Oracle® Healthcare Data Repository

Release Notes

8.2
G25709-01
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Oracle Healthcare Data Repository Release Notes, 8.2

G25709-01

Contents

Preface

This preface contains the following sections:

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.

Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

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Oracle Healthcare Data Repository

This release packages both HDR 7.0.2.x module and HDR 8.1.4 FHIR module and is released as an Oracle Healthcare Data Repository version 8.2.

For details on installing Healthcare Data Repository release 8.2, see the Installation chapter.

What's New

- Now HDR 8.2 is packaged with HDR 7.0.2.x module and HDR FHIR 8.1.4 module in this release. Note that original HDR 8.1.x RIM server is removed in this release.
- Now HDR 7.0.2.x RIM server is HDR 8.2 RIM server.
- Now HDR 8.2 RIM server also supports on Oracle Weblogic 14c (14.1.1.0) server with Oracle JDK 11 and Oracle Database 19c.
- Now HDR FHIR module supports only on Oracle WebLogic 14c (14.1.1.0) server with Oracle JDK 11 and Oracle Database 19c.
- Now HDR FHIR server is upgraded to HAPI FHIR 6.4.2 version libraries.
- Now HDR FHIR also supports FHIR experimental versions R4B and R5. It does not support transformation between the versions i.e. R4.0.1 to R4B, R4.0.1 to R5 and R4B to R5.

What's Fixed

The following HDR FHIR bugs are ported from HDR 8.1.4 release to this 8.2 release. Also included are the following support enhancement in this release:

Table 1-1 Fixed in 8.2

Bug Number	Description
Enhancement 36285820	Support to include HDR 7.0.2.x in HDR 8.2 release. Now HDR 8.2 is packaged only with HDR 7.0.2.x and HDR FHIR 8.1.4 modules in this release. Note that HDR 8.1.x RIM server is removed in this release. Now HDR 7.0.2.x RIM server is HDR 8.2 RIM server.

Table 1-1 (Cont.) Fixed in 8.2

Bug Number	Description
Bug 35593497	HDR FHIR did not support FHIR versions R4B and R5. Now HDR FHIR supports FHIR experimental versions R4B and R5. But it does not support transformation between the versions i.e. R4.0.1 to R4B, R4.0.1 to R5 and R4B to R5. **Note:** The database schema configured and used for one FHIR version should not be used for other FHIR versions. i.e. Schema configured to be used for R4, should not be used for R4B and R5, configured to be used for R4B, should not be used for R4 and R5, and configured to be used for R5, should not be used for R4 and R4B.
Bug 35393352	In HDR FHIR schema, the partitioning columns (partition_date and partition_id) were not added on to the resources extended tables. Now HDR FHIR supports partitioning, and the corresponding partitioning columns (partition_date and partition_id) are added on to the resources extended tables.
Bug 35599740	HDR FHIR did not support searching resources using patient :identifier modifier. Now HDR FHIR supports for searching resources using patient :identifier. Example: `GET [base]/Consent?patient:identifier=http://test.com|12345` [Searches for all Consent resources that reference a patient by a particular patient identifier.]

Table 1-1 (Cont.) Fixed in 8.2

Bug Number	Description

Bug 35393317	HDR FHIR server did not have the property to enable/disable the scheduler JOB that check Resource Count.
	Now HDR FHIR server is able to enable/disable the scheduler JOB that check the Resource Count via the following property.
	`enable_resource_count_scheduling_job: false`
	If this property is enabled, the Resource Count scheduler JOB will be triggered for every configured interval of time and retain the resource count in cache with configured cache expiry time in minutes. This can also be controlled with the following properties:
	`resource_count_cache_expiry_time_in_minutes: 240`
	`resource_count_job_scheduling_time_in_minutes: 10`

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Installation

To install the Healthcare Data Repository patch, you need to download and install it. You then need to perform some post-installation steps.

See the following topics for details.

- Download the Patch
  Oracle distributes the patch set in a zip file.
- Software Requirements
  Software Requirements for Oracle Healthcare Data Repository 8.2.
- Install the Patch
  Extract the contents of the patch set file (**p36285820_82000_Generic.zip**) to a temporary directory <hdr82_patch_dir>. The following directories and files are extracted:
- Install HDR 8.2 on Database Tier
  Extract the contents of **hdr82_artifacts.zip** file to a directory on the database tier.
- Upgrade HDR FHIR Database Schema to HDR 8.2
  If you are already using HDR FHIR 8.1.4 schema, you can directly use HDR FHIR 8.1.4 schema as is for HDR 8.2. No upgrade is required.
- Create HDR 8.2 and HDR FHIR Database Schemas on ATP
  If you want to use OCI Autonomous Transaction Processing Database, this section describes steps to configure the CTB, HCT, and HDR FHIR schemas on Autonomous Database system.
- Install HDR 8.2 on Middle Tier
  To install HDR RIM application and HDR-FHIR application on middle tier, perform the following:
- Install HDR and HDR FHIR on WebLogic 14c
  The install_hdr.sh script file will be used to configure HDR deployment on WebLogic server.
- Install HDR FHIR – WL
  The following steps show how to install the HDR FHIR application on the same HDR Managed Server.
- Install HDR FHIR on new WebLogic 14c Domain
  To install HDR-FHIR application on new WebLogic domain, perform the following:
- Install HDR FHIR – WLD
  The **install_hdr_fhir.sh** file will be used to configure HDR FHIR deployment on new WebLogic domain. The script sets all the required environment variables already configured in the user_defined.properties.sh file.

Download the Patch

Oracle distributes the patch set in a zip file.

To locate and download the patch set:

1. Log in to My Oracle Support at support.oracle.com/signin

2. Click the **Patches & Updates** tab. The Patches and Updates page appears and displays the Patch Search region.
3. In the **Patch Name or Number** field, enter the primary bug number fixed in this patch (**36285820**).
4. Select **Search** to open the Patch Search page to the patch you entered.
5. Select the patch number. You can review details about the patch. You can also review the Readme file before downloading the patch.
6. Select **Download** to open the File Download dialog box.
7. Browse to a temporary directory where you want to download the file. Select **Continue**.
8. Select **Save**.
9. Transfer the patch .zip file to the necessary servers.

Software Requirements

Software Requirements for Oracle Healthcare Data Repository 8.2.

- Operating System: Oracle Enterprise Linux 8.x or 9.x
- Oracle Database 19c
- WebLogic Server 14.1.1.0 with the Coherence option
- JDK version 11.0.17 and executable in path

Install the Patch

Extract the contents of the patch set file (**p36285820_82000_Generic.zip**) to a temporary directory <hdr82_patch_dir>. The following directories and files are extracted:

- **hdr82_artifacts.zip** - contains the following artifacts for installation of HDR 8.2:
  - Installation artifacts of HDR 7.0.2.x for both database and middle tier.
  - Installation artifacts of HDR FHIR for both database and middle tier.
- **ReadMe_HDR_8_2.htm** - contains the location of the most current user documentation and release notes.

Install HDR 8.2 on Database Tier

Extract the contents of **hdr82_artifacts.zip** file to a directory on the database tier.

- Ensure you have read and write permissions to these directories, subdirectories, and their files.
- Set **HDR_HOME** environment variable to a directory where **hdr82_artifacts.zip** file is extracted.
- Set **JAVA_HOME** environment variable to a directory where JDK11 is installed and **JAVA_HOME/bin** directory is configured in the PATH on the database tier.
- Set **ORACLE_HOME** environment variable to a directly where Oracle 19c database is installed.

- Ensure **ORACLE_HOME/bin** directory is configured in the PATH on the database tier.

- Create HDR 8.2 Database schemas – CTB and HCT
  To setup HDR 8.2 Database schemas (CTB and HCT) on DB version 19c, perform the following:
- Create HDR FHIR Database Schema
  To setup HDR FHIR Database schema on DB version 19c, perform the following:

Create HDR 8.2 Database schemas – CTB and HCT

To setup HDR 8.2 Database schemas (CTB and HCT) on DB version 19c, perform the following:

Create Tablespaces

Execute create_tablespace.sh script to create the tablespaces for both CTB and HCT schemas.

1. Navigate to `$HDR_HOME/database/db/hct`

2. Run chmod 700 on `create_tablespace.sh`

3. Run create_`tablespace.sh`

Example:

```
sh $HDR_HOME/database/db/hct/create_tablespace.sh <ORACLE_HOME>
<SYS_USER_NAME> <DB_HOST> <DB_SERVICE_NAME> <DB_PORT> <TABLESPACE_LOCAION>
<CTB_TABLESPACE_NAME> <HCT_TABLESPACE_NAME> <INDEX_TABLESPACE_NAME>
<CTX_TABLESPACE_NAME>

sh create_tablespace.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 /scratch/app/oracle/oradata CTB_TBS HCT_TBS IDX_TBS CTX_TBS
```

The script prompts you to enter SYS user password, provide valid value and hit enter.

Required tablespaces are created for both CTB and HCT schemas.

Create HCT User

Execute create_hct_user.sh script to create the HCT user.

1. Navigate to `$HDR_HOME/database/db/hct`

2. Run chmod 700 on `create_hct_user.sh`

3. Run `create_hct_user.sh`

Example:

```
sh $HDR_HOME/database/db/hct/create_hct_user.sh <ORACLE_HOME> <SYS_USER>
<DB_HOST> <DB_SERVICE_NAME> <DB_PORT> <HCT_TABLESPACE_NAME>
<INDEX_TABLESPACE_NAME> <CTX_TABLESPACE_NAME>

sh create_hct_user.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 HCT_TBS IDX_TBS CTX_TBS
```

The script prompts you to enter SYS user and HCT user password, provide valid values and hit enter. HCT user is created.

Create HCT user Database Objects

If you want you want to create HCT schema with all required seed data then execute create_hct_database.sh script to create the HCT schema required database object like tables, indexes, seed data etc.

1. Navigate to `$HDR_HOME/database/db/hct`

2. Run chmod 700 on `create_hct_database.sh`

3. Run `create_hct_database.sh`

Example:

```
sh $HDR_HOME/database/db/hct/create_hct_database.sh <ORACLE_HOME>
<SYS_USER_NAME> <DB_HOST> <DB_SERVICE_NAME> <DB_PORT> <HCT_TABLESPACE_NAME>
<INDEX_TABLESPACE_NAME> <CTX_TABLESPACE_NAME> <BASE_LANG_CODE>
<JAVA_EXECUTABLE_PATH> <ETS_LIB_PATH>

sh create_hct_database.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 HCT_TBS IDX_TBS CTX_TBS ENUS /scratch/java/jdk11/bin/
java $HDR_HOME/database/hdr_cp_lib
```

The script prompts you to enter SYS user and HCT user password, provide valid values and hit enter. Required database objects like tables, sequences, indexes, seed data, packages etc. are created for HCT user.

OR

If you want you want to create HCT schema without seed data then execute create_hct_empty_database.sh script to create the HCT schema required database object like tables, indexes etc. No seed data will be inserted.

1. Navigate to $HDR_HOME/database/db/hct

2. Run chmod 700 on create_hct_empty_database.sh

3. Run create_hct_empty_database.sh

Example:

```
sh $HDR_HOME/database/db/hct/create_hct_empty_database.sh <ORACLE_HOME>
<SYS_USER> <DB_HOST> <DB_SERVICE_NAME> <DB_PORT> <HCT_TABLESPACE_NAME>
<INDEX_TABLESPACE_NAME> <CTX_TABLESPACE_NAME> <BASE_LANG_CODE>
<JAVA_EXECUTABLE_PATH> <ETS_LIB_PATH>

sh create_hct_empty_database.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 HCT_TBS IDX_TBS CTX_TBS ENUS /scratch/java/jdk11/bin/
java $HDR_HOME/database/hdr_cp_lib
```

The script prompts you to enter SYS user and HCT user password, provide valid values and hit enter. Required HCT schema database objects are created without seed data.

Create CTB User

Execute create_ctb_user.sh script to create the CTB user.

1. Navigate to $HDR_HOME/database/db/ctb

2. Run chmod 700 on create_ctb_user.sh

3. Run create_ctb_user.sh

Example:

```
sh $HDR_HOME/database/db/ctb/create_ctb_user.sh <ORACLE_HOME> <SYS_USER>
<DB_HOST> <DB_SERVICE_NAME> <DB_PORT> <CTB_TABLESPACE_NAME>
<INDEX_TABLESPACE_NAME>

sh create_hct_user.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 CTB_TBS IDX_TBS
```

The script prompts you to enter SYS user and CTB user password, provide valid values and hit enter. CTB user is created.

Create CTB User Database Objects

If you want you want to create CTB schema with all required seed data then execute create_ctb_database.sh script to create the CTB schema required database object like tables, indexes, seed data etc.

1. Navigate to $HDR_HOME/database/db/ctb

2. Run chmod 700 on create_ctb_database.sh

3. Run create_ctb_database.sh

Example:

```
sh $HDR_HOME/database/db/ctb/create_ctb_database.sh <ORACLE_HOME> <SYS_USER>
<DB_HOST> <DB_SERVICE_NAME> <DB_PORT> <CTB_TABLESPACE_NAME>
<INDEX_TABLESPACE_NAME> <JAVA_EXECUTABLE_PATH> <CTB_LIB_PATH>

sh create_ctb_database.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 CTB_TBS IDX_TBS /scratch/java/jdk11/bin/java $HDR_HOME/
database/hdr_cp_lib
```

The script prompts you to enter SYS user and CTB user password, provide valid values and hit enter. Required database objects like tables, sequences, indexes, seed data, packages etc. are created for CTB user.

OR

If you want you want to create CTB schema without seed data then execute create_ctb_empty_database.sh script to create the CTB schema required database object like tables, indexes etc. No seed data will be inserted.

1. Navigate to $HDR_HOME/database/db/ctb

2. Run chmod 700 on create_ctb_empty_database.sh

3. Run create_ctb_empty_database.sh

Example:

```
sh $HDR_HOME/database/db/ctb/create_ctb_empty_database.sh <ORACLE_HOME>
<SYS_USER> <DB_HOST> <DB_SERVICE_NAME> <DB_PORT> <CTB_TABLESPACE_NAME>
<INDEX_TABLESPACE_NAME> <JAVA_EXECUTABLE_PATH> <CTB_LIB_PATH>

sh create_ctb_empty_database.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 CTB_TBS IDX_TBS /scratch/java/jdk11/bin/java $HDR_HOME/
database/hdr_cp_lib
```

The script prompts you to enter SYS user and CTB user password, provide valid values and hit enter. Required CTB schema database objects are created without seed data.

Create HDR FHIR Database Schema

To setup HDR FHIR Database schema on DB version 19c, perform the following:

Create Tablespaces

Execute `create_tablespace.sh` script to create the tablespaces for HDR FHIR schema.

1. Navigate to `$HDR_HOME/database/db/fhir/create-schema`
2. Run chmod 700 on `create_tablespace.sh`
3. Run `create_tablespace.sh`

Example:

```
sh $HDR_HOME/database/db/fhir/create-schema/create_tablespace.sh
<ORACLE_HOME> <SYS_USER> <DB_HOST> <DB_SERVICE_NAME> <DB_PORT>
<TABLESPACE_LOCAION> <FHIR_TABLESPACE_NAME> <INDEX_TABLESPACE_NAME>

sh create_tablespace.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 /scratch/app/oracle/oradata OHF_FHIR_DATA_TBS
OHF_FHIR_IDX_TBS
```

The script prompts you to enter SYS user password, provide valid values and hit enter. Required tablespaces are created for HDR FHIR user.

Create HDR FHIR User

Execute `create_hdr_fhir_user.sh` script to create the HDR FHIR user.

1. Navigate to `$HDR_HOME/database/db/fhir/create-schema`
2. Run chmod 700 on `create_hdr_fhir_user.sh`
3. Run `create_hdr_fhir_user.sh`

Example:

```
sh $HDR_HOME/database/db/fhir/create-schema/create_hdr_fhir_user.sh
<ORACLE_HOME> <SYS_USER> <DB_HOST> <DB_SERVICE_NAME> <DB_PORT>
<HDR_FHIR_USER_NAME>
```

```
sh create_hdr_fhir_user.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 HDR_FHIR
```

The script prompts you to enter SYS user and HDR FHIR user password, provide valid values and hit enter. HDR FHIR user is created.

Create HDR FHIR User Database Objects

Execute `create_hdr_fhir_database.sh` script to create the HDR FHIR schema required database object like tables, indexes etc.

1. Navigate to `$HDR_HOME/database/db/fhir/create-schema`
2. Run chmod 700 on `create_hdr_fhir_database.sh`
3. Run `create_hdr_fhir_database.sh`

Example:

```
sh $HDR_HOME/database/db/fhir/create-schema/create_hdr_fhir_database.sh
<ORACLE_HOME> <SYS_USER> <DB_HOST> <DB_SERVICE_NAME> <DB_PORT>
<HDR_FHIR_USER_NAME>

sh create_hdr_fhir_database.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 HDR_FHIR
```

The script prompts you to enter SYS user and HDR FHIR user password, provide valid values and hit enter. Required database objects like tables, sequences, indexes, seed data, packages etc. are created for HDR FHIR user.

Upgrade HDR FHIR Database Schema to HDR 8.2

If you are already using HDR FHIR 8.1.4 schema, you can directly use HDR FHIR 8.1.4 schema as is for HDR 8.2. No upgrade is required.

To upgrade HDR FHIR 8.1.3 Database schema to HDR8.2, perform the following:

1. Navigate to `$HDR_HOME/database/db/fhir/upgrade-schema`
2. Run chmod 700 on `upgrade_fhir_schema_from_813_to_82.sh`
3. Run `upgrade_fhir_schema_from_813_to_82.sh`

   Example

   ```
   sh $HDR_HOME/database/db/fhir/upgrade-schema/
   upgrade_fhir_schema_from_813_to_82.sh <ORACLE_HOME> <SYS_USER_NAME>
   <DB_HOST> <DB_SERVICE_NAME> <DB_PORT> <HDR_FHIR_USER_NAME>

   sh upgrade_fhir_schema_from_813_to_82.sh /scratch/app/oracle/product/19c
   sys localhost servicename 1521 HDR_FHIR
   ```

   The script prompts you to enter SYS user password, HDR_FHIR user password, HDR_FHIR user current data tablespace name and HDR_FHIR user current index tablespace name, provide valid values and hit enter. Required database objects like tables, sequences, indexes etc. are upgraded to HDR FHIR 8.2 schema.

> **Note:**
>
> The upgrade is not a data migration, it's only a FHIR schema upgradation to HAPI 6.4.2 version compatible.

Create HDR 8.2 and HDR FHIR Database Schemas on ATP

If you want to use OCI Autonomous Transaction Processing Database, this section describes steps to configure the CTB, HCT, and HDR FHIR schemas on Autonomous Database system.

Prerequisites

- Ensure that the Autonomous Transaction Processing Database is already set up and configured in the user Tenancy.
- The wallet file is (Wallet_<DBNAME>.zip) downloaded to your local instance.
- Ensure your local SQL client (e.g., SQL*Plus) is able to connect to ATP using the downloaded Wallet file.
- Set HDR_HOME environment variable to a directory where hdr82_artifacts.zip file is extracted.

Create HCT User

Once the SQL*Plus client is connected to an Oracle ATP instance successfully, execute create_hct_user.sh script to create the HCT User.

1. Navigate to `$HDR_HOME/database/atpdb/hct`
2. Run chmod 700 on `create_hdr_user.sh`
3. Run `create_hct_user.sh`

Example:

```
sh $HDR_HOME/database/atpdb/hct/create_hct_user.sh <ORACLE_HOME>
<ADMIN_USER_NAME> <TNS_NAME>

sh create_hct_user.sh /scratch/app/oracle/product/19c admin
hdiphdrdevdb_tpurgent
```

The script prompts you to enter Admin user and HCT user passwords, provide valid value and hit enter. HCT database user is created.

Create HCT Database Objects

Execute create_hct_database.sh script to create the HCT schema required database object like tables, sequences, indexes, seed data, packages etc.

1. Navigate to `$HDR_HOME/database/atpdb/hct`
2. Run chmod 700 on `create_hct_database.sh`
3. Run `create_hct_database.sh`

Example:

```
sh $HDR_HOME/database/atpdb/hct/create_hct_database.sh <ORACLE_HOME>
<ADMIN_USER_NAME> <TNS_NAME>

sh create_hct_database.sh /scratch/app/oracle/product/19c admin
hdiphdrdevdb_tpurgent
```

The script prompts you to enter ADMIN user and HCT user passwords and HCT terminology base language code (Ex: ENUS), provide valid values and hit enter. Required database objects like tables, sequences, indexes, seed data, packages etc. are created for HCT user.

Create CTB User

Execute create_ctb_user.sh script to create the CTB user.

1. Navigate to `$HDR_HOME/database/atpdb/ctb`
2. Run chmod 700 on `create_ctb_user.sh`
3. Run `create_ctb_user.sh`

Example:

```
sh $HDR_HOME/database/atpdb/ctb/create_ctb_user.sh <ORACLE_HOME>
<ADMIN_USER_NAME> <TNS_NAME>

sh create_ctb_user.sh /scratch/app/oracle/product/19c admin
hdiphdrdevdb_tpurgent
```

The script prompts you to enter ADMIN user and CTB user passwords, provide valid values and hit enter. CTB user is created.

Create CTB Database Objects

Execute create_ctb_database.sh script to create the CTB schema required database object like tables, sequences, indexes, seed data, packages etc.

1. Navigate to `$HDR_HOME/database/atpdb/ctb`
2. Run chmod 700 on `create_ctb_database.sh`
3. Run `create_ctb_database.sh`

Example:

```
sh $HDR_HOME/database/atpdb/ctb/create_ctb_database.sh <ORACLE_HOME>
<ADMIN_USER_NAME> <TNS_NAME>

sh create_ctb_database.sh /scratch/app/oracle/product/19c admin
hdiphdrdevdb_tpurgent
```

The script prompts you to enter ADMIN user and CTB user passwords, provide valid values and hit enter. Required database objects like tables, sequences, indexes, seed data, packages etc. are created for CTB user.

Create HDR FHIR User

Execute create_hdr_fhir_user.sh script to create the HDR FHIR user.

1. Navigate to `$HDR_HOME/database/atpdb/fhir`
2. Run chmod 700 on `create_hdr_fhir_user.sh`
3. Run `create_hdr_fhir_user.sh`

Example:

```
sh $HDR_HOME/database/atpdb/fhir/create_hdr_fhir_user.sh <ORACLE_HOME>
<ADMIN_USER_NAME> <TNS_NAME>

sh create_hdr_fhir_user.sh /scratch/app/oracle/product/19c admin
hdiphdrdevdb_tpurgent
```

The script prompts you to enter ADMIN user password, HDR FHIR user name (eg: HDR_FHIR) and HDR FHIR user password, provide valid values and hit enter.

HDR FHIR database user is created.

Create HDR FHIR Database Objects

Execute create_hdr_fhir_database.sh script to create the HDR FHIR schema required database object like tables, sequences, indexes, seed data, packages etc.

1. Navigate to `$HDR_HOME/database/atpdb/fhir`
2. Run chmod 700 on `create_hdr_fhir_database.sh`
3. Run `create_hdr_fhir_database.sh`

Example

```
sh $HDR_HOME/database/atpdb/fhir/create_hdr_fhir_database.sh <ORACLE_HOME>
<ADMIN_USER_NAME> <TNS_NAME>

sh create_hdr_fhir_database.sh /scratch/app/oracle/product/19c admin
hdiphdrdevdb_tpurgent
```

The script prompts to enter Admin user password, HDR FHIR username and password, provide valid values and hit enter. Required database objects like tables, sequences, indexes, seed data, packages etc. are created for HDR FHIR user.

Install HDR 8.2 on Middle Tier

To install HDR RIM application and HDR-FHIR application on middle tier, perform the following:

1. Extract the contents of **hdr82_artifacts.zip** to a directory on the middle tier.
2. Ensure you have read and write permissions to these directories, subdirectories, and their files.

3. Set `HDR_HOME` environment variable to a directory where **hdr82_artifacts.zip** file is extracted.
4. Set `JAVA_HOME` environment variable to a directory where JDK11 is installed and `JAVA_HOME/bin` directory is configured in the PATH on the middle tier.
5. Set `WL_HOME` environment variable to a directory where WebLogic 14c is installed.
6. Navigate to the `$HDR_HOME/weblogic/install` directory.
7. Edit the `$HDR_HOME/weblogic/install/`**`user_defined.properties.sh`** to provide the required environment details to create all the HDR Resources in weblogic server using WLST scripts. Refer to the Details About user_defined.properties.sh section for information on these properties.

```
# HDR Home directory
export HDR_HOME=/u01/hdr/hdr_home
export domainHome=/u01/data/domains
export wlHome=/u01/data
export domainName=hdr_domain

#  Adminserver configuration
export adminServerName=AdminServer
export adminServerListenAddress=localhost
export adminServerListenPort=7001
export adminServerSSLEnabled=True
export adminServerSSLListenPort=7002
export adminServerUsername=weblogic
export managedServerName=hdr_server
export managedServerListenAddress=localhost
export managedServerListenPort=7003
export managedServerSSLEnabled=True
export managedServerSSLListenPort=7004
export JAVA_HOME=/u01/jdk
export hdrAppName=hdr_exploded_app

# Required for DB details to configure weblogic datasource
export dbHostName=localhost
export dbPort=1521
export dbServiceName=orcl.db.com

# OID Properties
export internalRoot=9.989898.51
export empiDomain=9.303030.51
export empiMasterId=9.404040.51
export cdaMmid=9.505050.51
export identificationRoot=9.808080.51

# IHE Profile Option Values
export auditServerHost=ihexds.nist.gov
export auditServerPort=8087
export auditServerTransportProtocal=UDP
export repositoryUniqueId=1.19.6.24.109.42.1
export iheRegistryUrl=http://ihexds.nist.gov:12080/tf6/services/
xdsregistryb
export iheRegistryAsyncUrl=http://ihexds.nist.gov:12080/tf6/services/
xdsregistrybas
export iheRegistryUpdateUrl=http://ihexds.nist.gov:12080/tf6/services/
```

```
xdsregistrybas

# HDR FHIR Properties
export hdrFhirDbUserName=HDR_FHIR
```

8. Run the `install_hdr.sh` and `install_hdr_fhir.sh` scripts in a specific order to deploy HDR and HDR-FHIR application on Weblogic Server. Refer Install HDR and HDR FHIR on WebLogic 14c. section.

Install HDR and HDR FHIR on WebLogic 14c

The install_hdr.sh script file will be used to configure HDR deployment on WebLogic server.

Install HDR

The install_hdr.sh script sets all the required environment variables already configured in the user_defined.properties.sh file. The script accepts CREATE_OPTION (1 to 12) as an argument to configure the HDR on WebLogic server.

Table 2-1 Create Option Argument

Create Option	Action
1	Configure HDR domain and HDR managed server
2	Start Admin and managed servers
3	Create Oracle Wallet and Configure the IHE_XDS_USER
4	Configure Datasource
5	Configure JMS Resources
6	Configure JVM arguments
7	Restart HDR Managed Server
8	Deploy HDR application
9	Register OID’s
10	Configure the Profile Options
11	Persists Empi Default Context
12	Persists HDR 8.2 Release information

- Navigate to the $HDR_HOME/weblogic/install directory.
- Execute install_hdr.sh script in the following order with CREATE_OPTION (1 to 12) to configure the HDR application on WebLogic server.

Create HDR Domain and HDR Managed Server

To create HDR domain and HDR managed server on WebLogic, run $HDR_HOME/weblogic/install/install_hdr.sh with CREATE_OPTION 1.

```
sh install_hdr.sh 1
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter.

The script creates the configured HDR WebLogic domain, WebLogic AdminServer and WebLogic HDR managed server.

Start Admin Server and Managed Server

To start Admin server and HDR managed server, run $HDR_HOME/weblogic/install/install_hdr.sh with CREATE_OPTION 2.

```
sh install_hdr.sh 2
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter.

The script starts both WebLogic Admin Server and HDR managed server. Check both Admin and managed server logs and ensure that both the servers are up and running after execution of this script completed.

Create Oracle Wallet and Configure the IHE_XDS_USER

To create oracle wallet and configure the IHE_XDS_USER on WebLogic Realm, run $HDR_HOME/weblogic/install/install_hdr.sh with CREATE_OPTION 3.

```
sh install_hdr.sh 3
```

The script prompts you to enter WebLogic Administrator user password, IHE_XDS_USER Oracle wallet password and IHE_XDS_USER password, provide valid values and hit enter.

The script creates the Oracle wallet for IHE_XDS_USER and configure IHE_XDS_USER in WebLogic Realm.

Configure JDBC Resource

To configure the following Datasource on WebLogic HDR managed server, run $HDR_HOME/weblogic/install/install_hdr.sh with CREATE_OPTION 4.

Datasource: CTBAppsDBDS

JNDI Name: jdbc/CTBAppsDBDS

```
sh install_hdr.sh 4
```

The script prompts you to enter WebLogic Administrator user password and CTB Database user password, provide valid values and hit enter.

The script configures the CTBAppsDBDS datasource on weblogic HDR managed server.

Configure JMS Resources

To configure the following JMS Resources on WebLogic HDR managed server, run $HDR_HOME/weblogic/install/install_hdr.sh with CREATE_OPTION 5.

HDRJMSServer, HDRJMSSystemModule, HDRConnectionFactory, AsyncXDS_PnRbRequestQueue, AsyncXDS_PnRbResponseQueue,

AsyncXDS_RetrieveDocbRequestQueue, AsyncXDS_RetrieveDocbResponseQueue and HDRConcurrentProgramRequestsQueue.

```
sh install_hdr.sh 5
```

Configure JVM Arguments

To configure the following JVM argument to the WebLogic HDR managed server, run $HDR_HOME/weblogic/install/install_hdr.sh with CREATE_OPTION 6.

JAVA_OPTIONS="-Xms2048M -Xmx2048M -Djava.util.logging.config.file=logging.properties -Djava.security.auth.login.config=$HDR_CONFIG_DIR/weblogic.security -Dtangosol.coherence.mode=prod ${JAVA_OPTIONS};

```
sh install_hdr.sh 6
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter.

The script configures the required JVM arguments to WebLogic HDR managed server.

Restart HDR Managed Server

To restart HDR managed server, run $HDR_HOME/weblogic/install/install_hdr.sh with CREATE_OPTION 7.

```
sh install_hdr.sh 7
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter. The script restarts the HDR managed server. Check HDR managed server log and ensure that managed server is up and running after execution of this script completed.

Deploy HDR Application

To deploy HDR application on WebLogic HDR managed server, run $HDR_HOME/weblogic/install/install_hdr.sh with CREATE_OPTION 8.

```
sh install_hdr.sh 8
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter.

The script deploys the HDR application on WebLogic HDR managed server.

Configure OIDs

This is optional. If you want to configure the OIDs, ensure that the required OIDs are configured in the $HDR_HOME/weblogic/install/user_defined.properties.sh file. To configure the OID's, run $HDR_HOME/weblogic/install/install_hdr.sh with CREATE_OPTION 9.

```
sh install_hdr.sh 9
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter.

The script configures the OID's into CTB_CORE_ROOT_MASTER table of CTB database schema.

Configure IHE Profile Options

If you want to configure the IHE Profile Options, ensure that the required profile options are configured in the $HDR_HOME/weblogic/install/user_defined.properties.sh file.

To configure the IHE profile options, run $HDR_HOME/weblogic/install/install_hdr.sh with CREATE_OPTION 10.

```
sh install_hdr.sh 9
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter.

The script configures the OID's into CTB_CORE_ROOT_MASTER table of CTB database schema.

Configure IHE Profile Options

If you want to configure the IHE Profile Options, ensure that the required profile options are configured in the $HDR_HOME/weblogic/install/user_defined.properties.sh file.

To configure the IHE profile options, run $HDR_HOME/weblogic/install/install_hdr.sh with CREATE_OPTION 10.

```
sh install_hdr.sh 10
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter.

The script configures the IHE Profile Options into the profile options tables of the HCT database schema.

Persists Empi Default Context

To persist the Empi default context, run $HDR_HOME/weblogic/install/install_hdr.sh with CREATE_OPTION 11.

```
sh install_hdr.sh 11
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter.

The script persists Empi default context (HDR_DEFAULT_LINKING_CONTEXT and HDR_DEFAULT_DEDUP_CONTEXT) into CTB_PI_CONTEXT table of the CTB database schema.

Persists HDR 8.2 Release information

This script persists the HDR 8.2 patch release information into HDR_RELEASE_INFO table for middle tier. To persist those details, run $HDR_HOME/weblogic/install/install_hdr.sh with CREATE_OPTION 12.

```
sh install_hdr.sh 12
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter.

The script persists the HDR 8.2 patch release information into HDR_RELEASE_INFO table for middle tier. You can see those details in CTB. HDR_RELEASE_INFO table.

> **Note:**
>
> If you want to install HDR on middle tier with all create options in a single execution, run $HDR_HOME/weblogic/install/install_hdr.sh with CREATE_OPTION ALL.
>
> ```
> sh install_hdr.sh ALL
> ```

The script prompts you to enter WebLogic Administrator user password, IHE_XDS_USER Oracle wallet password, IHE_XDS_USER password and CTB database user password, provide valid values and hit enter.

The script configures and installs HDR on WebLogic server.

Install HDR FHIR – WL

The following steps show how to install the HDR FHIR application on the same HDR Managed Server.

If you want you install HDR FHIR on the new WebLogic domain, refer to Install HDR FHIR on new WebLogic 14c Domain section.

If you want to install HDR FHIR application on the same HDR Managed Server, continue executing the **install_hdr_fhir.sh** script to deploy and configure required HDR FHIR resources on the same HDR managed server.

Ensure that the **hdrFhirDbUserName** parameter is properly configured in the $HDR_HOME/weblogic/install/**user_defined.properties.sh** file.

Run the **install_hdr_fhir.sh** script in the following order with CREATE_OPTION (3 to 6) to deploy and configure HDR FHIR on HDR Managed server where HDR RIM application is deployed.

Configure HDR FHIR JDBC Resource

To configure the following Datasource on WebLogic HDR managed server, run $HDR_HOME/weblogic/install/**install_hdr_fhir.sh** with CREATE_OPTION 3.

Datasource: FhirDataSource

JNDI Name: jdbc/FhirDataSource

```
sh install_hdr_fhir.sh 3
```

The script prompts you to enter WebLogic Administrator user password and HDR FHIR Database user password, provide valid values and hit enter.

The script configures the FhirDataSource datasource on WebLogic HDR managed server.

Configure HDR FHIR JVM Arguments

To configure the following JVM argument to the WebLogic HDR managed server, run $HDR_HOME/weblogic/install/install_hdr_fhir.sh with CREATE_OPTION 4.

JAVA_OPTIONS="-Xms2048M -Xmx2048M -Dlogging.config='$HDR_CONFIG_DIR'/fhir/log4j2.properties -Dhdr_fhir_config_location='$HDR_CONFIG_DIR'/fhir/hdr_fhir.yaml

```
sh install_hdr_fhir.sh 4
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter.

The script configures the required JVM arguments to WebLogic HDR managed server.

Restart HDR Managed Server

To restart HDR managed server, run $HDR_HOME/weblogic/install/install_hdr_fhir.sh with CREATE_OPTION 5.

```
sh install_hdr_fhir.sh 5
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter.

The script restarts the HDR managed server. Check HDR managed server log and ensure that managed server is up and running after execution of this script completed.

Deploy HDR FHIR Application

To deploy HDR FHIR application on HDR managed server, run $HDR_HOME/weblogic/install/install_hdr_fhir.sh with CREATE_OPTION 6.

```
sh install_hdr_fhir.sh 6
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter.

The script deploys the HDR FHIR application on WebLogic HDR managed server.

> **Note:**
>
> If you want to continue to install HDR FHIR on the same HDR managed server in a single execution, run $HDR_HOME/weblogic/install/install_hdr_fhir.sh with CREATE_OPTION CONT(continued) option.
>
> ```
> sh install_hdr_fhir.sh CONT
> ```
>
> The script prompts you to enter WebLogic Administrator user password and HDR FHIR database user password, provide valid values and hit enter.

The script configures and installs HDR FHIR on the same HDR managed WebLogic server.

Install HDR FHIR on new WebLogic 14c Domain

To install HDR-FHIR application on new WebLogic domain, perform the following:

1. Extract the contents of **hdr82_artifacts.zip** to a directory on the middle tier.
2. Ensure you have read and write permissions to these directories, subdirectories, and their files.
3. Set **HDR_HOME** environment variable to a directory where **hdr82_artifacts.zip** file is extracted.
4. Set **JAVA_HOME** environment variable to a directory where JDK11 is installed and JAVA_HOME/bin directory is configured in the PATH on the middle tier.
5. Set **WL_HOME** environment variable to a directory where WebLogic 14c is installed.
6. Navigate to the $HDR_HOME/weblogic/install directory.
7. Edit the $HDR_HOME/weblogic/install/**user_defined.properties.sh** to provide required environment details to create all the HDR FHIR Resources in WebLogic server using WLST scripts.

```
# HDR Home directory
export HDR_HOME=/u01/hdr/hdr_home
export domainHome=/u01/data/domains
export wlHome=/u01/data
export domainName=hdrfhir_domain

#  Adminserver configuration
export adminServerName=AdminServer
export adminServerListenAddress=localhost
export adminServerListenPort=8001
export adminServerSSLEnabled=True
export adminServerSSLListenPort=8002
export adminServerUsername=weblogic
export managedServerName=hdrfhir_server
export managedServerListenAddress=localhost
export managedServerListenPort=8003
export managedServerSSLEnabled=True
```

```
export managedServerSSLListenPort=8004
export JAVA_HOME=/u01/jdk

# Required for DB details to configure weblogic datasource
export dbHostName=localhost
export dbPort=1521
export dbServiceName=orcl.db.com

# HDR FHIR Properties.
export hdrFhirDbUserName=HDR_FHIR
```

Install HDR FHIR – WLD

The **install_hdr_fhir.sh** file will be used to configure HDR FHIR deployment on new WebLogic domain. The script sets all the required environment variables already configured in the user_defined.properties.sh file.

The script accepts CREATE_OPTION (1 to 6) as an argument to configure the HDR FHIR on WebLogic domain.

Table 2-2 Create Option Arguments

Create Option	Action
1	Configure WebLogic HDR FHIR domain and HDR FHIR managed server
2	Start Admin and managed servers
3	Configure Datasource
4	Configure JVM arguments
5	Restart HDR FHIR Managed Server
6	Deploy HDR FHIR application

1. Navigate to the `$HDR_HOME/weblogic/install` directory.

2. Ensure that **hdrFhirDbUserName** parameter is properly configured in the $HDR_HOME/weblogic/install/**user_defined.properties.sh** file.

3. Run the **install_hdr_fhir.sh** script in the following order with CREATE_OPTION (1 to 6) to deploy and configure HDR FHIR on new WebLogic domain.

Create WebLogic HDR FHIR Domain and HDR FHIR Managed Server

To create WebLogic HDR FHIR domain and HDR FHIR managed server, run $HDR_HOME/weblogic/install/**install_hdr_fhir.sh** with CREATE_OPTION 1.

```
sh install_hdr_fhir.sh 1
```

The script prompts you to enter WebLogic Administrator user password, provide valid values and hit enter.

The script creates the configured HDR FHIR WebLogic domain, WebLogic AdminServer and WebLogic HDR FHIR managed server.

Start Admin Server and Managed Server

To start Admin server and HDR FHIR managed server, run $HDR_HOME/weblogic/install/**install_hdr_fhir.sh** with CREATE_OPTION 2.

```
sh install_hdr_fhir.sh 2
```

The script prompts you to enter WebLogic Administrator user password, provide valid values and hit enter.

The script starts both WebLogic Admin Server and HDR FHIR managed server. Check both Admin and managed server logs and ensure that both the servers are up and running after execution of this script completed.

Configure HDR FHIR JDBC Resource

To configure the following datasource on WebLogic HDR FHIR managed server, run $HDR_HOME/weblogic/install/**install_hdr_fhir.sh** with CREATE_OPTION 3. Datasource: FhirDataSource JNDI Name: jdbc/FhirDataSource

```
sh install_hdr_fhir.sh 3
```

The script prompts you to enter WebLogic Administrator user password and HDR FHIR Database user password, provide valid values and hit enter. The script configures the **FhirDataSource** datasource on WebLogic HDR FHIR managed server.

Configure HDR FHIR JVM Arguments

To configure the following JVM argument to the HDR managed server, run $HDR_HOME/weblogic/install/**install_hdr_fhir.sh** with CREATE_OPTION 4.

JAVA_OPTIONS="-Xms2048M -Xmx2048M -Dlogging.config='$HDR_CONFIG_DIR'/fhir/log4j2.properties -Dhdr_fhir_config_location='$HDR_CONFIG_DIR'/fhir/hdr_fhir.yaml

```
sh install_hdr_fhir.sh 4
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter.

The script configures the required JVM arguments to HDR FHIR managed server.

Restart HDR Managed Server

To restart HDR managed server, run $HDR_HOME/weblogic/install/**install_hdr_fhir.sh** with CREATE_OPTION 5.

```
sh install_hdr_fhir.sh 5
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter.

The script restarts the HDR FHIR managed server. Check managed server log and ensure that managed server is up and running after execution of this script completed.

Deploy HDR FHIR Application

To deploy HDR FHIR application on WebLogic HDR managed server, run $HDR_HOME/weblogic/install/**install_hdr_fhir.sh** with CREATE_OPTION 6.

```
sh install_hdr_fhir.sh 6
```

The script prompts you to enter WebLogic Administrator user password, provide valid value and hit enter.

The script deploys the HDR FHIR application on WebLogic HDR managed server.

> **Note:**
>
> If you want to install HDR FHIR on new WebLogic domain with all create options in a single execution, run $HDR_HOME/weblogic/install/**install_hdr_fhir.sh** with CREATE_OPTION ALL.
>
> ```
> sh install_hdr_fhir.sh ALL
> ```

The script prompts you to enter WebLogic Administrator user password and HDR FHIR database user password, provide valid values and hit enter. The script configure and install HDR FHIR on new WebLogic Domain.

3
Perform the Post-Installation Steps

Perform the following post-installation steps:

1. Stop and start the WebLogic Admin server and the HDR Managed server.
2. Extract the updated HDR FHIR CLI module (<**hdr82_patch_dir**>/webloigc/fhir/hdrfhircli/hdr-fhir-cli-app-8.1.0-SNAPSHOT.zip) file on the middle tire to use the features of HDR FHIR command line module.
3. Use the updated <**hdr82_patch_dir**>/ database/db/hct/execute/**hdr_ets_compatible_loinc_preloader.py** file to convert native LOINC files into the ETS compatible version files to load them into the ETS repository.

   > **Note:**
   >
   > Use Python version in 2.x series to execute ETS LOINC pre-loader python script.

4. Use the following ETS scripts to run the ETS Jobs from database tier.
   a. <**hdr82_patch_dir**>/database/db/hct/execute/hdr_ets_loader.sh runs ETS loader program.
   b. <**hdr82_patch_dir**>/database/db/hct/execute/hdr_ets_importer.sh runs ETS importer program.
   c. <**hdr82_patch_dir**>/database/db/hct/execute/hdr_ets_maintenance.sh runs ETS maintenance program.
5. Use the following ETS scripts to run the ETS Jobs from middle tier.
   a. <**hdr82_patch_dir**>/weblogic/scripts/hdrmt_ets_scripts runs ETS loader program.
   b. <**hdr82_patch_dir**> weblogic/scripts/hdrmt_ets_importer.sh runs ETS importer program.
   c. <**hdr82_patch_dir**>/weblogic/scripts/hdrmt_ets_maintenance.sh runs ETS maintenance program.
6. You can use all the required **Client-side Library** jar files from <**hdr82_patch_dir**>/weblogic/jars location.

4

Details About user_defined.properties.sh

This section describes the properties defined in the **user_defined.properties.sh**.

Table 4-1 User Defined Properties

Property Name	Details of Property Value to be Assigned
HDR_HOME	Absolute path where **hdr82_artifacts.zip** file is extracted.
domainHome	Absolute path where HDR WebLogic domain is going to be created. Example: `/u01/data/domains`
wlHome	Absolute path where WebLogic 14c is installed. Example: `/u01/data`
domainName	HDR or FHIR WebLogic domain name.
adminServerName	WebLogic Admin server name. It should be AdminServer.
adminServerListenAddress	WebLogic Admin Server Listening Address. By default it is set to localhost.
adminServerListenPort	WebLogic Admin Server Non-SSL Listening Port. By default it is set to 7001
adminServerSSLEnabled	If you want to enable SSL for WebLogic Admin Server, set this property to True. By default it is set to True.
adminServerSSLListenPort	WebLogic Admin Server SSL Listening port. By default it is set to 7002
adminServerUsername	WebLogic Admin Server User name. By default it is set to weblogic.
managedServerName	WebLogic HDR/FHIR Managed Server name. By default it is set to hdr_server
managedServerListenAddress	WebLogic HDR/FHIR Managed Server Listening address. By default it is set to localhost
managedServerListenPort	WebLogic HDR/FHIR Managed Server Listening port. By default it is set to 7003
managedServerSSLEnabled	If you want to enable SSL for WebLogic HDR/FHIR managed Server, set this property to True. By default it is set to True.
managedServerSSLListenPort	WebLogic HDR/FHIR Managed Server SSL Listening port. By default it is set to 7004
JAVA_HOME	Absolute path where JDK11 is extracted. Example: `/u01/jdk-11.0.21`
hdrAppName	HDR Application name, i.e. HDR exploded directory name. By default it is set to `hdr_exploded_app`
dbHostName	HDR Oracle Database Host Name
dbPort	HDR Oracle Database Port Number
dbServiceName	HDR Oracle Database Service Name

Table 4-1 (Cont.) User Defined Properties

Property Name	Details of Property Value to be Assigned
configureOids	If you want to configure the HDR OID's into the HDR repository (Table Name: CTB.CTB_CORE_ROOT_MASTER), then set this property to "true" and provide valid values for the given properties (internalRoot, empiDomain, empiMasterId, cdaMmid and identificationRoot). The value of those properties should in Object identifier (OID) format. By default the property set to false. **Note:** If you use migrated CTB schema from HDR 7.0.2.x to HDR 8.2, then set this property to false as all the OIDs are migrated.
internalRoot	HDR Internal Root ID
empiDomain	HDR EMPI domain ID
empiMasterId	HDR EMPI Master ID
cdaMmid	HDR CDA MMID
identificationRoot	HDR Identification Default Root ID
configureIHEProfileOptions	If you want to configure the IHE Profile option values into the HDR repository (Table Name: HCT. HCT_CS_PROFILE_OPTION_VALUES), then set this property to "true" and provide valid values for the given properties (auditServerHost, auditServerPort, auditServerTransportProtocal, repositoryUniqueId, iheRegistryUrl, iheRegistryAsyncUrland iheRegistryUpdateUrl). By default the property set to false. **Note:** If you use migrated CTB schema from HDR 7.0.2.x to HDR 8.2, then set this property to false as all the IHE profile option values are migrated.
auditServerHost	IHE Audit Server Host Name
auditServerPort	IHE Audit Server Port Number
auditServerTransportProtocal	IHE Audit Server Transport Protocol

Table 4-1 (Cont.) User Defined Properties

Property Name	Details of Property Value to be Assigned
repositoryUniqueId	HDR Repository Unique ID
iheRegistryUrl	IHE Registry Synchronous URL
iheRegistryAsyncUrl	IHE Registry Asynchronous Registry URL
iheRegistryUpdateUrl	IHE Registry Update URL
configureEmpiDefaultContext	If you want to configure the EMPI default Linking and Dedup contents into the HDR repository (Table Name: CTB. CTB_PI_CONTEXT), then set this property to “true”. By default the property set to false. **Note:** If you use migrated CTB schema from HDR 7.0.2.x to HDR 8.2, then set this property to false as all the EMPI default context values are migrated.
hdrFhirDbUserName	HDR FHIR Oracle Database User Name

5
Migration

Both HDR 7.0.2.x (CTB and HCT) schemas and HDR 8.2 (CTB and HCT) schemas are the same. You can directly use HDR 7.0.2.x schemas for HDR 8.2 as is.

If you want to migrate some filtered data from HDR 7.0.2.x CTB schema to HDR 8.2 CTB schema, you can use these migration scripts as a base scripts.

> **Note:**
>
> - You have to add your filtered condition for all specific SELECT statements in the **insert_ctb_temp_tables.sql** file while inserting the data into the TEMP tables.
> - HCT schema is a Terminology schema, no filter conditions required to migrate to HDR 8.2. You can use the same HDR 7.0.2.x HCT schema for HDR 8.2.

To migrate HDR 7.0.2.x CTB schema to HDR 8.2 CTB schema, perform the following:

- Take backup of the existing HDR 7.0.2.x CTB schema using the export schema operation or any other alternative methods.
- Before migrating CTB schema, ensure that there is enough tablespace available on the database, if required add extra data files to the existing CTB and Index tablespaces.
- Take the backup of the HDR Delete API PLSQL package (hdr_delete_api.sql) from the CTB schema and reuse the same once the migration is completed successfully.
- Extract the contents of **hdr82_artifacts.zip** to a directory on the middle tier.
- Ensure you have read and write permissions to these directories, subdirectories, and their files.
- Set **HDR_HOME** environment variable to a directory where **hdr82_artifacts.zip** file is extracted.
- Set **JAVA_HOME** environment variable to a directory where JDK11 is installed and executable in path.
- Ensure the **ORACLE_HOME** environment variable is already set and the ORACLE_HOME/bin directory is configured in the PATH on the machine.
- Navigate to the $HDR_HOME/database/migration_scripts/HDR7.x_HDR82 directory.
- Run the **migrate_ctb_db_objects.sh** script in a specific order to migrate HDR7.0.2.x CTB user database objects to HDR8.2 CTB user database objects. Refer to the Migrate HDR 7.0.2.x CTB Schema to HDR 8.2 CTB Schema section.

Migrate HDR 7.0.2.x CTB Schema to HDR 8.2 CTB Schema

The migration will happen within the HDR 7.0.2.x CTB schema itself. Once the migration is completed successfully, the migrated CTB schema can be used for HDR 8.2 CTB schema.

Execute **migrate_ctb_db_objects.sh** script with MIGRATE_OPTION (1 to 16) to migrate HDR7.0.2.x CTB user database objects to HDR8.2 CTB user database objects.

Table 5-1 Migrate Options

Migrate Option	Action
1	Update CTB Sequences
2	Create CTB temp Tables
3	Insert into CTB temp Tables from CTB tables
4	Compare Count Validation
5	Drop CTB Tables
6	Rename CTB temp Tables to CTB main tables
7	Create CTB Types
8	Create CTB synonyms
9	Grant All synonyms from HCT
10	Create Packages for CTB
11	Create Views for CTB
12	Create Indexes for CTB
13	Create OMP default queue, i.e. CTB_OMP_DEFAULT_QUEUE
14	Persist HDR 8.2 Release Information
15	Compile CTB schema
16	Gather stats CTB Schema

Execute the **migrate_ctb_db_objects.sh** script in the following order to migrate HDR7.0.2.x CTB schema to HDR8.2 CTB schema.

Navigate to the $HDR_HOME/database/migration_scripts/HDR7.x_HDR82 directory.

Update CTB Sequences

Update the CTB sequences by running $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 1.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>

sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 1
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script updates the sequences for CTB user and initialized to next values.

Create CTB Temp Tables

Once the CTB sequences are updated successfully, create the CTB temp tables by running $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 2.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>

sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 2
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script creates the temp tables for CTB user.

Insert into CTB Temp Tables from CTB Tables

Once the CTB temp tables are created successfully, insert into CTB temp tables by running $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 3.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>

sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 3
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script inserts the data into the temp tables from the CTB tables.

Count Validation

Once the data is migrated to CTB temp tables successfully, verify the count validation by running $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 4.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>

sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 4
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script checks the count validation between CTB temp tables and CTB main tables and record those results into CTB. HDR_CTB_COUNT_VALIDATION_LOG.

Drop CTB Existing Tables

Once the data is migrated to CTB temp tables successfully, drop the existing CTB tables by running $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 5.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>

sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 5
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script drops the CTB existing tables.

Rename CTB Temp Tables to CTB Main Tables

Once the CTB existing tables are dropped successfully, rename the temp CTB tables to CTB main tables by running $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 6.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>

sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 6
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script renames the CTB temp tables to main tables.

Create CTB Types

Once the CTB temp tables are renamed successfully, create CTB types by running $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 7.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>

sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 7
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script creates the CTB types.

Create CTB Synonyms

Once the CTB types are created successfully, create CTB synonyms by running $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 8.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>

sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 8
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script creates the CTB synonyms.

Grant Permission to all Synonyms from HCT

Once the CTB synonyms are created successfully, provide grant permission to all CTB synonyms by running $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 9.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>

sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 9
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script grants permission to all CTB synonyms from HCT.

Create CTB Packages

Once the CTB grant permissions created successfully, create CTB packages by running $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 10.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>

sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 10
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script creates the CTB packages.

Create CTB Views

Once the CTB packages created successfully, create CTB views by running $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 11.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>
```

```
sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 11
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script creates the CTB views.

Create CTB Indexes

Once the CTB views created successfully, create CTB indexes by running $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 12.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>

sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 12
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script creates the CTB indexes.

Create OMP Default Queue CTB_OMP_DEFAULT_QUEUE

Once the CTB indexes created successfully, create CTB OMP default queue by running $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 13.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>

sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 13
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script creates the CTB OMP default queue i.e. **AQ$CTB_OMP_DEFAULT_QUEUE**.

Persist HDR 8.2 Release Information

Persist HDR 8.2 patch release information into HDR_RELEASE_INFO table by running $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 14.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>

sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 14
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script records the HDR 8.2 patch release information into HDR_RELEASE_INFO table for database tier. You can see those details in CTB.HDR_RELEASE_INFO table.

Compile CTB Schema

You can compile CTB schema by running $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 15.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>

sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 15
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script compiles the CTB schema using dbms_utility.compile_schema procedure.

Gather Stats CTB Schema

This is optional. If you want to do gather stats to CTB schema then execute $HDR_HOME/database/migration_scripts/HDR7.x_HDR82/migrate_ctb_db_objects.sh script with MIGRATE_OPTION 16.

Example:

```
sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME> <HOST_NAME>
<SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> <MIGRATE_OPTION>

sh migrate_ctb_db_objects.sh /scratch/app/oracle/product/19c sys localhost
servicename 1521 IDX_TBS 16
```

The script prompts you to enter SYS and CTB user passwords, provide valid values and hit enter. The script gather stats the CTB schema.

> **Note:**
>
> If you want to migrate HDR 7.0.2.x CTB schema to HDR 8.2 CTB schema with all migrate options in a single execution, run database/migration_scripts/HDR7.x_HDR82/**migrate_ctb_db_objects.sh** with MIGRATE_OPTION ALL.
>
> ```
> sh migrate_ctb_db_objects.sh <ORACLE_HOME> <SYS_USER_NAME>
> <HOST_NAME> <SERVICE_NAME> <DB_PORT> <CTB_INDEX_TABLESPACE_NAME> ALL
> ```

The script prompts you to enter SYS database user password and CTB database user password, provide valid values and hit enter. The script migrates the HDR 7.0.2.x CTB schema to HDR 8.2 CTB schema in a single execution. You can check the count validation in HDR_CTB_COUNT_VALIDATION_LOG table.

6
Perform the Post-Migration Steps

Perform the following post-migration steps:

1. Use backed up HDR delete API PLSQL package (hdr_delete_api.sql) for deleting transactional data (or persisted object graphs) from Oracle HDR 8.2 CTB tables.
   a. Connect to HDR database (locally from the database machine or remotely using sqlplus) as "ctb" user.
   b. Execute the hdr_delete_api.sql file that will compile the HDR delete API PLSQL package "HDR_DELETE_API". The package should compile successfully.
2. Drop the existing HDR Bulk Data Loader job by executing the following SQL scripts from sqlplus/sqldeveloper as sys user:
   a. exec dbms_scheduler.drop_job('hdr_bdl_scheduler_job',TRUE);
   b. exec dbms_scheduler.drop_program('hdr_bdl_scheduler_program')
3. Create the HDR Bulk Data Loader Job. To create the HDR Bulk Data Loader job, perform the following:
   a. Create Bulk Data Loader log directory by executing the following SQL script from the sqlplus/sqldeveloper as ctb user. The SQL script accepts the absolute path of CTB concurrent program libraries folder on the database server as an argument.

      ```
      @$HDR_HOME/database/db/ctb/create/directory/
      create_bdl_log_directory.sql  $HDR_HOME/database/hdr_cp_lib
      ```

   b. Create Bulk Data Loader Job by executing the following SQL script from the sqlplus/sqldeveloper as sys user. The SQL script accepts, 1. Absolute path of the java executable on the database server, 2. Absolute path of CTB concurrent program libraries folder on the database server, 3. CTB user password as an arguments.

      ```
      @$HDR_HOME/database/db/ctb/create/jobs/
      hdr_bulk_loader_job.sql $JAVA_HOME/bin/java $HDR_HOME/database/
      hdr_cp_lib <CTB_DB_USER_PASSWORD>
      ```

7

Product Documentation

Oracle Healthcare Data Repository comes with a full documentation set for 8.2.

You can find the product documentation in the following locations:

- **My Oracle Support**: support.oracle.com/signin — What's New, What's Fixed, and Known Issues.
- **Oracle Help Center**: Oracle Healthcare Data Repository product page
  Oracle may not update all documents for every release. Therefore, you may see a release with guides that include different versions. For example, Release Notes can show the latest patch version number and the User Guide shows the full release number).