

Reference Guide

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OpenEnterprise HDA Server Reference Guide (V2.83)

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1 Bristol HDA Server

The Historical Data Access (HDA) Server follows the OPC Foundation Historical Data Access Specification to provide data to HDA aware clients (ie. the OpenEnterprise Trend Client).

Like all of the Client Server components, the HDA Server has its own User Interface (UI), which enables the user to specify and view the databases to which is connected, and control the way the UI behaves. When it is running, its icon is visible in the System Tray at the bottom right of the Windows

Desktop - [HDA Server](#). To display the UI, double click on this icon in the System Tray.

1.1 HDA Tag Format

The format of the OPC HDA Tag is a string in the following format:

```
BristolBabcock.BristolHDAserver\"<database>\".<tablename>\".<object key value>\".<log column name>\".<log control primary key>\".<data set collection rate>\"[.<timecolumn>\"]
```

Where...

Tag Element	Explanation
<database>	The Polyhedra database from which the historical data is to be sourced.
<tablename>	The table from which the historical data for the tag is sourced. This corresponds to the source attribute value of the associated OELOGCONTROL table entry)
<object key value>	This is the object key identifier for the object within the source table defined above, and would have the form; <KeyAttributeName:KeyAttributeDataType:KeyAttributeValue>, as per the OPC data access tag. The object key is either a Primary Key or a Unique Key.
<log column name>	The name and data type of the attribute being logged. This would have the form <ColumnName:ColumnDataType>. This is determined using the name attribute of the associated OELOGCOLUMN table entry.
<log control primary key>	The primary key value of the stream, (i.e. OELOGCONTROL table entry), through which the tag defined above is being logged.
<data set collection rate>	The collection rate of the data set from which the historical data is to be obtained. A value of "0s" indicates raw data, any other value indicates compressed data. This is sourced from the rate attribute of the associated OELOGDATA table entry.
<timecolumn>	Optional field indicating the external time column to be used instead of the default timestamp column. This is in the format of "timecolumn:<columnname>".

1.2 Client-Server Application Architecture

Most OpenEnterprise View components (e.g. Alarm View, Alarm Printer View, Trend View, OEGraphics View, Notes View) have what is known as three-tier Client-Server architecture. Each of the components listed above is a Client, which uses one or more Server components to provide them with the data that they request. This data is then displayed by the Client to the user. In turn, the Server component requests the data from what is usually a remote OpenEnterprise data source (Database Management System) running on an OpenEnterprise server. The Server component, is therefore a direct client of the OpenEnterprise database, but a Server of the OpenEnterprise View component (hence the term "three-tier"). Both Client and Server components must run on the same workstation, but the database usually runs on another machine.

1.3 Pre-Starting Server Components

All Server components are started automatically as a background process when a Client component starts up. They then close when the Client closes, except for the OPC and HDA Servers, which remain open by default. However, this can cause problems when Client components are being opened and closed rapidly. It is therefore recommended that Server components be started before any Client components begin requesting data from them. Obviously, if a Client component is not required, then the Server component is not required. The following are the Server components that should be started on an OpenEnterprise workstation before any of their 'Clients' begin running: -

- The Bristol OPC Server (Clients = OEGraphics and Trend View)
- The Bristol HDA Server (Client = Trend View)
- The Alarm Server (Clients = Alarm View, Alarm Banner)
- The Alarm Printer Server (Client = Alarm Printer View)
- The Notes Server (Client = Notes View)

These components reside in the OpenEnterprise bin directory (by default *C:\Program Files\Bristol\OpenEnterprise\bin*). They are executables, and may be started in any of the ways that an executable file is started (e.g. double clicking, batch file, Startup menu).

1.4 AutoTerminating OPC and HDA Servers

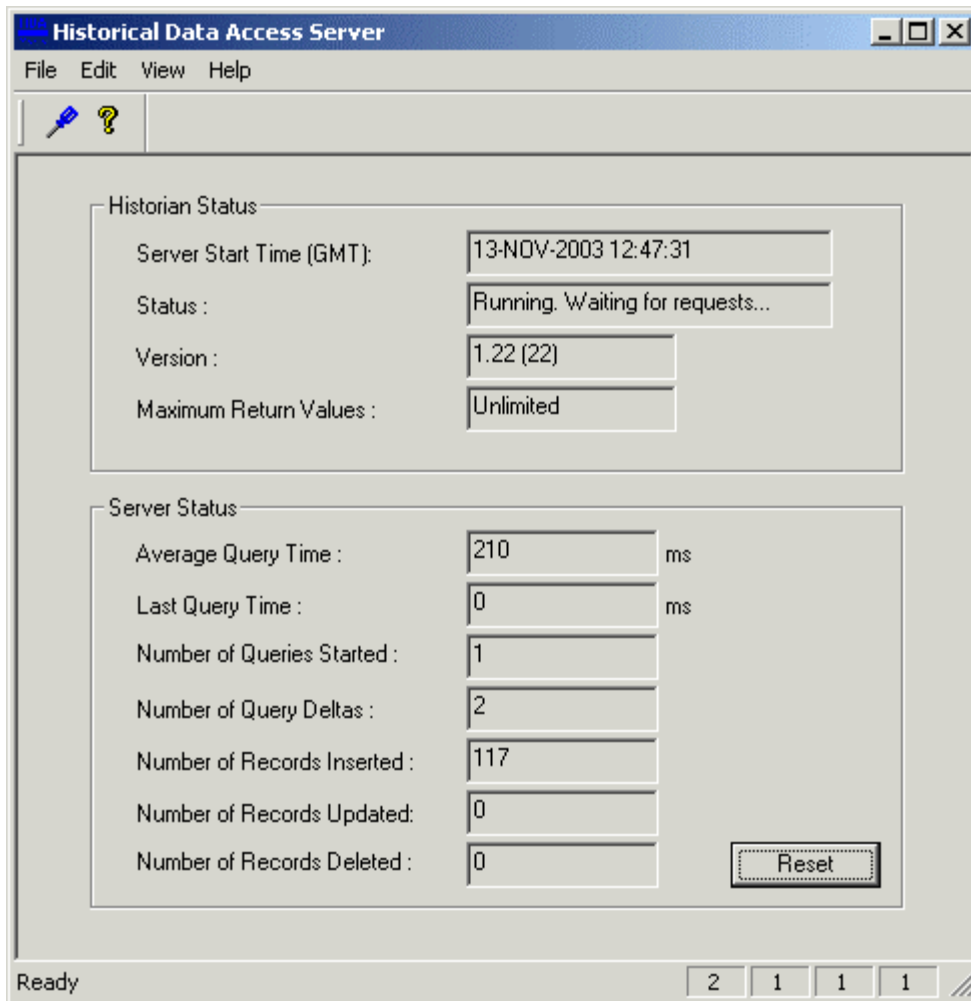
By default, the OPC and HDA Servers remain open when a calling Client closes.

This behaviour can be changed using the OpenEnterprise Settings Editor. Open the Settings Editor, and find the *OpenEnterprise\Tasks\BristolHDA Server* key. Then look for a value on this key named *AutoTerminate*. If one is not there already, create one, and set the data to 1.

To set the Server back to normal behaviour (i.e. to remain open when the Client closes) set the value data back to 0 (zero).

1.5 Historical Data Access Server

When visible, the HDA Server's Main Dialog shows statistical information about itself and provides the user with the ability to configure the Server.



1.5.1 File Menu

The File Menu provides an option to Exit the application. This will cause the application to close as a Windows process if the HDA Server is not currently supplying data to a client, but if it has a subscribing client, it will hide itself, but remain running as a process. The UI can be invoked again by double clicking on its icon in the System Tray.

1.5.2 Edit Menu

The Edit Menu provides an option to open the Properties dialog, which enables the user to configure pre-connect databases and the way that the UI behaves.

1.5.3 View Menu

There are two options available from this menu: -



1. **Toolbar** - when checked, the toolbar is visible under the Menu bar.
2. **Status Bar** - when checked, the Status Bar is visible at the bottom of the Main Dialog window. It displays information on the current status of the HDA Server.

1.5.4 Help Menu

This provides an option to open the About dialog, which provides information on the version and build of OpenEnterprise being used and contact information.

1.5.5 Toolbar

This contains two icons: -

- Properties icon  - selection opens the HDA Server Properties dialog.
- About icon  - selection opens the About dialog, which provides information on the version and build of OpenEnterprise being used and contact information.

1.5.6 Historian Status

The "Historian Status" information provides data about the Server; when it started, version, current status etc.

1.5.7 Server Status

The "Server Status" information provides details about what the server has been doing. For example, how many queries it has performed and how long they have taken etc.

1.5.8 Reset Button

Pressing this button will reset all of the Server Status information back to zero.

1.5.9 Servers Created



The number of Server objects created.

1.5.10 Browsers Created



The number of Browser objects created.

1.5.11 Running Queries



The number of queries running currently.

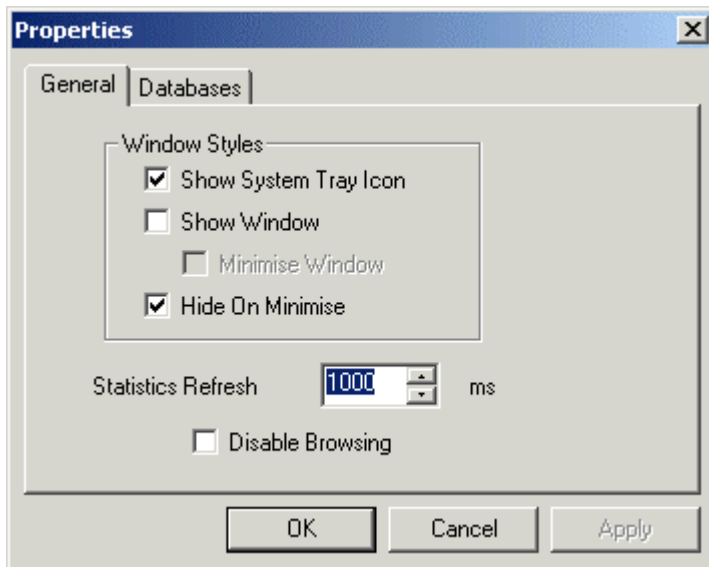
1.5.12 Database Objects



The number of database objects created by the HDA Server in response to requests made by OPC Clients. This does not necessarily mean the number of connected databases.

1.6 General Properties

This tab on the Property dialog enables the user to configure the way that the HDA Server User Interface behaves. Changes are implemented when the user selects the **[OK]** button at the bottom of the Properties dialog.



1.6.1 Show Icon on Task Bar

When checked will place an icon representing the HDA Server in the System Tray in the task bar. The default value is TRUE.

The icon will have two states. When the HDA Server is not busy the following icon will be displayed:



When it is busy, handling requests etc, the following icon will be displayed: -



Once finished processing the previous icon will be displayed.

Note: If the 'Show Window' is not set and the Show Icon on Task Bar is not set then the HDA Server will NOT be visible at all.

1.6.2 Show Window

When checked, the HDA Server's User Interface will be displayed on startup.

1.6.3 Minimize Window

A check in this box makes the window minimised. The default value is ON, which means that the window is displayed in minimised mode. To display the window in normal mode this box must be unchecked.

1.6.4 Hide on Minimize

If checked, when the HDA Server's User Interface is minimized, it will also be hidden. If the *Show System Tray Icon* box and *ShowWindow* boxes are unchecked at the same time that this box is checked, then at startup the HDA Server's User Interface will not be available.

The interface may be restored by using the Settings Editor to manually change the *ShowtrayIcon* value on the *OpenEnterprise\Tasks\BristolHDA Server* key to 1. A restart will be necessary before the change takes effect.

1.6.5 Statistics Refresh Interval

This field allows a user to configure the time (in milliseconds) when the HDA statistics will be refreshed. The default value is 1000ms (1 second).

1.6.6 Disable Browsing

This check box allows the user to prevent the HDA Server building browse information, reducing load time and resource usage.

1.6.7 OK Button

When this button is selected, changes made to any tab are saved, and the Property dialog is closed. Changes will be applied immediately.

1.6.8 Cancel Button

When this button is selected, the Property dialog is closed without saving any changes made on either tab.

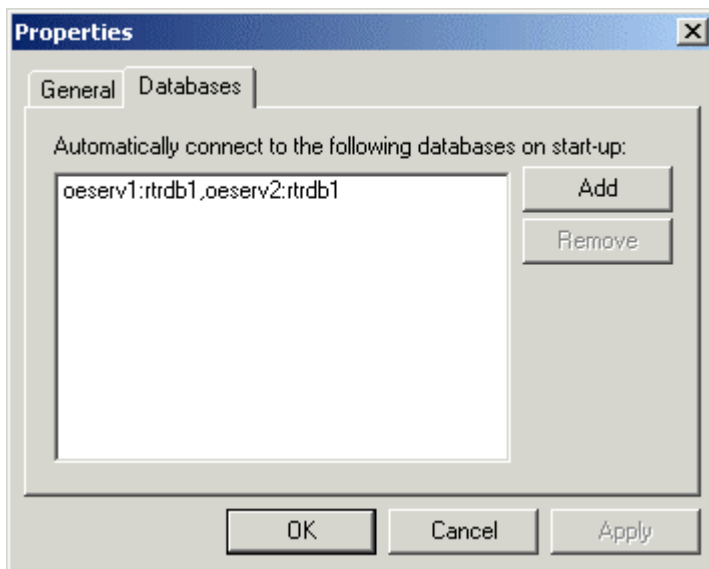
1.6.9 Apply Button

When selected, any changes made on the dialog are saved, but the dialog is not closed down.

1.7 Databases

1.7.1 Databases

This tab on the Property dialog enables the user to configure databases that the HDA Server will attempt to connect to next time it is started.



1.7.2 Auto Connect Database List

Displays the list of OpenEnterprise databases that the HDA Server will automatically attempt to connect with on startup.

1.7.3 Add Button

Selection of this button opens the Add New Database dialog, which enables you to define and add a new Database to the list.

1.7.4 Remove Button

Any database selected from the list is removed.

1.7.5 OK Button

When this button is selected, changes made to any tab are saved, and the Property dialog is closed. Changes will be applied immediately.

1.7.6 Cancel Button

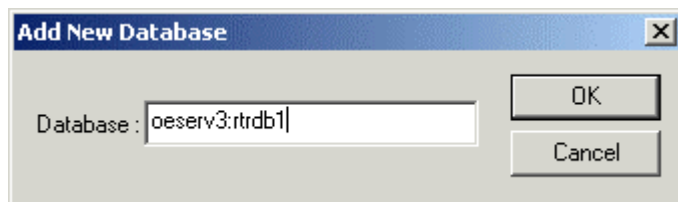
When this button is selected, the Property dialog is closed without saving any changes made on either tab.

1.7.7 Apply Button

When selected, any changes made on the dialog are saved, but the dialog is not closed down.

1.7.8 Add Database Dialog

The new OpenEnterprise Database should be typed into the 'Database' field using the <ServerName>:<DataPortName> database definition string. Then press **[OK]** to add the new Database to the list.



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