

United States Patient Solution Using MDM

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United States Patient Solution Using MDM

The topics listed here provide information about the United States Patient Solution, why you should use it, and an overview on how to use it. This solution is geared for users of Oracle databases, and Oracle database scripts are supplied. The purpose of the solution is to help you solve a business problem.

What You Need to Know

These topics provide conceptual information about the solution.

- [“Benefits of the United States Solution” on page 6](#)
- [“United States Patient Solution Template” on page 6](#)

What You Need to Do

The first of these topics provides a general overview on using the United States Patient Solution with MDM and then points you to detailed instructions on how to alter the solution to suit your company's requirements, while the second provides you with the scripts you need to create an Oracle database.

- [“United States Patient Solution Uses” on page 7](#)
- [“Creating a Database for the United States Patient Solution” on page 12](#)

Note – You could probably create a database using MySQL or SQL Server. However, the United States Patient Solution has only been tested with the Oracle database.

Benefits of the United States Solution

This topic introduces you to the United States Patient Solution. 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.

As this template was specifically designed for United States healthcare, use it with the Master Data Management (MDM) product suite, specifically the Master Index portion of MDM, when implementing your system.

The patient solution was created to enable 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. Benefits for using the solution include:

- Set up of patient solution template using MDM's Master 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

United States Patient Solution Template

The United States Patient Solution template is located on your installation media under `components\addons\MDM\solutions`. You can view information about how this solution is configured at <http://java.net/downloads/javacaps-samples/Mural/Solutions/Solutions.html>.

As the social security number, SSN, is the major United States identifier of healthcare patients, it is included as one of the keys for block-search definitions and matches on the main USAPatient node in the template. The four matching keys for searches are:

- FirstName
- LastName
- Gender
- SSN

The SSN is comprised of three sections: nine digits (social security number) that are divided by two hyphens using the format of nnn-nn-nnnn. All nine digits are important, although at times after the SSN has been recorded in the system only the last four digits are used for identity purposes when cross-referenced with other key identifiers.

In the template, only the `USAPatient` node contains mandatory variables. All the sub-nodes, for example `Address` and `Contact`, are optional.

Every effort has been made to make the template specific to the United States healthcare industry.

See Also

- [United States Patient Solution Using MDM](#)
- [“Benefits of the United States Solution” on page 6](#)
- [“Creating a Database for the United States Patient Solution” on page 12](#)

United States Patient Solution Uses

If you are new to Master Data Management, you may want to review information about creating a master index. For more information, see [Oracle Java CAPS Master Index User's Guide](#).

To begin using the United States Patient Solution project, you just open the project in the NetBeans IDE. As the project has already been created and the object structure is in place, all you have to do is tweak it so that it serves your company's requirements. Links are provided for detailed instructions for completing all of the major steps.

▼ To Use the United States Patient Solution

Before You Begin Ensure that the Java CAPS Master Index is installed before beginning this procedure.

- 1 **Download the United States Patient Solution project.**
 - a. Navigate to `components\addons\MDM\solutions` on your installation media.
 - b. Copy the file `MDM_Solutions.zip` to a temporary directory and extract the file.
 - c. Unzip `MDM-Solutions-USAPatient.zip`.
- 2 **Open all the United States Patient Solution projects.**
 - a. In the NetBeans IDE, select `File`→`Open Project`.
 - b. Highlight `USAPatient`, select `Open Required Projects` in the right pane, and click `Open Project`.

This opens the following under the Projects tab:

- USAPatient
- USAPatient-ejb
- USAPatient-war

3 Create the database for your solution.

All the necessary SQL has been provided for an Oracle database.

For instructions on creating a database using the Oracle scripts that are provided for you, go to [“Creating a Database for the United States Patient Solution” on page 12](#).

The Oracle scripts that come with the solution create a user identified as `usa`. They are located in the `Solutions\NB\MI\project\USAPatient\sca\source\DatabaseScript` directory. For detailed instructions on how to create a database, go to [“Creating the Master Index Database” in Oracle Java CAPS Master Index User’s Guide](#).

Creating the database is a multistep process and not in the scope of this topic. The steps include:

- a. **Analyze the Master Index database requirements.**
- b. **Create a Master Index database and user.**

Note – You create the database using tools provided by your database vendor, such as Oracle.

- c. **Define the Master Index database indexes.**
- d. **Define the Master Index external systems.**
- e. **Define and customize the Master Index code lists for Oracle.**
- f. **Define the Master Index user code lists.**
- g. **Create custom Master Index database scripts.**
- h. **Specify a starting EUID for a Master Index.**

Note – An EUID is an enterprise-wide unique identification number that is assigned to a profile.

4 If the GlassFish server is not running, start the server.

- a. **In the NetBeans IDE, select the Services tab.**
- b. **Expand the Servers node, right-click GlassFish V2 and select Start.**

Note – You can also start the server using the shortcut located in the base directory where you installed Java CAPS 6.

5 Right-click the USAPatient project and select Generate Master Index Files.

Note – This project has already been created. When you create fields in the object structure of the master index application you can specify several properties for each field. What you specify determines how the fields appear and function in the wizard.

6 Build and deploy the USAPatient project.

- a. Right-click the USAPatient project and select Build.
- b. Right-click the USAPatient project and select Undeploy and Deploy.
- c. In the Warning — Select Server dialog box, select GlassFish V2.

7 Open the GlassFish Admin Console.

- a. In the NetBeans IDE, select the Services tab.
- b. Right-click GlassFish V2, and select View Admin Console.
The GlassFish Enterprise Server Admin Console opens.

8 Use the GlassFish Enterprise Server Admin Console to define the following:

- a. Connection Pool
 - i. In the left pane choose Resources→JDBC→Connection Pools.
 - ii. In the Connection Pools window, click New.
 - iii. In New JDBC Connection Pool (Step 1 or 2), set the name as USAPatient.

Note – All three of the Resource Type options are valid, and one must be selected. Also, you must name the Database Vendor, such as Oracle.

b. JDBC Resources

- i. In the left pane choose Resources→JDBC Resources.
- ii. In the JDBC Resources window, click New.

iii. In New JDBC Resource, set the JDBC Name as `jdbc/USAPatientDataSource` and click OK.

c. **User ID, Group List, and Password**

i. In the left pane choose Configuration→Security→Realms→file.

ii. In the Edit Realm window, click Manage Users.

iii. In the File Users window, click New.

iv. In the New File Realm User, set the following.

User ID	usa
Group List	MasterIndex.Admin,Administrator
Password	usa

9 **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 index applications you create using the Java CAPS Master Index. 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. **To open the MIDM, go to `http://localhost:<http-port-number>/USAPatientMIDM`.**

Note – The default port number is 8080. For *http-port-number* you need to use the port number defined during your Java CAPS installation. The angle brackets (< >) are not part of the port number.

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

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

Note – This file is found in the
 <JavaCAPS6-install>\appserver\domains\domain1\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.

```
<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">
```

b. Log into the MIDM using usa for the User ID and Password.

10 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.

For detailed instructions on how to perform the following tasks working with the MIDM, go to [Master Index Data Manager User's Guide](#).

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 Sun.

d. Enter a Local ID.

For example, 444-444-4444.

e. In the USAPatient 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 but give them a different social security number (SSN). Be sure to select MySQL as the system for the second record. Additionally, the digits in the SSN should differ.
- Check for duplicates.
- Look at the various tabs and try different queries or actions once you have some duplicates.

11 Update the USAPatient model.

- a. Make the desired changes to the Master Index configuration files.
- b. Right-click the USAPatient project and select Generate Master Index Files.
- c. Update the database definitions by running the following SQL commands as the `usa` user.

Tip – Be sure to run the `drop.sql` script first. Then run the `create.sql` script.

- `drop.sql`
- `create.sql`
- `codelist.sql`
- `systems.sql`
- `createIndexes.sql`
- `createUserCodeData.sql`

- d. Build and deploy the USAPatient project.
 - i. Right-click the USAPatient project and select Clean and Build.
 - ii. Right-click the USAPatient project and select Undeploy and Deploy.

Creating a Database for the United States Patient Solution

This topic provides an example on how to create a user called `usa`. To create a different user, edit the `createuser-usa.sql` file. For links to instructions on the various tasks when setting up your healthcare solution, see [“United States Patient Solution Uses” on page 7](#).

▼ To Create a Database for the United States Patient Solution

Before You Begin The Oracle scripts that come with the solution create a user identified as `usa`. They are located in the `Solutions\NB\MI\project\USAPatient\sca\source\DatabaseScript` directory.

- 1 As a `SYSDBA` user run the `createuser-usa.sql` script.
- 2 As the `usa` user, with a password of `usa`, run the following scripts.

Tip – Run the `create.sql` script first.

- `create.sql`
- `odelist.sql`
- `systems.sql`
- `createIndexes.sql`
- `createUserCodeData.sql`

