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1 United States Patient Solution Using OHMPI

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The United States Patient Solution was created to help you solve a business problem by providing you with a template that is configurable to your specific healthcare requirements. It enables you to set up a skeleton of your patient application without having to create everything from scratch, allowing you to avoid trial and error. But this does not mean your application is immediately a fully-functioning project for you will need to configure it as well as set various parameters that are specific to your healthcare needs, such as standardization and matching. This guide points to OHMPI documents that provide the information you need to complete these tasks.

**Audience**

This document is intended for users of the Oracle Healthcare Master Person Index (OHMPI) that want to set up an application for their specific healthcare needs from a template that has been localized to the United States.

**Documentation Accessibility**

For information about Oracle’s commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

**Access to Oracle Support**

Oracle customers have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

**Related Documents**

For more information and instructions for implementing and using a master index application, see the following documents in the Oracle Healthcare Master Person Index Release 2.0 documentation set:

- Oracle Healthcare Master Person Index Installation Guide
- Oracle Healthcare Master Person Index Release Notes
- Oracle Healthcare Master Person Index User’s Guide
- Oracle Healthcare Master Person Index Configuration Guide
- Oracle Healthcare Master Person Index Configuration Reference
Finding Information and Patches on My Oracle Support

Your source for the latest information about Oracle Healthcare Master Person Index is Oracle Support’s self-service Web site My Oracle Support (formerly MetaLink).

Before you install and use Oracle Healthcare Master Person Index, always visit the My Oracle Support Web site for the latest information, including alerts, White Papers, installation verification (smoke) tests, bulletins, and patches.

Creating a My Oracle Support Account

You must register at My Oracle Support to obtain a user name and password account before you can enter the Web site.

To register for My Oracle Support:
1. Open a Web browser to https://support.oracle.com.
2. Click the Register here link to create a My Oracle Support account. The registration page opens.
3. Follow the instructions on the registration page.

Signing In to My Oracle Support

To sign in to My Oracle Support:
1. Open a Web browser to https://support.oracle.com.
2. Click Sign In.
3. Enter your user name and password.
4. Click Go to open the My Oracle Support home page.

Finding Information on My Oracle Support

There are many ways to find information on My Oracle Support.

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Note: These documents are designed to be used together when implementing a master person index application.
Searching by Article ID
The fastest way to search for information, including alerts, White Papers, installation verification (smoke) tests, and bulletins is by the article ID number, if you know it.

To search by article ID:
2. Locate the Search box in the upper right corner of the My Oracle Support page.
3. Click the sources icon to the left of the search box, and then select Article ID from the list.
4. Enter the article ID number in the text box.
5. Click the magnifying glass icon to the right of the search box (or press the Enter key) to execute your search.

The Knowledge page displays the results of your search. If the article is found, click the link to view the abstract, text, attachments, and related products.

Searching by Product and Topic
You can use the following My Oracle Support tools to browse and search the knowledge base:

- Product Focus — On the Knowledge page under Select Product, type part of the product name and the system immediately filters the product list by the letters you have typed. (You do not need to type "Oracle.") Select the product you want from the filtered list and then use other search or browse tools to find the information you need.

- Advanced Search — You can specify one or more search criteria, such as source, exact phrase, and related product, to find information. This option is available from the Advanced link on almost all pages.

Finding Patches on My Oracle Support
Be sure to check My Oracle Support for the latest patches, if any, for your product. You can search for patches by patch ID or number, or by product or family.

To locate and download a patch:
2. Click the Patches & Updates tab. The Patches & Updates page opens and displays the Patch Search region. You have the following options:
   - In the Patch ID or Number is field, enter the number of the patch you want. (This number is the same as the primary bug number fixed by the patch.) This option is useful if you already know the patch number.
   - To find a patch by product name, release, and platform, click the Product or Family link to enter one or more search criteria.
3. Click Search to execute your query. The Patch Search Results page opens.
4. Click the patch ID number. The system displays details about the patch. In addition, you can view the Read Me file before downloading the patch.
5. Click Download. Follow the instructions on the screen to download, save, and install the patch files.
Finding Oracle Documentation
The Oracle Web site contains links to all Oracle user and reference documentation. You can view or download a single document or an entire product library.

Finding Oracle Health Sciences Documentation
To get user documentation for Oracle Health Sciences applications, go to the Oracle Health Sciences documentation page at:
http://www.oracle.com/technetwork/documentation/hsgbu-154445.html

Note: Always check the Oracle Health Sciences Documentation page to ensure you have the latest updates to the documentation.

Finding Other Oracle Documentation
To get user documentation for other Oracle products:
1. Go to the following Web page:
http://www.oracle.com/technology/documentation/index.html
Alternatively, you can go to http://www.oracle.com, point to the Support tab, and then click Documentation.
2. Scroll to the product you need and click the link.
3. Click the link for the documentation you need.

Conventions
The following text conventions are used in this document:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface</strong></td>
<td>Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.</td>
</tr>
<tr>
<td><em>italic</em></td>
<td>Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.</td>
</tr>
<tr>
<td><code>monospace</code></td>
<td>Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.</td>
</tr>
</tbody>
</table>
This chapter introduces you to the Oracle Healthcare Master Person Index (OHMPI) United States Patient Solution. It also provides instructions that help you to use the solution template to create and generate a patient application using OHMPI, set up a database, set resources in an application server, and then build and deploy the application. But it goes beyond this, for you will need to set your matching and standardization levels to ensure that your project is set up to function per your specifications. You will also need to configure your application specifically to your healthcare enterprise. This guide will provide pointers to OHMPI documents that contain detailed information on what you need to know to perform these tasks.

This chapter is divided into:

■ What you Need to Know
■ What You Need to Do

These sections provide information about the United States Patient Solution, why you should use it, and an overview on how to use it. The purpose of the solution is to help you solve a business problem.

What You Need to Know

The following section provides conceptual information about the United States Patient Solution.

■ “Understanding the Benefits of the United States Patient Solution”

What You Need to Do

The first section provides a procedure that leads you through using the United States Patient Solution with OHMPI to create an application, configure it, and then deploy it. The second details setting-up a database (if one is not in place) and setting resources in an application server. The final section presents an overview procedure for using the Master Index Data Manager (MIDM) to manage an OHMPI project.

■ “Using the United States Patient Solution”

Which includes the following:

= “Creating and Configuring the United States Patient Solution Application”
= “Setting Up a Database and the Application Server”
= “Deploying the OHMRI Application”
= “Opening and Using the Master Index Data Manager”
Understanding the Benefits of the United States Patient Solution

This section introduces you to the United States Patient Solution template. The purpose is to help you solve a business problem by providing you with a template that is configurable to your specific requirements, enabling you to create a single patient solution that includes all required and optional bits of information that are specific to each and every patient in your healthcare system. After the database is completed and operational, you will have a patient model that eliminates errors inherent in systems that have patient information spread throughout a number of hard copy and electronic systems that is easy to access and use.

This patient template comes with an object model, code modules in `codelist.sql`, a set of match fields, and block searches. The configurations include ballpark numbers that function. The United States Patient Solution template provides much more completeness than our previously released “Person” object model and enables you to set up your healthcare solution without having to create everything from scratch. When studying the solution, observe that it addresses all pertinent bits of patient information, including insurance, medical condition, and medications.

As this template was specifically designed for United States healthcare, it allows you to create an OHMPI project in a reasonably short amount of time. With a database (Oracle, MySQL, or SQL Server) in place, the projects created with this template can be generated, deployed, and run. Benefits for using the solution include:

- Set up of patient solution template using Oracle Healthcare Master Person Index
  - Enables easy alteration of the template to suit your requirements
  - Combines and standardizes records into a single patient database
  - Enables merging of disparate legacy patient databases
- Completed United States Patient Solution
  - Enables web services connectivity
  - Enables fully-functioning patient knowledge base
  - Reduces patient identity errors
  - Increases reliability while reducing cost

Note: In reality, all OHMPI projects require much more fine-tuning and custom plug-ins to satisfy site-specific requirements.

Using the United States Patient Solution

If you are new to OHMPI, you may want to see the Oracle Healthcare Master Person Index User’s Guide (Part Number E25242-01) for it gives you an overview and provides detailed steps for setting up a master person index application. For information on how to start and use the Master Index Data Manager (MIDM), see the Oracle Healthcare Master Person Index Data Manager User’s Guide (Part Number E25246-01). These guides feature the following:

- Create the OHMPI application
- Configure code lists
- Create the database
- Define the database connection
Define security
Build and deploy the project
Launch Master Index Data Manager

The purpose of the previously mentioned guides is to give you an overall view of the steps involved to create a master person index application. However, and this is important, if you decide to use the United States Patient Solution as your model, you do not need to create it from scratch. From within NetBeans IDE use OHMPI’s project wizard to navigate to and select the United States Patient Solution project icon. As the project has already been created and the object structure is in place, all you have to do is move through a number of steps and set-up the template so that it serves your company’s requirements.

The following sections provide the information you need to create an OHMPI application from the United States Patient Solution, set-up a database (if you have not done so already), setting your resources in an application server, and using the MIDM to manage your project:

- "Creating and Configuring the United States Patient Solution Application"
- "Setting Up a Database and the Application Server"
- "Deploying the OHMPI Application"
- "Opening and Using the Master Index Data Manager"

Creating and Configuring the United States Patient Solution Application

Before You Begin
Ensure that OHMPI is installed before beginning this procedure.

To Create an MPI Application
1. On the NetBeans toolbar, click New Project.
   The New Project wizard appears, and opens on the Choose Project window.
2. Under Categories select OHMPI, under Projects select Master Person Index Application, and then click Next.
   The Name and Location window appears with default NetBeans project name and directory paths.
3. Enter a NetBeans project name and the path where you want to store the project files in the upper portion of the window or accept the defaults.
4. Select the application server you are using from the drop down list.
   a. If no application servers appear in the list, click Manage.
      The Servers window appears.
   b. Click Add Server.
      The Add Servers Instance window appears.
   c. Choose a server (for example GlassFish v2.x or Oracle WebLogic Server), and click Next.
   d. Under Server Location, browse to the location of your application server, or accept the defaults and click Finish.
You are returned to the Servers window with the application server you selected listed under Servers in the left pane.

e. Click Close.

The Name and Location window reappears.

5. The J2EE field has been populated; if you want to use another version, make your selection from the drop down list.

6. The Set as Main Project is selected; if you do not want this master person index to be the main project, deselect the option.

7. Click Next.

The Name Application window appears with a default application name.

Before you can configure a new master person index application, you should give the application a unique name. It is a good practice to give each master person index application a unique name you create because certain components within the application server are based on the application name. Dependent components include the data source for the JDBC connection and the outbound Topic (if one is used).

8. In the Application field of the Name Application window, enter a name for the new master person index application, and then click Next.

The Define Source Systems window appears.

9. In the Name field of the Define Source Systems window, enter the processing code of one of the source systems that will share data in the master person index system (for example, “GMH” or “MCT”), and then click Add (see below).

The source system is the key to your network. If it is a hospital (for example, Glendale Memorial Hospital or Medical Center of Tarzana, the system might be “GMH” or “MCT”), all of its patient records would be sent into the master person index with a system code/LID of GMH/120210210 or MCT/48481234. For more information on the LID, see “Step 4: Define Source Systems” in chapter 2 of the Oracle Healthcare Master Person Index User’s Guide (Part Number E25242-01).

You can enter any of the following characters:

- ! _ ( ) | + \Q $ % & : ; - /
- a-z
- A-Z
- 0-9
- Æ Ø Ø-Ý

The value you entered appears in the Systems box.

Note: Give the application the same name you will give to the parent object when you define the object structure.

Note: Be sure to enter the processing code of the system and not the name. This value is entered in update.xml for defining survivor strategies for the single best record (SBR).
10. Do any of the following:
   ■ To define additional systems, repeat the above step for each source system that
     will share information with the master person index application.
   ■ To remove a system from the list, highlight the name of that system in the
     Systems box, and then click Remove.
   ■ To remove all systems from the list, click Remove All.
11. When you have defined all required source systems, click Next.
    The Define Deployment Environment window appears.
12. On the Define Deployment Environment window, enter the following information
    to specify information about the deployment environment, including the database,
    date format, and transaction mode:
   ■ Database - The type of database being used for the master person index
     application. You can select MySQL, Oracle, or SQL Server.
   ■ Date Format - The date format for the master person index system. This
     defines how dates should be entered and how they appear on the MIDM. You
     can select MM/dd/yyyy, dd/MM/yyyy, or yyyy/MM/dd.
   ■ Transaction Mode - An indicator of whether transactions are distributed.
     Select one of the following options:
     – XA (across applications), if the transactions will be distributed across
       multiple applications.
     – XA (within application only), if the transactions will be distributed just
       across the master person index application.
     – Local, if the transactions will not be distributed.
13. When you have defined the deployment environment fields, click Next.
    The Define Enterprise Object window appears.
14. From the drop-down list of the Add Solution icon, select Patient and then
    USPatient.
    The object model is populated. It has been pre-set, that is all the object fields were
    already created with a set of default properties that define each field, and you are
    unable to change anything.
    Click Next.
    The Generate Project Files window appears, listing which files will be generated.
    You can choose to generate the remaining master person index files now by
    checking the box, but if you intend to change the configuration you will need to
    again generate all the application files.
    Click Finish.
15. In the Projects pane (left side of NetBeans), if not already expanded, expand the
    United States Patient Solution you just created.
16. Right-click Configuration and then select Edit.

The Configuration Editor opens on the right side of the window. For detailed information about the Master Person Index object field properties, see the Oracle Healthcare Master Person Index User’s Guide (Part Number E25242-01).

17. As desired, modify the object properties for any field to suit your data processing, storage, and display requirements. After you modify a property value, press Enter to apply the change.

18. When you have completed configuring the object fields, right-click the USPatient application and from the context menu select Generate Master Index Files.

The patient solution came with codelist.sql and system.sql; when you generate the master index files, two additional SQL files are created: create.sql and drop.sql.

You are now ready to set up the database and resources on the application server.

Setting Up a Database and the Application Server

Before you are able to use the Master Index Data Manager, you need to perform a few tasks that are required for runtime to function properly. These include:

- “Creating a Database (MySQL)”
- “Creating a Database (Oracle)”
- “Using the Admin Console to Set Resources (GlassFish)”
- “Using the Admin Console to Set Resources (WebLogic)”

Creating a Database (MySQL)

1. Create the database for your solution.

   All the necessary SQL has been provided for all the supported databases.

   Note: For detailed instructions on how to create a database, see chapter 3, “Master Person Index Database,” in Oracle Healthcare Master Person Index User’s Guide (Part Number E25242-01). For additional information, see the tools provided by your database vendor, such as Oracle or MySQL.

   Once you have created a database you are ready to open your application server.

2. Analyze the Master Person Index database requirements.

3. Create the Master Person Index database and user, and then grant the user permission to work on the database.

   At the command prompt do the following:

   a. create database <database_name>;

      Where <database_name> is the name you give the database (for example, ohmpi).

   b. create user '<user_name>' to '@'%' identified by '<password>';

      Where <user_name> is the name of the person assigned to administer the database (for example, ohmpi) and <password> is the string of alphanumeric characters that identify the user (for example, ohmpi).
c. `grant all on <database_name> to '<user_name>'@'%' identified by '<password>';`

Where `<database_name>` is the name of database (for example, `ohmpi`), `<user_name>` is the name of the person assigned to administer the database (for example, `ohmpi`) and `<password>` is the string of alphanumeric characters that identify the user (for example, `ohmpi`). This command gives the user permission to work on that database.

d. `use ohmpi;`

This defines which database you are going to use.

4. Check if the table you created is accessible, and if not set the directory using these commands:

   a. `show tables;`
   
   The result will show that the table you created is not available.

   b. `mysql -h localhost -u <user_name> -p <password> -D ohmpi`

   Where `<user_name>` is the name of the person assigned to administer the database (for example, `ohmpi`) and `<password>` is the string of alphanumeric characters that identify the user (for example, `ohmpi`). This command sets the directory where the table you created is located.

5. If needed, define the OHMPI database indexes.

6. Create custom OHMPI database scripts.

   a. In the left pane in NetBeans IDE under the Projects tab, expand your OHMPI project, expand Database Script, and then double-click `create.sql`.

   b. In the Configuration Editor, customize the object model (`object.xml`); then save and generate the application.

   This creates a new `create.sql` file.

   c. Copy `create.sql`, and then using the command prompt, run `create.sql` in the directory where you created the database.

7. If required, customize the OHMPI code lists (`codelist.sql` is provided as part of the solution template).

   a. In the left pane in NetBeans IDE under the Projects tab, expand your OHMPI project, expand Database Script, and then double-click `codelist.sql`.

   b. In the Text Editor, customize `codelist.sql`, save your changes, and copy the SQL file.

   c. Using the command prompt, run `codelist.sql` in the directory where you created the database.

8. If needed define the OHMPI external systems, such as hospitals.

   a. In the left pane in NetBeans IDE under the Projects tab, expand your OHMPI project, expand Database Script, and then double-click `systems.sql`.

   Note: See "Define Master Person Index Database Indexes" in chapter 3 of the Oracle Healthcare Master Person Index User’s Guide (Part Number E25242-01) for information on how to complete this task.
b. In the Text Editor, customize `systems.sql`, save your changes, and copy the SQL file.

c. Using the command prompt, run `systems.sql` in the directory where you created the database.

9. If user code is used, define the OHMPI user code lists.

   **Note:** User code is not defined in the solution template. To perform this task, see "Step 6: Define Master Person Index User Code Lists in chapter 3 of the Oracle Healthcare Master Person Index User’s Guide (Part Number E25242-01)."

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**Creating a Database (Oracle)**

Before you begin, make sure you have Oracle installed as a service with remote host access enabled. Perform the following steps to create all databases:

1. Create an Oracle environment and user for the Master Person Index tables by running the following command:

   ```
   grant CREATE SESSION, CREATE TABLE, CREATE TRIGGER, CREATE PROCEDURE, UNLIMITED TABLESPACE, CREATE TYPE to <USER_NAME> identified by <PASSWORD>
   ```

2. Open `systems.sql` in a Text Editor, and add the HL7 systems with which you will be sharing data.

   **Note:** See Step 5 for the location of this file.

   For more information about modifying this file, see "Step 4: Define Master Person Index External Systems" in Oracle Healthcare Master Person Index User’s Guide (Part Number E25242-01).

3. Open `codelist.sql` in a Text Editor, and add any common code information you need for the master person index system.

   **Note:** See Step 5 for the location of this file.

   For more information about code lists and modifying this file, see "Step 5: Define Master Person Index Code Lists" in Oracle Healthcare Master Person Index User’s Guide (Part Number E25242-01).

   **Note:** This step is optional. The default configuration does not use common code tables. Adding this feature will cause additional validations to be performed against incoming data.

4. Log in to the mpi schema as the user you created above.

5. Run the following SQL files against the mpi schema (`<project_name>\ihe-mpi\src\DatabaseScript`). The `create.sql` file must be run first:

   - `create.sql`
   - `systems.sql`
   - `codelist.sql`
Using the Admin Console to Set Resources (GlassFish)

1. Open the Admin Console.

Note: For the examples in this procedure we used GlassFish.

   a. In the NetBeans IDE, select the Services tab.

   b. Right-click GlassFish v2.x, and select View Admin Console.
      The Oracle GlassFish Enterprise Server Admin Console opens.

2. Use the Sun GlassFish Enterprise Server Admin Console to define the following:

   a. Create two Connection Pools
      - In the left pane choose Resources->JDBC->Connection Pools.
      - In the Connection Pools pane, click New.
      - In New JDBC Connection Pool (Step 1 of 2), set the name for your connection pool using your database name. For example, cpmysqlDS with cp representing connection pool, mysql representing the database name and DS representing the data source.
      - In the Resource Type field you must select one of the selections from the drop-down list.
      - In the Database Vendor field select a vendor from the drop-down list.
      - Click Next.
      - In New JDBC Connection Pool (Step 2 of 2), you need to select and define four properties.
        * Database Name: The name you gave the database.
        * Password: The password for the database.
        * URL: (do not select "url" in lower case). This must be jdbc:<database>://<hostname>:<port number>/<database name> where database is your database (for example, Oracle or MySQL), hostname is the name of your host (for example, localhost), port number is generated, and database name is the name you gave your database when you created it.
        * User: The name you assigned to the User.
        - Click Finish.

   b. Repeat all of step a, only this time set the Sequence Data Source using your application name. For example, cpUSPatientSDS with cp representing connection pool, USPatient representing the application name and SDS representing the sequence data source.

   c. Create two JDBC Resources
      - In the left pane choose Resources->JDBC Resources.
      - In the JDBC Resources pane, click New.

Note: All three of the Resource Type options are valid.
- In New JDBC Resource, set the JNDI Name as `jdbc/application nameDataSource` (for example, `jdbc/USPatientDataSource`).

**Note:** The application name must match the application name you set in NetBeans for both the data source and the sequence data source.

- In New JDBC Resource, set the Pool Name from the drop-down list. It should be the JDBC Data Source that you just created and click **OK**.
- In the JDBC Resources pane, click **New**.
- In New JDBC Resource, set the JNDI Name as `jdbc/application nameSequenceDataSource` (for example, `jdbc/USPatientSequenceDataSource`).
- In New JDBC Resource, set the Pool Name from the drop-down list. It should be the JDBC Sequence Data Source that you just created and click **OK**.

d. **User ID, Group List, and Password**
   - In the left pane choose **Configuration->Security->Realms->file**.
   - In the Edit Realm pane, click **Manage Users**.
   - In the File Users pane, click **New**.
   - In the New File Realm User, set the following:
     - When ready, click **OK**.

You are now ready to deploy your application.

**Using the Admin Console to Set Resources (WebLogic)**

**To Create JDBC Data Resources for an MPI Application Project for MySQL**

This section provides instructions for creating the JDBC data resources and defining the JDBC connections for an MPI Application Project.

1. For instructions on how to start and stop your Oracle WebLogic Server, see *Starting and Stopping Servers: Quick Reference* at [http://download.oracle.com/docs/cd/E14571_01/wls.htm](http://download.oracle.com/docs/cd/E14571_01/wls.htm).

2. Launch the **Oracle WebLogic Server Administration Console**.

3. Log in using the default user Name (**weblogic**) and Password (**welcome1**).

   The Oracle WebLogic Administration Console appears.

4. On the left panel, under Domain Structure, expand **Services**, click **JDBC**, and then choose **Data Sources**.

   A Summary of JDBC Data Sources appears in the right panel.

<table>
<thead>
<tr>
<th>User ID</th>
<th>Select a user name that is meaningful to you, for example <strong>us</strong>.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group List</td>
<td><strong>MasterIndex.Admin,Administrator</strong>¹</td>
</tr>
<tr>
<td>Password</td>
<td>The password is of your choosing, for example <strong>us</strong>.</td>
</tr>
</tbody>
</table>

¹ This is a super group, with all privileges.
5. To create a new JDBC Data Source click **New** at the bottom of the right panel. Settings for a new JDBC Data Source appears in the right panel of the page. It is here that you will create a new JDBC Data Source.

6. In the **Name** field, type `<application_name>DataSource`. The name you enter here will propagate elsewhere, so choose a name that is meaningful (for example, `PatientDataSource`).

7. In the **JNDI Name** field, type `jdbc/<application_name>DataSource`. Use the name you entered in step 6 here (for example, `jdbc/PersonDataSource`).

8. Click **Save**.

   A new page appears in the right panel which is for setting the Database Type.

9. In the **Database Type** drop-down list, choose the appropriate type (for example: `MySQL`).

10. In the **Database Driver** drop-down list, choose the appropriate driver; for example: `MySQL's Driver (Type 4) Versions:using com.mysql.jdbc.Driver`.

11. Make sure that your data source supports Global Transactions.

12. Click **Next**.

    Connection Properties appears on the Create a New JDBC Data Source panel. Use it to define the connection properties.

13. In the **Database Name** field, type a name for the database to which you want to connect (for example: `Patient`).

14. In the **Host Name** field, type the name or the IP address of the database server (for example: `localhost`).

15. In the **Port** field, type the port on the database server that is used to connect to the database (for example: `3306`, the default for MySQL).

16. In the **Database User Name** field, type the database account user name you want to use to create database connections (for example: `root`).

17. In the **Password** field, type a password for your database account to use to create database connections.

18. In the **Confirm Password** field, re-type the password to confirm it.

19. Click **Next**.

    The Settings for PersonDataSource page appears in the right panel.

20. Click the **Connection Pool** tab, click **Test Configuration**, and then click **Next**. Select Targets appears on the Create a New JDBC Data Source page in the right panel. Here you select one or more targets to deploy the new JDBC data source.

21. In the **Servers** check list, select one or more target servers and click **Finish**.

**Note:** If you do not select a target, the data source will be created but not deployed. You will need to deploy the data source at a later time.

22. Repeat the above steps to create `jdbc/<application_name>SequenceDataSource`.
To Create JDBC Data Resources for an MPI Application Project for Oracle


2. Launch the Oracle WebLogic Server Administration Console.

3. Log in using the default user Name (weblogic) and Password (welcome).
   The Oracle WebLogic Administration Console appears.

4. On the left panel, under Domain Structure, expand Services, click JDBC, and then choose Data Sources.
   A Summary of JDBC Data Sources appears in the right panel.

5. To create a new JDBC Data Source click New at the bottom of the right panel.
   Settings for a new JDBC Data Source appears in the right panel of the page. It is here that you will create a new JDBC Data Source.

6. In the Name field, type <application_name>DataSource.
   The name you enter here will propagate elsewhere, so choose a name that is meaningful (for example, PersonDataSource).

7. In the JNDI Name field, type jdbc/<application_name>DataSource.
   Use the name you entered in step 6 here (for example, jdbc/PersonDataSource).

8. Click Save.
   A new page appears in the right panel which is for setting the Database Type.

9. In the Database Type drop-down list, choose the appropriate type (for example: Oracle).

10. In the Database Driver drop-down list, choose the appropriate driver; for example: Oracle’s Driver (Thin XA) for Instance Connections; Versions: 9.0.1; 9.2.0; 10, 11.

11. Click Next.

12. Click Next.
   Connection Properties appears on the Create a New JDBC Data Source panel. Use it to define the connection properties.

13. In the Database Name field, type a name for the database to which you want to connect (for example: Person).

14. In the Host Name field, type the name or the IP address of the database server (for example: localhost).

15. In the Port field, type the port on the database server that is used to connect to the database (for example: 1521, the default for Oracle).

16. In the Database User Name field, type the database account user name you want to use to create database connections (for example: root).

17. In the Password field, type a password for your database account to use to create database connections.

18. In the Confirm Password field, re-type the password to confirm it.

19. Click Next.
   The Settings for <application_name>DataSource page appears in the right panel.

20. Click the Connection Pool tab, click Test Configuration, and then click Next.
Select Targets appears on the Create a New JDBC Data Source page in the right panel. Here you select one or more targets to deploy the new JDBC data source.

21. In the Servers check list, select one or more target servers and click Finish.

**Note:** If you do not select a target, the data source will be created but not deployed. You will need to deploy the data source at a later time.

22. Repeat the above steps to create jdbc/\<application_name>\SequenceDataSource.
You are now ready to deploy your application.

**Deploying the OHMPI Application**

**GlassFish**

1. To deploy your application, under Common Tasks, expand Applications, select Enterprise Applications, and in the right pane, click Deploy.
2. In the Deploy Enterprise Applications/Modules pane, browse to the location of the EAR files for the application.
3. In the File Upload window, select the patient-project EAR file and click Open and then click OK.

**WebLogic**

1. On the left panel of the WebLogic Server Admin Console, under Domain Structure, select Environment and then choose Deployments.
   The Summary of Deployments panel appears.
2. On the right side of the panel under Deployments, click Install.
   A Summary of Deployments panel with a Deployments table containing a list of EAR files appears.
3. Locate your application EAR and click Next.
   The Install Application Assistant page appears in the right panel.
4. Locate the deployment you want to install and prepare for deployment.
   
   **Tip:** Select the file path that represent the application root directory, archive file, exploded archive directory, or application module descriptor that you want to install. You can also enter the path of the application directory or file in the Path field.

   **Note:** Only valid file paths are displayed. If you cannot find your deployment files, upload your file(s) and/or confirm that your application contains the required deployment descriptors.
5. Click Next.
6. Click Finish.
You are now ready to open the MIDM and manage your OHMPI project.

Opening and Using the Master Index Data Manager

1. Open the Master Index Data Manager.

The Master Index Data Manager (MIDM) is a web-based interface that allows you to access, monitor, and maintain the data stored by the master person index applications you create using OHMPI. Use the MIDM to search for, add, update, deactivate, merge, unmerge, and compare object profiles. You can also view and correct potential duplicate profiles, view transaction histories, view an audit log, and print reports.

The MIDM is your primary tool to view and maintain the data stored in the master index database and cross-referenced by a master index application.

a. Using a browser, enter the URL to open the MIDM:

   `http://localhost:http-port-number/solution-object-nameMIDM`

   **Note:** The default port number for GlassFish is 8080 and the default port number for WebLogic is 7001. For `http-port-number` you need to use the port number defined during your OHMPI installation. The `solution-object-name` is the name of the solution template you selected when you began to create the Master Person Index application. For example, `solution-object-name` is `Patient` for the USPatient solution, making the key string `PatientMIDM`.

b. If you changed the default port but cannot remember the new port number, do one of the following:

   - From the NetBeans IDE, bring up the HTTP monitor and edit the port number of the HTTP server by selecting the Client and Server tab and then editing the port number which is listed as Port number of HTTP server.
   - Edit the `domain.xml` file.

   **Note:** This file is found in the

   `<OHMPI-install>\appserver\domains\domain\config` directory.

Find a line similar to the following example. The line you are looking for has the following values:

   - `http-listener acceptor-threads="1"`
   - `default-virtual-server="server"`
   - `security-enabled="false"`
This is usually the first http-listener entry in the domain.xml file. In the following example, the port is 9090 instead of the default, which is 8080.

```xml
<http-listener acceptor-threads="1" address="0.0.0.0"
  blocking-enabled="false"
  default-virtual-server="server" enabled="true" family="inet"
  id="http-listener-1"
  port="9090" security-enabled="false" server-name="" xpowered-by="true">
```

**Note:** The port number used in this example is for GlassFish. If you performed a similar task on WebLogic the port number would be different.

c. Log into the MIDM using ohmpi or your user for the User ID and Password.
   For information about logging in and logging out of the MIDM, see "Logging in to the Master Index Data Manager" and "Logging Out of the MIDM" in chapter 2 of the Oracle Healthcare Master Person Index Data Manager User's Guide (Part Number E25246-01).

2. Use the MIDM to add new records.
   This provides the initial steps for creating a new record, and then offers suggestions for you to try as you familiarize yourself with the United States Patient Solution and using Master Index Data Manager to tweak the solution to meet your particular requirements.

   To view tables that describe the properties you define on the MIDM Field Properties page of the wizard, see "Understanding Master Person Index Wizard Name Restrictions and Field Properties" in chapter 2 of the Oracle Healthcare Master Person Index User's Guide (Part Number E25242-01).

   a. In the MIDM GUI, click **Source Record**.
   b. To create a new record, click **Add**.
   c. In the Pick Out System drop down list, choose **Oracle**.
   d. Enter a Local ID.
      For example, **444-444-4444**
   e. In the USPatient information section, at a minimum, specify the required values.
   f. To add the record, click **Submit**.

   The following are examples of what you might try to increase your knowledge of the Master Index Data Manager GUI:

   - Add the same person twice, but give the two records different dates of birth. Be sure to select MySQL as the system for the second record.
   - Add different people.
   - Add the same person twice but give them different National Insurance numbers. Be sure to select MySQL as the system for the second record.
   - Check for duplicates.
For information about finding, merging, and resolving duplicate profiles on the MIDM, see "Working with Potential Duplicate Profiles on the MIDM" in chapter 6 of the Oracle Healthcare Master Person Index Data Manager User’s Guide (Part Number E25246-01).

**Note:** This includes a section that discusses duplicate records search fields.

- Look at the various tabs and try different queries or actions once you have some duplicates.