GENESIS64 – Trigger an Alarm when TrendWorX64 Stops Logging

APPLICATION NOTE

October 2015

Description: Guide to setting up an alarm that is triggered if the TrendWorX64 Logger stops logging.
General Requirement: General knowledge of TrendWorX64 Logger, GridWorX64 Server, and AlarmWorX64 Server.

Introduction

In some cases we need to know if the TrendWorX64 Logger is properly logging new values into SQL database. There could be a problem in the network connection, an unstable OPC server, corrupted data, or any number of things that can cause data to stop logging. To help warn when this has happened, this application note will walk you through using GridWorX64 to monitor the TrendWorX64 Logger database and trigger an alarm if the TrendWorX64 Logger stops logging. We will do this by checking the timestamp of the latest sample in the database and triggering an alarm if the timestamp becomes too old.

Before Getting Started

Before we start configuring GridWorX64 Server and AlarmWorX64 Server there are a few things we need to find out from the TrendWorX64 Logger. This App Note is using the Workbench Classic.

1. **Are you logging in Local or UTC time?** Most loggers log UTC time, but if your TrendWorX64 Logger does not have "Use UTC Time" checked in the configuration you are logging in local time.
2. **Pick a logging group.** These steps will monitor the logging for an individual logging group. Usually (but not always) when logging stops for one group it means logging has stopped for the whole logger. Choose a group that logs a sample most frequently out of all of your groups.

   NOTE: If you want to monitor more than one group you can. The easiest way is to repeat the steps in this application note for each group and create a one alarm for each group.

3. **Find the table name of the logging group.** In your TrendWorX64 Logger configuration, open the logging group and go to the Table(s) Management Tab. Note the table name of the logging group. We will use this later.
4. **Decide on the alarm time.** We need to determine how long a period of time needs to pass since the last sample timestamp before we trigger the alarm. A good time depends on a lot of factors, such as:
   a. **How often does your data change?** If it's normal for your data to go five minutes between changes then the alarm time should be longer than five minutes.
   b. **How often are you logging to database?** The data is not available until it is logged. The Logging tab of the logging group determines when data gets put into the database. If you are logging On Interval every hour then your alarm time should be longer than an hour.
   c. **How soon do you need to be notified?** If you need to be notified very quickly when logging stops you will want a shorter time.

   Considering those factors, choose the amount of time the alarm will wait since the last sample before it triggers. The shorter the alarm time the sooner you will be notified if a problem happens, but the more chance of getting a "false positive" (an alarm when logging has not stopped).

Creating GridWorX64 Data Source

First, we will create a GridWorX64 data source that will report the number of seconds it has been since the last sample was logged.

NOTE: For more information on how to configure GridWorX64 Server, consult the help files.

1. Open the GridWorX64 Server provider in Workbench.
2. Create a new database connection to connect to your TrendWorX64 logging database.
3. Add a new Data Source to your new database connection.
4. For the SELECT command, choose the manual SQL editor and add the following SQL query.

```
SELECT DATEDIFF(ss, MAX(table_end_time),
GetUtcDate()) AS SecsSinceUpdate from
YourTableName_Info
```

Adjust the SQL query as needed. Replace YourTableName (in green) with the name of the table for your logging group. (Make sure to keep the _Info on the end of the table name.)

Most logging takes place in UTC time, but if you are instead logging in local time, replace GetUtcDate (in blue) with GetDate.

Depending on your alarm time, you may want to replace ss (in red). "SS" indicates that the value will be returned in seconds. If your alarm time is better measured in minutes or hours you may want to change it to mi (minutes) or hh (hours). You may also want to change SecsSinceUpdate to something more appropriate (like MinsSinceUpdate), but that is optional.

NOTE: See your SQL Server documentation for more information about the DATEDIFF function.

5. Make sure to test your query to see if it is returning a reasonable value. It should be the number of seconds (or minutes, or hours) since the last sample was logged.
6. You may want to update the Data Refresh period, which is how often GridWorX64 Server will re-run the query. A faster refresh will be a more accurate value, but will put more stress on your machine. Keep your alarm time in mind. If your alarm time is two hours, you do not need to refresh the GridWorX64 tag every second.
7. Hit Apply when done. Your data source should look something like Figure 1.

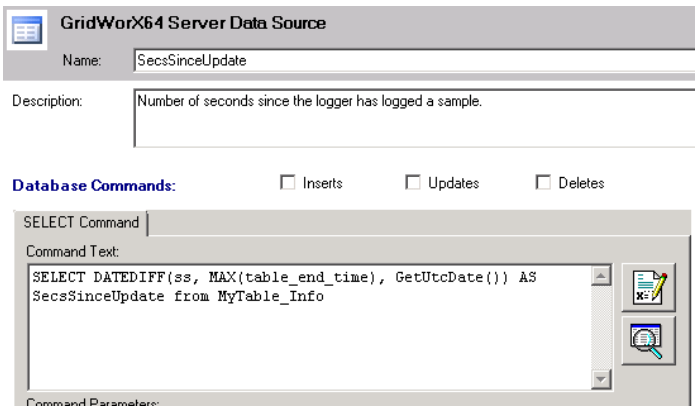

Figure 1 - GridWorX64 data source definition

8. You can test this GridWorX64 tag further by adding it to a process point in GraphWorX64. Browse for the tag under Home → Databases. You can stop your TrendWorX64 Logger as a test, and you should see this value increase until logging is started again.

Creating an Alarm

1. Open the AlarmWorX64 Server provider in Workbench.
2. Create a new alarm. For the OPC Input, browse to the GridWorX64 tag, which can be found under Home → Databases.
3. Configure a limit alarm where the Hi limit is the number of seconds (or minutes, or hours) for your alarm time. For example, if your GridWorX64 tag is returning the number of minutes and you want to alarm if five minutes have passed with no sample, configure the Hi limit to be 5. You may configure a HiHi limit as well, if you want. Hit Apply when you are finished configuring your alarm, which may look like Figure 2.

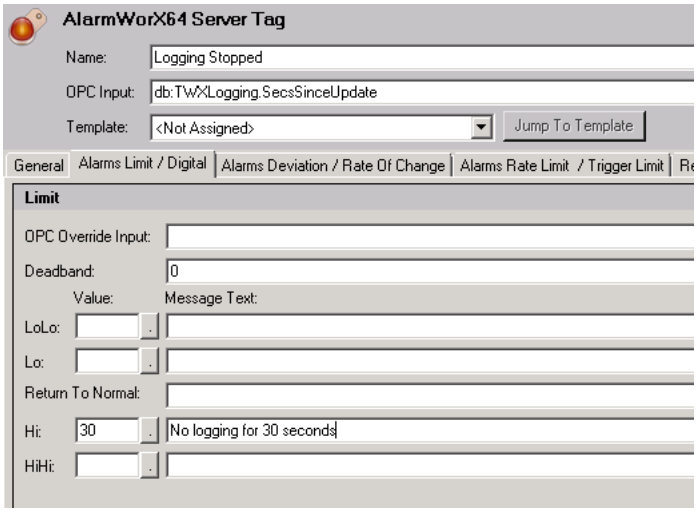

Figure 2 - AlarmWorX64 alarm tag

4. Take a look at an existing AlarmWorX64 Viewer or create a new one, stop your logger, and watch for your alarm.

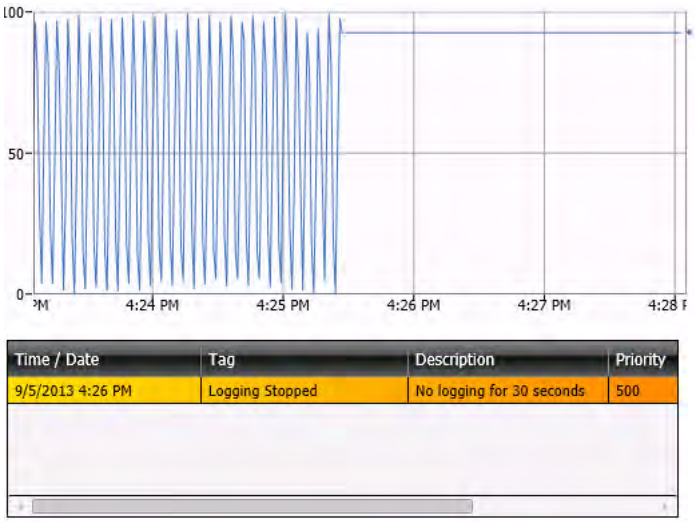

Figure 3 - Successful alarm