Lab 12: Investigating UDDI

In this lab, you will learn about the UDDI data model.

Objectives:

- To use a private UDDI registry
- To examine the UDDI data model

Part 1: Installing the Server and UDDI Tools

In this lab, you will use the jUDDI server, which is an open-source, Java implementation of the UDDI specification. For your convenience, we have packaged jUDDI within a configured Apache Tomcat installation, using the open-source HypersonicSQL database to hold the UDDI data.

Steps:

_1. Examine your computer to ensure that the UDDI server and browser are installed looking in the *c:\java* directory (Windows XP) or *c:\Users\username\java* (Windows Vista or later). for subdirectories named *uddi-server* and *ub-0.2-bin*.

_2. To start the UDDI server:

a. From the Windows Start menu, choose *Run...*, then enter **cmd** and press Enter. This will open a command-prompt window.

b. In the command-prompt window, enter the following to change to the correct directory and start the server. On Windows XP:

```
c:
cd \java\uddi-server\bin
SET PATH=C:\Program Files\IBM\SDP\jdk\bin;%PATH%
SET JAVA_HOME=C:\Program Files\IBM\SDP\jdk
SET JRE_HOME=C:\Program Files\IBM\SDP\jdk\jre
catalina run
```

On Windows Vista or later:

```
c:
cd \Users\username\java\uddi-server\bin
SET PATH=C:\Program Files\IBM\SDP\jdk\bin;%PATH%
SET JAVA_HOME=C:\Program Files\IBM\SDP\jdk
SET JRE_HOME=C:\Program Files\IBM\SDP\jdk\jre
catalina run
```

Substitute your actual user name for the "username" above.

The server should start and display a sign-on message. Leave the command prompt window open.

c. To test that the server is functional, open a Web browser and enter:

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```
http://localhost:8080/juddi/happyjuddi.jsp
```

You should see a Web page that summarizes the UDDI server's status. Ensure that there is no red text or error messages on the page.

Part 2: Publishing a Service

In this part, you will use the jUDDI console to publish a service in UDDI.

Steps:

_1. To start the jUDDI console, open a Web browser and enter the URL:

```
http://localhost:8080/juddi/console/
```

This Web page shows a rudimentary administration console to interact with the jUDDI server.

_2. Since you are going to publish to the registry, you must first authenticate. When we configured jUDDI, we defined credentials for a UDDI user named *jdoe* with an empty password.

Follow these steps to obtain an authentication token:

a. In the jUDDI console, click on the link *get_authToken* under the *UDDI Publish API* category. This will open a form into which you can enter the SOAP message for the get_authToken UDDI request.

Please examine the provided template for the SOAP message. Note that "***" are placeholders into which you can enter data.

b. Find the "***" for *userID* and change the value to **jdoe**. You can leave the *cred* attribute unchanged since this user has no password.

Click the Submit button -- the console should display the response message in the lower part of the form.

c. In the response, in the *authInfo* element, there should be a string that starts with **authInfo**. This string is your authentication token that you must provide with any further publishing commands.

Use the mouse to highlight the text within the *authInfo* element (including the *authToken:* text) and then start Notepad and paste the authentication token into Notepad.

_3. Next, let's publish a *business entity*. In the jUDDI console, on the right side of the window, click the link labeled *save_business* under the *UDDI Publish API* category. Again, the console will display a SOAP message with "***" placeholders into which you can enter data.

Please examine the SOAP message and see if you can make sense of it.

_4. You now need to fill in all of the "***" except for the *useType* field. You can use the following values:

```
authInfo       Copy and paste the authorization token from the last step
name           Goliath, Inc.
description    A big company
personName     Bill Jones
phone          555-1212
email          bill@goliath.com
```

When you are finished, press the Submit button and study the response message.

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What is the business key that the registry generated for Goliath? Copy and paste it to Notepad.

_5. Next, let's create a tModel for the Lab02 service you created earlier. Follow these steps:

a. First, ensure that the WSDL for the service is available. Start another Web browser window and enter:

```
http://localhost:9080/lab02Web/HelloWorldService?wsdl
```

If this doesn't work, look back at Lab02 and redeploy the service and try again.

b. In the jUDDI console, on the right side of the window, click the link labeled *save_tModel* under the *UDDI Publish API* category. Again, the console will display a SOAP message with "***" placeholders into which you can enter data.

Enter the following into the "***" (you can leave fields not mentioned here as "***"):

```
authInfo      Paste the authorization token from Notepad
name          http://localhost:9080/lab02Web/HelloWorldService
overviewURL   http://localhost:9080/lab02Web/HelloWorldService?wsdl

Category Bag
------------

tModelKey    UUID:C1ACF26D-9672-4404-9D70-39B756E62AB4
keyName      uddi-org:types
keyValue     wsdlSpec
```

Press the Submit button.

Looking at the response, what's the unique tModel key that was assigned by the server? Copy and paste it into Notepad.

c. Here's a discussion of the data you entered:

- The *name*, by convention, is the target namespace of the service as specified in the WSDL
- The *overviewURL*, by convention, is the network addressible URL of the WSDL
- This *tModelKey* is a well known value that we attach as a category to indicate that our tModel references WSDL. The *keyName* and *keyValue* are also part of this convention.

_6. Finally, we can create a *business service* and associated *binding template*. Follow these steps:

a. In the jUDDI console, on the right side of the window, click the link labeled *save_service* under the *UDDI Publish API* category. Again, the console will display a SOAP message with "***" placeholders into which you can enter data.

Enter the following into the "***" (you can leave fields not mentioned here as "***"):

```
authInfo      Paste the authorization token from Notepad
businessKey   Paste the business key from Notepad
name          Lab02 Service
accessPoint   http://localhost:9080/lab02Web/HelloWorldService
tModelKey     Paste the tModel key from Notepad
overviewURL   http://localhost:9080/lab02Web/HelloWorldService?wsdl
```


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Press the Submit button.

Looking at the response, what's the unique service key that was assigned by the server? Copy and paste it into Notepad. Also paste the generated binding key into Notepad

b. Here's a discussion of the data you entered:

- The *businessKey* ties this service back to Goliath, Inc.
- The *accessPoint*, by convention, is the service's endpoint URL
- This *tModelKey* ties the service and binding template to the tModel you created earlier

_7. You have now registered your service into the UDDI registry. A client application could now look up the service, perhaps searching by tModel name, and then locate the WSDL.

Part 3: Examining the Registry

In this part, you will use a UDDI browser to examine the details of the service you published in the last step.

Steps:

_1. Use Windows Explorer to navigate to the *C:\java\ub-0.2-bin\bin* folder (Windows XP) or *C:\Users\username \java\ub-0.2-bin\bin*, then double-click on *ub.bat* to start the registry browser.

_2. First, you need to configure the registry browser to connect to the jUDDI server. From the menu, choose *Edit - UDDI Registries...* and then press the Add button. Enter the following information:

```
Name:         jUDDI
Inquiry URL:  http://localhost:8080/juddi/inquiry
Publish URL:  http://localhost:8080/juddi/publish
Username:     jdoe
Password:     Please leave this blank
```

Press OK to add the registry, then highlight it in the list and press the Connect button.

_3. First, let's search for the business entity. Follow these steps:

a. From the menu, choose *View - Basic Find*.

b. In the Find dialog, ensure that the *Business* category is selected, then for the *name*, enter **Goliath**, then press Search. You should see an entry for Goliath in the left-hand navigation pane.

c. Click on the Goliath entry -- you should see the business details that you entered, as well as the business key. Verify that the business key (the *id*) is the same as you pasted into Notepad in an earlier step.

d. Expand the Goliath entry, then click on *Bill Jones* -- you should see the phone number and email address that you published.

e. Click on the *Lab02Service* entry -- you should see the details that you published. Verify that the service key (the *id*) is the same as you pasted into Notepad in an earlier step.

f. Expand the *Lab02Service* entry, then click on the *http://localhost:9080/lab02Web/HelloWorldService* entry -- you should see the details of the binding template you published. Verify that the binding key is the same as you pasted into Notepad.

g. Expand the *http://localhost:9080/lab02Web/HelloWorldService* entry, then examine the subentry that represents the associated tModel. Verify that the subentry's value corresponds to the tModel key that you saved in Notepad.

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_4. Next, let's search directly for the tModel. Follow these steps:

a. From the menu, choose *View - Basic Find*.

b. In the Find dialog, ensure that the *tModel* category is selected, then for the *name*, enter **http://localhost:9080/lab02Web/HelloWorldService** -- this is the tModel name you published earlier. Then press Search. You should see an entry for the tModel name in the left-hand navigation pane.

c. Click on the tModel name entry, and note the following:

- The *id* matches the tModel key you pasted into Notepad
- The *overviewDoc URL* is the network-addressible URL of the WSDL that you published in an earlier step.

d. Expand the tModel name entry, then click on the *uddi-org:types (wsdlSpec)* entry, which represents a tModel category. Note that this entry contains the well known tModel value that indicates that the associated tModel references a WSDL in its overview document's URL.

e. You can now explore anything else in the registry browser and close it when you are finished.

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