ProfiView

ProfiView 1.7

Reporting & Alarming manual

ver. 1.02

History track:

Ver.	Name	Date	Description
1.01	Maca P.	26.4.2010	Initial creation
1.02	Maca P.	29.7.2010	Correction after ver 1.7 patching.

1. About this document

Profiview offers very simple mechanism of reporting and alarming. This document is to describe what is the possibility and what is the potential of reporting and alarm in actual version of ProfiView. This document doesn't describe how to configure ProfiView alarm manager. Look into ProfiVIew Configuration manual to see how to configure ProfiView Alarm manager.

2. What is ProfiView

ProfiView is software which can:

Visualize graphically and textually production process, measurement of quantities etc...
Monitors production status, process, running systems etc...
Alarming of unexpected situations, values etc...
Reporting of monitored process or measurement.

ProfiView is a cheap and effective tool with modular architecture, which is possible to use in any area, where you need to visualize or monitor some process or status, where you need regularly report the status or process and alarm unexpected or limit situations/values.

ProfiView, thanks to it's modularity, is able to communicate with any device, which offers digital interface with implemented any communication protocol. You just need to have the right module for ProfiView. ProfiView still extends the device portfolio. Ask for support of your device.

Typical application of ProfiView is connection to industry PLC, e.g. product of OMRON, read memory of PLC, and then visualize them in pictures or text or numbers on the screen.

Example of application: Monitoring and reporting of sewage plant process, monitoring of machine run in production hall and calculation of productivity, monitoring and visualization free parking places.

ProfiView is free to download on **http://profiview.maxpro.cz** (under shareware licence). You can purchase support, installation, configuration, development and more.

2.1. Technical parameters of ProfiView ver 1.07

- Multi OS software (Windows, Linux), tested for Windows XP, Windows Vista
- Easy configuration and application change
- Detailed documentation for installation and project configuration
- Supports PLC with RS232 cable interface
- Supports remote connection via AT modem, AT GSM modem.
- Supports e.g. OMRON PLC with CMODE protocol – for other go to **http://profiview.maxpro.cz**
- Detailed logs of ProfiView activity = easy trouble shooting and analysis
- Possibility to integrate your own communication modules (for developers)
- One installation can handle more implementations/configuration (projects)
- Supports more languages: English, German, Czech
- Free download, under Shareware licence

3. ProfiView reporting

Each software usually needs a kind of reporting, which enables the user to report daily activity or some kind of statistical or historical information. Example of statistic information can be liquid rate of flow, time of running machine, number of events with it's details like time stamp, status value etc.
Profiview contains reporting mechanism, which is so easy, that each user with basic PC skills can manage such reporting.

Reporting is made of 2 steps:

- get statistical input (records of machine/process behavior or statuses)
- build a summary files/sheets presenting the big amount of statistical records/inputs

Basic principal is in logging of the interested values. ProfiView configuration of Memory objects allows the user to define, whether the memory value will be reported or not. See ProfiView Configuration Manual , `MObject` configuration, attribute `"report"`, for more details. This will make sure, that each time, when ProfiView will read the value of `MObject`, this values will be recorded into specific log file. The log file location is in installed directory - subdirectory `"logs"`. The destination can be reconfigured in configuration file `log4j.properties`.

Each application of ProfiView may require different statistical processing of report file (log), **therefore there is not unified process or tool how to manage the reports**. This is up to software integrator to prepare specific report calculation. We recommend using PERL programming language, because it is dynamic, very flexible and very fast or development. Other possibility is to upload the file into database and make the processing in the database. There are other chances how to process report files, therefore we keep it up to software integrator to prepare it for the customer.

4. Report file format

If you keep default configuration after installation, then you can find the report file in installation directory, subdirectory `"logs"`. The default file name is `"reporter.log"`. This file is a text file, where on each line is record of one `"MObject"`. The record is added to the file in the moment, when ProfiView is successfully reading the value from the machine (e.g. from PLC memory). If the value cannot be read for any reason (like error in connection, error checksum etc.) then the failure is not recorded in report file. Such failure can be found in `"profiview log"`.

The report file contains records which are made of following details:

Name	Format	Description
Date	YYYY.MM.DD	Date when record was created (follows system date)
Time	HH24:mm:ss:ms	Time when record was created (follows system time)
MObject name	String	Name of MObject – see configuration manual
Value	Value with decimal point	Value with decimal point.

Example of report file from default project:

```
2010.07.29;21:26:52:218 ;tank1;0.0
2010.07.29;21:26:52:218 ;tank2;20.0
2010.07.29;21:26:52:218 ;pump1;2.0
2010.07.29;21:26:52:234 ;pump2;6.0
2010.07.29;21:27:02:250 ;pump1;3.0
2010.07.29;21:27:02:250 ;tank2;30.0
2010.07.29;21:27:02:265 ;pump2;7.0
2010.07.29;21:27:02:265 ;tank1;10.0
2010.07.29;21:27:12:265 ;pump1;4.0
2010.07.29;21:27:12:281 ;pump2;8.0
2010.07.29;21:27:12:281 ;tank1;20.0
2010.07.29;21:27:12:296 ;tank2;40.0
2010.07.29;21:27:22:281 ;pump1;5.0
2010.07.29;21:27:22:281 ;pump2;9.0
```

5. Alarming

ProfiView offers alarming mechanism as tool for improving monitoring process. The alarm is a kind of event on the users screen, which is popping up over all windows and informing, that something happened. It is used for maintenance, which doesn't need to watch all the time the screen. The alarm can be followed be sound signal.

Basic idea is, that each monitored value (`"MObject"` according to ProfiView Configuration Manual) can have some value at each time. But some value may be alarming values, like tank is too full, engines stopped, no pressure in pipes, no liquid flow etc.

How to configure ProfiView to monitor `"MObjects"` and generate Alarm is covered by ProfiView Configuration Manual. Alarming is managed by ProfiView Alarm Manager. This alarm manager makes sure, that each alarm relevant event is recorded into a kind of log file. In default installation is the file located in ProfiView directory, subdirectory `"logs"`. The default file name is `"alarms.log"`. You can reconfigure location and file name in `log4j.properties` file.

There are 3 types of alarm, that can be configured in ProfiView:

Threshold up – Such alarm will be triggered if value of monitored `MObject` will go higher then some thresh hold. The threshold is configurable value in ProfiView project configuration, in section <ALARMMANAGER>. See ProfiView configuration manual.

Threshold down – Such alarm will be triggered if value of monitored `MObject` will go lower then some thresh hold. The threshold is configurable value in ProfiView project configuration, in section <ALARMMANAGER>. See ProfiView configuration manual.

Equal – Such alarm will be triggered if value of monitored `MObject` is equal to preconfigured value. The threshold is configurable value in ProfiView project configuration, in section <ALARMMANAGER>. See ProfiView configuration manual.

In principal the alarm would be generated each time, when ProfiView will find out, that value of monitored `MObject` is fitting the condition from configuration. However if monitoring of the `MObject` is periodical e.g. every second, then the window of alarms would be full in half of minute. Therefore ProfiView Alarm Manager registers so called **first occurrence**, **last occurrence** and **duration** of the specific alarm.

First occurrence says when the alarm was observed first time.
Last occurrence says when the alarm was observed last time
Duration says what is the time between first and last occurrence.

Configuration of alarm works with another value and it is maximal age of alarm. This value defines when disappear the alarm from Alarm Manager window. If time between last occurrence and current time is higher then alarm maximal age, then Alarm Manager will remove the alarm from Alarm window.

Even Alarm Manager shows only relevant information in the window on the screen, **in alarm log you will find each occurrence of the alarm.** It is recorded in this log file with all relevant information.

Last parameter we have to explain is **severity** of the alarm. This we can understand as priority of the alarm. The severity defines color, which is used to display the alarm in the window. Severity 1 is the most important alarm, severity 3 is the alarm with low importance.

Example:

Alarm configuration values (in ProfiView project configuration file)

Alarm type: *Thresholdup*
Value: *10.0*
Maxage: *60*
Severity: *1*

Explanation of the values and logic of Alarm Manager:

Time: 13:01:00 MObject value = 9.9 No alarm generated

Time:	13:05:00	MObject value = 10.0	No alarm generated
Time:	13:08:00	MObject value = 10.1	Alarm generated – first occurrence = 13:08:00, last occurrence = 13:08:00
Time:	13:10:00	MObject value = 10.5	Alarm still on the screen last occurrence = 13:10:00
Time:	13:12:00	MObject value = 9.9	Alarm still on the screen, but not no record in alarm.log
Time:	13:25:00	MObject value = 10.1	Alarm still on the screen, last occurrence = 13:25:00 Alarm again recorded in alarm.log
Time:	14:25:00	MObject value = 9.9	Alarm removed from alarm window
Time:	14:25:01	MObject value = 10.1	Alarm generated – first occurrence = 14:25:01 Last occurrence = 14:25:01

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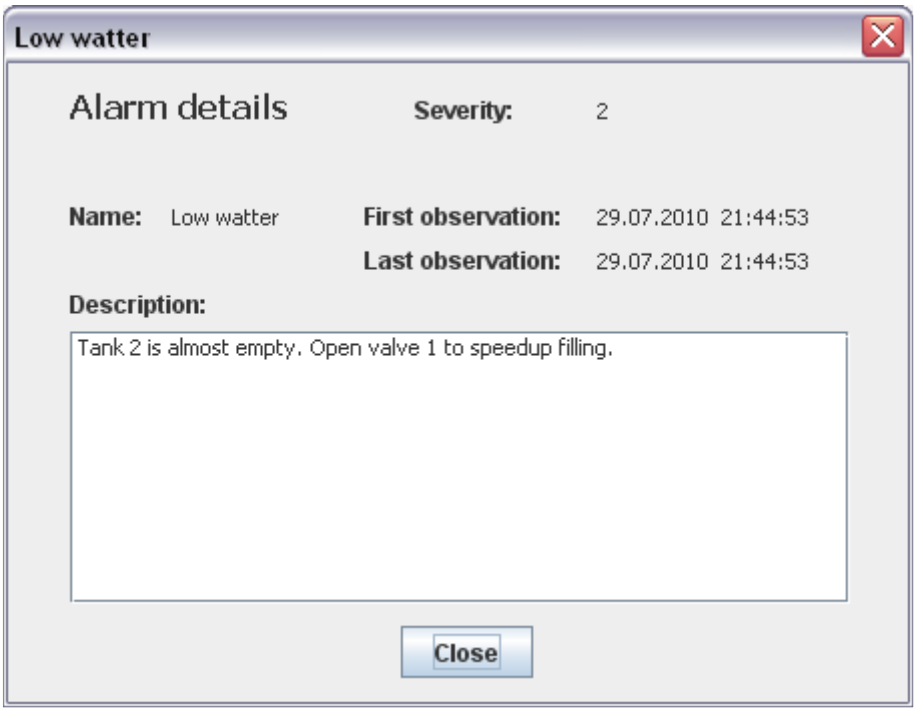
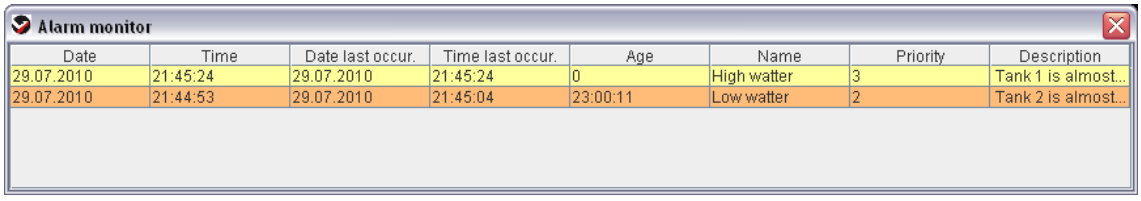
Note: Between 13:08:00 and 14:25:00 is recorded into alarm.log each occurrence of the alarm even it has no impact on displayed information (except last occurrence date/time).

Alarm details window:



Alarm manager window: