



Oracle Patch Set Update for Ex Libris Products Using 12.1.0.2

*. This Patch Set Update will work only for 12.1.0.2 version.

In case of an older version – please contact support
to handle 12.1.0.2 upgrade first

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Before You Upgrade

Make sure application is stopped!!!!!!!!!!!!!!!!!!!!!! -
Call Hub if necessary

For production that uses Veritas cluster:

1. Freeze the cluster:

As user root - get the cluster name:

`hagrp -list`

```
For example:
# hagrp -list
ClusterService      db01
ClusterService      db02
Group_Alma_Prod_DB_NA03  db01
Group_Alma_Prod_DB_NA03  db0
```

Freeze it:

`hagrp -freeze <NAME>`

```
For example:
# hagrp -freeze Group_Alma_Prod_DB_NA03
```

2. Shutdown the DB and ask CPG to make a cold backup snapshot of the DB

This section lists the prerequisites for upgrading, provides an overview of the quick upgrade package, and describes the pre-upgrade procedures that you should perform.

Upgrade Prerequisites

The upgrade of your Oracle software and databases must be performed by a local DBA only. Before starting an upgrade, a full backup of all Oracle 12 software and databases is absolutely necessary.

For information as to whether the application and application version with which you are working supports Oracle 12c1, refer to the documentation for your application.

Quick Upgrade Package Overview

The package contains Oracle 12.1 software and has been pre-built by Ex Libris.

Pre-Upgrade Procedure

Before you upgrade, you must perform the following procedure.

- 1 Log on to the Oracle server as an Oracle user (typically `oracle`).
- 2 Use the following command to determine which operating system is installed on the Oracle server:

```
uname
```

Note that the upgrade packages on the Ex Libris FTP server (<ftp.exlibris.co.il>) are compatible with the Linux, Sun Solaris, and AIX operating systems.

- 3 Download the appropriate upgrade package from the `/oracle/12.1.0.2/<platform>/quick` directory on the Ex Libris FTP server.
- 4 Place the upgrade package in a temporary directory, such as `/exlibris/ftp_from_exlibris`.
- 5 Extract the package using the following:
 - the `tar` utility, if your Oracle server is running on a Linux platform
 - the `gnu_tar` utility, if your Oracle server is running on a Sun Solaris platform
 - the `gnu_tar_aix` utility, if your Oracle server is running on an AIX platform

For detailed instructions on using these utilities, see step 10 in [Upgrading Oracle Software](#).

The `tar` utility is available with your operating system installation. The `gnu_tar` and `gnu_tar_aix` utilities are available on the FTP server, along with the Oracle packages.

If you are working with the `gnu_tar_aix` utility, you must rename it to `gnu_tar` after downloading it. If you are working with either `gnu_tar` utility, you must change permissions after downloading the utility. To do so, use the following commands:

```
cd /exlibris/ftp_from_exlibris
chmod +x gnu_tar*
```

Note: Make sure that the `oraInst.loc` file resides on the Oracle server – in the `/var/opt/oracle` directory on a Sun Solaris OS and in the `/etc` directory on a Linux OS. The contents of the `oraInst.loc` file are as follows:

```
inventory_loc=/exlibris/app/oracle/product/12r1/oraInventory
inst_group=dba
```

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Upgrading Your Oracle Software and Database

This section describes how to upgrade your Oracle software, as well as each database associated with Oracle 12.

Upgrading Oracle Software

The upgrade instructions below relate to a standard Oracle installation in the `/exlibris/app/oracle/product/12r1` directory. These instructions are relevant for customers using the quick upgrade package, according to Ex Libris recommendations.

To upgrade your Oracle software:

- 1 Log on to the Oracle server as an application user (for example, Aleph, Rosetta).
- 2 Shut down the Ex Libris applications associated with Oracle 12.
- 3 Log on again to the Oracle server as an Oracle user (typically `oracle`).

- 4 Stop the Oracle listener:

```
lsnrctl stop
```

- 5 Check for invalid DB objects that may exist before the upgrade:

```
sqlplus /nolog
```

```
SQL> CONNECT / AS SYSDBA
```

```
SQL> set pause off
```

```
SQL> spool /tmp/before_upg_invld_objs.log
```

```

SQL> col owner form a20
col object_name form a40
col object_type form a30
select owner,object_name,object_type from all_objects where status <>
'VALID' ;
SQL> spool off
SQL> exit

```

6 Shut down all Oracle 12 databases.

7 Back up the existing database and listener configurations:

```

cd $ORACLE_HOME
tar -cf ../../conf12r1.tar ./dbs ./network/admin/listener*
./network/admin/tnsnames* ../ssh

```

8 Back up the current Oracle software located in the
/exlibris/app/oracle/product/12r1 directory and remove or rename it:

```

cd $ORACLE_HOME/..
mv 12r1 12r1_old

```

9 Extract the Oracle 11.2.0.3 quick upgrade package from the temporary directory in which you placed it to the /exlibris/app/oracle/product directory:

```

cd /exlibris/app/oracle/product

```

- For Sun Solaris x-86 platforms:

```

cat /exlibris/<ftp_from_exlibris>/ora12.1.0.2_solaris_x86.tar.gz_* |
gnu_tar
-xzvf -

```

- For Sun Solaris Sparc platforms:

```

cat /exlibris/<ftp_from_exlibris>/ora12.1.0.2_solaris.tar.gz_* | gnu_tar
-xzvf -

```

- For Linux platforms:

```

cat /exlibris/<ftp_from_exlibris>/ora12.1.0.2_linux64.tar.gz_* | tar -
xzvf -

```

10 Restore the original configuration of the databases and listener:

```

cd $ORACLE_HOME
tar -xf ../../conf12r1.tar

```

11 Open the .cshrc file under \$ORACLE_HOME and change the ORACLE_SID environment variable to the appropriate variable.

12 Make sure ORACLE_HOME is owned by oracle:dba, and change permissions for the Oracle binary files:

If \$ORACLE_HOME directory and sub-directories/files are not owned by oracle:dba, then change it:

As oracle issue:

```
chown oracle:dba
```

as root:

```
cd /exlibris/app/oracle/product/12r1
```

```
./root.sh
```

```
chmod +s $ORACLE_HOME/bin/oracle
```

```
cd $ORACLE_HOME
```

```
find . -type d | xargs chmod +x
```

On a Linux server:

```
find . -print0 | xargs -0 chmod o+r
```

On AIX and Solaris servers:

```
find . | sed 's/.*/"&"/' | xargs chmod +r
```

Upgrading Oracle Databases

The following procedure should be performed for each database associated with Oracle 11.

To upgrade your Oracle databases:

1 Log on to the Oracle server as an Oracle user (typically `oracle`).

2 Start the Oracle Net listener:

```
lsnrctl start
```

3 For each database instance running on the Oracle home being patched, connect to the database using SQL*Plus. Connect as `SYSDBA` and run the following:

4 `su - oracle`

```
cd $ORACLE_HOME/OPatch
```

```
sqlplus /nolog
```

```
SQL> CONNECT / AS SYSDBA
```

```
SQL>set pause off
```

```
SQL> startup upgrade
```

```
SQL> quit
```

```
./datapatch -verbose
```

```
sqlplus /nolog
```

```
SQL> CONNECT / AS SYSDBA
```

```
SQL> shutdown
```

```
SQL> startup
```

5 Check the following log files for any errors:

- `/exlibris/app/oracle/cfgtoollogs/sqlpatch/22674709/22674709_apply_<SID>_< TIMESTAMP >.log`

- /exlibris/app/oracle/cfgtoollogs/sqlpatch/22291127/19694308/22291127_apply_SID>_< TIMESTAMP >.log

where TIMESTAMP is in the following format: YYYYMMDD_HH_MM_SS.

6 Run the utlrp.sql script as follows:

```
cd $ORACLE_HOME/rdbms/admin
sqlplus /nolog
SQL> CONNECT / AS SYSDBA
SQL> set pause off
SQL> @utlrp.sql
```

For Solaris use:

```
SQL> @utlrp.sql 1
```

7 Check if any Invalid objects still exist using the command:

```
SQL> select owner,object_name,object_type from all_objects where status <>
'VALID' ;
```

8 Manually recompile any invalid objects. For example:

```
SQL> alter <object_type> owner.<object_name> compile;
```

Note: Those objects that were found to be in status INVALID before the upgrade, may not compile successfully after the upgrade, as well.

9 As the root user, run the root.sh script:

```
cd /exlibris/app/oracle/product/12r1
./root.sh
```

10 Assure that PSU was applied for the DB:

```
col DESCRIPTION form a40
col status form a20
col action_time form a40
select patch_id,action_time,description
from sys.registry$sqlpatch;
```

Result should contain (with your current date)

PATCH_ID	ACTION_TIME	DESCRIPTION
21555660	09-MAY-16 07.54.09.468617 AM	Database PSU 12.1.0.2.5, Oracle JavaVM Component (Oct2015)
22674709	09-MAY-16 07.54.09.480762 AM	Database PSU 12.1.0.2.160419, Oracle JavaVM Component (Apr2016)
22291127	09-MAY-16 07.54.09.913201 AM	Database Patch Set Update : 12.1.0.2.160419 (22291127)

Note: If result for some reason does not show the patch was applied, run again the whole thing from section 4 (startup upgrade)

For DB's in **cloud environment only** (for backup purpose) ,Please perform the following:

From unix user 'oracle':

```
$ cd $ORACLE_HOME/sqlplus/admin
```

```
$ echo "col name for a9" >> glogin.sql
```

```
$ echo "set lines 200" >> glogin.sql
```

Once the upgrade is finished, start the Ex Libris application and perform sanity checks.