

**Reference Guide**

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**Alarm Banner**

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# **Bristol OpenEnterprise Reference Guide**

## **Alarm Banner**

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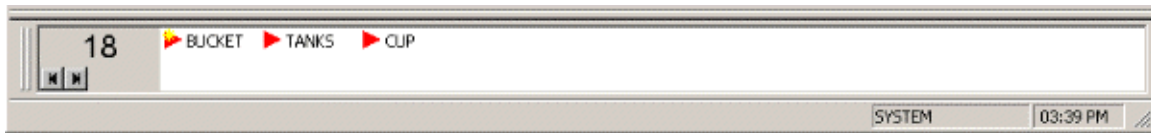


## 1 Alarm Banner

### 1.1 Overview

The Alarm Banner enables the user to: -

- Take an overall view of Plant Areas having high priority, unacknowledged alarms;
- View a count of the total number of high priority, unacknowledged alarms on the whole SCADA system;
- View alarm statistics for those Plant Areas / Sites which have alarms;
- Apply a filter to the Alarm Viewer based on any Plant Area selected in the Alarm Banner, so that alarm details for that Plant Area may be separated and investigated.



The Alarm Banner is an ActiveX control that provides the user with an overview of unacknowledged, high priority alarms grouped by Plant Area. The Alarm Banner can be run within any ActiveX control container. Typically this would be a docked banner window at the bottom of the Desktop. It can also run outside the Desktop environment in its own custom container, as shown above, where it is called the OpenEnterprise Alarm Ribbon.

### 1.2 Accessing the Property Pages

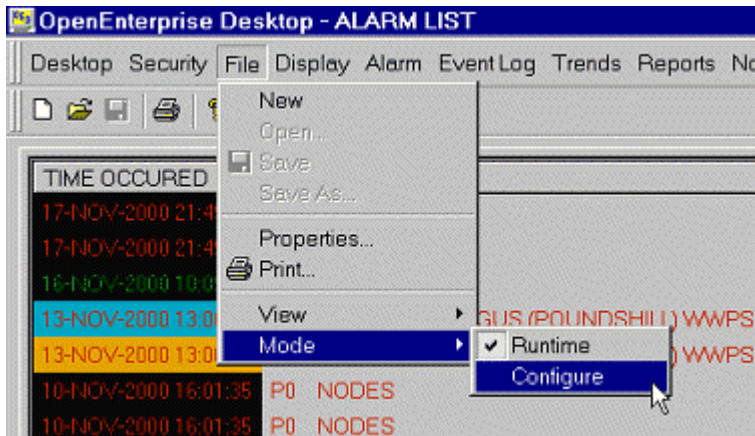
The Property Pages of an View component provide all of the dialogs necessary to configure it. There are two ways to access the Property pages.

#### 1.2.1.1 1. From the 'Configure' Menu Item

Where this is depends on whether you are running the View component inside the Desktop, or within its own container.

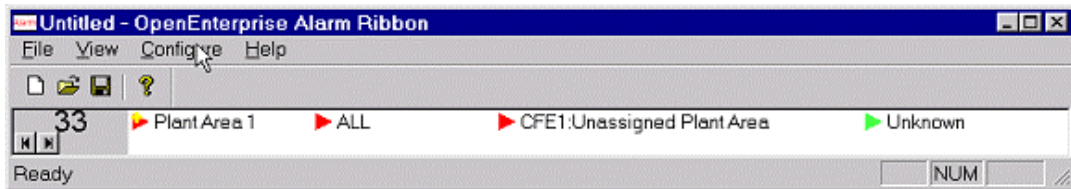
##### 1.2.1.1.1 Within Desktop

If the View is running in a child window within the Desktop then it can be placed into Configure Mode by selecting the 'File/Mode/Configure' menu option as shown below.



### 1.2.1.1.2 Within the View Container

If the View is running within its own container, then the Configure option is available directly from the Menu Bar, as shown in the example below.



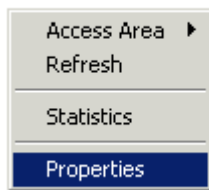
### 1.2.1.2 2. Ctr + M Keyboard Option

The View may be toggled between Runtime and Configure Mode by pressing and holding down the 'Ctrl' and 'M' keys together on the computer's keyboard. When in the Desktop, the View must be the active window (i.e. selected).

### 1.2.1.3 The Property Context Menu

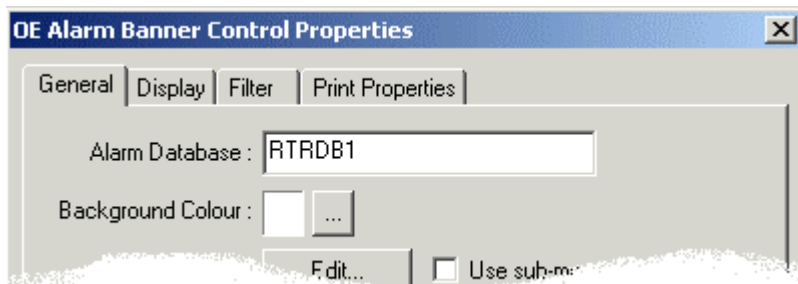
Once the View is in Configure mode, right click on it and select the 'Properties' menu, as shown below.

#### OE Alarm Banner



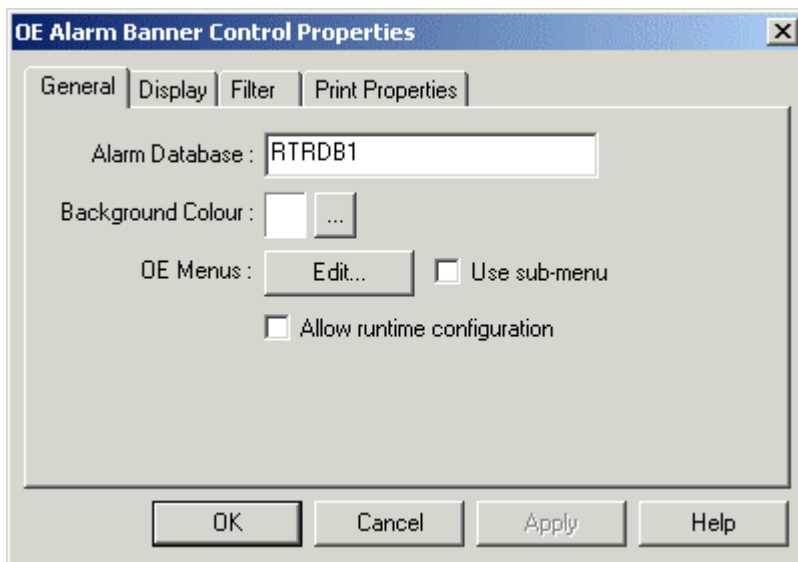
## 1.3 Alarm Banner Configuration

The Property Pages for the Alarm Banner are displayed below.



### 1.3.1 General Page

The General Property page allows configuration of the Alarm Database and window background color. It also enables Custom context menu items for the Alarm Banner to be configured, or to allow access to the Property pages in Runtime mode.



#### 1.3.1.1 Configure the Alarm Database

Type the name of the Alarm Database into this field. database names, whether in Standalone or Redundant mode are usually defined by the Server's DNS name(s) followed by a colon, followed by 'rtrdb1' (eg Server:rtrdb1). There is a comma in between each server if the Database is running in Redundant mode- (eg Master1:rtrdb,Master2:rtrdb1). Databases may also be defined by Internet Protocol (IP) addresses (eg 102.10.0.90:rtrdb1,102:10.0.91:rtrdb1). The Server DNS names may be aliased using the Hosts file found in the 'C:\Winnt\System32\Drivers\etc' directory. This allows Databases to be named independently of specific IP addresses or DNS names. A sample Hosts entry is shown below (the headings should not be included in the actual file): -

IP Address	Alias 1	Alias 2	Comment
101.100.0.183	oeserv1	oedwat1	#pserv1
101.100.0.184	oeserv2	oedwat2	#pserv1

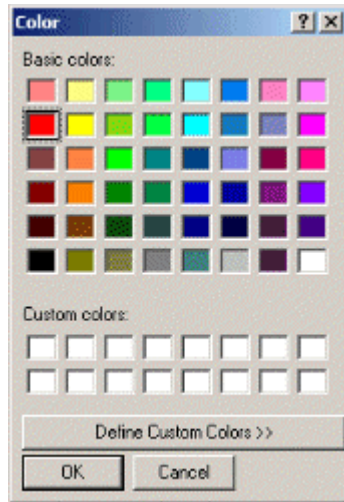
The IP addresses of the Servers are given on the left, then after a space or tab each alias name is specified. In the example above there are two alias names defined for each Server. A hash indicates that what follows is a comment, not an alias.

The 'rtrdb1' part of the database name is an alias for a TCP service port defined in the Services file on the Server(s) which are running the database. The Services file is found in the same directory as the Hosts file. In applications where there is more than one database defined, these aliases may be given more descriptive names such as 'nw3000', 'dynamiclogic' or 'corporate'. Each alias must have a unique service number, and the numbers must be applied consistently across the application.

General Page

1.3.1.2 Window Background Color

This selects the background color of the client window. By default the background color is white. When the colored square is selected this palette is displayed for selection of a new color.



1.3.1.3 Edit Menu Button

This button allows the configuration of a customised Context Menu. If selected, the Menu Editor is displayed from which new context menu items may be defined.

1.3.1.3.1 OEMenus and Alarm Banner Filtering

Alarm *priority* and *state* filters can be set on the Filter Page of the Alarm View. Also the context menu available during runtime operation of the Alarm Banner enables filtering on the access area.

But parameters passed through custom OEMenus can also filter the Alarm Banner on any attribute of the Alarm Summary table, even custom attributes that have been added for specific projects. See the Filtering on Custom Alarm Summary Attributes topic for instructions on how to do this.

1.3.1.4 Use Sub Menu

If the [Use sub-menu] option is checked, a separate sub-menu is used for Custom context menu items.

Further details may be found within the Menu Editor Help.

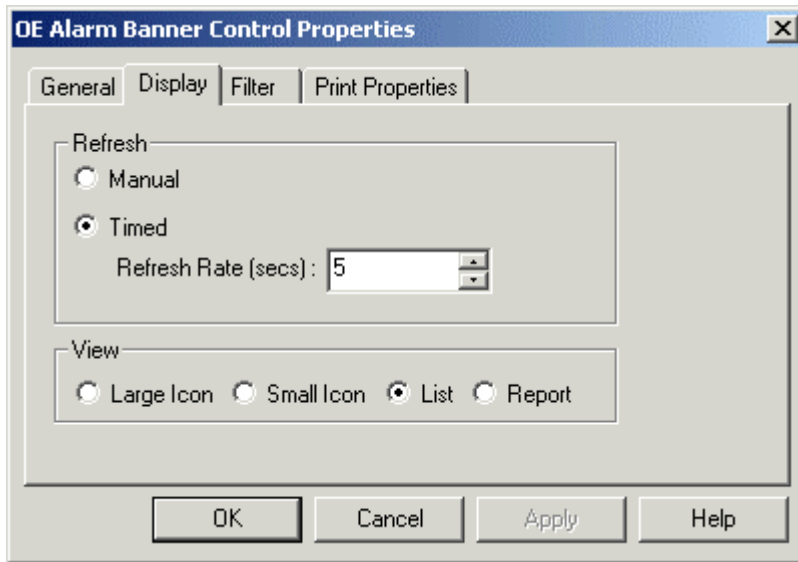


### 1.3.1.5 Allow Runtime Configuration

Selecting this check box on the General Page will allow users to access the Alarm Banner's Property pages in Runtime mode from the Alarm Banner context menu.

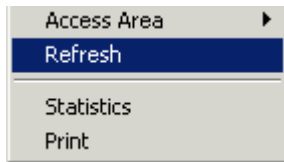
### 1.3.2 Display Page

The Display page enables configuration of the refresh rate and general look of the Alarm Banner.



#### 1.3.2.1 Manual Refresh

The refresh rate may be set to manual by selecting the **[Manual]** radio button within the 'Refresh' section of the Display Property Page. If selected, the Alarm Banner will only refresh when the 'Refresh' option is selected from the Alarm Banner's context menu in Runtime.



#### 1.3.2.2 Timed Refresh

Selecting the **[Timed]** radio button will enable the user to change the automatic refresh rate for the Alarm Banner. A dialog box will allow the user to change the number of seconds between refreshes. This can be done by using the spin arrows or by typing directly into the 'seconds' field.

#### 1.3.2.3 View Type

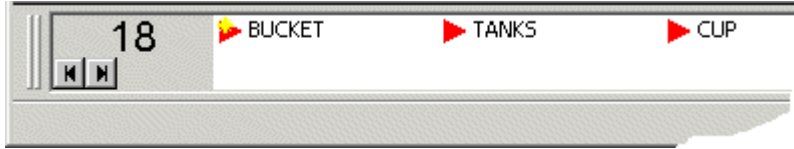
The 'View' section of the Display Page enables the user to select the way in which the Sites / Plant Area icons will be displayed.

#### 1.3.2.4 Large Icons

Selecting this option causes the Plant Areas to be displayed as large triangles left to right with their name underneath.

1.3.2.5 Small Icons

This option shows the Plant Areas as small icons left to right with their name to the side. This allows the Alarm Banner to take up less space along the bottom of the Desktop.



1.3.2.6 List View

This enables the Alarm Banner to be displayed as a vertical list. This may be helpful for Alarm Banners that are docked on the left side of an Desktop.



1.3.2.7 Report View

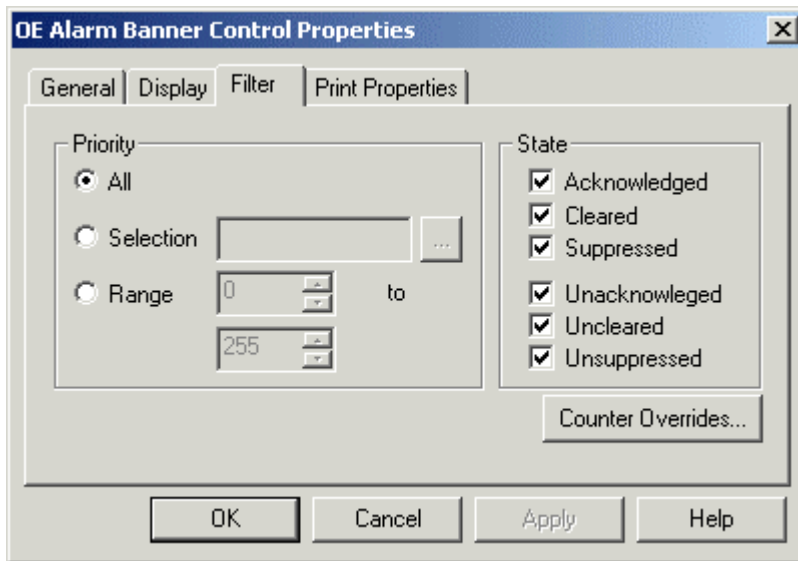
This mode allows statistics to be viewed for each Plant Area in a single window.

Plant Area	UnCleared & UnAcknowledged	Cleared & UnAcknowledged	UnCleared & Acknowledged
BUCKET	2	3	1
TANKS	2	0	9
CUP	0	0	1

The screenshot shows the Alarm Banner in 'Report View' mode. On the left, a large number '18' is displayed above two small square icons. The main area contains a table with four columns: 'Plant Area', 'UnCleared & UnAcknowledged', 'Cleared & UnAcknowledged', and 'UnCleared & Acknowledged'. The table lists three plant areas: BUCKET, TANKS, and CUP, with their respective counts. At the bottom right, there is a 'SYSTEM' label and a time display '12:31 PM'.

1.3.3 Filter Page

The Filter page provides the ability to filter the Alarm Banner according to the priority and state of alarms. It also provides a means to override the filter settings for the Alarm Banner's counter, which appears in the bottom left corner of the Alarm Banner window.



### 1.3.3.1 OEMenus and Alarm Banner Filtering

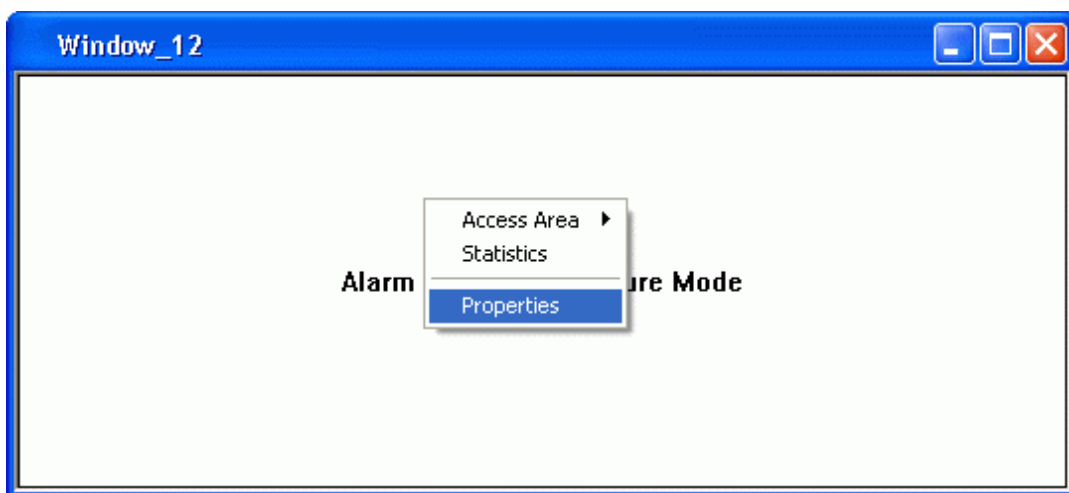
Alarm *priority* and *state* filters can be set on the Filter Page of the Alarm View. Also the context menu available during runtime operation of the Alarm Banner enables filtering on the access area.

But parameters passed through custom OEMenus can also filter the Alarm Banner on any attribute of the Alarm Summary table, even custom attributes that have been added for specific projects. See the Filtering on Custom Alarm Summary Attributes topic for instructions on how to do this.

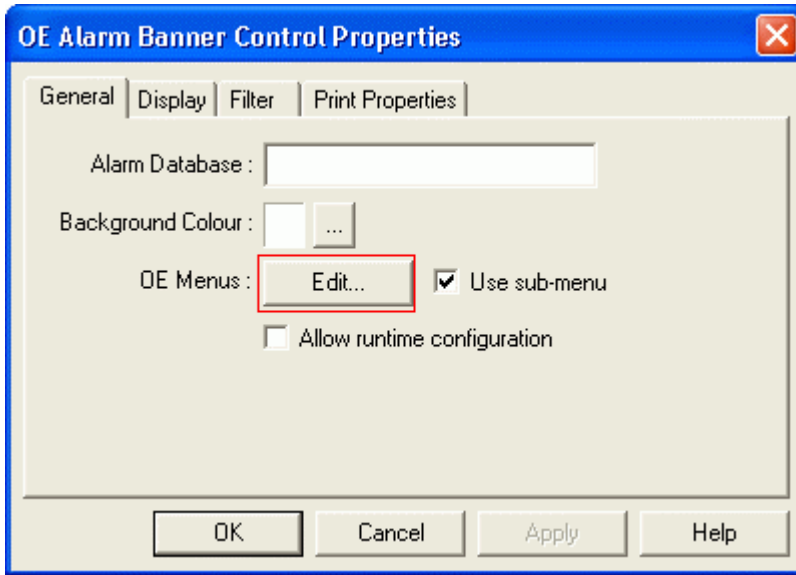
### 1.3.3.2 Filtering on Custom Alarm Summary Attributes

If we have added extra columns to the Alarm Summary table we cannot access these from the Filter Page of the Alarm Banner configuration interface. We can, however apply a filter on custom columns by using a Custom Menu on the Alarm Banner. Here's how we can do this: -

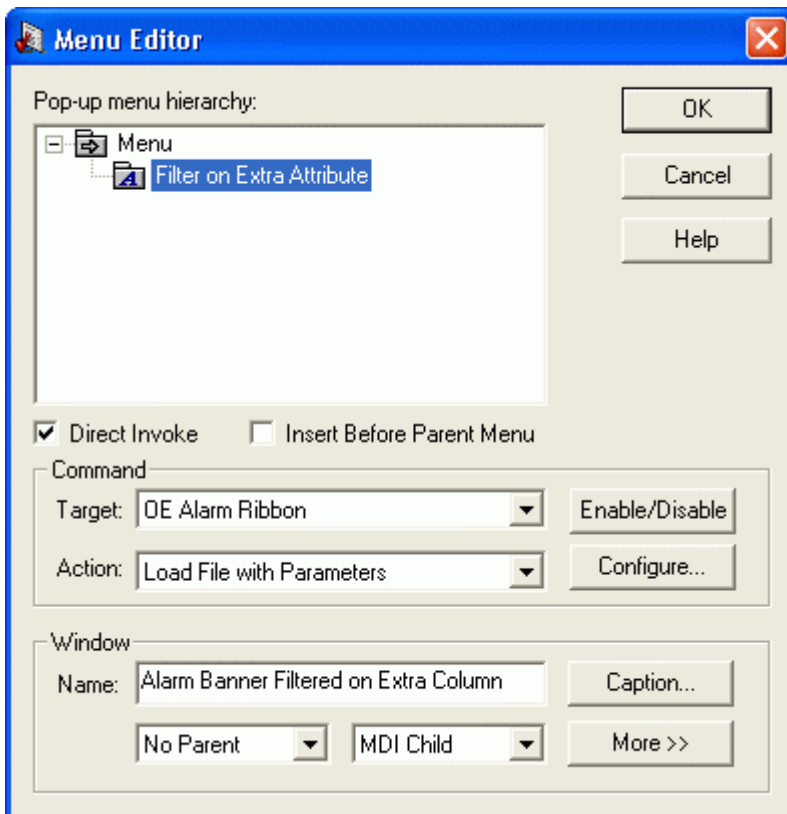
1. Place the Alarm Banner into configure mode by selecting Ctrl-m from the keyboard, or File>Mode>Configure from the OEDesktop, or the Configure menu from the Alarm Banner container. Save the file.



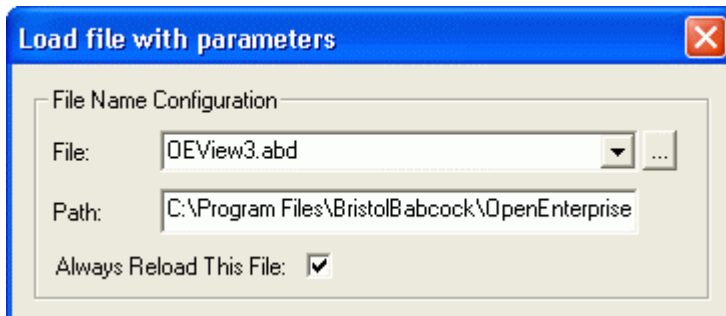
- 2. Select the [Edit] button on the General tab of the Alarm Banner Property pages.



- 3. Create a new Custom Command, rename it and set the Target to 'OE Alarm Ribbon' and the Action to 'Load File with Parameters'.

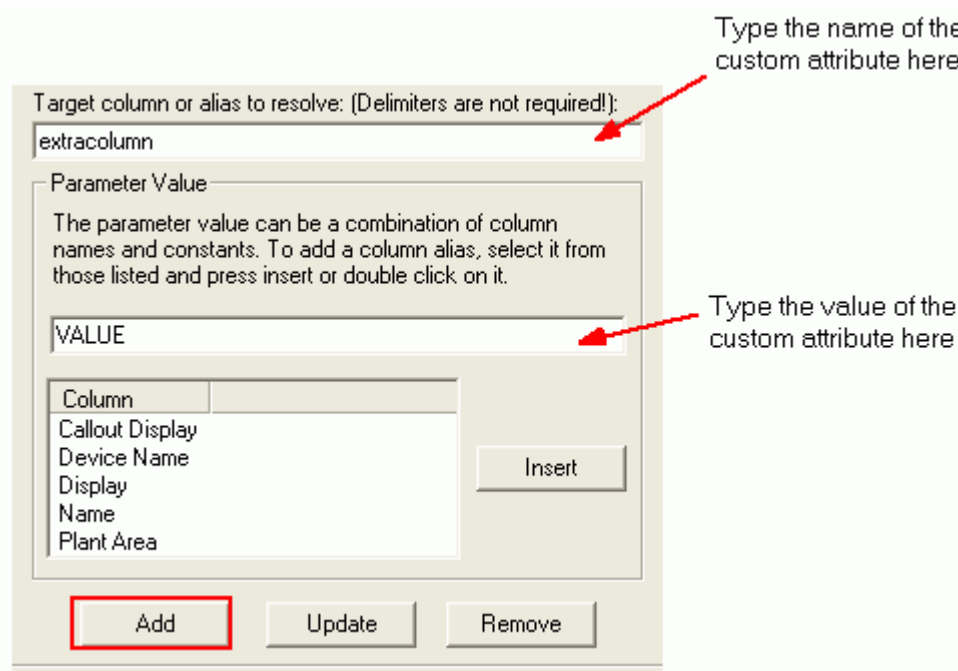


- 4. Use the ellipsis [...] button to browse for the file that you saved in step 1. We want to reload it but apply our filter to it.

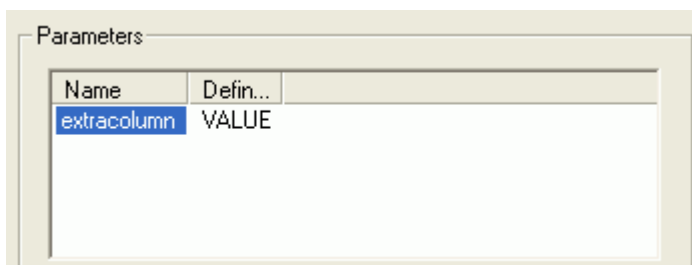


5. Type the name of the added column in the 'Target column of alias to resolve' field. We could add a filter on the values that are available in the Column List, but we cannot use the Column List to filter on our custom column (in our example this is called 'extracolumn') because this does not appear there. So we need to type the custom column name directly into the 'Target' field.

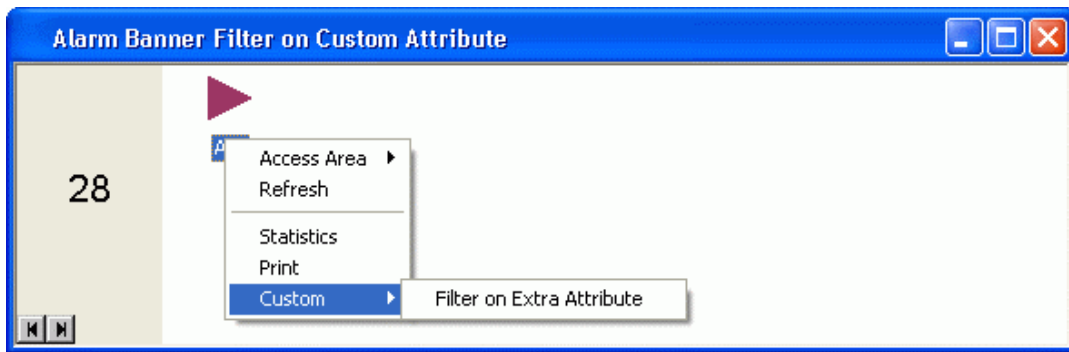
Then we should type the actual value that we want to filter on into the Parameter Value field (in the example this is 'VALUE'). Then select the [Add] button.



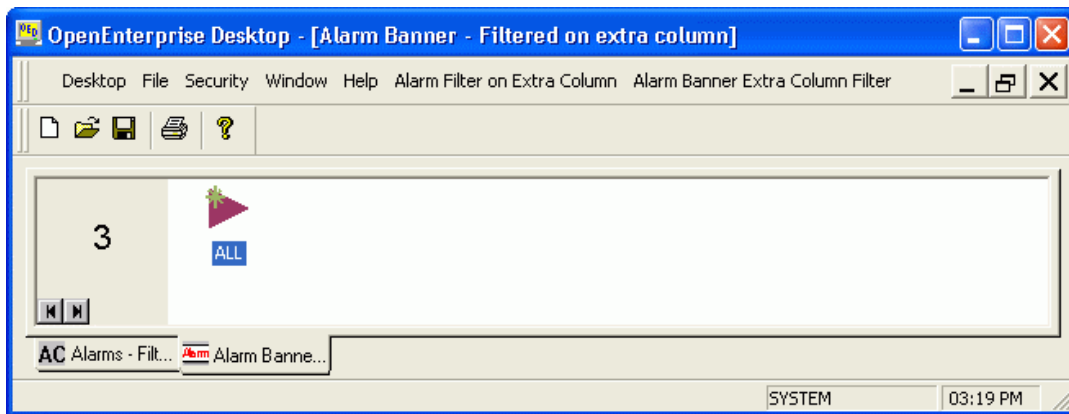
6. This adds our custom parameters to the Parameter List.



- 7. Finally, click the [OK] button at the bottom of the 'Load File with Parameters' dialog. Now, when the Alarm Banner is in runtime mode we can select our Custom Filter menu.



Now the Alarm Banner is filtered to show only the alarms having the value (VALUE) that we defined for our extra column (extracolumn). In our example only three alarms matched that filter.



**1.3.3.3 All Priorities**

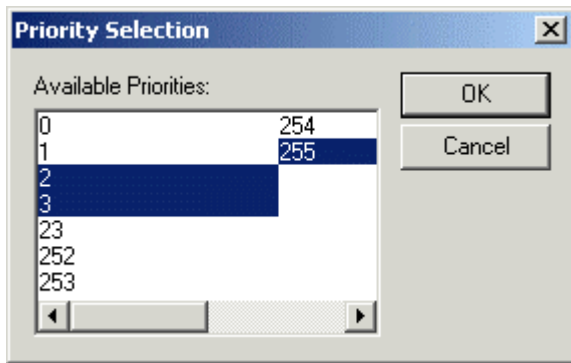
This is the default selection. If selected, all alarm priorities are counted and added to alarm total statistics.

**1.3.3.4 Selection of Priorities**

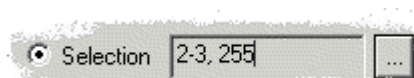
When the [Selection] radio button is chosen it enables the user to select any combination of Alarm Priorities as a filter. When the radio button is selected the browse button to the right of it becomes enabled. After selecting the browse button, the user is presented with the Priority Selection Dialog.

**1.3.3.5 Priority Selection Dialog**

The user may select any Alarm Priority by clicking on it. Once a priority is selected it remains selected until it is selected a second time, when it is deselected.



On pressing the [OK] button, the priorities for inclusion in the filter are entered into the grey field to the right of the [Selection] radio button on the Filter Page, as in the example below.



Filter Page

### 1.3.3.6 Range of Priorities

When selected, the user is able to define a range of Alarm Priorities as a filter for the Alarm Banner. The 'from and to' range numbers may be changed by using the spin arrows or by typing the number directly into the range field. The example below shows a filter set up to show and count only alarms that have priorities between 0 and 3.

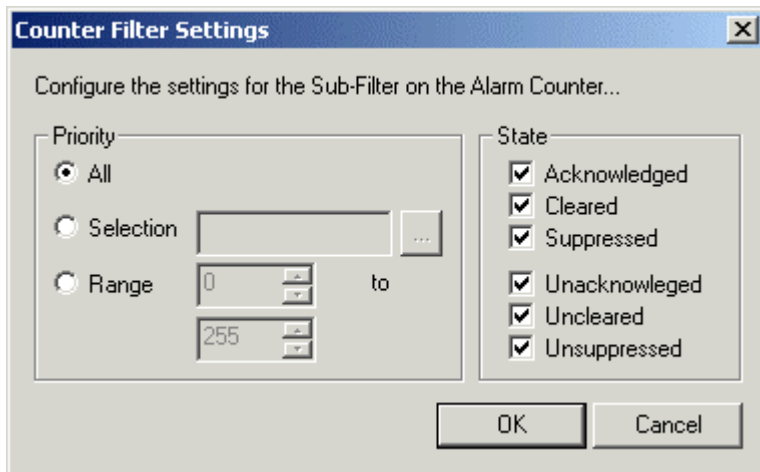


### 1.3.3.7 State Filters

The State section of the Filter page enables the user to configure a filter on alarm states, which will affect which Plant Areas are displayed within the Alarm Banner. Placing a tick next to alarm state pairs (i.e. Acknowledged/Unacknowledged, Cleared/Uncleared, Suppressed/Unsuppressed) cancels filtering for that alarm state. Leaving both alarm state pairs without a tick also has the effect of cancelling filtering on that state (i.e. both acknowledged and unacknowledged alarm will be counted).

### 1.3.3.8 Counter Filter Overrides

The Counter Filter Settings Dialog enables the user to configure a different Filter for the Alarm Banner's counter, which displays a count of all alarms of interest on the left of the Alarm Banner window.



**1.3.3.8.1 Priority Filter**

The Priority Filter section works in exactly the same way as the Priority section on the parent Filter page.

**1.3.3.8.2 Counter Filter States**

This section works in a slightly different way to the same section on the parent Filter page. The main difference is where both the TRUE and FALSE values of any pair of alarm state attributes are left empty (i.e. Acknowledged/Unacknowledged). The Alarm Banner treats this as a null value, and the counter returns zero alarms.

**1.4 Runtime Mode**

Below is an example Alarm Banner docked to the bottom of the Desktop, displaying Plant Area alarms as small icons.



**1.4.1 Icon Display Heirarchy**

By default Plant Areas with the highest priority, uncleared, unacknowledged alarm appear on the left of the list. If the number alarms from different Plant Areas are equal in this respect, then the occurrence time is taken into account - the Plant Area with most recent high priority uncleared, unacknowledged alarm taking priority.

**1.4.2 Colours and Flashing within the Alarm Banner**

Each site in alarm is represented by a bitmap. These bitmaps represent details about the top alarm as follows:

COLOUR	MEANING
"Flashing" between RED and WHITE	The Plant Area contains one or more Alarms



	that have not cleared, and are unacknowledged.
Steady RED	The Plant Area contains one or more alarms which are not cleared, but have been acknowledged.
"Flashing" between GREEN and WHITE	The Plant Area contains alarms which have cleared, but are unacknowledged.
YELLOW asterisk	The top alarm of the Plant Area has changed

**1.4.3 Alarm Counter**

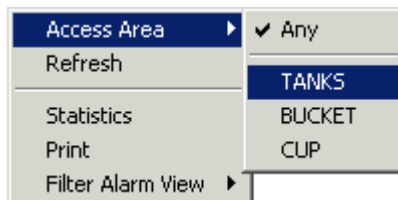
By default this counter will display the total number of alarms present on the SCADA application. If desired, a filter can be applied to this counter. In this case the counter will only display the number of a certain state and priority of alarms, (for example, Unacknowledged Priority 0 and Priority 1 alarms). The Count is refreshed automatically every few seconds, or manually by using the 'Refresh' option of the context menu.

**1.4.4 Plantareas In Alarm**

The pane to the right of the Counter displays the Plant Areas which are currently in alarm as icons. The Plant Area list is sorted left to right in order of top alarms. The data shown in the Alarm Banner is obtained from the plantarea, cleared, acknowledged, priority and occurrence time fields of the alarm summary table of the Database to which the Alarm Banner Client is connected. If the plantarea field is null or empty, then the site is deemed to be 'Unknown'. If a Plant Area icon is drawn with an X through it this indicates that the Plant Area now has no alarms associated with it. On the next refresh it will be deleted.

**1.4.5 Runtime Context Menu**

The runtime context menu becomes available when the Alarm Banner is in runtime mode. It enables the operator to filter the Alarm Banner, refresh its display, display alarm statistics or print the display. Access it with a right mouse click on the Alarm Banner window.



**1.4.5.1 Filter By Access Area**

Right clicking on the display area in runtime mode reveals a context menu item which enables filtering of the Alarm Banner by Access Area.

**1.4.5.2 Viewing Alarm Statistics**

Once the Alarm Banner is configured it may be used to view alarm statistics for Plant Areas which have alarms. There are two methods available for calling up alarm statistics.

Method 1

1. Select a site by clicking the left mouse button on a plant.

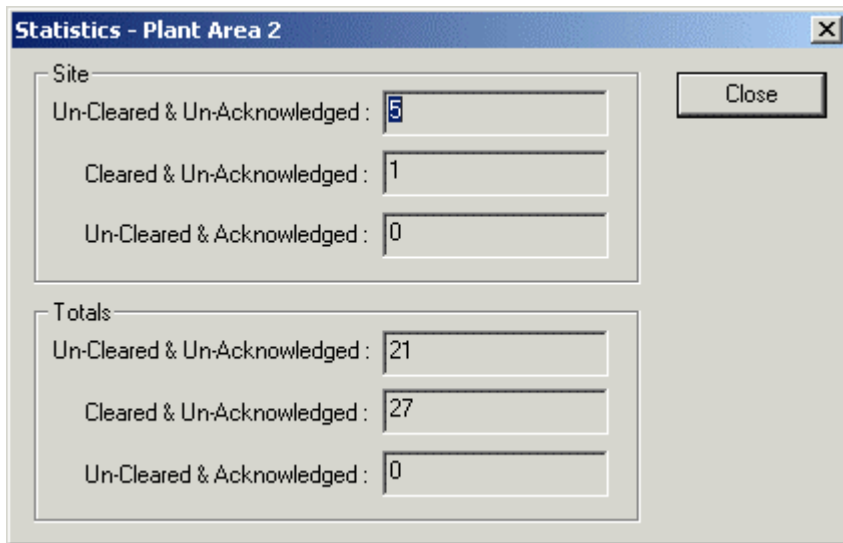
- 2. Press the right mouse button to get the context menu.
- 3. Select the statistics menu item.

Method 2

Double click the left mouse button on a site.

Statistics Box

The Statistics for the selected Plant Area as well as totals for the whole system should be displayed in a dialog as shown below. Note that these numbers are subject to the filter set up for the Alarm Banner instance.



Runtime Context Menu

1.4.5.3 Print

Prints the current Alarm View using the default printer.

1.4.5.4 Custom Menus

Custom Menu can be set up using the Menu Editor, accessed from the General Page. See the Worked Example for how to configure an OECustom Menu on the Alarm Banner that allows an Alarm Viewer to be launched that only displays alarms for the Plant Area currently selected in the Alarm Banner.

1.4.5.5 Custom Menu Worked Example

1.4.5.5.1 Creating a Context Menu

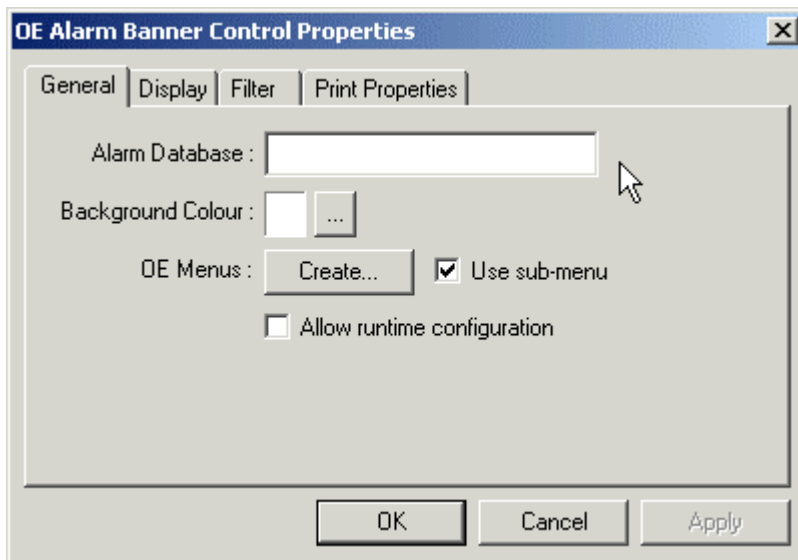
The following is a worked example of how to use the Menu component to apply a filter to the Alarm View from the Alarm Banner.

The Alarm Banner is very useful for larger SCADA applications where there are many Plant Areas (or Sites ). The Alarm View normally shows the details of all alarms for all Plant Areas as they occur. The Alarm Banner may be configured to have an additional context menu item enabling the user to apply a filter to the Alarm View causing it to show only alarms from the selected Plant Area.

It is assumed that prior to setting up this menu item that there is a fully configured and saved Alarm View file to hand, with the file extension .AC.

**1.4.5.5.2 Step 1 - Open the General Property Page**

When the 'General' Property Page is displayed click on the **[Create]** button, as displayed by the hotspot on the example below.



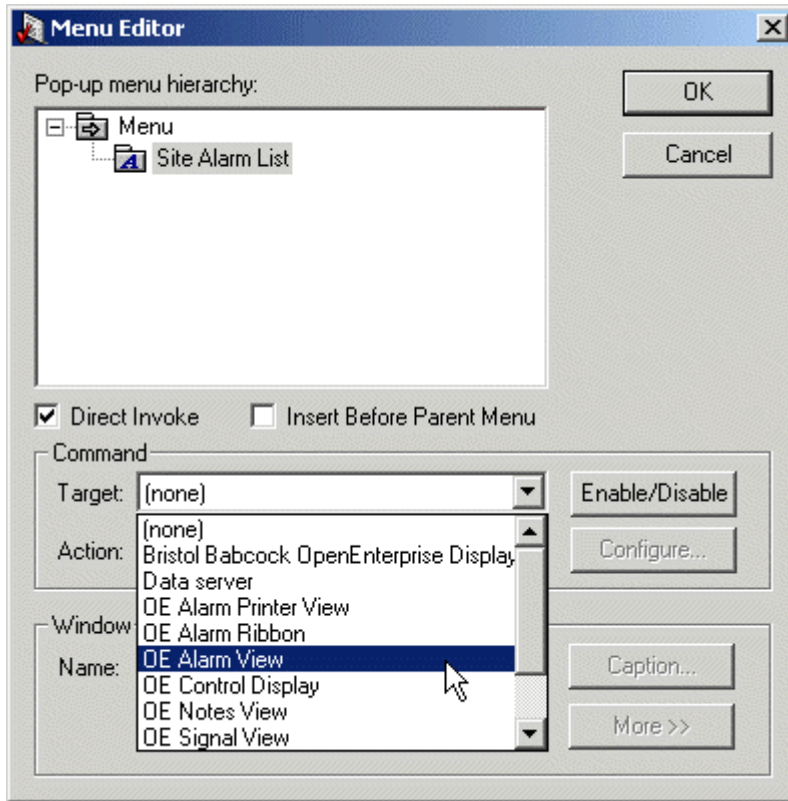
**1.4.5.5.3 Step 2 - Add a Menu Item**

Select the 'Menu' folder at the top of the Menu Editor window and right click. Then select the 'New Command' option.



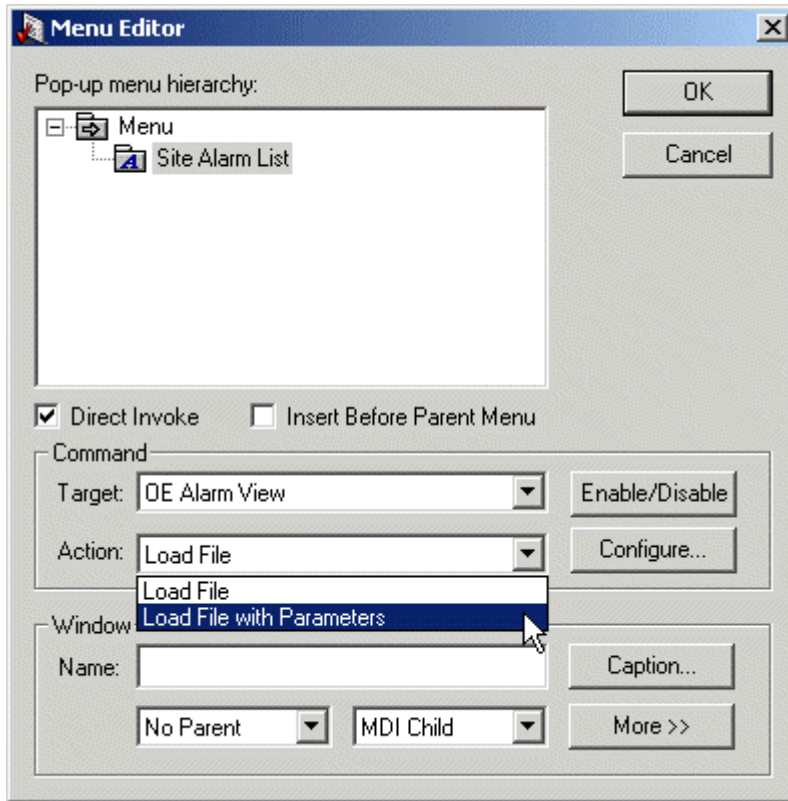
**1.4.5.5.4 Step 3 - Select the Target Application**

Click on the Target list and select the View required as the Target file (in this case Alarm View).



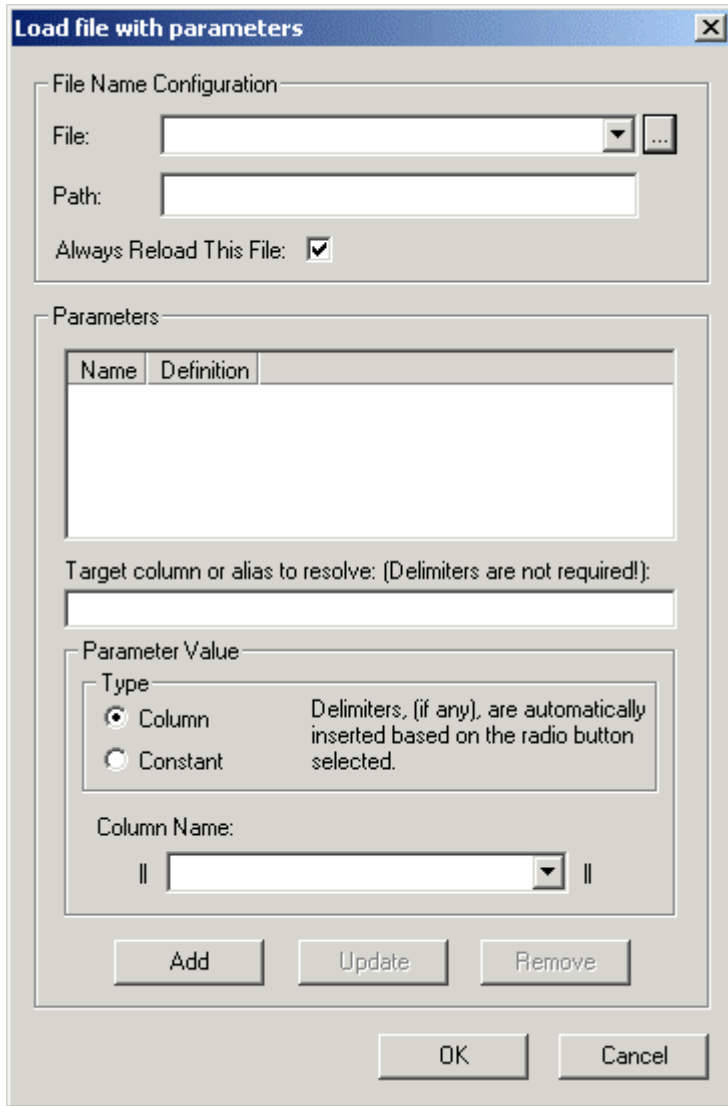
#### 1.4.5.5.5 Step 4 - Select the Action

Next, select the appropriate action to perform on the Target file from the Action list. As shown below, we need to not only open the target file, but to pass parameters to it, so the 'Load File with Parameters' option is chosen. When this is done, you can begin further configuration. Click the **hotspot** on the **[Configure...]** button now to go to the next step.



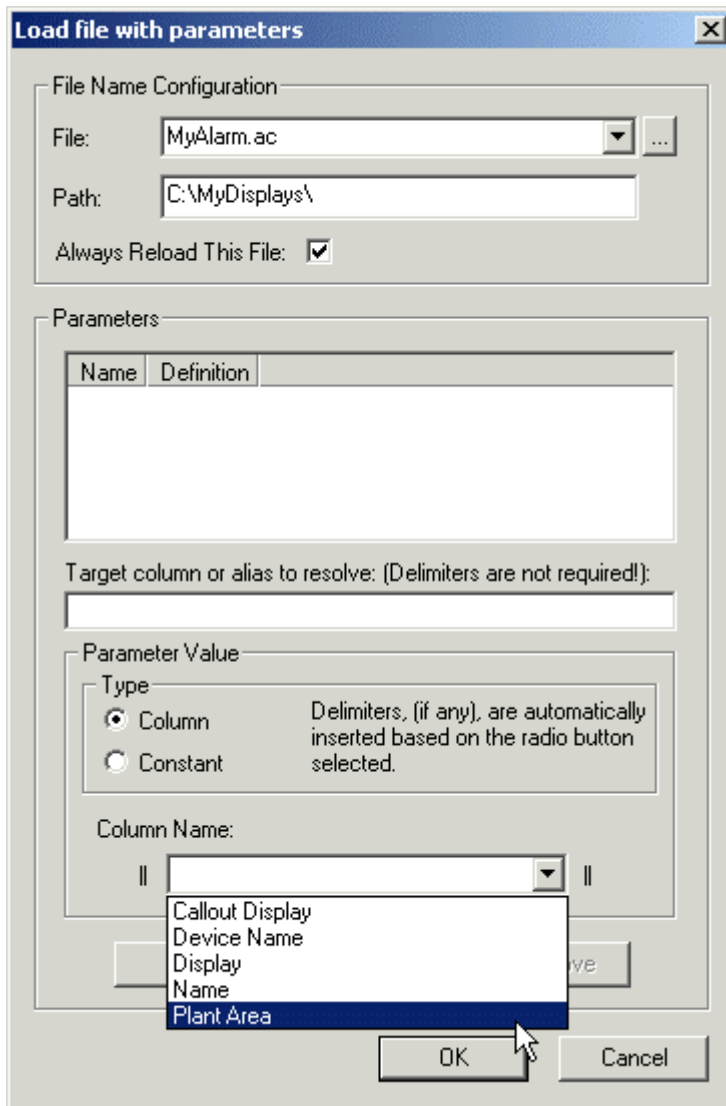
1.4.5.5.6 Step 5 - Select the Target File

The best way to do this is to select the browse button to the right of the **File** text field. Click on the [hostspot](#) on this button in the image below to go to the next step.



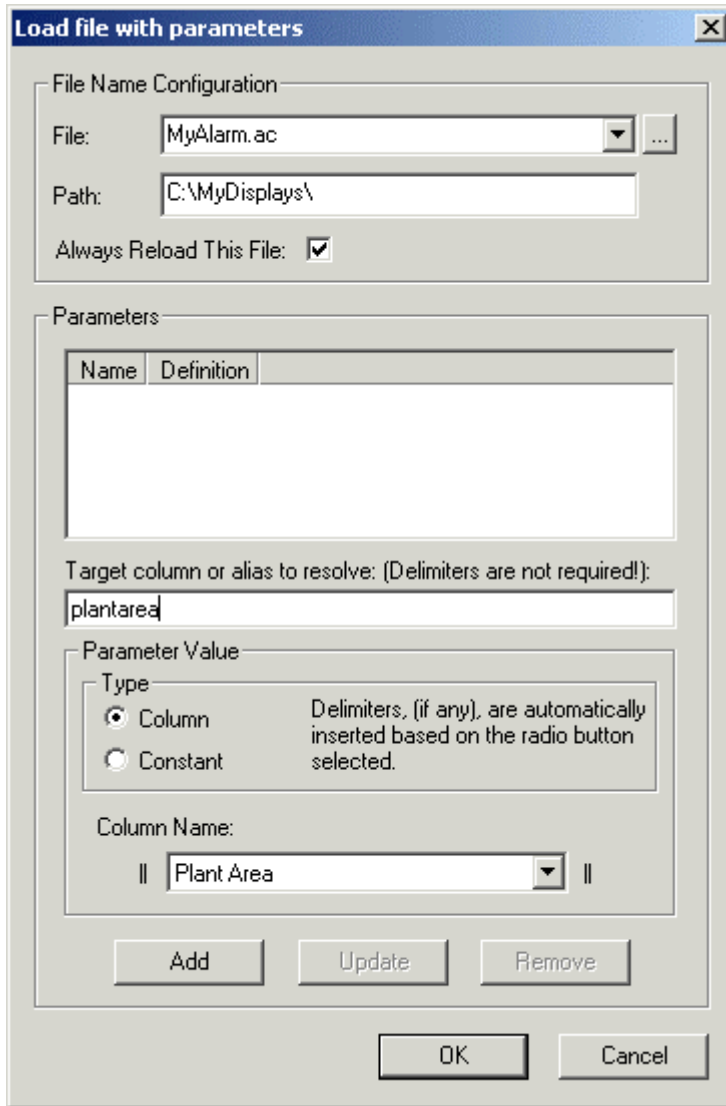
**1.4.5.5.7 Step 6 - Configure the Source Parameter**

The parameter that is going to be sent to the Target file needs to be specified. This is done by selecting the necessary Column name (in this case 'Plant Area') from the Column list in the Parameter Value section of the Configuration dialog.



**1.4.5.5.8 Step 7 - Define the Target Parameter**

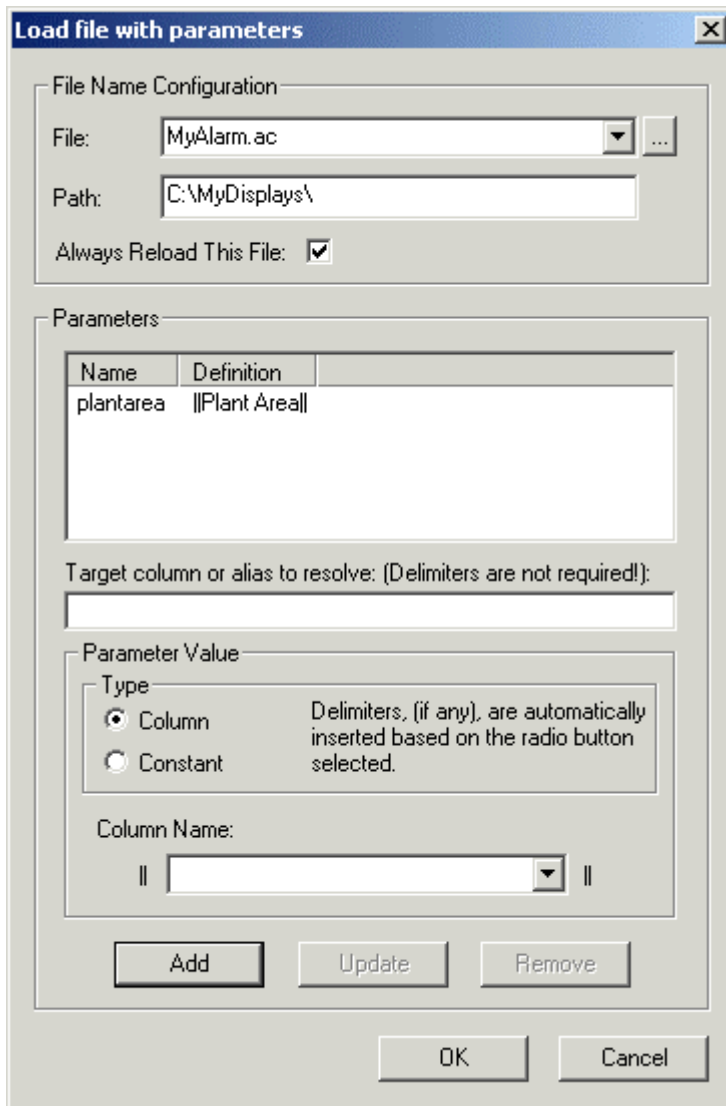
Next, we must define the matching parameter within the Target file (in this case it is the AccessArea attribute of the AlarmSummary table). This attribute will receive the parameter value that we send from this file as a filter. Finally, we must add our configured parameters to the Parameters list by clicking the **[Add]** button. Do that now to see the outcome.



**1.4.5.5.9 Parameters Configured**

This is how the configuration finally looks.

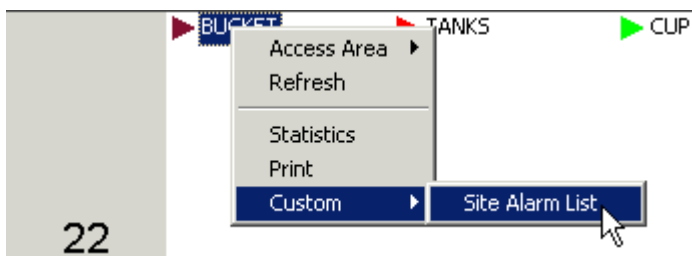




See Example in Use

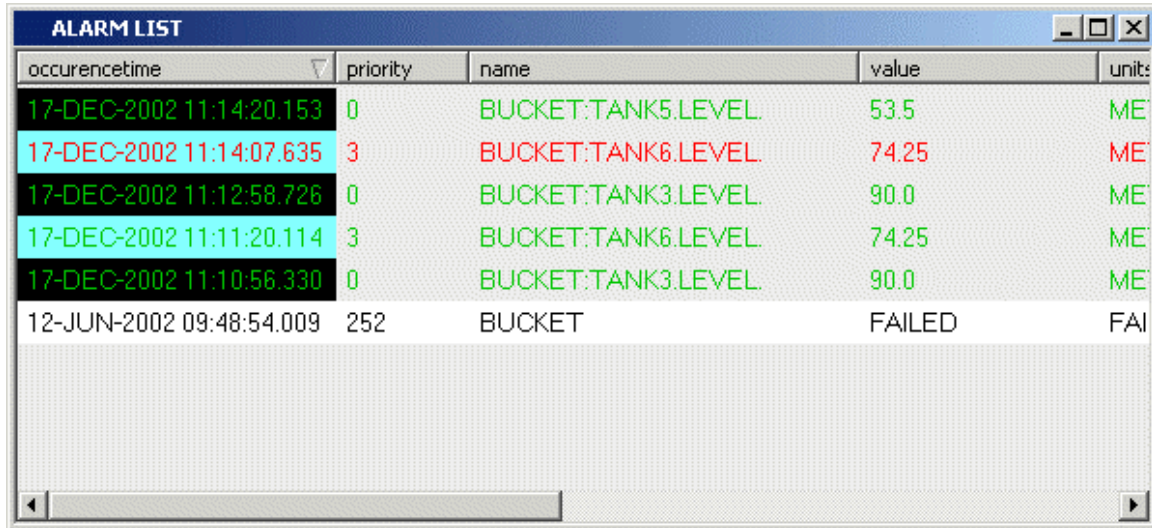
#### 1.4.5.5.10 Select Custom Menu

Click the **hotspot** on the Custom menu item below to see what the result of this would be in Runtime.



1.4.5.5.11 Result - Filtered Alarm List

As you can see, the Alarm List is automatically filtered to show only those alarms that come from the Plant Area selected within the Alarm Banner.



occurrence time	priority	name	value	units
17-DEC-2002 11:14:20.153	0	BUCKET:TANK5.LEVEL	53.5	ME
17-DEC-2002 11:14:07.635	3	BUCKET:TANK6.LEVEL	74.25	ME
17-DEC-2002 11:12:58.726	0	BUCKET:TANK3.LEVEL	90.0	ME
17-DEC-2002 11:11:20.114	3	BUCKET:TANK6.LEVEL	74.25	ME
17-DEC-2002 11:10:56.330	0	BUCKET:TANK3.LEVEL	90.0	ME
12-JUN-2002 09:48:54.009	252	BUCKET	FAILED	FAI

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## Reference Guide

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# Alarm Banner

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