

Taskmaster

Guide to Oracle Databases

Sample *Taskmaster* applications distributed by Datacap are set up using Microsoft Access for the *admin*, *engine*, and *rule* databases (.mdb). This document shows you how to configure your application to work with **Oracle** databases.

Keep in mind that any *Taskmaster* application can access Oracle for lookups and export, whether it is using Microsoft Access, SQL Server, or Oracle for the admin, engine, or rule databases. This guide describes only how to configure an application's admin, engine, and rule databases for use with *Taskmaster*: it does *not* describe how to perform lookups or exports.

- ✓ **Important!** This guide assumes that the reader has a working knowledge of Oracle database software. Please consult Oracle documentation for any questions you may have regarding its setup and operation.

Introduction

A *Taskmaster* application employs three primary databases:

- The **Admin** database contains definitions of the application's Workflow Hierarchies (workflows, jobs and tasks), and definitions of Security parameters for the application's Users, User Groups, Stations and Job-Task shortcut icons.
- The **Engine** database stores current and historical processing information about each batch and its contents.
- The **Rule** database maintains details of the application's RuleSets, rules, actions and fingerprints.

The next few pages show you how to create Oracle databases to use with your application. Before you begin, however, **be sure** to review the brief discussion of **prerequisites** on the next page.

Prerequisites

The steps you take to provide your application with Oracle databases will only be effective if you first:

- ◆ Install a **Datacap Taskmaster** configuration, using *Taskmaster 6.1* or above.
 - ◆ Set up **Taskmaster Server Service** (see Chapter 8 of the *Taskmaster Administrator's Guide*.)
 - ◆ **Set up at least one Taskmaster Client** station (Chapter 3 of the *Taskmaster Administrator's Guide*.)
 - ◆ Install **Oracle Data Access Products**, *version 10.1.0.2.0* or higher on the computer hosting the configuration's Taskmaster Server, and on *any Taskmaster Client* station requiring a connection to your application's Rule database (if it is an Oracle database). This is *not* necessary for *Taskmaster Web Client* stations.
 - ◆ Set up a **Net Service Name** for your Admin and Engine Database using Oracle's *Net Configuration Assistant* on the computer hosting the configuration's Taskmaster Server. Also, if your application uses an Oracle Rule Database, you will need to create a **Net Service Name** for your Rule Database on each machine running *Taskmaster Client*. This is *not* necessary for *Taskmaster Web Client* stations.
- ✓ These discussions also assume that Oracle is fully installed, and that you are familiar and comfortable with this database management system.

Database Creation

You'll use the process outlined below to create your Oracle databases.

Step	Action
1.	Place the folder provided with the Datacap Oracle Option into your existing Datacap directory. This folder contains a utility (OrclDB.exe) that will generate a SQL file. The SQL file, in turn, will be used to construct your database.
2.	On the computer that hosts your Oracle databases, open the <i>Oracle Database Configuration Assistant</i> .
3.	Create a new, empty database . According to Datacap convention, the database name combines an application's name with an "Adm", "Eng", or "Rule" suffix (without the quotation marks!).
4.	Log into <i>Oracle SQLPlus Worksheet</i> as the Database administrator.

To Create your Oracle Databases (continued)

Step	Action
5.	Open <i>and</i> execute the “ winlogontrigger.sql ” file. This step provides essential Date parameters to the Oracle database you created in Step #3. Successful execution is indicated by “connected” and “trigger created” messages.
6.	Exit <i>Oracle SQLPlus Worksheet</i> .
7.	Open the <i>Oracle Enterprise Manager</i> .
8.	Create a User for the Oracle database. Assign CONNECT and RESOURCE roles to this user. In the <i>System</i> tab, grant the user UNLIMITED TABLESPACE .
9.	Double-click on the OrclDB.exe utility. To generate a SQL script, use the dialog which appears.

The script will build your Oracle database in Step #11.

The **OrclDB.exe** utility gives you the option of creating blank databases, or importing records from an existing Access database (.mdb). In addition, any custom **Job Monitor** columns in your existing Engine database will be included in the SQL file that the utility generates.

10. Log onto *Oracle SQLPlus Worksheet* as the **User** you set up in Step #8.
11. Open the file created in Step #9 and execute the SQL script
12. Check to be sure that the script has not encountered or generated errors.
13. Close *Oracle SQLPlus Worksheet*
14. Repeat Step #2 – Step #13 for the Engine database, and the Rule database (if needed).
15. Establish “**Net Service Names**” for each of your newly created databases, using Oracle’s “*Net Configuration Assistant*”. These should be created on the machine that hosts your Taskmaster Server.

Also, you will need to define a Net Service Name for your Rule database on all machines running Taskmaster Client. (This is *not* necessary for Taskmaster Web Clients.) We *strongly suggest* that - to avoid confusion - you use the database name as the Net Service Name (For example: *1040Rule*).

16. Set up Data Source Names (DSN’s) for your Rule database on all machines running Taskmaster Client. (This is *not* necessary for Taskmaster Web Clients.) **Note:** We *strongly suggest* that - to avoid confusion - you use the database name as the DSN (For example: *1040Rule*).

Database Creation

17. Configure your application to use the Connection Strings which are discussed in the next section.
- ✓ Drop scripts are provided with the Datacap Oracle Option if you need to drop the database objects. There is one drop script for each of the three database types (**adminDrops.sql**, **engineDrops.sql**, and **ruleDrops.sql**).

Connection Strings

Taskmaster connects to its databases via **OLE DB**, which is a flexible standard for database access under Windows. OLE DB is a more general capability than ODBC and, therefore, *Taskmaster* can use OLE DB directly - or ODBC drivers - to connect to Oracle. OLE DB locates a *data source*, i.e. a database, by using an instruction called a *connection string*.

OLE DB Connections Strings link:

1. **Taskmaster Client shortcuts** to an application's Admin and Engine databases.
2. The application's **Report Viewer shortcut** to its Admin and Engine databases.
3. The application's **AutoDelete shortcut** to its Admin and Engine databases.
4. Entries in *Taskmaster Web's* **Apps.ini** file to the **Admin** and **Engine** databases of various applications.
5. The application's *Rule Manager* to the application's Rule database.
6. An **OpenConnection** action to a Lookup or Export database.
7. A **Lookup property** in the application's Document Hierarchy file (.xml) to the Lookup database.
8. A **Verify task** to the application's Rule database.

You'll find Connection String entries in these locations:

- **Shortcuts:** right-click on a shortcut icon and select **Properties**. Enter the Connection String in the *Shortcut's* tab's **Target** field.
- **Apps.ini file:** look in the **tmWeb** folder of your **Datacap** directory. This file has numerous Connection Strings.
- **Rule Manager Setup:** click on the Setup button in the *Fingerprints & Zones* or *Rules* panel of the **Rule Manager Window**. Enter the string's value in the **Rule Database** field of the **Rule Manager Setup** dialog.
- **RuleRunner** and **Verify Task Setup:** during the setup of a *RuleRunner* or Verify task, enter the string in the **Rule Database** field of the **Task Setup** dialog.

The next section describes the syntax of individual Connection Strings.

Important Formatting Considerations

The layout of the Connection Strings has been organized for clarity, and the values include default references. As you review these examples and prepare your own Connection Strings, **be sure** to keep the following guidelines in mind:

- Unlike the examples, an actual Connection String occupies a *single* line.
- The underscore character (“_”) in the examples indicates a space. Do **not** use this character – enter a space, instead.
- Values such as “C”, 1040Adm” and “Sheila” are illustrative. Be sure to replace them with **your** application’s drive letters, DSN’s, database names and paths, and machine names.
- Replace the **UID** and **PWD** values with User ID and Password values for your application.
- **NOTE:** If the **PROVIDER** entry is set to **ORACLE**, the **NET SERVICE NAME** for the database should be used as the DSN entry (DSN=<Net Service Name>).
- **NOTE:** If the **PROVIDER** entry is set to **ODBCORACLE**, the DSN created for the database should be used as the DSN entry (DSN=<Net Service Name>).

The *un-edited* Connection String for the 1040EZ application’s **TM Client** shortcut might look like the first example in the following section.

Connection Strings – Taskmaster Client Components

Taskmaster Client

```
C:\Datacap\tmclient\tmclient.exe_ -ad"PROVIDER=ORACLE;DSN=1040Adm;
CATALOG=;DBNTA=;UID=Admin;PWD=Admin;"_ -ed"PROVIDER= ORACLE;
DSN=1040Eng;CATALOG=;DBNTA=;UID=Admin;PWD=Admin;"
```

Report Viewer

```
C:\Datacap\tmclient\rptview.exe_-iC:\Datacap\1040EZ\process\rptview.ini_-ad"PROVIDER=
ORACLE;DSN=1040Adm;CATALOG=;DBNTA=;UID=Admin;PWD=Admin;"_ -
ed"PROVIDER=ORACLE;DSN=1040Eng;CATALOG=;DBNTA=;UID=Admin;PWD=Admin;"
```

AutoDelete

```
C:\Datacap\tmclient\tmbatdel.exe_ -ad"PROVIDER=ORACLE;
DSN=1040Adm;CATALOG=;DBNTA=;UID=Admin;PWD=Admin;"_
-ed"PROVIDER=ORACLE;DSN=1040Eng;
CATALOG=;DBNTA=;UID=Admin;PWD=Admin;"_
-iC:\Datacap\1040ez\process\tmbatdel.ini
```

Taskmaster Client Service (TMSub)

If you are using the **Taskmaster Client Service** (also known as TMSub) with your application, you will need to add User ID and Password information so that TMSub can log into your Oracle databases:

To access the tabs of the *Taskmaster Client Service* dialog:

1. Select **Datacap Taskmaster** from the **Programs** listings of your Windows Start button.
2. Double-click on the **Taskmaster Client Service** option in the **Taskmaster Client** folder: the *TMSub* tab of the *Taskmaster Client Service* dialog will appear on your screen.

Move to the dialog's *Taskmaster Server* tab and **click on** the Connect button. **Alert!** You cannot proceed unless you take this step.

In the *Admin/Engine* tab:

- Choose *Oracle* as the **Database Type**.
- Enter your **Net Service Name** information.
- Check the **User** option and enter the appropriate User ID
- Check the **Password** checkbox and enter the appropriate password.

Important! These steps need to be completed for the *Admin* sub-tab **and** for the *Engine* sub-tab.

Connection Strings - Taskmaster Web

If you have an application that runs in the *Taskmaster Web* environment, you have to modify a number of settings in *Taskmaster Web*'s **apps.ini** file. In the example below, these settings are in **bold** type for emphasis only. **Alert!** The text of the **AdmDSN** entry should each be on the same line, as well as the **EngDSN** text. The underscore character (“_”) in the examples indicates a space. Do **not** use this character; enter a space, instead.

```
[1040EZ]
TMServer=127.0.0.1
AdmDSN=PROVIDER=ORACLE;DSN=1040Adm;CATALOG=;DBNTA=;UID=
Admin;PWD=Admin;
EngDSN=PROVIDER=ORACLE;DSN=1040Eng;CATALOG=;DBNTA=;UID=
Admin;PWD=Admin;
RptDSN=PROVIDER=MSACCESS;DSN=C:\Datacap\1040EZ\process\
Rptview.mdb;CATALOG=;DBNTA=;
DateTimeSeparator='
Delay=20
Retries=3
Oracle=1
```

- ✓ In addition to adding the correct Connection String information, confirm that your **DateTimeSeparator** and **Oracle** values are the same as the values above.

Connection Strings – Rule Database Links

Rule Manager

Open your application's *Rule Manager* and click the **Setup** button in the upper right-hand corner of either panel of the *Rule Manager Window*.

When the *Rule Manager Setup* dialog appears, modify the **Rule Database DSN or Connection String** value to include the appropriate User ID and Password. Your connection string syntax should be similar to the example below:

```
PROVIDER=ODBCORACLE;DSN=1040Rule;CATALOG=;DBNTA=;UID=Admin;  
PWD=Admin;
```

Settings & Task Projects Files

Taskmaster tasks which use a Rule database (*RuleRunner* tasks and *Verify* tasks, for example) require that the appropriate Connection String information be added to the task setup.

For *Taskmaster Client* tasks, the Connection String information can be modified in the task's **Setup** dialog. For *Taskmaster Web* tasks, you will need to open the task's **.icp** or **.bnp** file in a text editor such as *Notepad* and manually add the Rule database Connection String information. Your values should be similar to the following examples:

ICP File – RuleDSN Entry

```
RuleDSN=PROVIDER=ODBCORACLE;DSN=1040Rule;CATALOG=;DBNTA=;UID  
= Admin;PWD=Admin;
```

Rule Runner / Verify Task Setup – RuleDSN Entry

```
PROVIDER=ODBCORACLE;DSN=1040Rule;CATALOG=;DBNTA=;UID=Admin;  
PWD=Admin;
```

Miscellaneous

- If the "OpenConnection" action (in the **Lookup.rra** and **ExportDB.rra** Action files) will be used to make a connection to an Oracle database, the appropriate Connection String information will need to be added to the action's parameter. Your parameter should be similar to the example below:


```
OpenConnection( PROVIDER=ODBCORACLE;DSN=1040Look;CATALOG=;  
DBNTA=;UID=Admin;PWD=Admin; )
```

- If you are using the “Lookup” or “Select” properties in your *Taskmaster Web* application, you will need to add the appropriate User ID and Password to the DSN. The property’s value should be similar to:

```
<SQL dsn=" PROVIDER=ODBCORACLE;DSN=1040Look;  
CATALOG=;DBNTA=;UID=Admin;PWD=Admin;">SELECT * FROM  
Taxpayer WHERE SSN like '@@SSN@%'</SQL>
```

or

```
<SQL dsn=" PROVIDER=ORACLE;DSN=LookUp;  
CATALOG=;DBNTA=;UID=Admin;PWD=Admin;">SELECT * FROM  
Taxpayer WHERE SSN like '@@SSN@%'</SQL>
```

Alert! If the **PROVIDER** entry is set to *ORACLE*, the **NET SERVICE NAME** for the database should be used as the DSN entry (DSN=<Net Service Name>).

Troubleshooting

SYMPTOM	SOLUTION
<p>You receive the following error message when running OrcIDB.exe:</p> <p>"Component 'Brws32x.ocx' or one of its dependencies not correctly registered: a file is missing or invalid."</p>	<p>Make sure you run OrcIDB.exe on a machine with a fully installed Taskmaster Client configuration. OrcIDB.exe requires that brws32x.ocx be registered on the same machine.</p>
<p>You receive the following error message when running either Taskmaster Client, <i>Report Viewer</i>, or <i>AutoDelete</i>:</p> <p>"Connecting to engine " 'ODBC;DSN=1040Eng' ORA-01005: null password given; logon denied. Driver's SQLSetConnectAttr failed."</p>	<p>Be sure that the icon used to activate the component includes a valid User ID and Password in the DSN Connection String for each database. For example:</p> <p>- ad"PROVIDER= ORACLE;DSN=1040Adm; CATALOG=;DBNTA=;UID=Admin;PWD=Admin;"</p> <p>- ed"PROVIDER=ORACLE;DSN=1040Eng; CATALOG=;DBNTA=;UID=Admin;PWD=Admin;"</p>
<p>You receive a message similar to the following from Taskmaster Client after running a <i>RuleRunner</i> or <i>Batch Pilot Verify</i> task:</p> <p>"Cannot insert statistics into database"</p>	<p>There is a ";" at the end of the insert statement that writes out the task's statistics. Make sure your using RuleRun.dcf version 6.03.02 or higher and verify.dcf version 6.03.27 or higher.</p>
<p>You receive a message similar to the following when you try to log into your <i>Taskmaster Web</i> page:</p> <p>"Unable to connect to AdminDB – ODBC;DSN=1040Adm"</p>	<p>Open the apps.ini file on your <i>Taskmaster Web Server</i> machine and make sure that your admin and engine DSN entries include a valid User ID and Password in the DSN Connection String. For example:</p> <p>AdmDSN=PROVIDER=ORACLE ; DSN=1040Adm ; CATALOG= ; DBNTA= ; UID=Admin ; PWD=Admin ;</p>
<p>You receive a message similar to the following while running your .sql script in <i>Oracle SQLPlus Worksheet</i>:</p> <p>"Error At Line 2: ORA-01843: not a valid month"</p>	<p>Be sure that you followed Step #4 on Page 2 for each database. If not, you must log into your databases via Oracle SQLPlus Worksheet as the Database Administrator and create the winlogontrigger using the script file: winlogontrigger.sql.</p> <p>Alternately, you can add the following string registry entry to the machine hosting your Oracle software and any machines where Oracle DSNs will be used:</p> <p>Local_Machine\Software\Oracle\Home0\NLS_DATE_FORMAT</p> <p>and give it the value:</p> <p>MM/DD/YYYY HH24:MI:SS</p>

SYMPTOM	SOLUTION
<p>You receive a message similar to the following while running your .sql script in Oracle SQLPlus Worksheet:</p> <p>“Error At Line 1: ORA-02291: integrity constraint (1040ADM.FK_StationIND) violated – parent key not found.”</p>	<p>An insert statement before the one generating this message failed, possibly due to the symptom listed above (“Error At Line 2: ORA-01843: not a valid month”).</p> <p>Correct this issue (using the instructions above) and run the insert statements again.</p>
<p>Inability to see or run tasks in the <i>Taskmaster Web Options</i> tab.</p>	<p>Be sure that you are using Oracle ODBC Driver version 9.02.00.54 or higher.</p>
<p>Inability to log in to <i>Taskmaster Web</i> with a certain Station ID.</p>	<p>Confirm that your Station ID exactly matches the entry in your database. Station ID’s will be case sensitive when using Oracle databases.</p>
<p>OpenConnection action fails to make a connection to your Oracle database.</p>	<p>Be sure that the action’s parameter includes valid Connection String information. For example:</p> <pre>OpenConnection(PROVIDER=ODBCORACLE; DSN=1040 Look; CATALOG=; DBNTA=; UID=Admin; PWD=Admin;)</pre>
<p>Failure of a RuleSet to run.</p>	<p>For <i>RuleRunner</i> tasks, check that the RuleType entries in the [RRULETYPE] section of your .bnp file are the same case as those in the rs_RuleSetType column in the RuleSet table located in your Oracle Rule database.</p> <p>For <i>Taskmaster Web RuleRunner</i> tasks, check that the RuleType entries in the [RULERUN] section of your .icp file are the same case as those in the rs_RuleSetType column in the RuleSet table located in your Oracle Rule database.</p>
<p>Failure of a RuleSet to run.</p>	<p>Make sure the Connection String syntax for your Rule database is correct in all places in the task’s .bnp or .icp file. Make sure to check that the syntax includes “Provider=ODBCORACLE...”</p>
<p>You cannot fit the connection string syntax in your shortcut (Ex: AutoDelete).</p>	<p>The “CATALOG=;DBNTA=;” entries can be omitted from the connection string.</p>
<p>Inability to connect to your Oracle Database(s).</p>	<p>Make sure that the DSN entry is correct.</p> <p>If the Provider is set to use ORACLE, then make sure the DSN value is set to use the Database’s Net Service Name. Also confirm that you have installed Oracle Data Access Products, version 10.1.0.2.0 or higher on the computer hosting the configuration’s Taskmaster Server, and on <i>any Taskmaster Client</i> station requiring a connection to your application’s Rule database (if it is an Oracle database). This is <i>not</i> necessary for <i>Taskmaster Web Client</i> stations.</p> <p>If the Provider is set to use ODBCORACLE, then make sure the DSN value is set to use the DSN name which can be found using the “ODBC Datasource administrator”.</p>