Oracle® Health Sciences Information Manager

Health Record Locator Installation and Configuration Guide

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Oracle Health Sciences Information Manager Health Record Locator Installation and Configuration Guide, Release 3.0

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Preface

Oracle Health Sciences Information Manager (OHIM) leverages Integrating the Healthcare Enterprise (IHE) profiles and Oracle WebLogic to provide a broad range of international-standards-based web services to HIE applications in a management and performance optimized solution.

Audience

This document is intended for users who want to install and use OHIM Health Record Locator (HRL) to participate in standards-based health information exchange activities within their organizations or with other organizations.

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.

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Related Documents

For more information, see the following documentation sets:

Oracle Health Sciences Information Manager

- *Oracle Health Sciences Information Manager Health Record Locator Installation and Configuration Guide* [this document]

- *Oracle Health Sciences Information Manager Policy Monitor Installation and Configuration Guide*

- *Oracle Health Sciences Information Manager Cross Community Access Gateway Installation and Configuration Guide*

- *Oracle Health Sciences Information Manager Cross Community Access Gateway User's Guide*

- *Oracle Health Sciences Information Manager Health Record Locator User's Guide*

- *Oracle Health Sciences Information Manager Security Guide*

- *Oracle Health Sciences Information Manager Release Notes*

Conventions

The following text conventions are used in this document:

boldface - Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.

italic - Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.

`monospace` - Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Getting Started

This chapter describes the minimum hardware and software requirements for installing Oracle Health Sciences Information Manager (OHIM) Health Record Locator.

This chapter includes the following sections:

- Section 1.1, "Hardware Requirements"
- Section 1.2, "Software Requirements"
- Section 1.3, "Downloading the Oracle Health Sciences Information Manager Health Record Locator"

1.1 Hardware Requirements

The following are the minimum hardware requirements for installing OHIM Health Record Locator:

- 4 GB (4096 MB) of RAM for WebLogic
- 12 GB of disk space
- 16 GB of disk space for 64-bit

1.2 Software Requirements

The following are the software requirements for installing OHIM Health Record Locator:

- Java 1.7 executable in path (for installer)
- Oracle JDK 1.7.0_45+ and WebLogic Server 11g Release 1 (10.3.6.0) or WebLogic Server 12c Release 2 (12.1.2)
- Oracle Database 11g Release 2 (11.2.0.4.0) or Oracle Database 12c Release 1 (12.1.0.2.0)
- Oracle Enterprise Linux 5.5 or higher
- Microsoft Windows x64 (64-bit) 2012 R2
- Microsoft Windows x64 (64-bit) 2012
- Microsoft Windows x64 (64-bit) 2008 R2

Configuration Requirements
Apache Ant 1.8.2 executable in path

```
PATH=$PATH:<install_dir>/apache-ant-1.8.2/bin
```

1.3 Downloading the Oracle Health Sciences Information Manager Health Record Locator

To download the Oracle Health Sciences Information Manager Health Record Locator, perform the following tasks:

1. Navigate to http://edelivery.oracle.com.

2. Enter your Registration information, accept the Agreement Terms by selecting the check boxes, then click **Continue**.

3. From the **Select a Product Pack** drop-down menu, select **Health Sciences**.

4. From the **Platform** drop-down menu, select **Linux x86**.

5. Click **Go**.

6. Select **Oracle Health Sciences Information Manager 3.0 Media Pack**.

7. Click **Continue**.

8. Click **Download** for the following and save the files to your system:

   - **Oracle Health Sciences Information Manager 3.0 Health Record Locator**

9. Extract the files to view the *Oracle Health Sciences Information Manager Health Record Locator Installation and Configuration Guide* and get the compressed tar file (`*.tgz`).

2

Installing and Configuring OHIM Health Record Locator

This chapter provides the instructions to install and configure the OHIM Health Record Locator.

This chapter includes the following sections:

2.1 Upgrading from Version 1.2.7.3 or Earlier

2.1.1 Upgrading the Application

If you have 1.2.X HRL installed, and if required, back up `config/xconfig.xml` and `codes/codes.xml` files. These files are located in `<GlassFish_Home>/domains/<domain_name>/config/hrl/`.

2.1.2 Migrating Data

> **Note:** If you are migrating from 1.2.8.X and 2.0.2.1, skip to
> Section 2.2.2.
>
> Section 2.1.2.1 and Section 2.1.2.2 are only applicable if you are
> migrating data from 1.2.7.3 and earlier releases.

> **Note:** It is assumed that the patient merge and unmerge operations
> do not happen during data migration.

2.1.2.1 Migrating ADT Schema

1. Execute the following command from sys db user:

    ```
    > sqlplus system as sysdba

    ...

    Enter password: <password>

    SQL>GRANT SELECT ON OMAR.EXTERNALIDENTIFIER TO ADT;
    ```

2. Connect to adt db user:

    ```
    > sqlplus adt

    ...

    Enter password: <password>
    ```

3. Execute the following command:

    ```
    SQL>@<temp>/ADT_Patient_Migration.sql"
    ```

    where, `<temp>` is the file path where the **<install_dir>/ohim_hrl_
    installer/addons/recordlocator/oracle_db/rls_oracle_db_scripts.zip** file is
    extracted.

4. Execute the following command:

    ```
    SQL>@<temp>/ADT_MergeddObjects_Migration.sql
    ```

    where, `<temp>` is the file path where the **<install_dir>/ohim_hrl_
    installer/addons/recordlocator/oracle_db/rls_oracle_db_scripts.zip** file is
    extracted.

5. Execute the following command from sys db user:

    ```
    > sqlplus system as sysdba

    ...

    Enter password: <password>

    SQL>REVOKE SELECT ON OMAR.EXTERNALIDENTIFIER FROM ADT;
    ```

2.1.2.2 Migrating from OMAR Schema to HRLCORE Schema

Perform the following steps to migrate DocumentEntry, SubmissionSet, Folder, and
Association registry objects metadata:

2.1.2.2.1   Preparing HRLCore Schema

To configure the Oracle database with Health Record Locator, perform the following steps:

1. Copy the file from <install_dir>/ohim_hrl_ installer/addons/recordlocator/oracle_db/rls_oracle_db_scripts.zip to the host where the SQL Plus client is present in the PATH. Unzip the contents.

2. Log in to the host having SQL Plus and change the directory to where you have copied or extracted the files in step 1.

3. Update the create_tblspc_hrlcore_user.sql file with the Oracle DB specific Tablespace information and new password for the user HRLCORE (&hrlcorepswd). Also, update scripts `createadtddl.sql`, `createlogddl.sql`, `createhrlcoreddl.sql`, and `create_hrlcore_indexes.sql` based on your environments and requirements. Consider recommendations in Section 2.9.7 while updating these scripts.

4. Through SQL Plus, use admin or an ID in the Oracle DB having access to create table spaces and users to execute create_tblspc_hrlcore_user.sql.

5. Execute the following command through SQL Plus using the ID created in step 4.

   ```
   createhrlcoreddl.sql using HRLCORE
   ```

6. After creating HRLCORE schema successfully, remove the create_tblspc_hrlcore_ user.sql file.

2.1.2.2.2 Pre-migration Process

1. Connect to omar DB using the following script:

   ```
   > sqlplus omar

   ...

   Enter password: <password>
   ```

2. Execute the following SQL query to find duplicate SubmissionSets that exist in omar schema. The select query returns the SubmissionSet UID and the SubmissionSet ID.

   ```
   > SELECT EI.VALUE,EI.REGISTRYOBJECT FROM EXTERNALIDENTIFIER EI WHERE
   EI.VALUE IN (SELECT EID.VALUE FROM EXTERNALIDENTIFIER EID WHERE
   EID.IDENTIFICATIONSCHEME='SU' GROUP BY EID.VALUE HAVING COUNT(*) > 1)
   ORDER BY EI.VALUE ASC, EI.REGISTRYOBJECT ASC;
   ```

   > **Note:** It is assumed that you will manually delete the duplicate SubmissionSet and its contents after obtaining the list of such IDs by using the above query.

3. If document metadata is registered in the registry before HRL 1.2.1.1 patch, execute the following steps:

   a. Run the following queries to determine the record counts:

   ```
   SELECT COUNT(*) ASSOC_COUNT FROM ASSOCIATION WHERE
   VERSIONNAME='1.1';

   SELECT COUNT(*) EO_COUNT FROM EXTRINSICOBJECT WHERE
   VERSIONNAME='1.1';
   ```

```
SELECT COUNT(*) RP_COUNT FROM REGISTRYPACKAGE WHERE
VERSIONNAME='1.1';
```

```
SELECT COUNT(*) CLS_COUNT FROM CLASSIFICATION WHERE
VERSIONNAME='1.1';
```

```
SELECT COUNT(*) EI_COUNT FROM EXTERNALIDENTIFIER WHERE
VERSIONNAME='1.1';
```

    b. If the record count is greater than zero, execute the following PLSQL script to change the version of registry objects.

```
SQL>@<temp>/update_regob_versioninfo.sql
```

    where, <temp> is the file path where the **<install_dir>/ohim_hrl_ installer/addons/recordlocator/oracle_db/rls_oracle_db_scripts.zip** file is extracted.

4. Run the following steps to ensure that Extrinsicobject or Registrypackage LID value is updated with ID when LID is not in the UUID format:

    a. Run the following queries to determine the record counts where registry LID of the object is not in the UUID format:

```
SELECT COUNT(*) EO_COUNT FROM EXTRINSICOBJECT WHERE LID NOT LIKE
'urn:uuid:%';
```

```
SELECT COUNT(*) RP_COUNT FROM REGISTRYPACKAGE WHERE LID NOT LIKE
'urn:uuid:%';
```

5. If the record count is greater than zero, execute the following PLSQL script to update the LID value.

```
SQL>@<temp>/update_non_urn_lid_value.sql
```

where, <temp> is the file path where the **<install_dir>/ohim_hrl_ installer/addons/recordlocator/oracle_db/rls_oracle_db_scripts.zip** file is extracted.

2.1.2.2.3 Migration Process

1. Execute the following command from system user:

```
> sqlplus system as sysdba

...

Enter password: <password>

SQL>GRANT CONNECT, RESOURCE TO hrlcore IDENTIFIED BY <hrlcore_
password>;

SQL>GRANT SELECT ON OMAR.ASSOCIATION TO HRLCORE;

SQL>GRANT SELECT ON OMAR.CLASSIFICATION TO HRLCORE;

SQL>GRANT SELECT ON OMAR.DESCRIPTION TO HRLCORE;

SQL>GRANT SELECT ON OMAR.EXTERNALIDENTIFIER TO HRLCORE;

SQL>GRANT SELECT ON OMAR.EXTRINSICOBJECT TO HRLCORE;

SQL>GRANT SELECT ON OMAR.NAME_ TO HRLCORE;

SQL>GRANT SELECT ON OMAR.REGISTRYPACKAGE TO HRLCORE;

SQL>GRANT SELECT ON OMAR.SLOT TO HRLCORE;
```

2. Create the following database types by connecting to hrlcore db user:

```
> sqlplus hrlcore
```

```
...
```

```
Enter password:<password>
```

```
create or replace TYPE HRL_QRY_ONE_PARAM_TYPE AS OBJECT (ONE
VARCHAR2(256));
```

```
/
```

```
create or replace TYPE HRL_QRY_ONE_PARAM_TYPE_TABLE AS TABLE OF HRL_
QRY_ONE_PARAM_TYPE;
```

```
/
```

3. Navigate to the migration directory using the following steps:

    a. Execute the following command:

```
> cd <install_dir>/ohim_hrl_installer/addons/recordlocator
```

    b. Extract the contents of the migration-bin.tar.gz file by executing the following command:

```
> tar -zxvf migration-bin.tar.gz
```

    c. Execute the following command:

```
> cd migration
```

4. In the rls_migration.properties file, edit the DB and number of threads information.

> **Note:** Before running the migration tool, in the logging.properties file, ensure to set the java.util.logging.FileHandler.level to `SEVERE`. This avoids generating detailed log statements.

5. Execute the following commands to create the credential store that holds the HRLCORE DB user's password. Ensure that you provide correct value for hrlcore database user to have the next migration process steps work properly.

- For Linux: a) `sh createCredentialStore.sh`

- For Windows: a) `createCredentialStore.cmd`

6. Execute the following consolidated command to store DocumentEntry IDs, Association IDs, Folder IDs, and SubmissionSet IDs to different files:

- For Linux: a) `sh runStoreRegObjIdsToFile.sh`

- For Windows: a) `runStoreRegObjIdsToFile.cmd`

This command internally calls separate scripts, which store registry object IDs to different files.

The following is the mapping between scripts that are called internally and the corresponding output files generated:

- `runStoreDocIdsToFile.sh` (`runStoreDocIdsToFile.cmd`, for Windows) - DocumentEntryUUIDs.txt

- `runStoreAssocIDsToFile`.sh (`runStoreAssocIDsToFile.cmd`, for Windows) - HasMemberAssocUUIDs.txt (for Has Member associations) and OtherAssocUUIDs.txt (for all the other association types)

- `runStoreFolderIdsToFile.sh` (`runStoreFolderIdsToFile.cmd`, for Windows) - FolderUUIDs.txt

- `runStoreSubmissionSetIdsToFile.sh` (`runStoreSubmissionSetIdsToFile.cmd`, for Windows) - SubmissionSetUUIDs.txt

> **Note:** If DocumentEntryUUIDs.txt already exists, the tool renames it as DocumentEntryUUIDs_timestamp.txt and recreates DocumentEntryUUIDs.txt. This process applies to all the other runStore*.sh scripts.

7. Execute the following consolidated command to migrate metadata of all the registry objects:

- For Linux: `a) sh runAllRegObjsMetadataMigration.sh`

- For Windows: `a) runAllRegObjsMetadataMigration.cmd`

This command internally calls separate scripts that carry out the actual metadata migration for that particular registry object type.

The following is the mapping between the scripts that are called internally and the corresponding registry object type whose metadata is migrated:

- `runDocEntryMigration.sh` (`runDocEntryMigration.cmd`, for Windows) - Document Entries' metadata

- `runHMAssociationMigration.sh` (`runHMAssociationMigration.cmd`, for Windows) - Has Member Associations' metadata

- `runOtherAssociationMigration.sh` (`runOtherAssociationMigration.cmd`, for Windows machine) - Other [APND, RPLC, XFRM, XFRM_RPLC, Signs] Associations' metadata

- `runFolderMigration.sh` (`runFolderMigration.cmd`, for Windows) - Folders' metadata

- `runSubmissionSetMigration.sh` (`runSubmissionSetMigration.cmd`, for Windows) - SubmmissionSets' metadata

> **Note:** All successfully processed DocumentEntry, Association, Folder, SubmissionSet UUIDs, latest deprecated DocumentEntry UUIDs are recorded to the SuccessfulTransactions_DE.txt, SuccessfulTransactions_HM_Assoc.txt, SuccessfulTransactions_OTH_Assoc.txt, SuccessfulTransactions_FL.txt, SuccessfulTransactions_SS.txt, and SuccessfulTransactions_DE_Deprecated.txt files.
>
> Failures are recorded in the FailedTransactions_DE.txt, FailedTransactions_HM_Assoc.txt, FailedTransactions_OTH_Assoc.txt, FailedTransactions_FL.txt, FailedTransactions_SS.txt, and FailedTransactions_DE_Deprecated.txt files.
>
> The RECORD_SUCCESSFUL_TRANSACTIONS_FLAG in rls_migration.properties indicates whether to record successfully processed UUIDs in the SuccessfulTransactions_*.txt file.

8. Execute the following command to get the IDs of registry objects whose statuses are updated in omar schema after metadata migration:

   ■ For Linux: `a) sh runStoreRegObjIdsOfStatusUpdatesToFile.sh`

   ■ For Windows: `a) runStoreRegObjIdsOfStatusUpdatesToFile.cmd`

   This command internally calls separate scripts that identifies the registry objects whose statuses are updated in the DB, and write their IDs to different files.

   The following is the mapping between the scripts that are called internally and the corresponding output files generated:

   ■ `runStoreDocIdsOfStatusUpdatesToFile.sh` (`runStoreDocIdsOfStatusUpdatesToFile.cmd`, for Windows) - DocumentEntryUUIDs.txt

   ■ `runStoreAssocIDsOfStatusUpdatesToFile.sh` (`runStoreAssocIDsOfStatusUpdatesToFile.cmd`, for Windows) - HasMemberAssocUUIDs.txt (for Has Member associations), and OtherAssocUUIDs.txt (for all the other association types)

   ■ `runStoreFolderIdsOfStatusUpdatesToFile.sh` (`runStoreFolderIdsOfStatusUpdatesToFile.cmd`, for Windows) - FolderUUIDs.txt

9. Execute the following script to synchronize the status of registry objects between hrlcore and omar DB schemas:

   ■ For Linux: `a) sh runAllRegObjsStatusUpdate.sh`

   ■ For Windows: `a) runAllRegObjsStatusUpdate.cmd`

   This command internally calls separate scripts that carry out the actual status synchronization activity for the registry objects.

   The following is the mapping between the scripts that are called internally and the corresponding registry object type whose statuses get synchronized between hrlcore and omar DB:

   ■ `runUpdateDocEntryStatus.sh` (`runUpdateDocEntryStatus.cmd`, for Window) - Document Entries statuses

   ■ `runUpdateHMAssociationStatus.sh` (`runUpdateHMAssociationStatus.cmd`, for Windows) - Has Member Associations' statuses

- `runUpdateOTHAssociationStatus.sh` (`runUpdateOTHAssociationStatus.cmd`, for Windows) - Other [APND, RPLC, XFRM, XFRM_RPLC, Signs] Associations' statuses

- `runUpdateFolderStatus.sh` (`runUpdateFolderStatus.cmd`, for Windows) - Folders' statuses

10. To check if migration is completed, run the following script:

   - For Linux: a) `sh validateMigration.sh`

   - For Windows: a) `validateMigration.cmd`

   > **Note:** Before performing the next steps, use the **create_hrlcore_indexes.sql** file to create indexes. The file can be found under the directory where the <install_dir>/ohim_hrl_installer/addons/recordlocator/oracle_db/rls_oracle_db_scripts.zip file is extracted.
   >
   > Also, ensure that steps 11 and 12 are executed during production system downtime.

11. Execute the following command to store the latest deprecated DocumentEntry IDs to a file:

   - For Linux: a) `sh runStoreLatestDeprecatedDocIdsToFile.sh`

   - For Windows: a) `runStoreLatestDeprecatedDocIdsToFile.cmd`

   This command produces a file, LatestDeprecatedDocEntryUUIDs.txt that will be used as input in the next step.

12. Execute the following command to update the DocumentEntry status to `L`:

   - For Linux: a) `sh runUpdateLatestDeprecatedDocEntryStatus.sh`

   - For Windows: a) `runUpdateLatestDeprecatedDocEntryStatus.cmd`

2.1.2.2.4 Terminating the Migration Process

Perform the following steps to terminate the ongoing migration process:

1. Navigate to the **migration directory** and execute the following command:

   > `cd migration`

2. Open the **polledFile.txt** file in a text editor and change the file content to **stop**.

3. Press **Enter** and save the file.

   The application polls the polledFile.txt file every two minutes to check if it is changed. If it determines the entered text is **stop**, the migration activity is terminated and the application is closed.

   > **Note:** The stop and resume functionalities will work only for runAllRegObjsMetadataMigration.sh (runAllRegObjsMetadataMigration.cmd) and runAllRegObjsStatusUpdate.sh (runAllRegObjsStatusUpdate.cmd) commands.

2.1.2.2.5 Resuming the Migration Process

Perform the following steps to resume the migration process:

1. Navigate to the **migration directory** and execute the following command:

   `> cd migration.`

2. Open the **polledFile.txt** file in a text editor and change the file content to **resume**.

3. Press **Enter** and save the file.

   The tool determines the count of successfully processed records from the SuccessfulTransactions_*.txt file, skips these records in DocumentEntryUUIDs.txt, HasMemberAssocUUIDs.txt, OtherAssocUUIDs.txt, FolderUUIDs.txt, SubmissionSetUUIDs.txt, and LatestDeprecatedDocEntryUUIDs.txt, and continues to process the remaining records.

   > **Note:** The stop and resume functionalities will work only for runAllRegObjsMetadataMigration.sh (runAllRegObjsMetadataMigration.cmd) and runAllRegObjsStatusUpdate.sh (runAllRegObjsStatusUpdate.cmd) commands.

2.1.2.2.6 Commands in the polledFile.txt File

The following are the commands used in the polledFile.txt file:

- `run` followed by **Enter**. This string indicates that you can:

  - Execute the `runStore*.sh` scripts to get the registry objects IDs to file from the database.

  - Execute the `run*Migration.sh` or `runUpdate*.sh` scripts to perform the actual data migration or registry objects status synchronization that rely on the IDs in the file that was created in the previous step.

- `stop` followed by **Enter**.

  This string instructs the application to stop as soon as possible after committing currently migrated objects and not proceeding further to complete the migration of the remaining objects from the input file.

- `resume` followed by **Enter**.

  This string indicates that application will continue processing the metadata migration of registry objects from where it was stopped.

2.2 Upgrading from Version 1.2.8.x or Higher up to 2.0.2.x

2.2.1 Upgrading the Application

If required, back up `config/xconfig.xml` and `codes/codes.xml` files. These files are located in the `<WebLogic_Home>/user_projects/domains/<domain_name>/config/hrl/` or `<GlassFish_Home>/domains/<domain_name>/config/hrl/` directory.

If you are planning to use the existing WebLogic Server 11g Release 1 (10.3.6.0) instance where you installed the 2.0.2.1 HRL, perform the following:

1. Undeploy Enterprise Application, hrlapp.

2. If required, back up JDBC and JMS resource configurations.

   The installer re-creates these resources in the application server.

3. Remove the following resources if they exist from the application server instance

   a. JDBC Data Sources for rls-adt-pool, rls-log-pool, rls-registry-pool, and rls-dsub-pool

   b. JMS Module XLoggerJmsSystemResource

   c. JMS Server XLoggerJMSServer

4. If required, back up `conifg/xconfig.xml` and `codes/codes.xml` files.

   These files are located in the `<WebLogic_Home>/user_projects/domains/<domain_name>/config/hrl`.

5. If optional components Document Metadata Subscription (DSUB) and XAD-PID Change Management (XPID) are installed, undeploy Enterprise Applications NotificationBroker and xpid.

2.2.2 Migrating Data

Execute the following commands by connecting to hrlcore user:

```
> sqlplus hrlcore
...
Enter password:<password>


SQL>ALTER TABLE DOC_ENTRY RENAME COLUMN SOUCE_PATIENT_ID TO SOURCE_PATIENT_ID;


SQL>CREATE TABLE REFERENCE_ID_LIST_DE  (
  DOC_ID VARCHAR2(64) NOT NULL,
  PATIENT_ID VARCHAR2(256) NOT NULL,
  SEQUENCEID NUMBER(4) NOT NULL,
  VALUE VARCHAR2(256) NOT NULL
);


SQL>ALTER TABLE REFERENCE_ID_LIST_DE
  ADD CONSTRAINT REFERENCE_ID_LIST_DE_PK PRIMARY KEY (DOC_ID,
SEQUENCEID);
```

2.3 Installing the Oracle Health Sciences Information Manager Health Record Locator

Perform the following steps to install OHIM HRL:

1. Extract the installer file.

2. Copy or download the file `ohim_hrl_installer.tgz` to where you want to install HRL.

3. Extract the contents of the file either by using the unzip utility or the following command:

   ```
   $ tar -zxvf ohim_hrl_installer.tgz
   ```

2.4 Configuring the Oracle Health Sciences Information Manager Health Record Application's Oracle Database

> **Note:** If you have existing Record Locator database schemas, follow steps in Section 2.1.2 and Section 2.2.2, and skip rest of the section. For a fresh installation, follow the instructions below.

For using SQL scripts with SQL Plus in the Windows environment, refer to Section 2.4.2.

2.4.1 Preparing Database Schemas in Linux

To configure Oracle database to be used with Health Record Locator, perform the following steps:

1. Copy the file from `<install_dir>/ohim_hrl_installer/addons/recordlocator/oracle_db/rls_oracle_db_scripts.zip` to the host where the SQL Plus client present in the PATH and Bash or Sh shell is available. Unzip the contents.

2. Log in to the host having SQL Plus and change the directory to where you have copied or extracted the files in step 1.

3. Update the SQL script `create_tblspc_users.sql` with your Oracle DB specific Tablespace information. Also, update scripts `createadtddl.sql`, `createlogddl.sql`, `createhrlcoreddl.sql`, and `create_hrlcore_indexes.sql` based on your environments and requirements. Consider recommendations in Section 2.9.7 while updating these scripts.

4. Ensure that SQL Plus is available in the PATH, then run the `script create_tblspc_users.sh` as follows:

   ```
   > bash create_tblspc_users.sh
   ```

5. When, prompted, enter information for registry database host, SID or Service Name, port, admin user ID, password, ADT user password, HRLCORE user password and log user password.

2.4.2 Preparing Database Schemas in Windows

To configure Oracle database to be used with Health Record Locator, perform the following steps:

1. Copy the file from `<install_dir>/ohim_hrl_installer/addons/recordlocator/oracle_db/rls_oracle_db_scripts.zip` to the host where you have a SQL Plus client is present in the path.

2. Log in to the host where you copied `rls_oracle_db_scripts.zip` and extract its contents.

3. Change the directory to the path where you extracted the files in step 2.

4. Update `create_tblspc_users.sql` with the Oracle DB specific Tablespace information and new passwords for the users ADT (`&adtpswd`), HRLCORE (`&hrlcorepswd`), and LOG (`&logpswd`). Also, update scripts `createadtddl.sql`, `createlogddl.sql`, `createhrlcoreddl.sql`, and `create_hrlcore_indexes.sql` based on your environments and requirements. Consider recommendations in Section 2.9.7 while updating these scripts.

5. Through SQL Plus, use admin or an ID in the Oracle DB with access to create table spaces and users to execute `create_tblspc_users.sql`.

6. Execute the following scripts through SQL Plus using the IDs created in step 5.

   ```
   createadtddl.sql using ADT
   createlogddl.sql using LOG
   createhrlcoreddl.sql using HRLCORE
   create_hrlcore_indexes.sql using HRLCORE
   ```

7. After creating schemas successfully, remove `create_tblspc_users.sql`.

2.5 Configuring the Oracle Health Sciences Information Manager Document Metadata Subscription (DSUB)'s Oracle Database

2.5.1 Preparing Database Schemas in Linux

To configure Oracle database to be used with DSUB optional component, perform the following steps:

1. Copy the file from `<install_dir>/ohim_hrl__ installer/addons/recordlocator/dsub/oracle_db/dsub_oracle_db_ scripts.zip` to the host where the SQL Plus client present in the PATH and Bash or Sh shell is available. Unzip the contents.

2. Log in to the host having SQL Plus and change the directory where you have copied or extracted the files as mentioned in step 1.

3. Update the SQL script create_tblspc_users.sql with your Oracle database-specific Tablespace information.

4. Ensure that SQL Plus is available in the PATH, then run the script create_tblspc_ users.sh as follows:

   ```
   > bash create_tblspc_users.sh
   ```

5. When prompted, enter information for registry database host, SID or Service Name, port, admin user ID, password, and DSUB user password.

2.5.2 Preparing Database Schemas in Windows

To configure Oracle database to be used with DSUB optional component, perform the following steps:

1. Copy the file from `<install_dir>/ohim_hrl__ installer/addons/recordlocator/dsub/oracle_db/dsub_oracle_db_ scripts.zip` to the host where the SQL Plus client is present in the path.

2. Log in to the host where you copied `dsub_oracle_db_scripts.zip` and extract its contents.

3. Change the directory to the path where you extracted the files in step 2.

4. Update `create_tblspc_users.sql` with the Oracle database-specific Tablespace information and new passwords for the user dsub (`&dsubpswd`).

5. Through SQL Plus, use admin or an ID in the Oracle database with access to create table spaces and users to execute `create_tblspc_users.sql`.

6. Execute the following script through SQL Plus using the IDs created in step 5:

```
createdsubddl.sql using dsub
```

7. After creating schemas successfully, remove `create_tblspc_users.sql`.

2.6 Configuring the Oracle Health Sciences Information Manager XAD-PID Change Management (XPID)'s Oracle Database

2.6.1 Preparing Database Schemas in Linux

To configure Oracle database to be used with XPID optional component, perform the following steps:

1. Copy the file from `<install_dir>/ohim_hrl__installer/addons/recordlocator/xpid/oracle_db/xpid_oracle_db_scripts.zip` to the host where the SQL Plus client is present in the PATH and Bash or Sh shell is available. Unzip the contents.

2. Log in to the host having SQL Plus and change the directory where you have copied or extracted the files in step 1.

3. Update the SQL script create_tblspc_users.sql with your Oracle database-specific Tablespace information.

4. Ensure that SQL Plus is available in the PATH, then run the script create_tblspc_users.sh as follows:

   ```
   > bash create_tblspc_users.sh
   ```

5. When prompted, enter information for registry database host, SID or Service Name, port, admin user ID, password, and XPID user password.

2.6.2 Preparing Database Schemas in Windows

To configure Oracle Database to be used with XPID optional component, perform the following steps:

1. Copy the file from `<install_dir>/ohim_hrl__installer/addons/recordlocator/xpid/oracle_db/xpid_oracle_db_scripts.zip` to the host where the SQL Plus client is present in the path.

2. Log in to the host where you copied `dsub_oracle_db_scripts.zip` and extract its contents.

3. Change the directory to the path where you extracted the files in step 2.

4. Update `create_tblspc_users.sql` with the Oracle database-specific Tablespace information and new passwords for the user xpid (`&xpidpswd`).

5. Through SQL Plus, use admin or an ID in the Oracle database with access to create table spaces and users to execute `create_tblspc_users.sql`.

6. Execute the following script through SQL Plus using the IDs created in step 5:

   ```
   createxpidddl.sql using xpid
   ```

7. After creating schemas successfully, remove `create_tblspc_users.sql`.

2.7 Deployment Options

In OHIM HRL 3.0, the HRL supports DSUB and XPID transactions. Each XPID server and DSUB Notification Broker is implemented in separate optionally deployable components. Core HRL component is required for both DSUB and XPID support.

The XPID component must be deployed on the same application server instance as the core HRL component. However, the DSUB Notification Broker can be deployed either on the same application server instance as core HRL component or on a separate one. DSUB Publisher is part of the core HRL component and can be enabled through the configuration parameter.

2.8 Running the Installer

This section describes how to run the HRL installer. When the installer prompts, select **recordlocator** to install core HRL component, **dsub** for DSUB Notification Broker, and **xpid** for XPID HL7v2 server.

Execute the following commands:

```
$cd <install_dir>/ohim_hrl_installer
$java -jar ohim_hrl_installer.jar
```

To follow prompts, refer to Appendix A.

2.9 Configuration

The configuration file is located under `config/hrl/config` directory of the Application Server domain directory.

- WebLogic:

  ```
  <Weblogic_Middleware_Home>/user_projects/domains/<domain_
  name>/config/hrl/config/xconfig.xml
  ```

Restart the application server for `xconfig.xml` changes to take effect.

The following is the structure of the `xconfig.xml` file where, some configuration properties are specified under **HomeCommunity** and **Registry** elements.

```
<?xml version="1.0" encoding="utf-8"?>
<Config>
  <HomeCommunity name="home">
    <Property name="propName1">propVal1</Property>
    ...
  </HomeCommunity>
  <Registry name="localregistry">
    <Property name="propName2">propVal2</Property>
    ...
  </Registry>
</Config>
```

2.9.1 Enabling Sending ATNA UDP or TLS Messages

To enable sending ATNA UDP or TLS messages, edit the value of the following properties under **HomeCommunity** element and specify ATNA UDP or TLS server details:

- `ATNAPerformAudit`: Set this value to `true` to enable sending ATNA audit messages. By default, this value is set to `false`.

- `ATNAsyslogProtocol`: Set this value to `UDP or TLS` (default value).

- `ATNAsyslogHost`: Specify the ATNA UDP or TLS server host name or IP address.

- `ATNAsyslogPort`: Specify the ATNA UDP or TLS server port number.

- `ATNAMessageType`: Set this value to `RFC3881` or `DICOM`. This property indicates what audit message format should be generated by the system.

Ensure to configure the following properties when you use TLS for ATNAsyslogProtocol:

- `KeyStore`: Enter the file path of the keystore. For example, `/home/common/cert/keystore.jks`.

- `KeyStoreType`: Specify the type of the keystore. By default, the value is set to `JKS`.

- `TrustStore`: Enter the file path of the truststore. For example, `/home/common/cert/keystore.jks`.

- `TrustStoreType`: Specify the type of the truststore. By default, the value is set to `JKS`.

- `CredentialStore`: Enter the directory where Oracle wallet is created. For example, `/home/common`.

For configuring KeyStore and TrustStore passwords, see Section 2.13.

2.9.2 Other HomeCommunity Level Properties

- `ValidatePatientId`: Set this value to `true` (default value) to validate known patient IDs before registering DocumentEntry.

- `XMLSchemaValidationEnabled`: Set this value to `true` (default value) to schema validate incoming messages.

- `LogEnabled`: Set this value to `true` (default value) to enable logging registry request and response messages in Log schema tables.

> **Note:** This parameter is different from enabling ATNA audit log messages.

2.9.3 Registry Level Properties

- `ReceiverDeviceId`: Set this value to construct response messages in HL7v2 services.

- `ReceiverDeviceName`: Set this value to construct response messages in HL7v2 services. By default, this value is set to `ORACLE_HIA_RLS_XDSbRegistry`.

- `AcceptPIDOnlyFrom`: Set this property to let registry accept patient feed only from the specified domain. Comment or delete this property to let registry accept patient feed from all domain.

- `MaxLeafObjectsAllowedFromQuery`: Specify an integer value that determines the maximum number of document entries returned with Registry Stored Query response messages. By default, this value is set to `25`.

> **Note:** This property is applicable only when query request contains return type value `LeafClass`.

- `TrimLogQueueMessages`: Set this value to `true` (default value) to trim the messages logged in log schema tables.

- `MaxLeafObjectsPerLogQueueMsg`: Specifies the maximum number of Leaf objects to be logged per message.

  `MaxObjectRefsPerLogQueueMsg`: Specifies the maximum value of Object references to be logged per message.

- `ValidateCodeDisplayName`: Set this value to `true` to let HRL validate the code display names in the registry metadata of the request against the codes.xml file. By default, this value is set to `false`.

- `ValidateDocEntryURISlotValue`: Set this value to `true` to let HRL validate the URI slot value in the document metadata of the request. By default, this value is set to `false`.

- `AffinityDomainPIDAssigningAuthorityID`: Set this property to let registry append the Assigning Authority ID to the received Patient ID, which does not have this value. After updating the configured Assigning Authority Id value, the registry persists the Patient ID in the database.

  By default, this property is commented. To let HRL employ the above specified behavior, uncomment this property.

  The format of this property value is: `&OIDOfAssigningAuthorityID&ISO`

  For example:

  ```
  <Property name="AffinityDomainPIDAssigningAuthorityID">
  &amp;1.3.6.1.4.1.21367.2005.3.7&amp;ISO</Property>
  ```

- `AllowDuplicateUniqueIdInSubmission`: Set this value to `true` to let HRL duplicate unique IDs in a submission. By default, this value is set to `false`.

2.9.4 DSUB Properties

- `NotificationEnabled`: Set this value to `true` to enable publishing registry events to the DSUB Notification Broker. By default, this value is set to `false`.

- `PublishEndPoint`: Specify the publish endpoint URL of the DSUB Notification Broker.

- `DsubValidateCodeAndCodingScheme`: Set this value to `true` (default value) to validate code and coding scheme containing DSUB subscription message against codes file of the registry.

- `DefaultDaysBeforeExpiryOfSubscription`: Enter an integer value that indicates the number of days after which the subscription will expire. By default, this value is set to `30`.

- `NotificationBrokerSubscribeEndPoint`: Specify the Subscribe endpoint URL of the DSUB Notification Broker.

- `DeleteExpiredSubscriptionsIntervalDuration`: It indicates the number of milliseconds between successive invocations of the batch job to delete expired subscriptions (if any) from the database. Enter an integer value specifying milliseconds interval. The default value is `86400000` (1 day).

- `DeleteExpiredSubscriptionsTimerStartInterval`: It indicates the duration in milliseconds after the receipt of the first subscribe request to the Notification Broker. The batch job to delete the expired records becomes active at this point. Enter an integer value specifying milliseconds interval. The default value is `86400000` (1 day).

2.9.5 XPID

- `xpid.classification.scheme`: Content type classification coding scheme. This scheme should be present in the codes file.

- `xpid.classification.code`: Content type code for the coding scheme. This code should be present in the codes file.

XPID server related configuration are stored in `<domain_name>/config/hrl/xpid.properties`. The following is the description of properties in this file:

- `RLS_IHE_HL7V2_HOME`: Path to directory where XPID server files are extracted.

- `RLS_IHE_HL7V2_URL`: URL of XPID HL7v2 service.

2.9.6 Configuring Log4j

Perform the following steps to configure Log4j:

1. Set the JVM system property `log4j.configuration` pointing to the `log4j.properties` file.

   For example,

   ```
   -Dlog4j.configuration=file:<AppServer_domain_config_
   dir>/hrl/config/log4j.properties
   ```

2. In WebLogic application server, set the JVM system property `log4j.configuration`. The following is an example of one of the ways to set the property. For details, refer to *WebLogic Administration Guide*.

   For example,

   If you are deploying HRL to AdminServer, edit the *<WL_domain>*/bin/startWebLogic.sh. Change the below line from

   ```
   SAVE_JAVA_OPTIONS="${JAVA_OPTIONS}"
   ```

   to

   ```
   SAVE_JAVA_OPTIONS="${JAVA_OPTIONS}
   -Dlog4j.configuration=file:<AppServer_domain_config_
   dir>/hrl/config/log4j.properties"
   ```

   If you are deploying HRL to Managed WebLogic Server, edit the `<WL_domain>/bin/startManagedWebLogic.sh`. Change the following line from

   ```
   JAVA_OPTIONS="${JAVA_OPTIONS}"
   ```

   to

   ```
   JAVA_OPTIONS="${JAVA_OPTIONS} -

   Dlog4j.configuration=file:<AppServer_domain_config

   dir>/hrl/config/log4j.properties"
   ```

3. Before staring the application server, verify and update `log4j.properties` to contain proper log level and log file paths. Replace the string `${com.sun.aas.instanceRoot}` with `${user.dir}`.

2.9.7 Recommendations and Optional Configuration

The following are the recommendations and optional configuration:

- Oracle recommends partitioning the tables under HRLCORE schema for scaling with large volume of data. It is recommended to hash partition tables on PATIENT_ID column where this column exists. For ASSOCIATION_HM and ASSOCIATION_OTH tables, you may want to hash partition on ID column.

- Oracle recommends you to use Oracle database secure file and compression to store CLOB data and reduce the storage size without impacting the performance significantly.

- Although returning sorted document IDs in the Find Document query is supported, the provided script does not create indexes to optimize this query type to save disk space. If you use this feature, you must create composite index(es) on DOC_ENTRY with keys PATIENT_ID, ID, and sort attribute.

- Since this release enables DocumentEntry XML fragments to be stored in CLOB columns, improving CLOB data read performance between the database and application server improves overall Registry query performance, especially where the response type is LeafClass. Oracle 11.2 JDBC driver lets you increase default LOB prefetch size from 4k. You can configure this parameter through a JVM option.

  For example,

  ```
  -Doracle.jdbc.defaultLobPrefetchSize=32000
  ```

2.10 Updating Codes

The codes file is located under `config/hrl/codes` directory of the application server domain directory.

- WebLogic:

  ```
  <Weblogic_Middleware_Home>/user_projects/domains/<domain_
  name>/config/hrl/codes/codes.xml
  ```

You can update these files with new codes as applicable. Restart the application server for new codes to take effect.

2.11 Endpoints

2.11.1 Record Locator

Use the endpoints in Table 2–1 to configure XDS.b Document Repository, Document Consumer as needed.

Table 2–1   Record Locator Transactions and Web Service URLs

Transaction	Sync	Async	Endpoint URL
Register Document Set-b[ITI-42]	Yes	Yes	http(s)://<HRL_HOST>:<PORT>/hrl/regsvc
Registry Stored Query[ITI-18]	Yes	Yes	http(s)://<HRL_HOST>:<PORT>/hrl/regsvc
Patient Identity Feed(HL7 V3)[ITI-44]	Yes	Yes	http(s)://<HRL_HOST>:<PORT>/hrl/regsvc
Multi Patient Query[ITI-51]	Yes	Yes	http(s)://<HRL_HOST>:<PORT>/hrl/regmpqsvc

Table 2–1 (Cont.) Record Locator Transactions and Web Service URLs

Transaction	Sync	Async	Endpoint URL
Metadata Update - Update[ITI-57]	Yes	Yes	http(s)://<HRL_HOST>:<PORT>/hrl/regupdsvc
Metadata Update - Delete[ITI-62]	Yes	Yes	http(s)://<HRL_HOST>:<PORT>/hrl/regupdsvc

2.11.2 DSUB

Use the endpoints in Table 2–2 to configure your Document Metadata publisher and subscribers as needed.

Table 2–2   DSUB Transactions and Endpoint URLs

Transaction	Endpoint URL
Document Metadata Publish[ITI-54]	http(s)://<DSUB_HOST>:<PORT>/WS-BrokeredNotificationPubl ish_Service/Publish
Document Metadata Subscribe[ITI-52]	http(s)://<DSUB_HOST>:<PORT>/WS-BrokeredNotificationSu bscribe_Service/Subscribe
Document Metadata Unsubscribe[ITI-52]	http(s)://<DSUB_HOST>:<PORT>/WS-BrokeredNotificationUn Subscribe_Service/Unsubscribe?subscriptionId=<UUID> <UUID> should be a valid value as assigned by DSUB Notification Broker.

2.11.3 XPID

Use the endpoints in Table 2–3 to configure PIX Manager as needed.

Table 2–3   XPID Transaction and Endpoint URLs

Transaction	Endpoint URL
Notify XAD-PID Link Change[ITI-64]	`hl7://<XPID_HOST>:<PORT>` The port number is as specified in `<domain_name>/config/hrl/xpid.properties`

2.12 Setting up Keystore and Truststore for TLS Communication

HRL requires certificates to be loaded into Keystore and Truststore of WebLogic Sever or Managed WebLogic Server for TLS communication with Web Service client.

1. For configuring Identity and Trust for WebLogic Server or Managed WebLogic Server, follow the steps provided in
    http://docs.oracle.com/middleware/1212/wls/SECMG/identity_trust.htm#SECMG367.

2. Enable SSL to secure communication between client and HRL application. For configuring the SSL, follow the steps provided in
    http://docs.oracle.com/middleware/1212/wls/SECMG/ssl.htm#i1194343.

3. Under Advanced section of SSL configuration, perform the following:

    a. Set Hostname Verification to **None**.

    b. Enable **Use Server Certs**.

    c. Set the Two Way Client Cert Behavior option to **Client Certs Requested and Enforced**.

4. Restart the WebLogic Server or Managed WebLogic Server after configuring the Keystore and Truststore values.

2.13 Sending Audit Messages using TLS Protocol

To send audit messages using TLS protocol, perform the following steps:

1. Navigate to the audit-oss directory using the following steps:

    a. Execute the following command:

```
> cd <install_dir>/ohim_hrl_installer/addons/recordlocator
```

    b. Extract the contents of the audit-oss-bin.tar.gz file by executing the following command:

```
> tar -zxvf audit-oss-bin.tar.gz
```

    c. Execute the following command:

```
> cd audit-oss
```

2. Execute the following command. When prompted, enter the values for the wallet output directory, wallet password, keystore password, and truststore password. Ensure that you provide the correct passwords.

```
> sh setupCredentialStoreForATNA.sh
```

3. Configure the following properties in the `<WebLogic_Home>/user_projects/domains/<domain_name>/config/hrl/config/xconfig.xml` file:

<Property name="KeyStore">/home/common/cert/keystore.jks</Property>

<Property name="KeyStoreType">JKS</Property>

<Property name="TrustStore">/home/common/cert/keystore.jks </Property>

<Property name="TrustStoreType">JKS</Property>

<Property name="CredentialStore">/home/common</Property>

4. Restart the WebLogic Server or Managed WebLogic Server after configuring the preceding properties.

A

Running the Oracle Health Sciences Information Manager Record Locator Installer

The HRL application and its optional components, DSUB and XPID, can be deployed to either WebLogic Admin Server or Managed WebLogic Server. Provide the appropriate server name when the installer prompts you to enter the value for WebLogic server name. If you are deploying the application to Managed WebLogic Server, provide its corresponding http port value when prompted.

This appendix describes how to run the OHIM Record Locator installer. It contains the following topics:

- Section A.1, "Record Locator"
- Section A.2, "DSUB"
- Section A.3, "XPID"

A.1 Record Locator

```
$ cd <install_dir>
$ java -jar ohim_hrl_installer.jar
Oracle HIM HRL Installer 3.0.0.0
-- Feature
Choose option install_feature (recordlocator, dsub, xpid)
> recordlocator
-- Command
Choose option install_command (usage, version, install)
> install
Starting init install
-- Start weblogic
Choose option start_weblogic ([yes], no)
> no
-- Record locator database host
Enter recordlocator_db_host [localhost]
>
-- Record locator database port
Enter recordlocator_db_port [1521]
>
-- Record locator database sid or service name
Enter recordlocator_db_sid [orcl]
> orcl
-- Record locator database adt username
Enter recordlocator_db_adt_username [adt]
>
```

```
                -- Record locator database adt password
                Enter recordlocator_db_adt_password [<password>]
                >
                -- Record locator database log username
                Enter recordlocator_db_log_username [log]
                >
                -- Record locator database log password
                Enter recordlocator_db_log_password [<password>]
                >
                -- Record locator database hrlcore username
                Enter recordlocator_db_hrlcore_username [hrlcore]
                >
                -- Record locator database hrlcore password
                Enter recordlocator_db_hrlcore_password [<password>]
                -- Weblogic install directory
                Enter weblogic_install_dir [#null]
                > /home/hiauser/Oracle/Middleware
                -- Weblogic jdk directory
                Enter weblogic_jdk_dir [/home/common/java/jdk1.6.0] based on [${install_java_
                home}]
                >
                -- Weblogic server name
                Enter weblogic_server_name [AdminServer]
                >
                -- Weblogic domain name
                Enter weblogic_domain_name [domain1]
                >
                -- Weblogic domain directory
                Enter weblogic_domain_dir [/home/hiauser/Oracle/Middleware/user_
                projects/domains/domain1] based on [${weblogic_install_dir}${/}user_
                projects${/}domains${/}${weblogic_domain_name}]
                >
                -- Weblogic admin username
                Enter weblogic_admin_username [weblogic]
                >
                -- Weblogic admin password
                Enter weblogic_admin_password [<password>]
                >
                -- Weblogic admin protocol
                Enter weblogic_admin_protocol [t3]
                >
                -- Weblogic host
                Enter weblogic_host [localhost]
                >
                -- Weblogic admin port
                Enter weblogic_admin_port [7001]
                >
                -- Weblogic http port
                Enter weblogic_http_port [7001]
                >
                -- Stop weblogic
                Choose option stop_weblogic ([yes], no)
                >
```

A.2 DSUB

```
                $ cd <install_dir>
                $ java -jar ohim_hrl_installer.jar
                Oracle HIM HRL Installer 3.0.0.0
                -- Feature
```

```
Choose option install_feature (recordlocator, dsub, xpid)
> dsub
-- Command
Choose option install_command (usage, version, install)
> install
Starting init install
-- Start weblogic
Choose option start_weblogic ([yes], no)
> no
-- Dsub database host
Enter dsub_db_host [localhost]
>
-- Dsub database port
Enter dsub_db_port [1521]
>
-- Dsub database sid or service name
Enter dsub_db_sid [orcl]
> orcl
-- Dsub database dsub username
Enter dsub_db_dsub_username [dsub]
>
-- Dsub database dsub password
Enter dsub_db_dsub_password [<password>]
>
-- Weblogic install directory
Enter weblogic_install_dir [#null]
> /home/hiauser/Oracle/Middleware
-- Weblogic jdk directory
Enter weblogic_jdk_dir [/home/common/java/jdk1.6.0] based on [${install_java_
home}]
>
-- Weblogic server name
Enter weblogic_server_name [AdminServer]
>
-- Weblogic domain name
Enter weblogic_domain_name [domain1]
>
-- Weblogic domain directory
Enter weblogic_domain_dir [/home/hiauser/Oracle/Middleware/user_
projects/domains/domain1] based on [${weblogic_install_dir}${/}user_
projects${/}domains${/}${weblogic_domain_name}]
>
-- Weblogic admin username
Enter weblogic_admin_username [weblogic]
>
-- Weblogic admin password
Enter weblogic_admin_password [<password>]
>
-- Weblogic admin protocol
Enter weblogic_admin_protocol [t3]
>
-- Weblogic host
Enter weblogic_host [localhost]
>
-- Weblogic admin port
Enter weblogic_admin_port [7001]
>
-- Weblogic http port
Enter weblogic_http_port [7001]
>
```

```
-- Stop weblogic
Choose option stop_weblogic ([yes], no)
>
```

A.3 XPID

```
$ cd <install_dir>
$ java -jar ohim_hrl_installer.jar
Oracle HIM HRL Installer 3.0.0.0
-- Feature
Choose option install_feature (recordlocator, dsub, xpid)
> xpid
-- Command
Choose option install_command (usage, version, install)
> install
Starting init install
-- Start weblogic
Choose option start_weblogic ([yes], no)
> no
-- Xpid database host
Enter xpid_db_host [localhost]
>
-- Xpid database port
Enter xpid_db_port [1521]
>
-- Xpid database sid or service name
Enter xpid_db_sid [orcl]
>
-- Xpid database xpid username
Enter xpid_db_xpid_username [xpid]
>
-- Xpid database xpid password
Enter xpid_db_xpid_password [<password>]
>
-- Xpid install directory
Enter xpid_install_dir [#null]
>
-- Xpid install directory
Enter xpid_install_dir [#null]
> xpid
-- Xpid hl7 url
Enter xpid_hl7_url [hl7://localhost:4888]
>
-- Weblogic install directory
Enter weblogic_install_dir [#null]
> /home/hiauser/Oracle/Middleware
-- Weblogic jdk directory
Enter weblogic_jdk_dir [/home/common/java/jdk1.6.0] based on [${install_java_
home}]
>
-- Weblogic server name
Enter weblogic_server_name [AdminServer]
>
-- Weblogic domain name
Enter weblogic_domain_name [domain1]
>
-- Weblogic domain directory
Enter weblogic_domain_dir [/home/hiauser/Oracle/Middleware/user_
projects/domains/domain1] based on [${weblogic_install_dir}${/}user_
projects${/}domains${/}${weblogic_domain_name}]
```

```
>
-- Weblogic admin username
Enter weblogic_admin_username [weblogic]
>
-- Weblogic admin password
Enter weblogic_admin_password [<password>]
>
-- Weblogic admin protocol
Enter weblogic_admin_protocol [t3]
>
-- Weblogic host
Enter weblogic_host [localhost]
>
-- Weblogic admin port
Enter weblogic_admin_port [7001]
>
-- Stop weblogic
Choose option stop_weblogic ([yes], no)
>
```

B

Acronyms

This section provides a list of commonly used acronyms.

B.1 Acronyms

ARR
Audit Record Repository

CCD
Continuity of Care Document

CDA
Clinical Document Architecture

DER
Distinguished Encoding Rules

DSUB
Document Metadata Subscription

HIE
Health Information Exchange

HIO
Health Information Organization

HL7
Health Level 7

IHE
Integrating the Healthcare Enterprise

NHIE
Nationwide Health Information Exchange

NHIO
Nationwide Health Information Organization

OHIM
Oracle Health Sciences Information Manager

SAML
Security Assertion Markup Language

WSDL
Web-Service Definition Language

XCA
Cross Community Access

XCPD
Cross-Community Patient Discovery

XDM
Cross-Enterprise Document Media Interchange

XPID
XAD-PID Change Management

Glossary

This section provides definitions of commonly used words.

Health Information Exchange

Health Information Exchange is an entity that enables the movement of health-related data among entities within a state, a region, or a non-jurisdictional participant group, which might include "classic" regional health information organizations at regional and state levels, Health Information Organization integrated delivery systems and health plans, or health data banks that support health information exchange.

Health Information Organization

Health Information Organization is an organization that enables the movement of health-related data among entities, evolving as a replacement term for health information exchange or HIE. Healthcare Information Technology Standards Panel Or simply HITSP, a cooperative partnership between the public and private sectors formed and supported by ONC for the purpose of harmonizing and integrating standards that will meet clinical and business needs established by AHIC use cases for sharing information among organizations and systems.

Integrating the Healthcare Enterprise

Integrating the Healthcare Enterprise is an initiative by healthcare professionals and industry to improve the way computer systems in healthcare share information, promoting and coordinating the use of established standards such as DICOM and HL7 to address specific clinical need in support of optimal patient care. The Nationwide Health Information Network is being developed by ONC to provide a secure, nationwide, interoperable health information infrastructure that will connect providers, consumers, and others involved in supporting health and healthcare.

Security Assertion Markup Language

Security Assertion Markup Language is an XML-based standard for exchanging authentication and authorization data between security domains.

Web Services Description Language

Web Services Description Language is an XML format for describing network services as a set of endpoints operating on messages containing either document-oriented or procedure-oriented information.

XML Schema

XML Schema is a means for defining the structure, content, and semantics of XML documents.

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