Oracle Patch
for Solaris 9 and 10

Version 10.2.0.3 to 10.2.0.4

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Preinstallation Preparation

This section includes:

- **Download Oracle 10.2.0.4 Patch File** on page **5**
- **Preinstallation Check** on page **6**
- **Install OS Patch** on page **7**

Download Oracle 10.2.0.4 Patch File

The Oracle 10.2.0.4 patch file can be downloaded directly from the ftp server at Ex Libris. It is repackaged to include the Oracle 10.2.0.4 patch file, some customized files, and ready-to-use scripts for the Voyager VGER database. A pre-assembled OS patch package that contains patch files for Solaris 9 and Solaris 10 is also available for download.

Table 1. Download Commands

Step #	Description	Commands
1.1.1	Logon as the oracle user.	su - oracle
1.1.2	Change to the /m1/ incoming directory.	cd /m1incoming
1.1.3	Make the oracle directory.	mkdir oracle
1.1.4	Change to the oracle directory.	cd oracle

Table 1. Download Commands

Step #	Description	Commands
1.1.5	Download the prepackaged files.	```ftp downloads.exlibrisgroup.com user: patch password:<See eService> cd oracle/SunOS/10204 bin hash get p6810189_10204_Solaris-64.zip get SunOS_patches_ora10204.tar.bz2 get SunOS_ora10204_scripts.tar.bz2```

Preinstallation Check

The preinstallation check includes two parts:

- Check the existing Oracle database version
- Check the system requirements

This patch is created to apply directly to the Oracle 10.2.0.3 or 10.2.0.x database for the Voyager VGER database. If you have a database version older than 10.2.0.3, you need to upgrade to the Oracle 10.2.0.3 first using the standard packages provided by Ex Libris and, subsequently, apply this patch.

On the system side, Oracle 10.2.0.4 requires patch 112874-45 for Solaris 9 or patch 127111-11 for Solaris 10. The checking has been incorporated into the VIK scripts for the Voyager 2007.2.0 release. However, you can use the included scripts to ensure that required patches are properly installed.

Table 2. Preinstallation Commands

Step #	Description	Commands
1.2.1	Check Oracle database version.	```su - oracle sqlplus / as sysdba```
1.2.2	At command prompt, check version.	```SQL*Plus: Release 10.2.0.3.0 - Production on Wed Sep 23 09:29:28 2009```
1.2.3	Check the OS level again.	```uname -a```
1.2.4	Untar the downloaded OS patch.	```cd /m1/incoming/oracle bzip2 -dc SunOS_patches_ora10204.tar.bz2	tar xvf -```

Table 2. Preinstallation Commands

Step #	Description	Commands

1.2.5	Run the patch check script.	`cd /m1/incoming/oracle/`
		`SunOS_patches_ora10204`
		
		`./ora10204_solaris_check.ksh`

Review the output. If you determine that required patches have not installed, perform the actions described in *1.3 Install OS Patch*. Otherwise, proceed to **Perform Upgrade** on page **9**.

Install OS Patch

We have assembled an OS patch package for SPARC 64-Bit that contains the patch file required by Oracle 10.2.0.4 for Solaris 9 and Solaris 10. You can download it from the Ex Libris ftp server. Based on your system level, you can apply the appropriate patch file with the `root` privilege. A server reboot is required for the patch to take effect. Therefore, schedule server down-time and undertake this task properly.

Table 3. Install Commands

Step #	Description	Commands
1.3.1	Be the `root` user and check the OS level.	`su - root` `uname -a`

1.3.2	For Solaris 9, apply patch 112874-45 (file: 127127-11.zip). This is a `libc` patch.	`cd /m1/incoming/oracle/`
		`SunOS_patches_ora10204/Solaris_9`
		`unzip 127127-11.zip`
		`patchadd -d ./112874-45`

1.3.3	For Solaris 10, apply patch 127127-11 (file: 127127-11.zip). This is a kernel patch.	`cd /m1/incoming/oracle/`
		`SunOS_patches_ora10204/Solaris_10`
		`unzip 127127-11.zip`
		`patchadd -d ./127127-11`

1.3.4	Reboot the server using init 6 after the patch is completed successfully.	`init 6`

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Perform Upgrade

Prepare Oracle 10.2.0.4 Patch

Table 4. Patch Commands

Step #	Description	Commands
2.1.1	Perform the following as `oracle`.	```su - oracle```
2.1.2	Identify the existing Oracle database installation.	```more /var/opt/oracle/oratab```
2.1.3	Execute `opatch` to cross-check existing oracle patch version.	```cd $ORACLE_HOME/OPatch``` ```./opatch lsinventory -all```

2.1.4	Ensure that `java_pool_size` is no less than 150M and that the `shared_pool_size` is no less than 200M for the database upgrade.
	
	 If it is less, make changes.
		```sqlplus / as sysdba```
		 ```show parameter pool_size```
		 ```alter system set java_pool_size=150M scope=both;```
		 ```alter system set shared_pool_size=200M scope=both;```

Table 4. Patch Commands

Step #	Description	Commands
2.1.5	Extract the oracle patch file.	`cd /m1/incoming` `unzip p6810189_10204_Solaris-64.zip`
2.1.6	Extract the Ex Libris-supplied scripts used for the Oracle 10.2.0.4 patch.	`bzip2 -d SunOS_ora10204_scripts.tar.bz2	tar xvf -`
2.1.7	Copy a VGER-based customized response file from `SunOS_ora10204_scripts` to the uncompressed `<10.2.0.4 patch>/Disk1/response` directory.	`cp SunOS_ora10204_scripts/response/` `EXL_10gR2.rsp Disk1/response/.`

Update Oracle Time Zone Definitions

The Oracle 10.2.0.4 patch set includes an update to the Oracle time zone definitions (TZD) to Version 4 that contains changes to daylight savings time in the USA in 2007 and other updates.

Check the current version of the Oracle TZD and determine whether or not an action is needed. After reviewing the query result, if you determine that you have no user TZ data nor have DBMS_SCHEDULER jobs defined (most sites), then there is no action for you to take. However, if you have user-defined TZ data and/or DBMS_SCHEDULER jobs defined, read *Actions for the DSTv4 update in the 10.2.0.4 patchset* (Doc ID: 553812.1) in `http://metalink.oracle.com` and run the `utltzpv4.sql` script as needed.

Table 5. Time Zone Commands

Step #	Description	Commands

2.2.1	Check the current version of the Oracle TZD.	`sqlplus / as sysdba`
		`SQL> select version from`
		`v$timezone_file;`
		
		             VERSION
		
		            --------- 	
		
		             3

Table 5. Time Zone Commands

Step #	Description	Commands

2.2.2	If it reports version 4, there is no action. Go to **Install Oracle 10.2.0.4 Patch** on page **11**.
	
	If it reports version 3 or lower, run `dst_check.sql`.
		`cd /m1/incoming/`
		`SunOS_ora10204_scripts/DST`
		
		`sqlplus / as sysdba`
		
		`SQL> spool dst.log`
		
		`SQL> @dst_check.sql`
		
		`SQL> spool off`

2.2.3	Check the `dst.log` file and verify if there is user-defined data other than SYS and WMSYS objects.	`more dst.log`

2.2.4	If no user-defined TZ data exists, go to **Install Oracle 10.2.0.4 Patch** on page **11**.
	
	If there is user-defined TZ data, read *Actions for the DSTv4 update in the 10.2.0.4 patchset* for detailed instructions. Run `utltzpv4.sql` as needed.
		`http://metalink.oracle.com (Doc ID: 553812.1)`
		
		`cd /m1/incoming/SunOS_ora10204_scripts/ DST`
		
		`sqlplus sys/SYS_PSWD as sysdba`
		
		`@utltzpv4.sql`

Install Oracle 10.2.0.4 Patch

Table 6. Patch Commands

Step #	Description	Commands
2.3.1	Logon as the root user.	`su -`
2.3.2	Stop Apache, if it is running on this server.	`/etc/init.d/httpd2 stop`
2.3.3	Stop Voyager, if it is running on this server.	`/etc/init.d/voyager stop`
2.3.4	Note: If this is a split server environment, the voyager application must be stopped on all servers prior to proceeding with the patch.	
2.3.5	Stop all oracle processes associated with `ORACLE_HOME`.	`/etc/init.d/dbora stop`
2.3.6	`Logon as the Oracle user.`	`su - oracle`

Table 6. Patch Commands

Step #	Description	Commands

2.3.7	Verify all oracle environment variables are properly set and, especially, ensure that `ORA_NLS10` is in the correct path if it is set.	`echo $ORACLE_HOME $ORACLE_SID $ORA_NLS10`
		`ORACLE_HOME=/oracle/app/oracle/product/10.2.0/db_1`
		`ORACLE_SID=VGER`
		`ORA_NLS10=/oracle/app/oracle/product/10.2.0/db_1/nls/data`

2.3.8	If `ORACLE_HOME` is not in the standard location and `ORACLE_SID` is not VGER, apply the patch interactively.	`http://metalink.oracle.com` `"Oracle Database Patch Set Notes 10g Release 2 (10.2.0.4) Patch Set 3 for Solaris Operating System (SPARC 64-Bit)" (Patchset # 6810189)`

Table 6. Patch Commands

Step #	Description	Commands

2.3.9	If `ORACLE_HOME` and `SID` are standard, install the patch set in silent mode using the customized `EXL_10gR2.rsp` file that is contained in `SunOS_ora10204_scripts.tar.bz2`.	`cd /m1/incoming/oracle/Disk1`
		
		`ls response/EXL_10gR2.rsp`
		
		Check `ORACLE_HOME_NAME` in /oracle/app/oracle/oraInventory/ContentsXML/inventory.xml as follows:
		
		`grep -i HOME /oracle/app/oracle/oraInventory/ContentsXML/inventory.xml`
		
		Look for lines like:
		
		`<HOME NAME="OraDb10g_home1" LOC="/oracle/app/oracle/product/10.2.0/db_1" TYPE="O" IDX="1"/>`
		
		Extract the value of `ORACLE_HOME_NAME` that corresponds to your `ORACLE_HOME` location on the server and edit `response/EXL_10gR2.rsp` with this value.
		
		In the file, replace the value of `ORACLE_HOME_NAME` with the name identified in `/oracle/app/oracle/oraInventory/ContentsXML/inventory.xml` and ensure the value is included in double quotes such as `ORACLE_HOME_NAME="OraDb110g_home1"`
		
		Also, make sure that the `ORACLE_HOME` directory is edited globally in the `EXL_10gR2.rsp` to match what is on the server. A global substitution may be needed like the following:
		
		`vi response/EXL_10gR2.rsp`
		
		`s@/oracle/app/oracle/product/10.2.0/db_1@/oracle/app/oracle/product/10.2.0/your_local_directory@g`
		
		`./runInstaller -silent -responseFile <FULL_PATH_FILE_LOC>/Disk1/response/EXL_10gR2.rsp`

2.3.10	Check the log file for details.	`more $ORACLE_HOME/cfgtoollogs/dbua/logs/silent.log`

2.3.11	Be the `root` user and run.	`su - root`
		
		`/oracle/app/oracle/product/10.2.0/db_1/root.sh`

2.3.12	Be `oracle` and run the script to change the file permission.	`su - oracle`
		
		`cd $ORACLE_HOME/install`
		
		`./changePerm.sh`

Patch Oracle Database Client

For an application or a Web server that has the Oracle 10.2.0.x database client installed, apply the 10.2.0.4 patch set using steps similar to those described in **Install Oracle 10.2.0.4 Patch** starting on page **11**.

The major differences are:

- The previously-installed Oracle software would be the Oracle clients

- `ORACLE_HOME` usually points to `/oracle/app/oracle/product/10.2.0/client_1`

You need to verify and apply the OS patches on this server if they are not updated using the instructions in **Install OS Patch** starting on page **7**.

The specific procedures for applying the 10.2.0.4 patch set to the Oracle clients on the application or Web server are shown in **Table 7**.

Table 7. Database Client Commands

Step #	Description	Commands

2.4.1	Verify that the existing Oracle installation reflects the Oracle clients by looking at `/var/opt/oracle/oratab` and checking `ORACLE_HOME`.	`cat /var/opt/oracle/oratab`
		
		`VGER:/oracle/app/oracle/product/10.2.0/client_1:N`
		
		`*:/oracle/app/oracle/product/10.2.0/db_1:N`
		
		`echo $ORACLE_HOME`
		
		Should be `/oracle/app/oracle/product/10.2.0/client_1`

2.4.2	You should have also downloaded or transferred three standard Oracle 10.2.0.4 patch packages onto this server and put in a location.	`<FILEDIR>`
		
		`SunOS_ora10204_scripts.tar.bz2`
		`SunOS_patches_ora10204.tar.bz2`
		
		`p6810189_10204_Solaris-64.zip`

2.4.3	Ensure voyager services are stopped. If they are not, stop all of them.	`Su - root`
		
		`/etc/init.d/voyager stop`
		
		`ps -ef
			grep voyager`

2.4.4	If this server is verified to have the Oracle clients installed, apply the OS patches following the instructions in the previous section with the `root` privilege.	See **Preinstallation Check** on page **6**, 1.2.3 - 1.2.5, and **Install OS Patch** on page **7**, 1.3.1 - 1.3.4.
2.4.5	Be `oracle` to run the oracle patch.	`su - oracle`

Table 7. Database Client Commands

Step #	Description	Commands

2.4.6	Verify that the Oracle environment variables are properly set. If the ORA_NLS10 value is not set or not set correctly, set it to the correct path.	`echo $ORACLE_HOME $ORACLE_SID $ORA_NLS10`
		
		`ORACLE_HOME=/oracle/app/oracle/ product/10.2.0/client_1`
		
		`ORACLE_SID=VGER`
		
		`ORA_NLS10=/oracle/app/oracle/product/ 10.2.0/client_1/nls/data`
		
		`export ORA_NLS10`

2.4.7	**NOTE:** If `ORACLE_HOME` on the application server is not in the standard location or `ORACLE_SID` is not `VGER`, apply the patch interactively.	Search on `http://metalink.oracle.com` for: *Oracle Database Patch Set Notes 10g Release 2 (10.2.0.4) Patch Set 3 for Solaris Operating System (SPARC 64-Bit)* (Patchset # 6810189)

Table 7. Database Client Commands

Step #	Description	Commands

2.4.8	If `ORACLE_HOME` and `SID` are standard, install the patch set in silent mode using the customized `EXL_10gR2.rsp` file contained in `SunOS_ora10204_scripts.tar.bz2`.	`su - oracle`
		
		`cd /m1/incoming/oracle/Disk1`
		
		`ls response/EXL_10gR2.rsp`
		
		Check ORACLE_HOME_NAME in `/oracle/app/oracle/oraInventory/ContentsXML/inventory.xml` as follows:
		
		`grep -i HOME /oracle/app/oracle/oraInventory/ContentsXML/inventory.xml`
		
		Look for lines like:
		
		`<HOME NAME="OraClient10g_home1" LOC="/oracle/app/oracle/product/10.2.0/client_1"TYPE="O" IDX="1"/>`
		
		Extract the value of `ORACLE_HOME_NAME` that corresponds to your `ORACLE_HOME` location on the server and edit the `response/EXL_10gR2.rsp` file with this value.
		
		In the file, replace the value of `ORACLE_HOME_NAME` with the name identified in `/oracle/app/oracle/oraInventory/ContentsXML/inventory.xml` and ensure that the value is included in double quotes such as `ORACLE_HOME_NAME="OraClient10g_home1"`.
		
		Also, make sure that the `ORACLE_HOME` directory is edited globally in the `EXL_10gR2.rsp` file to match what is on the server. You may need a global substitution like:
		
		`vi response/EXL_10gR2.rsp`
		
		`s@/oracle/app/oracle/product/10.2.0/db_1@/oracle/app/oracle/product/10.2.0/client_1@g`
		
		`./runInstaller -silent -responseFile`
		
		`<FULL_PATH_FILE_LOC>/Disk1/response/`
		
		`EXL_10gR2.rsp`

2.4.9	Check the session log file in `/oracle/app/oracle/oraInventory/logs` for running details.	`more $ORACLE_HOME/cfgtoollogs/dbua/logs/`
		
		`silent.log`

Table 7. Database Client Commands

Step #	Description	Commands

2.4.10	Be the `root` user and run `root.sh` at the prompt.	`su - root`
		
		`/oracle/app/oracle/product/10.2.0/`
		`db_1/root.sh`

2.4.11	Check `libocijdbc10.so`.	`ls -l $ORACLE_HOME/dbjava/lib/`
		`libocijdbc10.so`
		
		`ls -l $ORACLE_HOME/lib/ libocijdbc10.so`
		
		`ls -l $ORACLE_HOME/dbjava/lib32/`
		`libocijdbc10.so`
		
		`ls -l $ORACLE_HOME/lib32/`
		`libocijdbc10.so`

2.4.12	Update `libocijdbc10.so` only if those in `$ORACLE_HOME/lib\|lib32` are not updated or have a date older than those in `$ORACLE_HOME/dbjava/lib|lib32`.	`cp -p $ORACLE_HOME/dbjava/lib/`
		`libocijdbc10.so $ORACLE_HOME/lib/`
		
		`cp -p $ORACLE_HOME/dbjava/lib32/`
		`libocijdbc10.so $ORACLE_HOME/lib32/`

2.4.13	Be `oracle` and run the script to change the file permission.	`su - oracle`
		
		`cd $ORACLE_HOME/install`
		
		`./changePerm.sh`

2.4.14	Check the configuration files in `$ORACLE_HOME/network/admin` and ensure they are properly installed, configured, and/or updated.	`cd $ORACLE_HOME/network/admin`
		
		`vi tnsname.ora`
		`vi sqlnet.ora`

2.4.15	Pause. Once the oracle database upgrade is complete on the Oracle database server and Oracle service becomes available, test the Oracle database connection from the application server that has the Oracle clients installed/patched as the user `oracle` and `voyager`.	`su - oracle`
		
		`sqlplus xxxdb/Xxxxdb@VGER`
		
		`su - voyager`
		
		`sqlplus xxxdb/Xxxxdb@VGER`

Upgrade Oracle Database to 10.2.0.4

After the patch set is installed, the Oracle 10.2.0.3 or earlier 10.2.0.x database needs to be upgraded to 10.2.0.4. Use the manual approach to complete this task.

Table 8. Upgrade Database Commands

Step #	Description	Commands
2.5.1	Be sure the Oracle database and Listener services are not running. If yes, stop it completely.	`su - oracle` `ps -ef	grep oracle` `lsnrctl stop` `sqlplus / as sysdba` `shutdown immediate` `quit`

2.5.2	`Verify all oracle environment variables are properly set and, especially, ensure that ORA_NLS10 is in the correct path if it is set.`	`echo $ORACLE_HOME $ORACLE_SID $ORA_NLS10`
		`ORACLE_HOME=/oracle/app/ oracle/product/10.2.0/db_1`
		`ORACLE_SID=VGER`
		`ORA_NLS10=/oracle/app/ oracle/product/10.2.0/ db_1/nls/data`

2.5.3	Run the Pre-Upgrade Information Tool.	`sqlplus / as sysdba`
		`SQL> startup upgrade`
		`SQL> spool upgrade_info.log`
		`SQL> @?/rdbms/admin/ utlu102i.sql`
		`SQL> spool off`
		`SQL> Shutdown immediate`
		<Then look for the log>

2.5.4	Check the output of of the Pre-Upgrade Information Tool in the `upgrade_info.log`. You should make adjustments or fix invalid objects as warnings indicate.	`more upgrade_info.log`

2.5.5	For a single instance, start the Listener and logon to the database via sqlplus as the `sys` user.	`lsnrctl start`
		`sqlplus /nolog`
		`connect / as sysdba`

2.5.6	Startup the database in upgrade mode and run the upgrade script.	`SQL> startup upgrade`
		`SQL> spool patch.log`
		`SQL> @?/rdbms/admin/ catupgrd.sql`
		`SQL> spool off`

Table 8. Upgrade Database Commands

Step #	Description	Commands
2.5.7	Review the `patch.log` file for errors and inspect the list of components that are displayed at the end of the `catupgrd.sql` script that provides the version and status of each server component in the database.	`more patch.log`
2.5.8	Restart the database.	`shutdown immediate` `startup`

2.5.9	Run the `utlrp.sql script` to recompile all invalid PL/SQL packages.	`SQL> @?/rdbms/admin/`
		`utlrp.sql`
		
		`SELECT count(*) FROM`
		`dba_objects WHERE`
		`status='INVALID';`
		
		`SELECT distinct`
		`object_name FROM`
		`dba_objects WHERE`
		`status='INVALID';`

2..5.10	Run the following command to check the status of all the components after upgrade.	`SQL> select comp_name,`
		`version, status from`
		`sys.dba_registry;`
		
		`select open_mode from`
		`v$database;`
		
		`select status from`
		`v$instance;`

Start Up the Oracle and Listener

Table 9. Start-up Commands

Step #	Description	Commands

2.6.1	Ensure oracle's `.profile` is updated and all variables are set correctly.
	
	Make sure `ORA_NLS10` is in the correct path.
		`vi oracle_login_home/`
		`.profile`
		
		`ORA_NLS10=/oracle/app/`
		`oracle/product/10.2.0/`
		`db_1/nls/data`

Table 9. Start-up Commands

Step #	Description	Commands

2.6.2	Start up Oracle as `oracle` in various ways to ensure that everything works properly.	`su - oracle`
		`sqlplus / as sysdba`
		`startup`
		`shutdown immediate`
		`quit`
		`cd $ORACLE_HOME/bin`
		`lsnrctl stop`
		`dbshut`
		`lsnrctl start`
		`dbstart`

2.6.3	Start up Oracle as the `root` user using the system script.	`su - root`
		`/etc/init.d/dbora stop`
		`/etc/init.d/dbora start`
		`ps -ef
			grep oracle`

Optionally after a successful upgrade and everything is verified to be running correctly, you might manually remove the Oracle 10.2.0.4 patch software from the directory where the patch files reside to free up the disk space on the server.