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 2.0.1

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Contents

Preface

Oracle Health Sciences Information Manager (OHIM) leverages Integrating the Healthcare Enterprise (IHE) profiles, CONNECT reference architecture, 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

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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*
- *Oracle Health Sciences Information Manager Policy Engine Installation and Configuration Guide*
- *Oracle Health Sciences Information Manager Policy Monitor Installation and Configuration Guide*
- *Oracle Health Sciences Information Manager Health Record Locator User Guide*
- *Oracle Health Sciences Information Manager Security Guide*

- *Oracle Health Sciences Information Manager Release Notes*

Oracle Health Sciences Information Gateway

- *Oracle Health Sciences Information Gateway CONNECT Gateway and Adapter Installation and Configuration Guide*
- *Oracle Health Sciences Information Gateway Cross Community Access Installation and Configuration Guide*
- *Oracle Health Sciences Information Gateway Cross Community Access User Guide*
- *Oracle Health Sciences Information Gateway Secure Health Email Installation and Configuration Guide*
- *Oracle Health Sciences Information Gateway Security Guide*
- *Oracle Health Sciences Information Gateway Release Notes*

Oracle Healthcare Master Person Index

- *Oracle Healthcare Master Person Index Australia Patient Solution User's Guide*
- *Oracle Healthcare Master Person Index United States Patient Solution User's Guide*
- *Oracle Healthcare Master Person Index United Kingdom Patient Solution User's Guide*
- *Oracle Healthcare Master Person Index Provider Index User's Guide*
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- *Oracle Healthcare Master Person Index WebLogic User's Guide*
- *Oracle Healthcare Master Person Index Command Line Reports and Database Maintenance User's Guide*
- *Oracle Healthcare Master Person Index Loading the Initial Data Set User's Guide*
- *Oracle Healthcare Master Person Index Match Engine Reference*
- *Oracle Healthcare Master Person Index Message Processing Reference*

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:

1.1 Hardware Requirements

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

- 2 GB (2048 MB) of RAM for GlassFish
- 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 1.6 executable in path
- Oracle Database 10+ (11g Release 2)
- GlassFish Enterprise Server 2.1.1 Patch 16 or higher
- WebLogic Server 10.3.6.0 (11g Release 1)
- Oracle Enterprise Linux 5.5 or higher
- Oracle JDBC Driver 11.2.0.1.0 in the application server

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 2.0.1 Media Pack**.
7. Click **Continue**.
8. Click **Download** for the following and save the files to your system:
   - **Oracle Health Sciences Information Manager 2.0.1 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 1.2.X Oracle Health Sciences Health Record Locator

If you have 1.2.X HRL installed, perform the following tasks to uninstall it:

1. Undeploy EJB modules `rlsservices.jar` and `xlogmdb.jar`. If `webapplication xref.war` is deployed, undeploy it as well.
2. If required, take a backup of JDBC and JMS resource configurations. The installer will recreate these resources in the application server.
3. Remove the following resources from your GlassFish application server.
   - JDBC Resources and JDBC Connection Pools for hieos-adt, hieos-log, hieos-omar.
   - JMS Connection Factory jms/XLoggerFactory
   - Destination Resource jms/XLogger
4. If required, take a backup of `config/xconfig.xml` and `codes/codes.xml` files. These files are located in `<GlassFish Home>/domains/<domain name>/config/hrl/`.

2.2 Migrating the Database

Note: If you are migrating from 1.2.8.X, skip Section 2.2, "Migrating the Database".

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

2.2.1 Migrating ADT Schema

1. Execute the following command from sys db user:

   ```
   > sqlplus sys/<sys_pwd> as sysdba

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

2. Connect to adt db user:

   ```
   > sqlplus adt/<adt_pass>
   ```

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:

   ```
   > sqplus sys/<sys_pwd> as sysdba

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

2.2.2 Migrating from OMAR Schema to HRLCORE Schema

Perform the following steps to migrate document entry, submission set, folder, and association registry objects metadata:

2.2.2.1 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).
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.

2.2.2.2 Pre-migration Process

1. Connect to omar DB using the following script:

   ```
   > sqlplus omar/<omar_user_pwd>
   ```

2. Execute the following SQL query to find duplicate submission sets that exist in omar schema. The select query returns the submission set UID and the submission set 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 submission set 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.

2.2.2.3 Migration Process

1. Execute the following command from sys db user:

   ```
   > sqplus sys/<sys_pwd> as sysdba

   GRANT CONNECT, RESOURCE TO hrlcore IDENTIFIED BY <hrlcore_password>;

   GRANT SELECT ON OMAR.ASSOCIATION TO HRLCORE;

   GRANT SELECT ON OMAR.CLASSIFICATION TO HRLCORE;

   GRANT SELECT ON OMAR.DESCRIPTION TO HRLCORE;

   GRANT SELECT ON OMAR.EXTERNALIDENTIFIER TO HRLCORE;

   GRANT SELECT ON OMAR.EXTRINSICOBJECT TO HRLCORE;

   GRANT SELECT ON OMAR.NAME_ TO HRLCORE;

   GRANT SELECT ON OMAR.REGISTRYPACKAGE TO HRLCORE;

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

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

   ```
   > sqlplus hrlcore/<hrlcore_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>/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. If you want to encode the HRLCORE DB user password, run the following script:

   `updatehrlcoreDBUserPassword.sh`

   If you want to change the default cipher algorithm **b64** (base 64), edit the cipher.properties file.

   The supported cipher algorithms are b64, hex, or aes. For example configurations, refer the Section 2.2.2.7.

   - For Linux: `a) sh updatehrlcoreDBUserPassword.sh`
   - For Windows: `a) updatehrlcoreDBUserPassword.cmd`

6. Execute the following consolidated command to store document entry IDs, association IDs, Folder IDs, and Submission Set 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 document entry, association, folder, submission set UUIDs, latest deprecated document entry 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 document entry 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 document entry status to `L`:

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

2.2.2.4 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.

2.2.2.5 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.

2.2.2.6 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.

2.2.2.7 Encoding Password

base64:

```
cipher_algorithm=b64
```

hex:

```
cipher_algorithm=hex
```

aes:

```
cipher_algorithm=aes
cipher_passphrase=hiapassphrase123
cipher_salthex=0001020304050F0F
cipher_ivhex=0001020304050F0F08090A0B0C0D0E0F
cipher_iterations=19
```

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 2.2, "Migrating the Database" on page 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, "Preparing Database Schemas in Windows" on page 2-10.

2.4.1 Preparing Database Schemas in Linux

To configure your 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 the previous step.
3. Update the SQL script create_tblspc_users.sql with your Oracle DB 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, 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 your 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).
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 Deployment Options

In OHIM HRL 2.0.1, 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.

2.6 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, "Running the Oracle Health Sciences Information Manager Record Locator Installer".

2.7 Configuration

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

- GlassFish:

  ```
  <GlassFish Home>/domains/<domain name>/ config/hrl/config/xconfig.xml
  ```

- 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>
```

2.7.1 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.

Note: For TLS auditing in WebLogic, ensure to start the WebLogic with the following JVM options for the keystore and truststore file:

```
-Djavax.net.ssl.keyStore=<keystore file>

-Djavax.net.ssl.keyStorePassword=<keystore pass>

-Djavax.net.ssl.keyStoreType=<keystore type>

-Djavax.net.ssl.trustStore=<truststore file>

-Djavax.net.ssl.trustStorePassword=<truststore pass>
```

2.7.2 Other HomeCommunity Level Properties

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

2.7.3 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.

2.7.4 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).

2.7.5 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.

2.7.6 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 GlassFish, navigate to **Application Server** > **JVM Settings** > **JVM Options**.
3. Enter the following JVM Option in the GlassFish Web Admin console.

   ```
   -Dlog4j.configuration=file:${com.sun.aas.instanceRoot}/config/hrl/confi
   g/log4j.properties
   ```

4. If you are using WebLogic application server, set the JVM system property `log4j.configuration` similarly. The following is an example of one of the ways to set the property. For details, refer to *WebLogic Administration Guide*.

   For example,

   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"
   ```

5. Before staring the application server, verify and update `log4j.properties` to contain proper log level and log file paths.

2.7.7 Recommendations and Optional Configuration

The following are the recommendations and optional configuration:

- 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 Document Entry 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 GlassFish JVM option or parameter and using 11.2 JDBC driver.

  For example,

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

2.8 Updating Codes

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

- GlassFish:

  ```
  <GlassFish Home>/domains/<domain name>/config/hrl/codes/codes.xml
  ```

- 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.

2.9 Endpoints

2.9.1 Record Locator

Use the endpoints in Table 2–1, " Record Locator Transactions and Web Service URLs" 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`
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`

2.9.2 DSUB

Use the endpoints in Table 2–2, " DSUB Transactions and Endpoint URLs" 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://<DSUB_HOST>:<PORT>/WS-BrokeredNotificationPublish_Service/Publish`
Document Metadata Subscribe [ITI-52]	`http://<DSUB_HOST>:<PORT>/WS-BrokeredNotificationSubscribe_Service/Subscribe`

2.9.3 XPID

Use the endpoints in Table 2–3, " XPID Transaction and Endpoint URLs" 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`

A

Running the Oracle Health Sciences Information Manager Record Locator Installer

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

A.1 Record Locator

A.1.1 GlassFish

```
$ cd <install_dir>
$ java -jar ohim_hrl_installer.jar
Oracle HIM HRL Installer 2.0.1.0
-- Feature
Choose option install_feature (recordlocator, dsub, xpid)
> recordlocator
-- Target
Choose option install_target (glassfish, weblogic)
> glassfish
-- Command
Choose option install_command (usage, version, install)
> install
Starting init install
-- Glassfish install directory
Enter glassfish_install_dir [#null]
> /home/hiauser/SUNWappserver
-- Glassfish domain name
Enter glassfish_domain_name [domain1]
>
-- Glassfish copy ojdbc jar to domain lib ext
Choose option glassfish_copy_ojdbc_jar_to_domain_lib_ext ([yes], no)
>
-- Start glassfish
Choose option start_glassfish ([yes], no)
>
```

```
-- Glassfish admin username
Enter glassfish_admin_username [admin]
>
-- Glassfish admin password
Enter glassfish_admin_password [adminadmin]
>
-- Glassfish master password
Enter glassfish_master_password [changeit]
>
-- Glassfish host
Enter glassfish_host [localhost]
>
-- Glassfish admin port
Enter glassfish_admin_port [4848]
>
-- Record locator database host
Enter recordlocator_db_host [localhost]
>
-- Record locator database port
Enter recordlocator_db_port [1521]
>
-- Record locator database sid
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 [#null]
>
-- Record locator database log username
Enter recordlocator_db_log_username [log]
>
-- Record locator database log password
Enter recordlocator_db_log_password [#null]
>
-- Record locator database hrlcore username
Enter recordlocator_db_hrlcore_username [hrlcore]
>
-- Record locator database hrlcore password
Enter recordlocator_db_hrlcore_password [#null]
>
-- Glassfish http port
Enter glassfish_http_port [8080]
>
-- Glassfish jdk directory
Enter glassfish_jdk_dir [/home/common/java/jdk1.6.0] based on [${install_java_
home}]
>
-- Stop glassfish
Choose option stop_glassfish ([yes], no)
>
```

A.1.2 WebLogic

```
$ cd <install_dir>
$ java -jar ohim_hrl_installer.jar
Oracle HIM HRL Installer 2.0.1.0
```

```
-- Feature
Choose option install_feature (recordlocator, dsub, xpid)
> recordlocator
-- Target
Choose option install_target (glassfish, weblogic)
> weblogic
-- Command
Choose option install_command (usage, version, install)
> install
Starting init install
-- Start weblogic
Choose option start_weblogic ([yes], no)
>
-- 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 [${install_java_
home}]
>
-- Weblogic domain name
Enter weblogic_domain_name [domain1]
>
-- Weblogic domain directory
Enter weblogic_domain_dir [/home/hiauser/Oracle/Middleware/user_
projects/domains/domain1] based on [${weblogic_install_dir}${/}user_
projects${/}domains${/}${weblogic_domain_name}]
>
-- Weblogic admin username
Enter weblogic_admin_username [weblogic]
>
-- Weblogic admin password
Enter weblogic_admin_password [welcome1]
>
-- Weblogic admin protocol
Enter weblogic_admin_protocol [t3]
>
-- Weblogic host
Enter weblogic_host [localhost]
>
-- Weblogic admin port
Enter weblogic_admin_port [7001]
>
-- Record locator database host
Enter recordlocator_db_host [localhost]
>
-- Record locator database port
Enter recordlocator_db_port [1521]
>
-- Record locator database sid
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 [#null]
>
-- Record locator database log username
Enter recordlocator_db_log_username [log]
```

```
>
-- Record locator database log password
Enter recordlocator_db_log_password [#null]
>
-- Record locator database hrlcore username
Enter recordlocator_db_hrlcore_username [hrlcore]
>
-- Record locator database hrlcore password
Enter recordlocator_db_hrlcore_password [#null]
>
-- Weblogic server name
Enter weblogic_server_name [AdminServer]
>
-- Weblogic http port
Enter weblogic_http_port [7001]
>
-- Stop weblogic
Choose option stop_weblogic ([yes], no)
>
```

A.2 DSUB

A.2.1 GlassFish

```
$ cd <install_dir>
$ java -jar ohim_hrl_installer.jar
Oracle HIM HRL Installer 2.0.1.0
-- Feature
Choose option install_feature (recordlocator, dsub, xpid)
> dsub
-- Target
Choose option install_target (glassfish, weblogic)
> glassfish
-- Command
Choose option install_command (usage, version, install)
> install
Starting init install
-- Glassfish install directory
Enter glassfish_install_dir [#null]
> /home/hiauser/SUNWappserver
-- Glassfish domain name
Enter glassfish_domain_name [domain1]
>
-- Glassfish copy ojdbc jar to domain lib ext
Choose option glassfish_copy_ojdbc_jar_to_domain_lib_ext ([yes], no)
>
-- Start glassfish
Choose option start_glassfish ([yes], no)
>
-- Glassfish admin username
Enter glassfish_admin_username [admin]
>
-- Glassfish admin password
Enter glassfish_admin_password [adminadmin]
>
-- Glassfish master password
```

```
Enter glassfish_master_password [changeit]
>
-- Glassfish host
Enter glassfish_host [localhost]
>
-- Glassfish admin port
Enter glassfish_admin_port [4848]
>
-- Dsub database host
Enter dsub_db_host [localhost]
>
-- Dsub database port
Enter dsub_db_port [1521]
>
-- Dsub database sid
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 [#null]
>
-- Glassfish http port
Enter glassfish_http_port [8080]
>
-- Glassfish jdk directory
Enter glassfish_jdk_dir [/home/common/java/jdk1.6.0] based on [${install_java_
home}]
>
-- Stop glassfish
Choose option stop_glassfish ([yes], no)
>
```

A.2.2 WebLogic

```
$ cd <install_dir>
$ java -jar ohim_hrl_installer.jar
Oracle HIM HRL Installer 2.0.1.0
-- Feature
Choose option install_feature (recordlocator, dsub, xpid)
> dsub
-- Target
Choose option install_target (glassfish, weblogic)
> weblogic
-- Command
Choose option install_command (usage, version, install)
> install
Starting init install
-- Start weblogic
Choose option start_weblogic ([yes], no)
>
-- 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 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 [welcome1]
>
-- Weblogic admin protocol
Enter weblogic_admin_protocol [t3]
>
-- Weblogic host
Enter weblogic_host [localhost]
>
-- Weblogic admin port
Enter weblogic_admin_port [7001]
>
-- Dsub database host
Enter dsub_db_host [localhost]
>
-- Dsub database port
Enter dsub_db_port [1521]
>
-- Dsub database sid
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 [#null]
>
-- Weblogic server name
Enter weblogic_server_name [AdminServer]
>
-- Weblogic http port
Enter weblogic_http_port [7001]
>
-- Stop weblogic
Choose option stop_weblogic ([yes], no)
>
```

A.3 XPID

A.3.1 GlassFish

```
$ cd <install_dir>
$ java -jar ohim_hrl_installer.jar
Oracle HIM HRL Installer 2.0.1.0
```

```
-- Feature
Choose option install_feature (recordlocator, dsub, xpid)
> xpid
-- Target
Choose option install_target (glassfish, weblogic)
> glassfish
-- Command
Choose option install_command (usage, version, install)
> install
Starting init install
-- Start glassfish
Choose option start_glassfish ([yes], no)
>
-- Glassfish install directory
Enter glassfish_install_dir [#null]
> /home/hiauser/SUNWappserver
-- Glassfish domain name
Enter glassfish_domain_name [domain1]
>
-- Glassfish admin username
Enter glassfish_admin_username [admin]
>
-- Glassfish admin password
Enter glassfish_admin_password [adminadmin]
>
-- Glassfish master password
Enter glassfish_master_password [changeit]
>
-- Glassfish host
Enter glassfish_host [localhost]
>
-- Glassfish admin port
Enter glassfish_admin_port [4848]
>
-- Xpid install directory
Enter xpid_install_dir [#null]
> xpid
-- Xpid hl7 url
Enter xpid_hl7_url [hl7://localhost:4888]
>
-- Glassfish http port
Enter glassfish_http_port [8080]
>
-- Stop glassfish
Choose option stop_glassfish ([yes], no)
>
```

A.3.2 WebLogic

```
$ cd <install_dir>
$ java -jar ohim_hrl_installer.jar
Oracle HIM HRL Installer 2.0.1.0
-- Feature
Choose option install_feature (recordlocator, dsub, xpid)
> xpid
-- Target
Choose option install_target (glassfish, weblogic)
> weblogic
```

```
-- Command
Choose option install_command (usage, version, install)
> install
Starting init install
-- Start weblogic
Choose option start_weblogic ([yes], no)
>
-- 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 [${install_java_
home}]
>
-- Weblogic domain name
Enter weblogic_domain_name [domain1]
>
-- Weblogic domain directory
Enter weblogic_domain_dir [/home/hiauser/Oracle/Middleware/user_
projects/domains/domain1] based on [${weblogic_install_dir}${/}user_
projects${/}domains${/}${weblogic_domain_name}]
>
-- Weblogic admin username
Enter weblogic_admin_username [weblogic]
>
-- Weblogic admin password
Enter weblogic_admin_password [welcome1]
>
-- Weblogic admin protocol
Enter weblogic_admin_protocol [t3]
>
-- Weblogic host
Enter weblogic_host [localhost]
>
-- Weblogic admin port
Enter weblogic_admin_port [7001]
>
-- Xpid install directory
Enter xpid_install_dir [#null]
> xpid
-- Xpid hl7 url
Enter xpid_hl7_url [hl7://localhost:4888]
>
-- Weblogic server name
Enter weblogic_server_name [AdminServer]
>
-- 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

NAV
Notification Of Document Availability

NHIE
Nationwide Health Information Exchange

NHIN
Nationwide Health Information Network

NHIO
Nationwide Health Information Organization

OHIG
Oracle Health Sciences Information Gateway

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.

CONNECT

Is a software solution that supports health information exchange that implements Nationwide Health Information Network (NHIN) standards and governance to ensure that health information exchanges are compatible with other exchanges being set up throughout the country. It enables public and private organizations to participate in the NHIN by leveraging their existing health information systems.

CONNECT Adapter

The portion of the CONNECT architecture that encapsulates the components most likely to be customized or replaced by an organization implementing CONNECT.

CONNECT Gateway

The portion of the CONNECT architecture that encapsulates the components most likely to be use as-is by an organization without modification. These components are primarily responsible for orchestrating information exchange with the NHIN.

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.

Nationwide Health Information Network

Nationwide Health Information Network is a set of standards, services and policies that enable secure health information exchange over the Internet. The network will provide a foundation for the exchange of health information across diverse entities, within communities and across the country, helping to achieve the goals of the HITECH Act. This critical part of the national health IT agenda will enable health information to follow the consumer, be available for clinical decision making, and support appropriate use of healthcare information beyond direct patient care so as to improve population health.

Nationwide Health Information Network Gateway

Within the CONNECT solution, the implementation of the core NHIN services and service interface specifications, comprising the CONNECT gateway and CONNECT adapter. The NHIN health information exchange or NHIE, a health information exchange that implements the NHIN architecture, processes, and procedures, is accredited as a participant of the NHIN.

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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