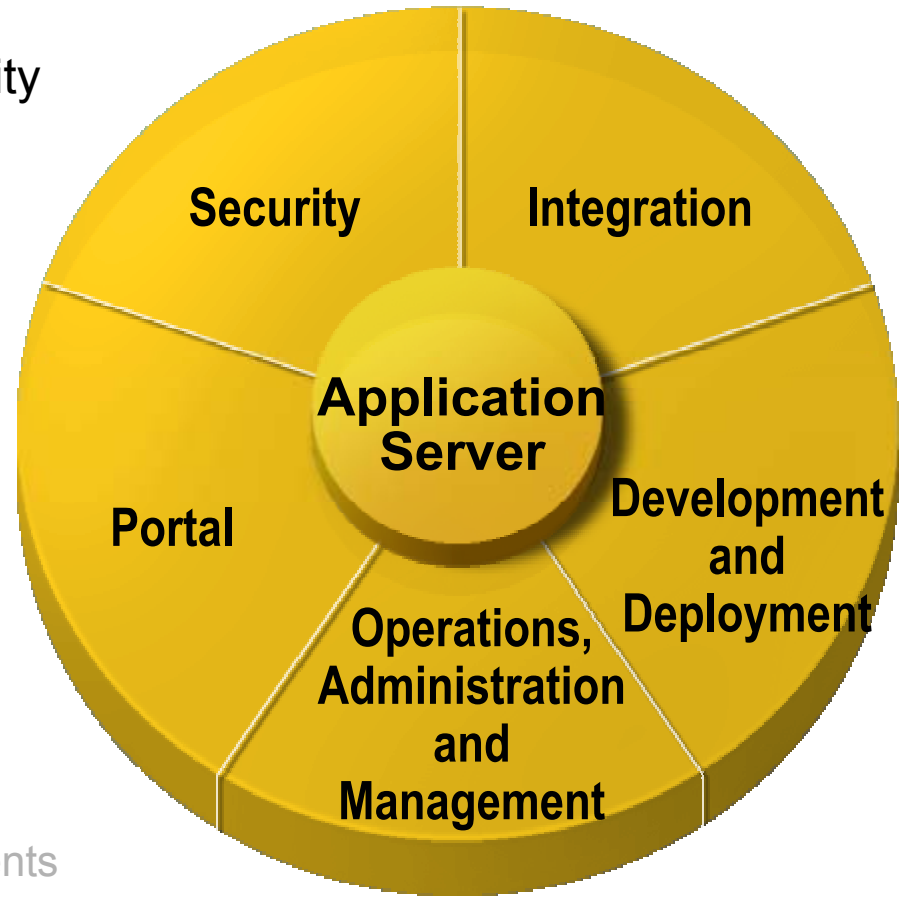
BEA WebLogic Platform

BEA WebLogic Server

- Scalability, Reliability
- Component model, J2EE
- Transactions
- Admin & Security
- Web Services

BEA WebLogic Portal

- Personalization
- E-Commerce
- E-Marketing
- Usability Enhancements
- Web Services



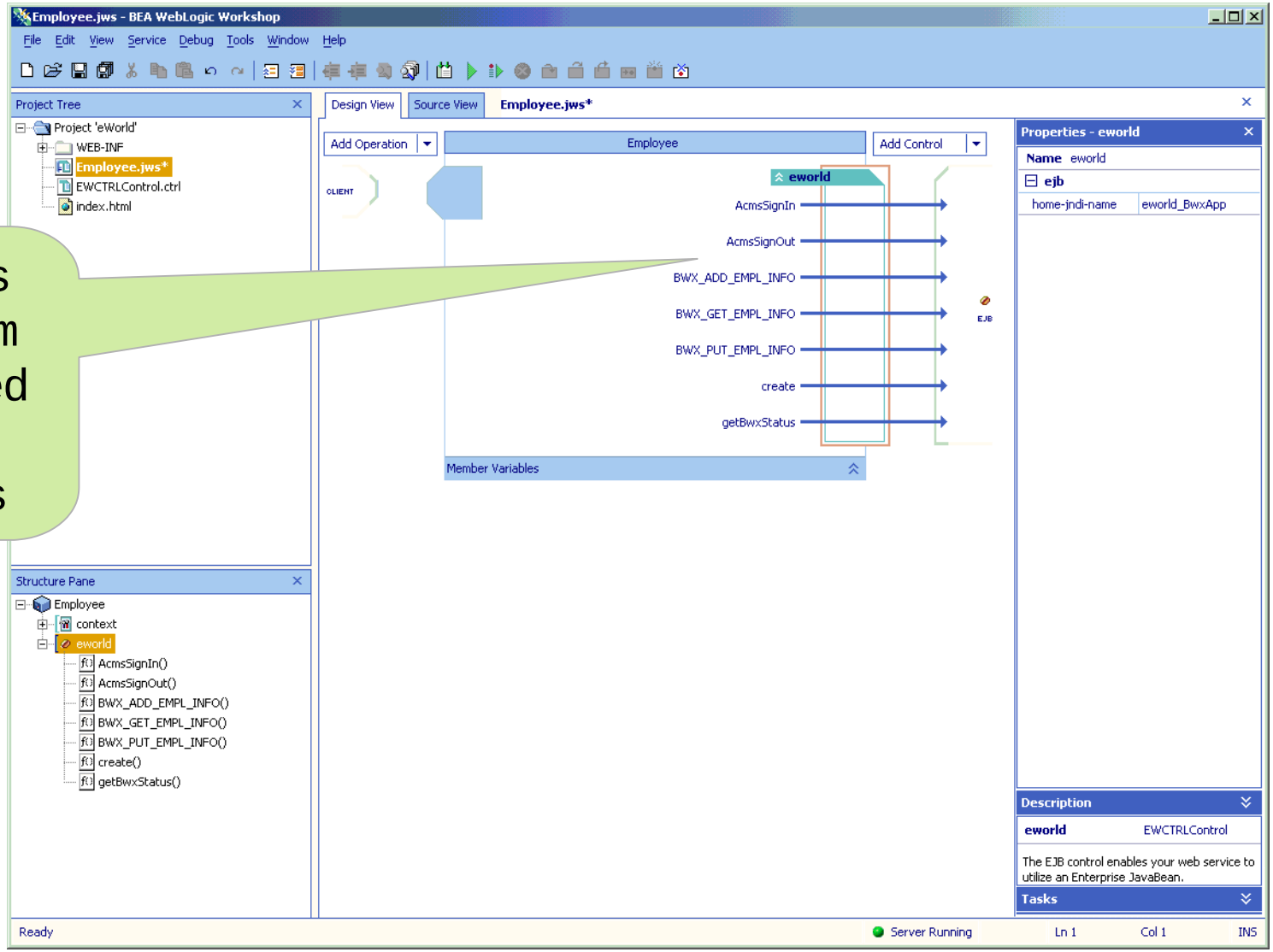
BEA WebLogic Integration

- Business Process Management
- J2EE CA Adapters
- Scalability & Reliability

BEA WebLogic Workshop

- Quickly build Enterprise Applications
- Make J2EE and Web Services accessible to all developers, not just experts

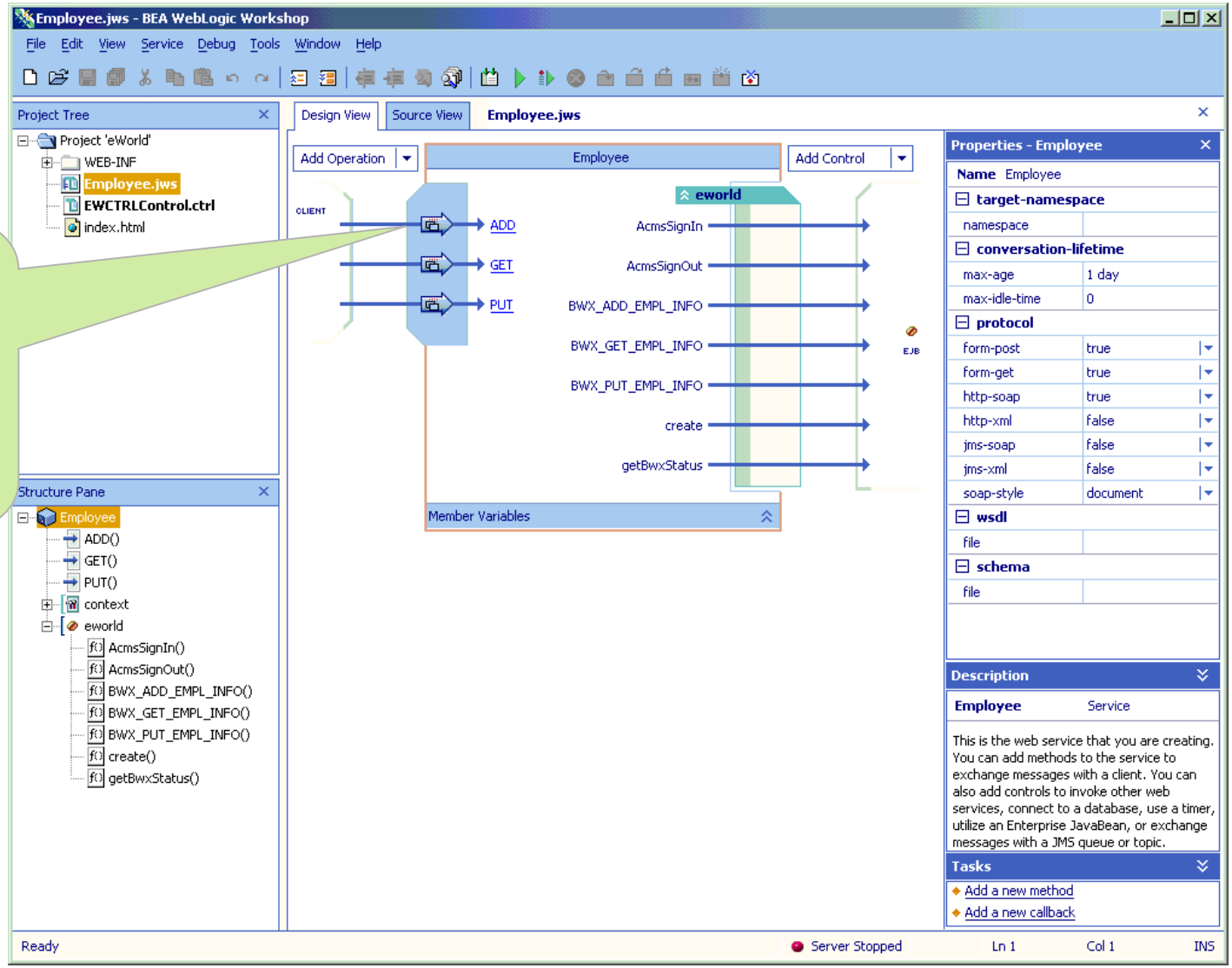
BEA WebLogic Workshop



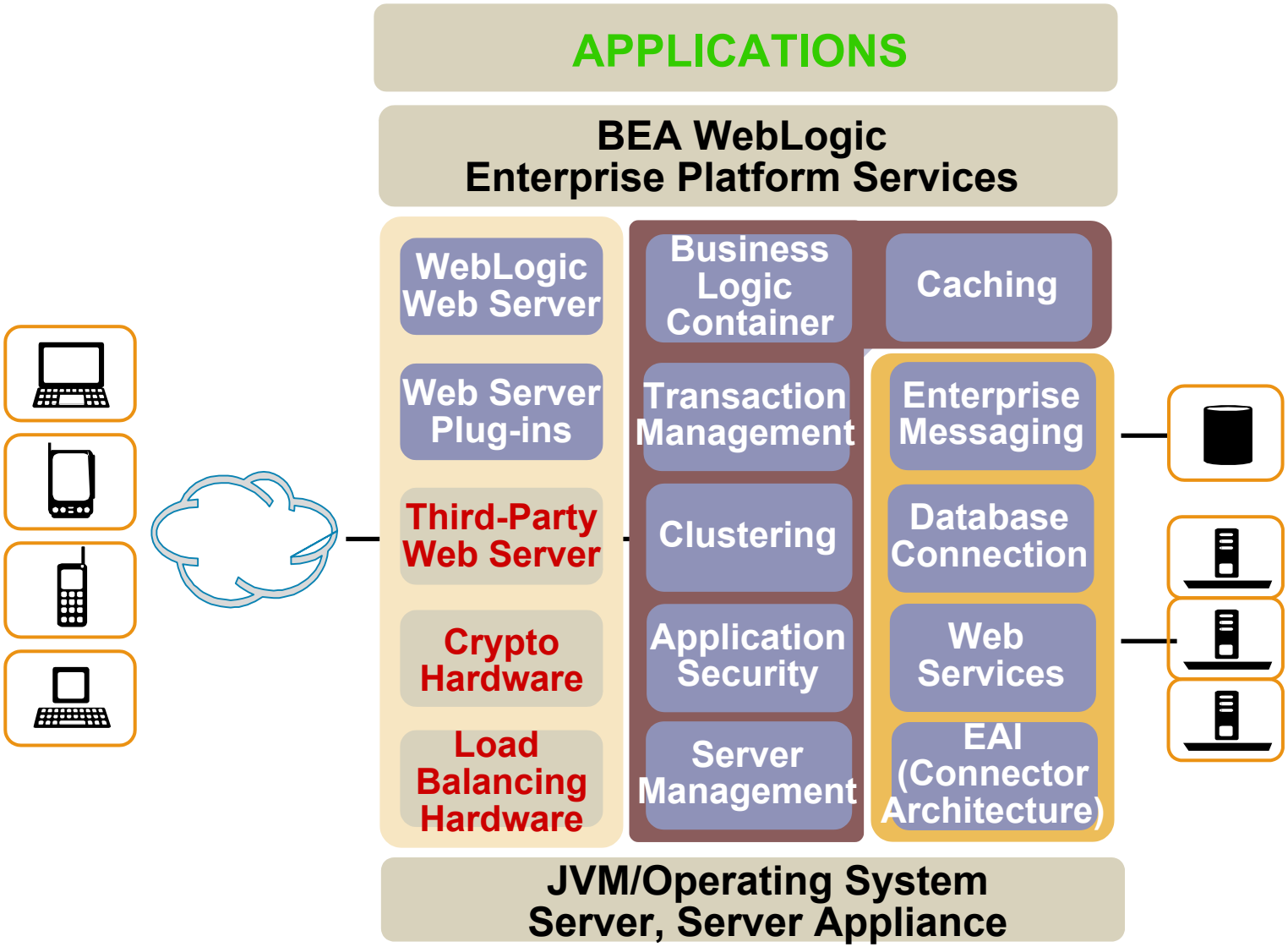
ACMS Tasks 'imported' from EJB generated by hp BridgeWorks

BEA WebLogic Workshop

ACMS Task 'methods' for invocation by WebLogic Server

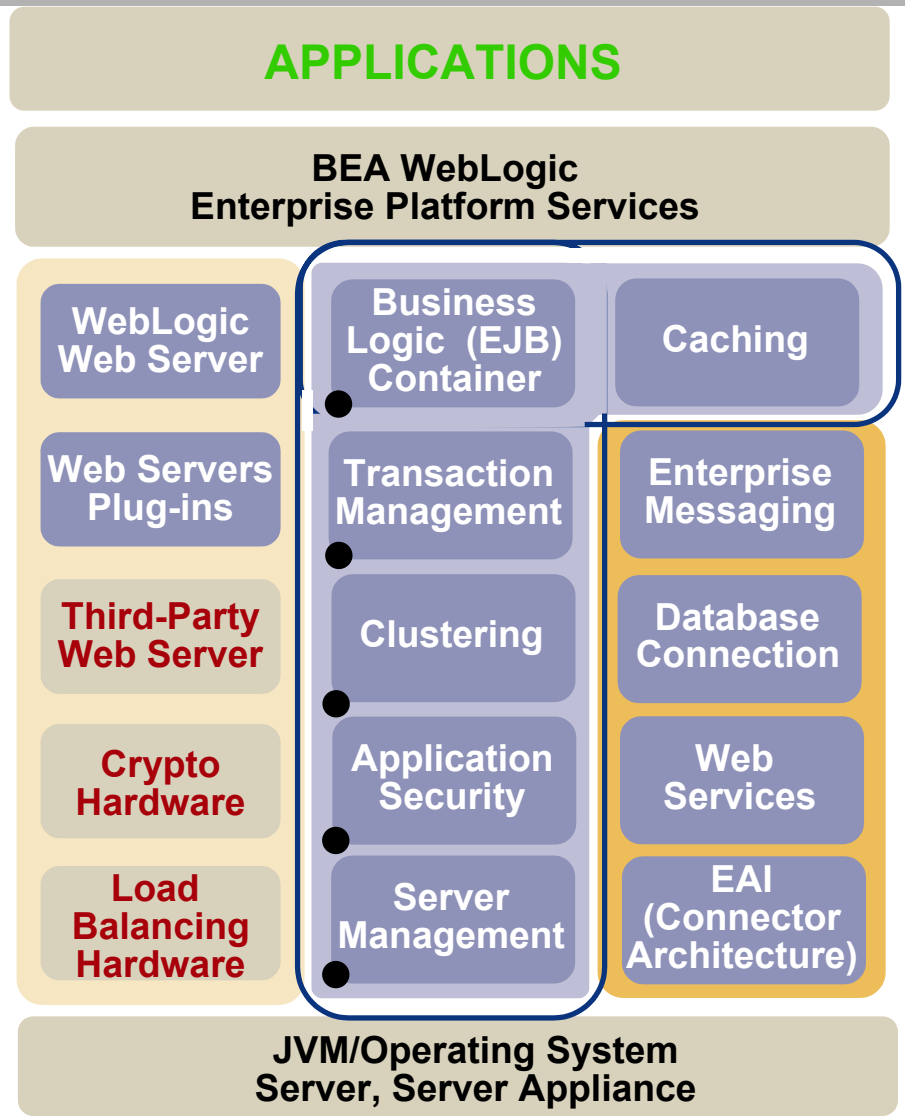


BEA WebLogic Server Architecture



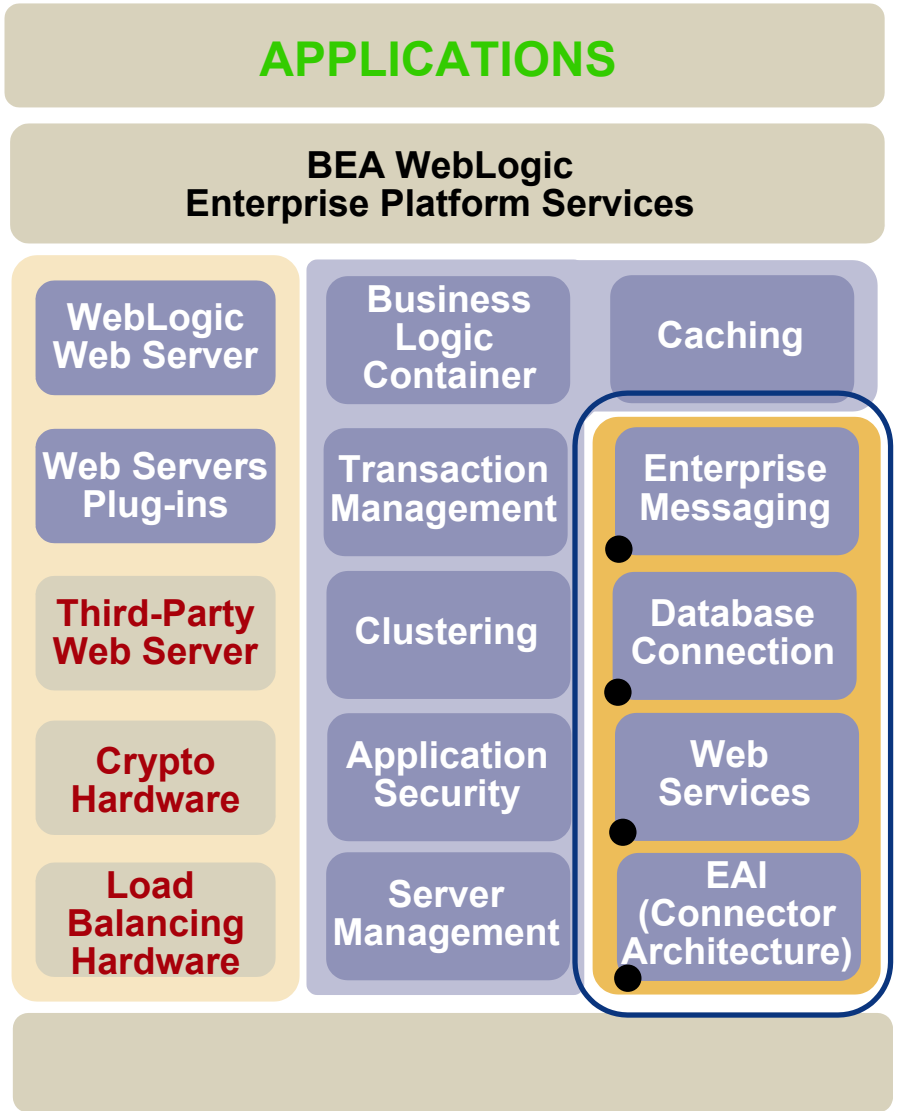
BEA WebLogic Middle tier

- J2EE Services
  - Session, Entity, Message Driven Beans (EJB 2.0)
  - Naming and Directory (JNDI)
  - JMS
  - Security
  - Transactional Support (JTA, two phase commit)
- Caching
  - EJB
- XML (with JAXP)



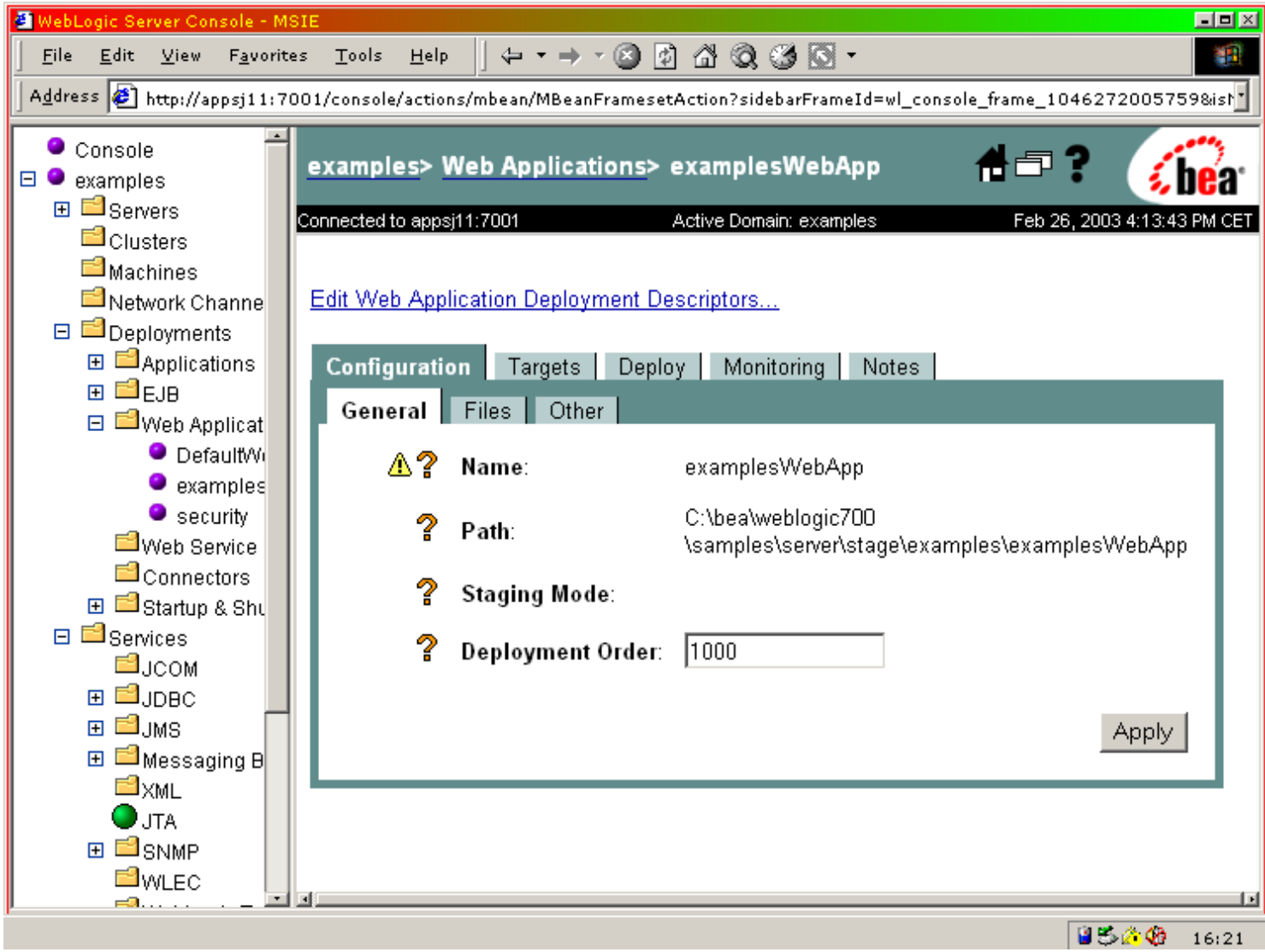
BEA WebLogic Integration Tier

- Web Services Support
  - XML, SOAP, WSDL, UDDI
- J2EE Connector Architecture
- Messaging
  - Built-in JMS
  - Messaging Bridge
- DBMS Access via JDBC, jDrivers
- RMI/IIOP
- WebLogic Tuxedo Connector
- jCom

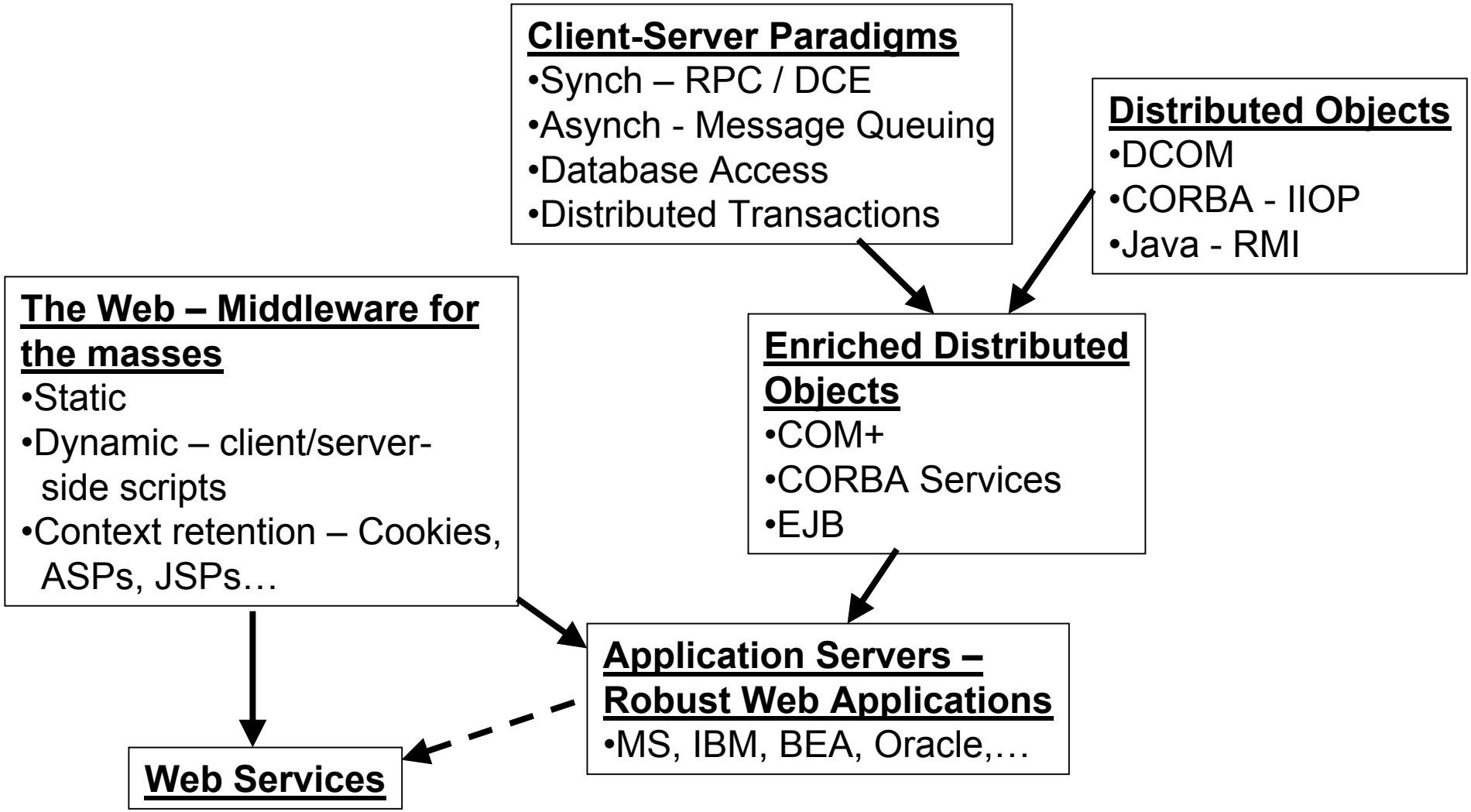


BEA WebLogic Server

Used to invoke and control the EJB or JavaBean methods generated by BridgeWorks from ACMS meta-data



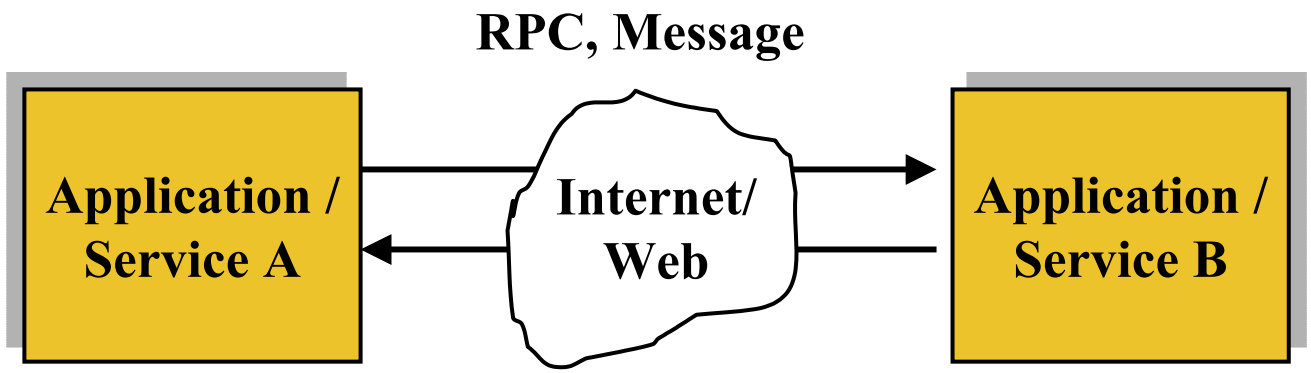
Distributed Computing: Brief History



Web Services

- Provide the 'wire protocol' to:
  - Enable the invocation of remote methods
  - Handle marshalling of arguments
  - Allow message or RPC based connections
- Enable the discovery of services through standards-based directories
- Hide the intricacies of the methods being invoked
- Allow invocation of methods regardless of language and platform
- Endorsed by both Java and .NET
- Are prerequisite for Service-oriented Architectures

Web Services – New Paradigm

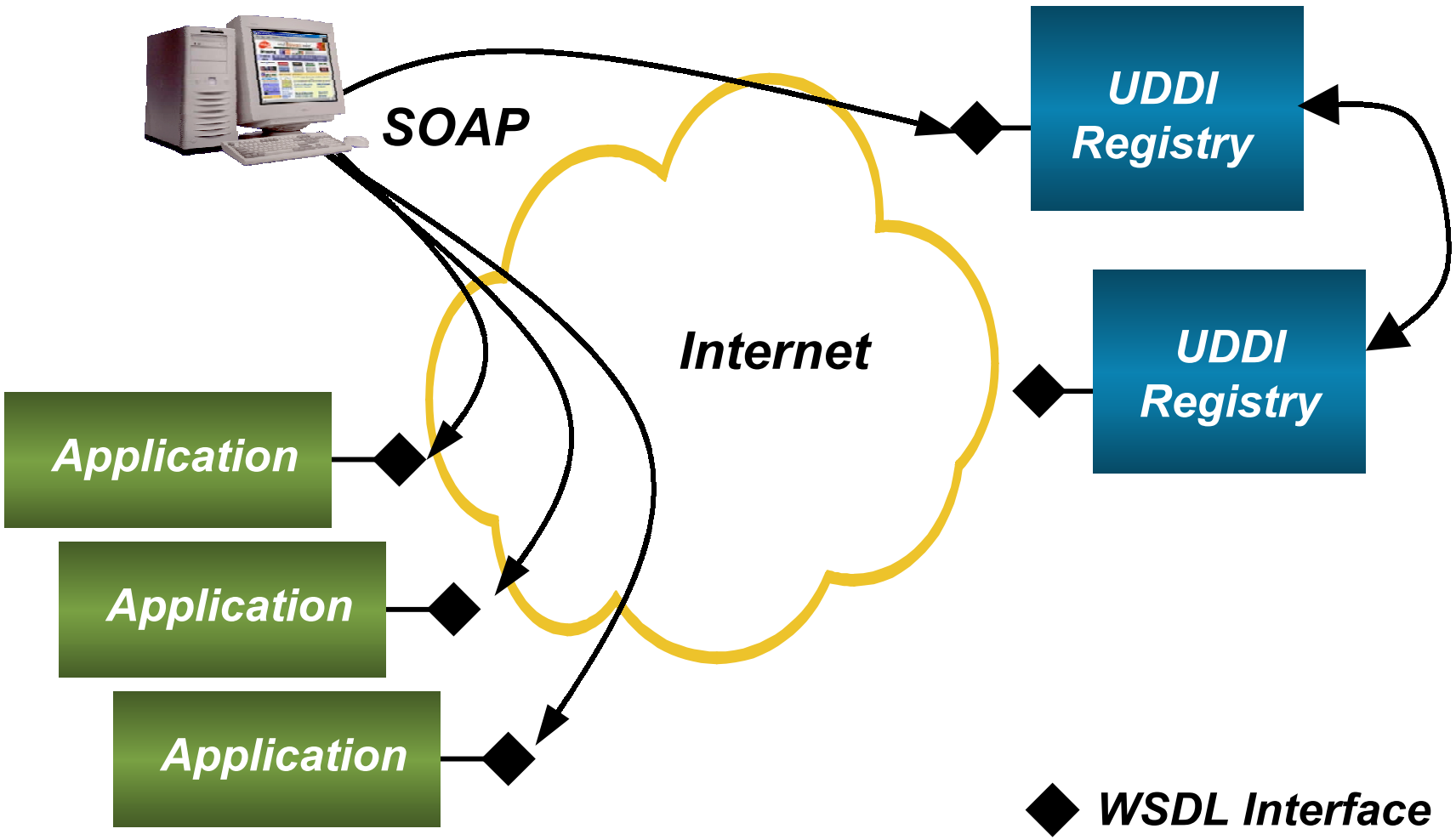


- Build (internet-wide) distributed applications via Web Services:
  - accessible using standard Internet protocols
  - Independent of operating system
  - Independent of programming language
  - represent black-box functionality that can be reused without worrying about how the service is implemented

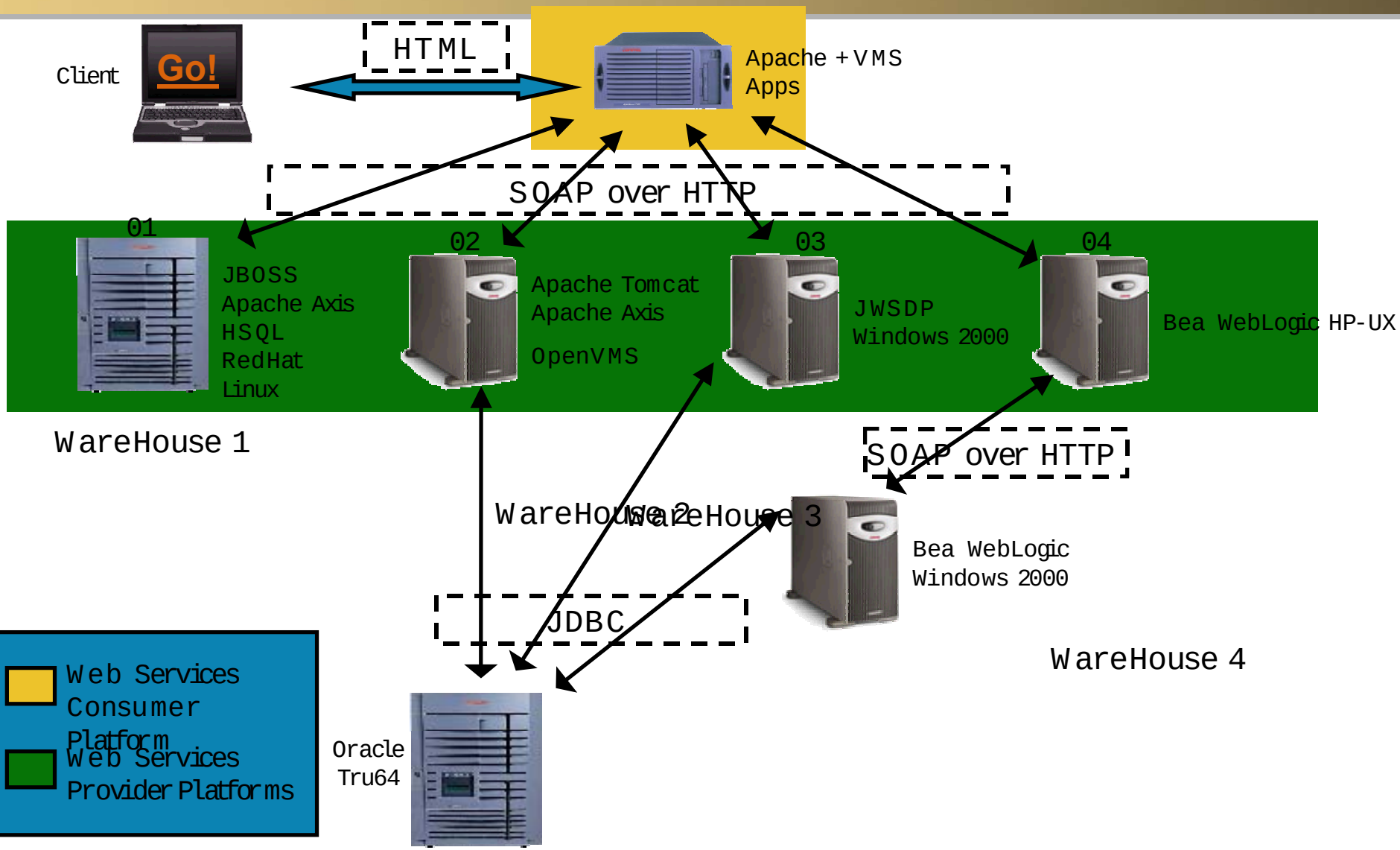
Web Services Technologies

- Simple Object Access Protocol (SOAP)
  - An XML-based way to invoke Web services
- Web Services Description Language (WSDL)
  - An XML-based language for describing Web services
- Universal Description, Discovery, and Integration (UDDI)
  - A registry for Web services
- Global XML Web Services Architecture (GXA)
  - SOAP headers for security and more

Web Services Technologies



Web Services - Typical Architecture



Summary

- Quickly generate all necessary components with little to no manual intervention or changes
- Generate EJB or JavaBean components from same definitions with no changes
- Integrate 'old' transactions using Web Services
- Reuse well-tested, reliable and long-running transaction processing functions
- Increase return on IT investment

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