Bristol OpenEnterprise Reference Guide

Historian Configuration Tool

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Contents

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1 Historian Configuration

The Historian Configuration Tool enables the user to create historical logging groups. A historical logging group defines a unique historical logging configuration. To configure a logging group we must: -

1.1   Define the Source table

The source table for the group can be selected from a list. The configuration tool ensures that the user provides a unique number for each group. The group can be configured to log all objects, within the selected table, or a subset of those objects.

1.2   Define the Columns to be logged

The user can then define which columns within the source table will be logged.

1.3   Define Datasets for the group

The user then configures one or more datasets. Datasets define the historical collection rate and mechanism. Datasets are defined as Raw or Compressed. Raw datasets record the actual value of an object at set intervals, whereas Compressed datasets use the data from Raw datasets or other Compressed datasets and apply various algorithms (e.g. average, first value, max value) to the data to arrive at the compressed data . Generally, for each logging group there will be one Raw dataset, and one or more Compressed datasets. In addition, The Historian Configuration Tool enables the user to define archiving activity for each of the datasets.

1.4   Define objects to be logged (Optional)

By default all signals or objects will be logged, but a group can be configured not to log all objects. In this case, the user must select the specific objects to be logged.

The Historian Configuration Tool enables the user to achieve these configuration tasks by presenting a 'Wizard'. This is a series of dialogs which break the configuration tasks outlined above down into relatively easy steps. When the Wizard is completed, the Historian Configuration Tool is able to make all the necessary database transactions to create the historical logging group.

1.5   Historical Logging in OpenEnterprise

The following is an attempt to summarize the historical logging process employed by OpenEnterprise, and to describe briefly how that data can be accessed.

1.5.1   The Historian

The OpenEnterprise Historian is a process which runs on an OpenEnterprise Server as part of the database management system. It is responsible for creating historical data. It only logs data when a Logging Group (also known as a Logging Stream) has been defined in the Logging tables (LogControl, LogColumn, LogData). These tables combine to define a source table, logging columns and datasets for the Logging Group. The Historian Configuration tool makes the process of creating a Logging Group fairly straightforward, without the need for knowledge of the database Schema .

1.5.2   Raw and Compressed Data

The Historian logs data from a user defined source table as either Raw or Compressed data. Raw data is the actual value of a logged object when a 'sample' is taken. Compressed data takes the Raw values and applies an algorithm to them (e.g. Average, Maximum, Minimum) over a period of time.

1.5.3   Historical Sampling

Historical 'sampling' can be scheduled at regular intervals (e.g. every 20 seconds), or can be set to happen only when a designated trigger column from the source table changes value. Obviously, the sample rate for a Compressed dataset must be a larger value than for the Raw dataset, since the Compressed dataset uses the values of the Raw dataset as its source.

1.5.4   Log Files

The Historian creates historical data and stores it within Historical Log files. The Log files provide dynamic storage of historical data. When a Log file is full of data, the Historian starts refilling it with data from the beginning of the file. That is why regular archive files must be saved from the data in each Log file. The archives provide a persistent record of historical data.

1.5.5   Archives

Archives can be set to be created at regular times or can be taken based on the percentage of unarchived data within a Log file. Archives must be brought online in order to view the data from them. A pre-defined number of archives can be automatically brought online as they are created. Extra ones can be brought online manually through the Archive File tool, where all aspects of archive file management can be undertaken. For more information on the Archive File tool, please refer to its help file.

1.5.6   Virtual Tables

OpenEnterprise uses the Log files to dynamically store historical data. To provide the user with a ready means of viewing this data, the Log files, together with any on-line archive files can be queried within the SQL Client as virtual tables. These virtual historical tables are seen as being derived from the Loghistory table. The EventHistory Log file and its table are created when the database is built. User defined Raw table names default to 'raw<Logging Group ID>', where <Logging Group ID> is the unique Logging Group number (the ID column of the LogControl table).

For instance *raw101_table* would be the name of a Raw logging table which has a Logging Group ID number of 101. Compressed table names default to 'comp<Logging Group ID>_<Log Interval in Seconds>s', where <Logging Group ID> is the unique Logging Group number (e.g. *Comp101_300s_table* would be the name of the table created for a compressed Logging Group with an ID of 101, which had been configured to log compressed values every 5 minutes (300 seconds). Views are created based on the Raw table of each Logging Group and for each granularity (i.e. sampling rate) within the Compressed table for each Logging Group.

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1.5.7 RTU Assisted Historical Logging

Protected mode Bristol RTUs can take advantage of OpenEnterprise NW3000 Archive Logging to manage and supply entries to the Historian for the storing of historical data. This also enables data to be 'back filled' into the historical tables for periods when the RTU was offline. There must be a suitable historical Logging Group created in the database which uses the logTrigger attribute to trigger logging, and includes the logValue and logTime attributes as logging columns. The OpenEnterprise BackFill component can also be configured to take Audit data from the RTU and enter it into the EventHistory table. To find out more about this process, see the NW3000 Archiving Overview help file.

1.5.8 Accessing Historical Data

There are a number of means of accessing historical data from an OpenEnterprise database.

1.5.8.1 Alarm View

The Alarm View can be configured to access data from the EventHistory table. When configured in this way, it is used to view historical alarm and event data within the OpenEnterprise Desktop environment. The historical data retrieved by the Event View can be extended and/or filtered as required. For further information regarding the Alarm View configured as an Event Viewer, see the Alarm View help file.

1.5.8.2 Trend View

The Trend View provides access to historical data from the OpenEnterprise database. The Trend View utilizes the Historical Data Access (HDA) Server to query the historical tables. When a pen is being configured, the HDA Server's browser enables the user to view the historical data as a tree, with the database as the parent node, followed by the source tables of the historical Logging Groups (or streams), followed by the signals that are being logged by the historian, followed by the datasets to which the signal belongs, followed by the attibutes that are being logged within the dataset. The user identifies the desired signal attribute, and the pen is created. The Trend View, when placed into Runtime mode, retrieves the required historical data from the historical tables and displays it as a graph. The Trend View is normally viewed as a window within the OpenEnterprise Desktop. Further information on configuring the Trend View can be found in its help file.

1.5.8.3 Database Object Viewer

Database Object Viewer is a part of the Database Explorer component. It enables the user to query objects in a graphical environment without using the SQL Client . Queries are built up as the user selects a table and attributes from the database. Queries can be narrowed on the 'Conditions' tab of the User Interface, as the user selects an attribute from the table, and adds the 'where' clause. The Database Object Viewer therefore provides another means of access to historical data. Further help on the Database Explorer can be found in its help file.

1.5.8.4 SQL Client

Historical data may be accessed via the SQL Client, as a query on the 'raw' or 'comp' views. Queries are in the form - 'select * from raw<LogID> where timestamp > now() - <seconds>|<minutes>|<hours><days>(<number of time units>);'. A real example could be 'select * from raw100 where timestamp > now() - hours(3);' This provides a time limitation to avoid an excessive database hit. Further help on using the SQL Client can be found in the SQLView help file.

2 Historical Configuration

The main Historical Configuration Tool dialog has three sections from top to bottom - a Menu Bar, a Historical Logging Group list and **[Add], [Modify]** and **[Delete]** buttons along the bottom.
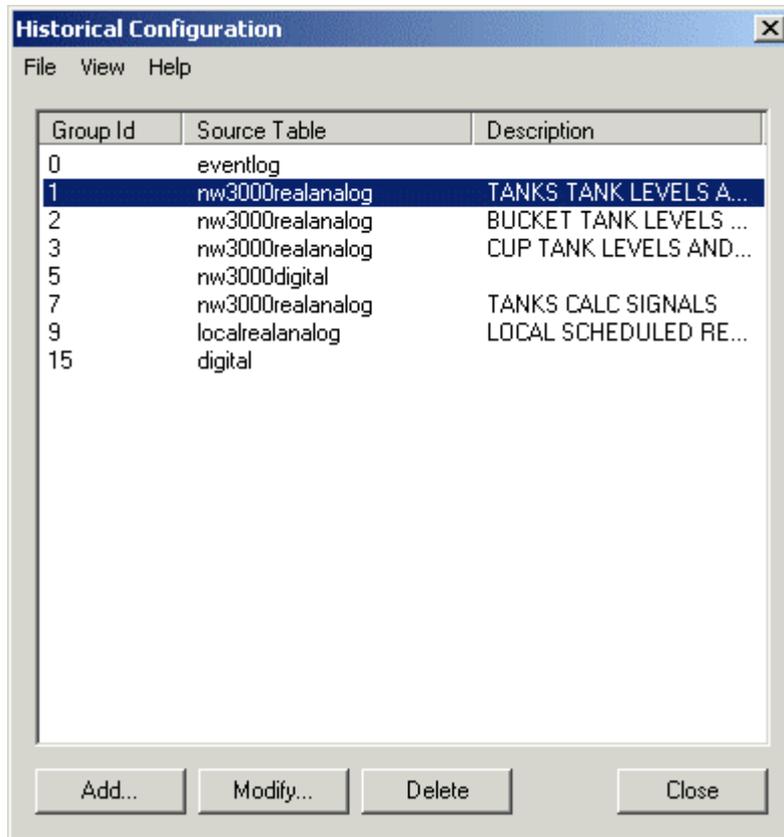
2.1 Historical Logging Group List

This area displays the configured historical logging groups. Each id must be unique. Id 0 is by default the Event Log group. Selection of any logging group causes the [Modify] and [Delete] buttons to become enabled.

2.2 Add Button

Selection of the **[Add]** or **[Modify]** buttons activates the Logging Group Wizard. The wizard simplifies the process of configuring the selected logging group and associated datasets.

2.3 Modify Button

Selection of the **[Add]** or **[Modify]** buttons activates the Logging Group Wizard. The wizard simplifies the process of configuring the selected logging group and associated datasets.

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2.4 Delete Button

Selection of this button will delete the selected Logging Group. A warning message box will be displayed before the deletion, giving the user the opportunity to cancel the action.

2.5 File Menu

2.5.1 File Menu

The File menu has two options - *Export* and *Exit*.

2.5.2 SQL Import-Export

This dialog enables the user to override the default SQL script file for Export or Import or to specify the name of a file to which the Import Status will be saved. The Title of the dialog will differ depending on what action is being taken.
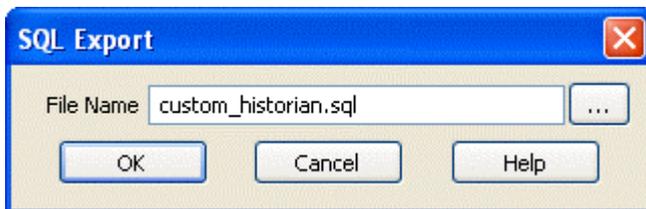
2.5.2.1 File Name

By default the Import or Export file will be named *custom_<Component>*.**sql***,* where <Component> indicates the OpenEnterprise configuration component from which the Import/Export is initiated, and will be written to the standard OEToolbox export file directory. The Status file has a default name of *custom_<Component>.txt*. If a file already exists in the directory with the filename specified, then prior to the Export, the existing file should be renamed such that .old is appended to the end of it, e.g. custom_historian.sql.old.

When Importing or Exporting, this file will be selected automatically and placed in the *File Name* field. The user will however have the ability to override both the name and location if they so require, using the browse button, or by manually editing the filename.

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2.5.2.2   File Browse Button

When the File Browse Button is selected, a standard File Open or File Save dialog is displayed, depending on which function has been chosen. The user can then select a file for Import, Export or Saving Import Status.
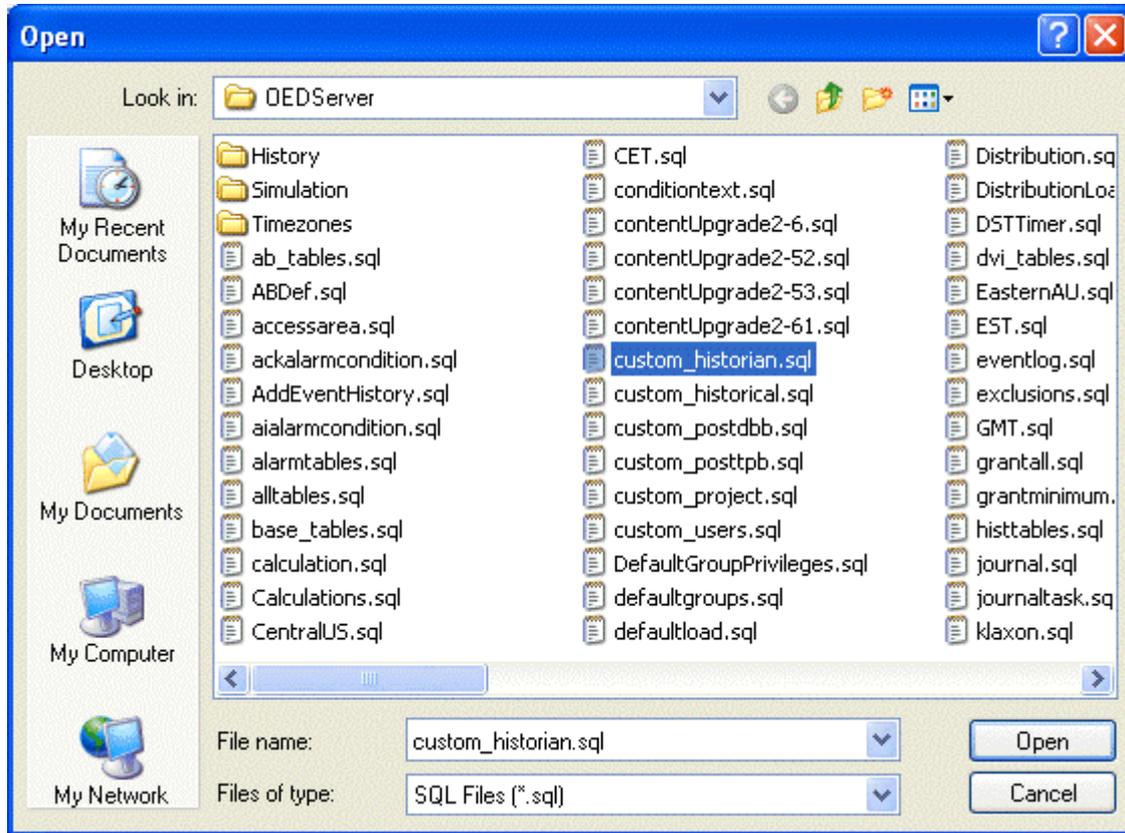
SQL Export Dialog

2.5.2.3   OK Button

When selected, the appropriate action will be commenced, using the file specified in the *File Name* field, depending on the action that was chosen.

2.5.2.4   Cancel Button

When selected, the File Import, Export or Save Status to File will be aborted.

2.5.2.5   Help Button

Selecting this button will display context sensitive help for the dialog.

2.5.3   Exit

Exits the Historian Configuration Tool.

2.6   View Menu

Select *View->Options...* to open the *Options*dialog.
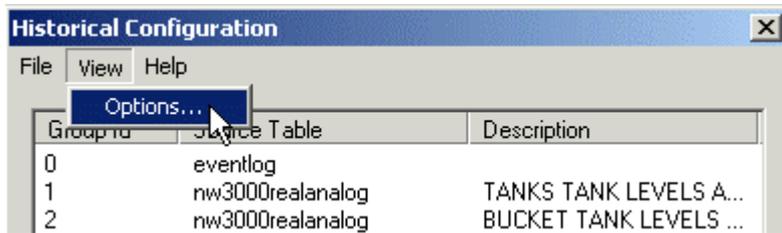
2.6.1   Options Dialog

Here, the user can configure a maximum number of objects to be returned by each re-query of the database on the Select Objects Dialog. Therefore, the filter only applies to Logging Groups which have been set up to log a subset of the objects in the source table.

2.6.1.1   Prompt for Filter Before Querying Database

When the *Select Objects* dialog is opened for the first time during a configuration session, the Historian Configuration Tool queries the database for the number of objects from the Source table that are specified by the **[Next <number of objects>]** button. This option may have been set in a previous session to a very large number. If the *Prompt for Filter Before Querying Database* option is checked before opening this dialog for the first time in a session, the Historian Configuration Tool will halt the query and prompt the user instead. The prompt asks the user to specify a filter before initiating the query by selecting the **[Refresh]** button. The prompt will appear at the top of the *Available Objects List.*

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The prompt gives the user time to specify a filter in the Filter Grid or to look at how many objects have been set for retrieval and to change this by accessing the *Options Dialog* if necessary. This number is shown on the [**Next <number of objects>**] button. It defaults to 100.

2.6.1.2   Number of Objects to Retrieve Field

This field sets the maximum number of objects that will be returned in a query. The default value is 100. The number set here will be reflected in the text on the **[Next <number of objects>]** button.

2.7   Help Menu

The *Help->About...* dialog provides useful information about the version and build number of OpenEnterprise which you are using.
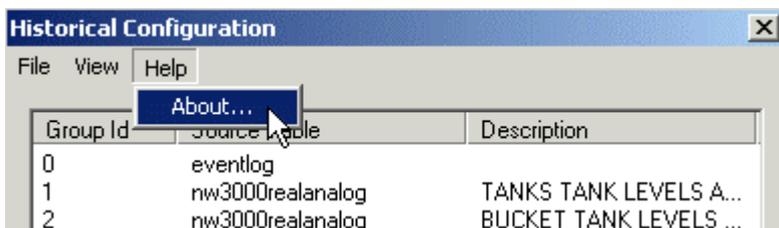
3 Logging Group

The first page of the Logging Group Wizard is displayed when the user clicks the **[Add]** or **[Modify]** button from the main Historical Configuration Tool dialog. It allows the user to define the source table, and assign a unique group id for the Logging Group, along with other basic set-up details.

3.1   Group ID

When adding a new logging group the user must assign a new logging group number in the Group Id field. The Group Id will be validated and checked for uniqueness when the [Next] button is pressed.

If the Group Id is not a number or is not unique then the Wizard will display an error and the user will be unable to move to the next page until this has been corrected.

When modifying an existing logging group, this field will be read only.

3.2   Source Table

When selected, the list will display available source tables.
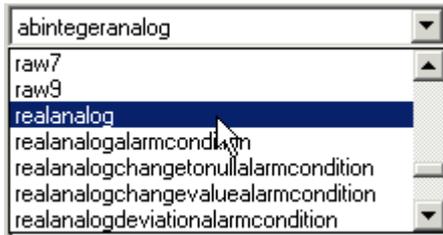
The Source Table will be checked when the [Next] button is pressed to ensure that it is defined.

Note: When modifying an existing logging group the Source Table cannot be changed.

3.3 Logging Group Description

A user specified description of the logging group.

3.4 Source Table - Name Column

This list, when opened displays the available columns within the selected source table. The primary key attribute will be selected by default Usually, this is the *name* attribute.
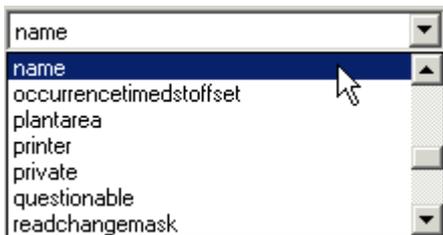
This will be the oelogcontrol table's *namecolumn* attribute. It refers to the unique attribute from the source table to be used as the unique identifier attribute of each object in the 'virtual' historical table.

The name column cannot be changed when modifying a logging group that has already been created.

3.5 Raw Data Table Field

This field is provided for information only. It is the default name of the 'virtual' table which will be used when querying the raw historical data for this group. This name can be changed later on in the initial configuration process. However, once the group is created, this name cannot be changed.

By default, when adding a new logging group this read only field will be set to raw<group_id>_table. The raw data will be accessed through a view. The view is created by the historical configuration process and will be named:

raw<x> where: <x> is the logging group id.

One view will be created for each raw dataset created for the logging group.

3.6 Compressed Data Table Field

This field is provided for information only. It is the name of the 'virtual' table which will be used when querying the compressed historical data for this group. This name can be changed later on in the initial configuration process. However, once the group is created, this name cannot be changed.

The compressed data will be accessed through a view. The view is created by the historical configuration process and will be named:

comp<x>_<rate> where: <x> is the logging group id and <rate> is the dataset logging rate.

One view will be created for each compressed dataset created for the logging group.

3.7 Estimated Number of Objects to Log

In order to calculate a buffer size for the logging group log files, the user must provide in this field an estimate of the number of objects that the logging group will track.

 If the **[Next]** button is pressed and no estimate of the number of objects to be logged is indicated the above message box is displayed. When the user selects **[OK]** the Wizard will remain on this page, forcing the user to enter an estimated number of objects.

3.8 Enabled Check Box

Specifies whether this logging group is enabled or not. It is set by default when adding a new logging group.

3.9 Log All Objects Check Box

The Log All Objects check box allows the user to limit the number of objects from the source table that will be logged. It is checked by default, meaning all objects in the table will be logged.

If the 'Log All Objects' box is unchecked by the user, an extra page is displayed later in the configuration process for this logging group, allowing the user to select those objects that should be logged. This process is known as user enabling.

At present, the tables that support user enabling are those derived from signal_table and objects_table. When one of these (i.e. realanalog) is selected from the 'Source Table' list, the check box is enabled. For other tables, or when no table is selected, this option is disabled and checked.

3.10 Advanced Button

Selecting the **[Advanced]** button displays the Historical Advanced Settings dialog box.

3.11 Historical Advanced Settings

This dialog box allows configuration of the more advanced features of the Historian. It is meant for use by System Administrators.

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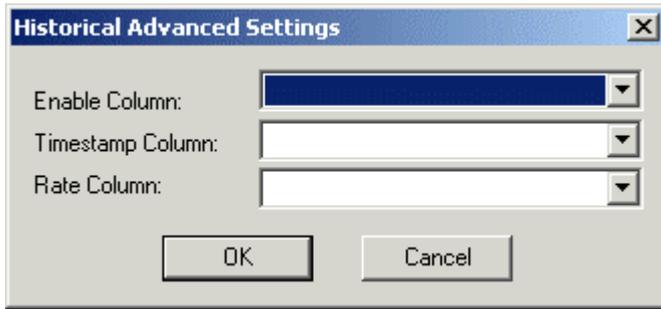
3.11.1 Advanced Settings Enable Column

Selecting this field will display a list of available boolean columns in the source table.
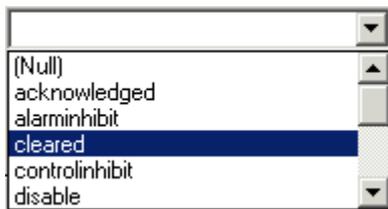
Any boolean column in the source table may be selected and used as the enable/disable column. The selected column can be used to define on a per object basis, whether historic logging is enabled.

3.11.2 Advanced Settings TimeStamp Column

This control allows a date-time column in the source table to be selected as the basis for the historical group's timestamp column.

The Historian by default uses the current time as the timestamp value for a sample in the historical table when an object is logged.

3.11.3 Advanced Settings Rate Column

The rate column entry allows an integer column in the source table to be specified.
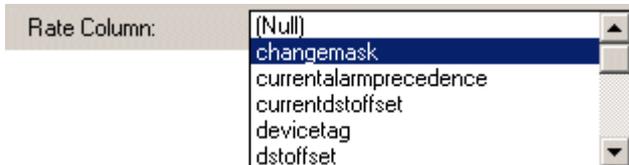
The number in the column will be interpreted as seconds, and will override the logging rate specified in the raw dataset.

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4 Logging Group - Select Fields

This page allows the selection of the fields that will be logged, plus specification of the type(s) of Compression to apply to the data from the column (e.g. Raw, First, Last, Average etc.).
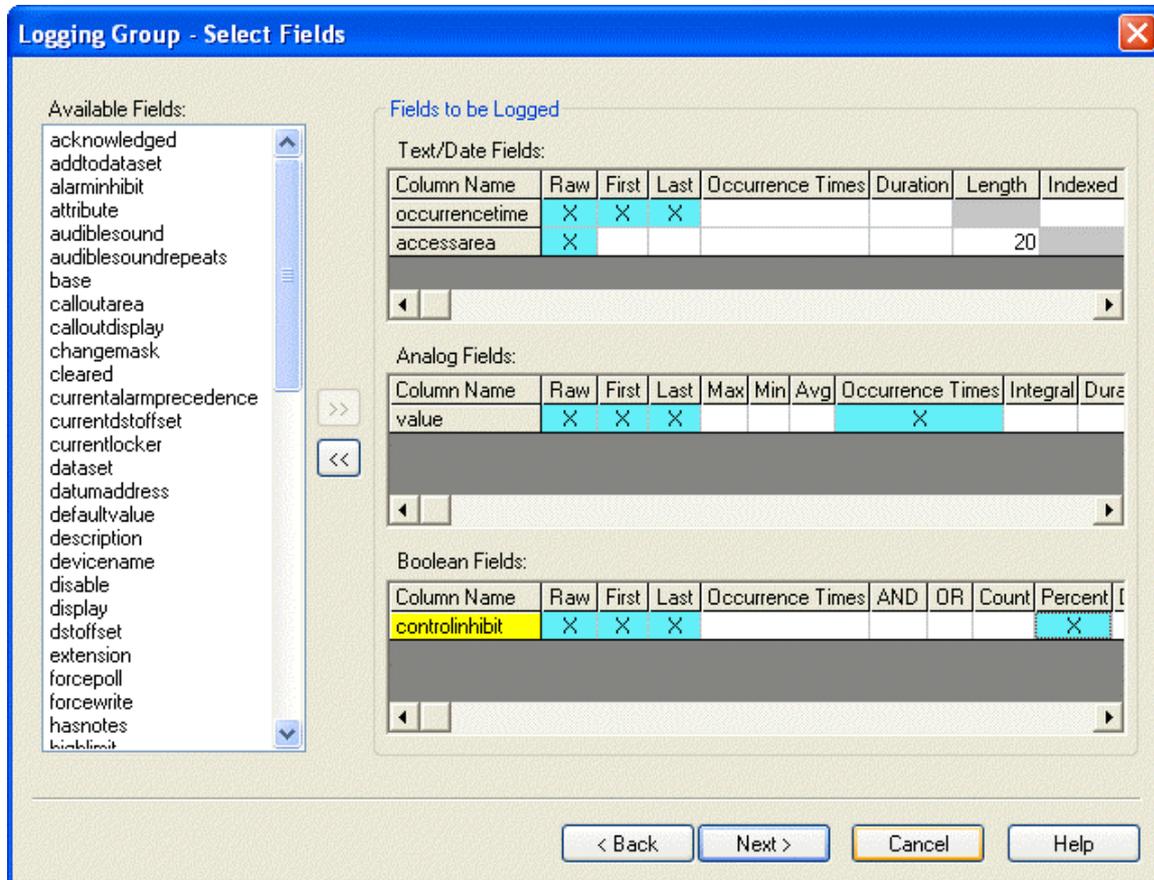
4.1   Available Fields

This list contains all of the available fields for the selected source table. Select one or a group of fields and then click the '**Move Fields Button**' to move it to the Fields to be Logged list. It no longer appears in the Available Fields list.

4.2   Move Fields Button

This button becomes enabled when one or more fields are selected from the *Available Fields list* When this button is pressed, the selected items in the *Available Fields list* are transferred to the relevant grids in the *Fields to be Logged* section.

If the current logging group has already been saved to the database then this button will be permanently disabled. This is because the database does not permit the columns associated with a logging group to be changed.

4.3 Remove Fields Button

This button removes items from the grids and places them back into the Available Fields list.

If the current logging group has already been saved to the database then this button will be permanently disabled. This is because the database does not permit the columns associated with a logging group to be changed.

4.4 Text or Date Fields

This grid control lists the text and date fields that have been selected from the Available Fields List.

4.5 Selected Fields and Compression

Select the white squares under each compression type to mark a field for Compression logging, as shown in this example:-
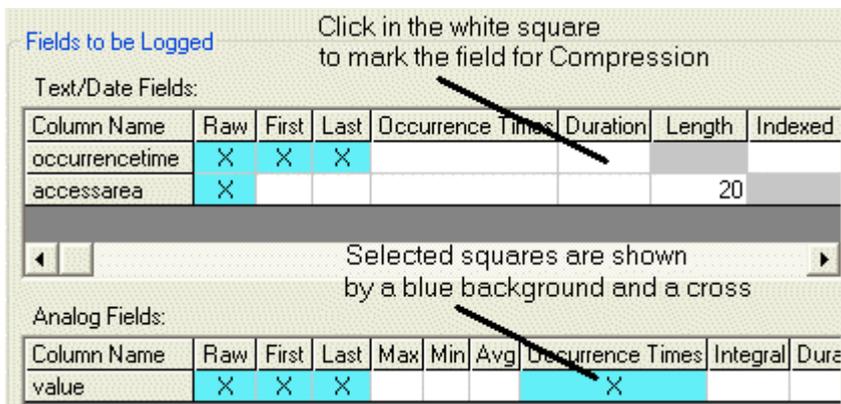
In order to store Compressed values from a field, the field must be marked on this page for Compression. Compression takes the values of a selected field from a Raw Dataset over a period of time, and processes the values to produce a single output value, depending on the type of Compression being applied. This value is then stored in a Compressed Dataset, which must also be defined by the user.

A Compressed Dataset can only be configured if a field has been marked for Compression. In turn, the Compressed Dataset can only be configured once the Raw Dataset has been created. The Raw Dataset is created on the *Define Datasets* page of the *Add Logging Group Wizard*. Once created, the Raw Dataset is shown in the list of Datasets on the *Define Datasets* Page. To create the Compressed Dataset, the Raw Dataset must be selected, and then the *[Add]* button selected. This then automatically opens the *Dataset Configuration Dialog*, which enables a Compressed Dataset to be configured that is dependent on the Raw Dataset. Once configured, the Compressed Dataset is shown as hanging from the Raw Dataset, as shown in the image below.

There are three types of field available, each having its own combination of Compression Options:-

1. Text or Date Compression Options

2. Analog Compression Options

3. Boolean Compression Options

4.5.1   Text Date Fields Compression Options

Column Name	Raw	First	Last	Occurrence Times	Duration	Length	Indexed
occurrencetime	X	X	X				
accessarea	X					20	

These are the Compression options available for Text or Date fields: -

- Raw

- First

- Last

- Occurrence Times

- Duration

- Length

- Indexed

Logging Group - Select Fields

4.5.1.1   Raw Logging

This is the actual raw, uncompressed value of the attribute at the time it is logged by the Historian. It is automatically selected, and cannot be de-selected.

4.5.1.2   First

Indicates that the first NOT NULL attribute value obtained within a compressed time period should be logged.

4.5.1.3   Last

Indicates that the last NOT NULL attribute value obtained within a compressed time period should be logged.

4.5.1.4   Occurrence Times

The time at which the value of the source column within the compression period was logged. There are four types of compression which are logged on the selection of this option:-

1. First Occurrencetime

2. Last Occurrencetime

3. Maximum Occurrencetime

4. Minimum Occurrencetime

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4.5.1.4.1   First Occurrencetime

The Occurrencetime of the first value in the Compression period.

4.5.1.4.2   Last Occurrencetime

The Occurrencetime of the last value in the Compression period.

4.5.1.4.3   Maximum Occurrencetime

The Occurrencetime of the maximum value in the Compression period.

4.5.1.4.4   Minimum Occurrencetime

The Occurrencetime of the minimum value in the Compression period.

4.5.1.5   Duration

The period of time used to calculate other compression values (i.e. when the source field had a not NULL value in the database).

4.5.1.6   Length

To enable the calculation of the database historical buffers, it is necessary for the user to specify the average length of any Strings to be logged. The length of a string is specified by first selecting the Length grid cell. Then the average expected number of characters for the string is typed into the cell. The Length cell will be disabled for date fields.

When the **[Next]** button is selected, if no length has been specified for a string, then the following message box will be displayed on screen.
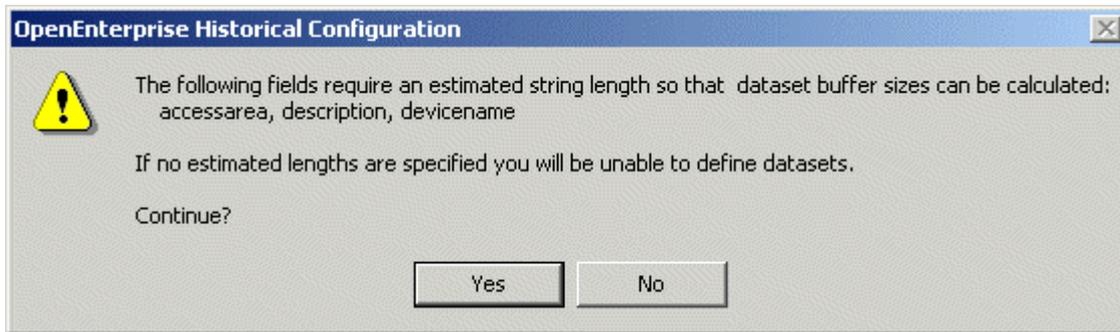
If the user selects **[Yes]** to continue, then the next page will be displayed, however the user will be unable to add Datasets. If the user selects **[No]** then the program will not move on to the next page.

4.5.1.7   Indexed

This field is included so that the user can specify which fields to use as Indexes when searching back through historical archive files for relevant information. A cross in this field indicates that it will be used as an index for archive file management. The user can create an index on Date/Time fields only. The option is disabled for other types of field.

4.5.2   Analog Compression Options

Analog Fields:									
Column Name	Raw	First	Last	Max	Min	Avg	Occurrence Times	Integral	Dura
value	X	X	X				X		

These are the Compression options available for Analog fields: -

- Raw

- First

- Last

- Max

- Min

- Average

- Occurrence Times

- Integral

- Duration

- Total

Logging Group - Select Fields

4.5.2.1   Raw Logging

This is the actual raw, uncompressed value of the attribute at the time it is logged by the Historian. It is automatically selected, and cannot be de-selected.

4.5.2.2   First

Indicates that the first NOT NULL attribute value obtained within a compressed time period should be logged.

4.5.2.3   Last

Indicates that the last NOT NULL attribute value obtained within a compressed time period should be logged.

4.5.2.4   Max

The maximum input value within the compressed time period.

4.5.2.5   Min

The minimum input value within the compressed time period.

4.5.2.6   Average

The time-weighted average of input values within the compressed time period.

4.5.2.7   Occurrence Times

The time at which the value of the source column within the compression period was logged. There are four types of compression which are logged on the selection of this option:-

1. First Occurrencetime

2. Last Occurrencetime

3. Maximum Occurrencetime

4. Minimum Occurrencetime

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4.5.2.7.1   First Occurrencetime

The Occurrencetime of the first value in the Compression period.

4.5.2.7.2   Last Occurrencetime

The Occurrencetime of the last value in the Compression period.

4.5.2.7.3   Maximum Occurrencetime

The Occurrencetime of the maximum value in the Compression period.

4.5.2.7.4   Minimum Occurrencetime

The Occurrencetime of the minimum value in the Compression period.

4.5.2.8   Integral

The estimated area bound by input values within the compressed time period.

4.5.2.9   Duration

The period of time used to calculate other compression values (i.e. when the source field had a not NULL value in the database).

4.5.2.10   Indexed

This field is included so that the user can specify which fields to use as Indexes when searching back through historical archive files for relevant information. A cross in this field indicates that it will be used as an index for archive file management. The user can create an index on Date/Time fields only. The option is disabled for other types of field.

4.5.2.11   Total

The total of the input values

4.5.3   Boolean Compression Options

Column Name	Raw	First	Last	Occurrence Times	AND	OR	Count	Percent	
controlinhibit	X	X	X					X	

These are the Compression options available for Boolean fields: -

- Raw

- First

- Last

- Occurrence Times

- And

- Or

- Count

- Percent

- Duration

Logging Group - Select Fields

4.5.3.1   Raw Logging

This is the actual raw, uncompressed value of the attribute at the time it is logged by the Historian. It is automatically selected, and cannot be de-selected.

4.5.3.2   First

Indicates that the first NOT NULL attribute value obtained within a compressed time period should be logged.

4.5.3.3   Last

Indicates that the last NOT NULL attribute value obtained within a compressed time period should be logged.

4.5.3.4   Occurrence Times

The time at which the value of the source column within the compression period was logged. There are four types of compression which are logged on the selection of this option:-

1. First Occurrencetime

2. Last Occurrencetime

3. Maximum Occurrencetime

4. Minimum Occurrencetime

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4.5.3.4.1   First Occurrencetime

The Occurrencetime of the first value in the Compression period.

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4.5.3.4.2   Last Occurrencetime

The Occurrencetime of the last value in the Compression period.

4.5.3.4.3   Maximum Occurrencetime

The Occurrencetime of the maximum value in the Compression period.

4.5.3.4.4   Minimum Occurrencetime

The Occurrencetime of the minimum value in the Compression period.

4.5.3.5   AND

The logical AND of input values within the compressed time period.

4.5.3.6   OR

The logical OR of input values within the compressed time period.

4.5.3.7   Count

The number of times a Boolean is switched to ON within the compressed time period.

4.5.3.8   Percent

The percentage of time a Boolean spent ON within the compressed time period.

4.5.3.9   Duration

The period of time used to calculate other compression values (i.e. when the source field had a not NULL value in the database).

4.6   Analog Fields

This section lists the analog fields that have been selected from the Available Fields list.

4.7   Boolean Fields

This section contains boolean fields that have been selected from the Available Fields List.

4.8   Logging Type Fields

These describe the type of logging the user wishes to apply to the selected columns. Logging falls into two main types - Raw and Compressed.

The Raw value is the actual value of the attribute at the time of logging. 'Compression' involves applying some kind of process to the raw data.

Selection of the logging type field will cause the background of the field to become light blue and a cross will be drawn on it.

This will indicate that the selected logging type will be used on this attribute. To activate the logging, datasets must be configured on the Dataset configuration wizard page, which appears later. For an explanation of each of the types of historical logging click on the bottom half of each *Logging Type* heading.

Historian Configuration Tool

5 Logging Group - Name Fields

This page allows the user to change the names of the logged fields from their defaults.
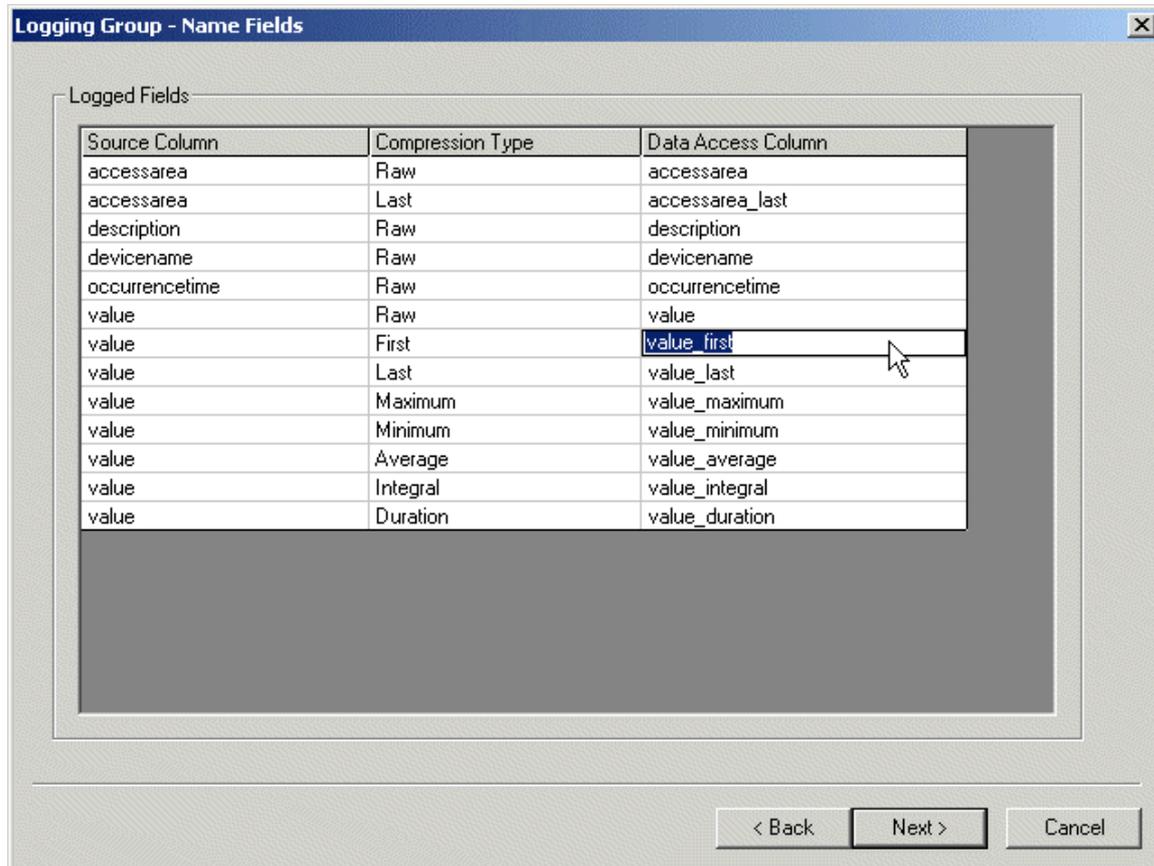
5.1 Logged Fields Grid

This grid control contains all of the fields that have been selected on the previous page and allows the user to change the column names which will be used in the historical tables. The fields are sorted first by source and then by compression type.

5.2 Data Access Column

When adding a logging group the Historical Configuration Editor will provide a set of default data access column names. The user is allowed to change the name of the historical column by typing a new name into a Data Access Column cell.

When the user attempts to move to the next page, an error will be given if any of the data access column names are not unique or if any of the column names entered are reserved by the historian.

As the name attribute of the OELogColumn table forms part of the primary key it is not possible to change the column names in an existing logging group.

Default Data Access Names

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Historian Configuration Tool

6 Logging Group - Define Datasets

This page is used to configure the raw and time compressed datasets.
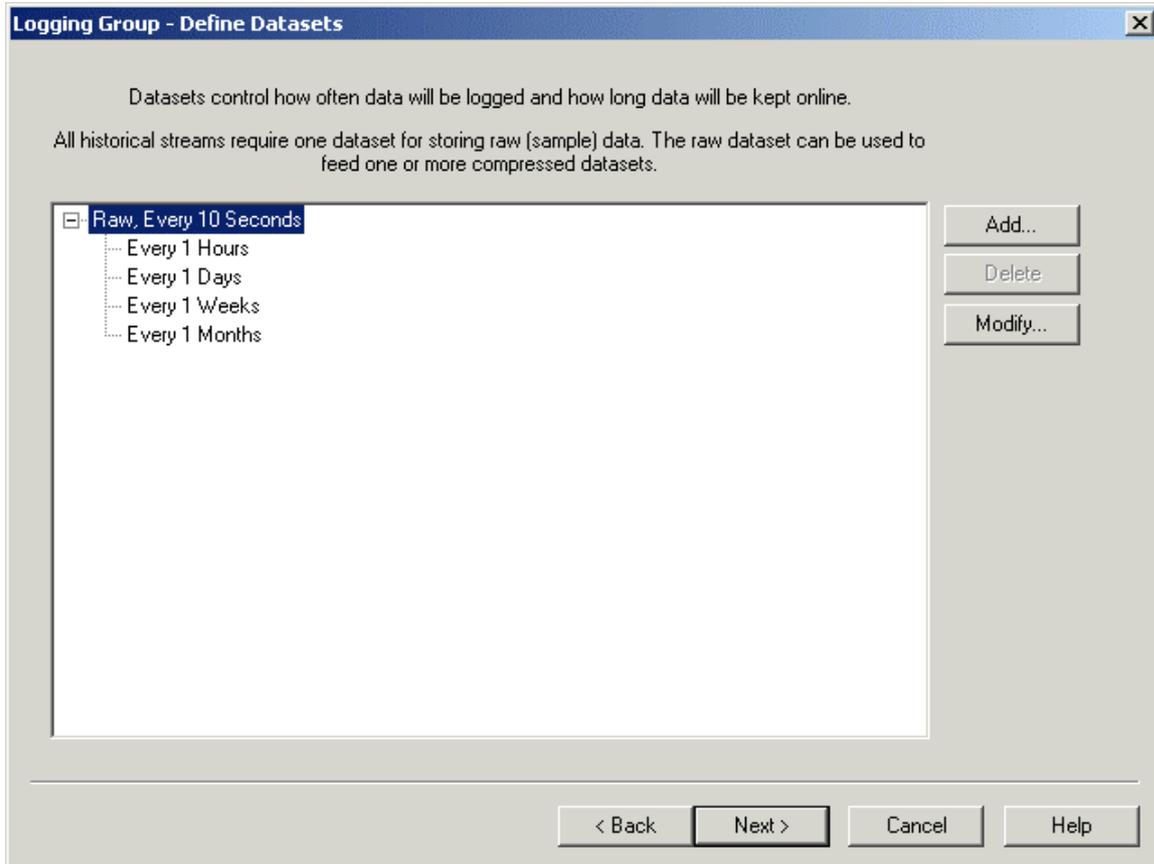
6.1   Add Dataset Button

When **[Add]** is selected, a new dataset is created and the *Dataset Configuration dialog* is displayed with default values. The "Fed from Dataset" field will be set to the dataset that was shown as selected when the **[Add]** action was selected.

6.2   Delete Dataset Button

This button is only enabled if a configured dataset is selected from the Dataset Tree View. When selected, a confirmation dialog will be displayed giving the user the option to continue or abort the deletion. If the Yes button is selected, the Dataset will be deleted, but if the No button is selected, the deletion will be aborted.

6.3   Modify Dataset Button

When **[Modify]** is selected, a selected Dataset can be modified by using the *Dataset Configuration dialog.* The "Fed from Dataset" field will be set to the dataset that was shown as selected when the **[Modify]** button was selected.

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6.4   Dataset Tree View

The datasets are displayed using a tree view.

Datasets are listed in their logical feed order, with lines and indentation being used to show the relationship between a dataset and its source dataset. The description of the dataset is either the user specified description attribute, if defined, or a generated description as shown in the above dialog box.

Double clicking on a dataset will perform the modify action on the dataset.

If no datasets are defined, a message will be displayed in the tree prompting the user to select the **[Add]** button to define the raw dataset. If no raw dataset has been defined and the user selects the **[Next]** button, an error will be reported and the user will not be able to progress to the next page.

6.5   Dataset Configuration

When adding, viewing or modifying a dataset this dialog box is displayed.
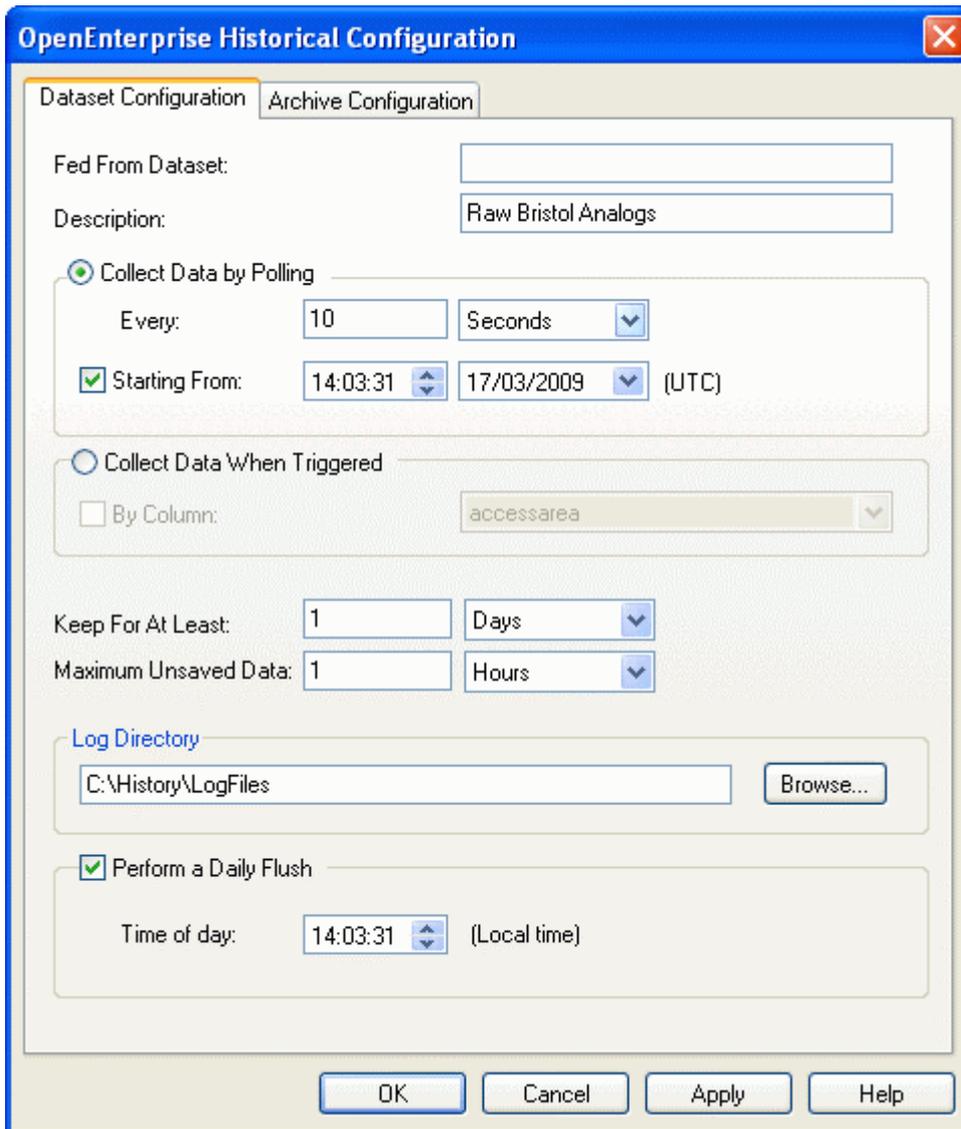
6.5.1 Fed From Dataset Field

This is the source dataset for this dataset. This read-only field will be either 'Raw' or the string describing another dataset. If it is a raw dataset, the field will be empty, because it is not fed from any other dataset, and can only be a source for other compressed datasets. The string will be the description attribute of the source dataset if one is defined. If the description attribute of the source is not defined, it will be a concatenated description combining the rate, start time and period of the source dataset.

6.5.2 Dataset Description

A user defined string describing this dataset. Although not required, it is recommended that this attribute is used to describe the dataset more fully. This string (if defined) will be used elsewhere within the Historical Configuration to improve readability of dataset id's.

6.5.3   Collect Data When Triggered

When checked, this control indicates that data for the raw dataset will be collected as it is triggered by a change in the data.

When this control is checked, the oelogdata rate attribute will be set to '0s' indicating it is the raw rate.

This control is only enabled when working with the raw dataset. It will also be disabled when a dataset that has been previously saved to the database is modified.

6.5.4   Trigger Column

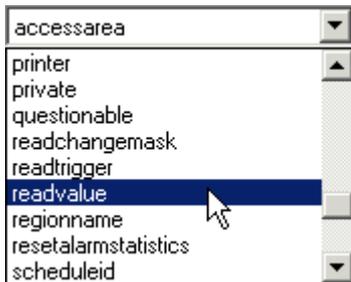When enabled, this field displays a list of columns that can be used to trigger data collection.

One must be selected if data collection is to be by trigger column. The field is only enabled if the Collect Data When Triggered radio button is checked and enabled.

6.5.5   Collect Data by Polling

When checked, indicates that data for the raw dataset will be collected by polling at a defined rate. The check box is only enabled when the dataset has not been previously saved to the database.

6.5.6   Data Collection Polling Rate

These fields on the Dataset Configuration dialog display the polling rate for this dataset only if the Collect Data by Polling box is checked. The units can be any of Seconds, Minutes, Hours, Days, Weeks, Months, or Years.

Units of less than months will be converted to seconds, Units of months or years will be converted to months.

This field is only enabled if the Collect Data by Polling radio button is checked and enabled.

6.5.7   Start Polling From Time

The 'Starting From' check box on the Dataset Configuration dialog is only enabled if the Collect Data by Polling radio button is checked and enabled. The time and date controls will only be enabled if the Starting From check box is checked and enabled.

If checked, this control defines the origin for this dataset. The origin must be in the past. If not checked, collection will start immediately after the dataset is added to the database. For compressed datasets this value is stored in the oelogdata compressionorigin attribute, whereas for a raw dataset this value will be stored in the oelogcontrol rateorigin attribute.

6.5.7.1 Setting Local Polling Time Correctly

This field defines the time that the data will begin to be collected. For compressed datasets collecting data on a daily basis, it defines the exact time that the data will be collected.

Important Note: The 'Starting from' time will be interpreted by OpenEnterprise as UTC, not local time. Users setting up historical streams should be aware of this and adjust the 'Starting from' time accordingly. For instance, if a dataset is required to collect samples at midnight local time, the 'Starting from' time should be set to (UTC +- Local Time Difference +- DST adjustment that is in force when the historian is being configured).

Note also that the 'Starting from' time must be set to the UTC equivalent of local time at the time the historian is configured. So for example, if local time is Eastern Standard Time, and when configuring the historian we are in DST, then the 'Starting from' time would be 4AM (Midnight + 5 hours - 1 hour).

The log_dst_adjusted resource: When configuring the 'Starting from' time in this way, the user must first ensure that the log_dst_adjusted resource is set to TRUE in the configuration file (the Poly.cfg file) for the database, and the database must be restarted before configuring the Historian. This resource causes the 'Starting from' time for all historical data sets to be adjusted for Daylight Saving Time (DST). The log_dst_adjusted resource will then ensure that this time is adjusted to 5AM when DST no longer applies. For further help on setting database resources, see the 'Modules and Resources' topic in the Session Manager help file.

Dataset Configuration

6.5.8 Keep Data for at Least Fields

The value in this field is used to determine the total size of the log file required for the Dataset. It is also used together with the value in the 'Maximum Unsaved Data' field to determine the buffersize and buffercount attributes of the Dataset. The buffersize value determines how many bytes will be allocated in memory for storing the logged values of the Dataset before they are flushed to the log file. The log file size, buffersize and buffercount are calculated using the following values:-

1. The number of signals in the Dataset.

2. The number of bytes required to store the data for one signal.

3. The polling rate (for polled logging).

4. The total time (polled logging) or total number of generations (triggered logging) for which data is required to be available in the log file.

5. The amount of data (expressed in time or generations) that the user is prepared to keep in memory before it is written to the log file.

6.5.8.1 Polled Data

When collecting polled data, the units combo box will contain the full range of time units, 'Seconds', 'Minutes', 'Hours', 'Days', 'Weeks', 'Months' and 'Years'. When the dataset contains raw data collected by trigger the Units combo box will only contain 'Generations'

6.5.8.2 Generations

A 'Generation' occurs when there is a value change in the trigger column for any of the signals in the Dataset. Only the object that caused the Generation is logged. The number of Generations required will depend on:-

1. How often, on average, the value of the trigger column for the whole Dataset is likely to change .

2. What time period the log file should cover.

For instance, if there is likely on average to be a value change within the whole Dataset every minute, and you would like the log file to cover one day, the number of Generations required would be 1440.

Note: This field will be disabled if the dataset has previously been saved to the database.

6.5.9   Maximum Unsaved Data Fields

This field sets the maximum amount of data that the user is willing to lose if there is a sudden Database failure for whatever reason. The value is used, along with the 'Keep Data for at Least' value, to determine the buffersize and buffercount attribute of the Dataset. For instance, if the 'Keep Data for at Least' value was one day, and the 'Maximum Unsaved Data' value was one hour, the buffercount would be 24.

When collecting polled data, the units combo box will contain the full range of time units, 'Seconds', 'Minutes', 'Hours', 'Days', 'Weeks', 'Months' and 'Years'. When the dataset contains raw data collected by trigger the Units Combo Box will only contain 'Generations'.

Note: This control will not be enabled if the dataset has previously been saved to the database.

6.5.10   Log Directory Field

This field from the Dataset Configuration dialog allows the user to specify the directory the log file will be created and maintained within. The **[Browse]** button displays a directory browser to allow the user to browse to the required directory.

This control will not be enabled if the dataset has previously been saved to the database.

6.5.11   Perform a Daily Flush

When this box is checked, a daily flushing of the memory buffer for this dataset to the log file will take place at the time specified in the 'Time of day' field.

The amount of data that exists in the memory buffer is determined by the 'Maximum Usaved Data' fields on the 'Dataset Configuration' dialog. Since this data exists only in the computer's memory, if there should be a power failure and the computer does not have a suitable UPS, a considerable amount of data could be lost.

The 'Perform a Daily Flush' feature is particularly useful for datasets that are configured to collect and compress data over a relatively long period (for instance a compressed dataset that stores averages over a monthly period).

6.5.12   Time of day

The time of day that the daily flush of the memory cache for this dataset will occur.

This value will be displayed in local time and will default to the current time. Click on the hours, minutes or seconds values in this control to change the daily flush time.

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6.6 Archive Configuration

This dialog enables the user to configure archiving activity for the current Dataset.
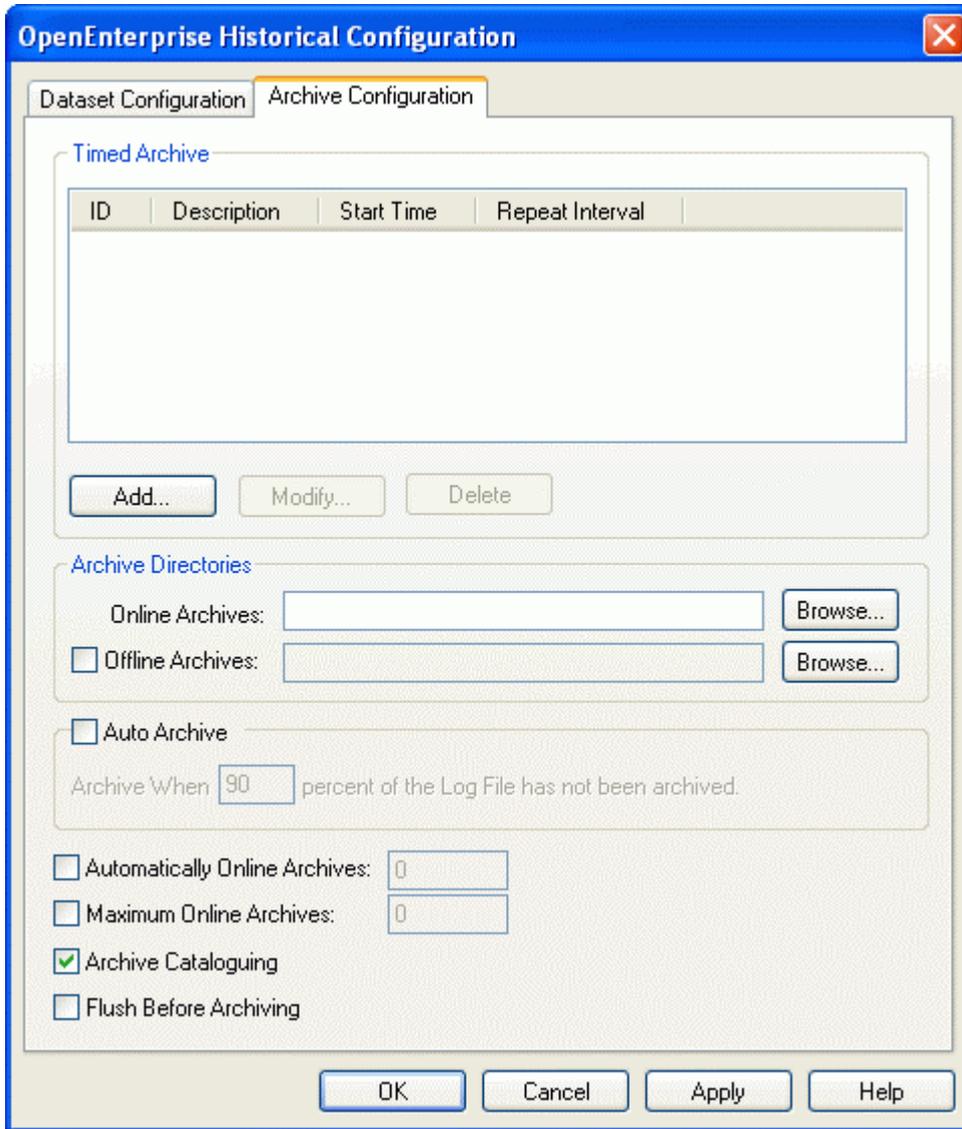
6.6.1 Timed Archive List

Displays any timed archives. The data is returned from the timed archive table. The records displayed are those which are related to the current dataset being modified. The **[Add], [Modify]** and **[Delete]** buttons located below the list control allow the user to configure timed archives. The buttons are enabled and disabled depending on the current selection in the list control.

6.6.2 Add Timed Archive Button

The **[Add]** button is always enabled allowing the user to add an entry independent of the current selection of the list control. After selecting the **[Add]** button, the Create New Timed Archive dialog is displayed on the screen to allow the user to create a timed archive.

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6.6.3   Archive Directories

This section of the Archive Configuration Dialog enables the user to specify the directories that archive files will be written to.

6.6.4   OnLine Archives Directory Field

This field allows the user to specify a directory where online archives will be saved, and is used in conjunction with the Archive File Manager. The number specified in the Automatically Online Archives field will govern the number of files in this directory.

The oldest will be moved into the Offline Directory as this number is exceeded, unless archive files are brought manually online also. In this case, the maximum number of files found in this directory will be governed by the Maximum Online Archives setting.

6.6.5   OffLine Archive Directory Enable Check Box

If this check box is ticked, the Offline directory field and browse for directory button will become enabled.

6.6.6   OffLine Archive Directory Field

If the Archive File Manager is being used, this will be the directory where offline archives will be saved. Archives will be made offline once the number of automatically online archives has been exceeded.

In this case the oldest online file will be placed into the offline directory as it is brought offline. Offline archives may be brought back online, as long as the Maximum Online Archives number is not exceeded.

6.6.7   Auto Archive Check Box

When this box is checked, archive files will be generated automatically. When the archive file is created, it is controlled by the "Archive When" fields.

6.6.8   When to Archive

This fields allows the user to specify when archives should automatically take place. An archive file will be created whenever the amount of data that has not been archived from the dataset's realtime storage file exceeds this percentage. The value in this field will be converted into the archivepercent attribute.

This control is only available when "Auto Archive" is checked.

6.6.9   Automatically Online Archives

If the check box is selected, the edit field becomes enabled. It can be used to specify the number of archives to be automatically made available on line. As the archives are created they are brought online up to the number specified here.

When the automatically online archives number is exceeded, the oldest archive online is taken offline, and the latest archive created is brought online. Old archives may be brought back online up to the number specified in the Maximum Online Archives field. This number includes the number of archives brought automatically online. Archives brought automatically online cannot be taken offline by the user. Note that the Archive File Manager is not required for this feature to work.

6.6.10 Maximum Online Archives

This feature requires the Archive File Manager to work. If the check box is selected, the editable field becomes enabled. This number places a limit on the number of archive files that may be brought online manually by the user. The number includes the number of archive files that may have been brought automatically online. The number of archive files which the user can bring online manually is the Maximum number - the Automatically online number.

Note: If the number of Automatically Online Archives is set to a greater value than that placed in the Maximum Online Archives field, then the Automatically Online Archives figure overrides the number set in Maximum Online Archives.

6.6.11 Archive Cataloguing

This field is checked by default. It causes the archives created from this Logging Group to be added to the Archive Catalogue table. This allows users to bring catalogued archives on and offline manually.

Note: If this field is unchecked then the user will be unable to bring archive files on and offline manually for this Logging Group.

6.6.12 Flush Before Archiving

If this box is checked, the memory buffer for this dataset will be flushed to the log file prior to creating an archive. This will ensure the archive includes the most recently logged data.

6.6.13 Create New Timed Archive

This dialog enables the user to create a new timed archive. Note that timed archiving requires the use of the OpenEnterprise Scheduler to function.
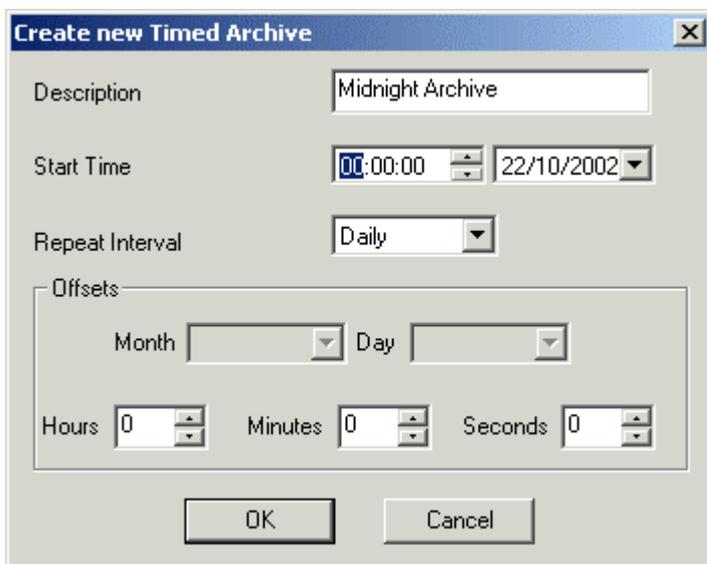
6.6.13.1 Timed Archive Description

This is the description of the timed archive record the user wishes to add to the database.

6.6.13.2 Timed Archive Start Time

This field allows the user to set a specific start time of the timed archive. By default this is set to the current time taken from the local time of the workstation.

6.6.13.3 Timed Archive Repeat Interval

This field must have a value. This field is required to inform the Scheduler what type of diary the user wishes to associate with the timed archive record being created.

Available options are: -

- Once

- Daily

- Weekly

- Monthly

- Yearly

- Weekday

- Weekend

- Monthend

- Minute

- Five Minutes

- Hourly

6.6.13.4 Timed Archive Offsets

- **Month** - Defines an offset value in months applicable to a yearly archive schedule.

- **Day** - Defines an offset value in days applicable to any archive schedule greater than daily

- **Hours** -Defines an offset value in hours applicable to any archive schedule greater than hourly

- **Minutes** - Defines an offset value in minutes applicable to any archive schedule greater than minutes.

- **Seconds** - Defines an offset value in seconds applicable to any archive schedule greater than seconds.

7 Dataset - View Names

This page allows the user to update the view name for the tables created when first configuring datasets. This will allow the user to configure more intuitive names for the historical access tables which are created. The view name cannot be changed once the Logging Group has been created.
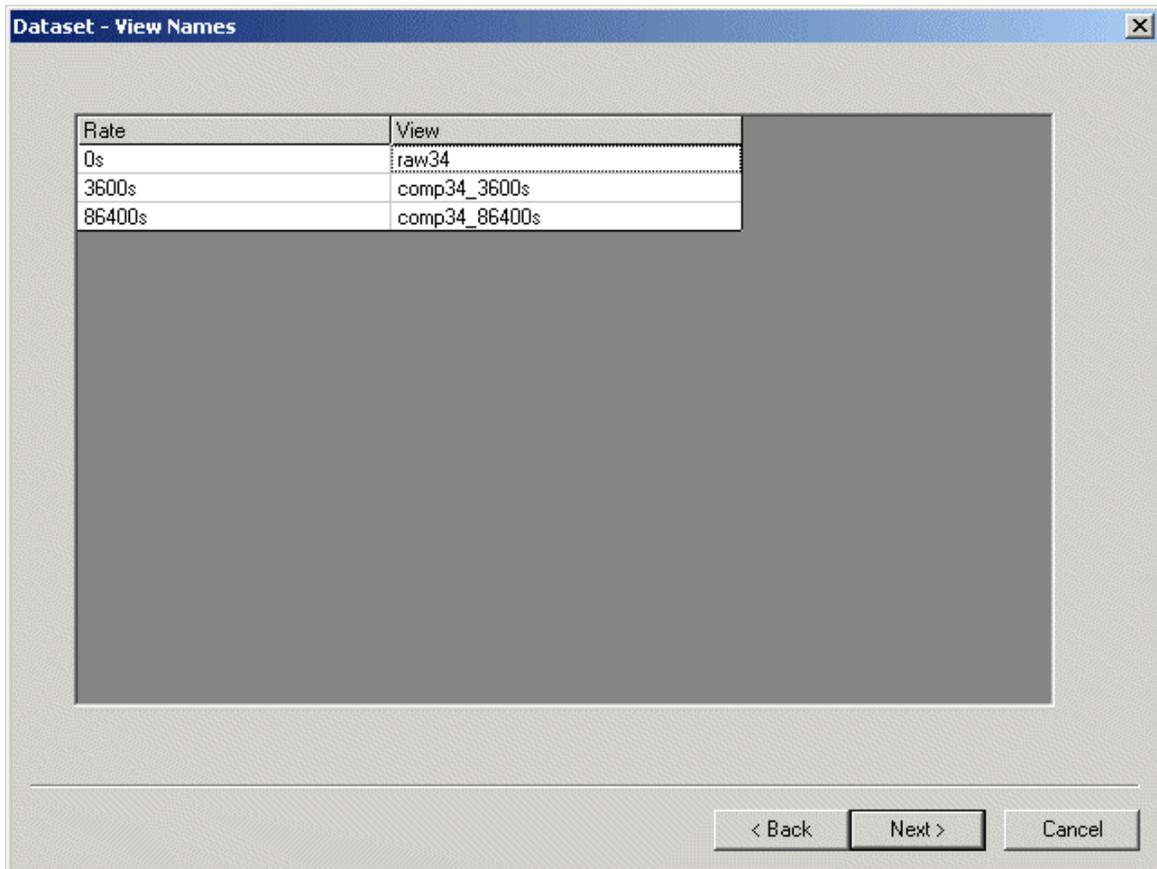

7.1 Logging Rate Field

This value is the collection rate specified when configuring a dataset. The values in these cells are read only and cannot be customised.

7.2 View Name Field

When the Logging Group is first created, this field is editable, and the name given to the views which will be created for the datasets of the current Logging Group can be changed.

8 Logging Group - Select Objects

This page will only be shown if the "Log All Objects" check box on the general page is not checked. It allows the user to select specific objects from the source table for inclusion in the current Logging Group.
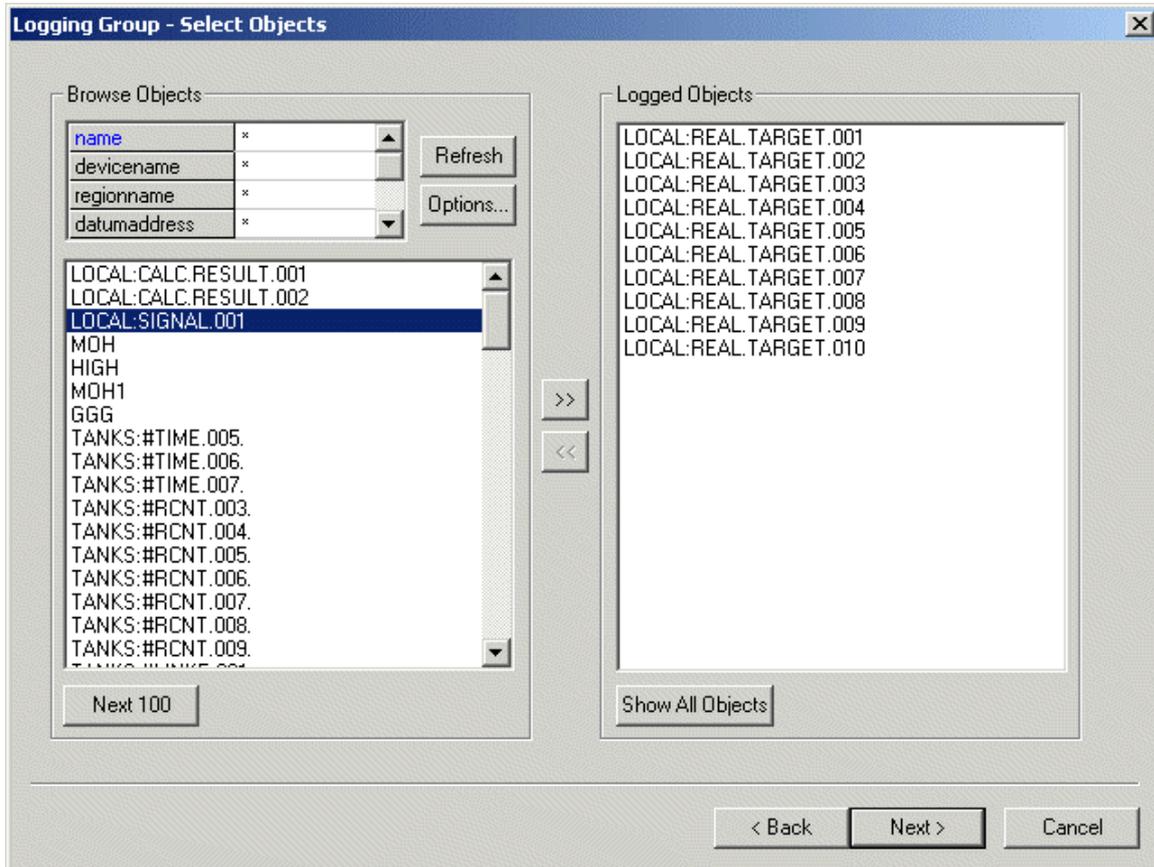
8.1 Browse Objects Filter

Due to the potentially large number of objects that might exist in the selected table, a browser is used to filter the list of objects displayed. The grid allows the contents of the list box to be filtered, reducing the overhead on the database of retrieving the required objects. The grid will contain an entry for each of the attributes of the table. Selection of the left-hand column will allow the user to specify a filter string for that column. The asterisk (*) can be used as a wild-card, as shown in the example below. The **[Refresh]** button must be selected to requery the database with the filter applied.
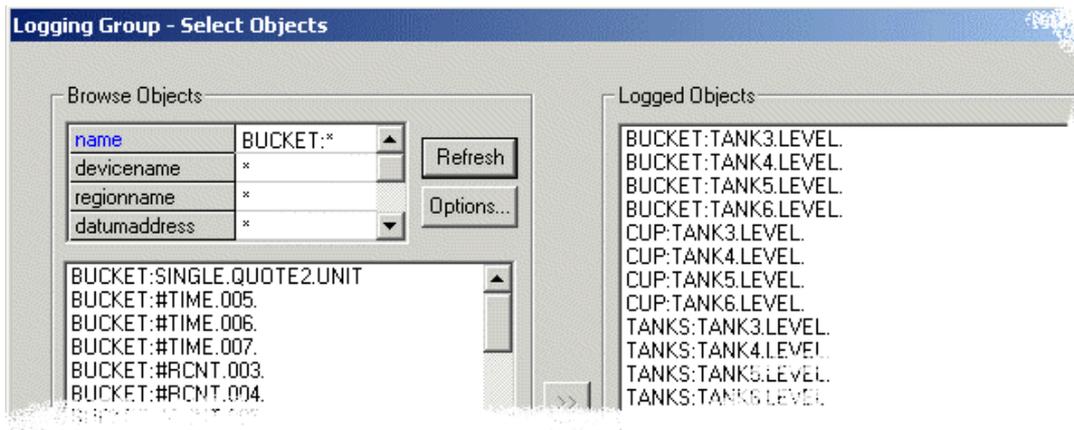
8.2   Refresh Button

The **[Refresh]** button is used to re-query the database applying the filter to reduce the number of entries in the list. As a safety net the number of objects returned is limited as specified in the Options Dialog. The **[Next]** button can be used to retrieve further objects.

8.3   Options Button

When the [Options] button is selected the *Options dialog* is displayed which allows the user to change the default number of records which will be displayed in the Available Objects List. The Options Dialog can be accessed from the View menu of the Historian's Main Dialog.

8.4   Available Objects List

This list contains the results of the database query for objects in the source table. The list is controlled by the Prompt for Filter Before Querying Database check box on the Options dialog.

If the option is checked then a message will be displayed at the top of the list informing the user to both specify a filter and then select the **[Refresh]** button to display objects.

8.5   Select Objects for Dataset Button

This button is used to add fields from the Available Objects list to the "Logged Objects" list. If an object already exists in the "Logged Objects" list no action will be taken. Objects can also be added to the list of logged objects by double clicking on them in the Available Objects List.

8.6   Remove Objects From Dataset Button

This button is used to remove selected objects from the Logged Objects list. This removes them from the dataset. Objects can also be removed from the list of logged objects by double clicking on them in the list of logged objects.

8.7   Logged Objects List

The "Logged Objects" list contains all objects that have been selected for logging within the current logging group. Items can be removed from this list by pressing the **[<<]** button, in which case they will no longer be logged. The list allows multiple objects to be selected for removal.

If an object is selected for logging, the id of the current logging group will be appended to it's dataset attribute when the logging group is finally added. The dataset attribute is a string containing a comma separated list of integers, which represent logging group id numbers. An object may belong to more than one logging group.

8.8   Next 100 Button

The **[Next 100]** button (the number after defaults to 100, but can be changed by configuration), allows the user to query the database for the next block of objects from the Source table. Existing list contents will not be removed. By repeatedly pressing the **[Next]** button the user can retrieve all objects that satisfy the filter.

The numeric value displayed on this button will be controlled by the "Retrieve Objects" field on the Options Dialog Box.
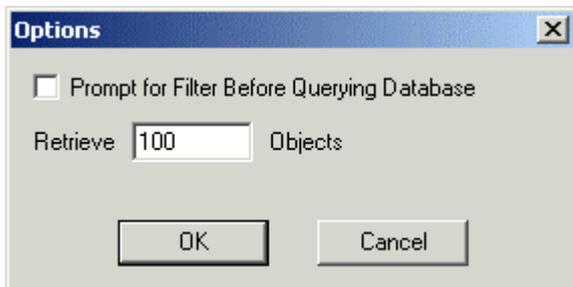
8.9   Show All Objects Button

This button allows a user that has the "Prompt for Filter Before Querying Database" option checked to view all of the objects that are currently marked for logging in the database. The retrieved set of objects is merged with any objects already in the "Logged Objects" list. Once this option has been run to completion the button will be disabled.

If the initial query was allowed to complete then this button will be disabled.
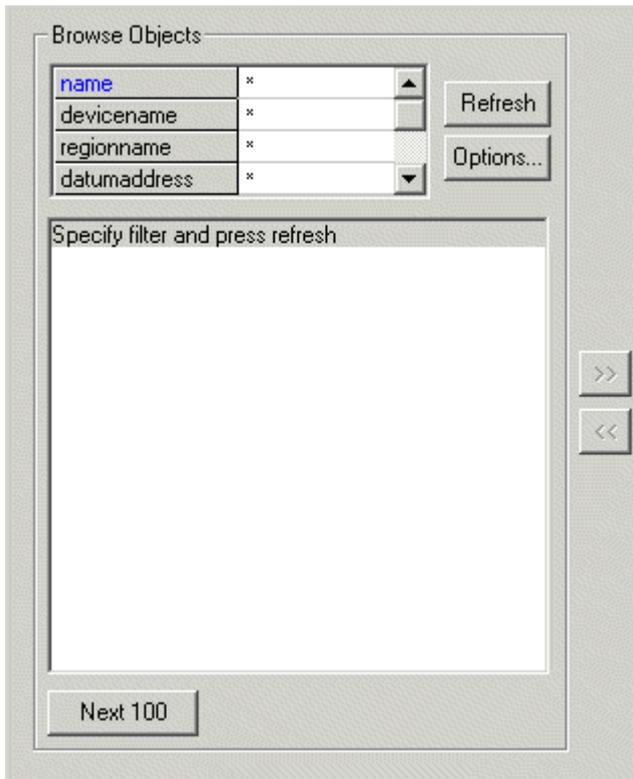
8.10   Options Dialog

Here, the user can configure a maximum number of objects to be returned by each re-query of the database on the Select Objects Dialog. Therefore, the filter only applies to Logging Groups which have been set up to log a subset of the objects in the source table.

8.10.1   Prompt for Filter Before Querying Database

When the *Select Objects* dialog is opened for the first time during a configuration session, the Historian Configuration Tool queries the database for the number of objects from the Source table that are specified by the **[Next <number of objects>]** button. This option may have been set in a previous session to a very large number. If the *Prompt for Filter Before Querying Database* option is checked before opening this dialog for the first time in a session, the Historian Configuration Tool will halt the query and prompt the user instead. The prompt asks the user to specify a filter before initiating the query by selecting the **[Refresh]** button. The prompt will appear at the top of the *Available Objects List.*

The prompt gives the user time to specify a filter in the Filter Grid or to look at how many objects have been set for retrieval and to change this by accessing the *Options Dialog* if necessary. This number is shown on the [**Next <number of objects>]** button. It defaults to 100.

8.10.2   Number of Objects to Retrieve Field

This field sets the maximum number of objects that will be returned in a query. The default value is 100. The number set here will be reflected in the text on the **[Next <number of objects>]** button.

9 Logging Group - Summary Page

The Summary Page gives a detailed description of the changes that will be made to the current logging group.

The user can now press the **[Finish]** button to apply the changes made to the database. All changes will be applied as a single transaction allowing rollback if any errors occur. Should errors be found, they will be reported and the user will be allowed to rectify the problem.
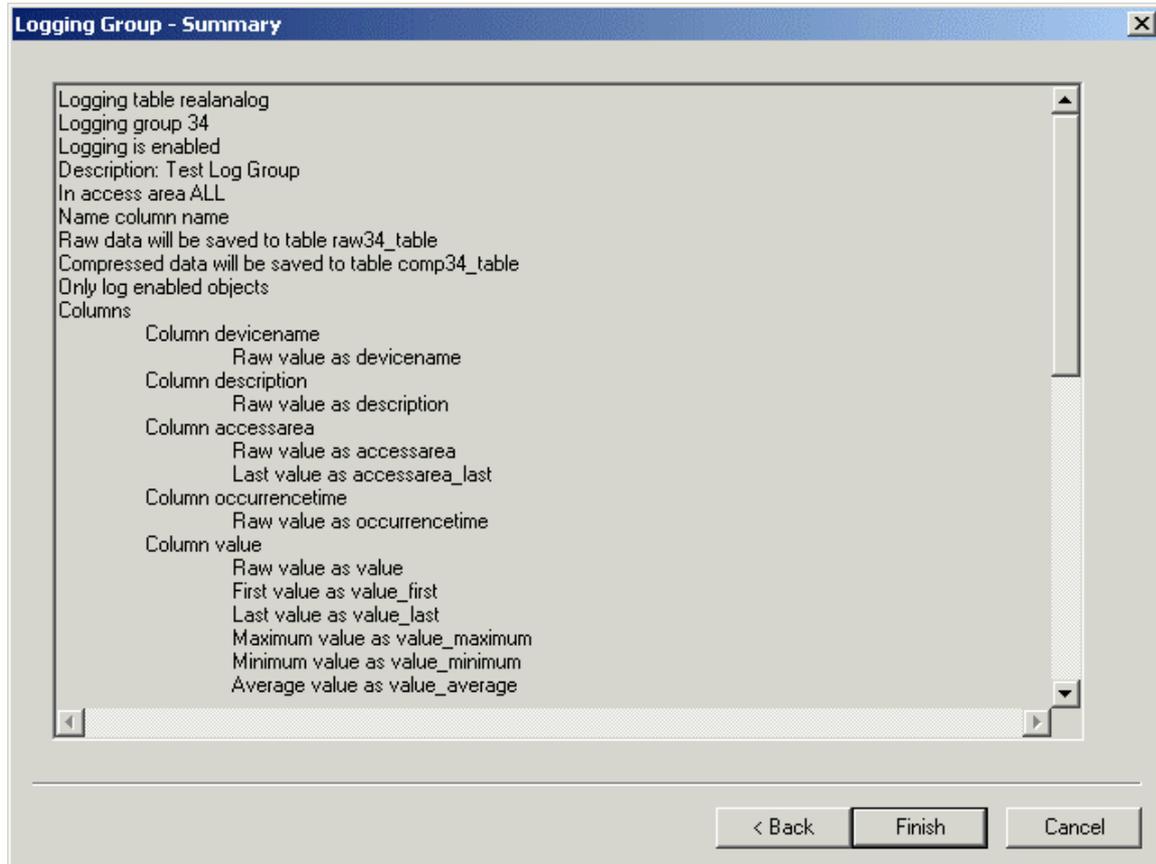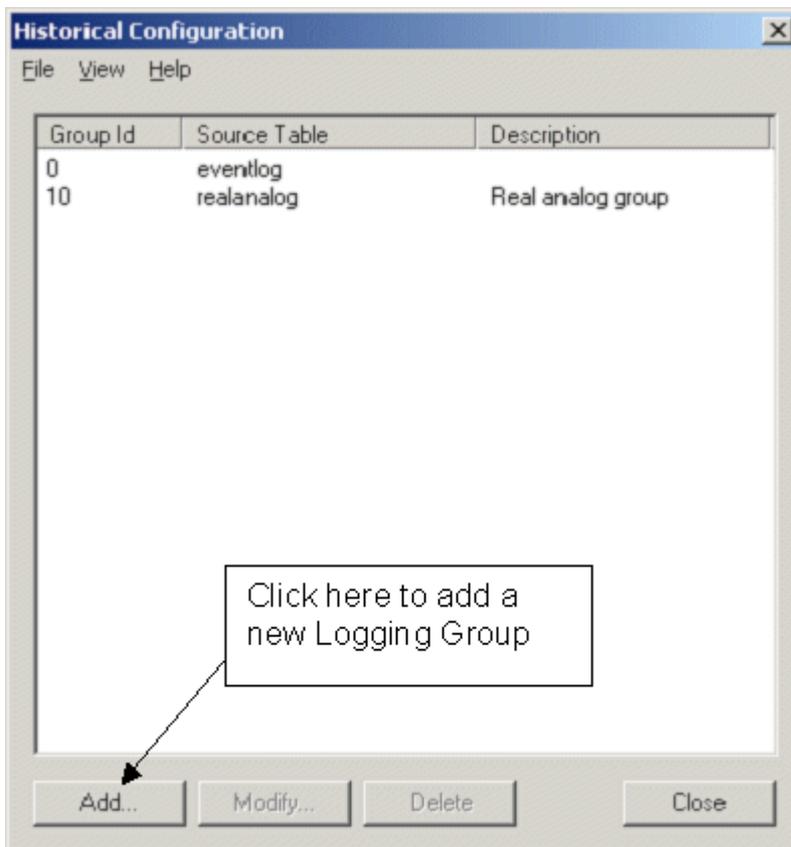
10 Example

This example shows how to create a Logging Group using the Historian Configuration tool, that will log the value column of user specified signals in the RealAnalog table, taking a sample when the value of the signal changes in the database. The Logging Group will have one Raw dataset, and a Compressed dataset, which records Minimum, Maximum and Average values based on the Raw data over hourly and daily periods.

The example shows how the Logging Group would be set up using the Logging Group wizard from the Historian Configuration tool.

10.1 Step 1 - Add New Logging Group

First, select the **[Add]** button from the Main dialog of the Historian Configuration tool.

10.2 Step 2 - Define Logging Group

In the example below, the 'realanalog' table has been chosen as the Source Table and the Group Id has been set to 20, which is a unique Id number. The default name attribute has been left as the Name column. This is included automatically as one of the logged attributes.

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In order to be able to create datasets, the Historian Configuration tool has to calculate the size of log file needed to contain the data. For this it needs an estimate of the number of objects which will need logging. Since this Logging Group will not log all objects in the Source Table, the 'Log All Objects' box has been unchecked. When we have configured this page correctly, we select the **[Next>]** button.

10.3   Step 3 - Define Fields

On this page, we have selected the ReadValue field to be logged. We use the ReadValue rather than the Value attribute because it is always a true reflection of the value within the PLC/RTU. Raw data collection is selected by default, but we have also selected Max, Min and Avg as algorithms to be applied to the Raw data for our compressed datasets, and have marked the field for Indexing. This indicates that we are going to use the Archive File Manager to manage our archives. We have left the accessarea as a field to be logged, and have typed in a length of 10, in order for the Historian Configuration tool to be able to calculate Log file sizes for our datasets.
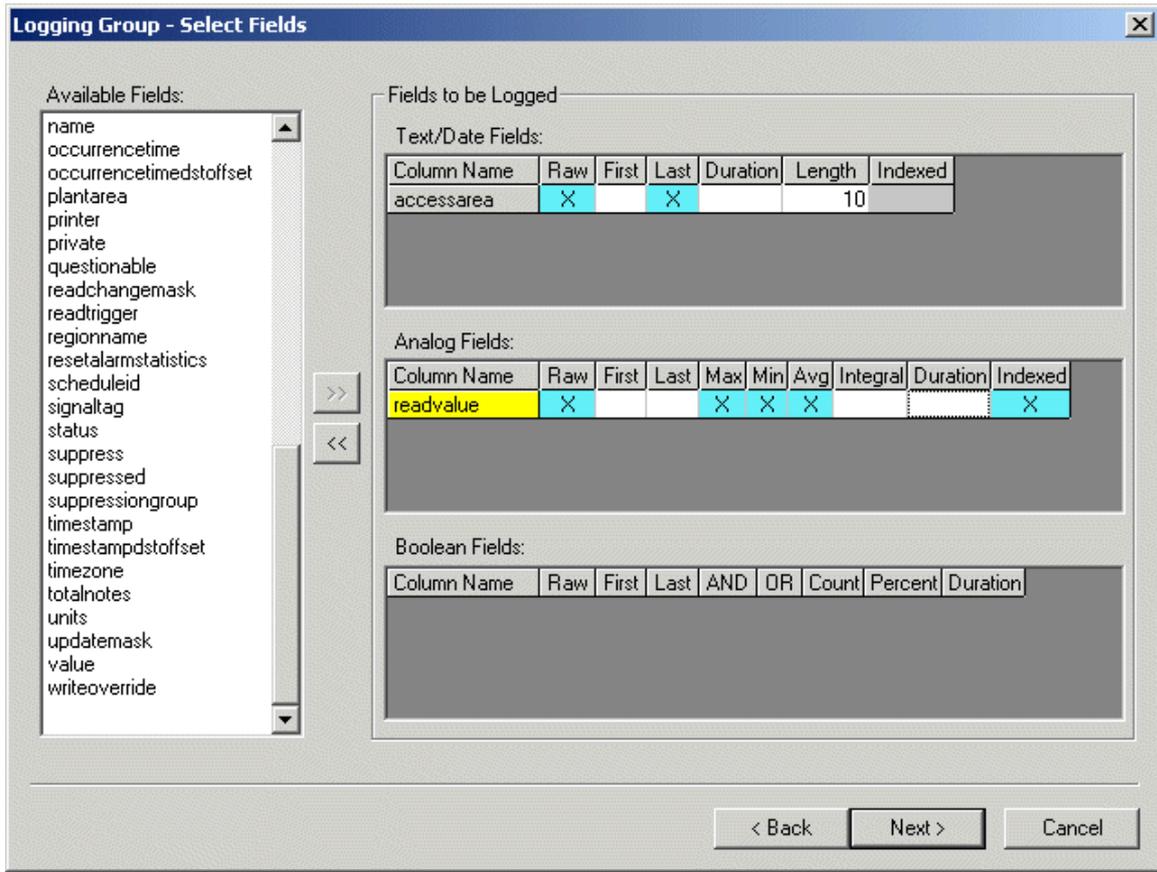
## 10.4 Step 4 - Naming of Data Access Columns

Everything will be left at the default setting on this page. The Historian Configuration tool supplies names for the historical output, which are adequate for our needs. Click the **[Next>]** button.
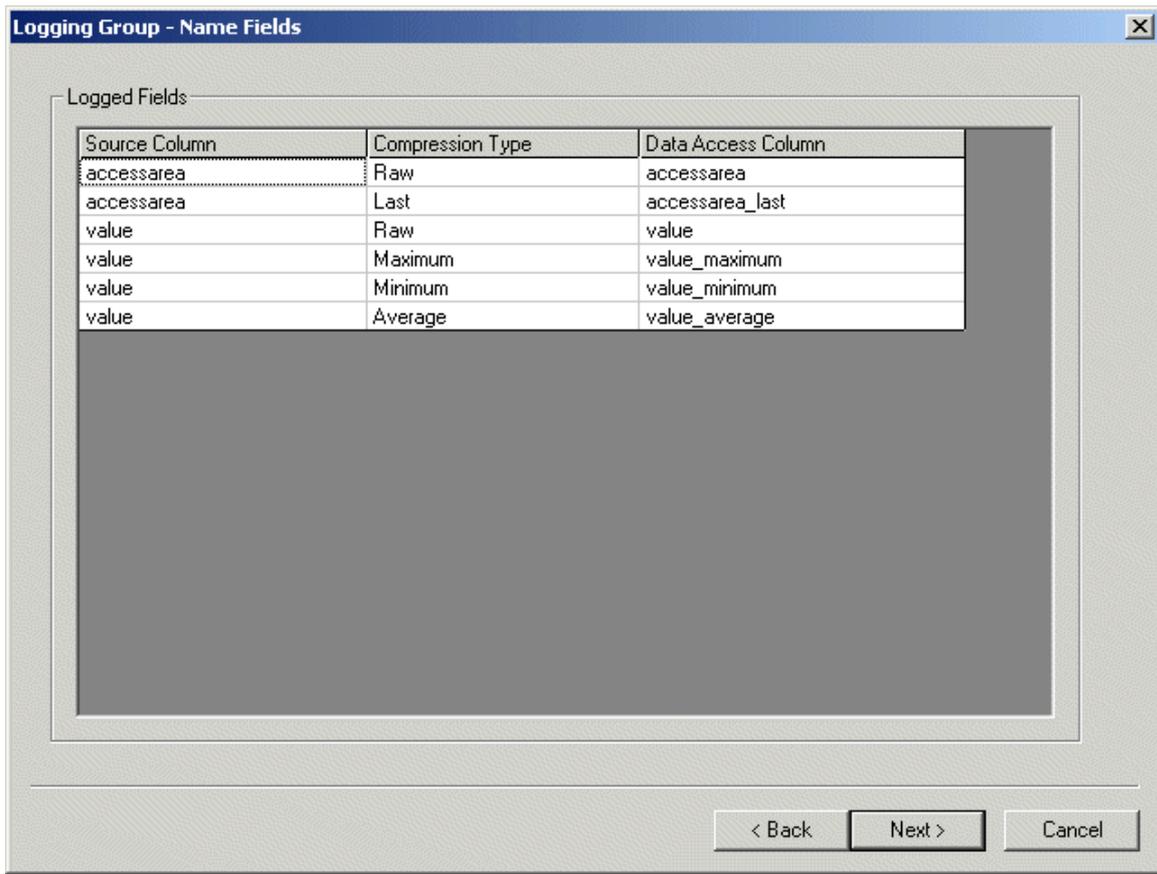
## 10.5   Step 5 - Create Raw Dataset

10.5.1   Step 5 - Create Raw Dataset

This is the page where we must define our Datasets. In order to do this, we first need to click the
[Add] button. Click the 'hotspot' around the **[Add]** button now to go to the next step of this example
set-up.
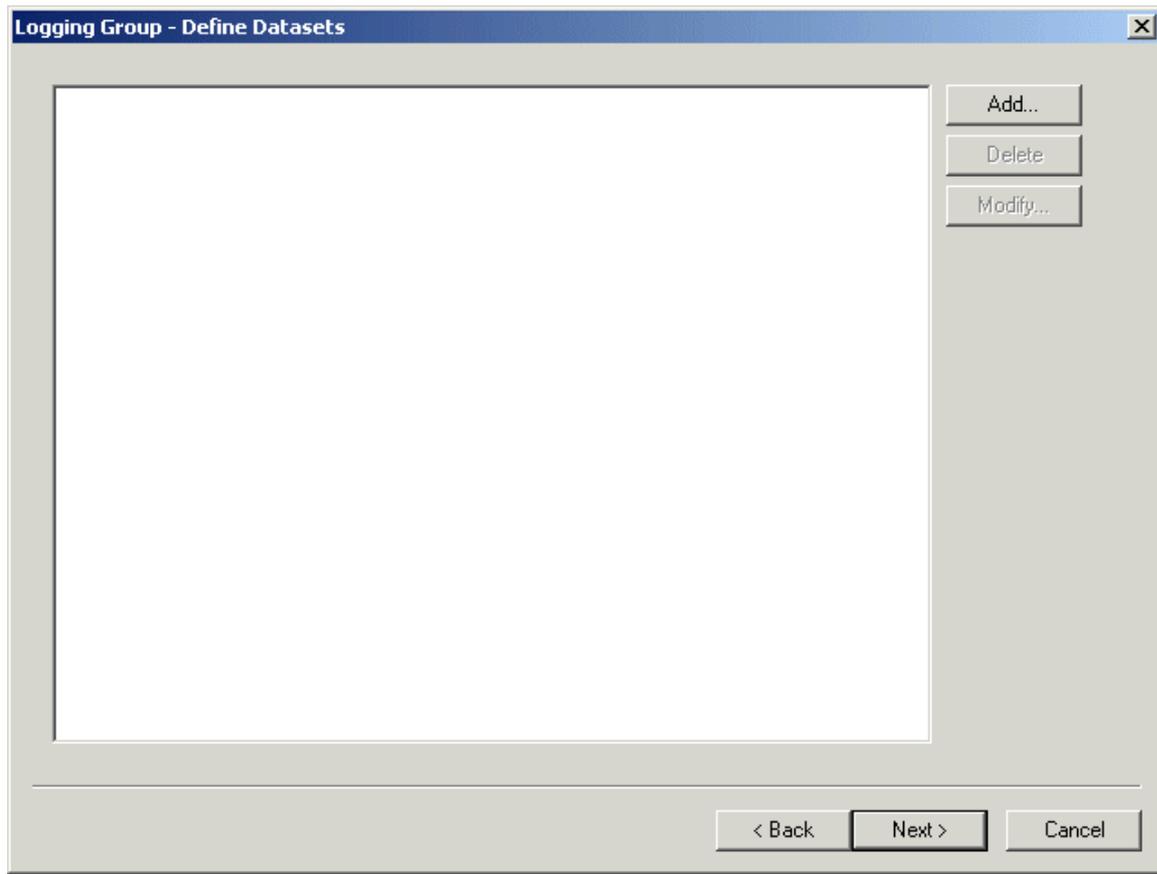
10.5.2   Step 5a - Configure Raw Dataset

This is the Dataset Configuration page. When this page has been configured as we want it, we need to select the 'Archive Configuration' tab to move on to the next step.
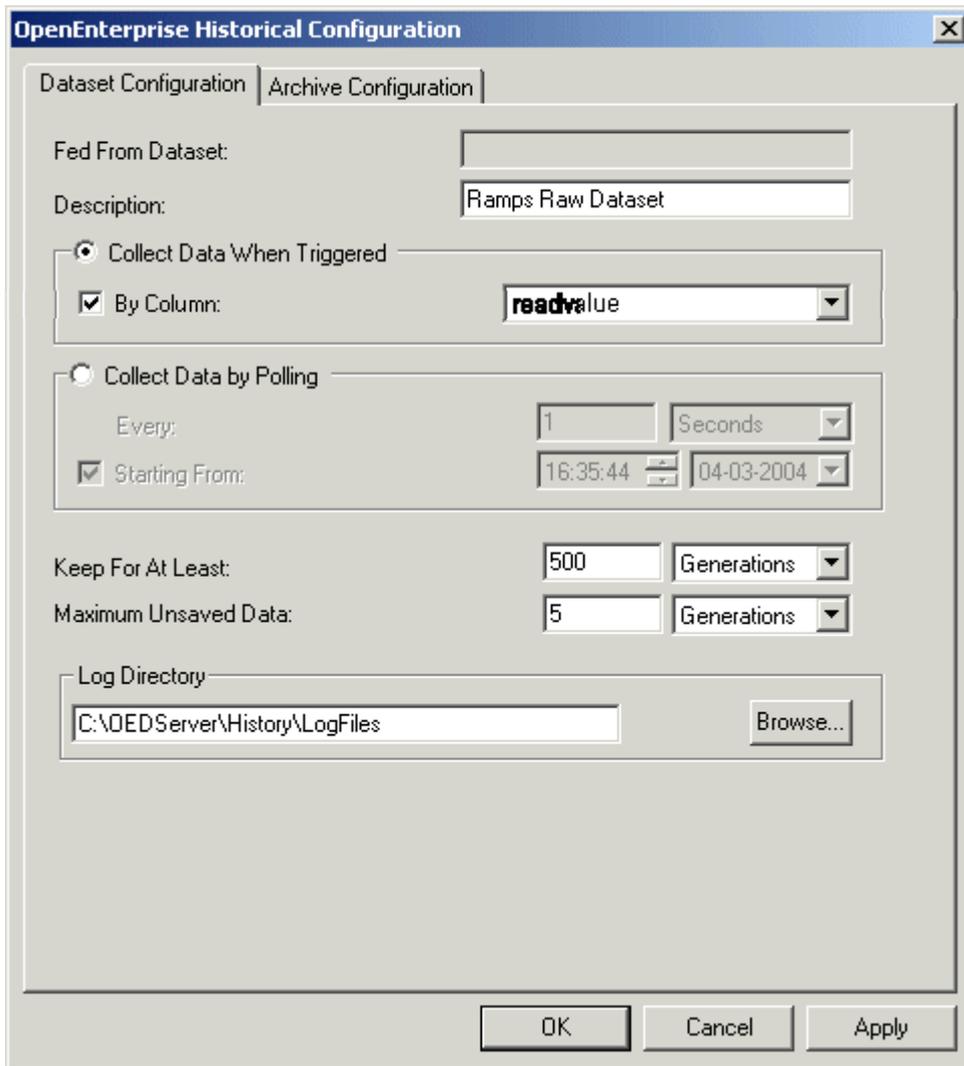
10.5.2.1   Fed From Dataset

The 'Fed From Dataset' field is disabled because this is a Raw dataset, and it cannot be fed by another dataset.

10.5.2.2   Dataset Description

A description of the Dataset has been typed into the 'Description' field.

10.5.2.3   Collect Data When Triggered

The 'Collect Data When Triggered' radio button has been selected, because we only want to sample data from this Dataset when an attribute belonging to one of the objects in the Dataset changes.

We have selected the ReadValue column as the trigger attribute for our historical data collection. A Historical sample will be entered into the Raw dataset for each object whenever   the *readvalue* of that signal changes. This is the database equivalent of collection 'by exception' at the RTU. The 'Collect Data by Polling' section is disabled, because we have chosen trigger collection.

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10.5.2.4 Keep For at Least

The 'Keep For at Least' field is important with regard to calculation of the Log File size. When triggering is used as a means of determining when to take historical samples, the units applied are 'Generations'. We have entered 500 Generations on the assumption that in normal operation one of the signals is going to undergo a change in value every 20 seconds. This means that we shall have in our Log file about eight hours worth of data (one working shift).

10.5.2.5 Maximum Unsaved Data

We have set the Maximum Unsaved Data field to 5. We have chosen this figure, because whereas we do not want to be writing disk every time a sample changes, neither do we wish to risk losing more than 5 generations of data.

10.5.2.6 Log Directory Defined

The Log directory has been defined in this field. This is where the Log files will be stored. The default location is in the Data directory of the database. If no directory is defined here, OpenEnterprise will use the default directory.

10.5.3 Step 5b - Raw Archiving Configuration

This is the Archive Configuration for our Raw dataset.
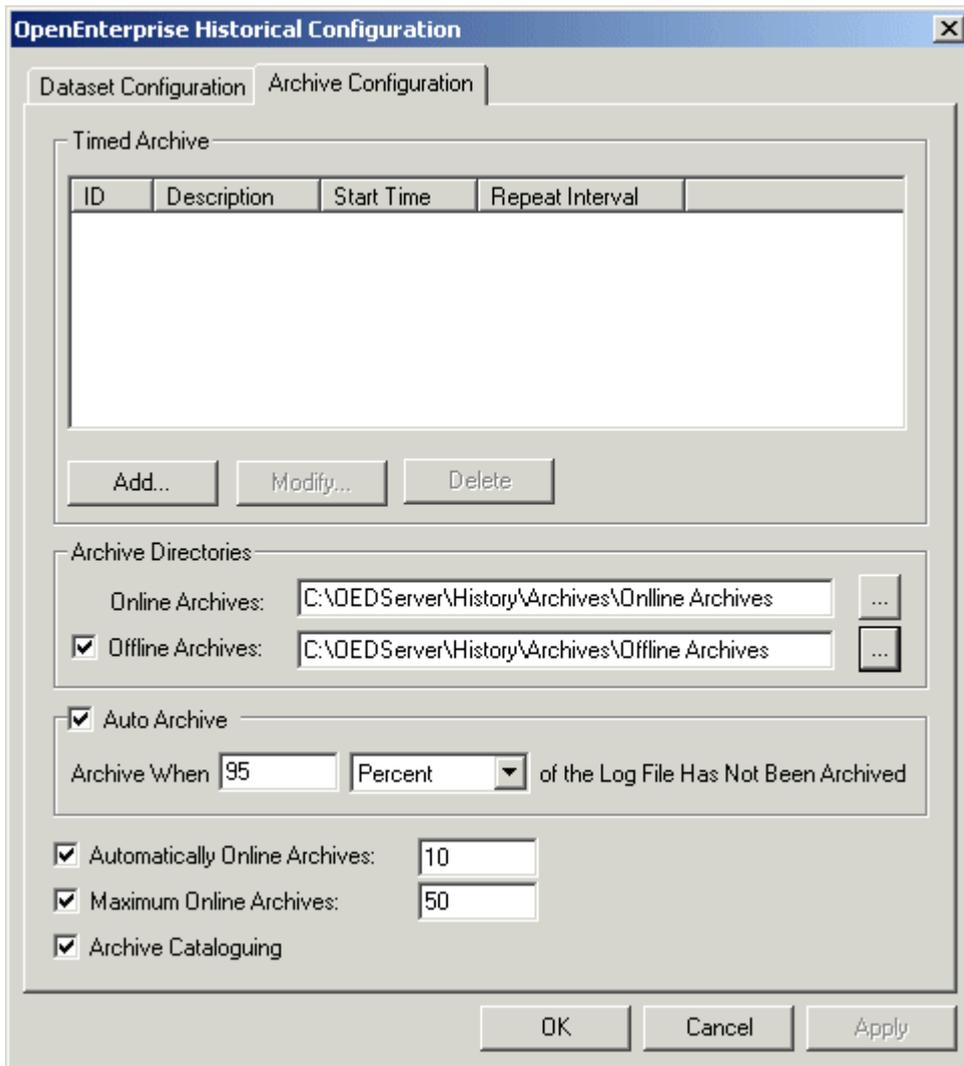
10.5.3.1   Timed Archiving

We have elected not to use timed archives, since archiving by percentage ensures that the archives will always be created before the Log file begins overwriting itself. They will also be of a uniform size.

10.5.3.2   Online and Offline Directories

Since Online and Offline directories for the archives have been specified, we must ensure that we run the Archive File Manager as part of our OpenEnterprise session. When an archive is created automatically as a result of the automatic archive creation regime, or when an archive is brought online it will be placed into the Online directory specified here. When the archive is taken offline, it will be moved to the Offline folder.

10.5.3.3   Auto Archiving

We have chosen to archive via the Auto Archive feature of OpenEnterprise. This is probably the safest method of archiving, particularly when historical samples are triggered by changes in value. There could be a scenario where our estimate of 500 generations is too small, and the Log file is filled in under the 7 to 8 hours we expected. In that case, if we only archive every 7 or 8 hours, we risk losing some data due to the Historian starting to overwrite data before we take an archive.

In our example, when 95 percent of the Log file is full of unarchived data, the Historian will create an archive of that unarchived data. The Log file will continue to be used until it is full, and then will begin writing data to the beginning of the file. When the Log file is again 95 percent full of unarchived data, the Historian will create a new archive, and so on.

10.5.3.4   Automatically Online Archives

We have set the number of automatically generated archives to be left online to 10. When that number is exceeded, the Historian will take the oldest automatically generated archive offline and replace it with the latest archive.

### 10.5.3.5   Maximum Online Archives

This is the maximum number of archives that will be allowed to be online at any one time. The number includes the automatically brought online files as well as those brought online manually using the Archive File manager. Setting this figure enables us to ensure that we do not stretch the Server's memory resources too far with online archives.

10.5.3.6   Archive Cataloguing

Archive Cataloguing must be enabled in order to be able to use the Archive File manager to bring archive files online and take them offline manually. It is enabled by default for every archive configuration.

10.6   Step 6 - Create Hourly Compressed Dataset

10.6.1   Step 6 - Create Hourly Compressed Dataset

Having created and configured our Raw dataset, and its archiving behaviour, we can now go on to create our compressed dataset, with various sample rates. When we are taken back to the 'Define Datasets' dialog, the new Raw dataset is selected by default, so any new datasets we create for this Logging Group will be compressed. To add a new compressed dataset we need to select the **[Add]** button again.

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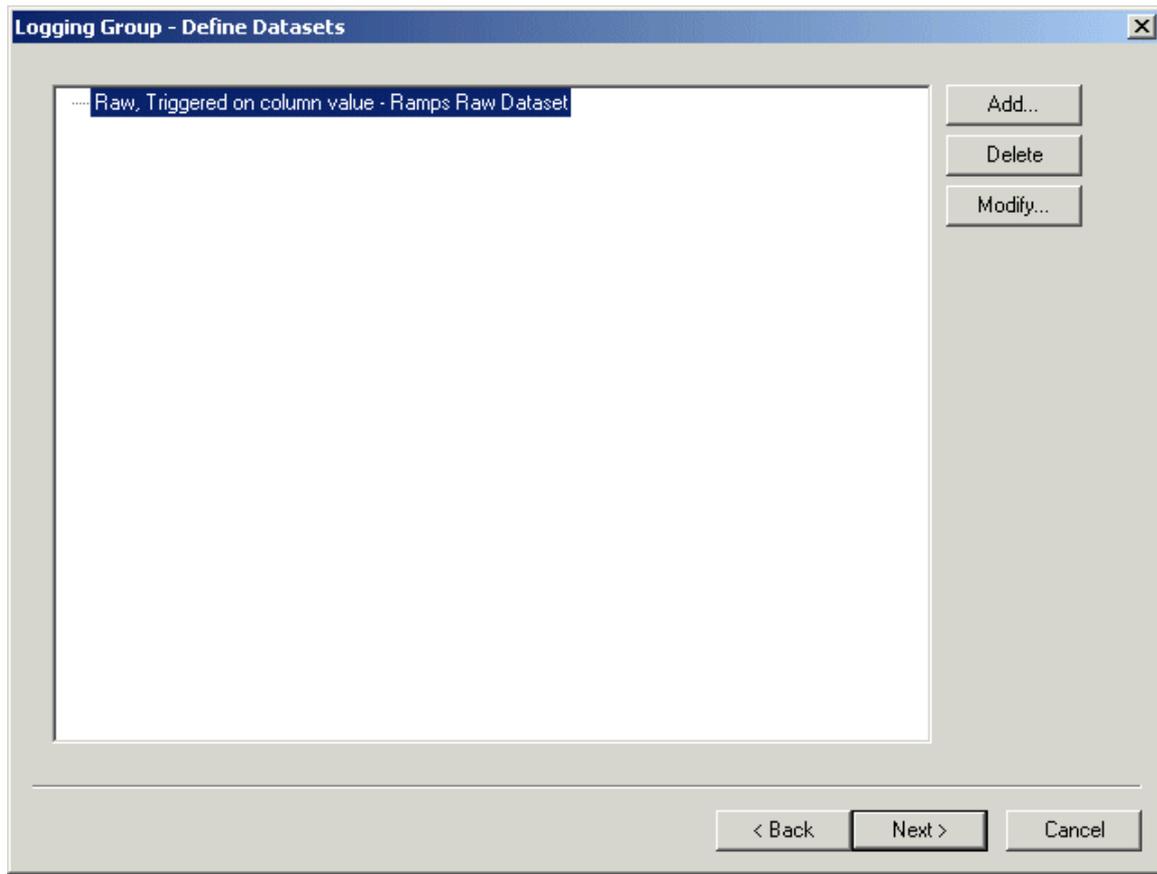
10.6.2   Step 6a - Configure Hourly Compressed Dataset

This first sample will be taken at hourly intervals.
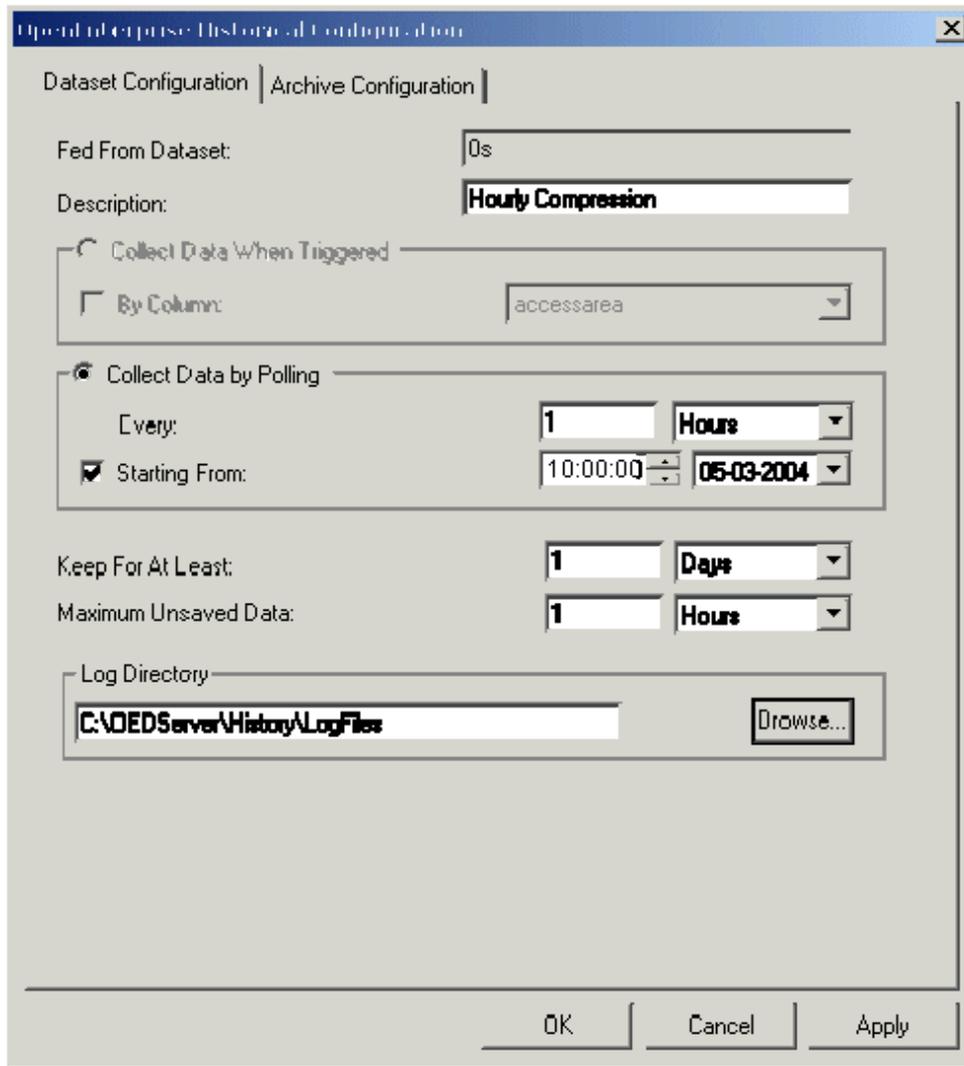
10.6.2.1 Hourly Fed From Dataset

Now that we are defining our first Compressed dataset sample, we can see that '0s' is in the 'Fed From Rate' field. '0s' signifies the Raw dataset, so this first compressed dataset will use the Raw dataset as its source file.

10.6.2.2 Hourly Dataset Description

A fitting description is typed in here.

10.6.2.3 Hourly Collection Frequency

The 'Collect Data When Triggered' section is disabled for compressed dataset configuration. We have to collect compressed data by polling frequency.

We have selected the 'Hour' collection rate here from the list, and typed '1' into the field to the left of the list. This means that our compressed dataset will take a one hourly sample from the Raw dataset and apply the compression algorithms which we selected on the 'Select Fields' dialog back in Step 3 of this example. That means it will give us the Minimum signal value, Maximum signal value and Average signal value over that period.

10.6.2.4   Start Time

The Start Time defaults to the current local time. Data collection for this dataset will not begin until the time given here is in the past. If this configuration takes place on an OpenEnterprise Workstation, it must be time synchronized with the OpenEnterprise Server. If the 'Starting From' box is unchecked, timing for collection will begin as soon as the Logging Group is created.

If hourly compression is to be performed on the hour, then the Start Time should be set to define an hour in the past e.g. if it is now 10:30:00, set the Start Time to 10:00:00. To set a daily compressed archive to create an archive at midnight, or to set a daily compressed dataset to log values at midnight every day, set this value to 00:00:00.

10.6.2.5   Hourly Log Keep For at Least

Since we want to take a Daily compressed sample too, we need to ensure that our Hourly samples are kept in the Log file for at least one day.

10.6.2.6   Hourly Maximum Unsaved Data

We want to ensure that we save the hourly sample to the Log file when it is produced.

10.6.2.7   Log Directory Defined

The Log directory has been defined in this field. This is where the Log files will be stored. The default location is in the Data directory of the database. If no directory is defined here, OpenEnterprise will use the default directory.

10.6.3   Step 6b - Configure Hourly Rate Archiving

10.6.3.1   Step 6b Configure Hourly Rate Archiving

We will configure a timed archive for the various compressed dataset samples. That way we can be sure when they will be created. To do this we need to add a timed archive by selecting the **[Add]** button in the 'Timed Archive' section of the dialog.
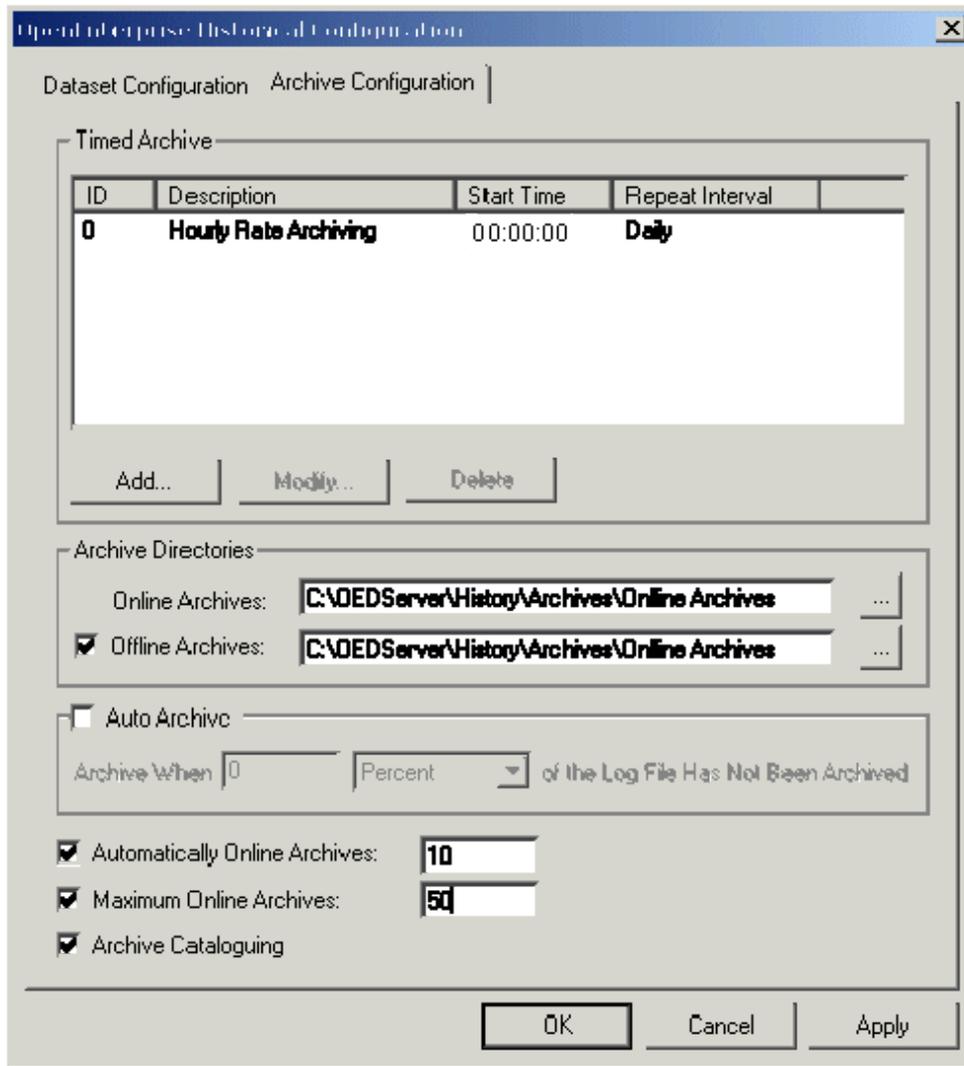
Step 6c

10.6.3.2   Online and Offline Directories

Since Online and Offline directories for the archives have been specified, we must ensure that we run the Archive File Manager as part of our OpenEnterprise session. When an archive is created automatically as a result of the automatic archive creation regime, or when an archive is brought online it will be placed into the Online directory specified here. When the archive is taken offline, it will be moved to the Offline folder.

10.6.3.3   Automatically Online Archives

We have set the number of automatically generated archives to be left online to 10. When that number is exceeded, the Historian will take the oldest automatically generated archive offline and replace it with the latest archive.

10.6.3.4 Maximum Online Archives

This is the maximum number of archives that will be allowed to be online at any one time. The number includes the automatically brought online files as well as those brought online manually using the Archive File manager. Setting this figure enables us to ensure that we do not stretch the Server's memory resources too far with online archives.

10.6.3.5 Archive Cataloguing

Archive Cataloguing must be enabled in order to be able to use the Archive File manager to bring archive files online and take them offline manually. It is enabled by default for every archive configuration.

10.6.4 Step 6c - Adding a Timed Archive

This is the dialog used to create a new Timed Archive. We have elected to create an archive of the hourly collection rate within our compressed dataset on a daily basis at midnight.
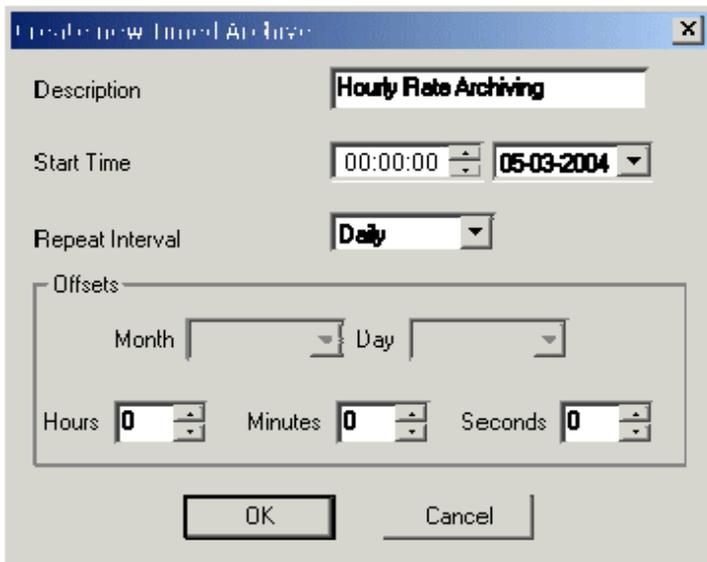
10.6.4.1 Example Timed Archive Description

A description of the Timed Archive is typed in here.

10.6.4.2 Timed Archive Start Time Example

To set a daily time for archiving the Hourly Compressed dataset, enter that time here. The time has been set in the example at midnight. Every day at midnight, the Hourly Compressed Dataset will be archived.

10.6.4.3 Timed Archive Repeat Interval Example

We selected the Daily repeat option from this list.

10.6.4.4 Daily Timed Archive Offset Example

We left the Offset to its default setting. This means that the archive will be created every day exactly on the next hour indicated by the *Start Time*. In the example, this would mean the archive would be created at midnight each day.

10.7   Step 7 - Dataset View Names

This is the next page of the wizard. Once the Datasets have been configured, you are given the opportunity to change the names of the Views that will be created for your Datasets once the Logging Group configuration has been completed. We are going to leave the View names at their defaults.
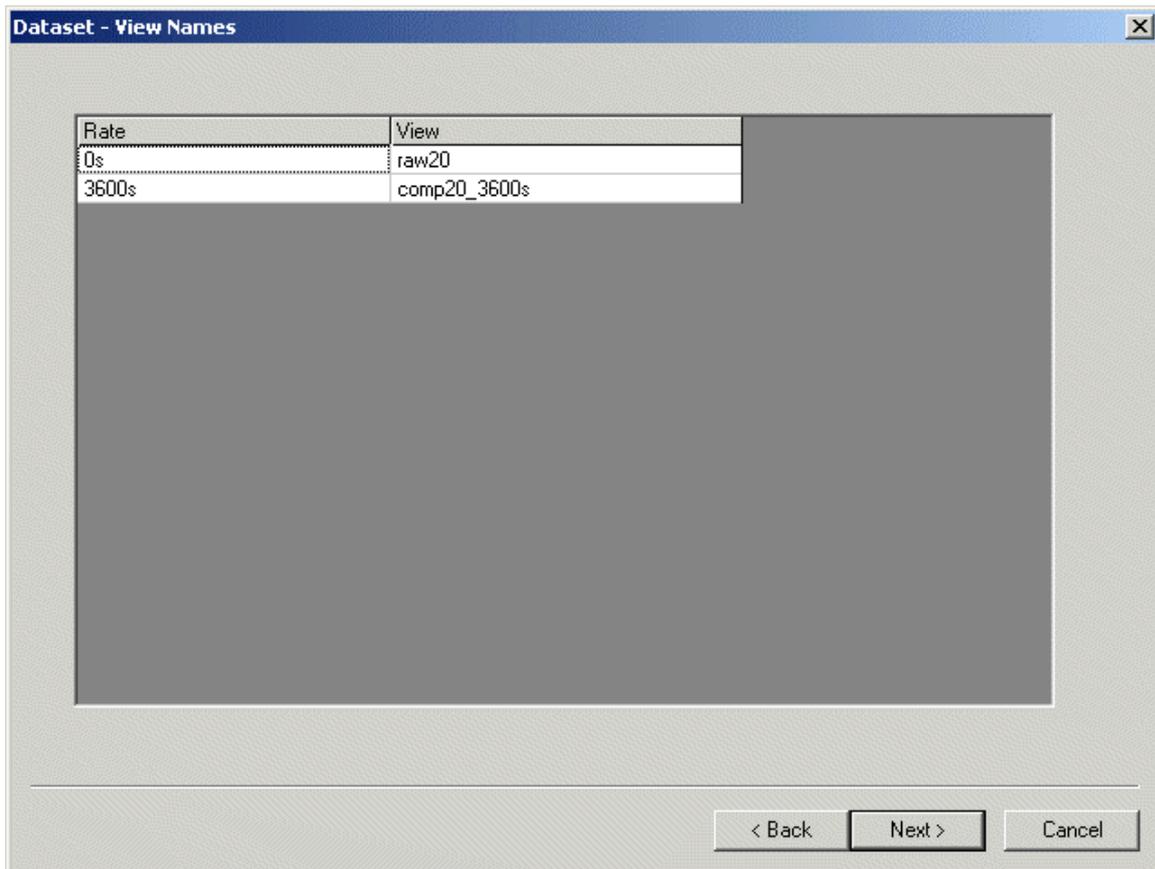
10.8   Step 8 - Selecting Objects

If we de-selected the 'Log All Objects' box, as we did in Step two of this example configuration, this means that we have the option here to select the objects to include in our Logging Group. Every object that is selected will have this Logging Group's Id number appended to its 'Dataset' attribute. In the example below, only three signals have been selected for inclusion in this Logging Group.

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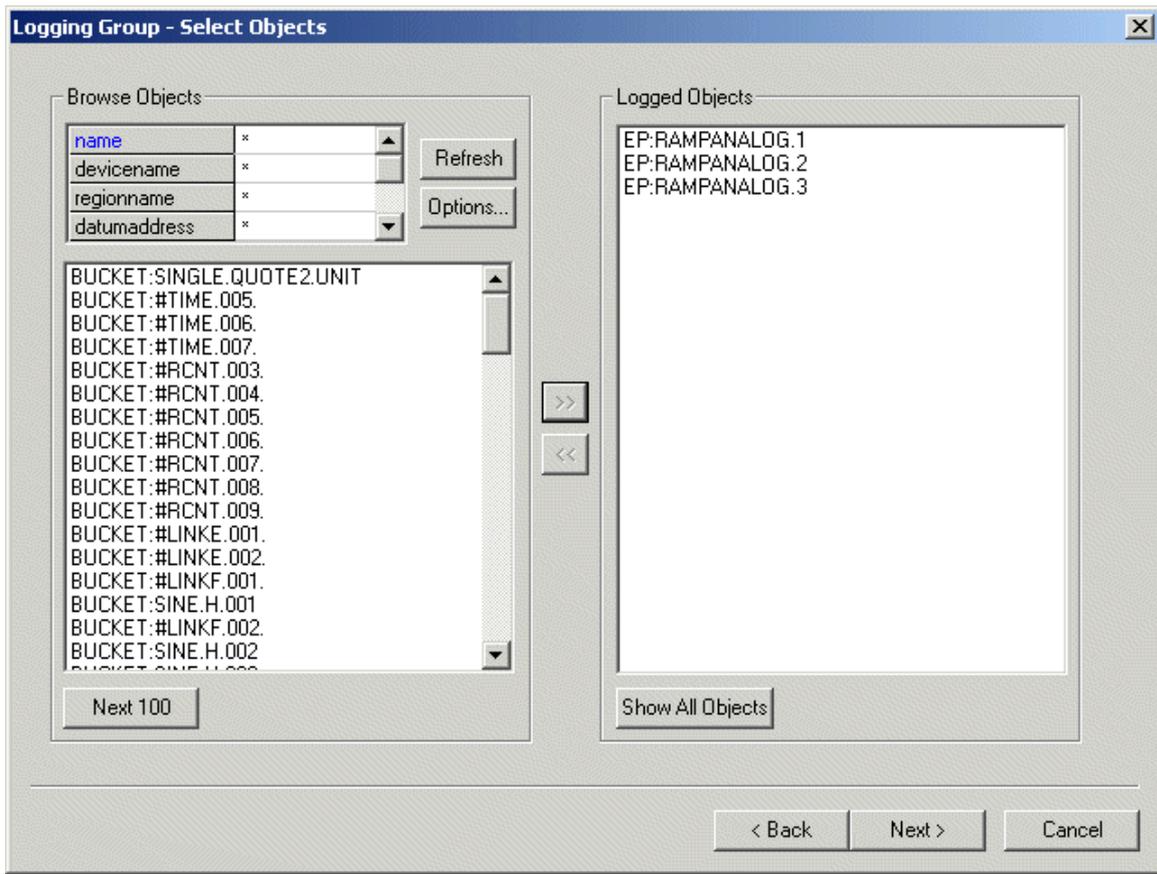
10.9   Step 9 - View Summary

This is the final page of the Logging Group wizard. It gives you a chance to check that the configuration details are correct before you create the Logging Group. If the configuration details are what you expected, click on the **[Finish]** button. This will close the wizard, and insert the Logging Group into the database. If you are not sure about anything click the **[<Back]** button to make changes.

Logging Group – Summary

```
Logging table realanalog
Logging group 20
Logging is enabled
Description: RealAnalog Ramp Signals Logging Group with Max, Min, Avg Compression
Name column name
Raw data will be saved to table raw20_table
Compressed data will be saved to table comp20_table
Only log enabled objects
An estimated 10 objects will be logged
Columns
        Column accessarea
                Raw value as accessarea
                Last value as accessarea_last
        Column value
                Raw value as value
                Maximum value as value_maximum
                Minimum value as value_minimum
                Average value as value_average
Datasets
        Dataset 0s
                Description: Ramps Raw Dataset
                Logged when column value changes
                Uses 100 buffers of 2151 bytes each
                The logfile will be saved to C:\OEDServer\History\LogFiles
                Log file is approximately 215120 bytes in length
                Logged data can be queried through view raw20
```

< Back   Finish   Cancel

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