

Integrating J2EE and .NET Applications with Web Services

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Agenda



- Interoperation Goals
- Issues
- Steps
- Trends
- Example



Application Integration



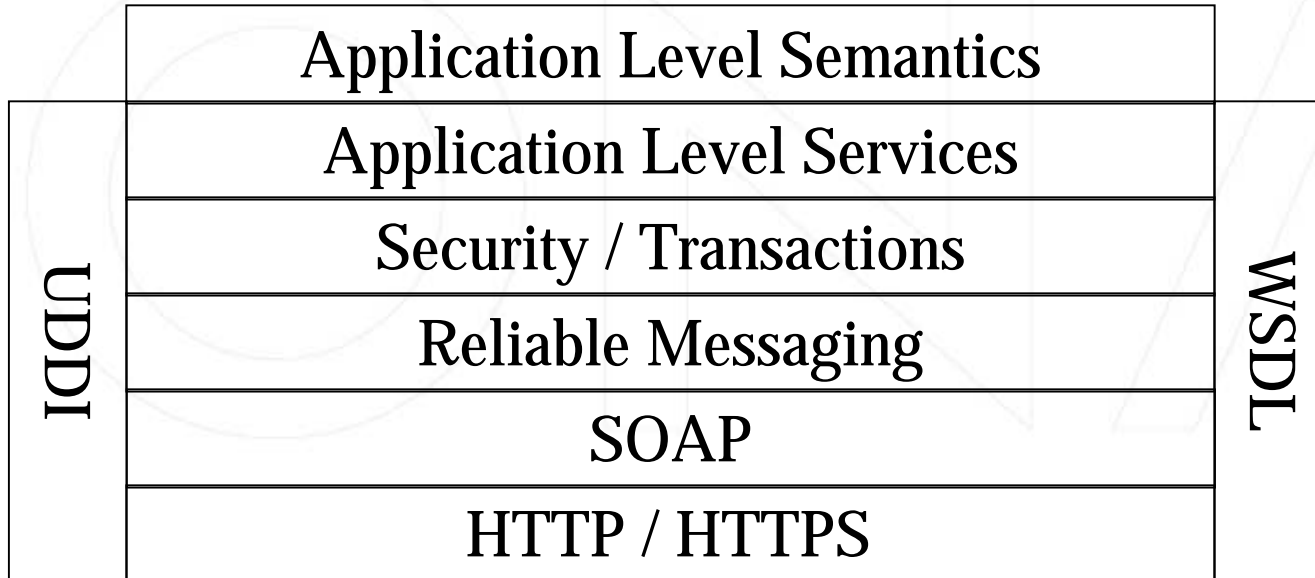
- Integration of J2EE (and other enterprise) applications with .NET applications
 - .NET clients to J2EE services
 - J2xE clients to .NET services
 - Peer to Peer: J2EE and .NET services
- What does this mean?
 - Discovery
 - Connectivity
 - Security, Transactions, etc...

Technologies



- WSDL 1.1 (WSDL v1.2 – spec not complete)
- SOAP 1.1 (SOAP v1.2 – spec not complete)
 - SOAP with Attachments
 - Encoding styles
 - RPC/Encoded (common)
 - RPC/Literal
 - Document Encoded
 - Document Literal (more robust w/ XML Schema)
- WSIL (used by VS.NET)
- UDDI
- HTTPS

Technology Stack



Interoperability



- SOAP messages and data types
 - Round 1
 - Round 2
 - Round C (Headers)
 - <http://www.xmethods.net/ilab/>
- WSDL
 - Rounds D, E, F
 - February 27-28
 - hosted by IONA in Waltham
 - <http://interop.xmlbus.com:7002>

The Semantic Mismatch



- J2EE (and CORBA) interfaces are typically too low level for web services
 - Request granularity
 - Interaction Style
 - Data types
- Can't just take existing J2EE and transform into a web service
- Can design J2EE interfaces to also be exposed as web services
- Or...

Interface Refactoring (1)



```
package Services {
    interface Service {
        readonly attribute string name;
    };
    struct Currency {
        string CurrencyCode;
        float value;
    };
    interface CurrencyConversionService : Service {
        Currency convert(in Currency from);
    };
    interface ServiceManager {
        Service getService (in string serviceName);
    };
};
```

Interface Refactoring (2)



```
<operation name="dollarsToEuros">
  <soap:operation soapAction="" style="document"/>
  <input name="dollarsToEuros">
    <soap:body namespace="http://xmlbus.com/Conversion"
      use="literal"/>
  </input>
  <output name="dollarsToEurosResponse">
    <soap:body namespace="http://xmlbus.com/Conversion"
      use="literal"/>
  </output>
</operation>
```

Enterprise Capabilities



- What technical capabilities are essential before Web Services can realistically be deployed?
 - Security
 - Transactions
 - Reliable Messaging
 - Enterprise Qos
 - Other?
- What interoperability is there at this level?

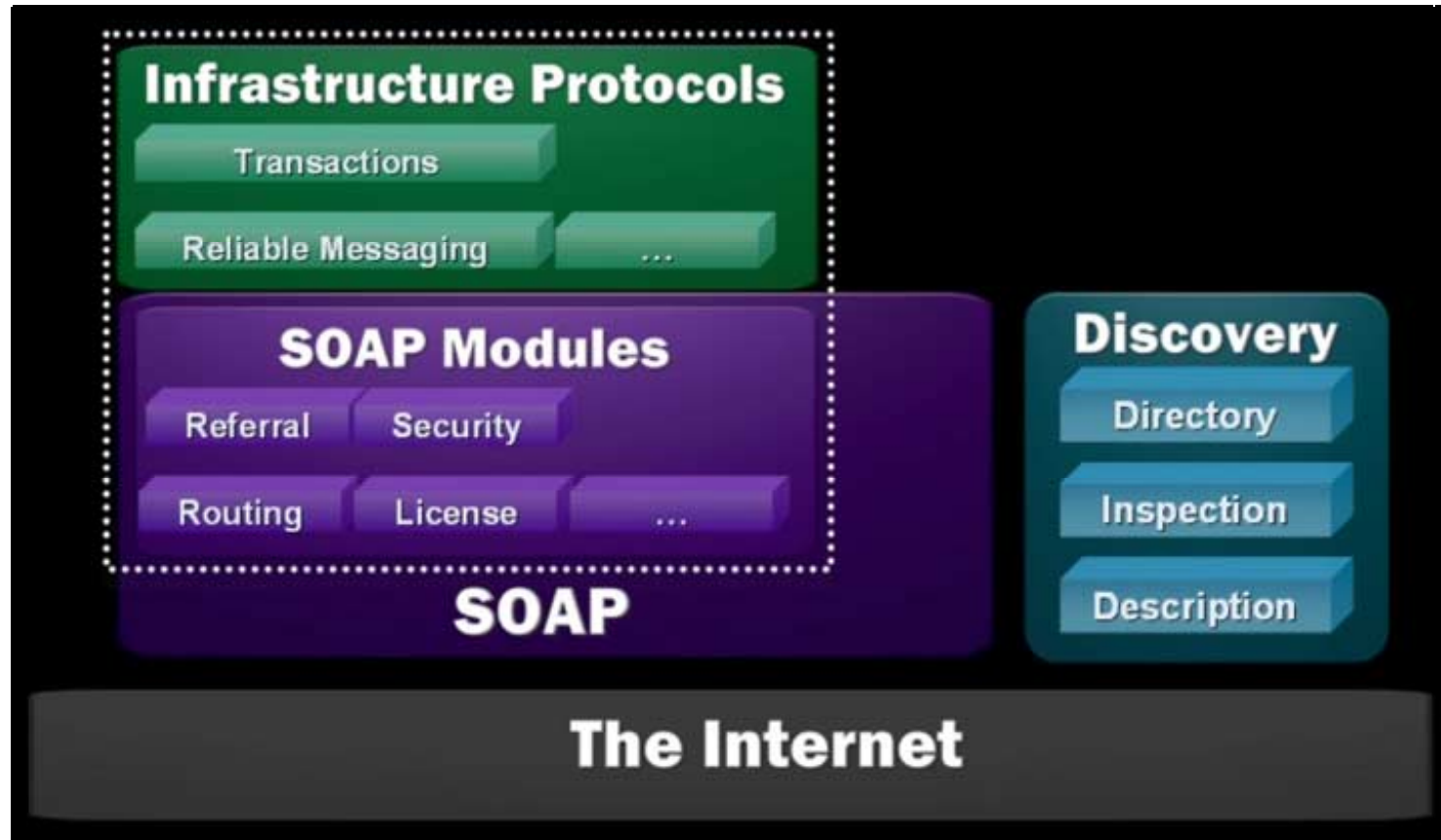
Microsoft GXA



- Global XML Architecture
- Current 'Global XML Web Services' initiative
- Releases 'open standards'
- Relevant works:
 - WS-Inspection
 - WS-License
 - WS-Referral
 - WS-Routing
 - WS-Security
 - WSDL
 - SOAP 1.0

<http://msdn.microsoft.com/library/en-us/dnsoapspec/html/wsspecscover.html>

Microsoft GXA



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