

Reference Guide

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Database Project Builder

Bristol OpenEnterprise Reference Guide

Database Project Builder

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1 Database Project Builder

The Database Project Builder (DPB) automates the process of building the OpenEnterprise database. It does this by presenting the user with a succession of options displayed as pages of a wizard. When all the pages have been completed, an OpenEnterprise project is created according to the user's instructions on: -

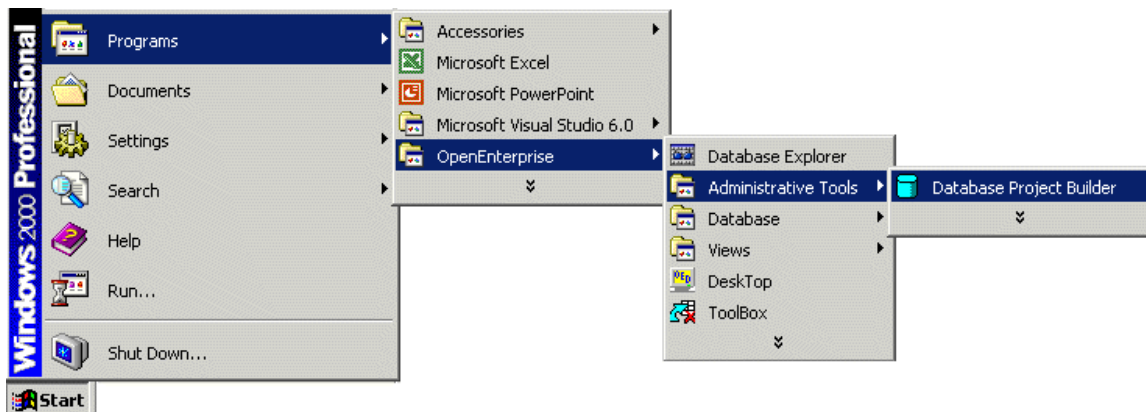
- Where the database files are located
- Options for database security
- Creation of users and passwords
- Setting the time zone
- Setting up data collection (for Bristol RTUs)
- Creation of historical logging streams
- Creation of an OpenEnterprise Session

When completed, the DPB process not only builds the database, it also creates a command file (OERebuild.cmd), which can be used to rebuild the database. This file can be edited to run the SQL Client and include custom SQL scripts at various stages in the build process. It also contains commands which run the OpenEnterprise Database Builder and Template Builder components at the appropriate stage of the database build process. These components add signals to the database from ACCOL loads compiled for Bristol RTUs, and create Poll Lists for Polled data collection.

1.1 Starting the Database Project Builder

To start the Database Project Builder. Click the Windows Start button and select the following shortcut:-

Start>Programs>OpenEnterprise>Administrative Tools>Database Project Builder



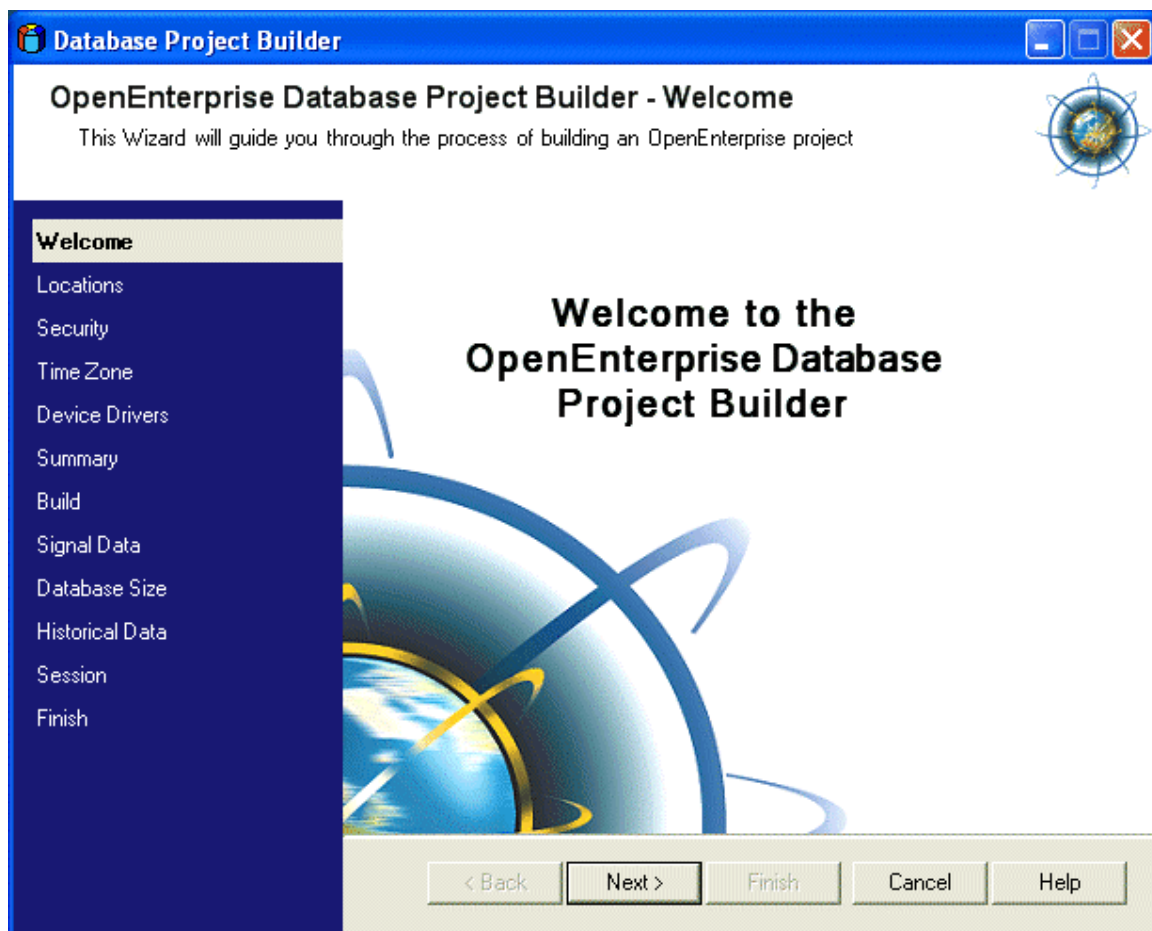
2 The Database Project Builder Wizard

The Database Project Builder Wizard completes 12 steps, using around 16 pages which result in the building of an OpenEnterprise project. You will be able at every stage before the actual build is initiated to go back to any of the pages and make changes.

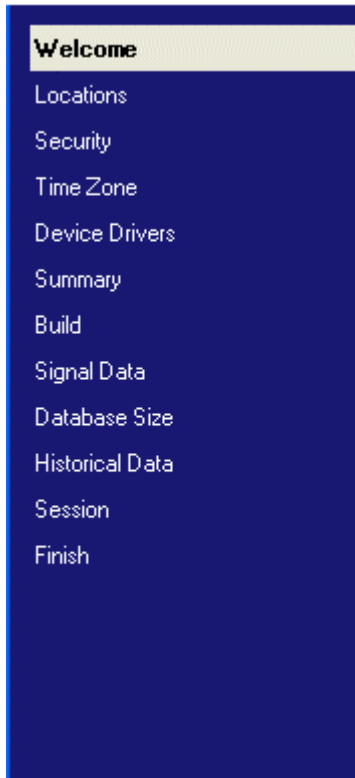
The Database Project Builder Wizard makes it easy for you to decide on the major configuration factors involved in building an OpenEnterprise project database, such as security structure and privileges, time zone, device drivers, and the location of the database files.

2.1 Welcome

The Welcome Page is the first page of the Database Project Builder wizard. It explains what it does. When you are ready to begin, click the **[Next>]** button.



2.1.1 Step List



This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.1.2 Back Button

The Back Button enables you to go back to the previous page to make changes before continuing with configuring the wizard. When viewing the first page of the wizard, and on the Build page, this button will be disabled.

2.1.3 Cancel Button

Clicking on this button will close the current page and will abort the Database Project Builder wizard. On the final page of the wizard, this button will be disabled.

2.1.4 Finish Button

This button will be disabled until the whole process of configuring the Database Project Builder wizard and building the database is complete. On the last page of the wizard, it will be enabled, and all other buttons will be disabled.

When selected, the Database Project Builder will close. If the "Start when wizard finishes" check box was selected when on the Session page, the configured Session will be started automatically.

2.1.5 Help Button

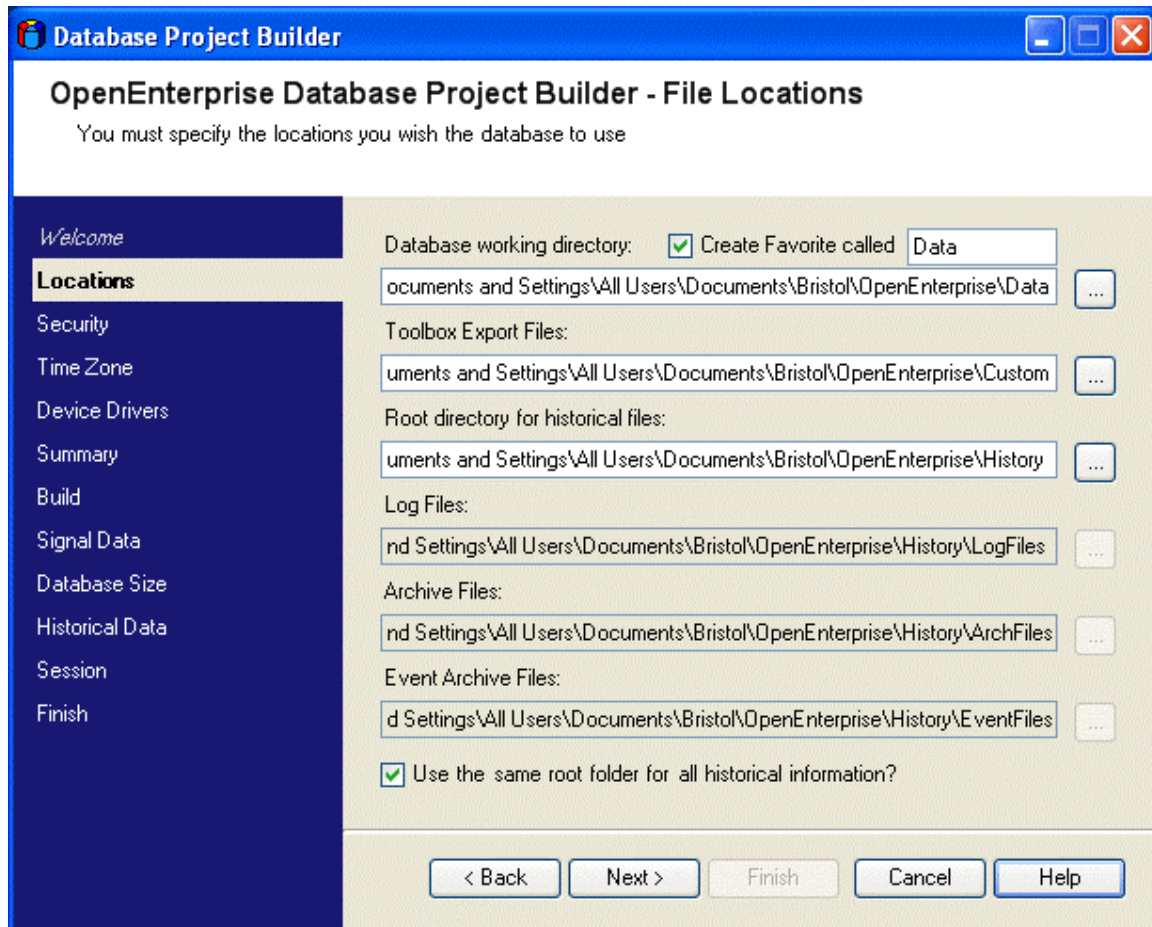
Selecting this button will open this help file at the appropriate topic.

2.1.6 Next Button

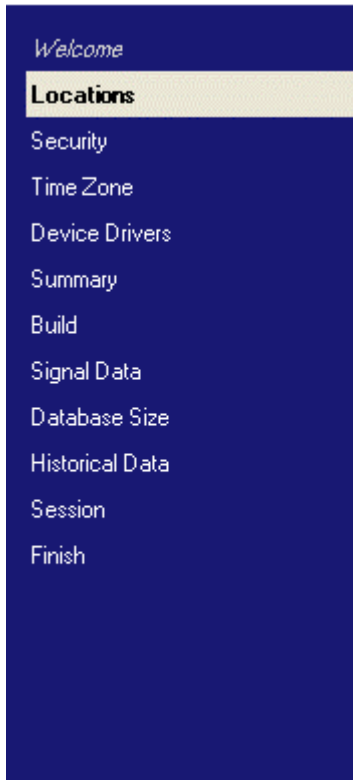
This button will close the current page in the wizard and open the next page.

2.2 Location

This page enables you to choose the directories where the database and its related files will be placed. OpenEnterprise suggests default directories, but these can be changed on this page.

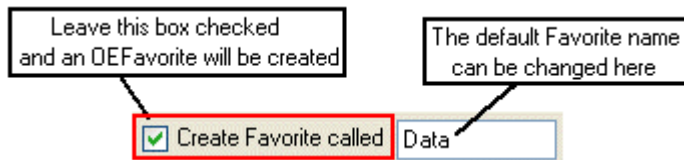


2.2.1 Step List



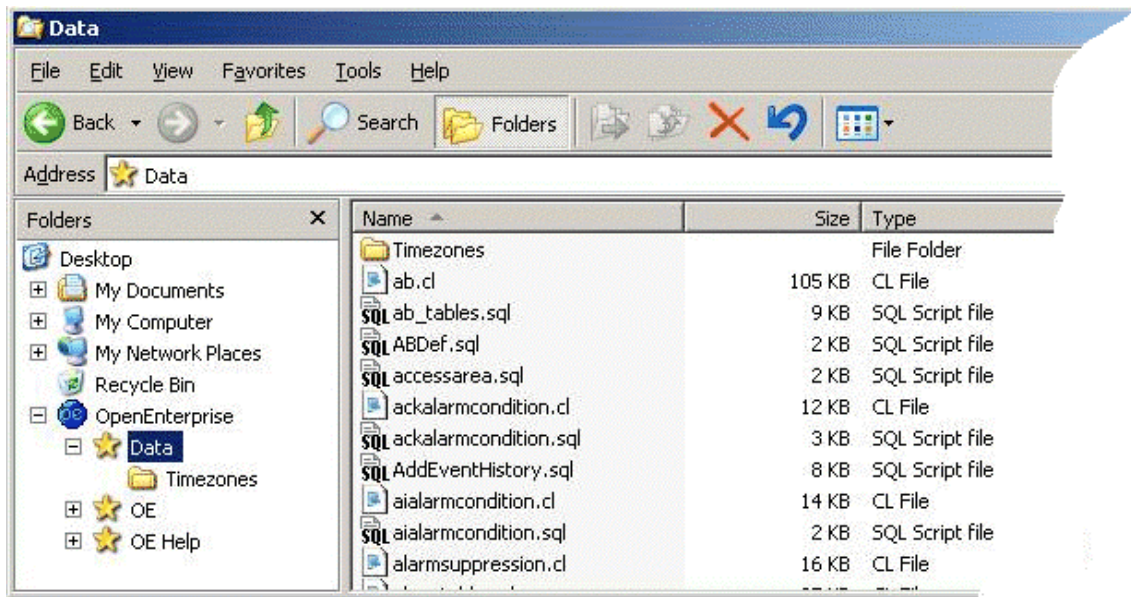
This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.2.2 Create Favorite called

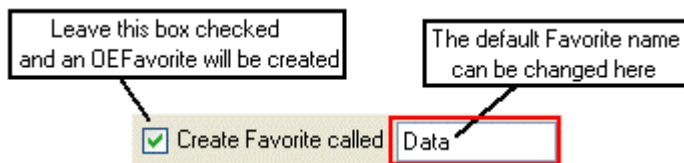


This box is checked by default. If it remains checked, when the Database Project Builder wizard is completed, an OEFavorite for the Data folder will be created. The OEFavorite will be given the name in the text box to the right of this check box. The default name is 'Data'. If the name is already in use, the creation of the OEFavorite will fail. No error will be displayed.

The OEFavorite will be available from Windows Explorer, and will appear underneath the OpenEnterprise node. Below is an example of how this will look in WindowsXP.



2.2.3 Favorite name



This text box defines the OEFavorite name that will be created. The default value is 'Data', but this can be changed by typing the preferred name directly into the text box.

2.2.4 Database Working Directory

The default database working directory is placed into this field automatically. The default path will be different depending on whether the host computer is using WindowsXP or Vista.

You can change it by typing directly into the box or using the browse button marked with three dots ([...]) to the right of this field.

2.2.5 Toolbox Export Files

This is where the Toolbox will write its database configuration export files. It defaults to the same directory as the database working directory.

It can be changed by typing directly into the box or using the browse button marked with three dots ([...]) to the right of this field.

2.2.6 Root Directory for Historical Files

This is the designated root directory for files relating to historical data collection. The default path will be different depending on whether the host computer is using WindowsXP or Vista.

You can change this directory by typing directly into the box or using the browse button marked with three dots ([...]) to the right of this field.

2.2.7 Log Files

Log files are used to dynamically store changing values over a period of time. They are sized to collect a defined amount of data, and the data is overwritten when the file is full. Archives are created from the Log files at regular intervals to create a permanent record of the data. OpenEnterprise creates an Event History Log file automatically, but Signal Log files have to be user defined for each OpenEnterprise project.

By default, the Log files directory will be placed within the designated Historical Files directory. However, if you want to put the Log files in another location, de-select the *Use the same root folder for all historical information* check box. Then either type the new Log file directory in here or use the browse button marked with three dots ([...]) to the right of this field.

2.2.8 Archive Files

Archive files are 'snapshots' of the changing contents of the Log files, created for permanent storage of historical data. This directory will typically be used to store signal archives. They can be brought online for examination within OpenEnterprise, exported in another form (i.e. Excel spreadsheet), and taken offline again. Archive files and Log files are accessed in OpenEnterprise through the virtual loghistory tables.

By default, the Archive files directory will be a sub directory within the Historical Files directory. However, if you want to put the Archive files in another location, de-select the *Use the same root folder for all historical information* check box. Then either type the new Archive file directory in here or use the browse button marked with three dots ([...]) to the right of this field.

2.2.9 Event Archive Files

Event Log archives are created automatically by OpenEnterprise. They contain all alarm and event information collected since the system began running.

By default, the Event archive files directory will be a sub directory of the Historical Files directory. However, if you want to put the Event Archive files in another location, de-select the *Use the same root folder for all historical information* check box. Then either type the new Event archive file directory in here or use the browse button marked with three dots ([...]) to the right of this field.

2.2.10 Use Same Folder for all Historical Information

This box is checked by default. When it is, all of the historical files will be kept in directories under the Historical Files directory. To change this behaviour, de-select this box. Then the *Log*, *Archive* and *Event Archive* fields will become enabled, and other directory locations can be chosen.

2.2.11 Directory Browse Button

Use this button to open a directory browser dialog. This dialog has the option to make a new directory also. You then select the chosen directory, and this location will be entered into the field to the left of the browse button.

2.2.12 Back Button

The Back Button enables you to go back to the previous page to make changes before continuing with configuring the wizard. When viewing the first page of the wizard, and on the Build page, this button will be disabled.

2.2.13 Next Button

This button will close the current page in the wizard and open the next page.

2.2.14 Finish Button

This button will be disabled until the whole process of configuring the Database Project Builder wizard and building the database is complete. On the last page of the wizard, it will be enabled, and all other buttons will be disabled.

When selected, the Database Project Builder will close. If the "Start when wizard finishes" check box was selected when on the Session page, the configured Session will be started automatically.

2.2.15 Cancel Button

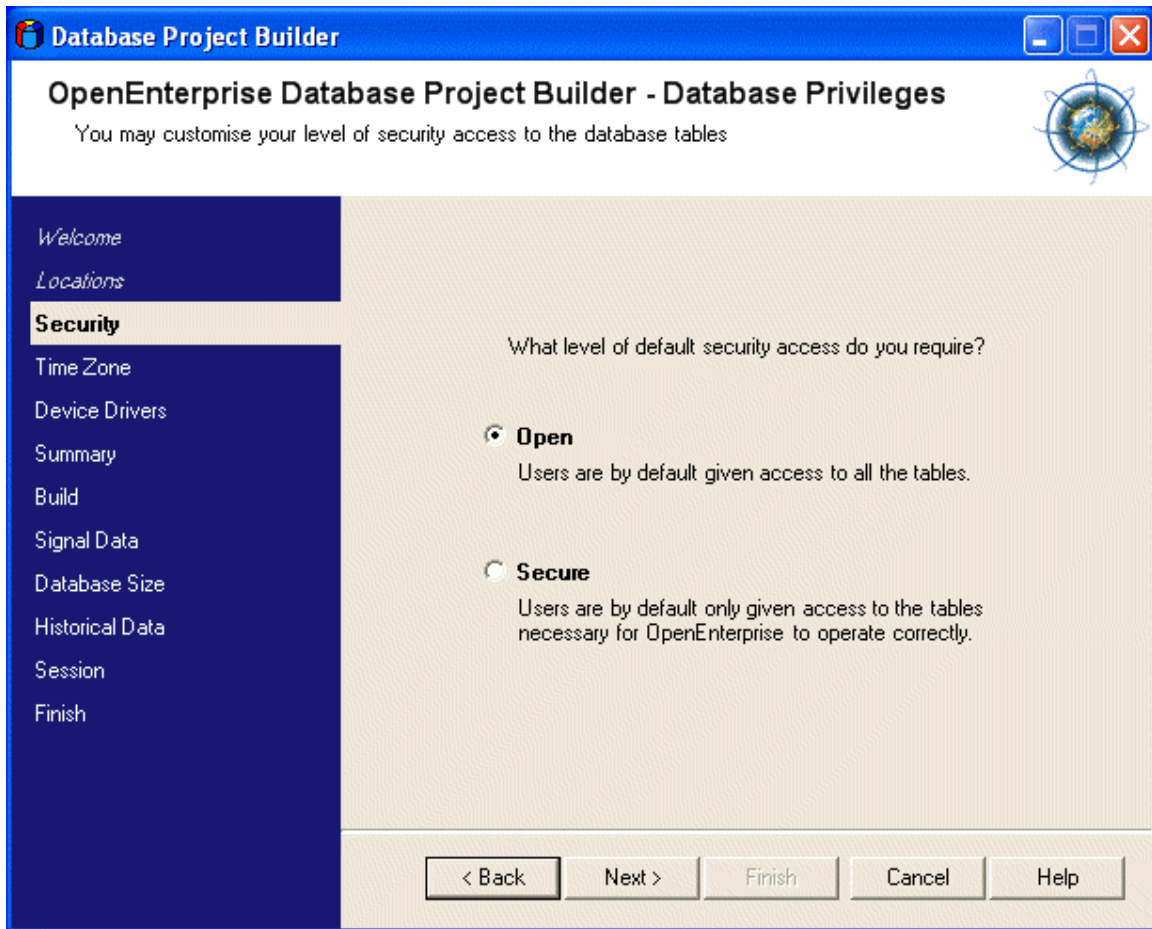
Clicking on this button will close the current page and will abort the Database Project Builder wizard. On the final page of the wizard, this button will be disabled.

2.2.16 Help Button

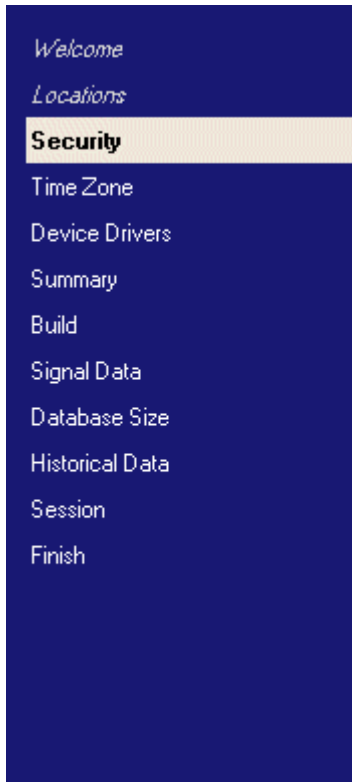
Selecting this button will open this help file at the appropriate topic.

2.3 Database Privileges

The Database Privileges page enables you to select the default table access level for the OpenEnterprise application.



2.3.1 Step List



This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.3.2 Open Access

Open Access means that all users will be given Read/Write access to most OpenEnterprise tables.

2.3.3 Grant All Sql Script

This is the SQL Script used to provide Open Access to the OpenEnterprise database. It is named *GrantAll.sql*, and is found by default initially in the **InstallationPath*\Bristol\OpenEnterprise\Database\Schema* directory.

```
-- First the system tables
grant all on tables to PUBLIC;
grant all on attributes to PUBLIC;
grant all on indexes to PUBLIC;
grant all on indexattrs to PUBLIC;
--- DVI tables
grant all on dvi_schedule to PUBLIC;
```

```
-- And the OE tables for which views are not defined,
grant all on accessarea to PUBLIC;
grant all on dataconnection to PUBLIC;
-- Grant all on users to PUBLIC; (note this line is commented out by
default)
grant all on AccessAreaConfig to PUBLIC;
grant all on AccessAreaConfigForUser to PUBLIC;
-- Signal definitions
grant all on signal to PUBLIC;
-- digital signals
grant all on digital to PUBLIC;
grant all on nw3000digital to PUBLIC;
grant all on multidigital2 to PUBLIC;
grant all on multidigital3 to PUBLIC;
grant all on multidigital4 to PUBLIC;
-- integer analog signals
grant all on integeranalog to PUBLIC;
-- Real analog signals
grant all on realanalog to PUBLIC;
grant all on nw3000realanalog to PUBLIC;
-- string signals
grant all on stringsignal to PUBLIC;
-- time signals
grant all on time to PUBLIC;
-- Binary Signals
grant all on binarysignal to PUBLIC;
-- Local Signals
grant all on localdigital to PUBLIC;
grant all on localintegeranalog to PUBLIC;
grant all on localmultidigital2 to PUBLIC;
```

```
grant all on localmultidigital3 to PUBLIC;
grant all on localmultidigital4 to PUBLIC;
grant all on localrealanalog to PUBLIC;
grant all on localstringsignal to PUBLIC;
grant all on localtimesignal to PUBLIC;
-- Base alarm condition view definition
grant all on alarmcondition to PUBLIC;
-- Digital alarm condition view definitions
grant all on digitalalarmcondition to PUBLIC;
grant all on digitalChangeToNullalarmcondition to PUBLIC;
grant all on digitalDelayalarmcondition to PUBLIC;
grant all on digitalStatealarmcondition to PUBLIC;
grant all on NW3000digitalalarmcondition to PUBLIC;
grant all on MultiStatedigitalalarmcondition to PUBLIC;
grant all on alarminhibitalarmcondition to PUBLIC;
grant all on alarminhibitstatealarmcondition to PUBLIC;
-- Integer alarm condition view definitions
grant all on integeranalogalarmcondition to PUBLIC;
grant all on integeranalogChangeToNullalarmcondition to PUBLIC;
grant all on integeranalogChangeValuealarmcondition to PUBLIC;
grant all on integeranalogDeviationalarmcondition to PUBLIC;
grant all on integeranalogEqualsalarmcondition to PUBLIC;
grant all on integeranalogLimitalarmcondition to PUBLIC;
grant all on integeranalogRateOfChangealarmcondition to PUBLIC;
grant all on integeranalogSignalalarmcondition to PUBLIC;
-- Real alarm condition view definitions
grant all on realanalogalarmcondition to PUBLIC;
grant all on realanalogChangeToNullalarmcondition to PUBLIC;
grant all on realanalogChangeValuealarmcondition to PUBLIC;
```

```
grant all on realanalogDeviationalarmcondition to PUBLIC;
grant all on realanalogEqualsalarmcondition to PUBLIC;
grant all on realanalogLimitalarmcondition to PUBLIC;
grant all on realanalogRateOfChangealarmcondition to PUBLIC;
grant all on realanalogSignalalarmcondition to PUBLIC;
grant all on NW3000realanalogalarmcondition to PUBLIC;
-- Journal task definition
grant all on journaltask to PUBLIC;
-- Journal alarm condition view definitions
grant all on journalalarmcondition to PUBLIC;
grant all on journalEqualalarmcondition to PUBLIC;
grant all on journalRangealarmcondition to PUBLIC;
-- Alarm Condition Lookup View definition
grant all on alarmconditionlookup to PUBLIC;
-- Alarm Priority Block View definition
grant all on alarmpriorityblock to PUBLIC;
-- Alarm Summary and Event log View definitions
grant all on alarmsummary to PUBLIC;
grant all on eventlog to PUBLIC;
-- Klaxon
grant all on klaxon to PUBLIC;
-- Historian View definitions
grant all on oelogaccess to PUBLIC;
grant all on oelogarchive to PUBLIC;
grant all on oelogcolumn to PUBLIC;
grant all on oelogcontrol to PUBLIC;
grant all on oelogdata to PUBLIC;
grant all on oelogdataextension to PUBLIC;
grant all on oelogextract to PUBLIC;
```

```
grant all on oelogworker to PUBLIC;
grant all on archivefile to PUBLIC;
-- Data connection stuff
grant all on connection_config to PUBLIC;
--Objects...
grant all on objects to PUBLIC;
-- Notes definitions
grant all on notes to PUBLIC;
grant all on objectnotes to PUBLIC;
grant all on signalnotes to PUBLIC;
grant all on usernotes to PUBLIC;
grant all on recipientusernotes to PUBLIC;
grant all on senderusernotes to PUBLIC;
grant all on selfusernotes to PUBLIC;
grant all on notesalarmcondition to PUBLIC;
-- Suppression View definitions
grant all on suppressiongroup to PUBLIC;
grant all on signalsuppressiongroup to PUBLIC;
grant all on objectsuppressiongroup to PUBLIC;
grant all on suppressiongrouplookup to PUBLIC;
grant all on suppressiongroupdelaytimer to PUBLIC;
-- timer tables
grant all on oetimer to PUBLIC;
grant all on digitaldelaytimer to PUBLIC;
grant all on alarmssuppressiontimer to PUBLIC;
grant all on autologouttimer to PUBLIC;
-- NW3000 Poll lists
grant all on nw3000polllist to PUBLIC;
grant all on nw3000analogpolllist to PUBLIC;
```

```
grant all on nw3000digitalpolllist to PUBLIC;
-- NW3000 RDI View definitions
grant all on nw3000driver to PUBLIC;
grant all on nw3000network to PUBLIC;
grant all on nw3000device to PUBLIC;
grant all on nw3000audit to PUBLIC;
-- Additional NW3000 related Views
grant all on nw3000alarmprioritymap to PUBLIC;
grant all on NW3000Archive to PUBLIC;
grant all on nw3000devicecommunicationalarmcondition to PUBLIC;
grant all on nw3000devicestatusalarmcondition to PUBLIC;
grant all on nw3000deviceversionalarmcondition to PUBLIC;
-- Grant and revoke configuration View definitions
grant all on groups to PUBLIC;
grant all on usergroups to PUBLIC;
grant all on exclusions to PUBLIC;
-- UserNameOnly View definition
grant all on UserNameOnly to PUBLIC;
-- Scheduler View definitions
grant all on Diary to PUBLIC;
grant all on CalendarEventsForDiary to PUBLIC;
grant all on CalendarEvents to PUBLIC;
grant all on EventPeriods to PUBLIC;
grant all on SchedulePattern to PUBLIC;
grant all on ScheduleEvents to PUBLIC;
grant all on ToBeScheduled to PUBLIC;
grant all on ControlCurve to PUBLIC;
-- Time Zone and DST View definitions
grant all on TimeZones to PUBLIC;
```

```
grant all on DatabaseTimeStatus to PUBLIC;
grant all on DSTInformation to PUBLIC;
-- Calculation tables
grant all on calculation to PUBLIC;
grant all on RealAnalogSignalTrigger to PUBLIC;
grant all on StringSignalTrigger to PUBLIC;
grant all on DigitalSignalTrigger to PUBLIC;
grant all on CalculationCallbackTimer to PUBLIC;
grant all on AttributeTrigger to PUBLIC;
grant all on CalculationStatusAlarmCondition to PUBLIC;
grant all on IntegerAnalogSignalTrigger to PUBLIC;
-- Redundancy table
grant all on Redundancy to PUBLIC;
grant all on redundancyalarmconditiona to PUBLIC;
grant all on redundancyalarmconditionb to PUBLIC;
-- Archive Catalogue tables
grant all on ArchiveCatalogue to PUBLIC;
grant all on ArchiveIndex to PUBLIC;
grant all on DateTimeArchiveIndex to PUBLIC;
grant all on IntegerArchiveIndex to PUBLIC;
grant all on RealArchiveIndex to PUBLIC;
grant all on ArchiveBackupSet to PUBLIC;
grant all on ArchiveBackupItem to PUBLIC;
-- Timed Archive Table
grant all on TimedArchive to PUBLIC;
-- Allen Bradley RDI tables
grant all on ABDriver to PUBLIC;
grant all on ABNetwork to PUBLIC;
grant all on ABDevice to PUBLIC;
```



```
grant all on ABRealAnalog to PUBLIC;
grant all on ABIntegerAnalog to PUBLIC;
grant all on ABDigital to PUBLIC;
grant all on ABComplex to PUBLIC;
grant all on ABPollList to PUBLIC;
grant all on ABDeviceHealthAlarmCondition to PUBLIC;
-- Security Phase 1 access
grant all on currentuser to PUBLIC;
grant all on adminuser to PUBLIC;
-- security phase 2 access
grant all on Workstation to PUBLIC;
grant all on lockouttimer to PUBLIC;
-- the following view provides access to user based information essential
-- to the OE Security Manager. ALL users as a minimum require SELECT access
-- to this View.
grant all on useraccess to PUBLIC;
-- The following view is used to provide account lockout functionality.
-- As a minimum ALL USERS must have SELECT & UPDATE rights on this view!
grant all on UserLockout to PUBLIC;
-- database replication view
grant all on DatabaseReplication to PUBLIC;
-- security replication view
grant all on SecurityReplication to PUBLIC;
-- event replication view
grant all on EventReplication to PUBLIC;
-- The following line allows the OE Security Configuration Tool to
determine who
-- granted administrative configuration rights to a user.
-- Added select privileges for column_privileges, as this, and that on the
```

```
-- table_privileges table are required in order for OE Replication to
function.

grant select on table_privileges to PUBLIC;

grant select on column_privileges to PUBLIC;

-- Temporary View to allow access to the expirywarningtime value in a
format

-- that is acceptable to ODBC/DAO. All users must have SELECT privileges on
this

-- view as a minimum.

grant select on expirywarningtime to PUBLIC;

-- Security Token Views

grant select on Token to PUBLIC;

grant select on TokenGroup to PUBLIC;

grant select on TokenAccess to PUBLIC;

grant select on TokenGroupAccess to PUBLIC;

-- OPC Client RDI Views

grant all on OPCDriver to PUBLIC;

grant all on OPCServer to PUBLIC;

grant all on OPCDevice to PUBLIC;

grant all on OPCGroup to PUBLIC;

grant all on OPCItemRealAnalog to PUBLIC;

grant all on OPCItemIntegerAnalog to PUBLIC;

grant all on OPCItemDigital to PUBLIC;

grant all on OPCItemString to PUBLIC;

-- OE Mail/Paging Server Views

grant all on PatternGroup to PUBLIC;

grant all on Pattern to PUBLIC;

grant all on Recipient to PUBLIC;

grant all on MailFormat to PUBLIC;

grant all on AlarmPattern to PUBLIC;

grant all on AlarmRecipient to PUBLIC;
```

```
grant all on AlarmMailFormat to PUBLIC;
grant all on alarmpagingformat to PUBLIC;
grant all on alarmpagingrecipient to PUBLIC;
grant all on alarmresponseaction to PUBLIC;
grant all on alarmresponseactionemail to PUBLIC;
grant all on alarmresponseactiongroup to PUBLIC;
grant all on recipientassociations to PUBLIC;
grant all on recipientgroup to PUBLIC;
grant all on routine to PUBLIC;
grant all on telephonenumber to PUBLIC;
-- AlarmRedirection views
grant all on AlarmRedirection to PUBLIC;
grant all on AlarmRedirectionTimer to PUBLIC;
-- Questionable alarm condition views
grant all on QuestionableRangeAlarmCondition to PUBLIC;
grant all on QuestionableEqualsAlarmCondition to PUBLIC;
grant all on NW3000QuestionableAlarmCondition to PUBLIC;
-- Plant Area
grant all on PlantArea to PUBLIC;
-- persistent memory monitor table
grant all on memoryMonitor to PUBLIC;
grant all on memoryalarmcondition to PUBLIC;
grant all on memorymonitorcallbacktimer to PUBLIC;
-- Printer Group Views
grant all on oeprinter to PUBLIC;
grant all on oeprinteralarmcondition to PUBLIC;
grant all on oeprintergroup to PUBLIC;
grant all on oeprintergroupalarmcondition to PUBLIC;
grant all on oeprinterrelationship to PUBLIC;
```

```
-- SQL Script tables
grant all on RunSQLScript to PUBLIC;
grant all on TriggerSQLProcedure to PUBLIC;
grant all on TriggerSQLProcedureTimer to PUBLIC;
grant all on RunSQLScriptErrorAlarmCondition to PUBLIC;
grant all on TriggerSQLProcedureErrorAlarmCondition to PUBLIC;

-- Schema Help
grant all on SchemaHelp to PUBLIC;

-- OpenBSI Comm Stats
grant all on BSAPLine to PUBLIC;
grant all on IPLine to PUBLIC;
grant all on Line to PUBLIC;
grant all on BackupLineStats to PUBLIC;
grant all on BackupLine to PUBLIC;
```

2.3.4 Secure Access

Secure Access means that users are given the minimum level of access required on a sub-set of tables which are necessary for OpenEnterprise to function correctly. Applications with stringent security needs should choose this option.

2.3.5 Grant Minimum SQL Script

This is the SQL Script used to provide Secure Access to the OpenEnterprise database. It is named *GrantMinimum.sql*, and is found by default initially in the **InstallationPath*\Bristol\OpenEnterprise\Database\Schema* directory.

```
grant select on alarmconditionlookup to PUBLIC;
grant select on alarmpriorityblock to PUBLIC;
grant all on alarmsummary to PUBLIC;
grant all on attributes to PUBLIC;
grant select on currentuser to PUBLIC;
grant select on dstinformation to PUBLIC;
grant all on eventhistory to PUBLIC;
grant select on eventlog to PUBLIC;
grant select on tables to PUBLIC;
```

```
grant select on attributes to PUBLIC;
grant all on indexattrs to PUBLIC;
grant select on indexes to PUBLIC;
grant select on notes to PUBLIC;
grant select on objectnotes to PUBLIC;
grant select on signalnotes to PUBLIC;
grant select on tables to PUBLIC;
grant select on timezones to PUBLIC;
grant select on oelogcontrol to PUBLIC;
grant select on oelogcolumn to PUBLIC;
grant select on oelogdata to PUBLIC;
grant select on token to PUBLIC;
grant select on tokenaccess to PUBLIC;
grant select on tokengroup to PUBLIC;
grant all on tokengroupaccess to PUBLIC;
grant all on useraccess to PUBLIC;
grant select on userlockout to PUBLIC;
grant select on usernotes to PUBLIC;
grant select on usernameonly to PUBLIC;
grant select on workstation to PUBLIC;
grant select on accessareaconfig to PUBLIC;
grant select on accessarea to PUBLIC;
grant select on plantarea to PUBLIC;
grant select on SchemaHelp to PUBLIC;
```

2.3.6 Back Button

The Back Button enables you to go back to the previous page to make changes before continuing with configuring the wizard. When viewing the first page of the wizard, and on the Build page, this button will be disabled.

2.3.7 Next Button

This button will close the current page in the wizard and open the next page.

2.3.8 Finish Button

This button will be disabled until the whole process of configuring the Database Project Builder wizard and building the database is complete. On the last page of the wizard, it will be enabled, and all other buttons will be disabled.

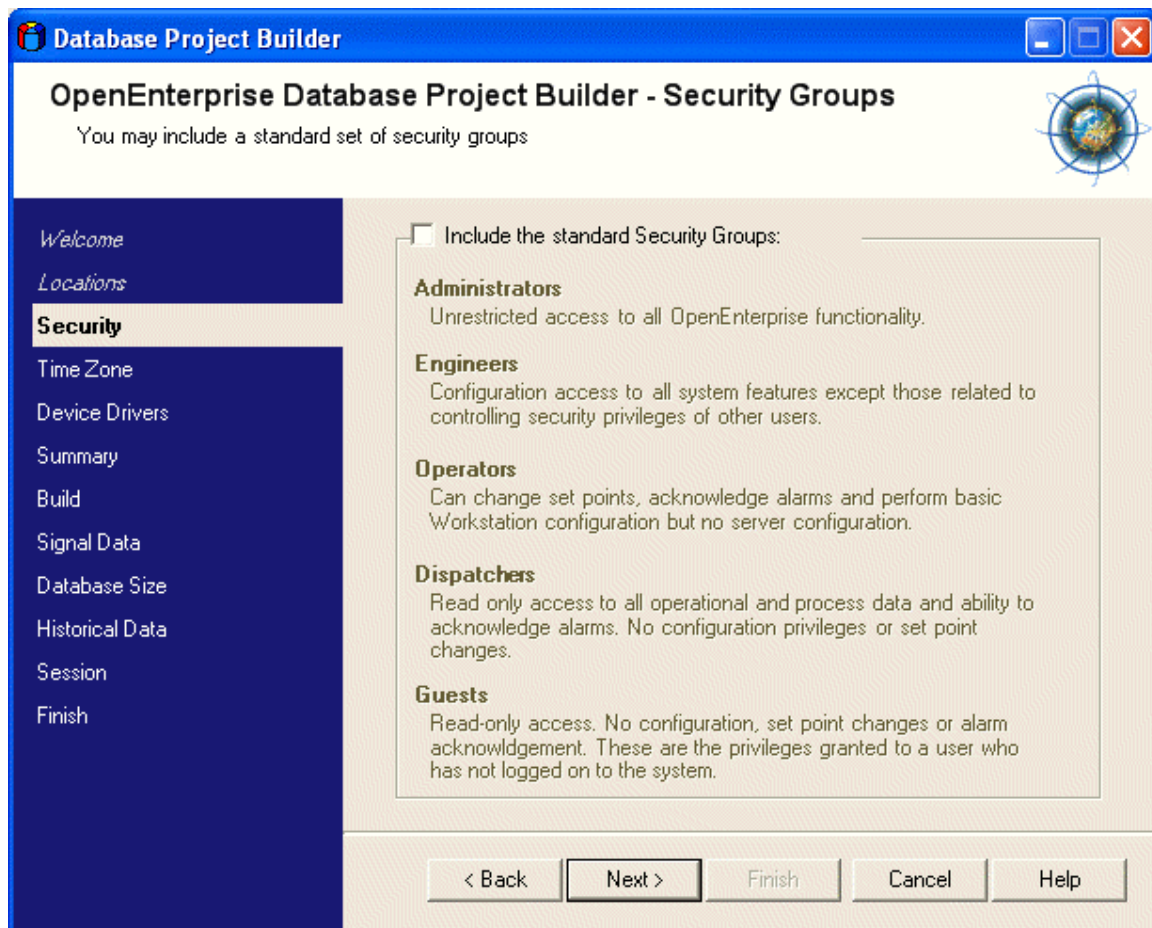
When selected, the Database Project Builder will close. If the "Start when wizard finishes" check box was selected when on the Session page, the configured Session will be started automatically.

2.3.9 Cancel Button

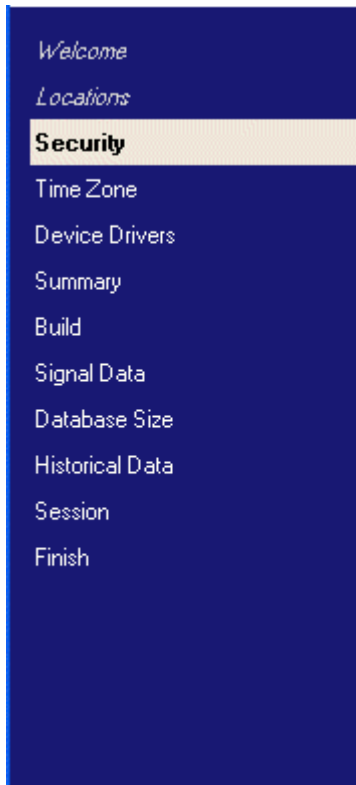
Clicking on this button will close the current page and will abort the Database Project Builder wizard. On the final page of the wizard, this button will be disabled.

2.4 Security Groups

This page enables you to choose whether to automatically set up groups of users, or to set up the database with no groups of users.



2.4.1 Step List



This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.4.2 Standard Group Configuration

If the Standard Group Configuration radio button is selected, five groups of users with a graded set of privileges from the highest group (Administrators) to the lowest (Guest), will be created automatically when the **[Next>]** button is selected.

If this option is not selected, the database will be built with no user created user groups. There will, of course, still be the default 'All Users' group, to which all users automatically belong.

If you decide not to include them at this stage, these exact same Groups can be created later, when the database has been built, using the Security Configuration Tool.

Once the Groups have been created, users automatically inherit the Security settings of any Group to which they are assigned.

2.4.3 The User Groups

Each user group will have separate Workstation and Table access security defined.

2.4.3.1 Workstation Functionality (Tokens)

Each group has a different level of Workstation Security defined via its access to Tokens that enable functionality on the Workstation. To see what Tokens are assigned to each group, review the *DefaultGroups.sql* file.

2.4.3.2 Table Privileges

Each Group will also be given different database privileges, which will grant Read Only or Read/Write access to key tables. Although these settings will be overridden if the *Open* option was selected on the Database Privileges page, the Token security settings of each user group will render any undesired Database Privileges void.

For instance, if the users in the Guests group have Read/Write privileges on the AlarmSummary table, Token Security only allows them to view alarms, not to acknowledge them. To see the exact privileges assigned to each group review the *DefaultGroupPrivileges.sql* file.

2.4.3.3 SQL Script File Location

The above files are found by default initially in the **InstallationPath*\Bristol\OpenEnterprise\Database\Schema* directory, from where they are copied to the user defined Data directory.

Groups Page

2.4.4 Back Button

The Back Button enables you to go back to the previous page to make changes before continuing with configuring the wizard. When viewing the first page of the wizard, and on the Build page, this button will be disabled.

2.4.5 Next Button

This button will close the current page in the wizard and open the next page.

2.4.6 Cancel Button

Clicking on this button will close the current page and will abort the Database Project Builder wizard. On the final page of the wizard, this button will be disabled.

2.4.7 Finish Button

This button will be disabled until the whole process of configuring the Database Project Builder wizard and building the database is complete. On the last page of the wizard, it will be enabled, and all other buttons will be disabled.

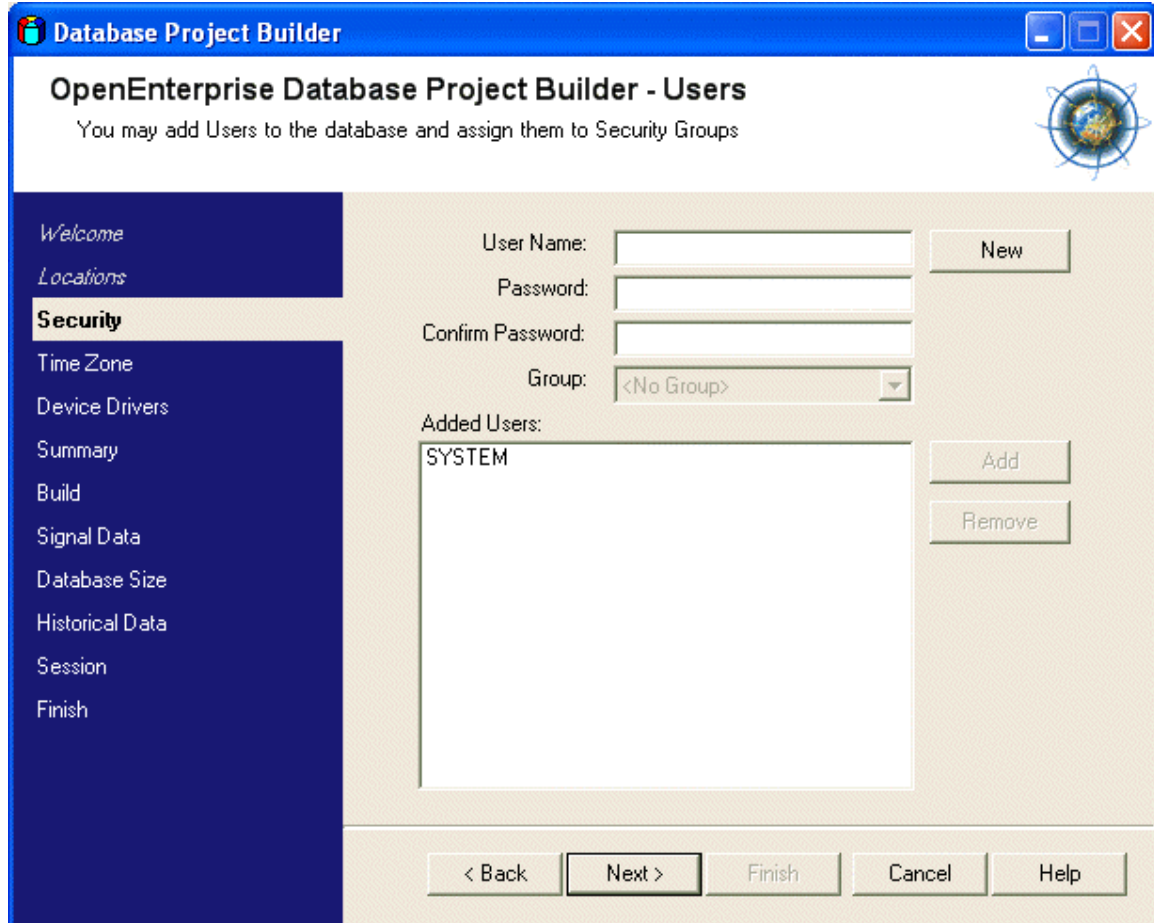
When selected, the Database Project Builder will close. If the "Start when wizard finishes" check box was selected when on the Session page, the configured Session will be started automatically.

2.4.8 Help Button

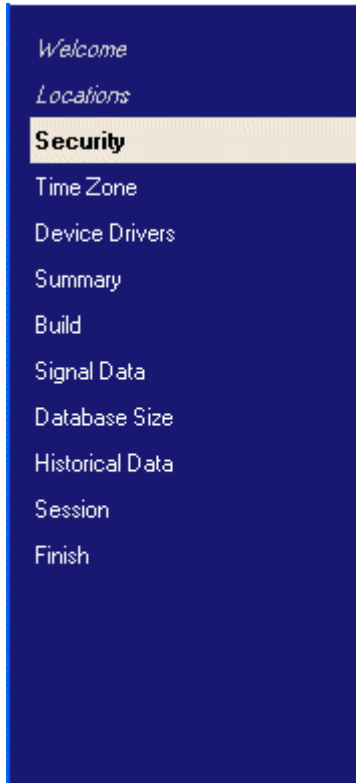
Selecting this button will open this help file at the appropriate topic.

2.5 Users

The Users page enables you to create users who will be able to log on to the new OpenEnterprise system. Prior to the display of this page, a message will appear, informing you that the default Administrator user (SYSTEM) has been created, along with the SYSTEM user's password. Clear this message by selecting the **[OK]** button.



2.5.1 Step List



This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.5.2 User Name

Type the user's log in name here. Remember that although a user's password can be changed once the database is built, you cannot change the user's log in name.

2.5.3 New User Button

When selected, any text within the fields on the left of the button will be cleared, ready for entering another user's name and password.

2.5.4 Password

Type the user's intended password here first. For greater security, use a combination of lower and upper case letters, as well as characters and numbers in the password. Security can be configured so that users must change their password at regular intervals.

2.5.5 Confirm Password

Type the user's password in here again as a check. When the **[Next]** button is selected, the DPB will check that this matches the text in the *Password* field before moving on.

2.5.6 Group

If you elected to create user groups on the previous page, this list box will be populated with the default groups. Users can be assigned to groups by selecting one of the groups from this list.

2.5.7 Added Users List

This box displays all of the users that will be added to the OpenEnterprise project from this page. The SYSTEM user is created already by the DPB and is displayed automatically at the top of the list.

2.5.8 Add Button

When selected, any new user that has been configured within the *Name, Password, Confirm Password and Group* fields will be placed in the *Added Users List*.

2.5.9 Remove Button

When selected, any user (except the SYSTEM user) selected from the *Added Users List* will be removed.

2.5.10 Back Button

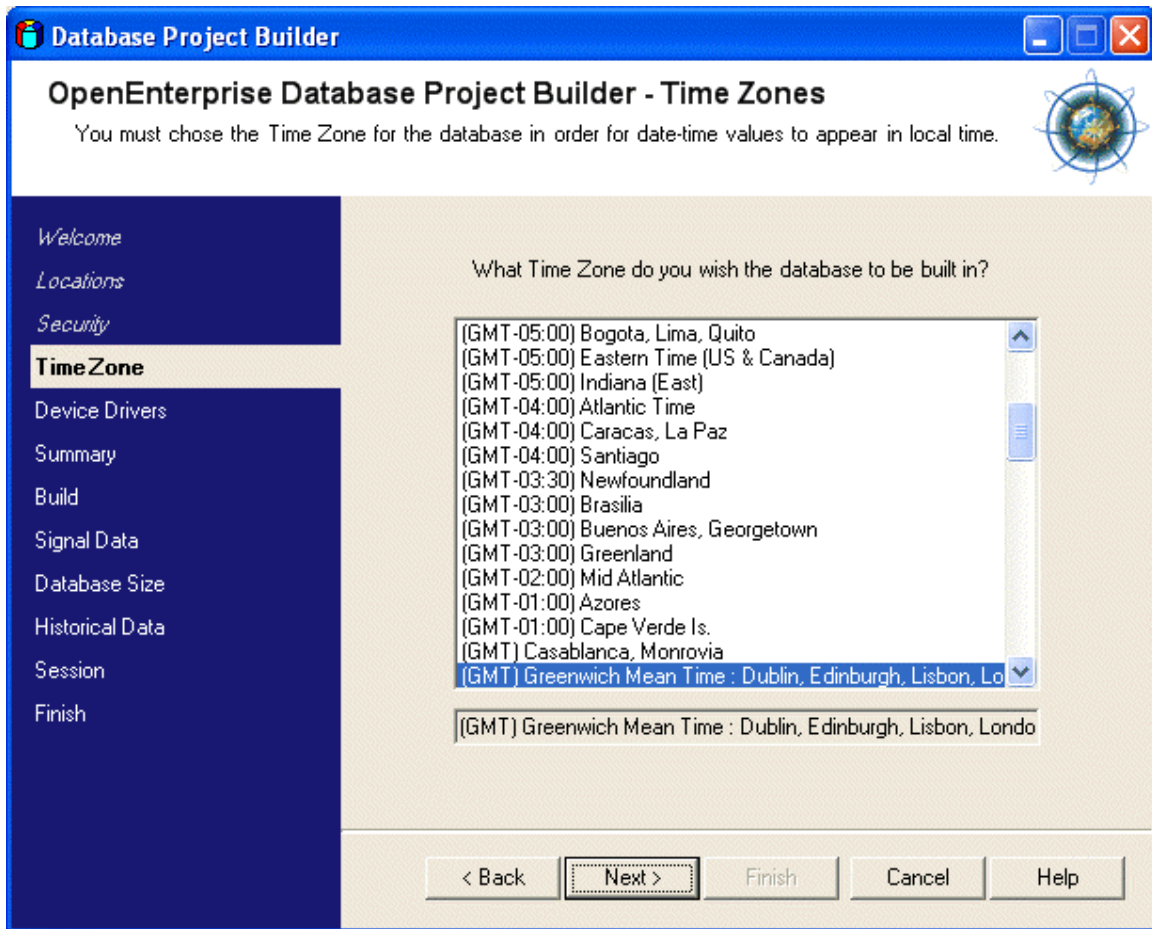
The Back Button enables you to go back to the previous page to make changes before continuing with configuring the wizard. When viewing the first page of the wizard, and on the Build page, this button will be disabled.

2.5.11 Next Button

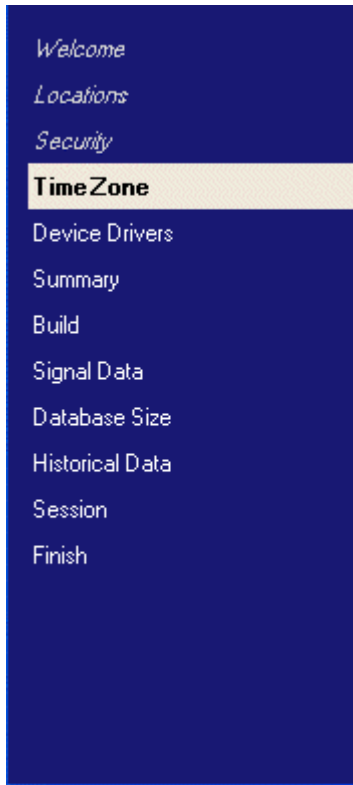
This button will close the current page in the wizard and open the next page.

2.6 Time Zone

This page enables you to choose the correct time zone setting for the OpenEnterprise project.



2.6.1 Step List



This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.6.2 Time Zone

This is a list of time zones. The selection will default to the time zone of the PC. Select the one required for the OpenEnterprise project.

2.6.3 Back Button

The Back Button enables you to go back to the previous page to make changes before continuing with configuring the wizard. When viewing the first page of the wizard, and on the Build page, this button will be disabled.

2.6.4 Next Button

This button will close the current page in the wizard and open the next page.

2.6.5 Finish Button

This button will be disabled until the whole process of configuring the Database Project Builder wizard and building the database is complete. On the last page of the wizard, it will be enabled, and all other buttons will be disabled.

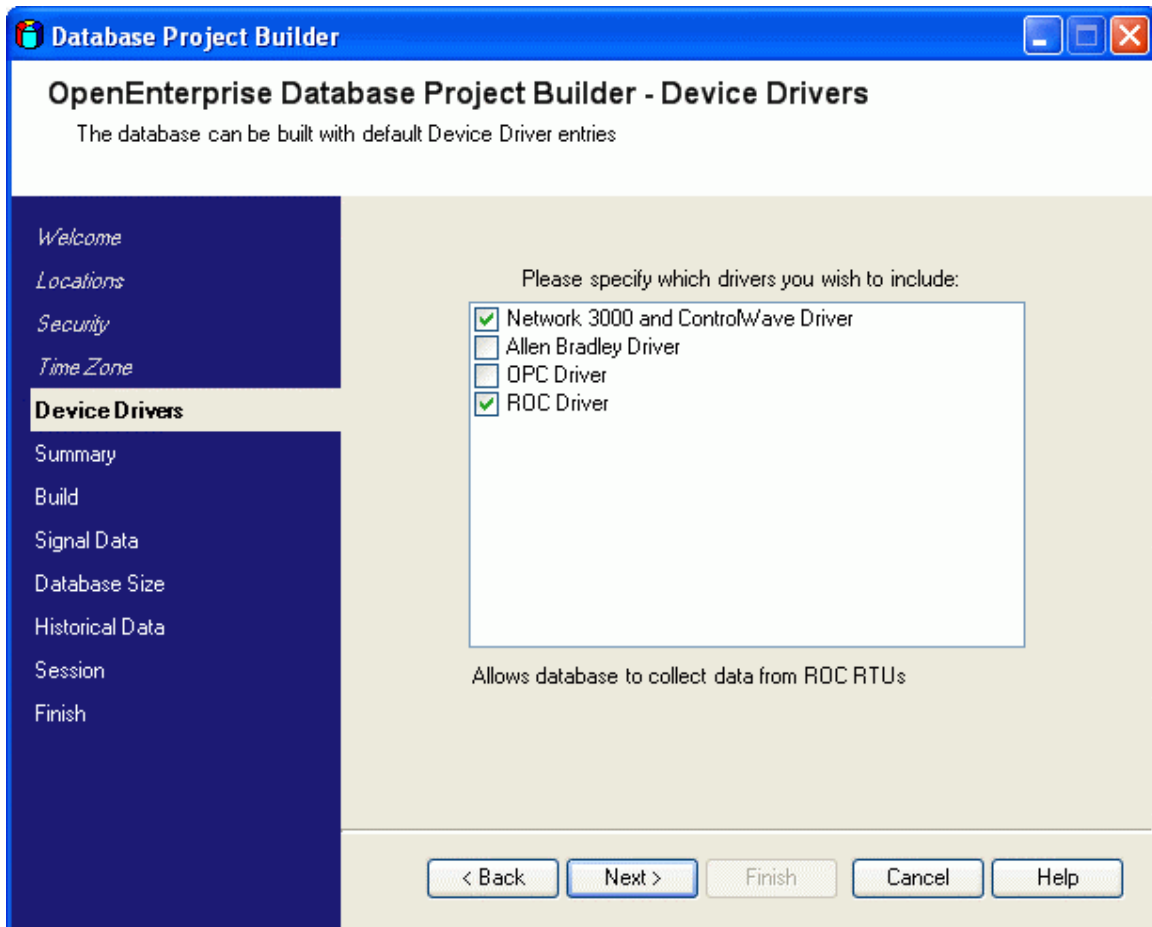
When selected, the Database Project Builder will close. If the "Start when wizard finishes" check box was selected when on the Session page, the configured Session will be started automatically.

2.6.6 Cancel Button

Clicking on this button will close the current page and will abort the Database Project Builder wizard. On the final page of the wizard, this button will be disabled.

2.7 Device Drivers

The Device Drivers page enables you to select the required device drivers. Any one or all of the available device drivers can be selected.



2.7.1 Step List



This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.7.2 Allen Bradley Driver

Select this option to install the tables and entries necessary for the ABRDI device driver to collect data from Allen-Bradley devices. The ABRDI will be added to the OpenEnterprise session.

2.7.3 Bristol NW3000 Driver

Select this option to install the tables and entries necessary for the RDI3000 driver to collect data from Bristol RTUs. The RDI3000 will be added to the OpenEnterprise session.

2.7.4 OPC Client Driver

Select this option to install the tables and entries necessary for the OpenEnterprise OPC Client RDI driver to collect data from device specific OPC Servers. The OPC Client RDI will be added to the OpenEnterprise session.

2.7.5 Back Button

The Back Button enables you to go back to the previous page to make changes before continuing with configuring the wizard. When viewing the first page of the wizard, and on the Build page, this button will be disabled.

2.7.6 Next Button

This button will close the current page in the wizard and open the next page.

2.7.7 Finish Button

This button will be disabled until the whole process of configuring the Database Project Builder wizard and building the database is complete. On the last page of the wizard, it will be enabled, and all other buttons will be disabled.

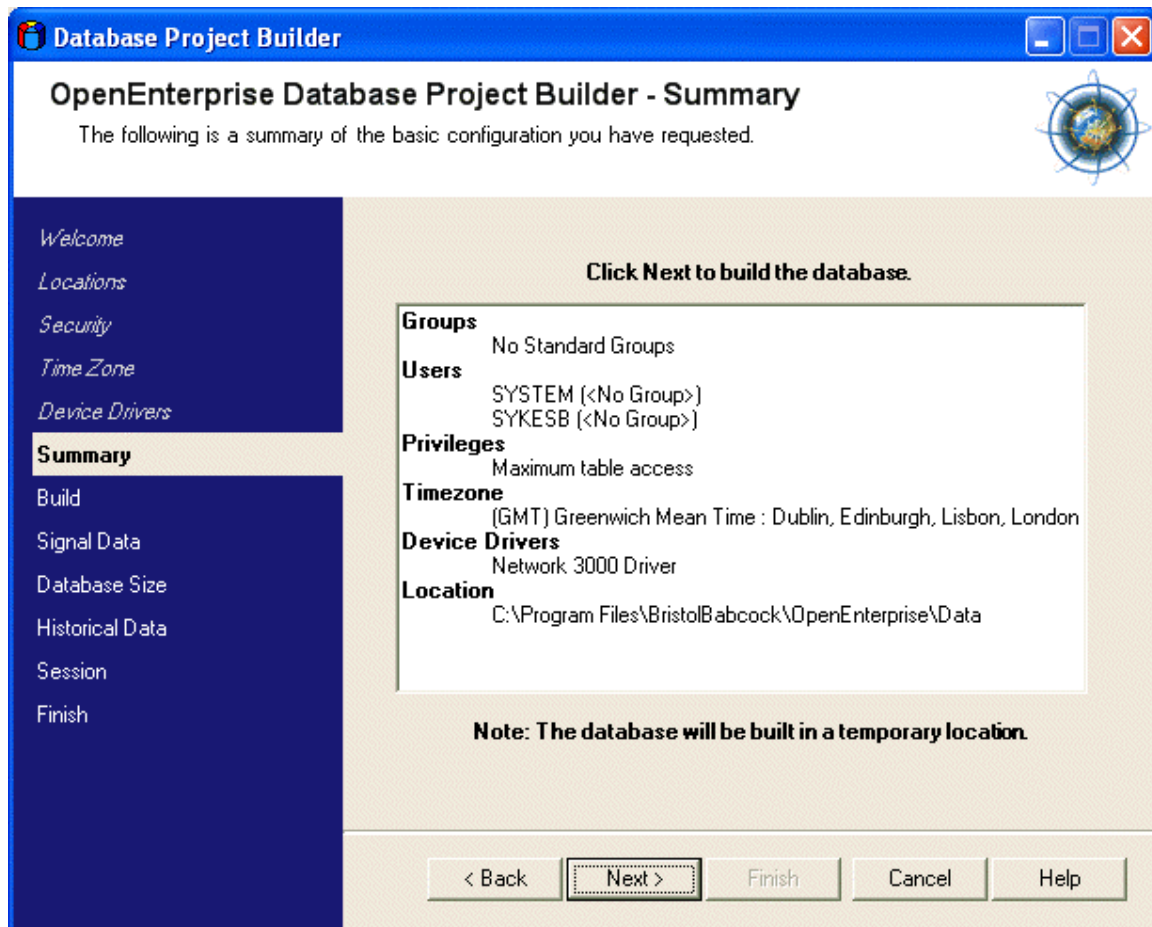
When selected, the Database Project Builder will close. If the "Start when wizard finishes" check box was selected when on the Session page, the configured Session will be started automatically.

2.7.8 Cancel Button

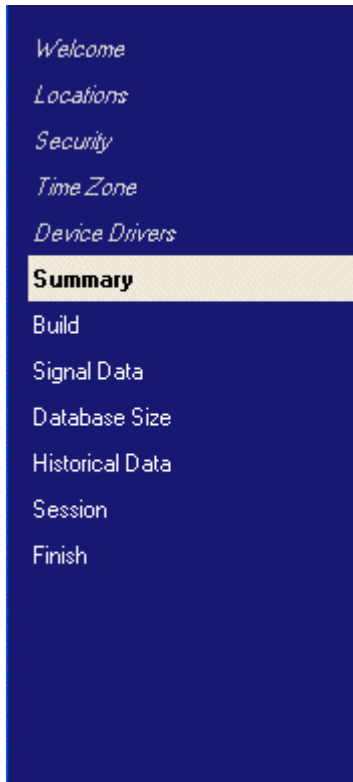
Clicking on this button will close the current page and will abort the Database Project Builder wizard. On the final page of the wizard, this button will be disabled.

2.8 Summary

The Summary Page provides a summary of all the options you have chosen. Read it before you continue to ensure they are the correct options. You can go back and change options from here by clicking on the [**<Back**] button.



2.8.1 Step List



This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.8.2 Back Button

The Back Button enables you to go back to the previous page to make changes before continuing with configuring the wizard. When viewing the first page of the wizard, and on the Build page, this button will be disabled.

2.8.3 Next Button

This button will close the current page in the wizard and open the next page.

2.8.4 Finish Button

This button will be disabled until the whole process of configuring the Database Project Builder wizard and building the database is complete. On the last page of the wizard, it will be enabled, and all other buttons will be disabled.

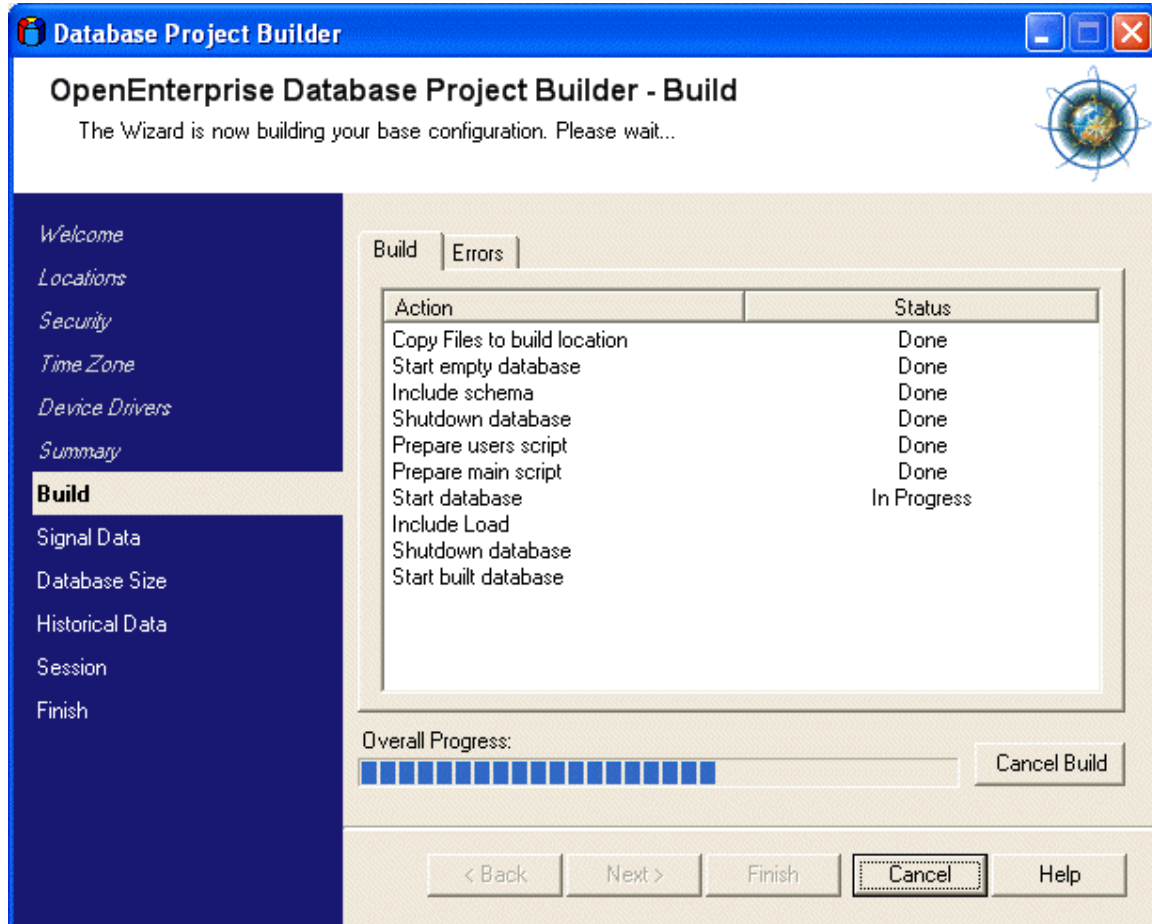
When selected, the Database Project Builder will close. If the "Start when wizard finishes" check box was selected when on the Session page, the configured Session will be started automatically.

2.8.5 Cancel Button

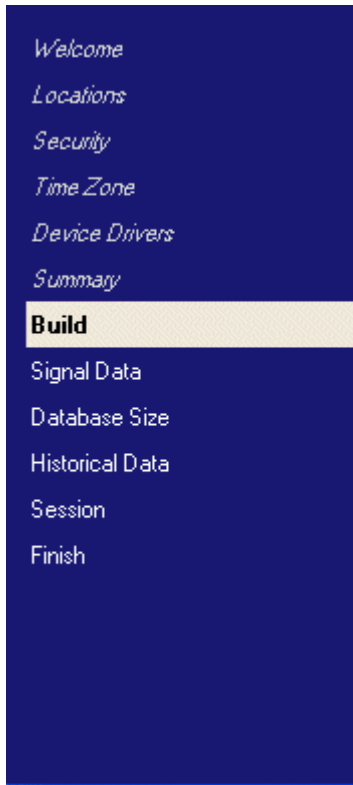
Clicking on this button will close the current page and will abort the Database Project Builder wizard. On the final page of the wizard, this button will be disabled.

2.9 Build

The Build page will inform you of its progress and display any errors encountered during the build process.



2.9.1 Step List



This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.9.2 Build Progress List

This is a list of Actions that are required to build the OpenEnterprise project. The status of each action is shown in the Status column as the build process continues. When an Action is started, the Status will display *In Progress*. If the Action is completed successfully, the Status should say *Done*. Anything else denotes an error. For more information on the error, see the *Error* tab.

2.9.3 Errors Tab

More information on any errors that occurred during the build process are listed on this tab.

2.9.4 Overall Progress

This bar displays the overall progress of the build graphically.

2.9.5 Cancel Build Button

Selecting this button will stop the build process without closing the wizard. To begin the build process again, select the **[Back]** button to go back to the *Summary* page, and then select the **[Next]** button from the *Summary* page. The build process will then begin again.

2.9.6 Back Button

The Back Button enables you to go back to the previous page to make changes before continuing with configuring the wizard. When viewing the first page of the wizard, and on the Build page, this button will be disabled.

2.9.7 Finish Button

This button will be disabled until the whole process of configuring the Database Project Builder wizard and building the database is complete. On the last page of the wizard, it will be enabled, and all other buttons will be disabled.

When selected, the Database Project Builder will close. If the "Start when wizard finishes" check box was selected when on the Session page, the configured Session will be started automatically.

2.9.8 Cancel Button

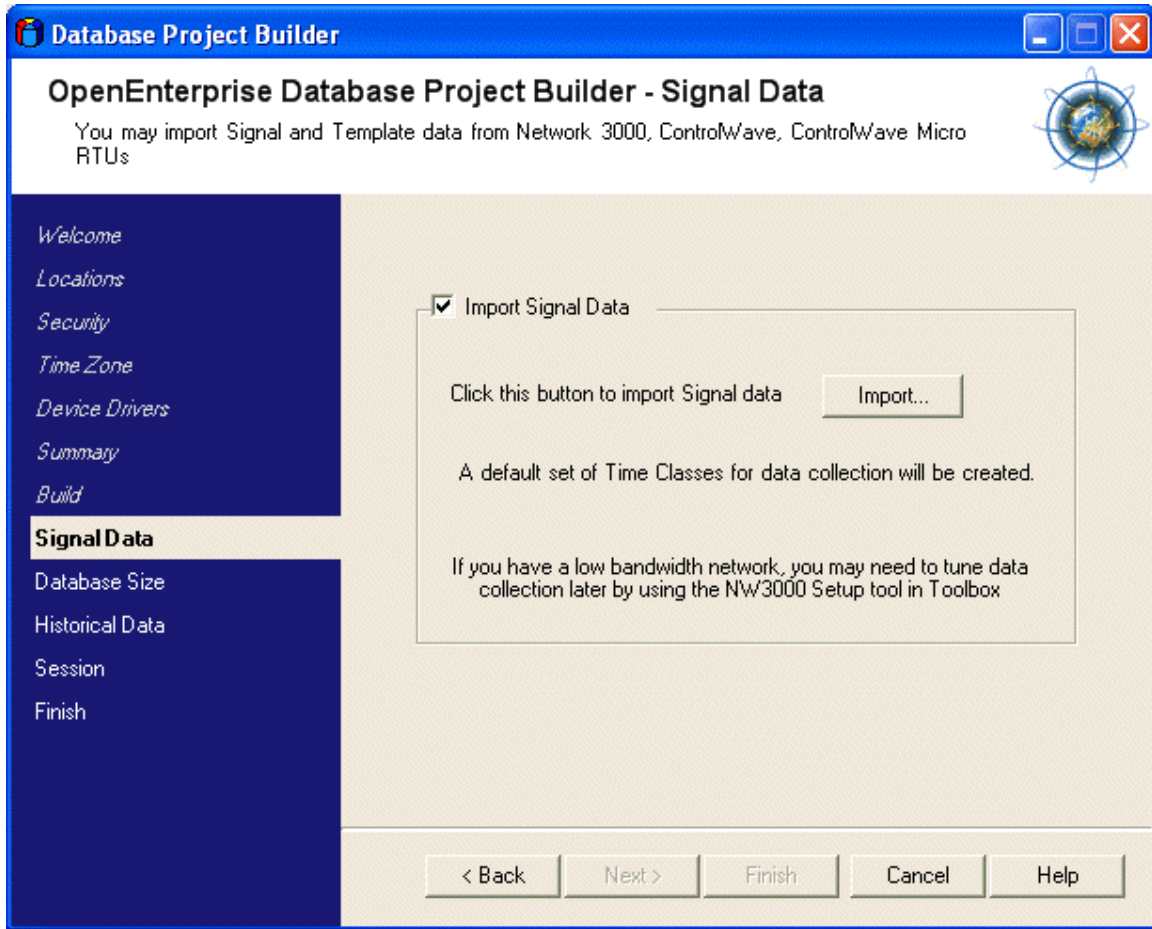
Clicking on this button will close the current page and will abort the Database Project Builder wizard. On the final page of the wizard, this button will be disabled.

2.9.9 Next Button

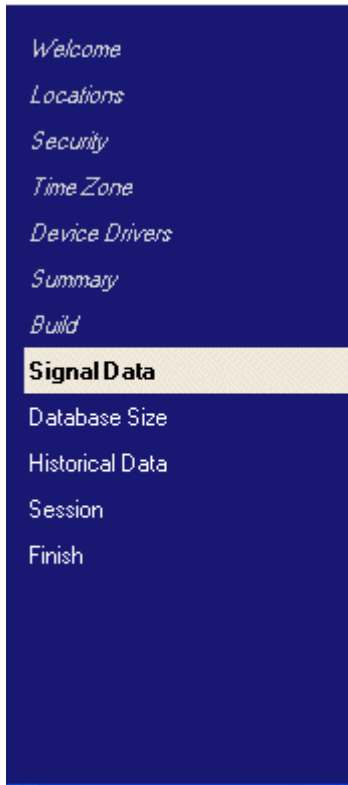
This button will close the current page in the wizard and open the next page.

2.10 Signal Data

The Signal Data page enables you to import signal data into the database from ACCOL programs which have been compiled for Bristol RTUs.



2.10.1 Step List



This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.10.2 Import Signal Data Checkbox

This option enables you to import signal data from ACCOL or IEC1131 programs to the OpenEnterprise database. When this box is checked, the **[Import]** button becomes available.

2.10.3 Import Button

Selection of this button will begin the process of importing signals from the ACCOL or IEC1131 load that will run on the Bristol RTUs that are collecting data for this project. When the button is selected the DPB will determine if OpenBSI is running. If not, it will offer to start it. You will be required to select the appropriate NDF file. Then the DPB will run the NW3000 Database Builder to import the signals, and finally, will ask if templates are to be created. If they are, then the DPB will run the NW3000 Template Builder.

2.10.4 Back Button

The Back Button enables you to go back to the previous page to make changes before continuing with configuring the wizard. When viewing the first page of the wizard, and on the Build page, this button will be disabled.

2.10.5 Next Button

This button will close the current page in the wizard and open the next page.

2.10.6 Finish Button

This button will be disabled until the whole process of configuring the Database Project Builder wizard and building the database is complete. On the last page of the wizard, it will be enabled, and all other buttons will be disabled.

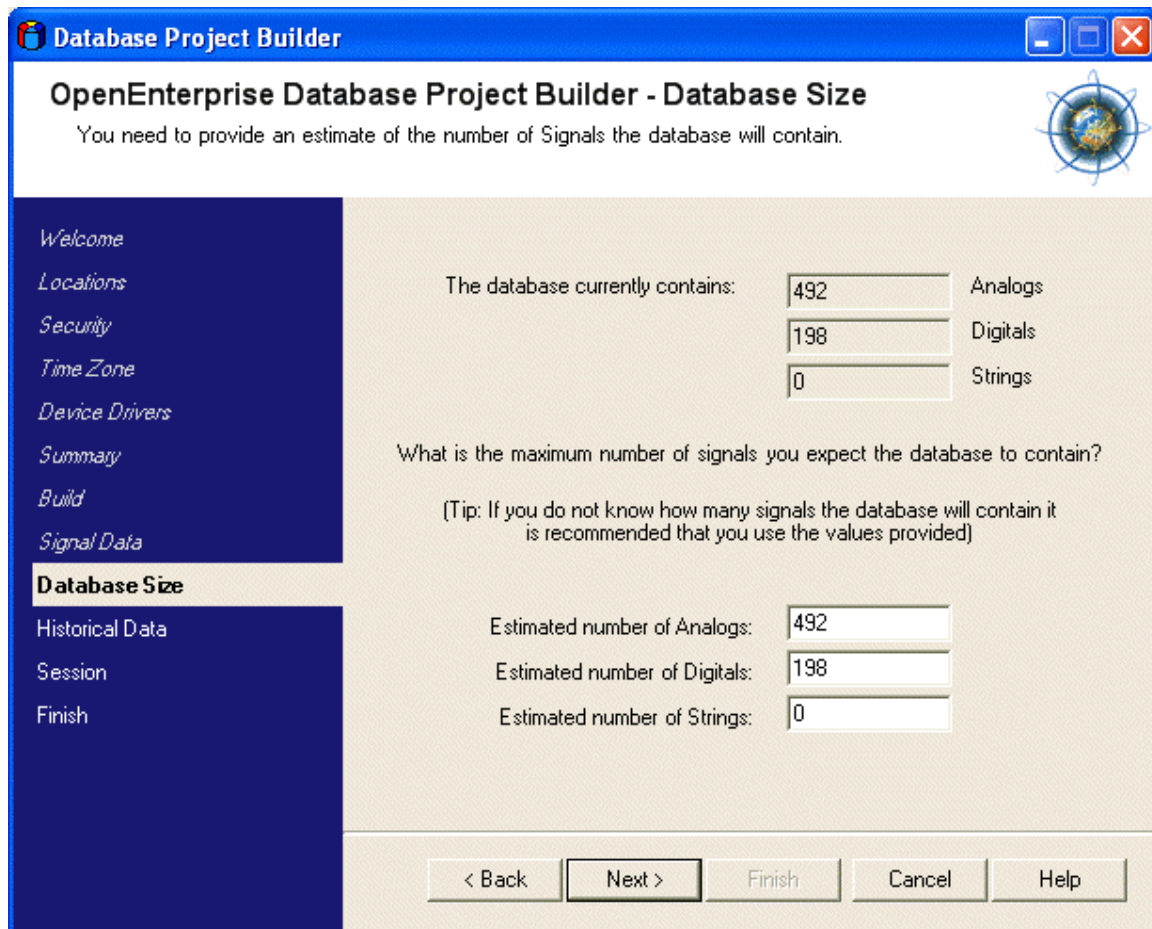
When selected, the Database Project Builder will close. If the "Start when wizard finishes" check box was selected when on the Session page, the configured Session will be started automatically.

2.10.7 Cancel Button

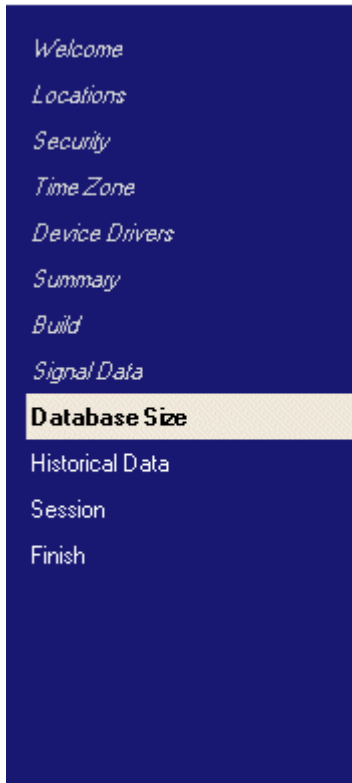
Clicking on this button will close the current page and will abort the Database Project Builder wizard. On the final page of the wizard, this button will be disabled.

2.11 Database Size

The Database Size page provides for extendibility by allowing you to size the database according to estimated future requirements.



2.11.1 Step List



This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.11.2 Current Number of Signals

These non-editable fields display the current number of Analog, Digital and String signals within the database.

2.11.3 Estimated Number of Signals

If the number of signals within the database is likely to grow, then you can enter the estimated totals for each type of signal in these fields. This will enable the DPB to allow for expansion in the database.

If the ROC Driver has been selected, it is recommended to add 5000 to the Analog and Digital fields to start with, since ROC signals can only be inserted after the Database Project Builder wizard has been completed and the OpenEnterprise Session has been started.

These estimates can be adjusted later through the Program Arguments for the Database task using the -m command line argument. See the Program Arguments field on the 'Session Manager Configuration Task Page' in the Session Manager help file for more information.

2.11.4 Back Button

The Back Button enables you to go back to the previous page to make changes before continuing with configuring the wizard. When viewing the first page of the wizard, and on the Build page, this button will be disabled.

2.11.5 Next Button

This button will close the current page in the wizard and open the next page.

2.11.6 Finish Button

This button will be disabled until the whole process of configuring the Database Project Builder wizard and building the database is complete. On the last page of the wizard, it will be enabled, and all other buttons will be disabled.

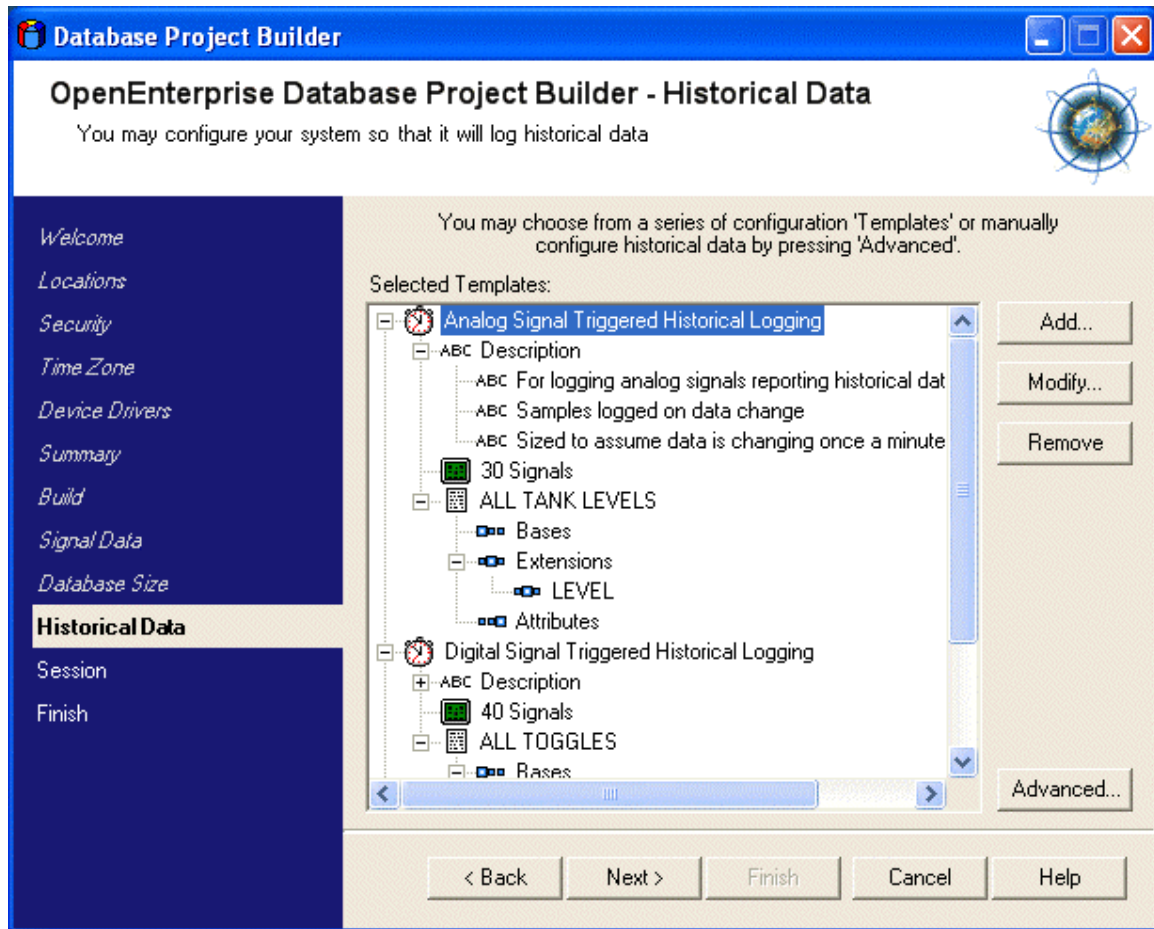
When selected, the Database Project Builder will close. If the "Start when wizard finishes" check box was selected when on the Session page, the configured Session will be started automatically.

2.11.7 Cancel Button

Clicking on this button will close the current page and will abort the Database Project Builder wizard. On the final page of the wizard, this button will be disabled.

2.12 Historical Data

Most OpenEnterprise projects require that values and events should be logged historically and subsequently archived for trending and auditing purposes. The Historical Data page enables you to configure and create the historical logging streams that will enable this. The DPB uses Historical Templates to create the historical streams.



2.12.1 Step List



This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.12.2 Selected Templates

This pane displays the templates that have been selected and configured for this project. The templates are displayed as a tree view, with the named templates at the top of the hierarchy on the extreme left of the tree.

The template names are followed by descriptive text, explaining what the templates are doing. Following this description, the number of signals in the template is displayed. Finally, the *Rules* that determine which signals belong to the historical stream are displayed.

For more information on how Historical Template files are created see the Template Files Overview page.

2.12.3 Add Template Button

Opens the Historical Templates dialog for configuring a template.

Historical Template Dialog

2.12.4 Modify Template Button

Opens the Historical Templates dialog for modifying a previously configured template.

Historical Template Dialog

2.12.5 Remove Templates Button

Removes the template that is currently selected from the *Selected Templates* list.

2.12.6 Advanced Button

Opens the Historical Configuration tool so that you can use its extra features to create the historical logging streams needed for the project.

2.12.7 Back Button

The Back Button enables you to go back to the previous page to make changes before continuing with configuring the wizard. When viewing the first page of the wizard, and on the Build page, this button will be disabled.

2.12.8 Next Button

This button will close the current page in the wizard and open the next page. The configured Historical templates will be used to create historical streams.

2.12.9 Finish Button

This button will be disabled until the whole process of configuring the Database Project Builder wizard and building the database is complete. On the last page of the wizard, it will be enabled, and all other buttons will be disabled.

When selected, the Database Project Builder will close. If the "Start when wizard finishes" check box was selected when on the Session page, the configured Session will be started automatically.

2.12.10 Cancel Button

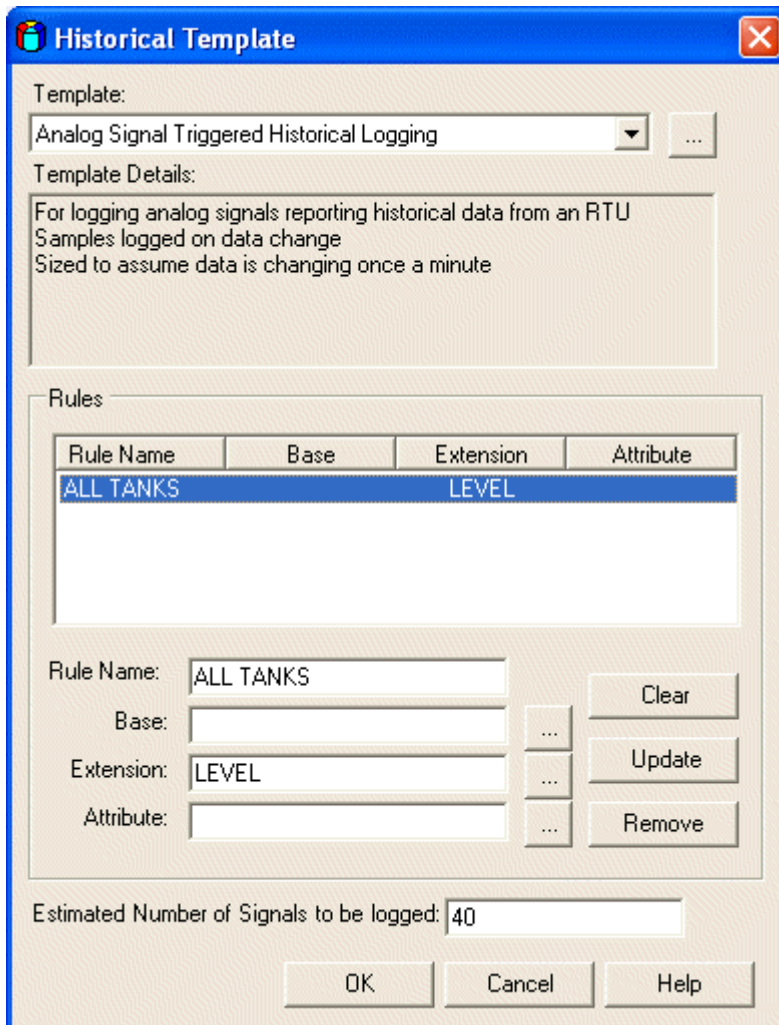
Clicking on this button will close the current page and will abort the Database Project Builder wizard. On the final page of the wizard, this button will be disabled.

2.12.11 Help Button

Selecting this button will open this help file at the appropriate topic.

2.12.12 Historical Template

The Historical Template dialog enables you to select which of the available historical templates will apply to the logging stream being configured, and to set up rules which will identify the signals which will belong to this historical stream. For more information on what Historical Template files are, and how they can be created, see the Template Files Overview page.



Historical Data Dialog

2.12.12.1 Templates

This is a list of configured templates. It is initially populated with the templates that come with OpenEnterprise. Their name and path are specified in the DPB.config file. They are XML files with an HTC extension.

For more information on how Historical Template files are created see the Template Files Overview page.

2.12.12.2 Template Browse Button

Opens a file browse dialog so you can search for any custom Historical Template files that you may have created.

For more information on how Historical Template files are created see the Template Files Overview page.

2.12.12.3 Template Details

A three line description of what the Historical Template does. These lines are taken directly from the template file itself.

For more information on how Historical Template files are created see the Template Files Overview page.

2.12.12.4 Estimated Number of Signals to Log

Type the estimated number of signals that will belong to the historical logging stream that will be created from this template. This will allow the stream to be sized correctly.

2.12.12.5 Rules List

Displays the Rules that have been configured for this template. Rules are basically filters that will be used to determine the signals that will belong to the historical logging stream that will be created from this template.

2.12.12.6 Rule Name

You can type a descriptive name for the rule here, or leave the DPB to automatically name it for you. Automatic rule names have the format *RULEn* where *n* is an incrementing number.

2.12.12.7 Base

Network 3000 Bristol RTU signals have a tri-partite construction of <Base>.<Extension>.<Attribute>. An entry in this field will filter signals for this template according to the <Base> part of the signal name.

2.12.12.8 Browse Base Button

Opens the Base Lookup dialog, so that filter criteria can be selected from the <Base> part of the signal name.

Base Lookup Dialog

2.12.12.9 Extension

Network 3000 Bristol RTU signals have a tri-partite construction of <Base>.<Extension>.<Attribute>. An entry in this field will filter signals for this template according to the <Extension> part of the signal name.

2.12.12.10 Browse Extension Button

Opens the Extension Lookup dialog, so that filter criteria can be selected from the <Extension> part of the signal name.

Extension Lookup Dialog

2.12.12.11 Attribute

Network 3000 Bristol RTU signals have a tri-partite construction of <Base>.<Extension>.<Attribute>. An entry in this field will filter signals for this template according to the <Attribute> part of the signal name.

2.12.12.12 Browse Attribute Button

Opens the Attribute Lookup dialog, so that criteria can be selected from the <Attribute> part of the signal name.

Attribute Lookup Dialog

2.12.12.13 Clear Button

Clears any text within the *Rule Name, Base, Extension or Attribute* fields, so that a new rule can be created.

2.12.12.14 Add/Update Rule Button

Adds or Updates the currently configured rule in the Rule List for this template.

2.12.12.15 Remove Rule Button

Removes the currently selected rule from the Rule List for this template.

2.12.12.16 OK Button

Selecting this button closes the Historical Template dialog. Any Templates selected and rules added will be saved to the Selected Templates list on the Historical Data dialog.

2.12.12.17 Cancel Button

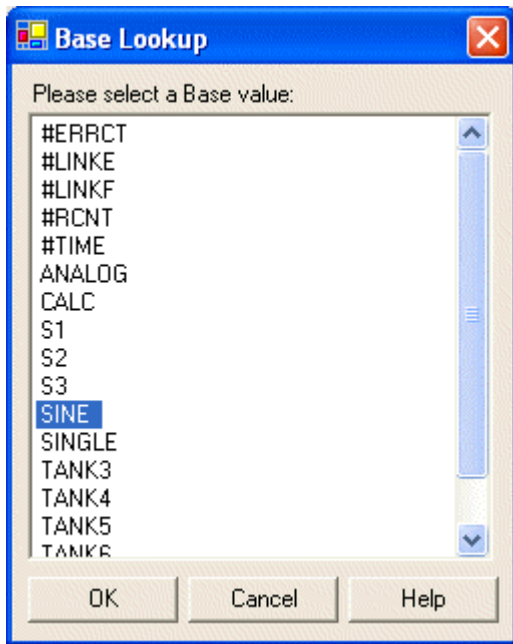
Selecting this button will close the Historical Template dialog. No Templates or Rules selected and configured on this dialog will be saved to the parent Historical Data dialog.

2.12.12.18 Help Button

Selecting this button will open this help file at the appropriate topic.

2.12.12.19 Base Lookup

The Base lookup dialog displays all Base names for signals in the selected ACCOL load.



Historical Template Dialog

2.12.12.19.1 Base, Extension or Attribute List

This list displays all Base, Extension or Attribute names for signals in the ACCOL load, depending on the browse button you selected. Multiple items may be selected by holding down the **[Shift]** or **[Ctrl]** key on the keyboard. The **[Shift]** key enables you to select a continuous block of items, whilst the **[Ctrl]** key enables you to select items from different areas of the list.

2.12.12.19.2 OK Button

Selecting this item will close the current dialog and save your selection to the relevant rule field of the Historical Template dialog.

2.12.12.19.3 Cancel Button

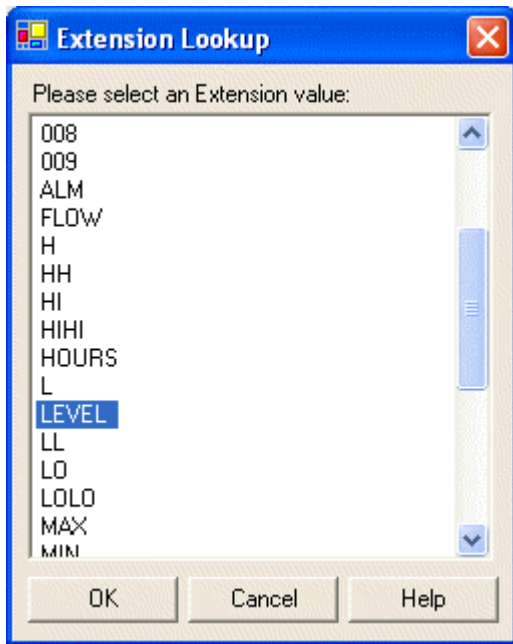
Selecting this button will close the Lookup dialog without saving any selections you made back into the Historical Template dialog.

2.12.12.19.4 Help Button

Selecting this button will open this help file at the appropriate topic.

2.12.12.20 Extension Lookup

The Extension lookup dialog displays all Extension names for signals in the selected ACCOL load.



2.12.12.20.1 Base, Extension or Attribute List

This list displays all Base, Extension or Attribute names for signals in the ACCOL load, depending on the browse button you selected. Multiple items may be selected by holding down the **[Shift]** or **[Ctrl]** key on the keyboard. The **[Shift]** key enables you to select a continuous block of items, whilst the **[Ctrl]** key enables you to select items from different areas of the list.

2.12.12.20.2 OK Button

Selecting this item will close the current dialog and save your selection to the relevant rule field of the Historical Template dialog.

2.12.12.20.3 Cancel Button

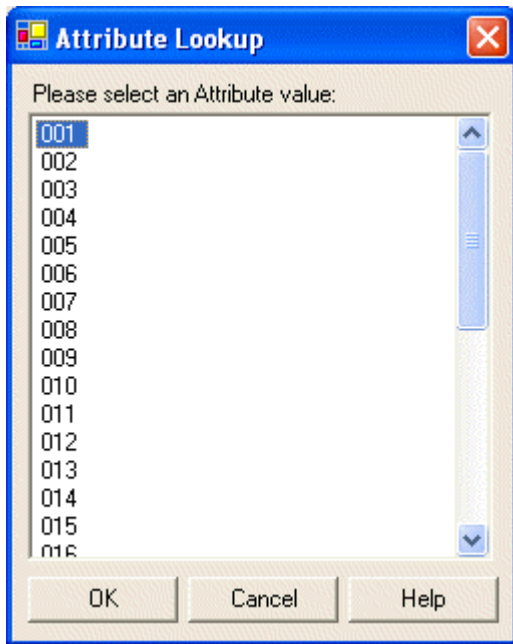
Selecting this button will close the Lookup dialog without saving any selections you made back into the Historical Template dialog.

2.12.12.20.4 Help Button

Selecting this button will open this help file at the appropriate topic.

2.12.12.21 Attribute Lookup

The Attribute lookup dialog displays all Attribute names for signals in the selected ACCOL load.



2.12.12.21.1 Base, Extension or Attribute List

This list displays all Base, Extension or Attribute names for signals in the ACCOL load, depending on the browse button you selected. Multiple items may be selected by holding down the **[Shift]** or **[Ctrl]** key on the keyboard. The **[Shift]** key enables you to select a continuous block of items, whilst the **[Ctrl]** key enables you to select items from different areas of the list.

2.12.12.21.2 OK Button

Selecting this item will close the current dialog and save your selection to the relevant rule field of the Historical Template dialog.

2.12.12.21.3 Cancel Button

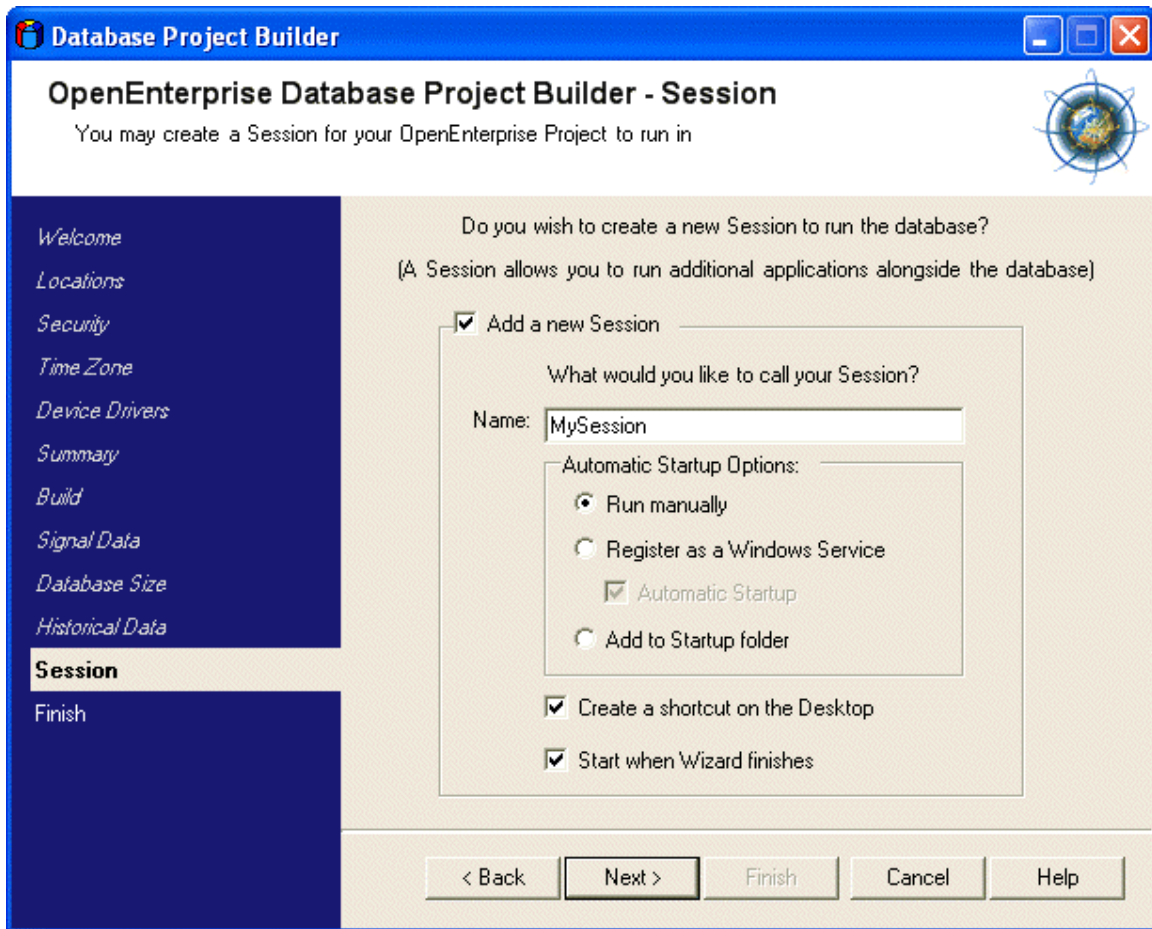
Selecting this button will close the Lookup dialog without saving any selections you made back into the Historical Template dialog.

2.12.12.21.4 Help Button

Selecting this button will open this help file at the appropriate topic.

2.13 Session Page

The Session page enables you to create an OpenEnterprise Session. For more information about OpenEnterprise Sessions see the Session Manager Help file.



2.13.1 Step List



This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.13.2 Add New Session

When checked, you are able to configure a custom OpenEnterprise Session for the project.

2.13.3 Session Name

Type in the name of the Session here. The default value is *MySession*.

2.13.4 Run Manually

Select this if you want to always start the Session manually after Windows has booted up.

2.13.5 Register as Windows Service

Select this option if you want to install the OpenEnterprise Session as a Windows service.

2.13.6 Automatic Startup

Select this option if you want the Session to be started automatically by Windows when it boots up. This option is only available if the Session is configured to start as a Windows service.

2.13.7 Add to Startup Folder

If this option is selected, the configured Session will be added to the Windows Startup folder as a shortcut.

2.13.8 Create Shortcut on Desktop

This option will cause a shortcut for the Session to be placed on the Windows Desktop.

2.13.9 Start When Wizard Finishes

If this option is selected, when the DPB wizard has finished the Session will be started immediately.

2.13.10 Back Button

The Back Button enables you to go back to the previous page to make changes before continuing with configuring the wizard. When viewing the first page of the wizard, and on the Build page, this button will be disabled.

2.13.11 Next Button

This button will close the current page in the wizard and open the next page.

2.13.12 Cancel Button

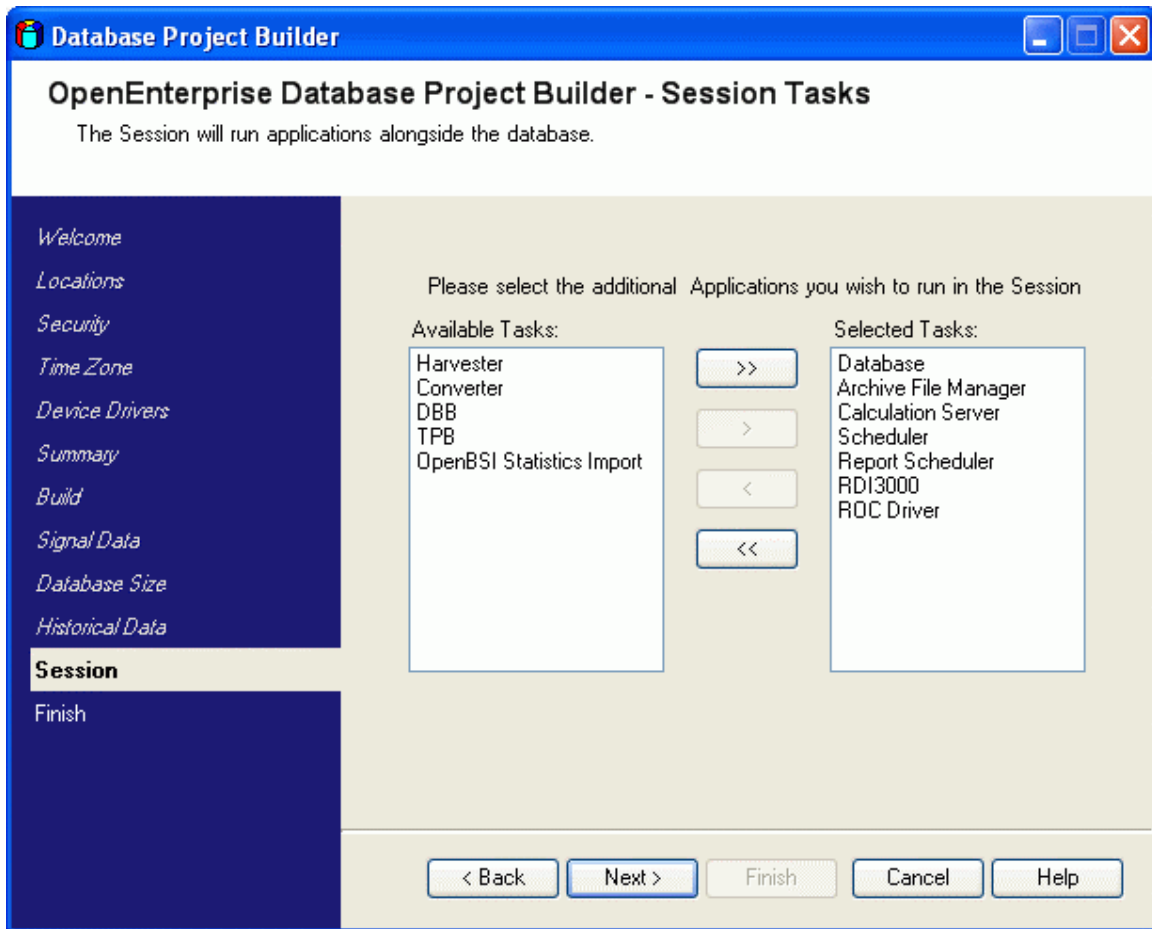
Clicking on this button will close the current page and will abort the Database Project Builder wizard. On the final page of the wizard, this button will be disabled.

2.13.13 Help Button

Selecting this button will open this help file at the appropriate topic.

2.14 Session Tasks

The Session Tasks page enables you to select the Tasks that you want to run as part of your OpenEnterprise Session. A default set of tasks will be selected based on selections from previous pages in the wizard.



2.14.1 Step List



This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.14.2 Available Session Tasks

This is a list of Tasks that are available to be included as part of the session.

2.14.3 Add All Tasks Button

When this button is selected, all tasks from the Available Session Tasks list will be moved to the Selected Session Tasks list, to be run as part of the OpenEnterprise session.

2.14.4 Add Single Task Button

When selected, the task currently highlighted in the Available Session Tasks list will be moved to the Selected Session Tasks list, and will be included in the session.

2.14.5 Remove Single Task Button

When selected, the currently highlighted task from the Selected Session Tasks list will be removed. It will no longer be a part of the session.

2.14.6 Remove All Selected Tasks Button

When selected, all tasks within the Selected Session Tasks list will be removed and replaced in the Available Session Tasks list. No tasks will be configured for the session.

2.14.7 Selected Session Tasks

This list displays all tasks that will be included in the session.

2.14.8 Back Button

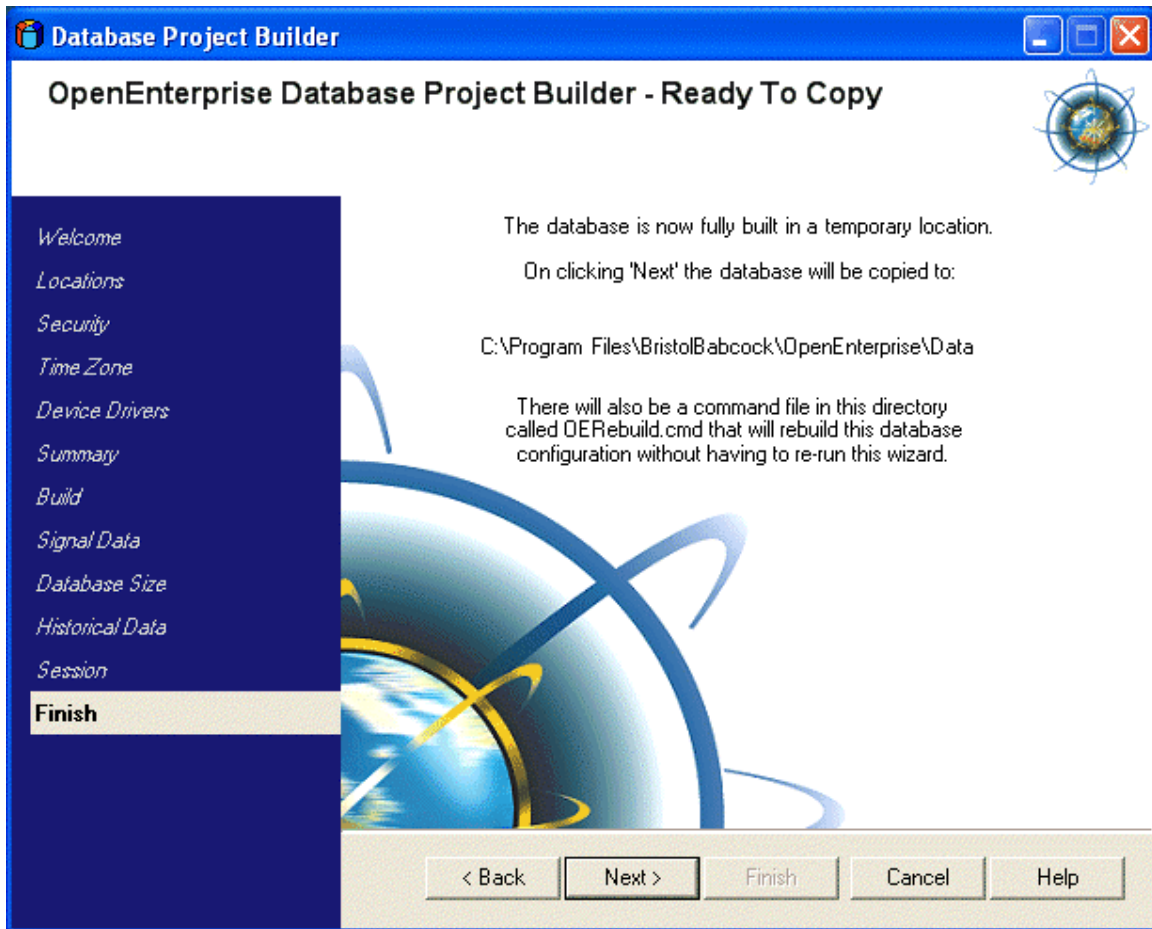
Selecting this button moves back one page in the wizard to the Session page.

2.14.9 Next Button

This button will close the current page in the wizard and open the next page.

2.15 Ready to Copy

The *Ready to Copy* page informs you that the OpenEnterprise database project has been completed, but is in a temporary location. It also explains about the OERebuild.cmd file, which will be created in the database directory. When the **[Next>]** button is selected, the database project will be copied over to the specified project directory. The **[Finish]** button will then be enabled to allow exit from the wizard.



Database Project Builder Overview

2.15.1 Step List



This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.15.2 Back Button

Selecting this button moves back one page in the wizard to the Session page.

2.15.3 Next Button

This button will initiate the final process of the Database Project Builder. When it is selected, the Database Project will be copied to the project directory, and the final page will open.

2.15.4 Finish Button

This button will be disabled until the whole process of configuring the Database Project Builder wizard and building the database is complete. On the last page of the wizard, it will be enabled, and all other buttons will be disabled.

When selected, the Database Project Builder will close. If the "Start when wizard finishes" check box was selected when on the Session page, the configured Session will be started automatically.

2.15.5 Cancel Button

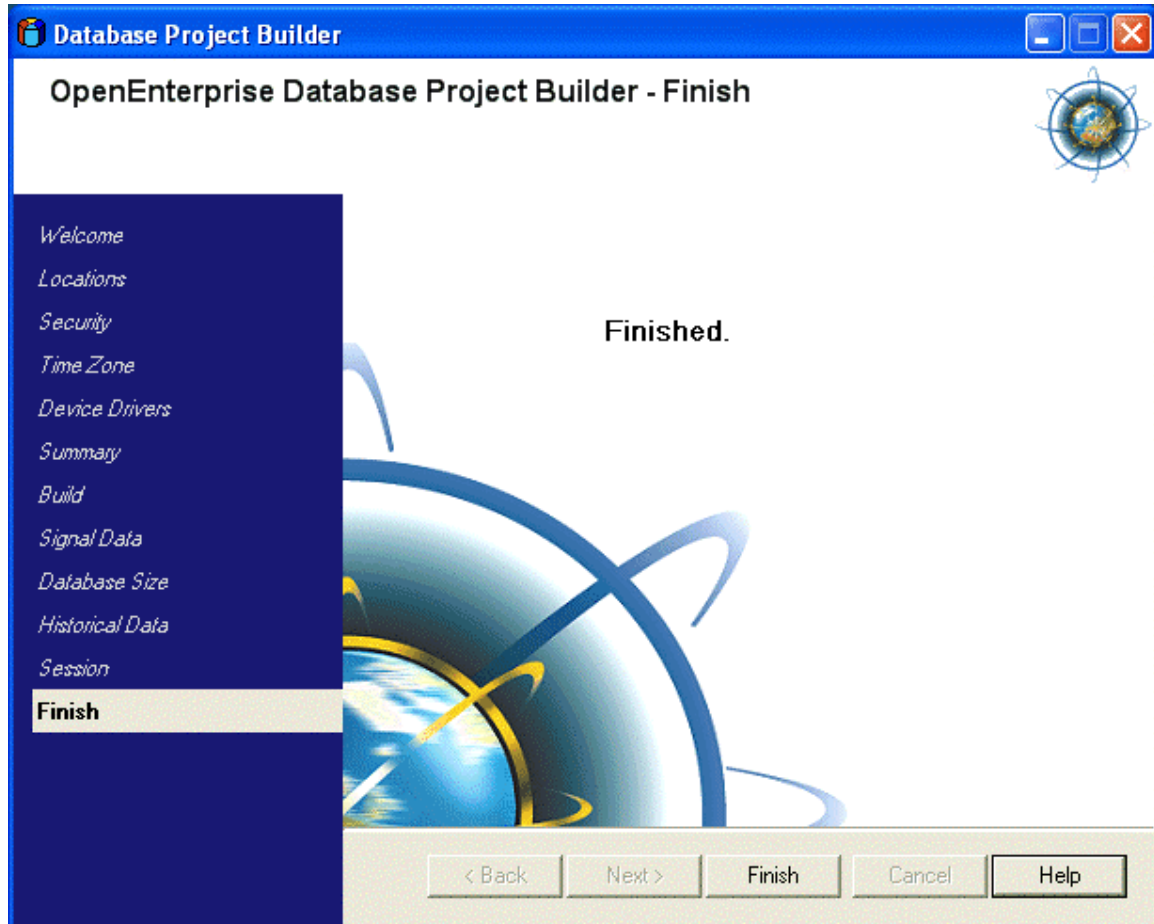
Clicking on this button will close the current page and will abort the Database Project Builder wizard. On the final page of the wizard, this button will be disabled.

2.15.6 Help Button

Selecting this button will open this help file at the appropriate topic.

2.16 Finish

This is the final page of the wizard. Click on the **[Finish]** button to close the Database Project Builder wizard.



2.16.1 Step List



This list appears to the left of every page of the wizard. It shows the steps which need to be taken to build the OpenEnterprise project. The current step will be highlighted. Previous steps will be shown in italics.

2.16.2 Back Button

This is the final page of the wizard, and the database has already been built, so the **<Back** button is disabled.

2.16.3 Next Button

This is the final page of the wizard, and the database has already been built, so the **<Next** button is disabled.

2.16.4 Finish Button

This button will be disabled until the whole process of configuring the Database Project Builder wizard and building the database is complete. On the last page of the wizard, it will be enabled, and all other buttons will be disabled.

When selected, the Database Project Builder will close. If the "Start when wizard finishes" check box was selected when on the Session page, the configured Session will be started automatically.

2.16.5 Cancel Button

Clicking on this button will close the current page and will abort the Database Project Builder wizard. On the final page of the wizard, this button will be disabled.

2.16.6 Help Button

Selecting this button will open this help file at the appropriate topic.

3 Configuration Files

There are two types of configuration files used with the Database Project Builder. They are: -

- The Application Configuration File
- Historical Template Files

3.1 Application Configuration File

Certain settings for the Database Project Builder are supplied from a configuration file called DPB.config.

This file is an XML file and must be located in the same directory that the Database Project Builder is running in.

It is possible to configure the Time Zones, Device Drivers, Historical Templates and Session Tasks that are available for the user to choose from. This is done by editing the file directly. The file can be edited in any standard text editor.

3.1.1 Application Configuration File Structure

The configuration for Database Project Builder (DPB) is sourced from a configuration file called DPB.config.

This file will be an XML file and must be located in the same directory that DPB is running in. It will be possible to configure the Time Zones, Device Drivers, Historical Templates and Session Tasks that are available for the user to choose from.

The following will be the format of DPB.config:

```
<?xml version="1.0" encoding="UTF-8"?>
<databaseProjectBuilder>
  <timeZones>
    <timeZone name="">
      <description></description>
    </timeZone>
  </timeZones>
  <drivers>
    <driver>
      <name></name>
      <text></text>
      <description></description>
```

```

        <task></task>
    </driver>
</drivers>
<templates>
    <template>
        <filename><filename>
    </template>
</templates>
<sessionTasks>
    <sessionTask>
        <name></name>
        <description></description>
        <application></application>
        <commandLine></commandLine>
    </sessionTask>
</sessionTasks>
</databaseProjectBuilder>

```

Configuration Files

3.1.2 Application Configuration XML Elements

The following table gives a description of the elements of the Database Project Builder's XML configuration file.

Element	Comments
<databaseProjectBuilder>	Defines DPB configuration.
<timeZones>	Defines a series of Time Zones
<timeZone>	Defines a Time Zone
<name> (under <timeZone>)	The name of the Time Zone SQL file
<description> (Under <timeZone>)	Text to display in the Time Zone page List Box
<drivers>	Defines a series of Device Drivers
<driver>	Defines a Device Driver
<name> (Under <deviceDriver>)	The name of the Driver SQL file
<text>	Text to display in the Device Drivers page List Box

<description> (Under <driver>)	Description to display below the List Box on the Device Drivers page
<task>	<SessionTask> to include when this Driver is included
<templates>	Defines a series of Templates
<template>	Defines a Template
<filename>	The filename of the Template file
<commandLine> (Under tpb)	The command line for TPB.
<sessionTasks>	Defines a series of Session Tasks
<sessionTask>	Defines a Session Task
<name> (Under <sessionTask>)	The name of the task (also displayed in the Session Tasks page List Boxes)
<description> (Under <sessionTask>)	Text to display in the Device Drivers page List Box
<application>	The name of the exe to be added
<commandLine>	Command line for the application

Configuration Files

3.2 Historical Template Files

Pre-configured historical 'Templates' ease the user through the process of creating historical streams for a new OpenEnterprise project. These could be historical set ups tailored for particular types of SCADA system e.g. Gas, Water etc.

The historical Templates are in the form of XML configuration files. A set of these files is distributed with OpenEnterprise and it is possible to include further project-specific ones. A description of the format and elements of these files is listed below.

- Historical Template XML Structure
- Historical Template XML Elements
- Historical Template Functions and Aliases

3.2.1

3.2.2 Historical Template File Structure

Below is defined the general structure of a historical template file. There may be any number of *bufferCalculation* or *SQL* elements defined within their respective parent elements.

```
<?xml version="1.0" encoding="UTF-8"?>
<historicalTemplate>
    <name></name>
    <version></version>
    <description>
```




```

        <text></text>

    </description>

    <outputFile></outputFile>

    <signalType></signalType>

    <userEnabling></userEnabling>

    <bufferCalculation name="">

        <sampleRate></sampleRate>

        <bufferPeriod></bufferPeriod>

        <bufferCount></bufferCount>

        <sampleSize></sampleSize>

        <signalCount></signalCount>

    </bufferCalculation>

    <commands>

        <sql></sql>

    </commands>

</historicalTemplate>

```

Template Files Overview

3.2.3 XML Elements

Below is a tabular definition and description of the XML elements required within a historical template file.

Element	Comments	Expected Values
<historicalTemplate>	Defines a Historical Template.	-
<version>	The version of the Historical Template schema	1.0
<name>	Name of the Template	-
<description>	Defines a series of lines of text that describe what the Template does. These lines will be shown as a summary of the Template.	-
<text>	A line of text to be shown in the summary	-
<outputFile>	Defines the name and path of the file that is created when the Template is applied.	-
<signalType>	Defines whether the template is defining an analog or a digital stream.	'analog' or 'digital' (case insensitive).
<userEnabling>	Defines whether the stream has user-enabling turned on.	'true' or 'false' (case insensitive)
<description>	Value to be written to the description attribute of oelogcontrol when the Logging Group is	-

	added.	
<bufferCalculation>	Defines a Buffer Calculation	-
"name"	The name of the calculation.	-
<sampleRate>	The frequency (in seconds) with which the data will be logged.	-
<bufferPeriod>	The time span (in seconds) that historical buffers in the Logging Group will be sized for.	-
<bufferCount>	The number of buffers required.	-
<sampleSize>	Size in bytes of each historical sample.	-
<signalCount>	The number of signals logged in the buffer.	-
<commands>	The parent element for the SQL statements which will create the historical streams.	-
<SQL>	The elements which contain each SQL statement that creates the historical streams. There can be multiple elements of this type within the parent <commands> element.	-

Template Files Overview

3.2.3.1 Description and Text

This section can be used for an on-screen description of the Template. The description text is split into lines defined by <Text> elements. There may be as many of these lines as is required to describe the Template. For example:

```
<description>
    <text>A stream for Analog samples</text>
    <text>A stream for Digital samples</text>
    <text>Samples logged every five minutes</text>
</description>
```

3.2.3.2 Output File

When the wizard applies the Template, it is converted into an SQL script file and included into the database. Producing an SQL file in this fashion allows the historical configuration to be included in system re-builds. The new files will be created in the database's folder.

The SQL file contains text indicating that it was generated from a historical template using the Database Project Builder.

It is possible to specify the file name of the output SQL file by including the element <outputFile> in the Template. If this element is not present, the filename will default to 'custom_historical.sql'.

Each template that is applied outputs to its own SQL file. These files will take the form of name of the SQL file and an incrementing number on the end. E.g. if the name of the file specified was MyFile.sql then the files created would be MyFile1.sql, MyFile2.sql etc.

3.2.3.3 Signal Type

In order to tie up a template to the number of Analogs or Digitals a user specifies on the Database Sizing Page, the type of data being configured by the Template must be provided. This will be in contained in the <signalType> element and will expect 'analog' or 'digital' as its value. If the element is not present then the Template will be deemed to be in an incorrect format.

3.2.3.4 User Enabling

If the stream being supplied has user-enabling enabled it should supply the <userEnabling> element with the value true. Otherwise this element should be supplied with the value false. If the element is missing it will be assumed that user-enabling is not enabled.

3.2.3.5 Rate and Triggered Collection

Buffer calculations are generally used to define the size of streams collected at a given rate. However, they are also used to size streams with triggered collection by employing a user supplied 'expected' sample rate which defines how often data is expected to be logged. This is defined within the <sampleRate> tags of the bufferCalculation section.

3.2.3.6 Buffer Calculations

Buffer Calculations are defined in the Template by <bufferCalculation> sections. There can be any number of these. A buffer calculation contains the following elements:

Element	Description
Name	A unique name for this buffer calculation
sampleRate	The granularity of samples (in seconds) in this buffer.
bufferPeriod	The time span of the buffer.
bufferCount	The number of buffers required.
sampleSize	The estimated size (in bytes) of each sample in the log file.
signalCount	The number of samples that will be logged.

The buffer calculation is as follows:

$$\text{Buffer Size} = (\text{signalCount} * \text{sampleSize}) * (\text{bufferPeriod} / \text{sampleRate})$$

An example of a Buffer calculation in the Template might be:

```
<bufferCalculation name=" FiveMinuteAnalog">
    <sampleRate>300</sampleRate>
    <bufferPeriod>3600</bufferPeriod>
    <bufferCount>24</bufferCount>
    <sampleSize>26</sampleSize>
    <signalCount>9999</signalCount>
</bufferCalculation>
```

Aliases can also be used within elements of The 'Buffer Calculations' section to define a buffer size that can be worked out dynamically.

It is possible to insert the results of a Buffer Calculation anywhere within the SQL section. This is done by the use of a 'pre-defined function'. Within an alias, the text `BUFFERSIZE(BufferCalc)` must be inserted. The name of the appropriate buffer calculation must be inserted between the brackets. To retrieve the buffer size using the example Buffer Calculation defined above the following alias would need to be inserted into the file:

```
[BUFFERSIZE(FiveMinuteAnalog)]
```

3.2.3.7 SQL

The bulk of the Template file contains SQL commands. These are contained in `<sql>` elements. For example:

```
<commands>
```

```
  <sql>insert into oelogcontrol (id, source, namecolumn, rate, enable,
    rateorigin, userenabling) values (1, 'nw3000realanalog_table', 'name',
    15, TRUE, '01-FEB-2001 10:00:00.000', TRUE)
```

```
  </sql>
```

```
</commands>
```

This allows very complex historical configurations to be designed.

3.2.3.8 Aliases

The difficulty with designing the historical configuration Templates up front is that buffer sizes cannot be known until the number of logged signals is known. As different systems will have different numbers of signals, buffer sizes will also vary from system to system. To get around this, an alias system has been adopted for the Templates; instead of hard-coding buffer sizes into the SQL, aliases may be inserted into the files. These are parsed at runtime and replaced with values relevant to the system in question.

An alias is defined by square brackets ('[' and ']') as these are values unlikely to be found in SQL commands. The text contained within these is parsed for recognised tokens and a particular result will be determined. This result is written into the place where the square brackets were.

E.g. if the value of MYTOKEN was worked out as 100 then the following fragment:

```
'...values ([MYTOKEN], 23, 'TEST')
```

would be converted to:

```
'...values (100, 23, 'TEST')
```

The alias system works in conjunction with 'Buffer Calculations', each defining a buffer size that will need to be worked out dynamically.

As well as the ability to specify the buffer size at runtime, it is possible to dynamically insert any of the Buffer Calculation values. For example it is possible to define a Historical Stream's sample rate in the Buffer Calculation section and use aliases for it in the SQL statements. This would allow it to be changed quickly and easily.

Historical Template File XML Elements

3.2.3.9 Parsing Aliases

The aliases in the file is parsed just before the Template is applied. This will allow the user to adjust the number of signals they believe will be logged historically.

3.2.3.10 Control IDs

As more than one Template may be applied there is a possibility that two Templates may define streams with the same Control Id. This would cause the second Template to fail when it is applied. To deal with this scenario, the control id may dynamically worked out at runtime. The function NEXTCONTROLID() will work out the next available control id from the database and return this value.

It will also be possible to increment the control is used by the template using the function INCREMENTCONTROLID().

3.2.3.11 Signal Count

In order to specify a Signal Count alias which retrieves the number of signals specified by a user of the Database Project Builder, rather than a value predetermined within the Template, use the SIGNALCOUNT() function without specifying the name of a <bufferCount> section as a parameter. Place this as an alias within the appropriate SQL section of the Historical Template file. See the rules on using aliases for further information.

3.2.3.12 Directories

It is possible to insert the directories for log files and archive files that the user specifies at runtime using the functions LOGFILEDIRECTORY(), ARCHIVEFILEDIRECTORY() and EVENTARCHIVEFILEDIRECTORY().

3.2.3.13 Signal Type

In order to tie up a template to the number of Analogs or Digitals a user specifies on the Database Sizing Page, the type of data being configured by the Template must be provided. This will be in contained in the <signalType> element and will expect 'analog' or 'digital' as its value. If the element is not present then the Template will be deemed to be in an incorrect format.

3.2.4 Functions and Aliases

This is a list of functions available for use with Historical Templates. Each function can be used as an alias within the SQL sections of a Historical Template.

Function	Parameters	Description
BUFFERSIZE()	The name of a Buffer Calculation	Works out the size of a buffer using the given Buffer Calculation's values
SAMPLERATE()	The name of a Buffer Calculation	Retrieves the <sampleRate> value in the given Buffer Calculation.
BUFFERPERIOD()	The name of a Buffer Calculation	Retrieves the <bufferPeriod> value in the given Buffer Calculation.
BUFFERCOUNT()	The name of a Buffer Calculation	Retrieves the <bufferCount> value in the given Buffer

		Calculation.
SAMPLESIZE()	The name of a Buffer Calculation	Retrieves the <sampleSize> value in the given Buffer Calculation.
SIGNALCOUNT()	The name of a Buffer Calculation	Retrieves the <signalCount> value in the given Buffer Calculation.
SIGNALCOUNT()	-	Retrieves the value the user specifies as the number of signals that will be logged.
LOGFILEDIRECTORY()	-	Retrieves the value the user specifies as the Log File directory
ARCHIVEFILEDIRECTORY()	-	Retrieves the value the user specifies as the Archive File directory
EVENTARCHIVEFILEDIRECTORY()	-	Retrieves the value the user specifies as the Event Archive File directory
NEXTCONTROLID	-	Retrieves the available next log control id from the database.
INCREMENTCONTROLID	-	Adds 1 to the value used as a control id.

Template Files Overview

3.2.4.1 Buffer Calculations

Buffer Calculations are defined in the Template by <bufferCalculation> sections. There can be any number of these. A buffer calculation contains the following elements:

Element	Description
Name	A unique name for this buffer calculation
sampleRate	The granularity of samples (in seconds) in this buffer.
bufferPeriod	The time span of the buffer.
bufferCount	The number of buffers required.
sampleSize	The estimated size (in bytes) of each sample in the log file.
signalCount	The number of samples that will be logged.

The buffer calculation is as follows:

$$\text{Buffer Size} = (\text{signalCount} * \text{sampleSize}) * (\text{bufferPeriod} / \text{sampleRate})$$

An example of a Buffer calculation in the Template might be:

```
<bufferCalculation name=" FiveMinuteAnalog">
    <sampleRate>300</sampleRate>
    <bufferPeriod>3600</bufferPeriod>
```

```
<bufferCount>24</bufferCount>

<sampleSize>26</sampleSize>

<signalCount>9999</signalCount>

</bufferCalculation>
```

Aliases can also be used within elements of The 'Buffer Calculations' section to define a buffer size that can be worked out dynamically.

It is possible to insert the results of a Buffer Calculation anywhere within the SQL section. This is done by the use of a 'pre-defined function'. Within an alias, the text `BUFFERSIZE(BufferCalc)` must be inserted. The name of the appropriate buffer calculation must be inserted between the brackets. To retrieve the buffer size using the example Buffer Calculation defined above the following alias would need to be inserted into the file:

```
[BUFFERSIZE(FiveMinuteAnalog)]
```

3.2.4.2 Rate and Triggered Collection

Buffer calculations are generally used to define the size of streams collected at a given rate. However, they are also used to size streams with triggered collection by employing a user supplied 'expected' sample rate which defines how often data is expected to be logged. This is defined within the `<sampleRate>` tags of the `bufferCalculation` section.

3.2.4.3 Signal Count

In order to specify a Signal Count alias which retrieves the number of signals specified by a user of the Database Project Builder, rather than a value predetermined within the Template, use the `SIGNALCOUNT()` function without specifying the name of a `<bufferCount>` section as a parameter. Place this as an alias within the appropriate SQL section of the Historical Template file. See the rules on using aliases for further information.

3.2.4.4 Directories

It is possible to insert the directories for log files and archive files that the user specifies at runtime using the functions `LOGFILEDIRECTORY()`, `ARCHIVEFILEDIRECTORY()` and `EVENTARCHIVEFILEDIRECTORY()`.

3.2.4.5 Control IDs

As more than one Template may be applied there is a possibility that two Templates may define streams with the same Control Id. This would cause the second Template to fail when it is applied. To deal with this scenario, the control id may dynamically worked out at runtime. The function `NEXTCONTROLID()` will work out the next available control id from the database and return this value.

It will also be possible to increment the control is used by the template using the function `INCREMENTCONTROLID()`.

3.3 Example Configuration Files

3.3.1 Example Session Values

These are the anticipated values for the `<sessionTasks>` section in `DPG.config`:

<name>	<description>	<application>	<commandLine>
Allen Bradley RDI	Remote Device Interface for Allen Bradley PLC's	<OE Bin Dir>ABRDI.exe	
Archive File Manager	Manages Archive Files in the OpenEnterprise system	<OE Bin Dir>OEArchiveFileManager.exe	rtrdb1
Calculation Server	Task to run Calculations in the OpenEnterprise system.	<OE Bin Dir>CalculationServer.exe	DataService=rtrdb1
OPC Client RDI	Remote Device Interface for OPC Servers	<OE Bin Dir>OEOPCClientRDI.exe	/r OPCClientRDI
RDI3000	Remove Device Interface for NW3000 and ControlWave	<OE Bin Dir>RDI3000.exe	
Scheduler	Task to run scheduled actions in the OpenEnterprise system.	<OE Bin Dir>OEScheduler.exe	rtrdb1
Harvester	Task to retrieve data from NW3000 and ControlWave RTUs and place it in files	<OpenBSI Dir>Harvester.exe	
Converter	Task to put data from Harvester files into the Database	<OpenBSI Dir>Bsicnvr.exe	
DBB	Task to build the database from RTU configuration.	<OE Bin Dir>dbb.exe	-srtrdb1 -m
TPB	Task to insert Template information into the database	<OE Bin Dir>tpb.exe	-srtrdb1 -m

Configuration Files

3.3.2 Example Historical Template File

The following is an example of a historical template file.

```
<?xml version="1.0" encoding="UTF-8"?>
```




```
<historicalTemplate>
    <version>1.0</Version>
    <name>Typical Analog Gas Configuration</name>
    <description>
        <text>Stream for Analog samples</text>
        <text>Samples logged every five minutes</text>
        <text>Maximum unsaved data: 1 Hour</text>
        <text>Maximum data online: 1 Day</text>
    </description>
    <outputFile>Custom\Historical.sql</outputFile>
    <signalType>analog</signalType>
    <userEnabling>>true</userEnabling>
    <bufferCalculation name="RawAnalog">
        <sampleRate>300</sampleRate>
        <bufferPeriod>3600</bufferPeriod>
        <bufferCount>24</bufferCount>
        <sampleSize>26</sampleSize>
        <signalCount>[ SIGNALCOUNT() ]</signalCount>
    </bufferCalculation>
    <bufferCalculation name="HourlyAnalog">
        <sampleRate>3600</sampleRate>
        <bufferPeriod>8600</bufferPeriod>
        <bufferCount>10</bufferCount>
        <sampleSize>26</sampleSize>
        <SignalCount>[ SIGNALCOUNT() ]</signalCount>
    </bufferCalculation>
    <bufferCalculation name="FiveMinuteAnalog">
        <sampleRate>300</sampleRate>
        <bufferPeriod>3600</bufferPeriod>
```

```
<bufferCount>24</bufferCount>

<sampleSize>26</sampleSize>

<signalCount>[ SIGNALCOUNT()]</signalCount>

</bufferCalculation>

<bufferCalculation name="DailyAnalog">

    <sampleRate>86400</sampleRate>

    <bufferPeriod>604800</bufferPeriod>

    <bufferCount>10</bufferCount>

    <sampleSize>26</sampleSize>

    <signalCount>[ SIGNALCOUNT()]</signalCount>

</bufferCalculation>

<commands>

    <sql value="insert into oelogcontrol
(id,source,namecolumn,rate,enable,rateorigin,userenabling) values
(1,'nw3000realanalog_table','name',15,TRUE,'01-FEB-2001
10:00:00.000',TRUE)"/>

    <sql value="insert into oelogcolumn
(control,name,type,sourcecolumn) values (1,'value',0,'readvalue')"/>

    <sql value="insert into oelogcolumn
(control,name,type,sourcecolumn) values
(1,'questionable',0,'questionable')"/>

    <sql value="insert into oelogcolumn
(control,name,type,sourcecolumn) values (1,'maximum',6,'value')"/>

    <sql value="insert into oelogcolumn
(control,name,type,sourcecolumn) values (1,'minimum',7,'value')"/>

    <sql value="insert into oelogcolumn
(control,name,type,sourcecolumn) values (1,'average',8,'value')"/>

    <sql value="insert into oelogdata
(rate,control,fedfromrate,buffercount,bufferize) values
('0s',1,NULL,[BUFFERCOUNT(RawAnalog)],[BUFFERIZE(RawAnalog)])"/>

    <sql value="insert into oelogdata
(rate,control,fedfromrate,buffercount,bufferize,compressionorigin) values
('[SAMPLERATE(FiveMinuteAnalog)]s',1,'0s',[BUFFERCOUNT(FiveMinuteAnalog)]
,[BUFFERIZE(FiveMinuteAnalog)],'01-FEB-2001 10:00:00.000')"/>
```

```
<sql value="insert into oelogdata
(rate,control,fedfromrate,buffercount,bufferize,compressionorigin) values
('[SAMPLERATE(HourlyAnalog)]s',1,'0s',[BUFFERCOUNT(HourlyAnalog)],[BUFFERSI
SIZE(HourlyAnalog)],'01-FEB-2001 10:00:00.000')"/>

<sql value="insert into oelogdata
(rate,control,fedfromrate,buffercount,bufferize,compressionorigin) values
('[SAMPLERATE(DailyAnalog)]s',1,'0s',[BUFFERCOUNT(DailyAnalog)],[BUFFERSI
ZE(DailyAnalog)],'01-FEB-2001 10:00:00.000')"/>

<sql value="update oelogcontrol set
raw='raw1_table',compressed='compl_table' where id =1"/>

<sql value="create view raw1 as select * from
raw1_table"/>

<sql value="create view
compl_[SAMPLERATE(FiveMinuteAnalog)]s as select * from compl_table where
granularity='[SAMPLERATE(FiveMinuteAnalog)]s'"/>

<sql value="create view
compl_[SAMPLERATE(HourlyAnalog)]s as select * from compl_table where
granularity='[SAMPLERATE(HourlyAnalog)]s'"/>

<sql value="create view
compl_[SAMPLERATE(DailyAnalog)]s as select * from compl_table where
granularity='[SAMPLERATE(DailyAnalog)]s'"/>

<sql value="update oelogdata set viewname='raw1'
where rate='0s' and control=1"/>

<sql value="update oelogdata set
viewname='compl_[SAMPLERATE(FiveMinuteAnalog)]s' where
rate='[SAMPLERATE(FiveMinuteAnalog)]s' and control=1"/>

<sql value="update oelogdata set
viewname='compl_[SAMPLERATE(HourlyAnalog)]s' where
rate='[SAMPLERATE(HourlyAnalog)]s' and control=1"/>

<sql value="update oelogdata set
viewname='compl_[SAMPLERATE(DailyAnalog)]s' where
rate='[SAMPLERATE(DailyAnalog)]s' and control=1"/>

<sql value="grant all on raw1 to PUBLIC"/>

<sql value="grant all on
compl_[SAMPLERATE(FiveMinuteAnalog)]s to PUBLIC"/>

<sql value="grant all on
compl_[SAMPLERATE(HourlyAnalog)]s to PUBLIC"/>

<sql value="grant all on
compl_[SAMPLERATE(DailyAnalog)]s to PUBLIC"/>

</commands>

</historicalTemplate>
```

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Database Project Builder

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