Integrating Web Services and Natural Using EntireX

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How would you like to…

- Access Adabas data from a Web Service?
  
  1. Extract IDL from existing Natural Subprogram - using Extraction Wizard
  2. Generate and deploy Web Service from the IDL - using Wrapper Wizard
  3. Run Natural RPC Server on Mainframe / Linux, UNIX or Windows
  4. Execute Web Service \(\rightarrow\) Invoke Natural Subprogram!

- Call a Web Service from a Natural program?
  
  1. Extract WSDL into IDL - using Extraction Wizard
  2. Generate Natural RPC Client from IDL - using Wrapper Wizard
  3. Run XML RPC Server on Linux, UNIX or Windows
  4. Run Natural program on Mainframe \(\rightarrow\) Invoke external Web Service!
EntireX Enables Creation of Business Services

(*) Could be a COBOL CICS transaction, a Natural subprogram, a C program on UNIX, etc.
Fast-Track Integration Projects with EntireX

- Out-of-the-box truly bi-directional support
- Unified environment with Natural & Natural ONE
- Broad platform & environments support
  - From z/OS and z/VSE to Linux, UNIX and Windows (LUW)
  - From: COBOL, PL/I, Natural or C
  - To: Web services, Java or .NET
- Ease of operation
- Seamless integration
- Excellent design-time support (Eclipse or Visual Studio)
- Vast choice of communication models

EntireX: Your Bridge to Business Process Excellence!
What Is Needed?
Access Adabas Data from a Web Service

**z/OS**

- **Adabas**
- **Natural Subprogram** VEH1001N
- **Natural RPC Server** LOGON MYLIB
- **EntireX Broker** ETB1331 - Port 21331

**Windows**

- **Web Services Stack** http://localhost:10010
- **Web Service**
  - **IDL**
  - **Wrapper Wizard**
  - **Extraction Wizard**

**z/OS** to **Windows**

- **Soap**
Demo 1 - Calling Natural from a Web Service
z/OS: Natural Subprogram

Subprogram: VEHI001N Library: SAMPU

DEFINE DATA
PARAMETER
1 #REG-NUM (A15)
1 #PERSONNEL-ID (A8)
1 #MAKE (A20)
1 #MODEL (A20)
LOCAL USING VEHI001L
END-DEFINE
*  
FIND VEHICLES-VIEW WITH REG-NUM = #REG-NUM
#PERSONNEL-ID := PERSONNEL-ID
#MAKE := MAKE
#MODEL := MODEL
END-FIND
*  
END
z/OS: Natural RPC Server

```z/OS
//NATB0100 EXEC PGM=NAT822BA
//STEPLIB  DD DSN=NAT822.LOAD,DISP=SHR
//          DD DSN=ADA825.LOAD,DISP=SHR
//          DD DSN=EXX822.LOAD,DISP=SHR
//DDPRINT DD SYSOUT=*  
//DDDRUCK DD SYSOUT=*  
//SYSOUT  DD SYSOUT=*  
//SYSUDUMP DD SYSOUT=*  
//SYSPRINT DD SYSOUT=*  
//DDKARTE DD DUMMY  
//DDCARD DD *
ADARUN DB=dbid,DE=device,SVC=svcnr,MODE=MULTI
//CMPRINT DD SYSOUT=*  
//CMTRACE DD SYSOUT=*  
//CMPRT01 DD SYSOUT=*  
//CMPRT01 DD SYSOUT=*  
//TRACE1 DD SYSOUT=*  
//CMPRMIN DD *
STACK=(LOGON MYLIB1)
RPC=(SERVER=ON,RPCKET=8000,SRVNAME=SRV1,SRVNODE=ETB1331,MAXBUFF=4000,
TRACE=(0),ACIVER=9)
//CMSYNIN DD *
//
```
Verify the WS-Stack Installation

- Browse to the WS-Stack Servlet running in Tomcat
  - [http://localhost:10010/wsstack](http://localhost:10010/wsstack)
  - Validate: Axis2 Happiness Page

**Web Services Stack Validation Page**

- Services: List deployed services; links to WSDLs
- Administration (user=\texttt{admin}, password=\texttt{axis2})
Call a Web Service from a Natural Program (2)

**z/OS**

- Natural RPC Client
- EntireX Broker ETB1331 - Port 21331

**Windows**

- External Web Server (IIS, WebSphere, WebLogic, etc.)
- Web Service
- XML RPC Server
  - Bin Directory: jxmlrpcserver.bat
  - Config
  - Properties

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Demo II - Calling a Web Service from Natural
Questions / Comments