xorb / xosoap — Remoting for OACS / .LRN

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Overview

What drives us ...

Features & Architecture

Consuming a remote service

Providing a remote service

Hooking-in add-on functionality: Interceptors

What remains to be done ...

Get glimpse of xorb / xosoap
What drives us ...
Features & Architecture
Features (I)

- xorb (p: xotcl-request-broker) — XOTcl Request Broker
- xorb mainly provides
  - A more generic invocation dispatcher, supporting local (following original ACS Service Contracts) and remote redirection (protocol-plugins: xotcl-soap).
  - An OO-interface that wraps up OpenACS's Service Contracts / Implementations (package: acs-service-contracts).
- xorb extends the original package by:
  - Object representations and caching of Contracts / Implementations (including signature-based synchronisation with database)
  - Contracts / implementations are delivered "on demand", supporting "thin" connection threads in the future.
  - Resolving invocation requests: Currently an extensible selection framework for attribution of implementations to contracts, upcoming Invocation Contexts.
  - An extensible infrastructure to plug-in new remoting protocols, currently SOAP.
Features (II)

- xosoap (p: xotcl-soap) is a SOAP "Protocol Plugin" for xorb:
  - SOAP (1.1) Server Framework
  - SOAP (1.1) Client Framework
  - HTTP / HTTPS Transport Infrastructure
    - Native XOTcl component: xotcl::comm::httpAccess
    - Optionally: TclCurl
  - Currently allows for RMI style of interaction
  - XOTcl SOAP Parser (based upon tDOM)
  - Functional modularity (realised by Chain of Interceptors)
  - WSDL generation
Architecture

[Diagram of architecture showing components and interactions related to SOAP messaging and service invocation.]
Consuming a remote service
Declaring a stub (I)

::xotcl::Class StockQuote
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  ad_instproc \n    -stub \n    -bind soap://64.124.140.30:9090/soap \n    -uri "urn:xmethods—delayed—quotes" \n  getQuote \n  { -symbol:remote} \n  {getQuote’s doc} {}
Declaring a stub (II)

1  ::xorbc::client::Stub StockQuoteStub -bind soap://64.124.140.30:9090/soap
2   -uri "urn:xmethods-delayed-quotes"
3  StockQuoteStub ad_instproc
4  getQuote
5  { -symbol:remote}
6  {getQuote's doc} {}
Providing a remote service
1: Declaring a contract

1  ServiceContract myContract -defines {
2       Abstract m1 -arguments {
3          arg1:string
4          arg3:integer
5       } -returns string -description "m1's description"
6   } -ad_doc {myContract's description}
2: Providing an implementation (a)

1 ServiceImplementation myImplementation implements myContract through {
2 Delegate m1 proxies ::myproc
3 }
4
5 myImplementation publish
2: Providing an implementation (b)

1 ServiceImplementation myImplementation -implements myContract
   -through {
2       Method m1 {arg1:string  arg3:integer} {doc} {return 1}
3   }
4
5 myImplementation publish
Hooking-in add-on functionality: Interceptors
Logging Interceptor

::xosoap::Interceptor LoggingInterceptor -scope 0 -superclass {
::xosoap::RequestInterceptor
::xosoap::ResponseInterceptor
}

LoggingInterceptor instproc handleRequest args {
# 1) retrieve args
my log "incoming request: $args"
# 2) modify args
# 3) pass on args or return
next [lindex $args 0] [lindex $args 1]
}

LoggingInterceptor instproc handleResponse args {
my log "outgoing response: $args"
next
}
What remains to be done ...
What remains to be completed ...

- Collection of examples & teasers
- Polishing-up of xorbi Interface: nearly finished
- Completing suite of regression test
- Advanced SOAP Support: Complex datatypes about to be included
- Implicit / automated stub generation from WSDL
- Lifecyling
Get glimpse of xorb / xosoap
Get previews from ...

- Two packages: xotcl-request-browser & xotcl-soap
- Subversion browsing: http://stefan.thinkersfoot.net/websvn (guest:guest)
- command line: svn checkout http://svn.thinkersfoot.net/xosoap/trunk
- command line: svn checkout http://svn.thinkersfoot.net/xotcl-request-broker/trunk

- Install procedures as for every OACS / .LRN package
- Currently 2 patches to xotcl-core are necessary (see readme in www/doc directories)
- For examples see www/doc in both packages
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