



Hyper Historian

Accessing Historical Values as OPC DA Data



APPLICATION NOTE

September 2013

Description: Using Hyper Historian OPC DA data

OS Requirement: Windows 8 x64 (Professional or Enterprise Edition), Windows 7 x64 (Professional or Enterprise Edition), Windows Server 2012 x64, Windows Server 2008 R2 x64, Windows Vista x64 SP2 (Business, Ultimate, or Enterprise Edition), Windows Server 2008 x64

General Requirement: Installation of GENESIS64 v10.7+ and basic knowledge of Hyper Historian and GENESIS64

Introduction

ICONICS Hyper Historian is a powerful, 64-bit, high performance plant historian. The Hyper Historian provides many features and functions for most mission critical applications demanding the highest level of availability and provides the highest performance possible by taking advantage of 64-bit hardware and software architectures, allowing it to access more CPU power and memory than traditional 32-bit-based historians.

One of the key features of the Hyper Historian is to provide full data replay functionality, which allow the user to not only see the logged data in trend windows, but also to show the data in the original SCADA/HMI process mimics.

This application note will show how to use Hyper Historian for replaying this data in GraphWorX64.

Using Hyper Historian Data Replay

The Hyper Historian will automatically make any value that is being logged available for data replay. For this purpose all historical logging tags are also exposed as OPC Data Access tags.

1. Open GraphWorX64 and insert a **Process Point** into the display and in the Data Browser select:
Home → OPC Classic Server → My Server → ICONICS.HyperHistorianDA.1 to show the OPC DA address space provided by the Hyper Historian Data Access Server as shown in Figure 1

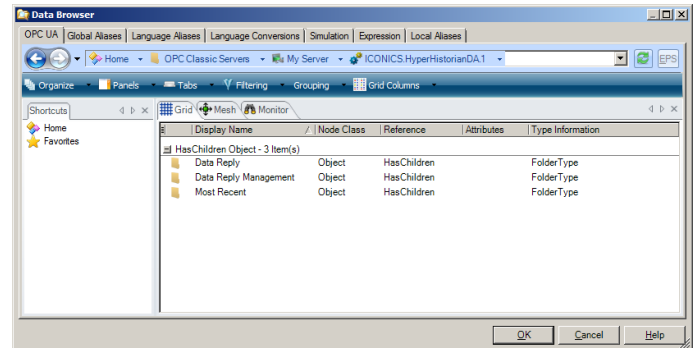


Figure 1 - Hyper Historian Data Access Server

Three main browse folders are provided by the Hyper Historian Data Access Server:

- **Data Replay**
This folder contains the tag hierarchy that can be browsed to select tags that can be replayed
- **Data Replay Management**
This folder contains the control tags to allow the user to go back and forward in time
- **Most Recent**
This folder contains the tag hierarchy to access the most recent (cached) value, this part of the Hyper Historian DA Server is especially useful when triggers or alarms have to be generated after the value has been logged and stored in the Historian database

2. Expand the **Data Replay** folder, and browse for a tag that has been logged by the system as shown in Figure 2, e.g. `@ICONICS.HyperHistorianDA.1\LogGrp\OPCUA\Ramp.%Context.Value`

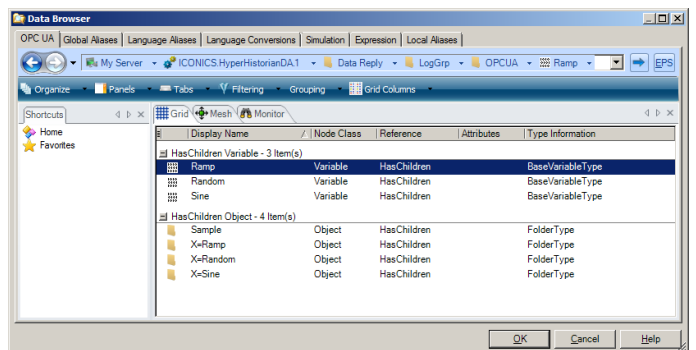


Figure 2 - Selecting Tag for Replay

It should be noted that the selected tag has a context flag in it, by default the context is set to `%Context`, this means that all tags within this context will be controlled by the Time control tag using the same context. The context identifier can be changed to suit the needs of the application. Hyper Historian is capable of



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independently maintaining and controlling multiple concurrent contexts.

3. Expand the **Data Replay Management** folder to access the Time control tag:
`@ICONICS.HyperHistorianDA.1\.%Context/Time.Value`
4. The context identifier can be changed as required. For the purpose of this setup, it can be left unchanged.
5. After entering runtime in GraphWorX64, the Time tag will show the default value of 12/30/1899 12:00:00 AM, this means that the current value is shown in the replay tag. Changing this value to another time will update the other tags on the screen. Please note that the Time will have to be specified in UTC/GMT.

Concurrent Contexts Example

This example will show how concurrent contexts can be used in GraphWorX64 and will use sample Hyper Historian configuration database that is installed with Hyper Historian.

1. Open Workbench and ensure that the Hyper Historian sample configuration is active and Hyper Historian is running
2. Open GraphWorX64 and follow the instructions in the previous section 'Using Hyper Historian DataReplay' to add a Data Replay tag for the tag:
`@ICONICS.HyperHistorianDA.1\LogGrp/OPCUA/Ramp. %Context.Value`
and a **Data Replay Management** (time) tag:
`@ICONICS.HyperHistorianDA.1\.%Context/Time.Value`
3. Do the above twice so that you end up with two pairs of the Data Replay and Data Replay Management as shown in Figure 3. This will allow us to apply a different context to each of the Data Replay tags

	Data Replay Tags	Data Replay Management
Context1	*.??	*.??
Context2	*.??	*.??

Figure 3 - Multiple Data Replay Tags

4. For the first pair of tags change the %Context to be %Context1. You should end up with the Data Replay tag as:
`@ICONICS.HyperHistorianDA.1\LogGrp/OPCUA/Ramp.%Context1.Value`

and the Data Replay Management tag as:
`@ICONICS.HyperHistorianDA.1\.%Context1/Time.Value`

5. Repeat the above for the second pair but set %Context to Context2

NOTE: %Context can be changed to any text you require as long as it is prefixed with %.

6. Put GraphWorX64 into runtime. You should now be able to change one or both of the time tags from the default value 31/12/1899 00:00:00 to your new value. This time value however will only apply to the Data Replay tag which uses the same context value.

	Data Replay Tags	Data Replay Management
Context1	73.21	12/30/1899 12:00:00 AM
Context2	53.09	9/5/2013 11:00:00 AM

Figure 4 – Changing time for Data Replay tags