AlarmWorX32 Logger - Efficient and Robust Alarm Archiving

APPLICATIONS NOTE

October 2013

Description: Guide to set and use high efficient and robust alarm archiving for high alarm volume applications
OS Requirement: Win 2000, XP Pro, Server 2003, Vista, Server 2008, Windows 7
General Requirement: GENESIS32 version 9.2 must be installed.

Introduction

In GENESIS32 version 9.2, the AlarmWorX32 logger has been updated to support two additional archiving modes. You can set the appropriate archiving mode by providing a value in the **Archive Mode** option in the Table(s) Management page. By default the value is set to 0. The modes available are as follows:

- **ARCHSTANDARD** which takes the value of 0. This makes use of iteration through archive tables
- **ARCHVIEW** which takes the value of 1. This creates a view to facilitate copying and deleting records
- **ARCHSQL** which takes the value of 2. This uses comment table elements (CTE) to copy and delete
- **ARCHSETTIME** which takes the value of 3. This Archives once daily. All records are moved at time of archive.
- **ARCHDAILYTABLE** which takes the value of 4. This creates one new archive table once each day. Records are archived each archive period based on Standard mode archive.

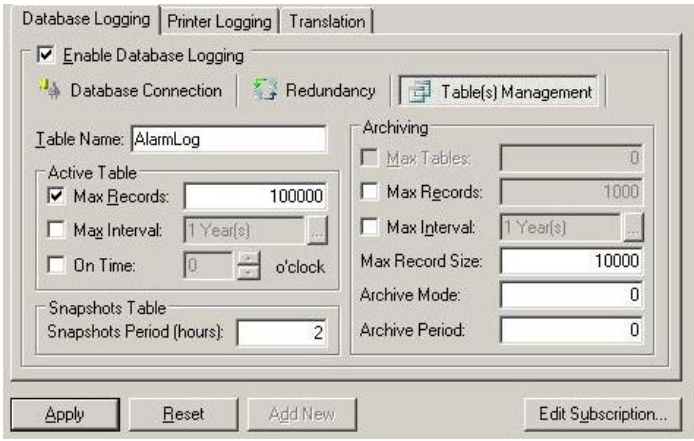

Figure 1 - Alarm Logger Configurator: Table(s) Management

Another setting we have added for archiving is the **Archive Period**. It is set in milliseconds and by default it is set to 3600000 (1 hour). This sets the how often the logging service checks the logging database and compare to the archiving limits. Once the logger find the Active table for historical alarms reach its limits (for example Max rows), it starts archiving older items.

> **NOTE:** The AlarmWorX32 Logger checks the limits on start of the service as well. It can start archiving immediately after the service start. For more details on how to configure the other Archiving parameters, please refer to the AlarmWorX32 Logger help files.

These settings are also configurable in the **IcoSetup.ini** file located in \Documents and Settings\All Users\Application Data\ICONICS

```
[AWX32\AWXLog32]
...
ArchivePeriod=3600000
SetArchiveMode=0
```

Why Five Different Settings

While we give you the flexibility to choose between three different archive modes, it may be difficult for you to decide which one is right for you.

Table 1 shows some information about each archive mode and how it affects performance. You should note the following conditions:

- All performance tests were initially run on a low performance system
- There is a common trigger query that must be performed once at the start of each archive time period. This query is believed to be the current bottle neck on establishing the maximum log table size that can be successfully archived
- The chunk size is set based on 'Max Records' value in the AlarmWorX32 Logger Configurator. Performance will degrade as this setting increase.
- It is expected that enabling 'Archive table time limited' support will slow down through-put performance.
- Estimated improvement 2300% to 2600%.

Table 1 - Archive Modes Compared

	Archive Mode Value	Supported Feature	Database Support	Performance	Active Table Size Limit	NOTES
ARCHSTANDARD	0	Archive on size, archive on time, archive table size limit, archive table time limit	MS SQL, Access, MySQL, Oracle	11 min 24 sec to move 100,000 records in 100,000 record chunks	1 – 1.5 million records	
ARCHVIEW	1	Archive on size, archive on time, archive table size limit	MS SQL 2005 and later, Oracle	2 min 49 sec to move 700,000 records in 100,000 record chunks	Unknown	This is memory intensive. It also requires a patch for SQL 2005 and up: http://support.microsoft.com/kb/926292
ARCHSQL	2	Archive on size, archive on time, archive table size limited	SQL 2005 and later	2 min 40 sec to move 700,000 + records in 100,000 record chunks	Unknown	This is only available for SQL 2005 and later
ARCHSETTIME	3	NA	SQL 2005 and later	Unknown	Greater than 1.5 million records	This is only available for SQL 2005 and later
ARCHDAILYTABLE	4	Archive on Size, Archive on Time, Archive table size limited. Archive table time limited	SQL 2005 and later	Unknown	Greater than 1.5 million records	This is only available for SQL 2005 and later