Release 1673

Service Request 16984
Web PAN Rewrite

INSTALLATION INSTRUCTIONS

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Web PAN Rewrite
Installation Instructions
November 9, 2005

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Installation Overview

This document provides installation instructions for this release. Review these instructions carefully before proceeding with installation.

DB2 Installation
This portion of the installation creates DB2 objects for use by the Web PAN application.

DDL Member Installation

1. Install the new DDL Index members listed in the following table.

<table>
<thead>
<tr>
<th>DDL Member</th>
<th>Installed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBSES01A</td>
<td></td>
</tr>
<tr>
<td>TBSES00C</td>
<td></td>
</tr>
<tr>
<td>UC0VZSES</td>
<td></td>
</tr>
<tr>
<td>IXDI200C</td>
<td></td>
</tr>
<tr>
<td>IXPX300C</td>
<td></td>
</tr>
<tr>
<td>IXPX400C</td>
<td></td>
</tr>
<tr>
<td>IXPX500C</td>
<td></td>
</tr>
</tbody>
</table>

2. The RC/Migrator strategy in ANALYSIS (R1673U) can be used to perform the above DB2 changes, or the environments may be updated using the DDL members. You should be aware that the strategies do not provide for local changes to referenced objects. If you do not wish to use the RC/Migrator strategy, skip this step and continue with Step 3.
   - Modify strategy member R1673U by replacing *AUTHID* and *STOGROUP* with the appropriate campus value.
   - Use RC/Migrator to execute the strategies.
   - Skip step 3.

3. If not using the RC/Migrator strategy, execute the DDL in the table below in the order indicated.

   - Drop View (No DDL member has been provided for this) UC0VZSES_SES

<table>
<thead>
<tr>
<th>DDL Member</th>
<th>Executed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBSES01A</td>
<td></td>
</tr>
<tr>
<td>UC0VZSES</td>
<td></td>
</tr>
<tr>
<td>IXDI200C</td>
<td></td>
</tr>
</tbody>
</table>
4. Install and execute the new DDL members listed in the following table, replacing *COLLID* with the collection ID for Web PAN. These DDL members define new stored procedures used by Web PAN. Once installed, execute each DDL member to create the new DB2 stored procedures. The CURRENT SQLID must be set to the value of *AUTHID* of the authorization ID that will own the Web PAN objects.

<table>
<thead>
<tr>
<th>DDL Member</th>
<th>Executed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>IXPX300C</td>
<td></td>
</tr>
<tr>
<td>IXPX400C</td>
<td></td>
</tr>
<tr>
<td>IXPX500C</td>
<td></td>
</tr>
</tbody>
</table>

5. Once the new stored procedures have been created with the DDL above, the procedures must be started using the DB2 START command (from SPUFI or in batch) as shown below:

   -START PROCEDURE (*AUTHID*,*)

Replace *AUTHID* in the above command with the value of *AUTHID* used to modify the DDL members in step 1.

6. Install and execute the new one-time DDL member listed in the following table, replacing *WEBID* with the surrogate ID to be used for Web PAN. Replace *AUTHID* with the value of the authorization ID that will own the Web PAN objects. Once installed, execute the DDL which will grant execution on the new stored procedures to the web surrogate ID and will re-grant read access to the re-created view UC0VZSES SES.

<table>
<thead>
<tr>
<th>DDL Members</th>
<th>Installed?</th>
<th>Executed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPWP010C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPWP020C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPWP030C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPWP040C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPWP050C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPWP060C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPWP070C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPWP080C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Include Member Installation

1. Install the modified include member listed in the table below:

<table>
<thead>
<tr>
<th>Include Member</th>
<th>Installed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>UC0VZSES</td>
<td></td>
</tr>
</tbody>
</table>

Bind Member Installation

1. Install the new bind members listed in the following table for the stored procedures replacing *COLLID* with the collection ID for Web PAN.

<table>
<thead>
<tr>
<th>Bind Members</th>
<th>Installed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSWP01</td>
<td></td>
</tr>
<tr>
<td>UCSWP02</td>
<td></td>
</tr>
<tr>
<td>UCSWP03</td>
<td></td>
</tr>
<tr>
<td>UCSWP04</td>
<td></td>
</tr>
<tr>
<td>UCSWP05</td>
<td></td>
</tr>
<tr>
<td>UCSWP06</td>
<td></td>
</tr>
<tr>
<td>UCSWP07</td>
<td></td>
</tr>
<tr>
<td>UCSWP08</td>
<td></td>
</tr>
</tbody>
</table>

Program Preparation

Note: At UCOP, all COBOL programs pass through the DB2 pre-compiler, whether or not the program contains embedded SQL, to resolve INCLUDE references. Your site may have different requirements.

1. Install, compile and link the new programs listed in the following table.

<table>
<thead>
<tr>
<th>Program</th>
<th>DB2?</th>
<th>Compile</th>
<th>Package Bind?</th>
<th>Done?</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSWP01</td>
<td>Yes</td>
<td>SPAS</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>UCSWP02</td>
<td>Yes</td>
<td>SPAS</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>UCSWP03</td>
<td>Yes</td>
<td>SPAS</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>
Web Installation

Net.data Component Installation

Identify the directory where Release 1408 (EDB Web Inquiry) macro files were installed. Review and edit the job “PDS2HFS” in the JCL library to transfer the macro file to the identified application directory structure.

Run this jobstream once the necessary customization has been made.

After running the PDS2HFS jobstream, verify that the following modified Net.data file was copied to the appropriate macro directory:

<table>
<thead>
<tr>
<th>FTP PDS Source</th>
<th>Filename</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMACRO</td>
<td>ppsmenu.d2w</td>
<td>PPS Main Menu</td>
</tr>
</tbody>
</table>

The value of variable “vPANaddress” must be modified to point to the defined path of the new web PAN application. Change the literal *PANADDRESS* to the appropriate value.

The value of variable “vMeritAddress” must be modified to point to the defined path of the web Merit application. Change the literal *MERITADDRESS* to the appropriate value.

Once the macro files have been copied, use the `chmod` command to set permissions on all files to 755. The group ownership of all files may be left as-is, assigned to the group associated with the installer ID.

```
$ chmod 755 *
```
Websphere Environment

The Websphere Web PAN application was developed and tested under the following environment:

1. Operation System: IBM AIX (Unix) v5.2
2. Websphere Application Server specification:
   IBM WebSphere Application Server for Network Deployment, 5.1.1.3
3. The application developed in JDK 1.3
4. DB2 Connect Version 8.2 running on AIX
5. The application is developed as per J2EE 1.3 specification.
   - J2EE 1.3 includes Servlet Specification level 2.3
   - JSP Specification level 1.2.
   - Connector Architecture Specification level 1.0
   - Applications developed for this J2EE level typically target a 5.0 or higher version of Websphere Application Server.

Websphere Component Installation

For installing WAS (Websphere Application Server) and related components (DB2 Connect etc.) please refer to the release document of web merit application R1668 http://www.ucop.edu/ppsmaint/REL2005/R1668/

Note: The JDBC Data Source definition should be in version 5. (not version 4)

J2C Authentication Entry

The Web PAN application requires Data Sources version 5 which uses J2C architecture. In the old version 4 data source, the database userid/password needed to be typed for all data source entries. In version 5 data source, you need to create a J2C authentication data entry (a set of userid/password stored) and use that entry for any data source to be defined.

Note: J2C entries can be also added while adding data sources. This is mentioned in the section where adding data source is explained.
Expand “Security” from left menu. Expand JAAS authentication. Click on J2C Authentication Data.

Click on “New” and you will be presented with this screen. Enter the fields, click OK and save.
Adding JDBC DB2 Data Source

If you already have a DB2 Datasource defined and which can be used for Web PAN database access, you can use that. Otherwise, you need to create a new data source for Web PAN.

Here are the steps:

Expand the Resources tab on the left and click on JDBC Providers
If you have a DB2 driver installed click on the driver name. Otherwise, click New and proceed.

### JDBC Providers

JDBC providers are used by the installed applications to access data from databases.

<table>
<thead>
<tr>
<th>Total: 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope: Cell=ssedevNetwork</td>
</tr>
</tbody>
</table>

- Cell: ssedevNetwork
- Node: 
- Server: 

To specify cell scope, clear the node and server scope fields.

To select a node scope, type in or browse for the node.

To select a server scope, select a node scope. When new items are created in this view, their names are prefixed with the node and server scope names.

When new items are created in this view, their names are prefixed with the node and server scope names.

**Filter**

**Preferences**

[New] [Delete]

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB2 JDBC Driver</td>
<td>DB2 JDBC Driver</td>
</tr>
<tr>
<td>MSSQLServer 2000</td>
<td>Microsoft SQL Server 2000</td>
</tr>
<tr>
<td>Sybase JDBC Driver</td>
<td>Sybase JDBC Driver</td>
</tr>
</tbody>
</table>
Choose DB2 Universal JDBC Driver Provider. Consult your DB2 admin if required.
While adding new driver, you need to provide the classpath for the driver file (db2java.zip).

To add a datasource, from the bottom of the above screen, click “Data Sources” (note: do not click “Data Sources (Version 4)” as explained in the J2C Authentication section above). On the next screen you will see a list of already created data sources. Click “New” on the top to create a new data source.
Enter the required fields and click OK. Make sure to give a name and JNDI name for the data source.
Now, you need to set up the parameters for the data source.

Click on the data source just created. You will be presented with the screen like above. Go to the bottom of the screen and we will see the options as below.

If you have not set J2C Authentication entries already, you can add here. Click on “J2C Authentication Data Entries” at the bottom.

Click New to add J2C Authentication entry.
Enter the DB2 userid and password. Give a name in alias field. Click OK.

<table>
<thead>
<tr>
<th>Configuration</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Properties</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Alias</strong></td>
<td><em>DB2 qa userid</em></td>
</tr>
<tr>
<td><strong>User ID</strong></td>
<td><em>U1RD82Q</em></td>
</tr>
<tr>
<td><strong>Password</strong></td>
<td>********</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td><code>userid/pwd for qa</code></td>
</tr>
</tbody>
</table>

Specifies a list of userid and password for use by Java 2 Connector security.
Go back to the datasource details page. Set “Component-managed Authentication Alias” and “Container-managed Authentication Alias” from the pull down list. Choose “DefaultPrincipalMapping” for Mapping-Configuration Alias.

Now, set up the database name. Click on “Custom Properties” and you will be presented with a screen as below. On this screen, click on databaseName and type the name. This name is what has been defined in DB2 Connect Client Configuration as a database entry.
You can change the default settings for connection pool parameters. Click on “Connection Pool” and change the default values as required.

Save everything (click on save link on the top) and test the connection by clicking “Test Connection” button.
Installing the Websphere PAN Application

Installing The EAR/WAR file using WS Admin Panel (Web Based)

The Web PAN Application can be installed in a WAS (Websphere Application Server) 5.xx or higher version in two ways:
   a) installing a EAR (Enterprise Application Archive) file
   b) installing a WAR (Web Application Archive) file

Download application from
   PAYDIST.R1673.PANEAR
   PAYDIST.R1673.PANWAR

Note: if you are using FTP to download these files, please make sure to download in binary format.

You may choose ear file from local path or from the server.

Preparing for the application installation

Specify the EAR/WAR/JAR module to upload and install.

Path: Browse the local machine or a remote server:
   Local path: [Input field]
   Server path: [Input field]

Context Root: Used only for standalone Web modules (*.war)

Choose the local path that resides on any of the nodes.
You must specify a context root for the EAR file.

[Next] [Cancel]
For WAR file installation, you need to provide a context root. This context root determines the URL to invoke the application. When installing war, Websphere creates an enterprise application and deploys the war under it.

### Preparing for the application installation

Specify the EAR/WAR/JAR module to upload and install.

<table>
<thead>
<tr>
<th>Path:</th>
<th>Browse the local machine or a remote server:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Local path:</td>
</tr>
<tr>
<td></td>
<td><img src="path/to/image" alt="Image" /> Browse...</td>
</tr>
<tr>
<td></td>
<td>Server path:</td>
</tr>
<tr>
<td></td>
<td><img src="path/to/image" alt="Image" /> Browse...</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Context Root:</th>
<th>Used only for standalone Web modules (*.war)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="path/to/image" alt="Image" /> Webpan</td>
</tr>
</tbody>
</table>

[Next] [Cancel]
No need to change default bindings.

### Preparing for the application installation

You can choose to generate default bindings and mappings.

<table>
<thead>
<tr>
<th>Generate Default Bindings</th>
<th>[ ] Generate default bindings for all mappings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Override</td>
<td>[ ] Do not override existing bindings</td>
</tr>
<tr>
<td></td>
<td>[ ] Override existing bindings</td>
</tr>
</tbody>
</table>

**Virtual Host**

[ ] Do not default virtual host name for web modules

[ ] Default virtual host name for web modules:  

```
default_host
```

**Specific bindings file:**  

[ ] Optional location of pre-defined bindings file

[ Previous ]  [ Next ]  [ Cancel ]
Nothing to modify in this screen. One thing to note here is that if you enable “Pre-compile JSP”, the JSPs will be compiled while installing the application. Otherwise, JSPs are compiled when the JSP page is invoked first time.

<table>
<thead>
<tr>
<th>AppDeployment Options</th>
<th>Enable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-compile JSP</td>
<td></td>
</tr>
<tr>
<td>Directory to Install Application</td>
<td></td>
</tr>
<tr>
<td>Distribute Application</td>
<td>✓</td>
</tr>
<tr>
<td>Use Binary Configuration</td>
<td></td>
</tr>
<tr>
<td>Deploy EJB</td>
<td></td>
</tr>
<tr>
<td>Application Name</td>
<td>PAS/IBM Enterprise</td>
</tr>
<tr>
<td>Create MBbeans for Resources</td>
<td>✓</td>
</tr>
<tr>
<td>Enable Class Reloading</td>
<td></td>
</tr>
<tr>
<td>Reload Interval in Seconds</td>
<td></td>
</tr>
<tr>
<td>Deploy WebServices</td>
<td></td>
</tr>
</tbody>
</table>

Next  Cancel

Step 2  Map resource references to resources
Step 3  Map virtual hosts for web modules
Map resource references to resources. This is important. Web PAN application internally has a reference binding with name as “jdbc/panDataSource” which should be mapped to an existing resource. You can choose from the pull down list of resources already defined. This should be a JDBC Provider resource for DB2 access defined under Resources.
Map virtual hosts for web modules. If you have multiple virtual hosts, you can choose one here.

Install New Application

Allows installation of Enterprise Applications and Module

Step 1    Provide options to perform the installation
Step 2    Map resource references to resources

→ Step 3:  Map virtual hosts for web modules

Specify the virtual host where you want to install the Web modules contained in your application. Web modules can be installed on multiple virtual hosts so you can choose the virtual host where you want to install them.

Apply Multiple Mappings

- Web Module

- PANWeb

Virtual Host

- default_host
- admin_host

Step 4   Map modules to application servers
Step 5   Summary
Map modules to application servers. Choose the application server where you want to install the application.

### Install New Application

Allows installation of Enterprise Applications and Module

- **Step 1**: Provide options to perform the installation
- **Step 2**: Map resource references to resources
- **Step 3**: Map virtual hosts for web modules

→ **Step 4**: Map modules to application servers

Specify the application server where you want to install modules contained in your application. Modules can be installed on the same server or dispersed among other servers.

*Clients and Servers:*

- WebSphere os11-ssdev.Network, node=ssdev, server=PAYROLL
- WebSphere os11-ssdev.Network, node=ssdev, server=ER3
- WebSphere os11-ssdev.Network, node=ssdev, server=ERP
- WebSphere os11-ssdev.Network, node=ssdev, server=SSD
- WebSphere os11-ssdev.Network, node=ssdev, server=FILE

<table>
<thead>
<tr>
<th>Module</th>
<th>URL</th>
<th>Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>PANWeb</td>
<td>PANWeb ear WEB-INF/web.xml</td>
<td>WebSphere os11-ssdev.Network, node=ssdev, server=PAYROLL</td>
</tr>
</tbody>
</table>

Apply

- [ ] Module
- [ ] URL

[Previous] [Next] [Cancel]
Final screen. Click Finish and then “Save to Master Configuration” on next screen. You need to hit save button on the next screen.
Updating the Application.

Updating already existing application is similar to installing first time. Go to the list of applications, choose applications to update and continue with the screens followed.

Setting the Web PAN Application Parameters

There are two configurable parameter files used in Web PAN application:

i. ApplicationResources.properties
ii. Log4.properties

The location of these files are specified in web.xml file. These files are available in /WEB-INF directory. It is recommended that you move these files to the default location on the server that is specified in web.xml. This way when you update the application the properties files will not be overwritten.

The default location for the properties files: /data/WebSphere/PAYROLL/props/webpan (you will need to create this directory on the server). If you choose a different location each time you install a new .ear file, you will need to make sure that web.xml entries are pointing to the right directory.

a) Set the following database parameter in the ApplicationResources.properties file:
   - database.context.name (This must match the DB2 datasource name in WebSphere as described in section "Adding JDBC DB2 Datasource" of this document. If the datasource name is the default, panDataSource, no change is needed to this parameter)database.authid (Change **AUTHID** to the database authorization ID)
b) Set the email parameters in the `ApplicationResources.properties` file:
   - `mail.smtp.host`: Change **SMTP.SERVER** to the local smtp host name for forwarding PANs, eg. popserv.ucop.edu.
   - `mail.smtp.port`: Change **SMTP.PORTNO** to the local smtp port number for forwarding PANs, eg. 25.
   - `mail.smtp.from`: Change **SMTP.FROM** to the "from" address for forwarding PANs, eg. panmail@ucop.edu

c) Set the `net.data.base` parameter in the `ApplicationResources.properties` file:
   - `net.data.base`: Change **NET.DATA.URL** to the local base url for the net.data menu, eg. http://prod.ucop.edu/ppxcgi/ucdb2www/. Note that this includes the final "/", but does not include the net.data login program name ppslogon.d2w/main).

The Application Log

The `Log4.properties` file controls the parameters for application log.

The default location for the log file is: `/logs/WebSphere/PANWEB` (you will need to create this directory on the server), set in the `log4j.appender.LOGFILE.File` parameter in the `log4.properties` file. If you choose a different location, each time you install a new .ear file, you will need to make sure that web.xml entries are pointing to the right directory.

For setting other parameters of logging, please refer to [http://logging.apache.org/log4j/docs/documentation.html](http://logging.apache.org/log4j/docs/documentation.html)

Security Handling

The application can be invoked only from PPS Main Menu. A valid RACF login is required in PPS Main Menu. A click on any of the Web PAN links from PPS Main Menu will transfer the request to Web PAN application and a validation is done against PPS security table. Access to different sections of Web PAN application is controlled by ARSM rules as per the requirement.

Session Time Out

WebSphere standard session time out (due to inactivity) is 30 minutes by default. But this is configurable in websphere administration (application additional properties in WebSphere 5.x). It is advisable to make this time out interval same as the time out interval in the main calling application (PPS).

Testing
Perform installation verification testing as described in the Test Plan.

Perform any desired additional campus testing.