The Events notification plugin
PRINTED MANUAL

Events notification plugin

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1 Introduction

This plugin handles our data loggers' internal events and allows you to send messages or notifications about these events in various ways.

Once an event occurs (for example: "Port opened" or "Configuration changed"), the plugin creates a text message using the specified template and sends a notification.

The form of the notification depends on the plugin settings.

The plugin supports the following notification types:

- Sending messages via e-mail.
- Sending a message to a remote computer on the network (Window 2000+).
- Opening a message box on a local computer.
- Launching a program or script.
- Playing a sound.
- Sending an instant message to Telegram or Slack.
- Sending an SMS using a mobile phone or web service.
- Each event type can have individual notification settings.

2 System requirements

The following requirements must be met for "Events notification" to be installed:

Operating system: Windows 2000 SP4 and above, including both x86 and x64 workstations and servers. The latest service pack for the corresponding OS is required.

Free disk space: Not less than 5 MB of free disk space is recommended.

Special access requirements: You should log on as a user with Administrator rights in order to install this module.

The main application (core) must be installed, for example, Advanced Serial Data Logger.

3 Installing Events notification

1. Close the main application (for example, Advanced Serial Data Logger) if it is running;
2. Copy the program to your hard drive;
3. Run the module installation file with a double click on the file name in Windows Explorer;
4. Follow the instructions of the installation software. Usually, it is enough just to click the "Next" button several times;
5. Start the main application. The name of the module will appear on the "Modules" tab of the "Settings" window if it is successfully installed.

If the module is compatible with the program, its name and version will be displayed in the module list. You can see examples of installed modules on fig.1-2. Some types of modules require additional configuration. To do it, just select a module from the list and click the "Setup" button next to the list. The configuration of the module is described below.

You can see some types of modules on the "Log file" tab. To configure such a module, you should select it from the "File type" list and click the "Advanced" button.
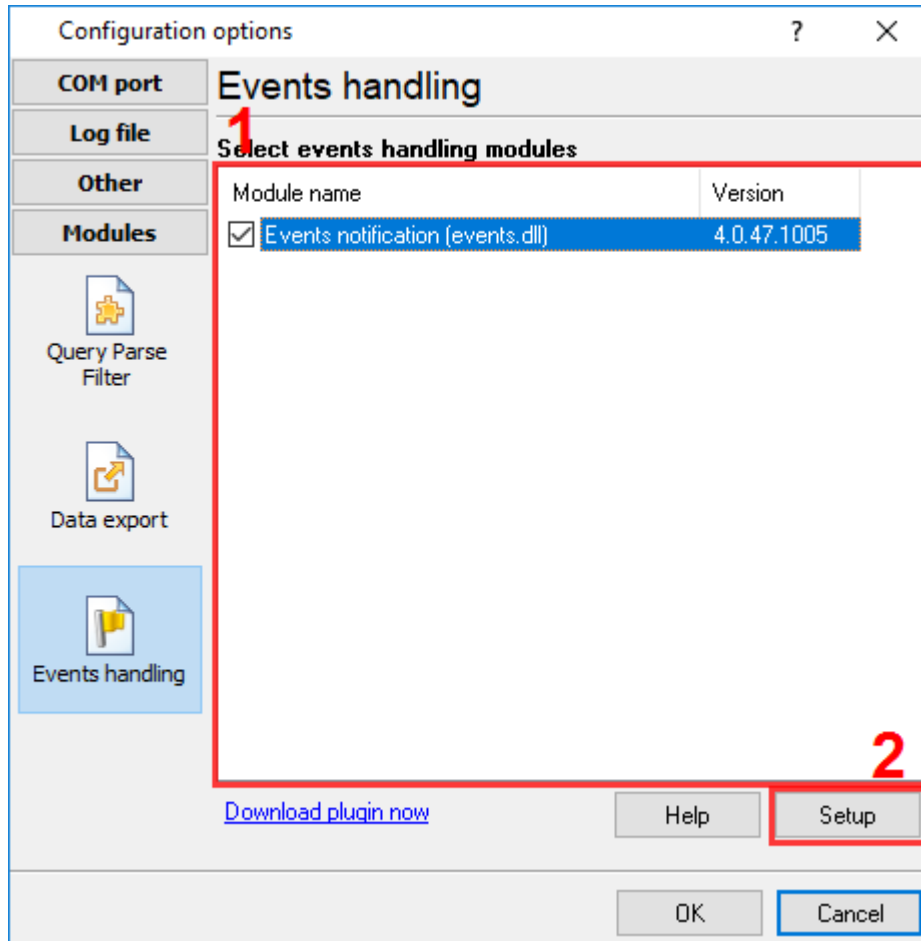
Fig. 1. Example of installed module

4   Glossary

Main program - it is the main executable of the application, for example, Advanced Serial Data Logger and asdlog.exe. It allows you to create several configurations with different settings and use different plugins.

Plugin - it is the additional plugin module for the main program. The plugin module extends the functionality of the main program.

Parser - it is the plugin module that processes the data flow, singling out data packets from it, and then variables from data packets. These variables are used in data export modules after that.

Core - see "Main program."

5   Plugin settings

Before you start using the plugin, you should configure it. The settings are specified in the settings window that you open in the main program. Click the "Plugin selection and configuration" button on the toolbar or select "Options - Settings" in the menu, open the "Modules - Events handling" tab. After that, select the line with the plugin name and press the "Setup" button.

The plugin has two types of settings:

1. Preferences - general settings of the nodule applied to all events and notifications. To edit them, select the "Preferences" item in the navigation tree to the left of the dialog window;
2. Actions - settings specified separately for each event. To edit settings common for all events, select the "Actions" item in the navigation tree. To edit settings for each event separately, select a sub-item with the name of the corresponding event in the "Actions" item.
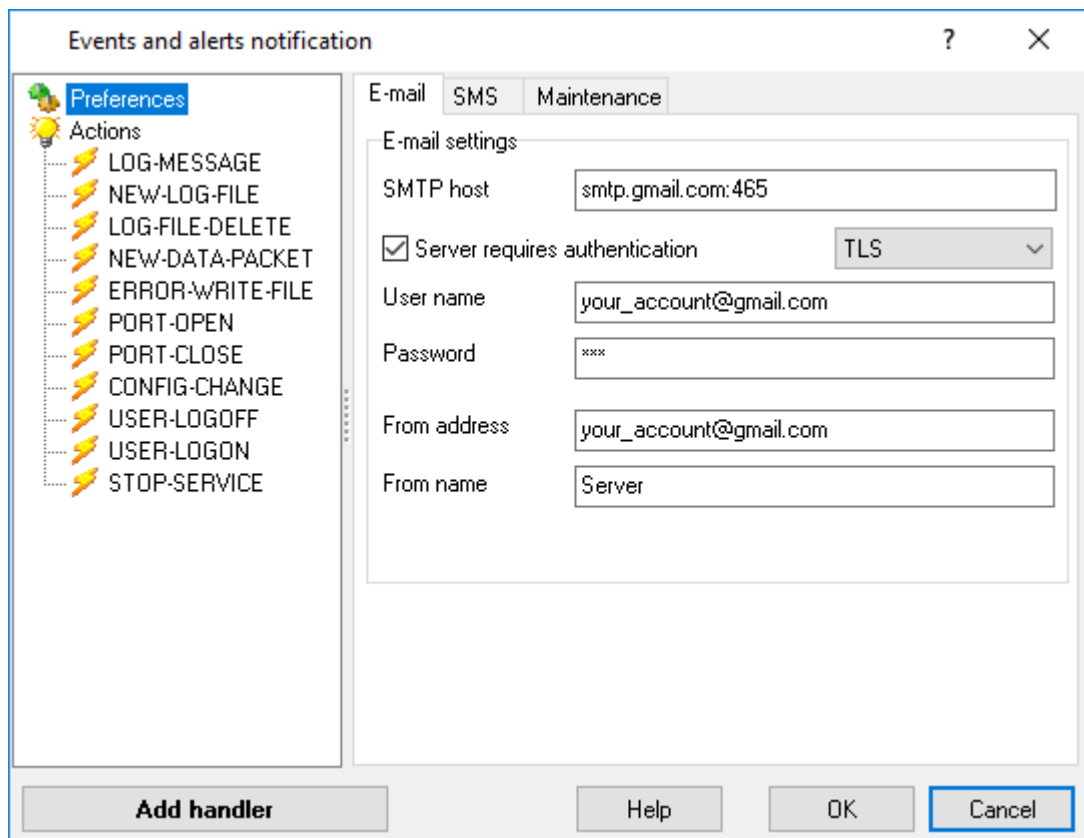

Fig. 2. Plugin settings window

5.1 Preferences

General plugin settings are specified on the **"Preferences"** tab. To open the page, select the "Preferences" item in the navigation tree.

- The E-mail tab allows you to specify SMTP server settings for sending e-mail messages;
- The Message template tab defines templates to generate the text of the outgoing messages;
- The Maintenance tab defines the time interval for the message box to be displayed and allows you to specify the settings for putting messages in the buffer.

5.1.1 E-mail

The settings to be used to send notifications via e-mail are specified on the **"E-mail"** tab.
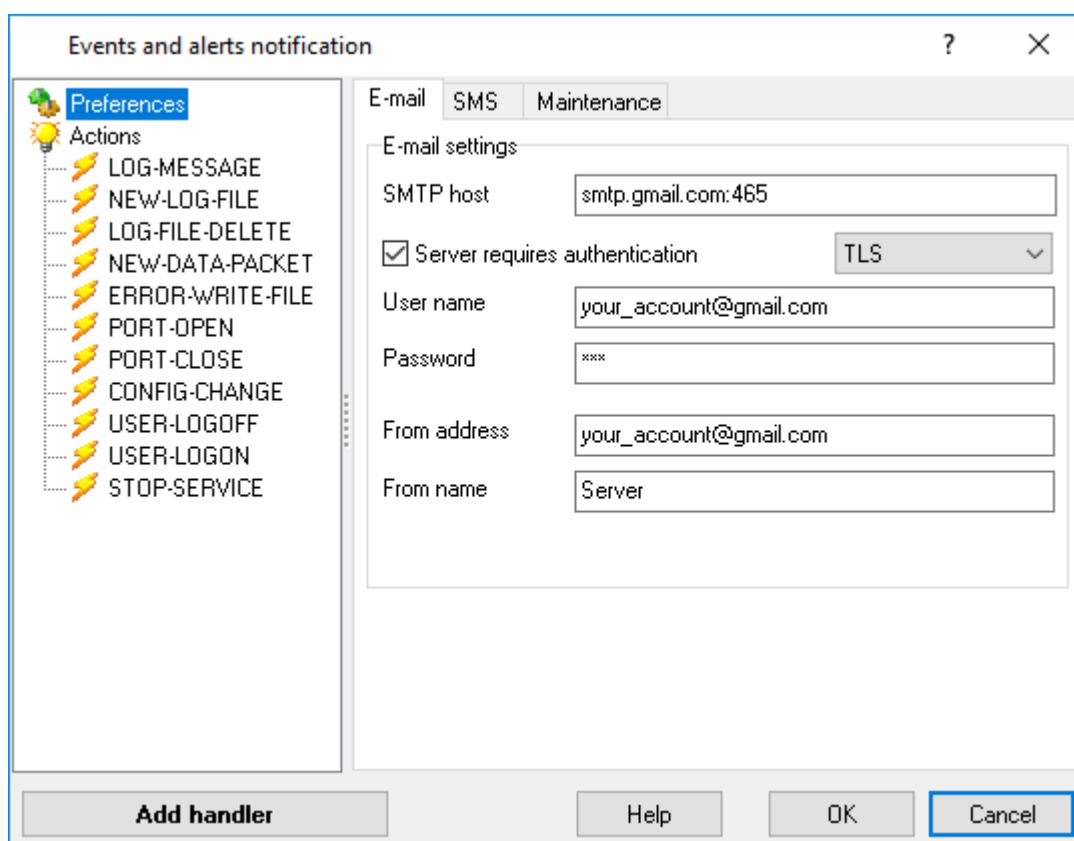

Fig. 3. E-mail settings

SMTP host - The plugin will send messages via this SMTP server.

Server requires authentication - Some SMTP servers require authentication for sending mail. If it is the case with your server, check this checkbox.

User name - The username is specified if the server requires authentication.

Password - The password is specified if the SMTP server requires authentication.

From address - The sender's e-mail address is specified here. You must specify it for the plugin to be able to send a message using the SMTP protocol.

From name - The sender's name is specified here.

5.1.2 Message template

The templates the program uses to generate the message text of notifications are specified on the **"Templates"** tab
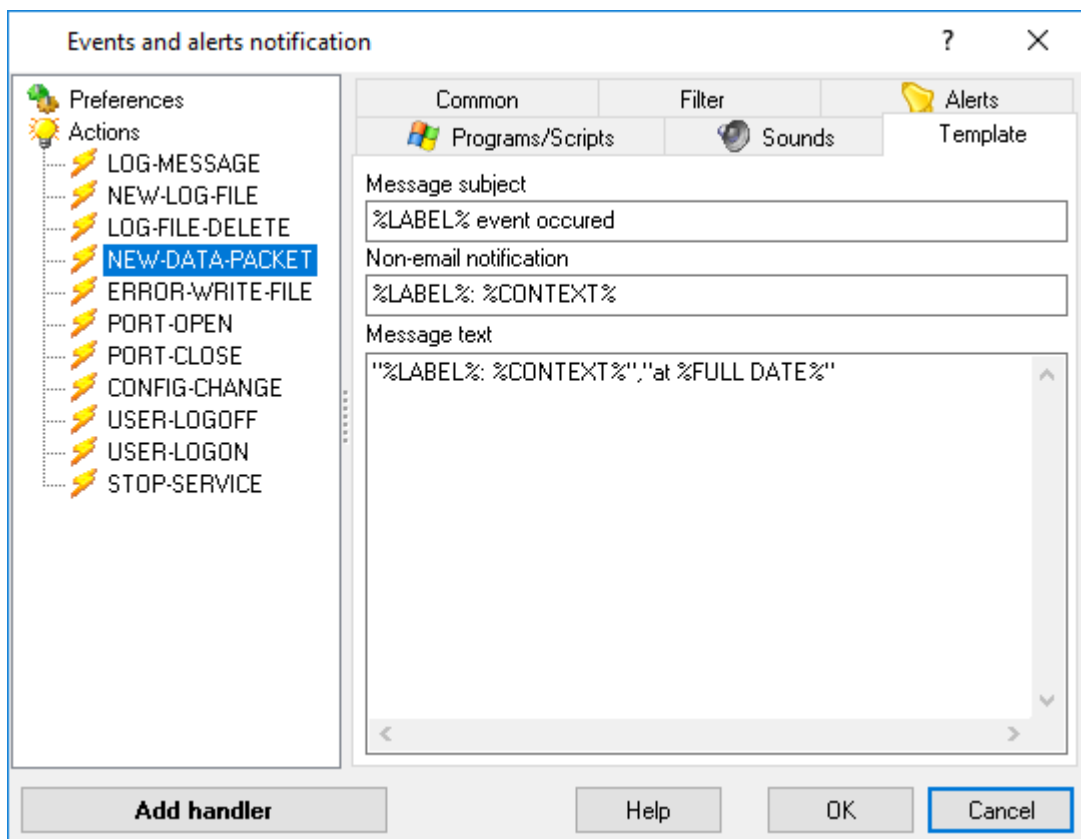

Fig. 4. Templates settings

Message subject - The template for generating text in the "Subject" field of the outgoing e-mail message.

Message text - The template for generating text in the body of the outgoing e-mail message.

Non-email notification - The template for generating text in the message sent to a remote computer or to the local one.

In all the fields on this tab, you can use macros to insert the information about the occurred event in the message text. Macros are strings between the % characters. When sending a message, the program will change the macro for the value with the information about a specific event.

The following macros can be used:
%LABEL% - stands for the type of the occurred event, e.g. "PORT-OPEN"
%FULL DATE% - stands for the full date of the event (including time)
%DATE% - stands for the date of the event (without time)
%TIME% - stands for the time of the event

When an event occurs, the plugin receives not only the event type, but also its context (information specific for each event), for example, when a PORT-OPEN event occurs, the plugin also receives the PORT variable containing the number of the opened port.
To put the context of an event into the message, you should specify the macro consisting of the variable name between the characters % (e.g. %PORT%).

The list of the supported events and their context variables:

LOG-MESSAGE - an event occurring when a new event is added to the kernel message log. Context: MESSAGE - message text; MSG-TYPE - the number of the source that caused the message from 0 to MAX (the list of sources is given in the message log settings window); MSG-LEVEL - the number specifying the level of the message importance (0 - information, 1 - warning, 2 - error); DATE-TIME - the date and time when the message was created.

NEW-LOG-FILE - an event occurring when a new file with data is created. The event occurs when a new file is created for incoming and outgoing data. Context: OLD-FILE-NAME - the name and path of the old file. This variable will be empty when the file is created right after the program is launched for the first time; NEW-FILE-NAME - the name and path of the new file.

LOG-FILE-DELETE - an event occurring when a file with data is deleted. Context: FILE-NAME - the path and name of the file that will be deleted right after the plugin processes the event.

NEW-DATA-PACKET - an event occurring when the parser singles out a new data packet from the general data flow and this packet is received. Context: FULL_DATA_PACKET - a string containing the full data packet.

ERROR-WRITE-FILE - an event occurring in case of a failed attempt to write to the file with data (for example, another application is using the file or there is no enough free space on the disk). Context: FILE-NAME - the path and name of the file; TEMP-FILE-NAME - the path and name of the file to which the data will be temporarily saved until it is possible to write data to the main file.

PORT-OPEN - an event occurring in case of a failed attempt to open a port. Context: PORT - the number of the port.

PORT-CLOSE - an event occurring in case of a successful attempt to close a port. Context: PORT - the number of the port.

5.1.3   Maintenance

To avoid overloading the server with sending messages via e-mail in case events occur too often, the plugin allows you to save them to the buffer and create one notification (for each address specified in the settings) consisting of the events put in the event buffer at the specified time intervals.
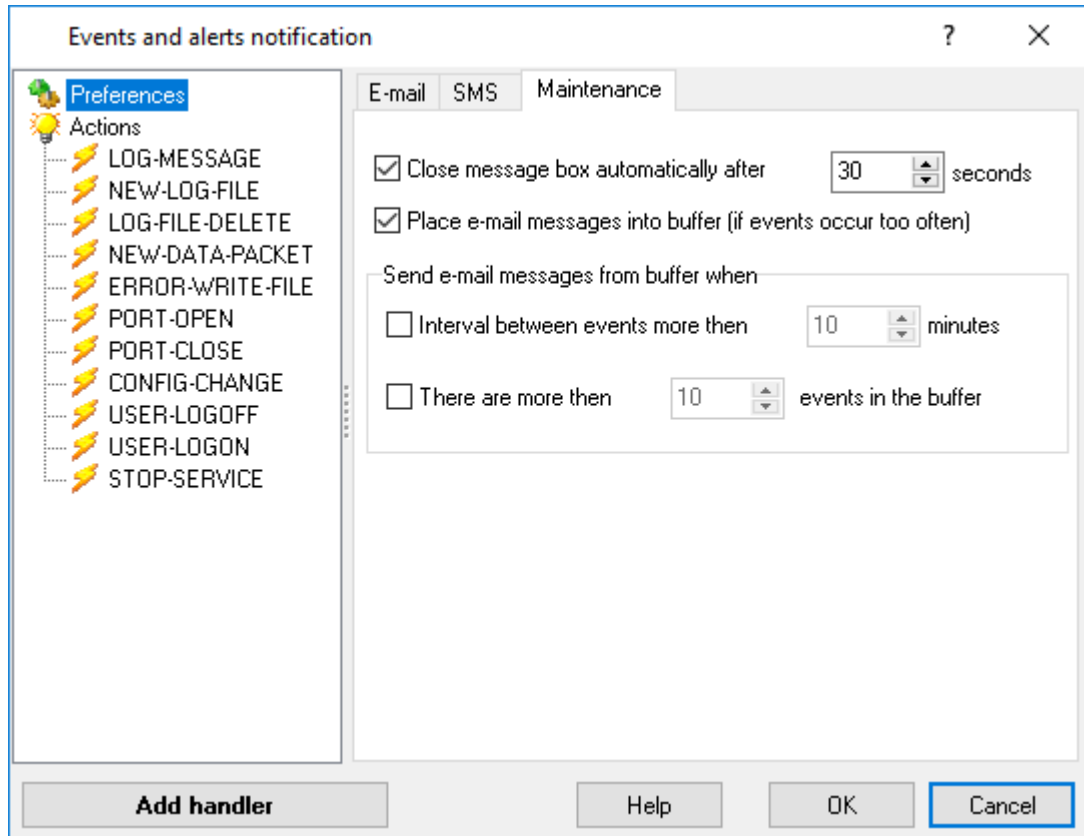

Fig. 5. Maintenance

Close message box automatically after NN seconds - Enable this option if you would like the message box to close automatically. Specify the time interval in seconds after which the message box will be closed.

Place e-mail messages into buffer - Enable this option if you would like to put events into the buffer before sending them. All grouped messages will be sent in one email.

Interval between events more than NN minutes - Enable this option and specify the time interval in minutes for the plugin to send messages from the buffer if the interval between two successive events exceeds the specified value.

There are more than NN events in the buffer - Enable this option and specify the number of messages in the buffer for the plugin to send messages from the buffer when their amount reaches the specified one.

Note: The settings for sending messages from the buffer can be used either together or separately. If no option is enabled, messages will not be put into the buffer, but sent as soon as they are generated.

5.2   Actions

The settings for sending notifications are specified on the **"Actions"** page. You can select what notifications should be activated when this or that event occurs.
To configure notifications applied to all events, select the **"Actions"** item in the navigation tree and enable the **"Use these settings for all events"** on the **"Common"** tab. If you uncheck **"Use these settings for all events"**, all events will use their own settings defined on their respective pages.

To configure notifications for each event separately, select an item that is a sub-item of the **"Actions"** item with the name of the event in the navigation tree. If **"Use these settings for all events"** is checked on the **"Common"** tab of the **"Actions"** page, the **"Use separate settings"** option will be available on the settings page of any event. Enable this option, if you want to use separate settings for the selected event.

When an event occurs, the plugin will perform an action checked for this event. For example, if the *NEW-LOG-FILE* event has **"To this email"** checked on the **"Alerts"** tab*,* an e-mail message will be sent to the specified address when the program creates a new log file. There is a "*Test"* button for each action to test it. In case an error occurs, (for example, you did not specify the recipient's e-mail address), you will see a message. If an error occurs when the main program performs an action, the error message will be put into the program log.

There are a number of tabs in the working area of the window:

- The Common tab displays the description of the selected event;
- The Alerts tab defines what notifications should be sent when the event occurs;
- The Programs tab allows you to specify the programs to be launched when the event occurs;
- The Sounds tab allows you to specify sound files to be played when the event occurs.

5.2.1 Common

The **"Common"** tab displays the description of the event selected in the navigation tree and allows you to specify whether to use common event settings or separate ones.
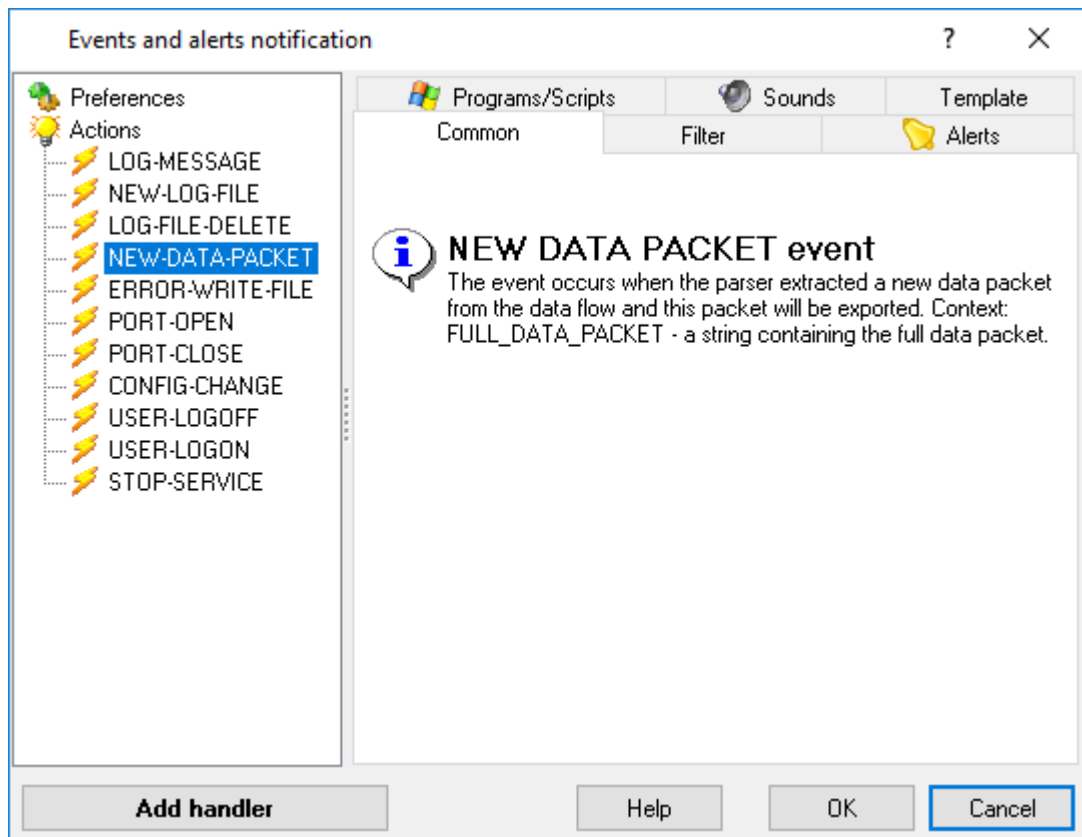

Fig. 6. Common settings

1. If the **"Actions"** item is selected in the navigation tree, the **"Use these settings for all events"** checkbox will be displayed at the top of the tab. Check it if you want to use the specified settings for all events. If you uncheck this option, each event will stick to its own settings.
2. If an event (a sub-item of the Actions item) is selected in the navigation tree and the **"Use these settings for all events"** checkbox is enabled on the "Actions" page, the **"Use separate settings"** checkbox will be displayed at the top of the tab. Check it if you want to use separate settings for the selected event, no matter whether the **"Use these settings for all events"** is on or off. In the navigation tree, the icon of those events that have the **"Use personal settings"** option enabled will be green.

5.2.2 Filter

If no filtering rules are set, the plugin allows all events.

Next, the plugin starts checking the rules in order from top to bottom.

The first rule sets the initial state of the filter (to allow or not).

All other rules are logically combined with it according to the specified "AND" or "OR" condition.

That is, if the first rule does not allow the event, and the "AND" condition is set, then the result will always be negative, and the event will not be processed.

The result of executing a rule can be inverted if the following parameters are set. For example,

Situation: "Contains", Action: "Do not process":
Situation: "Does not contain", Action: "Process":

That is, depending on whether a match is found, the result will switch to the opposite.

5.2.3 Sending notifications

On the **"Alerts"** tab, the settings for sending messages with the description of the occurred event via e-mail, instant message, to a remote computer on the network or to the local computer are specified.
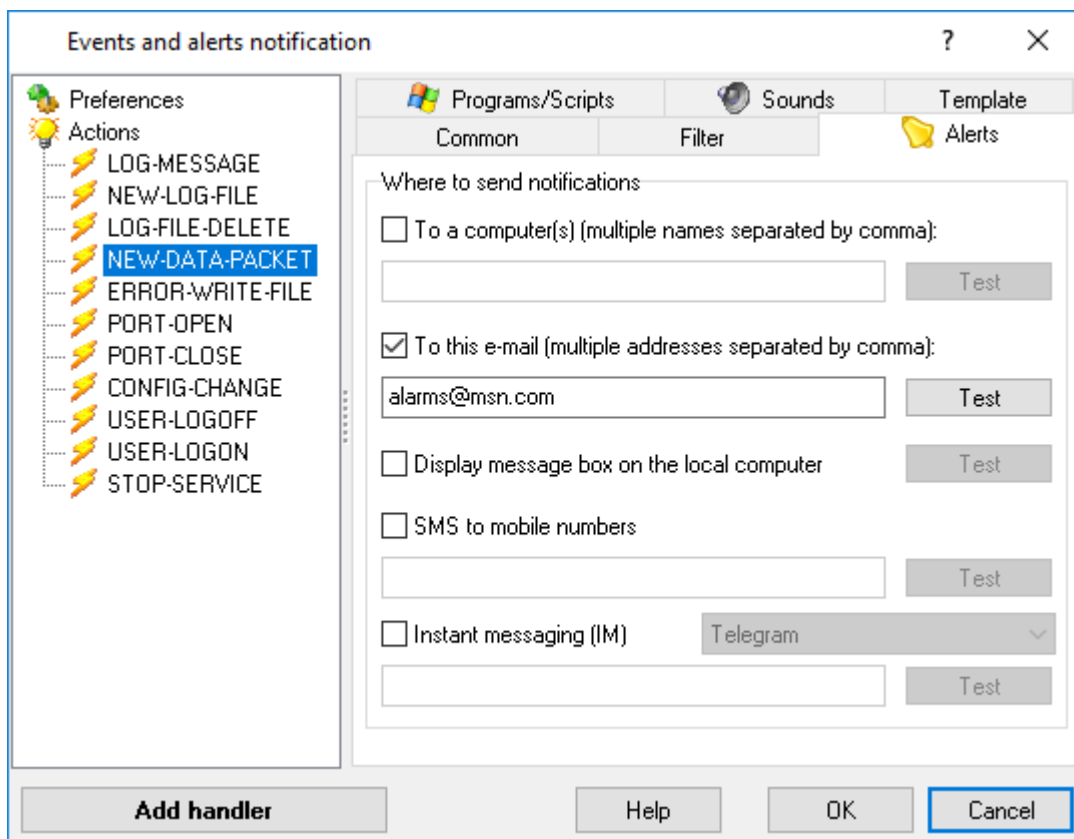

Fig. 7. Alert settings

Where to send notification:

1. **To a computer(s) -** Enable this option if you wish to send a message to a remote computer on the local area network as a Windows "NET SEND" notification upon the occurrence of an event. In the input field, specify the name of the computer or several computers separated by commas

where the message will be displayed. Message text will be generated according to the template specified in the [Non-email notification field](#) on the "Preferences" page;

2. **To this e-mail** - Enable this option if you want a message to be sent via e-mail once the event occurs. In the input field, specify an e-mail address or several e-mail addresses separated with commas or semicolons. If you use the semicolon, the plugin sends an individual message for each recipient. If you use the comma, the plugin sends one message to all recipients, adding more addresses to the "CC" field. Message text will be generated according to the template specified in the [Message text field](#) on the "Preferences" page;

3. **SMS to mobile numbers -** Enable this option if you want to send an SMS message to a mobile once the event occurs. In the input field, specify the mobile number in the E164 format, like +12008001122. Message text will be generated according to the template specified in the [Non-email notification field](#) on the "Preferences" page. The settings of the connection to the SMS provider are specified on the "Preferences" page;

4. **Display message box on the local computer -** If this option is on, a message box will be displayed on the local computer. Message text will be generated according to the template specified in the [Non-email notification field](#) on the "Preferences" page.

5. **Instant messaging (IM) -** If this option is on, the program will send a non-email message using the selected instant messenger.

Telegram

In the input field, you may specify a chat ID (e.g. @mychat) or user ID (e.g. 1234567). You may find your user ID using [this link](#). You may specify a semicolon separated list with several recipients. Each individual user should send /start to our "@aggsoft_event_bot" Telegram bot. Otherwise, the bot cannot send notifications to you. Telegram → Find → @aggsoft_event_bot → Start.

You can use your bot instead of "aggsoft_event_bot". In this case, you can append the API token to the recipient ID. For example,

@mychat@my-token
or
1234567@my-token

where "my-token" usually looks like:

471780000:AAHOlQZBHA_AAAiY_Zwv6UXmAAAdglMfqes

Slack

1. So first things first, to use the Slack API we require a token, for this purpose, you should request a Legacy token, which can be done at the following URI:

https://api.slack.com/custom-integrations/legacy-tokens

After clicking the "Create token" button, you will get a string that resembles this:

```
xoxp-aaaaa-bbbbb-ccccccc-ddddddd
```

2. If you want to send to a public or private channel, you either specify the channel's name (e.g. general) or encoded ID (e.g. C024BE91L), and the message will be posted to that channel. The channel's ID can be retrieved through web

interface: Side panel → Right click over the channel name → URL
https://workspace.slack.com/messages/**C024BE91L**

If you want to send a private message to a user, you must specify the encoded user ID (e.g. D024BE91L).

3. In the input field, you must specify a channel ID and your token like:

```
D024BE91L@xoxp-aaaaa-bbbbb-ccccccc-ddddddd
mychannel@xoxp-aaaaa-bbbbb-ccccccc-ddddddd
```

You may specify a semicolon separated list with several recipients.

5.2.4 Launching programs and scripts

The plugin can launch external programs when an event occurs in the main program. The settings for launching programs are specified on the **"Programs"** tab.
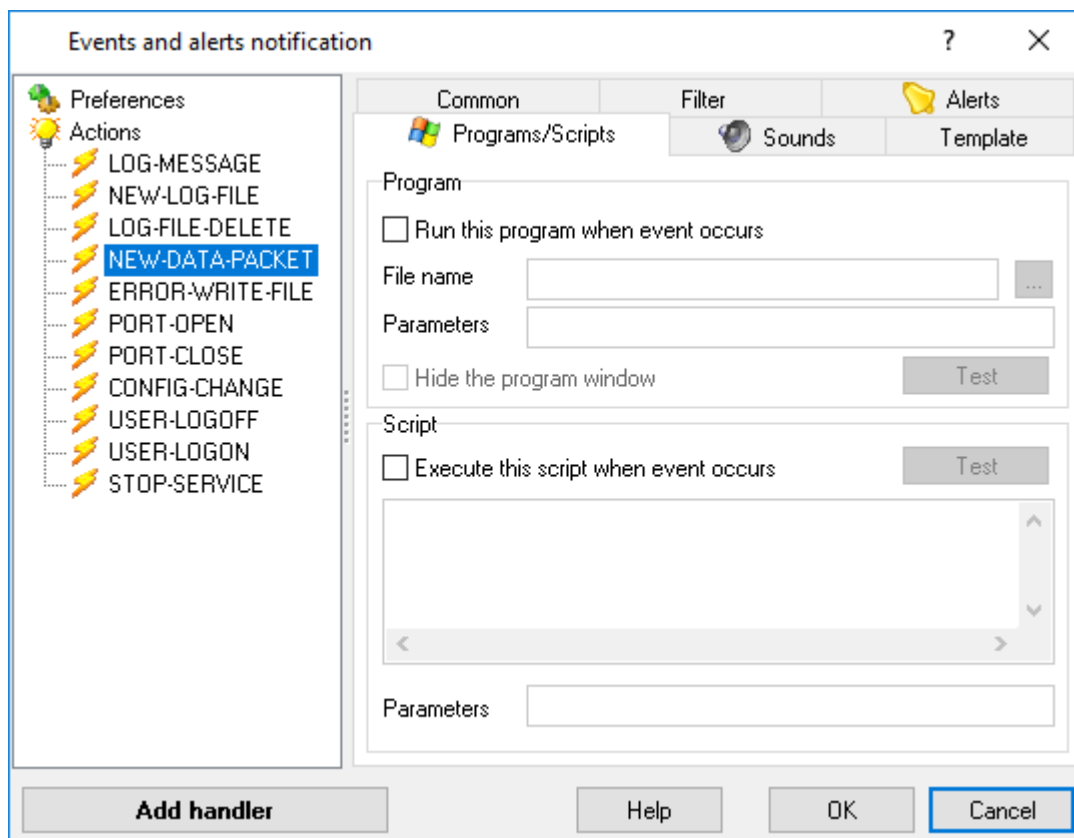

Fig. 8. Launching settings

Run this program when event occurs - Enable this option, for the plugin to launch an external program once the event occurs.

- **File name -** enter the program's full path and name for when this event happens. Click the [...] button to choose the file from your folders or network.

- **Parameters -** If necessary, specify command line parameters for the program launch. Macros can be used as parameters to include information about the event. Macros are strings enclosed by % characters. The plugin will replace the macros with the corresponding event information when the program is started. For more details on macros, refer to the Message template section.
- **Hide the program window -** If this option is on, the program window will be hidden after it is launched.

Execute this script when event occurs - Enable this option for the plugin to execute a VBScript once the event occurs. Enter the text of the script in the input field below.

- **Parameters -** If necessary, you can specify some parameters that should be used in the script. As a parameter, you can use macros for inserting information about the occurred event. Macros are strings between the % characters. When executing the script, the program will change the macro for the value with the information about the event. Detailed information on macros can be found in the Message template section.

5.2.5 Playing a sound

The plugin can play a sound file once an event occurs in the main program. The settings for playing sounds are specified on the **"Sounds"** tab.
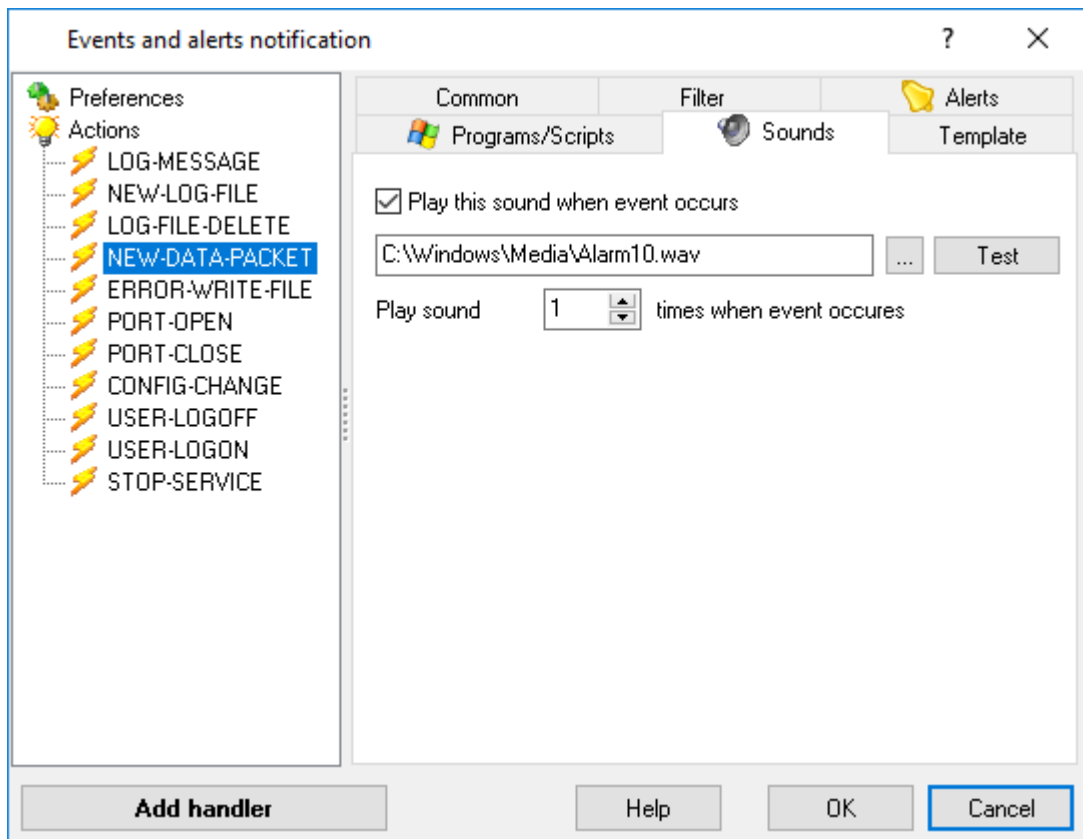

Fig. 9. Playing settings

Play this sound when event occurs - turn on this setting to play a sound when the event happens. Enter the file path and name in the box. Click the "..." button to pick the file from your computer or local network folders.

Play sound xx times when event occurs - specify how many times the sound should be played.