Genesys Quality Management 8.0

Using Oracle with Genesys Quality Management

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Chapter

1 Introduction

This chapter provides an overview of this document, identifies the primary audience, introduces document conventions, and lists related reference information:

Document Purpose

This document covers the additional or differing processes in Genesys Quality Management installation and maintenance that are required when using an Oracle database instead of (or in addition to) the embedded PostgreSQL database provided by Genesys.

This document does not cover the installation, use and administration of Oracle databases – please refer to Oracle user documentation for this information.

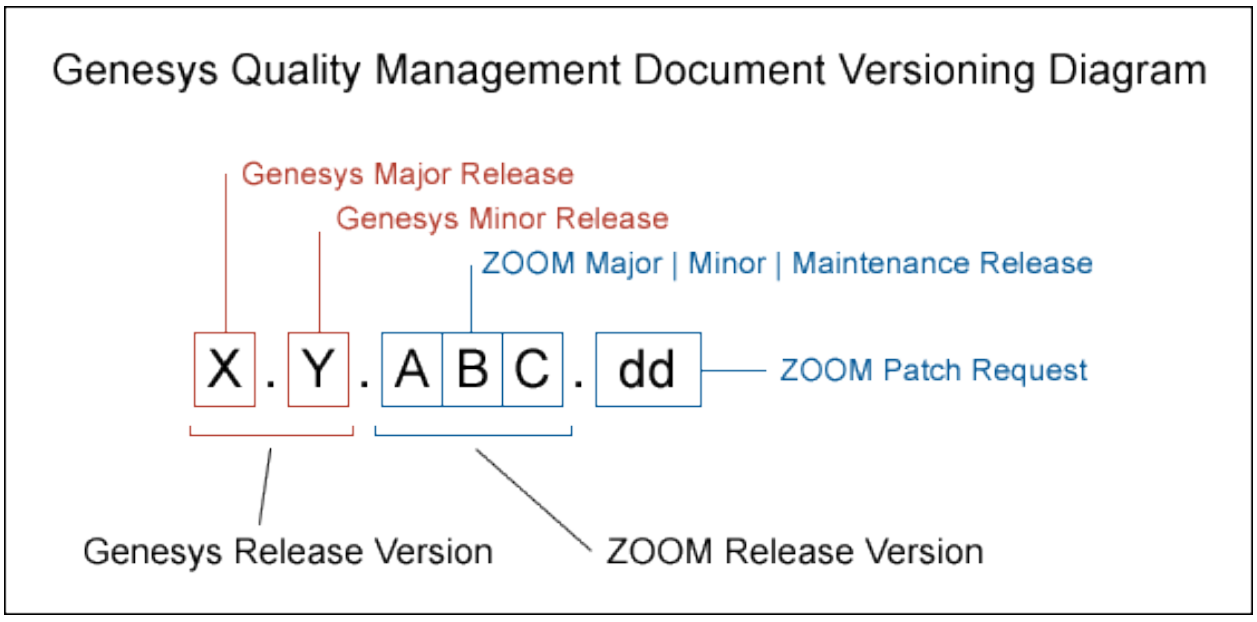
Audience

This document is intended for system engineers and administrators responsible for installation and upgrading of Genesys Quality Management.

Document Version

The Genesys Quality Management products are provided by a partnership between Genesys and ZOOM International. The Genesys Quality Management products use a versioning format that represents a combination/joining of the versions used by these two separate entities. Although the Genesys Quality Management products and documentation use this combined versioning format, in much of the software and logs you will see the ZOOM versioning alone. You need to be aware of this, for example, when communicating with Technical Support.

The version for this document is based on the structure shown in the following diagram:



Related Documents

For more information about Genesys Call Recording please consult:

- *Genesys Quality Management 8.0 Installation Guide*
- *Genesys Quality Management 8.0 Upgrade Guide*
- *Genesys Call Recording 8.0 User Guide*
- *Genesys Call Recording 8.0 Administration Guide*
- *Genesys Quality Management 8.0 Planning Guide*

Conventions Used

Names of functions and buttons are in **bold**. Example: **Upload**

File names, file paths, command parameters and scripts launched from the command line are in `non-proportional font`.

```
Code is placed on gray background and bordered
```

Expected Knowledge

Readers of this document are expected to have the following skills or knowledge:

- Basic knowledge of the Genesys Call Recording system features and functionality
- Knowledge of Red Hat Enterprise Linux installation and configuration
- Administrative knowledge of Oracle database systems
- Unix system administration skills

Chapter

2 Overview

Genesys Quality Management 8.0.480 introduces support for Oracle databases in addition to the embedded PostgreSQL database supplied as part of the Genesys Quality Management installation. Oracle databases are more suitable for Genesys Quality Management installations requiring high throughput and performance (i.e. large numbers of call center agents and simultaneous calls), and will often be part of an enterprise database strategy, enabling more efficient corporate maintenance and backup procedures to be employed.

An Oracle database can be used as the only configured database (storing all system and call data), or it can be used in addition to the embedded PostgreSQL database for specific data, such as call information. These database mappings can be modified after Genesys Quality Management installation, although a system restart will be required after each change.
A typical use case for mixed database deployments is a larger cluster scenario, where multiple smaller distributed recorder installations (using embedded PostgreSQL databases) provide call data to a central Oracle-powered Replay Server.

This Guide covers two main operations: deploying Genesys Quality Management 8.0.480 and above with Oracle, and migrating existing data between PostgreSQL and Oracle.

All Oracle-specific operations such as database installation, setup and maintenance are the responsibility of the customer; Genesys will not provide direct support for maintaining Oracle databases as we do for the embedded PostgreSQL database.

Supported Oracle Versions

Genesys Quality Management 8.0.480 supports Oracle database version 11g and above.

Chapter

3 Genesys Call Recording Installation

This section describes the additional steps that are required during Genesys Quality Management installation in order to use an Oracle database. For a detailed guide to installing Genesys Quality Management, please refer to the *Genesys Quality Management 8.0.480 Installation Guide*.

The information in this chapter is divided into the following topics:

Pre-Install Tasks

Before beginning the Genesys Quality Management installation, ensure you complete the following tasks:

- Set up access and credentials (tablespace (optional) and **administrative database username & password** for Genesys Quality Management) in a running Oracle database instance. The administrative username and password will be needed during installation for the `create_schema.sh` script

- For any Oracle clients (e.g. Oracle SQL Developer) that you will use with the Genesys Quality Management database schema, ensure that their host OS has the **NLS_LANG** property set to **AL32UTF8**, which can be achieved as follows:
  - On a Unix-based host OS, ensure the following system variable is defined:
    ```
    NLS_LANG= AMERICAN_AMERICA.AL32UTF8
    ```
    [See the next section for an example of how to achieve this in CentOS/RedHat Linux]

  - On a Windows-based host OS, ensure the following registry key is set:
    `"NLS_LANG"=" AMERICAN_AMERICA.AL32UTF8"`
    This registry key is in the Oracle HOME registry branch, which can be found at the following locations for Oracle 11g:
    either:
    `HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE\KEY_OraClient11g_home1`
    or:
    `HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\ORACLE\KEY_OraClient11g_home1`

Installation and Setup

This guide assumes a new installation of Genesys Quality Management 8.0.480. Earlier versions of Genesys Quality Management must be upgraded to Genesys Quality Management 8.0.480 using the upgrade wizard or manual upgrade methods before the following steps can be attempted (see the *Genesys Quality Management Upgrade Guide*).

A basic overview of installation and setup is as follows – please refer to the *Genesys Quality Management Installation Guide* for details of the standard installation procedure:

Run Standard Installer and Setup

- Start the installer from the CD / ISO and install the required Operating System (RedHat) as normal
- After OS installation and a system restart, log in as root administrator and start Genesys Quality Management setup (`/opt/callrec/bin/callrec-setup`)

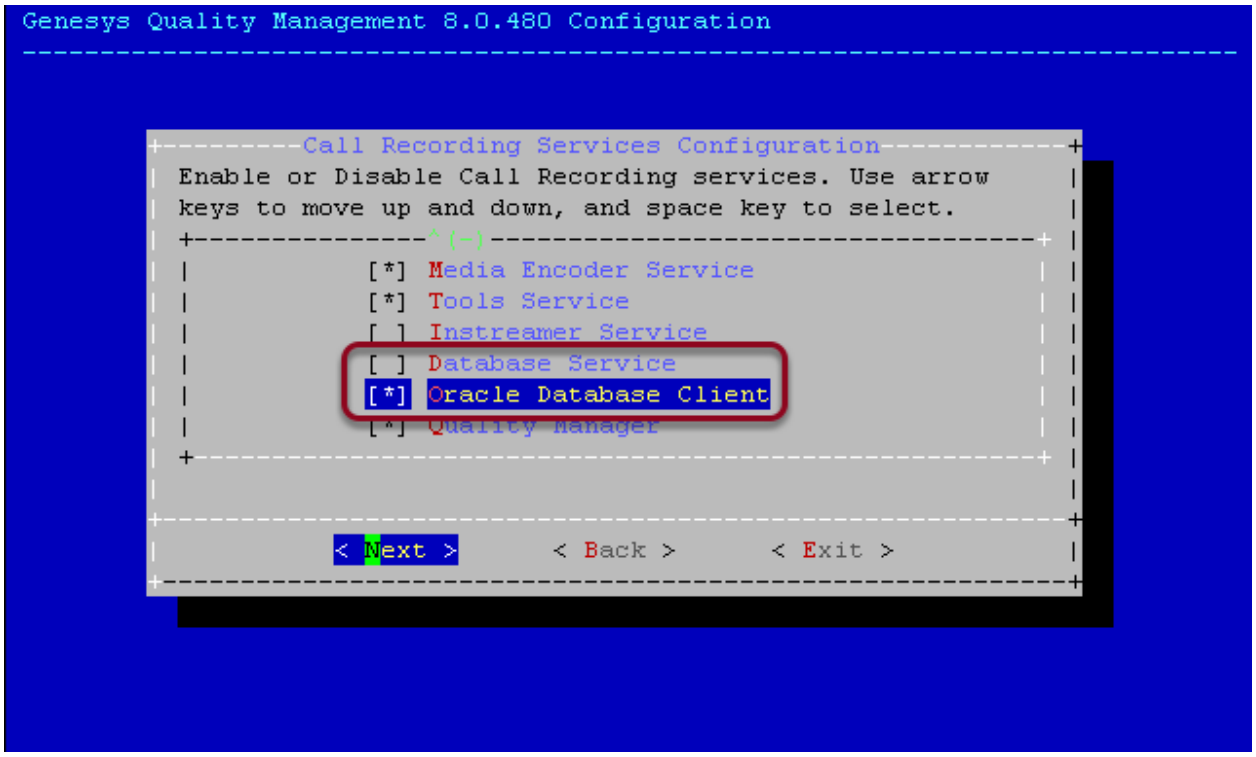


Figure 1: Selecting the Oracle Database Client

- On the services screen, select **Oracle Database Client** and unselect **Database Service** (the embedded PostgreSQL database)

Important! Using both embedded PostgreSQL and Oracle

If you wish to install and set up the embedded PostgreSQL database in addition to Oracle, you must run Genesys Quality Management setup twice; the first time selecting Database Service, and the second time selecting Oracle Database Client as described here.

After installation is complete, database pools, such as call data and Quality Manager data, can then be assigned to the different databases as appropriate – see Database Pool Mapping.

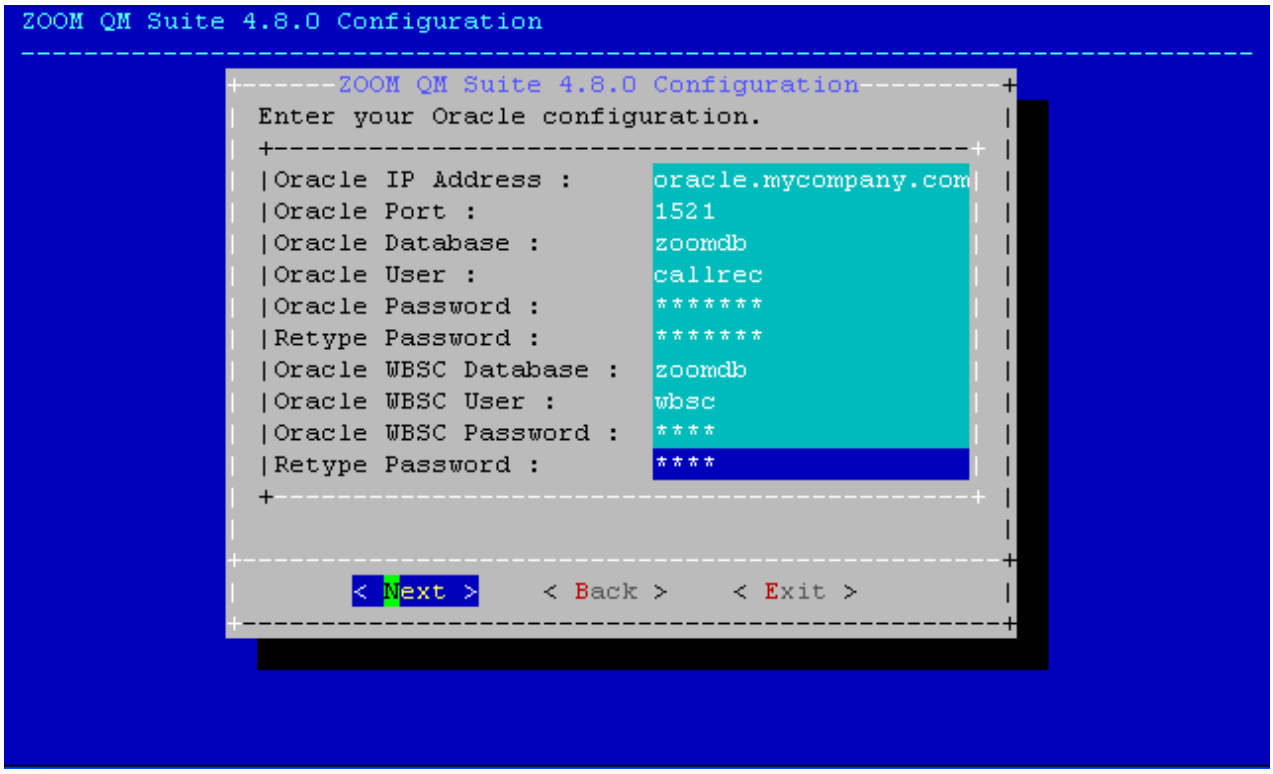


Figure 2: Oracle database configuration

- Enter the Oracle database credentials as follows:
  a. **Oracle IP Address** (or hostname): e.g. oracle.mycompany.com
  b. **Oracle Port**: default is 1521
  c. **Oracle Database** (or service name for Call Recording schema): e.g. zoomdb
  d. **Oracle User** (Call Recording database user): e.g. callrec
  e. **Oracle Password** (Call Recording user password): default: callrec
  f. **Oracle WBSC Database** (or service name for Quality Manager schema): e.g. zoomdb
  g. **Oracle WBSC User** (Quality Manager database user): e.g. wbsc
  h. **Oracle WBSC Password** (Quality Manager user password): default: wbsc

Note: Synonymous terms

Within the Call Recording product, the term ‘callrec’ will often be seen, which is synonymous with this product.

Similarly, the terms ‘scorecard’ and ‘wbsc’ are synonymous with the Quality Manager product, and ‘screenrec’ is synonymous with the Screen Capture product.

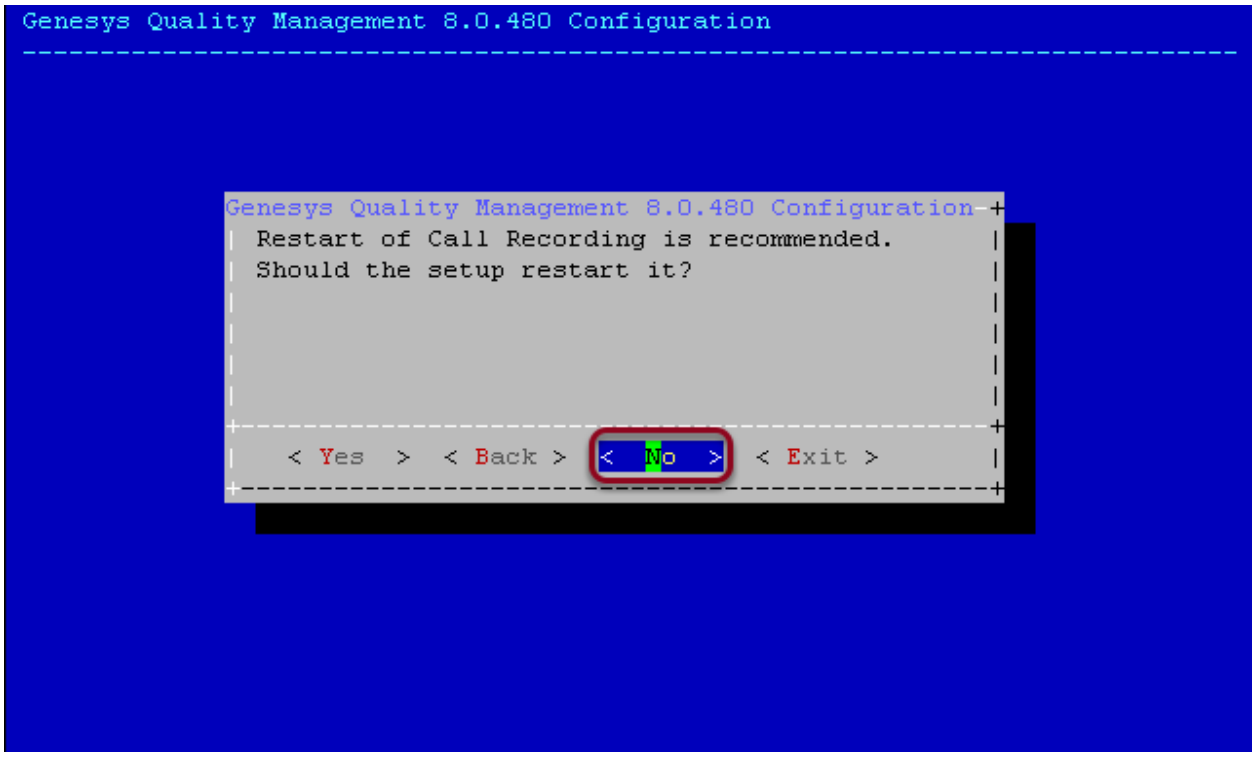


Figure 3: Do not restart Call Recording

- On the screen asking if you wish to restart Call Recording after completing Call Recording setup, make sure you select **No**
- Complete the Genesys Quality Management setup

Set System Variables

- After Genesys Quality Management setup is complete, ensure the system variable NLS_LANG is defined correctly for correct Oracle Client character-set selection:
  a. Run the following command:

```
env | grep NLS_LANG

[output:]
NLS_LANG=AMERICAN_AMERICA.AL32UTF8
```

  b. If the command output is not the same as the above, run the following commands to set the NLS_LANG system variable:

```
echo >> ~/.bash_profile
"NLS_LANG=\"AMERICAN_AMERICA.AL32UTF8\""
echo >> ~/.bash_profile "export NLS_LANG"
source ~/.bash_profile
```

Install Call Recording and Quality Manager Schema

If you are configuring an Oracle connection for the first time, you now need to create the Call Recording and Quality Manager user schema (database tables, triggers, etc.) in your Oracle database. This is achieved in one operation by using a schema creation script, in the `/opt/callrec/db_oracle_scripts/scripts` directory.

The script is available in two versions; the `create_schema.sh` script is a Linux shell script, while the `create_schema.bat` script is a Windows DOS script. In either case, the script must be run on a host server that has the Oracle 11g database client installed. This software is automatically included as part of the Genesys Quality Management installation process, so the `create_schemas.sh` script can be run on the Genesys Quality Management server, as described here.

The script's usage and parameters are as follows:

```
sh create_schemas.sh [system_user] [system_password] [database_name]
[callrec_schema_name] [wbsc_schema_name] [options]
```

The following parameters are required (you can also type:
`sh create_schema.sh` [without parameters] to view this parameter list):

- **`system_user`**: Username of database administrator account (see Pre-Install Tasks above)
- **`system_password`**: Password of database administrator account
- **`database_name`**: Database name, in the form:
  //hostname.domain.com:port/servicename
  e.g. //oracle.mycompany.com:1521/zoomdb
- **`callrec_schema_name`**: Call Recording schema user entered as **Oracle User** above.
- **`wbsc_schema_name`**: Quality Manager schema user entered as **Oracle WBSC User** above.

The following options can also be specified (not required in a standard installation):

`--tbscallrec` *`value`*: name of tablespace used for Call Recording (default: `USERS`)

`--tbswbsc` *`value`*: name of tablespace used for Quality Manager (default: `USERS`)

`--temptbs` *`value`*: name of tablespace for temporary files (default: `TEMP`)

`--data` *`Y`* `[or]` *`N`*: create default data: user `admin`, roles, etc. (default: `Y`)
This should normally be set to `Y` for new installations – the only case where the data is not required is when preparing a new database for migration of existing data.

`--create_admin` *`Y`* `[or]` *`N`*: create the user `callrec_wbsc_admin` with administrative rights for the Call Recording and Quality Manager schema (default: `N`).
This user has the following default credentials:
username: `callrec_wbsc_admin`
password: `adm`

See the following example:

```
cd /opt/callrec/db_oracle_scripts/scripts
sh create_schemas.sh system sys //oracle.mycompany.com:1521/zoomdb
callrec wbsc --tbscallrec USERS --tbswbsc USERS --temptbs TEMP –-data Y --
create_admin Y
```

Optional: Update Oracle Schema

- If the passwords you specified during Call Recording setup were not the default values, you will now need to reset the passwords of the new Call Recording and Quality Manager schema users created by the `create_schema.sh` script.
  Please consult your Oracle documentation for how to reset database user passwords.

Start Call Recording

- After schema installation is complete, start Call Recording at the command line, ensuring that the Call Recording Core service starts (indicating correct database connection):

  `service callrec start`

  Note that some other services may not start since they are not yet fully configured or await license activation – see the *Genesys Quality Management 8.0.480 Installation Guide* for more details.

Installation and basic setup are now complete, so you can begin to configure Call Recording and Quality Manager via their respective web interfaces (see the *Genesys Call Recording Administration Guide* and *Genesys Quality Manager Administration Guide*).

Troubleshooting Database Parameters

If there are any issues in starting up, check the database parameters in `/opt/callrec/etc/core.xml`, and the error log at `/opt/callrec/logs/error.log`.

After completing Genesys Quality Management setup with the Oracle Database Client service activated, the `core.xml` file should contain database pool configuration entries similar to the following (here with the default entries used earlier):

```
    <Pool name="callrec"
poolType="cz.zoom.util.db.pool.ibatis.IbatisPool">
      <Url dbName="zoomdb" host="oracle.mycompany.com" port="1521"/>
      <Login password="callrec" userName="callrec"/>
      <Connections init="1" max="20" timeOut="5"/>
      <SpecificSetting>
        <Value
name="sqlMapClass">cz.zoom.callrec.core.callstorage.pojo.oracle.S
qlMap</Value>
      </SpecificSetting>
    </Pool>
```

```
    <Pool name="Maintenance"
poolType="cz.zoom.util.db.pool.ibatis.IbatisPool">
      <Url dbName="zoomdb" host="oracle.mycompany.com" port="1521"/>
      <Login password="callrec" userName="callrec"/>
      <Connections init="1" max="20" timeOut="5"/>
      <SpecificSetting>
        <Value
name="sqlMapClass">cz.zoom.callrec.tools.bean.oracle.SqlMap</Valu
e>
      </SpecificSetting>
    </Pool>
    <Pool name="keymanager"
poolType="cz.zoom.util.db.pool.ibatis.IbatisPool">
      <Url dbName="zoomdb" host="oracle.mycompany.com" port="1521"/>
      <Login password="callrec" userName="callrec"/>
      <Connections init="1" max="20" timeOut="5"/>
      <SpecificSetting>
        <Value
name="sqlMapClass">cz.zoom.callrec.keyman.impl.pojo.oracle.SqlMap
</Value>
      </SpecificSetting>
    </Pool>
    <Pool name="scorecard"
poolType="cz.zoom.util.db.pool.ibatis.IbatisPool">
      <Url dbName="zoomdb" host="oracle.mycompany.com" port="1521"/>
      <Login password="wbsc" userName="wbsc"/>
      <Connections init="1" max="20" timeOut="5"/>
      <SpecificSetting>
        <Value
name="sqlMapClass">cz.zoom.scorecard.business.data.xmlOracle.SqlMap<
/Value>
      </SpecificSetting>
    </Pool>
```

Modify the `dbName`, `host`, `password` and `username` properties (for all occurrences) if required, then restart Call Recording:

```
service callrec restart
```

If you are still having issues with connections between Call Recording or Quality Manager to your Oracle database instance, please contact Genesys Support.

Chapter

4 Database Migration

This section covers the scripts and procedures necessary to migrate Call Recording and Quality Manager database data between the embedded PostgreSQL database and an external Oracle database; both PostgreSQL to Oracle and Oracle to PostgreSQL migration can be performed.

For customers with existing Genesys Quality Management deployments using PostgreSQL, the pattern of deployment and migration depends on the current version and products you have installed, as follows.

The information in this chapter is divided into the following topics:

Deployment and Migration Scenarios

The following scenarios illustrate the basic tasks necessary to accomplish a successful migration to an Oracle database for the given installed software versions. In every case, it is necessary to end up with a Genesys Quality Management 8.0.480 installation, in order to leverage the Oracle database.

Call Recording Only (8.0.46x, 8.0.47x)

- Create new 4.8 Installation with Oracle
- Upgrade existing Call Recording PostgreSQL database to latest minor version (using database scripts provided with official Call Recording ISO in `/opt/callrec/dbscripts/updates` directory)
- Perform Call Recording database migration of calls to 4.8 (using `/opt/callrec/bin/dbmigration` script included with the 4.8 installation, with a correctly configured `/opt/callrec/etc/migration.xml` file for PostgreSQL to Oracle migration)

Genesys Quality Management Call Recording (8.0.46x, 8.0.47x) + Quality Manager

- Create new 4.8 Installation with Oracle
- Upgrade existing Call Recording PostgreSQL database to latest minor version (using database scripts provided with official Call Recording ISO in `/opt/callrec/dbscripts/updates` directory)
- Perform Call Recording database migration of calls to 4.8 (using `/opt/callrec/bin/dbmigration` script included with the 4.8 installation)
- Upgrade existing Quality Manager PostgreSQL database to version 4.8 (using `/opt/callrec/bin/scmigration2` script in the 4.8 installation, with a correctly configured `/opt/callrec/etc/migration.xml` file for PostgreSQL to PostgreSQL migration)
- Perform Quality Manager database migration from PostgreSQL to Oracle (using `/opt/callrec/bin/scmigration2` script in the 4.8 installation, with a correctly configured `/opt/callrec/etc/migration.xml` file for PostgreSQL to Oracle migration)

Migration Requirements

The following information specifies the product and database version requirements for Call Recording and Quality Manager database migration.

Important! Quality Manager Migration

1. Quality Manager migration from PostgreSQL to Oracle requires a SOURCE installation of Genesys Quality Management 8.0.480 (or higher), due to schema incompatibilities with earlier database versions.

   For Quality Manager 8.0.46x – 8.0.47x migration to Oracle, it is therefore necessary to FIRST upgrade the earlier Genesys Quality Management version to Genesys Quality Management 8.0.480 (or higher) before attempting data migration.

   Please refer to the Genesys Quality Management 8.0.480 Upgrade Guide for the supported upgrade procedure.

2. Migrated Quality Manager evaluations will not be playable without separate (Call Recording) migration of the calls used in the evaluations.

Call Recording Database Migration

PostgreSQL to Oracle

Source database:
PostgreSQL database for an existing Call Recording 8.0.460 (or higher) installation (PostgreSQL 8.4 or higher is required)

Target database:
Empty Oracle 11g (or higher) database

Oracle to PostgreSQL

Source database:
Oracle: 11g (or higher) database for an existing Genesys Quality Management 8.0.480 (or higher) installation

Target database:
Empty PostgreSQL 8.4 (or higher) database

Quality Manager Database Migration

PostgreSQL to Oracle

Source database:
PostgreSQL database for an existing Genesys Quality Management 8.0.480 (or higher) installation

Target database:
Empty Oracle 11g (or higher) database

Oracle to PostgreSQL

Source database:
Oracle: 11g (or higher) database for an existing Genesys Quality Management 8.0.480 (or higher) installation

Target database:
Empty PostgreSQL 8.4 (or higher) database

Migration Overview

Before running the migration scripts, the target database must be empty; if any data does exist from an earlier migration, this is likely to be overwritten.

The following migration procedure is based on the migration of an existing Genesys Quality Management 8.0.480 installation with embedded PostgreSQL database to Oracle. A functional, empty Oracle database instance is assumed, with no pre-created Call Recording or Quality Manager schema.

The migration scripts create two separate Oracle schema for Call Recording and Quality Manager.

The entire migration process is performed at the command line, logged in as the root user with full permissions. A working knowledge of XML syntax is assumed.

Call Recording Migration

Edit the migration configuration XML file at `/opt/callrec/etc/migration.xml` as follows:

Target Database Pool

Within the `Database` node, create and insert a new database pool, representing the target ('to') database (in this case Oracle), using the following code (with values for `host`, `port`, `dbName`, `username`, `password` updated appropriately):

```
<Pool name="callrec49"
poolType="cz.zoom.util.db.pool.ibatis.IbatisPool">
  <Url host="oracle.mycompany.com" port="1521" dbName="zoomdb"/>
  <Login userName="callrec" password="callrec"/>
  <Connections max="20" init="1" timeOut="5"/>
  <SpecificSetting>
    <Value
name="sqlMapClass">cz.zoom.callrec.tools.migration.db.version48.orac
le.SqlMap</Value>
  </SpecificSetting>
</Pool>
```

Note that the `sqlMapClass` value must be correct, reflecting the correct version (version 48 = Call Recording database version 8.0.48x) and database driver (Oracle).

For PostgreSQL, this value would be:

`cz.zoom.callrec.tools.migration.db.version48.SqlMap`

Source Database Pool

Create and insert a second new database pool below the first, representing the source ('from') database (in this case PostgreSQL), using the following code (again with values for `host`, `port`, `dbName`, `username`, `password` updated appropriately):

```
<Pool name="callrec49source"
poolType="cz.zoom.util.db.pool.ibatis.IbatisPool">
  <Url host="localhost" port="5432" dbName="callrec"/>
  <Login userName="callrec" password="callrec"/>
  <Connections max="20" init="1" timeOut="5"/>
  <SpecificSetting>
    <Value
name="sqlMapClass">cz.zoom.callrec.tools.migration.db.version48.SqlM
ap</Value>
  </SpecificSetting>
</Pool>
```

Again, the `sqlMapClass` value must reflect the correct version and database driver.

For Oracle, this value would be the same as used for the earlier target pool, i.e.:

`cz.zoom.callrec.tools.migration.db.version48.oracle.SqlMap`

The pool names used above can differ, as long as they are unique and correctly referenced later.

Source and Target Assignment

Finally, the new source and target database pools need to be correctly assigned for the migration operation. This is achieved by adding the following two nodes in the `SpecifiedConfiguration` section:

Export Node

Within the first `Group` node (with `name` value set as `exports`) add the following `EqualGroup` node, ensuring the `poolName` value reflects the source database pool name you defined earlier:

```
<EqualGroup name="export">
  <Value name="name">version49source</Value>
  <Value name="dbPool">callrec49source</Value>
  <Value
name="class">cz.zoom.callrec.tools.migration.db.version48.ExportImpl
</Value>
</EqualGroup>
```

The `class` value should again represent the correct version (8.0.48x here) and database driver (PostgreSQL here). The Oracle 8.0.48x class value would be:

`cz.zoom.callrec.tools.migration.db.version48.oracle.ExportImpl`

The name value used (`version49source`) can be any permitted within XML syntax rules, and will be the export reference name used later when running the migration scripts.

Import Node

Similarly, within the second `Group` node (with `name` value set as `imports`) add the following `EqualGroup` node, ensuring the `poolName` value reflects the target database pool name you defined earlier:

```
<EqualGroup name="import">
  <Value name="name">version49</Value>
  <Value name="dbPool">callrec49</Value>
  <Value
name="class">cz.zoom.callrec.tools.migration.db.version48.oracle.Imp
ortImpl</Value>
</EqualGroup>
```

Once again, ensure the correct `class` value is used (the class here representing database version 8.0.48x for the Oracle driver). The equivalent value for the PostgreSQL 8.0.48x database driver would be:

`cz.zoom.callrec.tools.migration.db.version48.ImportImpl`

Run the Migration Script

After saving the `migration.xml` file, the Call Recording migration script can be run. This takes the following form:

```
/opt/callrec/bin/dbmigration [-config <config> | -configfile
<configfile>] [-countCRC] [-dryrun] [-export <name>] [-import
<name>] [-limit <limit>] [-logger <logger>] [-migrate <options>] [-
nobind]
```

The parameters and options are as follows:

`-config <`*`config`*`>`	URL to running configuration manager, e.g. `//localhost:30400/migration` Use this method OR `–configfile`
`-configfile <`*`configfile`*`>`	Use a configuration file, e.g. `/opt/callrec/etc/migration.xml` Use this method OR `–config`
`-countCRC`	Check and count the CRC for each file WARNING: this will heavily impair migration performance
`-dryrun`	Test mode - don't modify files or database. Displays all operations that will be performed.
`-export <`*`export`*`>`	Specify the export database configuration group e.g. `callrec49source`
`-help`	display usage help
`-import <`*`import`*`>`	Specify the import database configuration group e.g. `version49`
`-limit <`*`limit`*`>`	limit number of calls processed at one time. Default value: `1000`
`-logger <`*`logger`*`>`	log4j properties file to define the logging properties (doesn't exist by default) e.g. `/opt/callrec/etc/migration.log4j.properties` Similar to all Call Recording tool/script log4j parameters (see similar `xxxx.log4j.properties` files in the `/opt/callrec/etc/` directory)
`-migrate <`*`migrate`*`>`	What to migrate – select from the following relevant options: `callrec` – all Call Recording data `calls` – Call data `roles` – User roles
`-nobind`	Do not attempt to bind to the RMI registry. This option is only enabled in exceptional circumstances – normally it should be ignored. Default is to bind to RMI.

Sample (minimal)

```
/opt/callrec/bin/dbmigration -migrate callrec -export
version49source -import version49
```

It is recommended to try a test run of the script using the `-dryrun` option (see the parameters above), before attempting a 'real' data migration.

After running the 'real' migration, use an Oracle database administration tool, such as Oracle SQL Developer or TOAD, to verify that the migration has taken place.

Quality Manager Migration

Quality Manager migration configuration is very similar to the earlier Call Recording method. Quality Manager can either be migrated from/to the same Oracle database (but different schema) as Call Recording, or from/to a completely different Oracle database. In this case, the former default scenario is used, which migrates Quality Manager from an embedded PostgreSQL database to the same Oracle database as Call Recording (but different schema).

Once again, edit the migration configuration XML file at `/opt/callrec/etc/migration.xml` as follows:

Target Database Pool

Within the Database node, create and insert a new database pool, representing the target ('to') Quality Manager database (in this case Oracle), using the following code (with values for `host`, `port`, `dbName`, `username`, `password` updated appropriately):

```
<Pool name="scorecard49"
poolType="cz.zoom.util.db.pool.ibatis.IbatisPool">
  <Url host="oracle.mycompany.com" port="1521" dbName="zoomdb"/>
  <Login userName="wbsc" password="wbsc"/>
  <Connections max="20" init="1" timeOut="5"/>
  <SpecificSetting>
    <Value
name="sqlMapClass">cz.zoom.scorecard.business.data.xmlOracle.SqlMap<
/Value>
  </SpecificSetting>
</Pool>
```

Note that the `sqlMapClass` value must be correct (and is different to that for the Call Recording version).

For PostgreSQL, this value would be:
`cz.zoom.scorecard.business.data.SqlMap`

Source Database Pool

Create and insert a second new database pool below the first, representing the source ('from') Quality Manager database (in this case PostgreSQL), using the following code (again with values for `host`, `port`, `dbName`, `username`, `password` updated appropriately):

```
<Pool name="scorecard49source"
poolType="cz.zoom.util.db.pool.ibatis.IbatisPool">
  <Url host="localhost" port="5432" dbName="callrec"/>
  <Login userName="wbsc" password="wbsc"/>
  <Connections max="20" init="1" timeOut="5"/>
  <SpecificSetting>
    <Value
name="sqlMapClass">cz.zoom.scorecard.business.data.SqlMap</Value>
  </SpecificSetting>
</Pool>
```

Again, the `sqlMapClass` value must be correct as in the sample.

For Oracle, this value would be the same as used for the earlier target pool, i.e.:
`cz.zoom.scorecard.business.data.xmlOracle.SqlMap`

The pool names used above can differ, as long as they are unique and correctly referenced later.

Source and Target Assignment

Finally, as with the Call Recording configuration, the new Quality Manager source and target database pools need to be correctly assigned for the migration operation. However, unlike the earlier Call Recording method, this time a complete new `SpecifiedConfiguration` node must be created within the `Configuration` node, which will then contain our export and import nodes.

For clarity, the whole new `SpecifiedConfiguration` node is shown below, which should be added after the first (Call Recording) `SpecifiedConfiguration` node (with name value migration), but still within the `Configuration` node.

```
<SpecifiedConfiguration name="scorecardMigration">
  <Group name="exports">
    <EqualGroup name="export" egName="version49source">
      <Value name="dbPool">scorecard49source</Value>
      <Value
name="class">cz.zoom.scorecard.migration.ExportImpl</Value>
    </EqualGroup>
  </Group>
  <Group name="imports">
    <EqualGroup name="import" egName="version49">
      <Value name="dbPool">scorecard49</Value>
      <Value
name="class">cz.zoom.scorecard.migration.ImportImpl</Value>
    </EqualGroup>
  </Group>
</SpecifiedConfiguration>
```

As before, for the first Group node (with name value set as `exports`) ensure the `EqualGroup` node's `poolName` value reflects the Quality Manager source database pool name you defined earlier. Similarly, within the second Group node (with `name` value set as `imports`) ensure the `EqualGroup` node's `poolName` value reflects the Quality Manager target database pool name you defined earlier.

XML syntax differences
The export and import Quality Manager EqualGroup configuration nodes are the same as for Call Recording, apart from two minor differences:

- The `name` property for EqualGroup nodes is here renamed to `egName`
- The `class` values do not change depending on database type and version

Run the Migration Script

After saving the changes made to the `migration.xml` file, the Quality Manager migration script can now be run. This takes the following form:

```
/opt/callrec/bin/scmigration2 [-config <config> | -configfile
<configfile>] [-export <name>] [-import <name>] [-limit <limit>] [-
logger <logger>] [-migrate <options>]
```

The parameters and options are as follows:

-config <config>	URL to running configuration manager, e.g. //localhost:30400/migration Use this method OR –configfile

-configfile <configfile>	Use a configuration file, e.g. /opt/callrec/etc/migration.xml Use this method OR -config
-export <export>	Specify the export database configuration group e.g. version49
-help	display usage help
-import <import>	Specify the import database configuration group e.g. version49source
-limit <limit>	limit number of evaluations processed at one time. Default value: 1000
-logger <logger>	log4j properties file to define the logging properties (doesn't exist by default) e.g. /opt/callrec/etc/scmigration2.log4j.properties Similar to all Call Recording tool/script log4j parameters (see similar xxxx.log4j.properties files in the /opt/callrec/etc/ directory)
-migrate <migrate>	What to migrate – select from the following options: all – all Quality Manager data (users, questionnaires, evaluation data) users – users only questforms – questionnaires only usersquestforms – users and questionnaires only

Playing evaluations
Migrated Quality Manager evaluations will not be playable without separate (Call Recording) migration of the calls used in the evaluations.

Sample (minimal)

```
/opt/callrec/bin/scmigration2 -configurl //localhost:30400/migration
-export version49 -import version49source -migrate all -limit 1000
```

After running the migration, use an Oracle database administration tool, such as Oracle SQL Developer or TOAD, to verify that the migration has taken place.

Chapter

5 Oracle Mapping and Maintenance

The majority of Oracle database maintenance tasks are beyond the scope of this document, and are the responsibility of the Oracle database administrator. However, the following procedure(s) are specific to the Genesys Quality Management installation, and so are included here.

Database Pool Mapping

Database pools (such as those for call data, Quality Manager data, etc.) can be mapped to different database instances, if these are available to Genesys Quality Management (for example, several Oracle database instances, or both the embedded PostgreSQL database and an Oracle database instance, or other external PostgreSQL / Oracle databases, etc.).

Re-mapping database pools can be accomplished both in the Call Recording Web GUI and directly in the XML configuration files. In both cases, Call Recording will need to be restarted.

Warning! Switching databases can lead to configuration data loss!
If database pools such as the main callrec pool are re-mapped on a configured system, any existing configuration data (i.e. recording rules, users and passwords) will need to be re-entered.

Call Recording Web GUI

- After logging in as system administrator in the Call Recording Web GUI, navigate to the **Settings** > **Configuration** > **Call Recording Core** > **Database** tab.
- For each database pool (e.g. 'callrec'), select the appropriate database mapping from the dropdown **SQL map** field. When complete, click **Save configuration**.

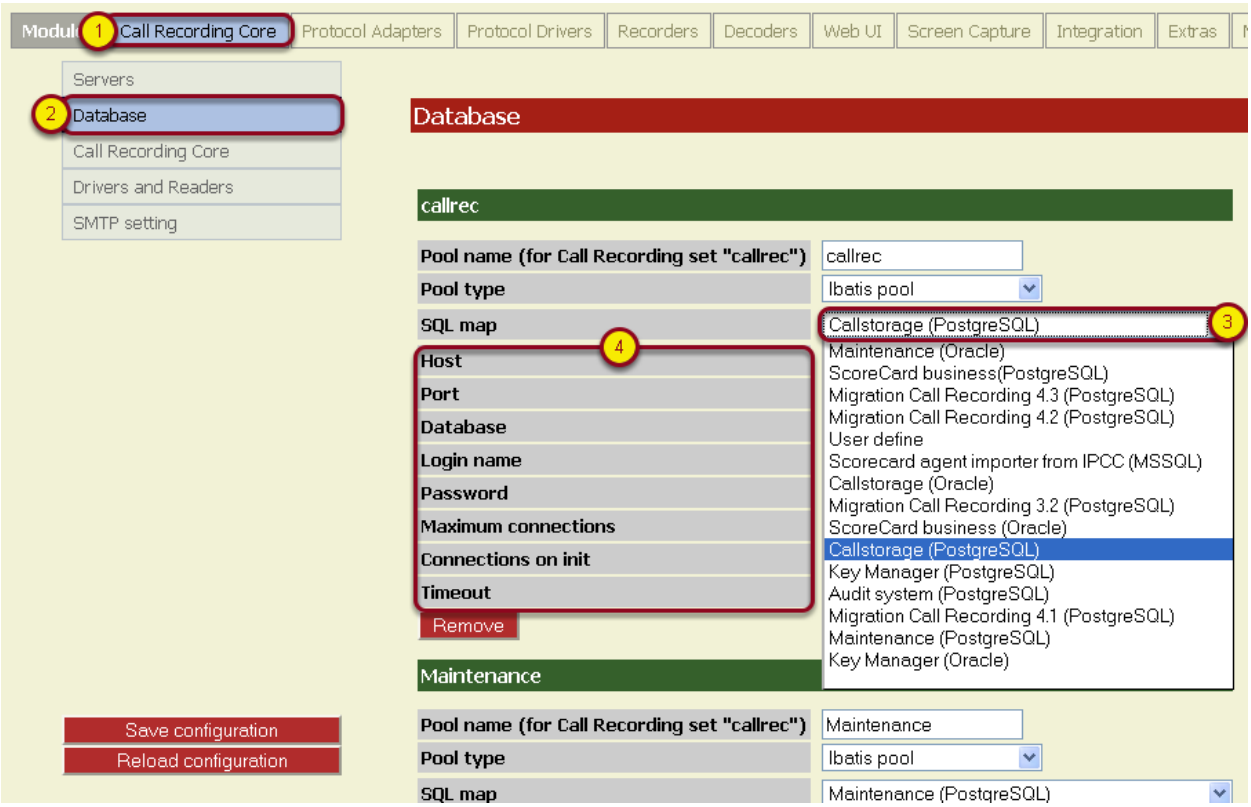


Figure 4: Database pool mapping in the Web GUI

- Restart Call Recording (see below for one method).

XML Configuration Files

- After logging in as the root user to the server on which the Configuration Service is running (the Call Recording server for single server installations), edit the /opt/callrec/etc/core.xml file, which contains the database pool configuration.

  The following xml snippets show the main Call Recording call data pool xml for (default) Oracle and PostgreSQL mapping.

Oracle Mapping Sample:

```
<Pool name="callrec"
poolType="cz.zoom.util.db.pool.ibatis.IbatisPool">
  <Url dbName="zoomdb" host="oracle.mycompany.com" port="1521"/>
  <Login password="callrec" userName="callrec"/>
  <Connections init="1" max="20" timeOut="5"/>
  <SpecificSetting>
    <Value
name="sqlMapClass">cz.zoom.callrec.core.callstorage.pojo.oracle.S
qlMap</Value>
  </SpecificSetting>
</Pool>
```

PostgreSQL Mapping Sample:

```
<Pool name="callrec"
poolType="cz.zoom.util.db.pool.ibatis.IbatisPool">
  <Url dbName="callrec" host="192.168.110.78" port="5432"/>
  <Login password="callrec" userName="callrec"/>
  <Connections init="1" max="20" timeOut="5"/>
  <SpecificSetting>
    <Value
name="sqlMapClass">cz.zoom.callrec.core.callstorage.pojo.SqlMap</Val
ue>
  </SpecificSetting>
</Pool>
```

- Edit the database pool mapping (ensuring that you assign the correct `sqlMapClass` – see samples above) and save the file
- Restart the Call Recording service:

```
service callrec restart
```

.

Chapter

6 Further Reference

For further information about Oracle, please refer to the official Oracle user documentation at:

http://www.oracle.com/technetwork/database/enterprise-edition/documentation/index.html

Chapter

7 Requesting Technical Support

Technical Support from VARs

If you have purchased support from a value-added reseller (VAR), contact the VAR for technical support.

Technical Support from Genesys

If you have purchased support directly from Genesys, contact Genesys Technical Support at the following regional numbers:

Region	Telephone	E-Mail
North America and Latin America	+888-369-5555 (toll-free) +506-674-6767	support@genesyslab.com
Europe, Middle East, and Africa	+44-(0)-1276-45-7002	support@genesyslab.co.uk
Asia Pacific	+61-7-3368-6868	support@genesyslab.com.au
Malaysia	1-800-814-472 (toll-free) +61-7-3368-6868	support@genesyslab.com.au
India	000-800-100-7136 (toll-free) +91-(022)-3918-0537	support@genesyslab.com.au
Japan	+81-3-6361-8950	support@genesyslab.co.jp

Before contacting Genesys technical support, refer to the *Genesys Technical Support Guide* for complete contact information and procedures.