



OPC ToolWorX – Using TraceWorX32 to Troubleshoot OPC Servers



APPLICATIONS NOTE

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Description: Guide to use TraceWorX32 to troubleshoot OPC ToolWorX 3.x OPC Server issues

OS Requirement: Win 2000, XP Pro, Server 2003, Vista, Server 2008, Windows 7

General Requirement: Requires OPC ToolWorX v.3.x

Introduction

TraceWorX32 (also referred as ReleaseTrace) provides online diagnostics and tuning of all OPC servers build on top of OPC ToolWorX (from version v3.1).

TraceWorX32 tracks the runtime activity for each OPC server application and logs the runtime data to a log file based on user-configured trace levels. The log file provides a thorough, color-coded report detailing all activity for the application, including the time, the date, the severity level, and a description of the event or problem.

TraceWorX32 also features several options for reporting issues to technical support. If you are experiencing problems with any applications, the log file deployment options, such as compressing and e-mailing log files, are ideal for tracking and archiving data and sending detailed reports to technical support. Developers can use these reports to identify the source of the problems.

Runtime activity is logged to the log file based on the trace level specified (value 0 - 1000). The trace level corresponds to the severity level of the runtime activity for the module. Runtime activity with a severity level greater than or equal to the specified trace level will be logged to the log file. For example, a trace level of Normal (600) filters out all activity with a severity level less than 600.

By default, tracing for modules is not enabled (i.e. the trace level is 1000). To log all activity to the log file (without regard to severity), set the level to 0 (logging all).

NOTE: Enabling tracing can slow down performance of ICONICS Applications. It is recommended to enable it only for debugging purposes.

TraceworX32 Registration and Un-registration

TraceWorX32 module is automatically registered with the OPC server as part of server's registration. The same applies for unregistration. After you register your server, you will find new ReleaseTraceModuleDesc INI entry in TraceWorX32.ini file (C:\Documents and Setting\All Users\Application Data\ICONICS).

NOTE: If OPC server is not added automatically, you can add it manually with entering proper ini entries.

Configuring Trace Parameters for OPC servers

There are configurable INI entries settings specified for each OPC server that you can change in order to fine-tune TraceWorX32 for the OPC server. You can create the entries in TraceWorX32.ini file (in C:\Documents and Setting\All Users\Application Data\ICONICS).

There are several ways how to configure the TraceWorX32 parameters:

- You can use the TraceWorX32 user interface that you find in Start Menu folder of the OPC ToolWorX.
- You can use the OPCAdmin application. (See more information on the OPCAdmin application in the product documentation.)
- You can create/modify/remove the entries manually.

The following are registry entries (configurable parameters):

Trace Level

Registry value name: ReleaseTraceLevel

Description: Trace level value.

Values: 0 to 1000 - default is 1000 (i.e. no logging).

Log File Location

Registry value name: ReleaseTraceLogFile

Description: Full path to release trace log file.

Max File Size

Registry value name: ReleaseTraceMaxFileSize

Description: Max size of the active logging file (in Megabytes) before archiving. A value of zero means no limit. Archiving consists of deleting the old archive file, renaming the active file with the archive file name and creating a new active file.

Module Description

Registry value name: ReleaseTraceModuleDesc

Description: Specifies the module name in TraceWorX32user interface

Example of INI entry for ICONICS OPC server:

```
[DATASTORE OPC-DA SERVER]
ReleaseTraceModuleDesc=DataStoreOPCRuntime
ReleaseTraceLevel=400
ReleaseTraceMaxFileSize=0
ReleaseTraceLogFile=D:\Testing\DataStoreOPCRuntime.exe.log.xml
```

Trace levels used in TraceWorX and OPC ToolWorX

Table 1 shows the levels defined by TraceWorX32 and Table 2 shows the levels defined by OPC ToolWorX.

Table 1 - TraceWorX32 Levels

Trace Level	Description
1000	RELTRACE_LEVEL_NONE
900	RELTRACE_LEVEL_SEVERE_ERROR
800	RELTRACE_LEVEL_ERROR
700	RELTRACE_LEVEL_WARNING
600	RELTRACE_LEVEL_NORMAL
400	RELTRACE_LEVEL_DEBUG
100	RELTRACE_LEVEL_DEBUG_VERBOSE
0	RELTRACE_LEVEL_ALL

Table 2 – OPC ToolWorX Trace Levels

Trace Level	Description
100	OPCTK_RELTRACE_LEVEL_DEBUG_OK
150	OPCTK_RELTRACE_LEVEL_DEBUG_WARNING
200	OPCTK_RELTRACE_LEVEL_DEBUG_ERROR

You can also specify your own level in case these definitions do not fit your needs. You can put the TraceWorX32 traces into your code fairly easily. To do so, use the predefined TRACEWORX_MSG macro definition that should be accessible from most places in your code. The syntax of the macro definition is TRACEWORX_MSG(Msg, wLogLevel), where Msg is your trace message, and wLogLevel is the trace level. Here is a typical example:

```
TRACEWORX_MSG("This is my trace message",
RELTRACE_LEVEL_NORMAL)
```