Integrating CORBA and Web Services

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Agenda

- Why bother?
- Basic integration overview
- More complex scenarios
- Challenges
- Summary
- Q & A
Why Bother

Web services are very similar to existing technologies:

- SOAP ↔ Java RMI, CORBA IIOP
- WSDL ↔ Java interfaces, CORBA IDL
- UDDI ↔ JNDI, CosNaming, CosTrader

So what’s the big deal?

Clearly there’s no point in just replacing a stable, mature technology platform with a new, less mature one
Benefits of Using Web Services

 Ease of Use
 - Simplifies connectivity between different “worlds”
 - CORBA, J2EE, .NET, etc.
 - Easier to build front end with simpler tools
  - Visual Basic, etc.

 Ubiquity
 - Widespread adoption of web services
  - Platform vendors (Microsoft, Sun, IBM, Oracle, …)
  - Application vendors (SAP, PeopleSoft, …)

 Opportunity: reuse existing deployments
 - Expose existing systems as web services
Goal:
- Expose CORBA objects as web services

Need to:
- Map IDL to WSDL ("development")
- Map SOAP to IIOP at run-time ("deployment")

It’s for real:
- A lot of real projects doing this right now
- Typically solving wider integration problems:
  - CORBA/.NET; CORBA/J2EE/.NET
CORBA/Web Services: Basic Integration

- Web Service Client (e.g., VB)
  - SOAP/HTTP
- Adapter
- CORBA Objects
- IDL
- IDL → WSDL
- Back-end CORBA System
- UDDI
- WSDL

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Not a bad first step, but...

- Naïvely exposing IDL is bit crude
  - Probably not designed to be used as web services
  - Web services tend to be coarser-grained

- Need ability to customize
  - Façade objects / interface mapping

- XSLT provides powerful mapping for XML
  - WSDL/WSDL mapping can implement façades
  - Simpler to deploy than wrapping at the IDL level
More complex integration

Web Service Client → Facade → XSLT Mapping → Adapter → CORBA Objects

Web Service Client

Integration Logic

Facade

IDL → WSDL

UDDI

WSDL

Back-end CORBA System

IDL

SOAP/HTTP
Benefits

- No need to redeploy back-end systems
  - Customization is handled in web service domain

- Simpler tools
  - XML tools tend to be easier to use than CORBA ones
  - Broader developer base

- Do customization nearer to the end-user

- Single model for N-way integrations
  - e.g., SAP + CORBA + .NET + J2EE
Challenges

- Web services aren’t fully mature
  - Especially around basic services like security

- Platform wars will probably resurface soon
  - E.g., Hailstorm versus Liberty Alliance

- Still... they won’t go away anytime soon
  - Integration opportunities / pressures

Opportunity:
- stable platform (CORBA) for core services, web services for integration
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