

## **Database Display Contents**

### **Reads**

Displays the total number of records read since the database was started.

### **Writes**

Displays the total number of records written since the database was started.

### **Deletes**

Displays the total number of records deleted since the database was started.

## **Log Display Contents**

### **Event**

Displays the number of the last event in the transaction journal.

## **Sessions Display Contents**

### **Connections**

Displays the number of applications currently connected to the database administrator. (In this single client version "Connections" is always 0 or 1).

## **Time Display Contents**

### **Elapsed**

Displays the number of hours, minutes and seconds since the database was started.



## Dump File Format

A dump file is an MS-DOS text file created by the 'Dump' Toolbox Menu Command.

The dump file is composed of three sections:

1) A two line header giving the version of the Orion Database Administrator followed by the date and time of the dump.

2) The transaction journal displaying for each event the journal record size, the transaction ID, the date and time of the transaction, the type of transaction, the file modified by the event and record id. The user name and password is given for connections and disconnections to the database. The beginning and end of each transaction are indicated.

3) The contents of each file displaying the table name on the first line followed by a line for each record in the table. Each record occupies a single line. The record id, record size, and data contents are supplied for each record. All record fields are separated by commas. All field data is enclosed in double quotation marks "".

## **Export File Format**

An export file is an MS-DOS text file created by the 'Export' File Menu Command. It uniquely identifies a database table followed by the data of the table, one record at a time.

Tables which are the targets of an export operation must have already been created (using standard SQL commands).

Data for each record is exported in the order in which the columns were created.

The physical format of an export file is identical to the Import File Format.

## Import File Format

An import file is an MS-DOS text file supplied by the user to be used with the 'Import' File Menu Command. It is made up of one or more packets. Each packet uniquely identifies a database table and supplies the data which is to be inserted into the table, one record at a time.

Tables which are the targets of an import operation must have already been created (using standard SQL commands).

Data for each record must be supplied in the order in which the columns were created.

Each packet begins with the user name and the table identifier separated by a '.'. All records to be inserted into the table are enclosed within a '{ '}' pair.

Each record begins with a '{' and ends with a '}'. Records are separated with a ';'. Within the enclosing '{ '}' pair, the data for each column are enclosed in double quotation marks "" except the NULL value which is simply spelt out. All columns are separated with a ','.

Supposing that user 'SYSTEM' has created a table with the SQL command:

```
CREATE TABLE S (  
    SNO      CHAR(5),  
    SNAME    CHAR(20),  
    STATUS   SMALLINT,  
    CITY     CHAR(15)  
);
```

The import file to insert 5 records would look like:

```
SYSTEM.S {  
    {"S1", "Smith", "20", "London"},  
    {"S2", "Jones", "10", "Paris"},  
    {"S3", "Blake", "30", "Paris"},  
    {"S4", "Clark", NULL, "London"},  
    {"S5", "Adams", "30", "Athens"}  
}
```

Note the NULL value in the third column of the fourth record.





## Orion Database Administrator Help Index

This index lists the help topics available for the database administrator. Using the keyboard, tab to select the underlined topic you want to view, then press enter. Using the mouse, point to the underlined topic you want to view, and click the left mouse button. Use the scroll bar to see entries not currently visible in the help window.

To learn how to use help, press F1 or choose "Using Help" from the help menu.

### Commands

File Menu Commands

Control Menu Commands

Toolbox Menu Commands

### Procedures

Checkpointing the Database

Connecting to the Database

Customizing Operation

Disconnecting from the Database

Exiting from the Database

Exporting Data from the Database

Importing Data to the Database

Installing the Database

Recovering the Database

Removing the Database

Starting the Database

Stopping the Database

### Displays

Database Display Contents

Log Display Contents

Sessions Display Contents

Time Display Contents

### File Formats

Dump File Format

Export File Format

Import File Format

## Orion Database Administrator Commands

To get help with a command, choose the appropriate menu. Use the scroll bar to see entries not currently visible in the help window.

To learn how to use help, press F1 or choose "Using Help" from the help menu.

### File Menu Commands

Import	Read data from a file into the database
Export	Write a copy of a database table to a file
Exit	Terminate the program

### Control Menu Commands

Start	Start the database
Stop	Stop the database
Suspend	Suspend the database

### Toolbox Menu Commands

Dump	Copy the entire database to a file
Install	Create the database for the first time
Checkpoint	Purge records from the transaction journal which have already been backed up
Recover	Recreate the database from the transaction journal
Remove	Entirely remove the database

## **Orion Database Administrator Procedures**

These procedures give you step-by-step instructions for using the database administrator. Use the scroll bar to see entries not currently visible in the help window.

To learn how to use help, press F1 or choose "Using Help" from the help menu.

### **Getting Started**

[Connecting to the Database](#)

[Customizing Operation](#)

[Importing Data to the Database](#)

[Installing the Database](#)

[Starting the Database](#)

### **Finishing Up**

[Disconnecting from the Database](#)

[Exiting from the Database](#)

[Exporting Data from the Database](#)

[Removing the Database](#)

[Stopping the Database](#)

### **Recovery**

[Checkpointing the Database](#)

[Recovering the Database](#)

## **Orion Database Administrator Displays**

These displays let you know what's happening from moment to moment. Use the scroll bar to see entries not currently visible in the help window.

To learn how to use help, press F1 or choose "Using Help" from the help menu.

### **Displays**

Database Display Contents

Log Display Contents

Sessions Display Contents

Time Display Contents

## **Orion Database Administrator File Formats**

These file formats define the file structure created and used by the database administrator. Use the [scroll bar](#) to see entries not currently visible in the help window.

To learn how to use help, press F1 or choose "Using Help" from the help menu.

### **File Formats**

[Dump File Format](#)

[Import File Format](#)

[Export File Format](#)



## File Menu Commands

Use the [scroll bar](#) to see more information.

The file menu includes commands that enable you to move data into database tables from a [flat file](#), to move data from a database table into a flat file, or terminate the database administrator.

### Import

Imports data from a flat file into the database.

If the database is not running or if a session is active, import appears dimmed on the file menu.

Related topics:

[Importing Data](#)

[Import File Format](#)

### Export

Exports data from the database into a flat file.

If the database is not running or if a session is active, export appears dimmed on the file menu.

Related topics:

[Exporting Data](#)

[Import file format](#)

### Exit

Terminates operation and removes the database administrator from memory.

Related topics:

[Stopping the Database](#)

[Disconnecting Applications](#)



## Control Menu Commands

Use the [scroll bar](#) to see more information.

The control menu includes commands that enable you to start, stop and suspend the database. Applications only have access to data after the database has been started. All applications must disconnect before the database can be stopped. Suspend prevents additional applications from connecting.

### Start

Starts the database and makes it available for applications to form connections. The database may only be started if it has been previously installed.

If the database is running, start appears dimmed on the control menu.

Related topics:

[Installing The Database](#)

### Stop

Stops the database and makes it unavailable for applications to form connections.

Related topics:

[Stopping the Database](#)

[Disconnecting Applications](#)

### Suspend

Disallows additional connections to be formed with applications. As applications disconnect they are not allowed to re-connect. When no applications remain connected, the database is stopped.

If the database is not running, suspend appears dimmed on the control menu.

Related topics:

[Stopping the Database](#)

[Disconnecting Applications](#)

## Toolbox Menu Commands

Use the [scroll bar](#) to see more information.

The toolbox menu includes commands that enable you to dump the entire database to a text file, to install the database for the first time, to recover the database and to entirely remove the database from the disk.

### Dump

Creates a [dump file](#) which includes either the entire [transaction journal](#) (log) or all records of all tables as ASCII text or both the log and tables. The file may be viewed with any program capable of displaying large text files (such as Microsoft Write).

If the database is not running or if a session is active, dump appears dimmed on the toolbox menu.

Related topics:

[Dump File Format](#)

[Customizing Operation](#)

### Install

Creates the [transaction journal](#) and all [system tables](#) for the first time. The location of the files thereby created is determined by settings in the [user profile](#).

If the database is running, install appears dimmed on the toolbox menu.

Related topics:

[Installing The Database](#)

[Customizing Operation](#)

### Checkpoint

Reduces the size of the [transaction journal](#) by purging records. After checkpointing the database, you will be required to back up the database using your favorite backup utility.

If the database is not running or if a session is active, checkpoint appears dimmed on the toolbox menu.

Related topics:

[Checkpointing The Database](#)

[Recovering The Database](#)

### Recover

Uses the [transaction journal](#) to restore the database to a stable state. Transactions not committed at the time of system failure are rolled back.

If you have checkpointed your database you will need your backup disks after recovery has started.

If the database is running, recover appears dimmed on the toolbox menu.

Related topics:

[Checkpointing The Database](#)

[Recovering The Database](#)

### Remove

Removes the database from the disk in its entirety. This operation should be performed only with the greatest care as all your data will be erased from the disk without being copied or backed up.

If the database is running, remove appears dimmed on the toolbox menu.

Related topics:

[Stopping the Database](#)

[Installing The Database](#)



## Checkpointing the Database

Since the transaction journal records all events which modify the database, it can grow to a substantial size. The 'Checkpoint' Toolbox Menu Command allows you purge transaction journal records after you have backed up all the database files.

You will be asked to backup all the database files **after** checkpoint has started. Only backup files created after checkpoint has started can be used by the 'Recover' Toolbox Menu Command.

Use your favorite backup utility to perform the backup. Database files can be found in the directory defined by the DatabasePath parameter of [OrionDb] in the "win.ini" file as described in Customizing Operation.

Checkpoint is disabled in the shareware version of the Orion Database Administrator.

## **Connecting to the Database**

Each time a query is executed the application connects itself to the Orion Database Administrator and tells the Orion Database Administrator to execute a query on its behalf. Processes which use the Orion Database Administrator automatically connect before each query begins execution.

## Customizing Operation

You may customize some operational characteristics of the Orion Database Administrator by using a text editor to modify the "win.ini" file. The Orion database administrator scans the "win.ini" file for the section identified by the keyword [\[OrionDb\]](#).

There are four optional parameters:

- \* Setting [AutoStart](#) to '1' causes the database to start as soon as it is executed.
- \* Setting [DatabasePath](#) to the name of a valid directory causes database files to be read and written there.
- \* Setting [DataFilePath](#) to the name of a valid directory causes that directory to be used as the default for import and export operations.
- \* Setting [FileNameDatabaseDump](#) to the name of a valid file causes the dump command to use that file for output.

Note that directories are never automatically created, you must do this using some other tool such as the Windows File Manager.

A typical block of the "win.ini" file might appear as follows:

```
[OrionDb]
AutoStart=1
DatabasePath=c:\database
DataFilePath=c:\export
FileNameDatabaseDump=c:\temp\orion.dmp
```

Default settings are as follows:

```
[OrionDb]
AutoStart=0
DatabasePath=c:\
DataFilePath=c:\
FileNameDatabaseDump=c:\orion.dmp
```

The Orion Database Administrator also relies upon the international date and time settings. The Windows defaults are fine and you can leave them alone. If you've changed them, don't worry, time stamps are saved in binary and not converted to international format until used for output. If you're interested, we recommend the following settings:

```
[intl]
iDate=0
iTime=0
s1159=AM
s2359=PM
```

International date and time settings are most easily changed via Microsoft's Windows Control Panel. Select the "International" icon then click on either "date" or "time".

## **Disconnecting from the Database**

Each time a query is executed the application connects itself to the Orion Database Administrator and tells the Orion Database Administrator to execute a query on its behalf. Processes which use the Orion Database Administrator automatically disconnect after each query completes execution.

## **Exiting from the Database**

In order to exit from the Orion Database Administrator, all queries must first complete execution. Exit from the Orion Database Administrator by either selecting 'exit' File Menu Command or 'close' in the system menu.



## Exporting Data from the Database

You can create a MS-DOS ASCII text file from the data in any table using the 'export' File Menu Command. When 'export' is selected, a dialog box is displayed showing a list of users and tables. Each time a user is selected, all tables belonging to that user are displayed. To export a table first select the user and then one of that user's tables. When you are satisfied with your selection click on the 'export' button. A standard 'Save As' dialog box is then displayed allowing you to choose both the directory and file name of the exported MS-DOS ASCII text file. While the file is being generated the database administrator displays how many records have been written to the export file. After the file is done, you may select another user and/or table to export.

Export files are in the format described in Import File Format.

## Importing Data to the Database

You can copy data in an MS-DOS ASCII text file into a pre-existing database table using the 'import' File Menu Command. When 'import' is selected, a standard open file dialog box is displayed. When a file is selected, the database administrator reads the file and inserts its data into the tables defined within the file. While the file is being read, the database administrator displays how many lines have been processed. After the file is done, you may select another file to import. If the import is not successful, a 'rollback work' operation is performed: the database will be as it was before the import operation commenced.

Import files must be in the format described in Import File Format.

## Installing the Database

Before installing the database, you should first define the directory in which the database will be placed. This directory is determined by [DatabasePath](#) parameter of [\[OrionDb\]](#) in the "win.ini" file as described in [Customizing Operation](#).

Install the database using the 'Install' [Toolbox Menu Command](#). This command will first remove any existing database files from the database directory. Database files are identified by the prefix 'OR'.

## Recovering the Database

If, for whatever reason, the Orion Database Administrator terminates abnormally, the system allows you to restore the database to a stable state by using the 'Recover' Toolbox Menu Command. Since the recovery process is irreversible, you should first save a copy of all files in the database directory.

If you have checkpointed the database you will be asked to restore the files you backed up at the time of the checkpoint **after** recovery has started. Do **not** restore your backup until instructed to do so.

Note: The Orion Database Administrator recovers the database by deleting all data and index files and then "replaying" the transaction journal. If the database has been checkpointed, the transaction journal files will be renamed to 'OR\_RECOV.\*' and you will be prompted to restore your backup. The next time you start the database, recovery will recommence.

Once recovery is begun, it must not be interrupted. A significant amount of time may be required. While recovery takes place, you will be notified as to its progress.

## Removing the Database

To completely delete all files associated with the Orion Database Administrator, select the 'Remove' Toolbox Menu Command. This command is irreversible and should be selected with great caution. A warning message is displayed before files are deleted.

## **Starting the Database**

The database may be started by selecting the 'Start' Toolbox Menu Command. This activates the database administrator and allows applications to connect to the database.

## Stopping the Database

The database may be stopped by selecting the 'Stop' Toolbox Menu Command. While the database administrator is not removed from memory, it is deactivated and applications will be denied connection to the database. If an application is connected to the database you will be asked whether you want to cancel the shutdown or whether you want to abort the session's activity and roll back any changes it has made to the database.

You may wish to stop the database automatically when all current activity is completed. Selecting 'Suspend' Toolbox Menu Command allows current activities to complete but prohibits new sessions from starting. When no more sessions exist the database is automatically stopped.





#### dump file

A file used for diagnostic purposes that contains all information in the database stored as ASCII text. The path name is determined by the user profile settings.

flat file

A MS-DOS file which contains ASCII text. Flat files are used to transfer large amounts of data into and out of the database. Flat files can be easily created and modified using standard text editors.

scroll bar

A bar that appears at the right and/or bottom edge of a window whose contents aren't completely visible. Each scroll bar contains two scroll arrows and a scroll box, which allow you to scroll within the window or list box.

shareware

A version of software not in the public domain but distributed so that customers have an opportunity to evaluate the product prior to purchase.

### system tables

System tables are the database tables which contain information about all columns, tables, indices and users in the database. These tables only updated by the database administrator and are never directly manipulated by any other application or user.

transaction journal

A transaction journal is a pair of files written by the database administrator. The transaction journal contains a record of every event which caused a change to the database.

user profile

Certain system parameters can be customized by the user. These settings are found in the file win.ini.

