



Web Services Infrastructure

**Patrick Thompson
Rogue Wave Software, Inc.**



Web Services

- SOAP is being used to create web services.
- A web service is a piece of functionality that can be invoked over the web (HTTP).
- Web services are either created from scratch or by presenting existing functionality as web services.



Implementing Web Services

- URL addressable
 - Platform, language independent
 - Do not require specific object model infrastructure on client and server
 - Implementation is opaque to client (black box)
- ? Can be considered “components for the Web”



Rogue Wave SOAP Experience

- We've been developing SOAP products since the SOAP 0.9 specification.
- We make SOAP bridges for accessing existing enterprise services and for creating new web services.
- We eat our own dog food... yum!



RW SOAP Products

- Creation of SOAP Web Services
- Current products provide access to existing resources: XML-CORBA Link and XML-DB Link.
- Common infrastructure provides support for security, service composition, transformations, HTTP GET access, pervasive devices.



XORBA

- XML-CORBA Link, a.k.a., XORBA, is a SOAP to CORBA bridge.
- It currently works with Orbix, VisiBroker, and Rogue Wave's ORB.
- Should work with any ORB that supports IIOP.
- Converts SOAP requests into IIOP requests and translates IIOP response into a SOAP response.
- Plugs into web servers.

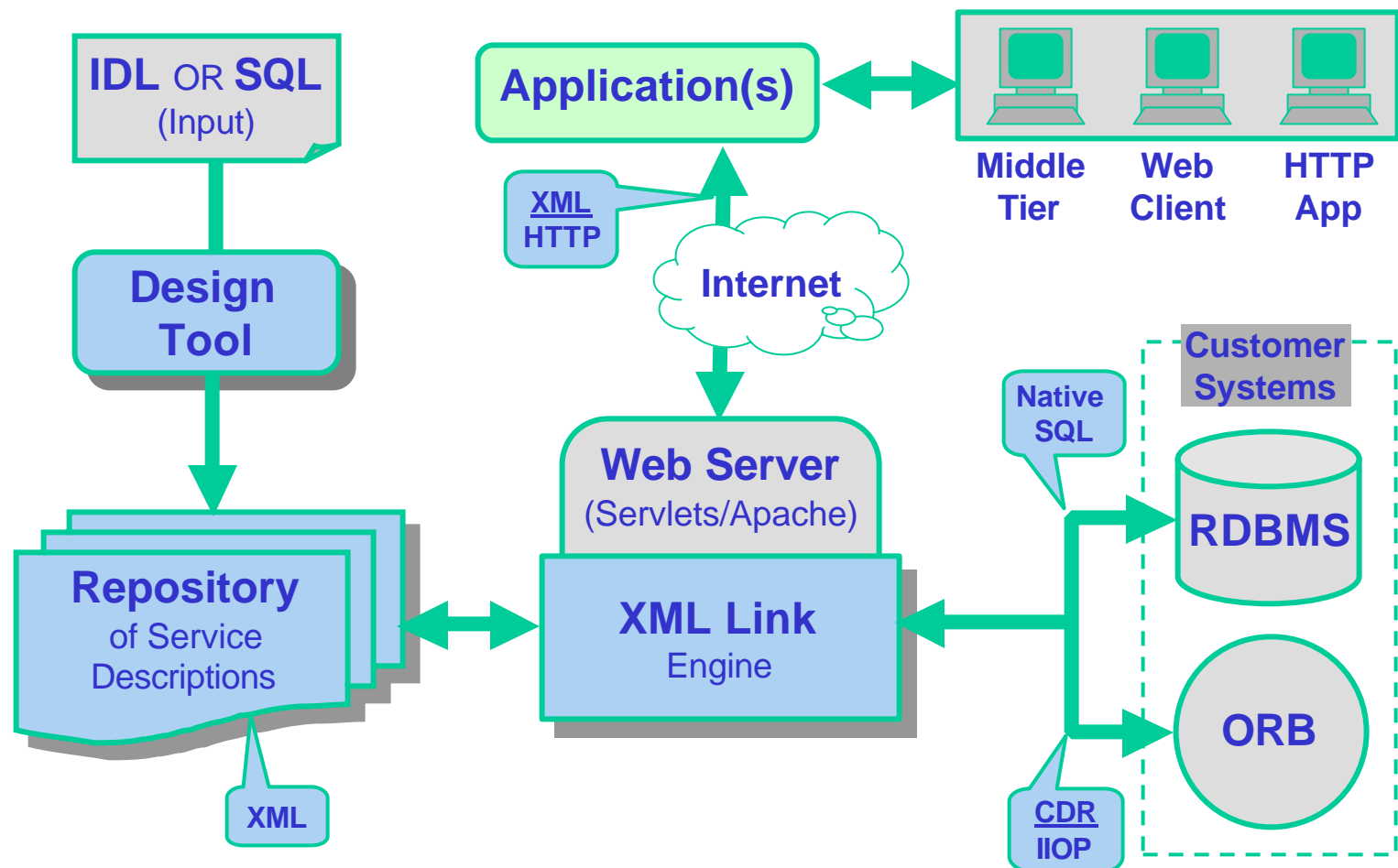


XML-DB Link

- Provides access to databases via SOAP.
- A named and parameterized set of SQL statements is invoked by a SOAP call.
- The result set is formatted as a SOAP response.
- Supports multiple databases and platforms via DBTools.h++.



XML Link Architecture



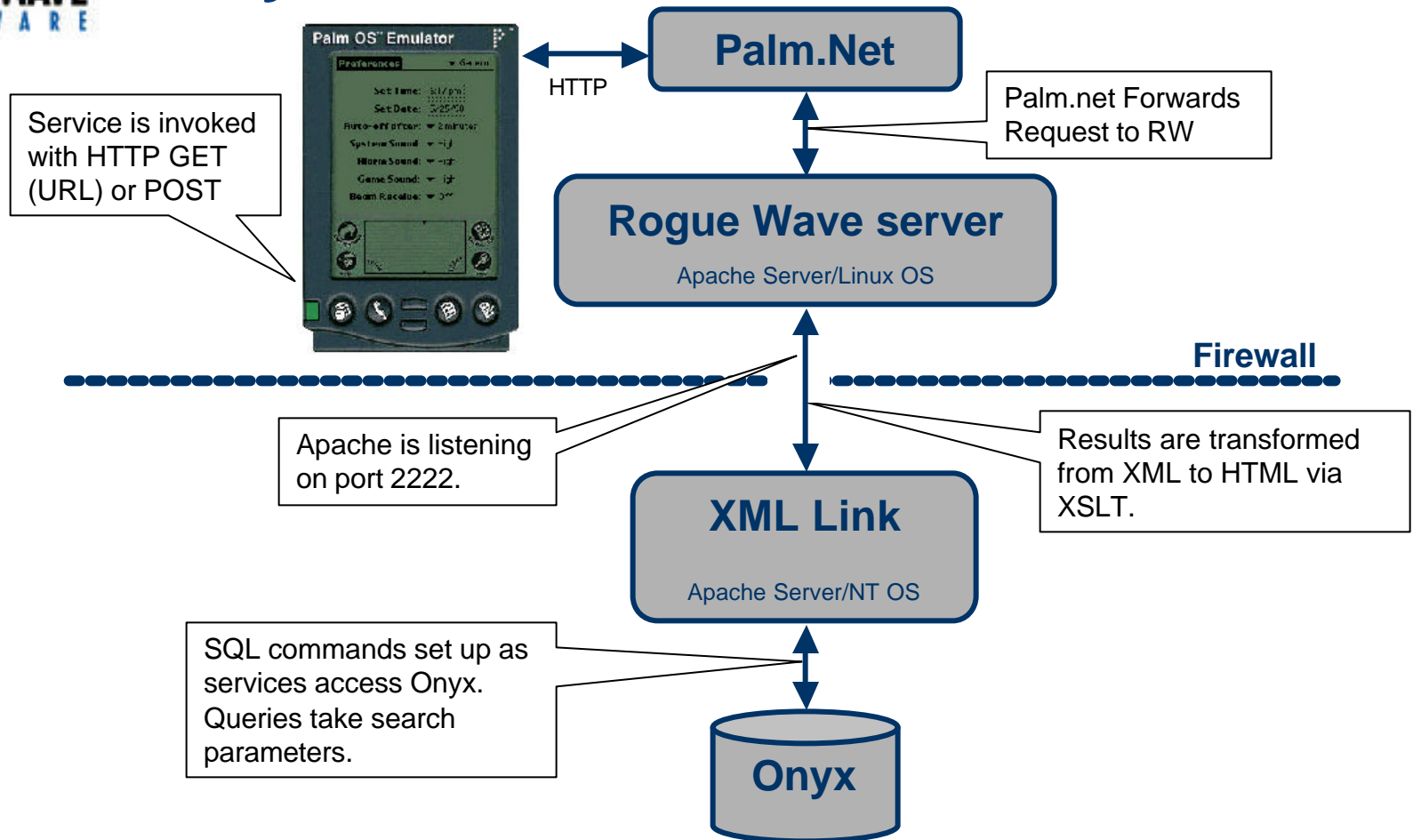


Composition & Transformations

- The XML Link infrastructure supports web service composition and transforms through a service composition language.
- You can create new web services by composing existing web services.
- Web service requests and responses can be transformed using XSLT.



Wireless Example: XML-DB Link & Onyx





Implementing a Knowledge Base

- Web access to our knowledge base.
- Knowledge base stored in Onyx database. Includes code samples formatted in HTML.



Lessons

- **Pluses**
 - Very flexible.
 - Allows loose coupling.
 - Mix and match clients, servers, and transports (bridging).
- **Minuses**
 - Performance impact.
 - Can't embed other XML documents or HTML (directly) within a SOAP request or response.