OpenEnterprise Monitor Reference Guide (V2.83)
# Contents

1 OEMonitor .......................................................................................................................... 1  
   1.1 Command Line Parameters ......................................................................................... 1  

2 OEMonitor Main Window .................................................................................................... 2  
   2.1 Menu Options ............................................................................................................ 2  
      2.1.1 File Menu .......................................................................................................... 2  
      2.1.1.1 New Window .................................................................................................. 3  
      2.1.1.2 Exit .................................................................................................................. 3  
      2.1.2 General Menu ..................................................................................................... 3  
      2.1.2.1 Data Connections ......................................................................................... 3  
      2.1.2.2 Memory .......................................................................................................... 3  
      2.1.3 Alarms Menu ....................................................................................................... 4  
      2.1.3.1 All ................................................................................................................... 4  
      2.1.3.2 Critical ............................................................................................................. 5  
      2.1.3.3 Non Critical .................................................................................................... 5  
      2.1.3.4 Operator Guide ............................................................................................. 5  
      2.1.3.5 Event .............................................................................................................. 6  
      2.1.3.6 Suppressed Alarms ....................................................................................... 6  
      2.1.4 Devices Menu ...................................................................................................... 6  
      2.1.4.1 General Status ............................................................................................. 7  
      2.1.4.2 Accol Versions .............................................................................................. 7  
      2.1.4.3 RBE ................................................................................................................ 7  
      2.1.4.4 Remote Alarm Reports .................................................................................. 8  
      2.1.4.5 Template Summary ....................................................................................... 8  
      2.1.4.6 Template Detail ............................................................................................ 8  
      2.1.4.7 Template Performance .................................................................................. 9  
      2.1.4.8 Rolling Scan ................................................................................................... 9  
      2.1.5 Signals Menu ....................................................................................................... 10  
      2.1.5.1 Analogs .......................................................................................................... 10  
      2.1.5.2 Digital ............................................................................................................. 11  
      2.1.5.3 Strings ............................................................................................................. 11  
      2.1.5.4 Alarm Inhibited Signals .............................................................................. 11  
      2.1.5.4.1 Alarm Inhibited Analogs ......................................................................... 11  
      2.1.5.4.2 Alarm Inhibited Digitals .......................................................................... 12  
      2.1.5.5 Disabled Signals ............................................................................................ 12  
      2.1.5.5.1 Disabled Analogs ..................................................................................... 12  
      2.1.5.5.2 Disabled Digital .......................................................................................... 12  
      2.1.5.5.3 Disabled Strings ....................................................................................... 13  
      2.1.5.6 Suppressed Signals ....................................................................................... 13  
      2.1.5.6.1 Suppressed Analogs .................................................................................. 13  
      2.1.5.6.2 Suppressed Digitals .................................................................................. 14  
      2.1.5.7 In-Alarm Signals ............................................................................................ 14  
      2.1.5.7.1 In-Alarm Analogs ..................................................................................... 15  
      2.1.5.7.2 In-Alarm Digitals ...................................................................................... 15  
   2.1.6 OpenBSI Menu ......................................................................................................... 15  
      2.1.6.1 Devices .......................................................................................................... 16  
      2.1.6.2 All Lines ......................................................................................................... 16
2.1.6.3 IP Lines .................................................................................................................... 16
2.1.6.4 BSAP Lines ............................................................................................................. 17
2.1.7 ROC ........................................................................................................................ 17
2.1.7.1 Devices (ROC) ....................................................................................................... 17
2.1.7.2 Requests (ROC) ..................................................................................................... 18
2.1.7.3 History Points (ROC) ............................................................................................. 18
2.1.7.4 Analogs (ROC) ........................................................................................................ 18
2.1.7.5 Digital (ROC) .......................................................................................................... 19
2.1.7.6 Strings (ROC) ......................................................................................................... 19
2.1.8 Tools Menu ............................................................................................................ 20
  2.1.8.1 Set device name Filter ............................................................................................. 20
    2.1.8.1.1 Enter Filter Expression ..................................................................................... 20
  2.1.8.2 Clear Filter ............................................................................................................. 21
  2.1.8.3 Import Query File ................................................................................................. 21
    2.1.8.3.1 Import Query .................................................................................................... 21
      2.1.8.3.1.1 Query File Path ......................................................................................... 21
      2.1.8.3.1.2 Query File Browse .................................................................................... 21
      2.1.8.3.1.3 Reload this file at startup ............................................................................ 22
  2.1.8.4 Export Data ......................................................................................................... 22
  2.1.8.5 Options ................................................................................................................ 23
    2.1.8.5.1 Query File ........................................................................................................ 24
    2.1.8.5.2 Unload Query file ............................................................................................ 24
    2.1.8.5.3 Include column headers in CSV file ............................................................... 24
2.2 Query Display Context Menu ..................................................................................... 24
  2.2.1 Filter By Device Name ............................................................................................. 25
  2.2.2 Set Filter ................................................................................................................ 25
    2.2.2.1 Enter Filter Expression ..................................................................................... 25
  2.2.3 Clear Filter ............................................................................................................. 26
  2.2.4 Export Data ............................................................................................................. 26
  2.2.5 Modify Data ........................................................................................................... 27
2.3 Status Bar ................................................................................................................... 27
  2.3.1 DataService ............................................................................................................ 27
  2.3.2 Current Device Filter ............................................................................................. 27
  2.3.3 Total Number of Items ............................................................................................ 27
  2.3.4 OEMonitor Current State ........................................................................................ 27
3 Creating Queries ............................................................................................................ 27
  3.1 The Query Configuration File .................................................................................... 28
    3.1.1 The nodes of the Query Configuration File .......................................................... 28
    3.1.2 OEMonitor root node ............................................................................................. 29
    3.1.3 menus node ............................................................................................................. 30
    3.1.4 mainMenu node ..................................................................................................... 30
    3.1.5 menu node .............................................................................................................. 31
      3.1.5.1 SQL element ..................................................................................................... 32
      3.1.5.2 pretransaction element .................................................................................... 32
      3.1.5.3 deviceName element ....................................................................................... 32
      3.1.5.4 hideColumns element .................................................................................... 32
      3.1.5.5 active element .................................................................................................. 33
      3.1.5.6 transactions node ............................................................................................ 33
      3.1.5.7 sortColumn element ...................................................................................... 33
3.1.5.8  contextmenu node................................................................. 33
3.1.5.9  transaction node................................................................. 34
3.2   Creating your own Query XML file............................................... 34
  3.2.1  Creating a new Main Menu.................................................. 35
  3.2.2  Creating new Menu Groups............................................... 36
  3.2.3  Creating new Menus......................................................... 37
  3.2.4  Importing the new Menus............................................... 38

4   Index ......................................................................................... 40
1 OEMonitor

The OEMonitor tool enables the user to instantly view or modify data from almost any table in the OpenEnterpriseObjectServer database. The Monitor comes with a set of useful default queries which can be selected from menu options, but the user can also create their own queries and corresponding menus.

Some of the data that the Monitor is set up to view by default are:

- Database client connections.
- Alarms.
- NW3000 and ControlWave Devices.
- NW3000 and ControlWave signals
- ACCOL versions.
- RBE.
- Remote Alarm Reports.
- Template summary.
- Template detail.
- OpenBSI Line information.

Multiple instances of the Monitor can be run in order to view different types of data at the same time.

1.1 Command Line Parameters

The Monitor tool will support command line parameters that optionally define the data service and user credentials. The application prototype is as follows:

`OEMonitor.exe [-sDataservice] [-uUsername <-pPassword>]`

Where:

- `[denotes an optional parameter]`
- `<denotes a required parameter>`

**Dataservice** = the data service of the database which the Monitor tool will connect to. This can be standalone or fault-tolerant, with or without connection options. If not defined, the default data service is 'rtrdb1'.

**Username** = the user name used for logging on to the database. Must be used in conjunction with the -p parameter. No default value.

**Password** = the password used for any database logons. Must be used in conjunction with the -u parameter. No default value.
Note: In the absence of Username/Password, the application will attempt to use the administrator credentials for the database.

2 OEMonitor Main Window

The main window displays the results of queries that have been selected from the OEMonitor Menu bar. This example is showing all alarms. This query has been displayed by selecting the Alarms>All menu item. For further help on the parts of this main window select the hotspots which appear when you hover the mouse over the image.

2.1 Menu Options

These are the default menu options. Click on the hotspots for information on any option along the menu bar.

2.1.1 File Menu

There are two options on the File Menu. Click the hotspots on the image below for help on these options.
2.1.1.1 New Window

This option will open a new instance of the OEMonitor tool. A separate query can then be selected and viewed alongside the query in the original OEMonitor instance.

2.1.1.2 Exit

Closes the OEMonitor tool.

2.1.2 General Menu

There are two options available on the General menu.

2.1.2.1 Data Connections

Shows details of all clients connected to the database, including the client's IP address, currently logged-on user and client details.

2.1.2.2 Memory

Displays the current memory usage of the database. Note this table only shows values when the database is configured as persistent (i.e. it is using a .MMF file).
2.1.3 Alarms Menu

These options provide a view on OpenEnterpriseObjectServer alarms.

2.1.3.1 All

Displays all current alarms.
2.1.3.2 Critical
Displays all Bristol RTU 'Critical' alarms. This priority requires immediate operator acknowledgement and action.

2.1.3.3 Non Critical
Displays all Bristol RTU 'Non-Critical' alarms. These are alarms that require operator action, but not necessarily immediate action.

2.1.3.4 Operator Guide
Displays all Bristol RTU 'Operator Guide' alarms. These alarms provides the operator with information.
### 2.1.3.5 Event

Displays all Bristol RTU 'Event' alarms. These alarms provides information on low priority events.

#### 2.1.3.6 Suppressed Alarms

Displays all Suppressed alarms. Note, Suppressed alarms are not the same as Inhibited alarms. Suppressed alarms appear in the AlarmSummary table, whereas Inhibited alarms do not.

### 2.1.4 Devices Menu

These options provide views on all Bristol devices within the configured SCADA system.
2.1.4.1 General Status

Displays General Status information for Bristol devices. For an explanation of each attribute in this Query, see the nw3000device topic in the OpenEnterprise Schema documentation.

2.1.4.2 Accol Versions

Displays control language version information for Bristol devices. For an explanation of each attribute in this Query, see the nw3000device topic in the OpenEnterprise Schema documentation.

2.1.4.3 RBE

Displays RBE (Report By Exception) information for Bristol devices. For an explanation of each attribute in this Query, see the nw3000device topic in the OpenEnterprise Schema documentation.
2.1.4.4 Remote Alarm Reports

Displays Remote Alarm Report information for Bristol devices. For an explanation of each attribute in this Query, see the nw3000device topic in the OpenEnterprise Schema documentation.

2.1.4.5 Template Summary

Displays Template Summary information for Bristol devices. Templates are also known as 'Poll Lists'. Poll Lists link signal names with a memory area in the RTU. OpenEnterpriseObjectServer uses Poll Lists to make data collection more efficient. For an explanation of each attribute in this Query, see the nw3000device topic in the OpenEnterprise Schema documentation.

2.1.4.6 Template Detail

Displays Template Summary information for Bristol devices. Templates are also known as 'Poll Lists'. Poll Lists link signal names with a memory area in the RTU. OpenEnterpriseObjectServer uses Poll Lists to make data collection more efficient. For an explanation of each attribute in this Query, see the nw3000device topic in the OpenEnterprise Schema documentation.
2.1.4.7 Template Performance

Displays Template Performance information for Bristol devices. The responsedelta attribute shows the number of milliseconds between the template request being sent and the template response being received. Templates are also known as 'Poll Lists'. Poll Lists link signal names with a memory area in the RTU. OpenEnterpriseObjectServer uses Poll Lists to make data collection more efficient. For an explanation of each attribute in this Query, see the nw3000device topic in the OpenEnterprise Schema documentation.

2.1.4.8 Rolling Scan

Displays Rolling Scan collection details for Bristol devices. Rolling Scan collection overrides normal Polled data collection according to schedules. Instead, data is continuously collected from each enabled RTU in turn. In the example below, the Device sleep value indicates the seconds that OpenEnterpriseObjectServer will wait once all templates for the Device have been collected before another collection is initiated. Maxduration indicates the number of seconds that Rolling Scan collection will run for the Device before returning to normal Polled collection. For an explanation of each attribute in this Query, see the nw3000device topic in the OpenEnterprise Schema documentation.
2.1.5 Signals Menu

These options provide views on all types of Bristol signals. Click the hotspots on the image below for help on these options.

2.1.5.1 Analogs

Displays all Bristol analog signals. The forcepoll attribute can be used to force data collection for a signal by selecting the 'Modify' option from the context menu, and setting the value to True. As well as the name, timestamp and value of the signal, the questionable (q), control-inhibit (ci), manual-inhibit (mi) and alarm-inhibit (ai) flags are also shown.
2.1.5.2 Digitals

Displays all Bristol digital signals. The forcepoll attribute can be used to force data collection for a signal by selecting the 'Modify' option from the context menu, and setting the value to True. As well as the name, timestamp and value of the signal, the questionable (q), control-inhibit (ci), manual-inhibit (mi) and alarm-inhibit (ai) flags are also shown.

```
<table>
<thead>
<tr>
<th>name</th>
<th>forcepoll</th>
<th>timestamp</th>
<th>value</th>
<th>q</th>
<th>ci</th>
<th>mi</th>
<th>ai</th>
</tr>
</thead>
<tbody>
<tr>
<td>CW1:08G.DIG.10_VALUE</td>
<td>FALSE</td>
<td>14-Aug-2007 12:37:00.462</td>
<td>TRUE</td>
<td>0</td>
<td>FALSE</td>
<td>FALSE</td>
<td>FALSE</td>
</tr>
<tr>
<td>CW1:08G.DIG.1_ENABLE</td>
<td>FALSE</td>
<td>14-Aug-2007 12:37:00.462</td>
<td>TRUE</td>
<td>0</td>
<td>FALSE</td>
<td>FALSE</td>
<td>TRUE</td>
</tr>
<tr>
<td>CW1:08G.DIG.2_VALUE</td>
<td>FALSE</td>
<td>14-Aug-2007 12:37:00.462</td>
<td>TRUE</td>
<td>0</td>
<td>FALSE</td>
<td>FALSE</td>
<td>TRUE</td>
</tr>
<tr>
<td>CW1:08G.DIG.2_ENABLE</td>
<td>FALSE</td>
<td>14-Aug-2007 12:37:00.462</td>
<td>TRUE</td>
<td>0</td>
<td>FALSE</td>
<td>FALSE</td>
<td>TRUE</td>
</tr>
<tr>
<td>CW1:08G.DIG.3_VALUE</td>
<td>FALSE</td>
<td>14-Aug-2007 12:37:00.462</td>
<td>TRUE</td>
<td>0</td>
<td>FALSE</td>
<td>FALSE</td>
<td>TRUE</td>
</tr>
<tr>
<td>CW1:08G.DIG.3_ENABLE</td>
<td>FALSE</td>
<td>14-Aug-2007 12:37:00.462</td>
<td>TRUE</td>
<td>0</td>
<td>FALSE</td>
<td>FALSE</td>
<td>TRUE</td>
</tr>
</tbody>
</table>
```

2.1.5.3 Strings

Displays all Bristol string signals. The forcepoll attribute can be used to force data collection for a signal by selecting the 'Modify' option from the context menu, and setting the value to True. As well as the name, timestamp and value of the signal, the questionable (q), control-inhibit (ci), manual-inhibit (mi) and alarm-inhibit (ai) flags are also shown.

```
<table>
<thead>
<tr>
<th>name</th>
<th>forcepoll</th>
<th>timestamp</th>
<th>value</th>
<th>q</th>
<th>ci</th>
<th>mi</th>
<th>ai</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP1:TEST-STRING.SIG</td>
<td>FALSE</td>
<td>14-Aug-2007 12:09:32.901</td>
<td>Test String</td>
<td>0</td>
<td>FALSE</td>
<td>FALSE</td>
<td>NULL</td>
</tr>
</tbody>
</table>
```

2.1.5.4 Alarm Inhibited Signals

The options under this group enable you to view Bristol alarm inhibited signals. The views available are:

a. Alarm Inhibited Analogs

b. Alarm Inhibited Digitals

2.1.5.4.1 Alarm Inhibited Analogs

Displays all Bristol alarm inhibited analog signals. The forcepoll attribute can be used to force data collection for a signal by selecting the 'Modify' option from the context menu, and setting the value to True. The questionable (q), control-inhibit (ci), manual-inhibit (mi) and alarm-inhibit (ai) value for each signal is also shown. All signals in this Query will have their ai value set to True.
2.1.5.4.2 Alarm Inhibited Digitals

Displays all Bristol alarm inhibited digital signals. The forcepoll attribute can be used to force data collection for a signal by selecting the 'Modify' option from the context menu, and setting the value to True. The questionable (q), control-inhibit (ci), manual-inhibit (mi) and alarm-inhibit (ai) value for each signal is also shown. All signals in this Query will have their ai value set to True.

2.1.5.5 Disabled Signals

The options under this group enable you to view all disabled Bristol signals. The views available are:-

- Disabled Analogs
- Disabled Digitals
- Disabled Strings

2.1.5.5.1 Disabled Analogs

Displays all disabled Bristol analog signals. The questionable (q), control-inhibit (ci), manual-inhibit (mi) and alarm-inhibit (ai) value for each signal is shown.

2.1.5.5.2 Disabled Digitals

Displays all disabled Bristol digital signals. The questionable (q), control-inhibit (ci), manual-inhibit (mi) and alarm-inhibit (ai) value for each signal is shown.
2.1.5.5.3 Disabled Strings

Displays all disabled Bristol string signals. The questionable (q), control-inhibit (ci), manual-inhibit (mi) and alarm-inhibit (ai) value for each signal is shown.

2.1.5.6 Suppressed Signals

The options under this group enable you to view all Bristol suppressed signals. The options available are:

a. Suppressed Analogs
b. Suppressed Digitals

2.1.5.6.1 Suppressed Analogs

Displays all Bristol analog signals that have been suppressed. The questionable (q), control-inhibit (ci), manual-inhibit (mi) and alarm-inhibit (ai) value for each signal is shown.
2.1.5.6.2 Suppressed Digitals

Displays all Bristol digital signals that have been suppressed. The questionable (q), control-inhibit (ci), manual-inhibit (mi) and alarm-inhibit (ai) value for each signal is shown.

2.1.5.7 In-Alarm Signals

The options under this group enable you to view Bristol signals that are currently in alarm. The options are:

a. In-Alarm Analogs
b. In-Alarm Digitals
2.1.5.7.1 In-Alarm Analogs

Displays all Bristol analog signals that are currently in alarm. The questionable (q), control-inhibit (ci), manual-inhibit (mi) and alarm-inhibit (ai) value for each signal is shown.

![Analog Monitor](image1)

2.1.5.7.2 In-Alarm Digitals

Displays all Bristol digital signals that are currently in alarm. The questionable (q), control-inhibit (ci), manual-inhibit (mi) and alarm-inhibit (ai) value for each signal is shown.

![Digital Monitor](image2)

2.1.6 OpenBSI Menu

These options provide information on OpenBSI Devices and lines in the Database.
2.1.6.1 Devices

Displays OpenBSI device communication statistics. For an explanation of each attribute in this Query, see the nw3000device topic in the OpenEnterprise Schema documentation.

2.1.6.2 All Lines

Displays OpenBSI Line statistics for all lines. For an explanation of each attribute in this Query, see the line topic in the OpenEnterprise Schema documentation.

2.1.6.3 IP Lines

Displays OpenBSI Line statistics for IP lines. For an explanation of each attribute in this Query, see the ipline topic in the OpenEnterprise Schema documentation.
2.1.6.4 BSAP Lines

Displays OpenBSI Line statistics for BSAP lines. For an explanation of each attribute in this Query, see the bsapline topic in the OpenEnterprise Schema documentation.

2.1.7 ROC

The ROC menu enables the user to view ROC Devices, Requests, History Points and Signals.

2.1.7.1 Devices (ROC)

Displays ROC Device information for viewing.
2.1.7.2 Requests (ROC)

Displays all ROC Requests for viewing. Requests can be created and scheduled using the ROC Configuration Tool.

2.1.7.3 History Points (ROC)

Displays ROC History Points for viewing. ROC Historical Requests are configured using the ROC Configuration Tool.

2.1.7.4 Analogs (ROC)

Displays all ROC Analog signals for viewing. ROC Analog signals can be created and modified in the OpenEnterprise database using the ROC Configuration Tool.
2.1.7.5 Digitals (ROC)

Displays all ROC Digital signals for viewing. ROC Digital signals can be created and modified in the OpenEnterprise database using the ROC Configuration Tool.

2.1.7.6 Strings (ROC)

Displays all ROC String signals for viewing. ROC String signals can be created and modified in the OpenEnterprise database using the ROC Configuration Tool.
2.1.8 Tools Menu

The Tools menu provides options to set the device name filter, clear an active device name filter, import a Query file and Export data.

2.1.8.1 Set device name Filter

This option opens the 'Enter Filter Expression' dialog, which allows you to set a device name filter. The filter will affect the current query and all subsequent queries until the filter is cleared.

2.1.8.1.1 Enter Filter Expression

Type a device name filter in the textbox. Wildcards can be used (eg IP*), or a selection of filters can be specified with a comma-separated list (eg IP1, IP3, IP6). Note that only Queries on tables that have a device name attribute allow filtering.
2.1.8.2 Clear Filter

Automatically clears the last device name filter that was applied.

2.1.8.3 Import Query File

Opens the Import Query File dialog, which enables you to import your own queries. User queries must be configured in a correctly constructed .XML file, which is then imported into the OEMonitor tool.

2.1.8.3.1 Import Query

The Import Query File dialog enables you to specify a user configured Query file that can be imported into the OEMonitor tool. The new Query file will add new menu items to the OEMonitor's menu bar, that will run user defined Queries. User defined Query files will override default menus where there is a clash of menu names.

2.1.8.3.1.1 Query File Path

Type the path and filename of the user created Query XML file here, or use the browse button to the right to search for it.

2.1.8.3.1.2 Query File Browse

The 'Choose Query File' dialog enables users to search for their own Query XML file.
2.1.8.3.1.3 Reload this file at startup

Users should check this box if they want their custom Query XML files to be loaded the next time the OEMonitor tool is opened.

2.1.8.4 Export Data

Exports the data from the current Query Window to a CSV (comma-separated values) file. When the option is selected a file save dialog with the title ‘Choose Export File’ is displayed. The Monitor will suggest a filename, which is derived from the name of the query selected, but this can be changed before saving.
Modify the file name if you want, and select the directory where you want to save it. The file will be saved with a .CSV extension. This file can be imported into Excel.

2.1.8.5 Options...

This dialog enables the user to unload an imported Query file and to specify whether headers should be included in Exported CSV files.
2.1.8.5.1 Query File

This list displays the currently imported Query files, and whether they are configured to reload at startup.

2.1.8.5.2 Unload Query file

Unloads the selected imported Query file.

2.1.8.5.3 Include column headers in CSV file

If checked, Exported CSV files will contain column headers.

2.2 Query Display Context Menu

Query results are displayed in this area. When no query has been selected from the Menu bar (i.e. when the OEMonitor is first opened), this area will be blank.
A context menu is available from the Query Display area. The options that are available depend on the query that is being displayed. The context menu is shown below.

2.2.1 Filter By Devicename

This option is available when one of the columns in the query currently displayed is 'Devicename'. If the option is selected, the query will be automatically filtered on the Devicename of the currently selected row of the query.

2.2.2 Set Filter

This option opens the 'Enter Filter Expression' dialog, which allows you to set a device name Filter. The filter will affect the current query and all subsequent queries until the filter is cleared.

2.2.2.1 Enter Filter Expression

Type a device name filter in the textbox. Wildcards can be used (eg IP*), or a selection of filters can be specified with a comma-separated list (eg IP1, IP3, IP6). Note that only Queries on tables that have a device name attribute allow filtering.
2.2.3 Clear Filter

Automatically clears the last device name filter that was applied.

2.2.4 Export Data

Exports the data from the current Query Window to a CSV (comma-separated values) file. When the option is selected a file save dialog with the title 'Choose Export File' is displayed. The Monitor will suggest a filename, which is derived from the name of the query selected, but this can be changed before saving.

Modify the file name if you want, and select the directory where you want to save it. The file will be saved with a .CSV extension. This file can be imported into Excel.
2.2.5 Modify Data

If the field you selected is editable, the 'Modify field' dialog appears. The 'Current Value' is shown in a non-editable field, and you can type in a new value for the field below. When the [OK] button is selected, the value is immediately updated.

Certain fields, such as Date/Time fields or Primary Keys cannot be updated. A message will inform you if this is the case.

![Modify field 'value']

2.3 Status Bar

The Status bar displays information about the OEMonitor and the Query currently being displayed.

2.3.1 DataService

The currently configured data service.

2.3.2 Current Device Filter

The currently applied Device name filter.

2.3.3 Total Number of Items

The total number of rows in the Query that is currently being displayed.

2.3.4 OEMonitor Current State

The current state of the application. Possible states are:-

(a) ‘Connecting to database’ – a connection attempt to the data service is in progress

(b) ‘Ready’ – the application is idle

(c) ‘Query in progress’ – a database query is currently in progress

(d) ‘Not connected to database’ – the data service is currently inaccessible

(e) ‘Error in query’ – the data service rejected the last query

3 Creating Queries

Menus and Queries for the OEMonitor are defined in a file named OEMonitorQueries.xml. This is an XML file. To find out more about this file see The Query XML file format page. It is strongly recommended that you do not alter this file.
You can create your own Menus and Queries for the OEMonitor tool by creating another XML file that is in the same format. Your own menus and queries can be different to the default ones, or can override them. For more information on how to do this, see the Creating your own Query XML file page.

3.1 The Query Configuration File

The OEMonitor Query Configuration File (OEMonitorQueries.xml) defines the standard OpenEnterpriseObjectServer Monitor menus and their associated Queries.

Like all XML files the OEMonitor Query XML file is composed of nodes, marked with the delimiters (eg <nodeName> and </nodeName>). Nodes may also appear as Attributes, defined within the immediate parent node. For instance, a menu name can appear as a node under its parent menu node:-

```
<menu>
  <name>All Alarms</name>
</menu>
```

or as an attribute defined within its parent node:-

```
<menu name="All Alarms">
</menu>
```

3.1.1 The nodes of the Query Configuration File

All nodes except for the root node are child nodes. Nodes other than the root node may also be a parent to other nodes. The Query XML file for the OEMonitor describes the names, structure and associated Queries of the OEMonitor's menus. The following list describes the node structure of the default OEMonitorQueries.xml file from the root node in.

1. OEMonitor root node
2. Menus node
3. mainMenu node
4. Menu node
   a. SQL node
   b. pretransaction node
   c. deviceName node
   d. hideColumns node
   e. active node
   f. transactions node
   g. sortColumn node
   h. contextmenu node
   i. transaction node

### 3.1.2 OEMonitor root node

The OEMonitor root node is the parent node of the OEMonitor XML configuration file. There is only one OEMonitor node.

```
<?xml version="1.0" ?>
<OMonitor>
  <menus/>
</OMonitor>
```

It must start and end every OEMonitor XML file. The OEMonitor node will have one 'menus' node.
3.1.3 menus node

The <menus> node is the immediate child of the <OEMonitor> node. Like the OEMonitor node, there is only one <menus> node. It is an immediate parent to one or more <mainMenu> nodes. When creating your own queries, if you want to create a new menu item along the menu bar, it must be placed as a separate <mainMenu> node within the <menus> node.

The 'menus' node will have one or more 'mainMenu' nodes.

3.1.4 mainMenu node

The <mainMenu> node is a child of the <menus> node. It may be a parent to a number of <menu> or other <mainMenu> nodes. A <mainMenu> node that is a child of another <mainMenu> node becomes a menu group under the parent <mainMenu>. A single menu command is configured within a <menu> node.
Each 'mainMenu' node will have one or more 'menu' nodes under it.

### 3.1.5 menu node

The Menu node contains elements that give the menu option its functionality. These elements are:-

- pretransaction
- SQL
- deviceName
- hideColumns
- active
- transactions
- sortColumn

As well as these menu functionality elements there is a sub-node that can be placed within the menu node:-

- contextmenu

Below is an example expanded menu node containing a contextmenu sub-node:-
3.1.5.1 SQL element

The SQL Query that will be displayed when the user selects the menu option. For example:

```xml
<SQL>select devicename, id, occurrencetime, name, value, units, description, cleared, acknowledged from alarmsummary</SQL>
```

The above SQL statement would create a view in the OEMonitor that would show all alarms when the menu to which it belongs is selected.

3.1.5.2 pretransaction element

The pretransaction node must contain an SQL transaction. For example:

```
<pretransaction>update nw3000polllist set forcepoll = true</pretransaction>
```

The pretransaction above could be used to ensure the latest signal data was available when viewing it.

If a pretransaction node is present under the menu node, the pretransaction will execute immediately before the 'select' statement of the SQL node.

3.1.5.3 deviceName element

When set to 'true', the Query can be filtered by a Devicename. The default value is 'false'. An example would be:-

```
<deviceName>true</deviceName>
```

The statement above would allow the query specified in the <SQL> element to be filtered by the devicename attribute.

3.1.5.4 hideColumns element

The hideColumns element must have a capitalized 'C' as shown. It is optional, and contains a comma-separated list of column names that are specified within the SQL statement but which are not to be displayed in the list view. This is typically used to hide the primary key column. An example of this would be:-

```xml
<hideColumns>devicename, id</hideColumns>
```
This statement would hide the devicename and id columns from view when the menu item to which it belongs is activated.

### 3.1.5.5 active element

When set to TRUE, the SQL query will be issued as an active query. A value of FALSE indicates a static query. The default value is TRUE. Note that active queries must also include the primary key in the list of attributes selected. This will not be verified by the Monitor tool. An example of this element would be:

```xml
<active>true</active>
```

This would make the query expressed in the SQL element an active query, which means it would update automatically when new data was available.

### 3.1.5.6 transactions node

When set to TRUE, the SQL query will allow transactional updates to be performed by the user. The default value is FALSE (read only). For example:

```xml
<transactions>true</transactions>
```

The above 'transactions' element would enable the user to make changes on certain columns of the query results that is displayed in the main window of the OEMonitor - for instance to change a signal's value.

### 3.1.5.7 sortColumn element

The optional column name used to sort the query results. The 'order' Attribute defines the sort order as either 'ASC' (ascending) or 'DESC' (descending).

The default is ASC. The Boolean Attribute ‘active’ is set to TRUE if active sorting is required. If this value is set to FALSE then only an initial sort will be performed. The default is FALSE.

An example sortColumn element would be:

```xml
<sortColumn order="ASC" active="true">occurencetime</sortColumn>
```

The above element would apply an ascending sort on the query in the SQL node according to values in the 'occurencetime' column.

### 3.1.5.8 contextmenu node

This is a way of adding a custom context menu to a view that has been created from a `<menu>` tag. The `<contextmenu>` tag must contain a `<transaction>` tag. The transaction tag must contain an SQL transaction. An example would be:

```xml
- <contextmenu>
  <transaction name='Acknowledge'>update alarmssummary set acknowledged=true where name = '{|name|}'</transaction>
</contextmenu>
```

In this example a context menu is created called "Acknowledge". When the user selects the "Acknowledge" option from the context menu, the transaction runs and automatically acknowledges the alarm that the user has selected.
Each contextmenu node has a single:

- transaction element

### 3.1.5.9 transaction node

The transaction node must appear within a contextmenu node. An example would be:

```xml
<transaction name="Acknowledge">update alarmsummary set acknowledged = true where name = '||name||'</transaction>
```

The name attribute of the transaction node provides the name of the context menu (e.g. in the example shown above, the name of the context menu will be 'Acknowledge').

### 3.2 Creating your own Query XML file

This section will show you how to create your own XML file that when imported will define a new menu and query for the OEMonitor tool. We will use Notepad to create the XML file. You could use a dedicated XML editor, or even MsWord, which would make it easier. This is what we are going to do:

1. Creating a new Main Menu.
2. Create two new Menu Groups.
3. Create new Menu commands.
4. Import the new Menus
3.2.1 Creating a new Main Menu

1. First, open Notepad and type `<xml version="1.0"?>` on the first line. This tells Windows that this is an XML file and not an ordinary text file. If you were using an XML Editor, you would not need to enter this line.

2. Now type in the Monitor tags, like this. In XML, a Node consists of an almost identical start and end tag. The forward slash "\" denotes the end tag of the Node.

3. Then type in the parent Menus tags. These are the immediate children of the OEMonitor Node.

4. Now type in the new Main Menu tags as a child of the Menus Node, and give it the name "My Alarms".
5. Finally, save the Notepad file as 'MyOEMonitorMenu.xml'. The file can be saved to any directory.

3.2.2 Creating new Menu Groups

1. Open the new 'MyOEMonitorMenu.xml' file in Notepad.

2. Now create two new Main Menu Nodes within the first Main Menu Node. These will appear as Menu Groups under the new "My Alarms" Main Menu option. Save the file again.
3.2.3 Creating new Menus

1. Open the new 'MyOEOMonitorMenu.xml' file in Notepad.

2. Create a new Menu with the name 'All Alarms' immediately under the "My Alarms" mainMenu Node. The new menu is contained within the highlighted text in the image below. The SQL statement shows all alarms. The deviceName tags are set to true, enabling the query to be filtered by Devicename. The active tags define it as an active query. The transactions tag has been set to true, which means the user can update values. The sortColumn has been set to 'occurencetime', and will be sorted in ascending order. The sorting will be active. Save the file once more.

3. Now create new menus under the "Alarm Priority" mainMenu for the Priority filters you would like to make available. Name them "Priority 0" to "Priority <n>". Give each SQL query a where clause that finds the correct priority for the menu name (e.g. - for the "Priority 0" menu it would be "where priority = 0"). Save the file again.
4. Finally, create new menus under the "Alarm State" mainMenu. The SQL for these menus will add where clauses that return the values for the acknowledged and cleared attributes of the AlarmSummary table under the headings "Acknowledged", "Un-Acknowledged", "Cleared" and "Un-Cleared". The example below only shows the "Acknowledged" and "Un-Acknowledged" menus. You can work the others out for yourself. Save the file one more time.

```
<mainMenu name="Alarm State">
  <menu name="Acknowledged">
    <sql>select devicename, id, occurrenceTime, name, value, units, description, cleared, acknowledged from alarmSummary where acknowledged = true</sql>
  </menu>
  <menu name="Un-Acknowledged">
    <sql>select devicename, id, occurrenceTime, name, value, units, description, cleared, acknowledged from alarmSummary where acknowledged = false</sql>
  </menu>
  <menu name="Cleared">
    <sql>select devicename, id, occurrenceTime, name, value, units, description, cleared, acknowledged from alarmSummary where cleared = true, acknowledged = true</sql>
  </menu>
  <menu name="Un-Cleared">
    <sql>select devicename, id, occurrenceTime, name, value, units, description, cleared, acknowledged from alarmSummary where cleared = false, acknowledged = true</sql>
  </menu>
</mainMenu>
```

3.2.4 Importing the new Menus

1. Firstly, select the 'Import Query File...' option from the 'Tools' dialog on the OEMonitor menu bar.
2. Using the browse button on the "" dialog, find the new Menu file. Then click the [OK] button.

3. The new Menus will be available in the OEMonitor.
4 Index

A
Accol Versions ................................................. 11
Active Node ..................................................... 35
Alarm Inhibited Analogs ...................................... 15
Alarm Inhibited Digitals ...................................... 15
Alarm Inhibited Signals ...................................... 15
Alarms Menu ..................................................... 8
All ....................................................................... 8
All Lines .......................................................... 19
Analogs ............................................................. 14, 22

B
BSAP Lines ........................................................ 20

C
Clear Filter ......................................................... 24, 29
Command Line Parameters .............................. 5
Contextmenu Node ............................................. 36
Creating ............................................................ 37
Creating new Menu Groups .............................. 38
Creating new Menus ......................................... 39
Creating Queries ............................................... 30
Critical ............................................................. 8
CSV file .............................................................. 27
Current Device Filter ........................................ 30

D
Data Connections ............................................... 7
DataService ....................................................... 30
DeviceName Node .............................................. 35
Devices ............................................................ 19, 21
Devices Menu .................................................... 10
Digitals .............................................................. 14, 22
Disabled Analogs ................................................. 16
Disabled Digitals ................................................. 16
Disabled Signals ............................................... 16
Disabled Strings ................................................. 16

E
Enter Filter Expression ....................................... 24, 28
Event ................................................................. 9
Exit ..................................................................... 7
Export Data ....................................................... 25, 29

F
Filter By Devicename .......................................... 28

G
General Menu .................................................... 7
General Status .................................................. 11

H
HideColumns Node ............................................. 35
History Points ................................................... 21

I
Import Query ...................................................... 24
Import Query File ............................................... 24
Importing ........................................................ 40
In-Alarm Analogs ............................................... 18
In-Alarm Digitals ............................................... 18
In-Alarm Signals ............................................... 18
Include column headers ..................................... 27
IP Lines .............................................................. 20
Items .................................................................. 30

M
Main Form ......................................................... 6
MainMenu Node ................................................ 33
Memory ............................................................. 7
Menus Node ....................................................... 32
Modify Data ....................................................... 30

N
New Main Menu .................................................. 37
New Menus ....................................................... 40
New Window ...................................................... 6
Node ................................................................. 34
Non Critical ....................................................... 9

O
OEMonitor Current State .................................... 30
OEMonitor Root Node ......................................... 32
OpenBSI Menu ................................................... 19
Operator Guide .................................................. 9
Options ........................................................... 6
Overview ........................................................ 5
Own Query XML file .......................................... 37

P
Pretransaction node ............................................ 34
<table>
<thead>
<tr>
<th>Reference Guide</th>
<th>D301514X412</th>
<th>OEMonitor</th>
<th>April 2012</th>
</tr>
</thead>
</table>

### Q
- Query Display ................................................... 27
- Query File .......................................................... 27
- Query File Browse ............................................. 25
- Query File Path .................................................. 24
- Query XML file format ........................................... 31

### R
- RBE ................................................................. 11
- Reload ............................................................. 25
- Remote Alarm Reports ........................................... 11
- Requests ........................................................... 21
- ROC ................................................................. 20, 21, 22, 23

### S
- Set Filter ........................................................... 24, 28
- Signals Menu ....................................................... 13
- SortColumn Node .................................................. 35
- SQL Node ............................................................ 34

### T
- Template Detail .................................................... 12
- Template Performance ........................................... 13
- Template Summary ................................................ 12
- Tools Menu .......................................................... 23
- Total Number ....................................................... 30
- Transaction Node .................................................. 36
- Transactions Node ................................................ 35

### U
- Unload Query file .................................................. 27

<table>
<thead>
<tr>
<th>Feature</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Query Display</td>
<td>27</td>
</tr>
<tr>
<td>Query File</td>
<td>27</td>
</tr>
<tr>
<td>Query File Browse</td>
<td>25</td>
</tr>
<tr>
<td>Query File Path</td>
<td>24</td>
</tr>
<tr>
<td>Query XML file format</td>
<td>31</td>
</tr>
<tr>
<td>RBE</td>
<td>11</td>
</tr>
<tr>
<td>Reload</td>
<td>25</td>
</tr>
<tr>
<td>Remote Alarm Reports</td>
<td>11</td>
</tr>
<tr>
<td>Requests</td>
<td>21</td>
</tr>
<tr>
<td>ROC</td>
<td>20, 21, 22, 23</td>
</tr>
<tr>
<td>Set Filter</td>
<td>24, 28</td>
</tr>
<tr>
<td>Signals Menu</td>
<td>13</td>
</tr>
<tr>
<td>SortColumn Node</td>
<td>35</td>
</tr>
<tr>
<td>SQL Node</td>
<td>34</td>
</tr>
<tr>
<td>Template Detail</td>
<td>12</td>
</tr>
<tr>
<td>Template Performance</td>
<td>13</td>
</tr>
<tr>
<td>Template Summary</td>
<td>12</td>
</tr>
<tr>
<td>Tools Menu</td>
<td>23</td>
</tr>
<tr>
<td>Total Number</td>
<td>30</td>
</tr>
<tr>
<td>Transaction Node</td>
<td>36</td>
</tr>
<tr>
<td>Transactions Node</td>
<td>35</td>
</tr>
<tr>
<td>Unload Query file</td>
<td>27</td>
</tr>
</tbody>
</table>