

CAPITA



Oracle 12.1.0.2 Installation and Database Upgrade

last updated for the Autumn 2016 release



Customer Advice

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You can log a call with the Service Desk via the Customer Service tool available on [My Account](#).

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Please ensure that you include the document name, version and aspect of documentation on which you are commenting.

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01 / Overview

Purpose

As a result of CCS's technology change, the Oracle database software platform will be migrating from the current versions of Oracle 11.2.0.4 to Oracle 12.1.0.2. The main reasons for the changes are PSN compliance and to ensure One continues to test against an up-to-date and supported version of Oracle.

IMPORTANT NOTE: For the One Spring 2016 Release (3.59) and the One Summer 2016 Release (3.60), Capita will support both Oracle 11.2.0.4 64-bit and 12.1.0.2 64-bit. From the One Autumn 2016 Release (3.61), Oracle 11.2.0.4 will not be tested by Capita and 12.1.0.2 64-bit will become the required standard Oracle version.

The following list details the supported version of Oracle for each version of the One software.

3.57 - 3.58 Oracle 11.2.0.4 only

3.59 - 3.60 Oracle 11.2.0.4 & 12.1.0.2

3.61 - Oracle 12.1.0.2 only.

You must be on Oracle 12.1.0.2 to upgrade to the One Autumn 2016 Release (3.61).

Authorities that purchase their Oracle license from Capita One can contact the Service Desk to request the Oracle media. Authorities that purchase their Oracle license from another supplier will need to contact them to request the Oracle media or download the media via their oracle support accounts.

Overview and Scope

This is a guidance document only, its purpose is not a step by step guide but to support your Oracle DBA to understand what is required within the One database.

Capita One's tested platform for the Oracle 12c database server is Windows Server 2012. Authorities using other operating systems for their Oracle database must ensure it is a fully supported platform by Oracle.

Capita One advises our customers to commission a new Oracle server running Windows Server 2012 for the upgrade to Oracle 12.1.0.2. Windows Server 2008 is not tested against Oracle 12.1.0.2. Capita One does not recommend that existing Oracle servers are upgraded from Server 2008 to Server 2012.

The Oracle 12.1.0.2 database upgrade should be performed by an Oracle DBA on a non-production system and thorough testing should be carried out and signed off before production databases are upgraded.

Capita One's tested method of upgrading to 12.1.0.2 is by using the Oracle Datapump export / import method against a new database.

NOTE: Customers who would like One Technical Services to carry out the Oracle 12.1.0.2 upgrade can request this by sending in a work request form to onetechservices@capita.co.uk.

Images used throughout this guide are examples only.

Prerequisites

- Newly commissioned Windows Server 2012 server meeting the OTRA specifications
- Logon account for Oracle server with admin rights (to install software).
- Oracle 11.2.0.4 databases need to be on the One Spring 2016 Release (3.59)
- Oracle 12.1.0.2 for Windows 64-bit software
- Oracle 12.1.0.2 client media (32-bit and 64-bit) available for installation on the mid-tier servers
- Firewall rules to allow a connection from the mid-tier environment to the new Oracle 12 database server. (typically port 1521).

IMPORTANT NOTE: *In the processes described below, you must ensure that you use the version of DBManager corresponding to the version of your One database, e.g. if your database is at the One Summer 2016 Release (3.60), you must ensure you are running the DBManager version from the 3.60 release media. Oracle 12.1.0.2 is tested against the One Spring 2016 Release (3.59) onwards.*

02 / Installation and Upgrade

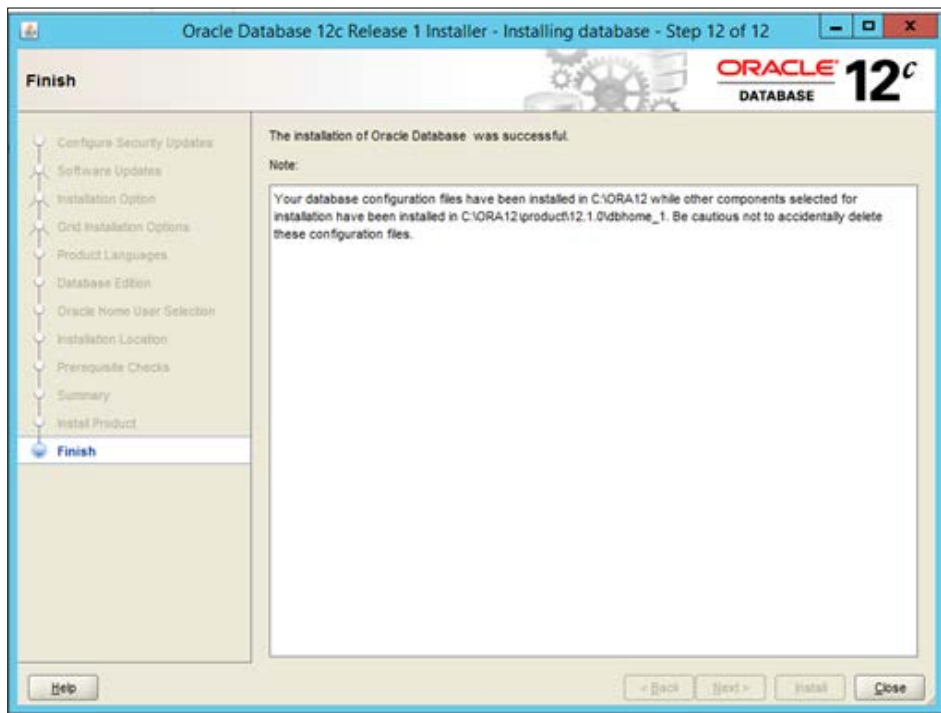
Oracle 12.1.0.2 Software Installation

You must make sure that the user logged in running the installation has administrator privileges.

Oracle recommend using a local user account with restricted permissions to administer the Oracle home; the Oracle 12.1.0.2 installation can be used to create this account for you.

1. Unzip all the zip files into the same location.
2. From the 'database' folder double click the setup.exe.
3. Select the following options during setup:
 - Install database software only
 - Single instance database installation
 - English and English (United Kingdom) for languages
 - Standard Edition 2 unless the authority has purchased an Oracle Enterprise license
 - Configure the user account as required, creating one if necessary
 - Choose your Oracle home (ideally not where your OS is installed)
 - Create an appropriately named listener for the Oracle 12 database
 - Make sure you meet the pre-requisites for the installation. Do not proceed until all have succeeded.

Upon a successful installation the below will be displayed:



Pre upgrade actions

The migration over to Oracle 12.1.0.2 requires changes on the existing Oracle 11.2.0.4 database and on the new Oracle 12.1.0.2 database.

You should ensure that access to the system has been disabled for the duration of the Oracle 12.1.0.2 migration process.

On the existing Oracle 11.2.0.4 server:

1. Stop all connections/access and take a cold backup of the database as a recovery point.
2. Make a note of any invalid objects and resolve them if possible.
3. Using an appropriate user, take a Datapump Export of the following Oracle Schemas:
 - ONESYSTEM
 - EMSPROCS
 - EMS_CONNECTION_DATA
 - ONETEST
 - ONETEST_GIS
 - ONETEST_IYSS
 - ONETEST_PUBLIC
 - ONETEST_REGISTERED
 - PANOPTIC.
4. Review the export log for errors
5. Copy the export dump file over to the Oracle 12 server.

IMPORTANT NOTE: *The schema names within your Capita One database may differ from the above example.*

On the Oracle 12 server:

1. Using the database configuration utility for Oracle 12, create a new custom database in an appropriate directory. The database should not include datafiles and should not be a pluggable/container database.

If you require Archive logging/Enterprise manager express, these options can be configured.
2. Name this database to reflect the existing One database, eg: ONETEST.
3. Configure the TNSNames and Listener appropriately and confirm you can connect to the new database.
4. Verify parameter locations are appropriate.
5. Create the tablespace structure for the One Database.
6. Using an appropriate user, import the Datapump dumpfile from Oracle 11.2.0.4 in to Oracle 12.1.0.2.
7. Review the import log for errors
8. Run the following grants against the new database (where onemast is your dataset user):
 - Grant execute on DBMS_LOCK to public
 - Grant select on DBA_JOBS_RUNNING to public
 - Grant create any directory to EMS_CONNECTION_DATA
 - Grant user onemast quote unlimited on ONE_XML.
9. Make a note of any invalid objects and resolve if possible.

10. Use DBmanager 3.59 to verify the system and dataset.
11. Review and amend the tablespace settings as required.

IMPORTANT NOTE: *If required, enable archiving and switch it on after the upgrade.
Remember to reconfigure any database backup solutions include the new Oracle 12 database server.*

Post-Upgrade Actions

1. On the Oracle 12 server, under **Services** ensure the listener's startup type is set to **Automatic**.
2. Ensure you can log into Enterprise Manager Express.
3. Check the database parameters for references to the older Oracle base folder. If there are any, update the parameters to refer to the new Oracle base folder.
4. Turn archive log mode back on if it was enabled before the upgrade.
5. Take a cold backup of database to create a restore point.
6. Remove references to the database from the previous Oracle server.
7. If you do not want file imports to go to the current location (i.e. if the current location is on the Oracle 11 server), create a physical directory on the Oracle server for the UTL directory for file imports.
8. Exit out of SQLPLUS as the SYS user and login as the DATASET user.
9. Run the following command replacing [B2BIMPORT_ORACLE_DIR] with the 'Oracle Server's Path for the Import directory' as defined in the One v3 Client via **Tools | System Administration | FTP/Copy Setup** tab:


```
CREATE OR REPLACE DIRECTORY B2BIMPORT_ORACLE_DIR AS '[B2BIMPORT_ORACLE_DIR]';
```
10. Run the following commands:


```
GRANT READ ON DIRECTORY B2BIMPORT_ORACLE_DIR TO EMS_CONNECTION_DATA;
GRANT WRITE ON DIRECTORY B2BIMPORT_ORACLE_DIR TO EMS_CONNECTION_DATA;
GRANT EXECUTE ON DIRECTORY B2BIMPORT_ORACLE_DIR TO EMS_CONNECTION_DATA;
Commit;
```
11. Ensure that the user profile in the 12.1.0.2 database will not lock out the One schema users.
12. Ensure that any database scheduled tasks are added to 12.1.0.2, e.g. any IYSS tasks.
13. Verify the database with DBmanager 3.59.
14. Ensure you have Installed 12.1.0.2 clients on the mid-tier servers.
15. Populate the TNSNames for the mid-tier clients to allow connection to the Oracle server.
16. Update the One v3 and v4 connections to point to the new Oracle 12 database instance.
17. Raise a service request with the Capita One service desk to get the web server TNSNames pointed to the new server.

Technical Services

Technical Services can carry out the above work for you (as a chargeable service). Please contact: onetechnicalservices@capita.co.uk for more details.

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