USB HID Logger

Watch It!

PRINTED MANUAL

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USB HID Logger

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1 Introduction

1.1 About USB HID Logger

More and more devices that support the HID data exchange interface have been appearing lately. It can be laboratory, measurement or medical tools, barcode, RFID or fingerprint scanners, UPSs (uninterruptible power supplies). It is not always that software supplied with these devices offers the necessary features. This program is intended to supplement or completely replace the "native" software.

Key features:

- Several USB HIDs simultaneously. It is possible to log data from several USB HIDs simultaneously. You can use different data log and export options for each device;
- All types of HIDs. Our software supports all usage types according to the USB HID specification;
- Data decoding. The program can log and export both binary data in the RAW format and decoded values from HID data packets;
- Enhanced file logs. Writing data to the log file without any changes. Creating a new file by time or size. Adding date and time stamps to the file;
- Fast and safe. Fast multithreaded, optimized and effective architecture;
- Data filters. They allow you to filter, format and merge your data, for instance, you can combine data from two different devices;
- Event processing. It is possible to analyze received data and process events, for instance, send e-mail messages when a certain value exceeds some predefined limit;
- Data export in real time. USB HID Logger can work as a DDE or OPC server and export decoded values from HID reports to other applications;
- Excel. It is possible to export data to Excel in real time in several ways (CSV, directly, via ActiveX or DDE);
- Export to various databases. The program can write data to all popular databases, including MSSQL 2000+, MySQL 4+, Oracle 8+, Access and some others in real time (a sample configuration for exporting data from a USB HID to a database);
- Modules. Lots of modules that allows you to extend the features of the program;
- Simple and intuitive interface. Neither programming nor special knowledge is required to configure the program;
- Supporting various operating systems. It runs under all versions starting from Windows 2000, including 32 and 64-bit systems..
- Windows service mode. USB HID Logger can also run as a service, which allows you to receive data from the moment the operating system starts before the user logs on. The program continues to run in the background after the user logs off.

1.2 Glossary

ASCII - An acronym for American Standard Code for Information Interchange. ASCII files are plain, unformatted text files that are understood by virtually any computer. Windows Notepad and virtually any word processor can read and create ASCII files. ASCII files usually have the extension .TXT (e. g., README.TXT).

Binary File - A file that contains data or program instructions written in ASCII and extended ASCII characters.

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Bit - Binary digit in the binary numbering system. Its value can be 0 or 1. In an 8-bit character scheme, it takes 8 bits to make a byte (character) of data.

Bytes - A collection of eight bits that represent a character, letter or punctuation mark.

Cable - Transmission medium of copper wire or optical fiber wrapped in a protective cover.

Client/Server - A networking system in which one or more file servers (Server) provide services; such as network management, application and centralized data storage for workstations (Clients).

PC - abbreviation for a Personal Computer.

Ports - A connection point for a cable.

Protocol -A formal description of a set of rules and conventions that govern how devices on a network exchange information.

2 License, Registration and technical support

2.1 License

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Trial Limited Version

The trial limited version of this software may be used for evaluation purposes at the user's own risk for a trial period. At the end of the trial period, the user must either purchase a license to continue using the software, or remove it from his/her system.

The trial limited version may be freely distributed, provided the distribution package is not modified. No person or company may charge a fee for the distribution of USB HID Logger without written permission from the copyright holder.

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On payment of the appropriate license fee, the user is granted a non-exclusive license to use USB HID Logger on one computer (i.e. a single CPU), for any legal purpose, at a time. The registered software may not be rented or leased, but may be permanently transferred, if the person receiving it agrees to terms of this license. If the software is an update, the transfer must include the update and all previous versions.

Registered customer are entitled to free updates during one year from the date of purchase. It means that during one year you can download and install the latest registered versions of USB HID Logger from our site. If you don't want to purchase an updates, you can use the program forever; it will never expire, but you won't be able to use the latest version. If you purchased the software more than one year ago, you are no longer entitled to free upgrade and technical support; however, you can purchase an updates to the latest version at a special, greatly discounted price, and this updates will allow you to have free updates and technical support for another year. The type of update license must match the type of your existing license.

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Should any term of these terms and conditions be declared void or unenforceable by any court of competent jurisdiction, such declaration shall have no effect on the remaining terms hereof.

If you do not agree to these conditions you should not install this software.

2.2 Limitations

Program is distributed on shareware terms. This means limited and unavailable secondary program possibilities, which become valuable or available after program registration. To register the program read here 4.
In trial version of our program are the following limits:

- Trial period is limited by 21 days. After that time program won't work until it is registered.
- Continuous program work time is limited. After set period a message will be displayed and program stops its work;
- All data export modules can handle first 100 records only;

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2.3 How to register

The program is distributed on shareware terms. This signifies limited or unavailable many features of the program, getting of full value or available after program registration.

If you'd like to be a registered user, to get information about the release of new versions, to use technical support and, at last, to get access to disabled functions of the program, register your copy. For registration, please, read license agreement 2.

If you want to buy a program through the Internet visit the registration page of our site. On this page you can get the newest information about the registration process, and also find an order link. After you've have the form of order registration. Enter your personal information and choose the most convenient payment method for you. Further, you'll get notification and follow the notes in it.

More information about services, registration documents, payment means you can get on our registration page of our site.

2.4 Support

Technical questions	support@aggsoft.com
Common questions	info@aggsoft.com
Sales questions	sales@aggsoft.com

3 Installation

3.1 System requirements

Windows 2000 Professional - Windowsa 8.1, including x64 and x86 OS, Workstation and Server OS.

3.2 Installation process

If any beta-version was installed on your computer, remove it.

Quit of the working USB HID Logger on installation time.

Run an installation file.

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By default, USB HID Logger will be installed to the directory "/Programs Files/USB HID Logger" of your system disk, but you can change this path.

In the standard distributive of USB HID Logger are no additional modules files, which you can download from our site.

4 Program use

4.1 Getting started

After you have successfully installed USB HID Logger, use the following simple steps to configure and run it.

Open the USB HID Logger program from the Start Menu.

At program run you get into the main program window (fig. 1.1.1), main elements of which are the main menu, the data window, the program messages list and the status bar. In the data window will be viewed formatted data processig. In the messages list are logged information, warning and error messages. The status bar shows current state of the selected data source, interface error messages and a number of bytes processed. Through the main menu, placed above the data window, you can get access to program settings 6 ("Options/Program settings...") and from the menu "File" (fig. 1.1.2) can open an current log-file or clean the data window.

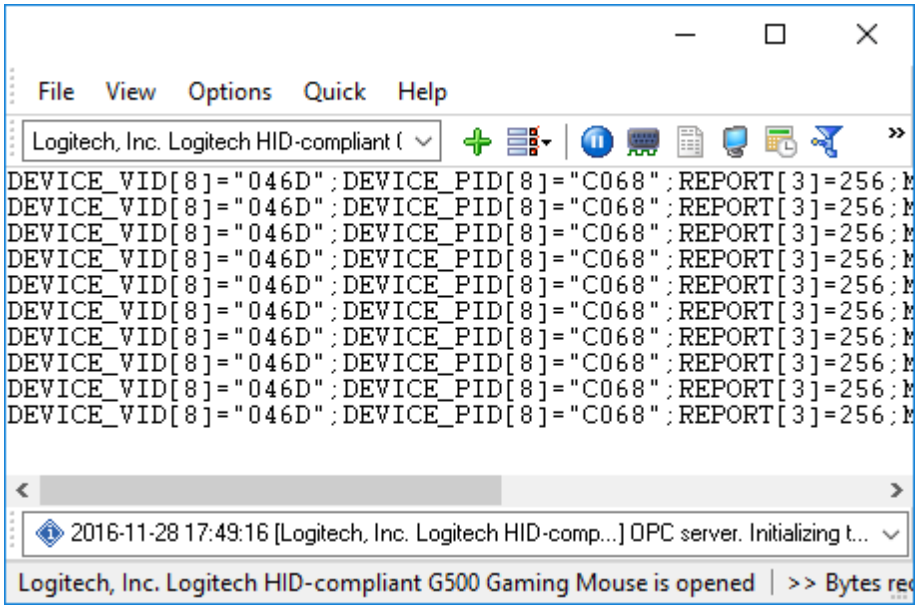

Fig. 1.1.1 Main program window

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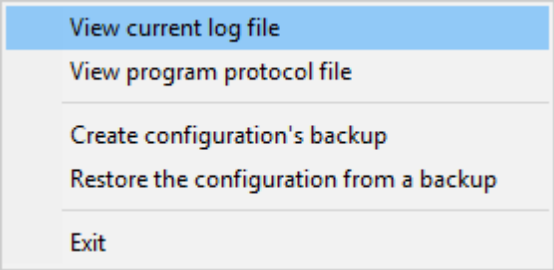

Fig. 1.1.2. "File" menu item

By default (after installation), the program has not any data sources configured. If the list of data sources on the toolbar is empty, then the program will ask you to add new configuration. Otherwise, the program will fill in the list of data sources and try to start logging of data sources configured. Yes, of course, all your settings are being saved while exiting from the program and loaded while the program start.

Set-Up is as Easy as 1-2-3

Step 1. Configure one or more data sources.

Click the "Add configuration" button on the toolbar with big green plus and choose your USB HID device. The "Device" tab of the "Configuration options" dialog lets you configure your settings.

Step 2. Configure log file.

Select the "Log file" header in the configuration dialog window and enable logging.

Step 3. Define how you want the your data to be filtered and exported .

The "Plug-in" button on the toolbar in the main window or "Modules" tab in the dialog window lets you specify how to parse, filter and format your data to the fit the exact format required by your application. It also lets you pre-define automatic output strings to be sent to an external device.

Now, the program process and exports data from one or multiple data sources.

4.2 Introduction

USB HID Logger can save data to a log file(s) without any changes (i.e. create raw binary log files) or write to log files depending on the parser module selected. In the first case you can view the log file with any hex editor and use this data for further analysis and remaking. In the second case you can view data with any text editor. You can find more information about log files in the "Log rotation 15" chapter.

You can watch the data in the data window (fig. 1.1.1 5). The data view is fully customizable. You can watch data in decimal, hexadecimal or your own format. How to customize data view you can read in the "Data view 11" chapter and how to customize program view you can read in the "Window view 27" chapter.

The data can be exported or transferred to one or more targets. Most simple way is to configure the log file rotation. But it is small part of all features of USB HID Logger. USB HID Logger has many additional modules 20 (so-called plug-ins), that are appreciably extending possibilities of the logging software. You can download and install any module supported. Most modules are free of charge for our customers. How to install and configure modules you can read in the "Modules 20" chapter.

The program and their plug-ins generates many messages and writes they to the list in the main window (fig. 1.1.1 5) and a protocol file, that you can use for administration of the software. You can configure types of system messages. More information about it you can read in the "Protocol and errors handling 30" chapter.

4.3 Data flow diagram

This diagram may help you to understand the flow of data within our software and a place of each module. All modules are described in following chapters.

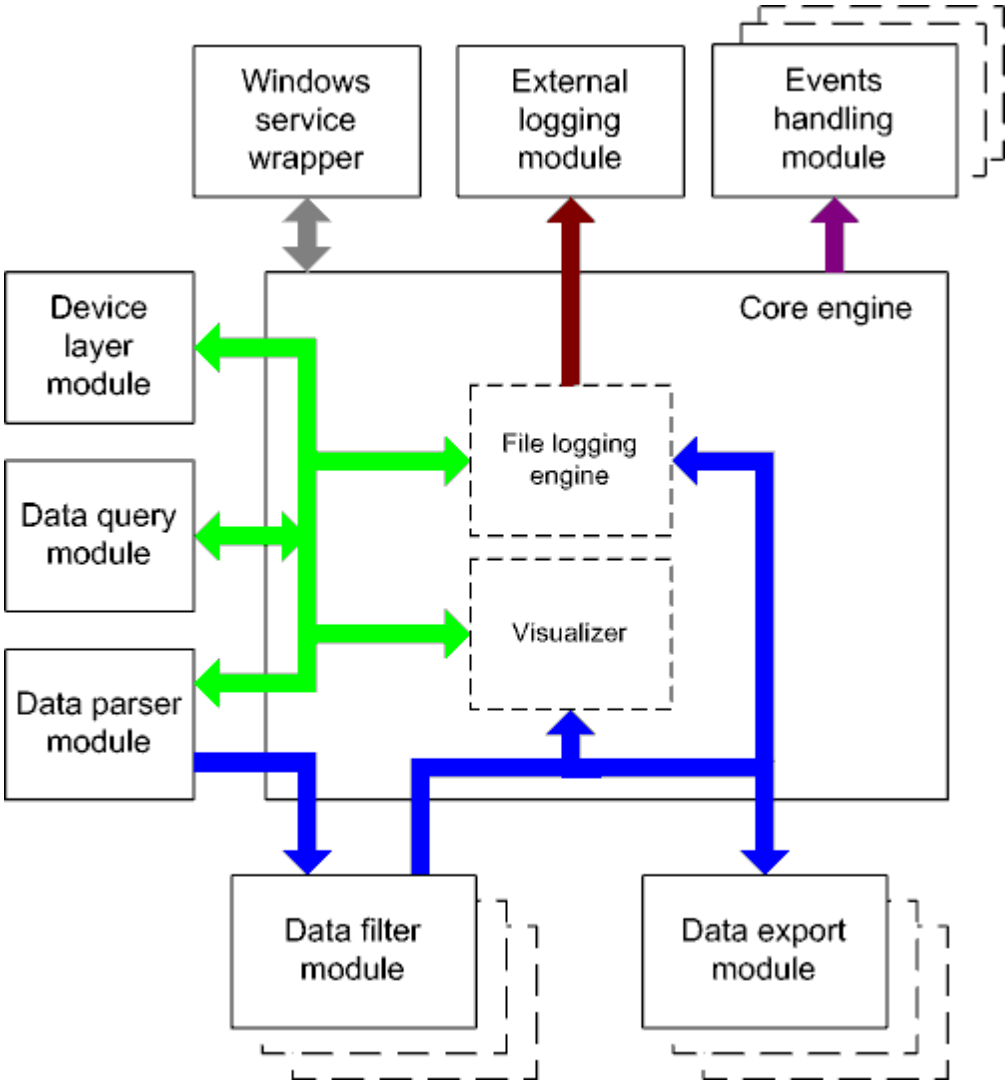

Fig. 1.2.1 Data flow diagram

History:

- Binary flow of data (RAW, unformatted data).

- Parsed data (formatted data). The data flow was been separated to data packets and variables. Each data packet can be interpreted as a row, and each variable can be interpreted as a column.

Wires with other colors mark other relations with unstructured data flow.

4.4 Work complete

After program work stop all program settings will be saved in Windows registry. Opened for reading/ writing data sources will be automatically closed and will be available for other applications.

4.5 Useful advices

1. Look through hint helps on all window elements - this will help you to get a picture of this element's function.

2. You can change all program settings without restarting the program. To transfer settings to another computer you can do the following:

1. Create a configuration backup from the "File" menu and restore it using the same menu.
2. Or export the registry node with all program settings. Start regedit.exe and export the following registry node:

   on Windows x64
   HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\AGG Software\USB HID Logger

   on Windows x32
   HKEY_LOCAL_MACHINE\SOFTWARE\AGG Software\USB HID Logger

3. On another computer import settings to the Windows registry.

Many main window elements have "hot" keys for quick access to its functions.

- Ctrl+S - analogues to click on "Start/Pause" button on toolbar.
- Ctrl+C - analogues to click on "Clear" button on toolbar.
- Ctrl+P - call options window with configuration settings.
- Ctrl+L - call options window with log file settings.
- With Ctrl+W hot key You can configure window view.
- Ctrl+R - show window with program's restart settings.
- Ctrl+E - Windows NT/2000/XP service settings is available here.
- Ctrl+M - here you can configure queries, parsers and other modules.

4. You can look at the summary statistic that contains summary about sent and received data,

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created files etc (View - Statistics)

5. You can save program settings to an INI file. It may help to install and use several copies of the program. You can make your choice from the "Options" menu.

6. The program window can display only last 10 message. The full program log file (if activated) you can open using the "File - View program protocol file" menu item.

4.6 Configuration

4.6.1 USB HID

4.6.1.1 Selecting USB devices

This tab contains the list of HIDs. To enable monitoring a device, select it in the list. Note that a USB device can be compound, i.e. one physical device may represent several logical devices. The HID list contains logical devices.

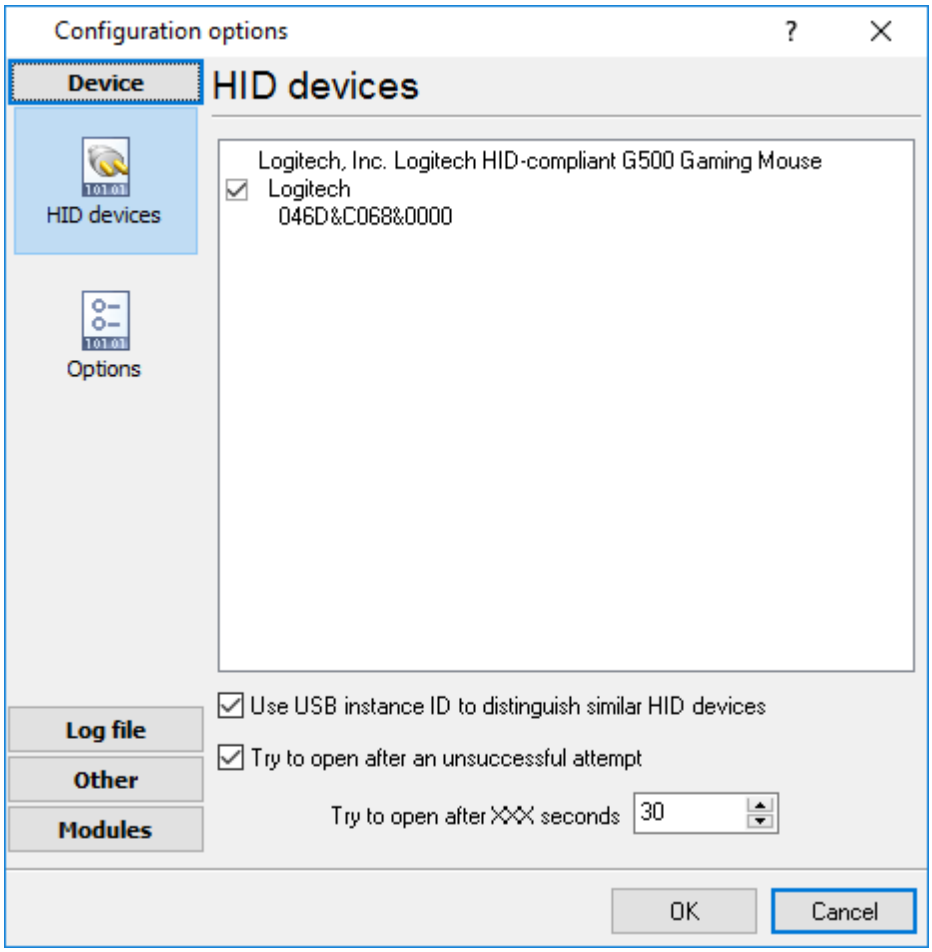

Fig.1 HID list

Use the instance number to differentiate between similar devices – enable this option if you

have several similar devices connected to the computer. In this case, the program will use the number of the physical USB port to differentiate between these devices. However, the devices need to be always connected to the same ports. If you have only one HID, you can disable this option. In this case, the program will control this HID model connected to any port.

Try to open again after a failed attempt – if this option is enabled, the program will wait till the device appears and automatically start logging data from it in case the HID is connected and disconnected periodically.

4.6.1.2 HID data log options

Data between the computer and a USB device is transmitted over the USB as binary data packets called HID reports. Our program can log both these binary data packets and already decoded values.

Log decoded data – the program transform data packets into a readable form

Log VID and PID – if this option is enabled, the program will add manufacturer and HID model IDs to every decoded data packet.

Log the USB device name – if this option is enabled, the program will add the name of the USB device to the decoded data packet.

One value per line – this option changes the format used to log decoded values and makes it possible to write values received from several different devices to the database. If you are going to log data to a plain text file, it is recommended to disable this option.

Log raw data – if this option is enabled, the program will log unprocessed (RAW) data.

Log mouse moves – mouse moves generate a lot of USB packets. If you want to log data about every mouse gesture, enable this option.

4.6.1.3 Samples

Configuring writing data from a USB HID to the database;
USB HID to MS SQL (writing a large number of variables);
USB HID to MS SQL (writing several variables);
Configuring writing data from a USB HID to MySQL;
Exporting data from a USB HID to Excel in real time.

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4.6.2 Additional parameters

4.6.2.1 Data view change

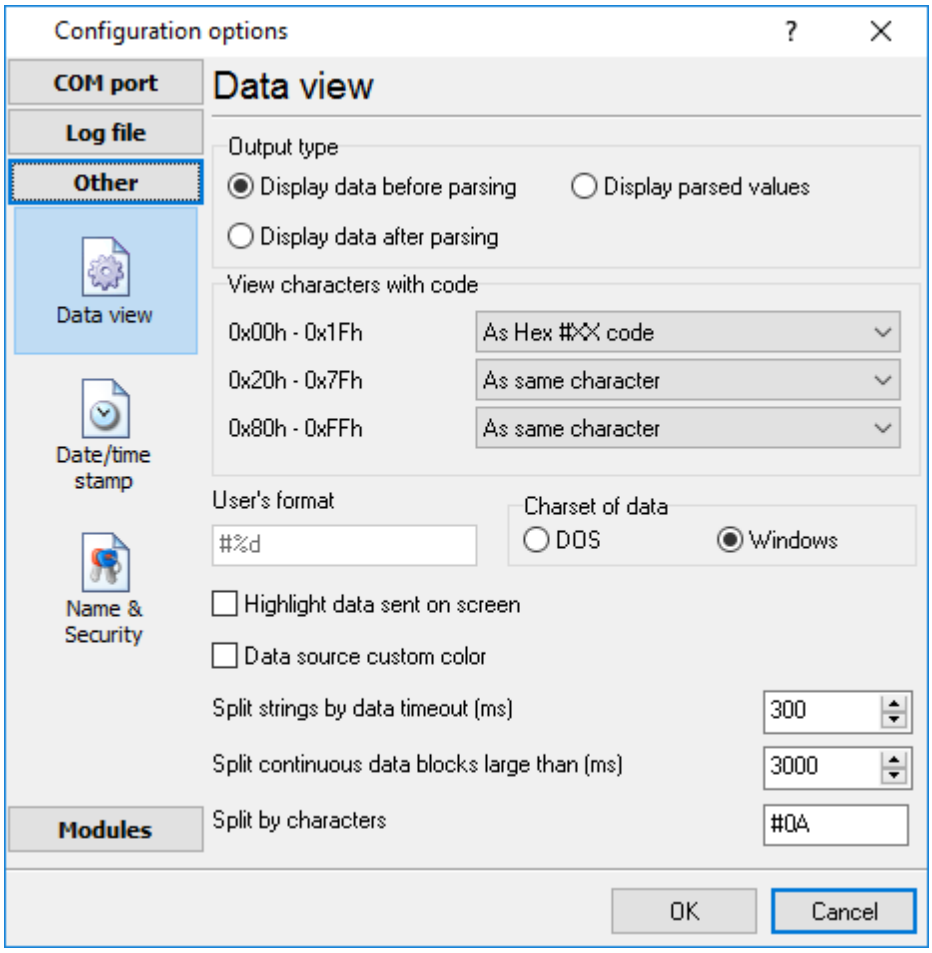

Fig. 3.1.1. Data view

Data view settings, that can be configured on the "Data view" tab:

1. **View characters with code** - the program can interpret and decode bytes as characters. You can select decoding mode for each characters range. If the range doesn't have the corresponding character, that's why these data can be displayed only in hexadecimal and decimal code.
2. You can set up data byte display **users format**. The directive %d shows to display an decimal code, the directive %x - hex code. You can set any framing characters before/after the user format.
3. **Highlight data sent on screen** - string with sent data will be highlighted by the set color.
4. **Character set** - allows to define the character set of incoming data. Windows - Windows ANSI character set, DOS - OEM character set.
5. Data source custom color - if you've created several configurations then you can define a custom color for each data source that allows to distinguish data flows on the "All data" page in the main window.
6. **Split strings by data timeout** - this option allows to visually split data packets in the program

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window. A data packets that will be received after the specified interval will be showed on a new line. If this value is set to 0 then data packets will not split.

7. **Split continuous data blocks large than** - this option allows to visually split continuous data flow in the program window. The program will show data from a new line every specified interval.
8. **Split by characters** - this option allows to visually split continuous data flow in the program window using the specified symbols. For example (fig. 3.1.1), the program will use a character with the 0Ah hexadecimal code that is equal to the "LF" ASCII code.

4.6.2.2 Date/time configuration

This group of options (fig. 3.2.1) allows you to configure how data and time stamps appear in the log file and on the screen. You can configure the stamp format in the program options 29.

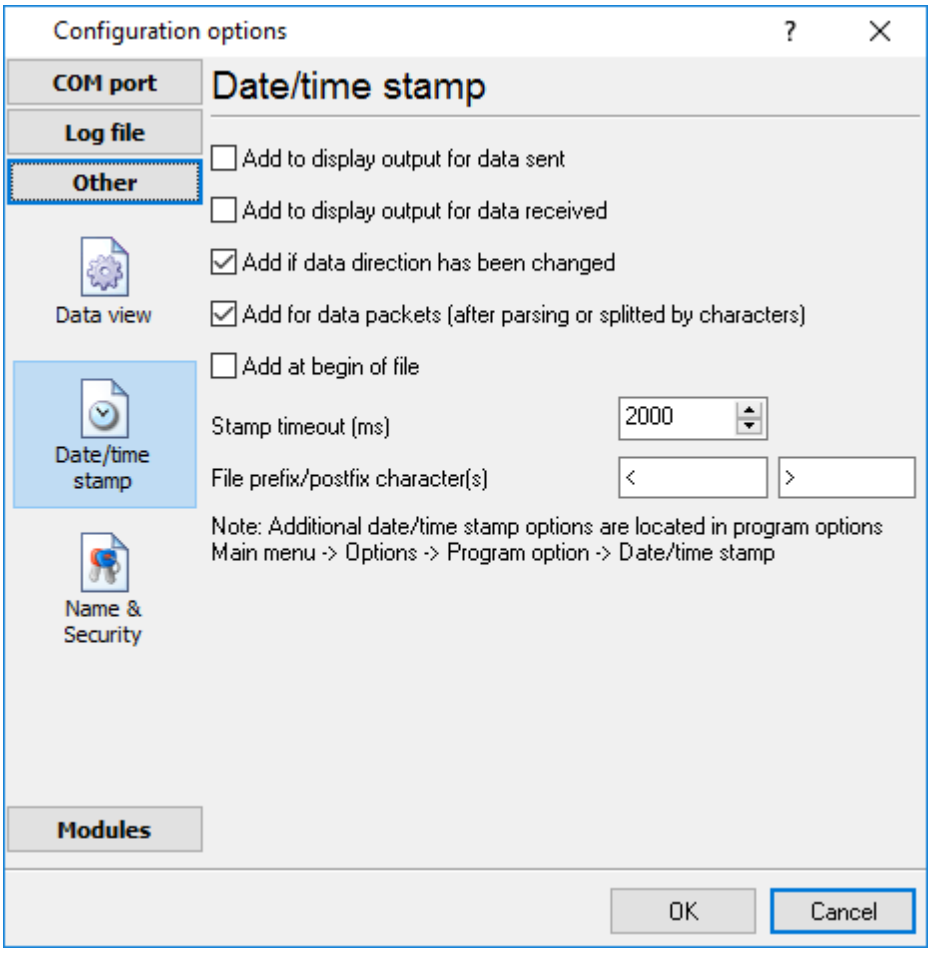

Fig. 3.2.1 Time stamp configuration

Add to display output for data sent - the time stamp will be added for the sent data displayed on the screen. The stamp will be added according to the timeout (if the data flow is uninterrupted) or when a data packet is sent.

Add to display output for data received - the same but for the received data.

Add if data direction has been changed - if the program is sending and receiving data, the time

stamp will be also added when the data transfer direction changes (sending/receiving).

Add for data packets - if the data is displayed after it is processed, the stamp will be added to each processed data packet.

Add at begin of file - the stamp will be added at the beginning of every new log file.

Stamp timeout - if the data flow is uninterrupted, the stamp will be added regularly at the interval specified in milliseconds.

File prefix/postfix character(s) - the program will use these characters instead of those specified in the program options 29 while writing data to a file. For example, it allows you to add the new line character or another sequence of characters before or after the stamp. Example: >#0D#0A

4.6.2.3 Name and security

This group of options (fig. 3.3.1) allows you to configure the following parameters:

Friendly name - this name will be added before the port number or the data source in the drop-down list in the main window of the program. It allows you to describe the data source.

Start logging automatically - if this option is enabled, the program will start receiving and logging data automatically when it is launched.

The "Security" option group allows you to protect user operations in this particular configuration with a password. You can specify advanced security options applied to the entire program in the program options 36.

Ask password before start and stop - the password will be required when the user clicks the "Start/Pause" button in the main window of the program.

Ask password before configuration edit - the password will be required when the user tries to open the Configuration options dialog box.

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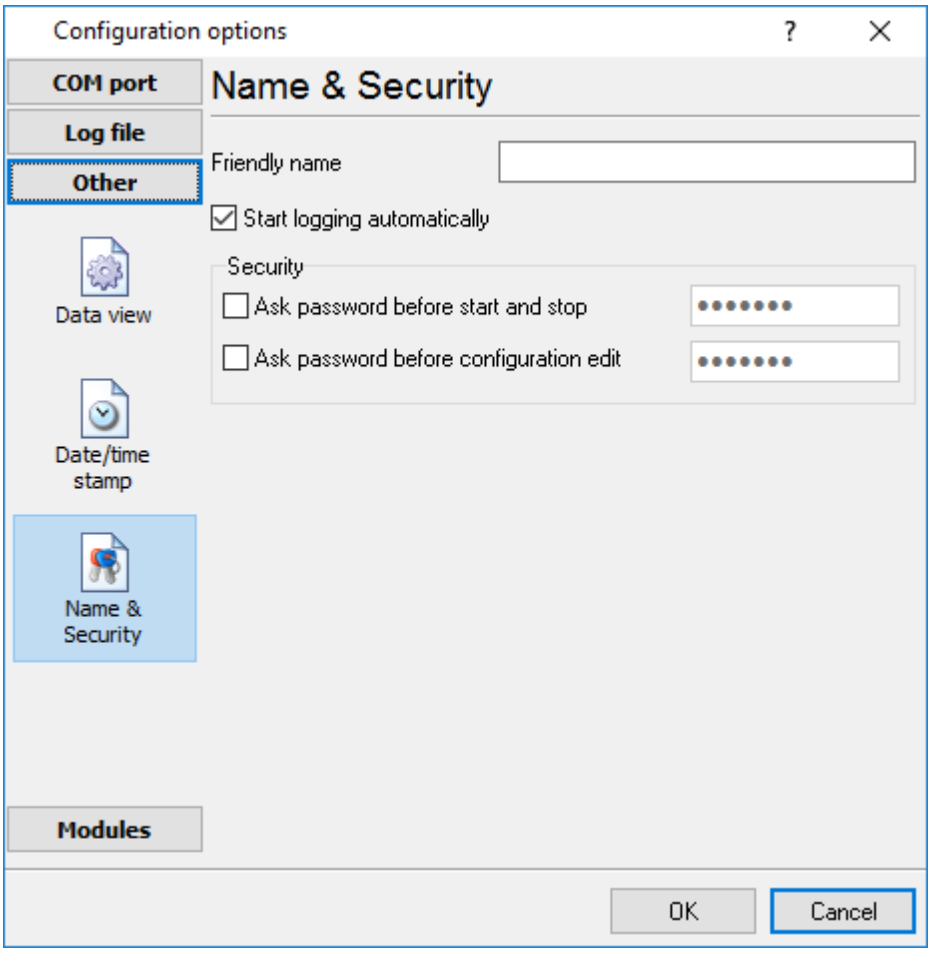

Fig. 3.3.1. Name and security

4.6.3 Log files

4.6.3.1 Log rotation

The main function of USB HID Logger is logging data to a file (so-called, log file). The "Log rotation" tab has a rich set of options for it. (fig. 4.1.1).

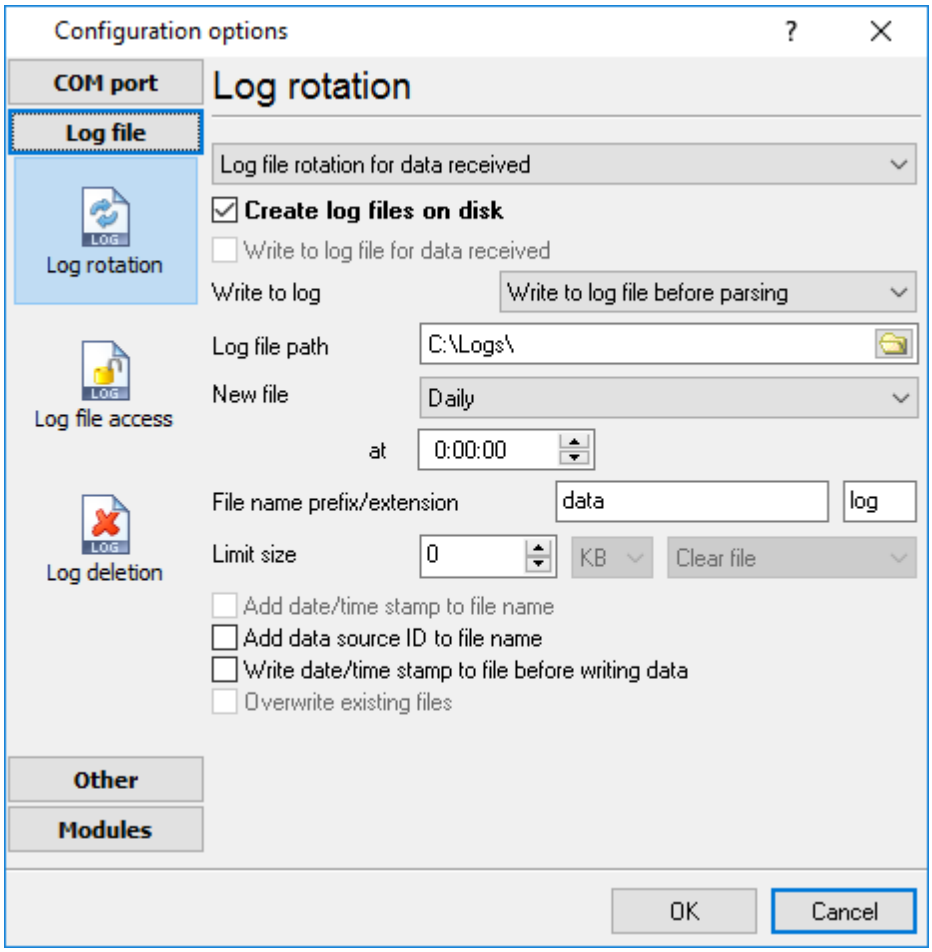

Fig. 4.1.1 Log-file forming modes

Set the "Create log file on disk" option to checked state. Then you can set path to folder, where files will be created with the help of dialog window, which will be showed up after clicking a button with picture of opening folder. You should select a necessary folder in the dialog window and click the "OK" button.

Note: The program can work with network paths too, but in this mode, the program will increase data flow over a network and can be failed with exceptional errors.

A log file name can be stamped with date and time. In this case a new log file is created periodically. The time stamp format depends on the selected period. For instance, if the "**File name prefix**" field is set to "sample", the "**File extension**" field to "log" and the "**File name format**" option is "Daily", then each log file created will have the format "sampleYYYYMMDD.log". On March 21st, 2003, the log file will be "sample20030321.log". Please, note, that the final extension (after the final period), remains at the end of the file name.

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Log rotation mode is defined by the following key parameters:

- **File name prefix** - text string, which will be added at file name beginning;
- **File name extension** - text string, which will be a file extension (characters after dot);

Limit size - the "Limit size" field specify the maximum size in kilobytes of any log file. If you'll specify zero size, then the file size will not limited. You may select from the following modes:

1. **Clear file** - if the log file size will exceed the limit specified, then the log file content will be deleted and file filling will start from beginning.
2. **Rename old** - if the log file size will exceed the limit specified then the existing log file will be renamed.
3. **Shift (no threshold)** - the older data over the limit specified will removed from the log file.
4. **Shift (with threshold).** In this mode the program will wait when the file size will exceed the limit specified + the threshold value. After this, the older data over the limit specified will removed from the log file.

If the program works continuous for a long time, it is possible that the log file will have large size and this file will be inconvenient for looking and analysing. For this there is the possibility to create files in dependence with the time on PC. You can select one variant predefined or set up new one:

- **Daily** - file will be created with name containing prefix, and date in format DDMMYYYY, where DD is two-digit day sign, MM is two-digit month sign and YYYY is four digits of the current year. The file name extension will be added at the end of file;
- **Monthly** - file will be created with name containing prefix, and date in MMYYYY format. The file name extension will be added at the end of file;
- **Each data packet in different file** - in this mode the program splits data flow to a different file. In this mode you should configure the parser or the program will split a data by timeout about 300 ms.
- **Don't create new file** - in this mode the program will write all data to one file. It is recommended for a small data flow. Otherwise your log file will be too big and a performance of the program will fall down;
- **User's format** - file will be created with name containing prefix and date in showed by you format (for example, DDMMYYYY). The file name extension will be added at the end of file. The file may not contain format signs, then file name will be constant. You should not use characters, that the OS doesn't allows in file name, such as "/,\.*,?" and some others;
- **Weekly** - create a new file every week. The file name will contains a week number;
- **After data timeout** - the program will create a new file if the program didn't receive any data at the specified interval.
- **Hourly** - file will be created with name containing prefix, and date in format YYYYMMDDHH, where HH is two-digit hour sign, DD is two-digit day sign, MM is two-digit month sign and YYYY is four digits of the current year. The file name extension will be added at the end of file;
- **Constantly named file** - the current log file will have a constant name. When creating a new file the existing log file will be saved using the new file name that will contain a data and time stamp.

Date and time formatting codes:

d - day, not adding null(1-31).
dd - day ,adding null(01-31).
ddd - day of the week in text form(Mon-Sat) according to standard, set on this computer.
dddd - day of the week in full text form(Monday-Saturday) according to standard, set on this

computer.
m - month, not adding null(1-12).
mm - month, adding null (01-12).
mmm - month in text form(Jan-Dec) according to standard, set on this computer.
mmmm - month in full text form (January- December) according to standard, set on this computer.
yy - year in the form of two last digits(00-99)
yyyy - year in the form of four last digits (0000-9999).
h - hours, not adding null (0-23).
hh - hours, adding null (00-23).
n - minutes, not adding null (0-59)
nn - minutes, adding null (00-59).
s - seconds, not adding null (0-59).
ss - seconds, adding null (00-59).

Example: you want to create log file every hour. It is desired that file name starts from "sample_log" and the file extension "txt".

Answer: set file prefix = sample_log_, file extension= txt (without dot!). In file name format show HHDDMMYYYY. Now file will be created every hour. Naturally, you can set any formatting characters combination, described higher.

If you want to access to a log file while the program work, then you should configure access mode settings 17 for the log file in the next chapter.

Add date/time stamp to file name - this option is available for modes #4 and #7 and allows to add date and time to the file name.

Add data source ID to file name - if this options is activated then then the program will append the data source name at the beginning of the file name. For example, COM1-sample20030321.log.

Write data/time stamp to file before writing data - if this options is activated then then the program will write a date/time stamp to a file before each data portion.

Overwrite existing files - this option is available for modes #4 and #7 and allows to delete an existing log file before creating a new log file.

4.6.3.2 Log file access

During work can be such situations, when it is necessary to get access to a file with *current* data (current log file) from other applications (for example, for data processing). But while you are accessing the current log file USB HID Logger can't write data to a log file and all data at this moment will be lost. We recommend to use a temporary file for data storage. It is most safe way. (fig. 4.2.1).

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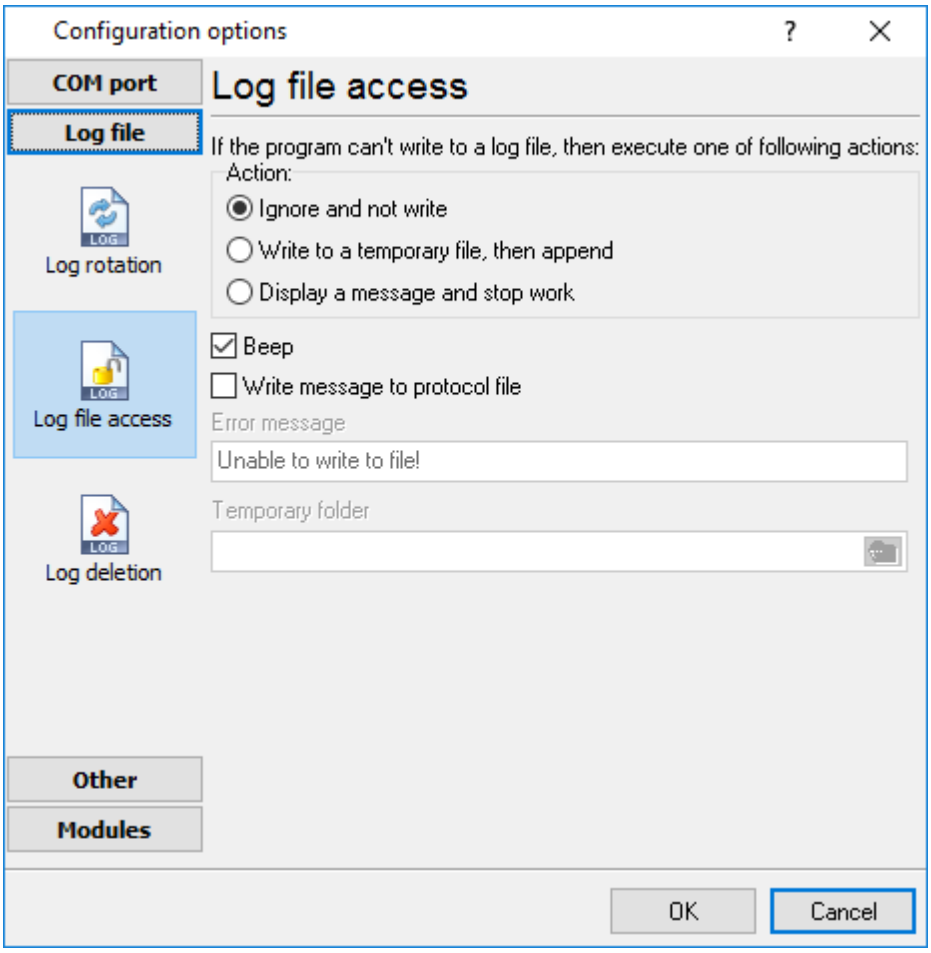

Fig. 4.2.1 File access mode.

You can select one from following variants:

- **Ignore and not write** - with this mode, the data will be lost;
- **Write to a temporary file, then append** - a temporary file will be created, to which writing will be done. After access to current file will be got, temporary file content will be added to the end of main file. But mind that if file is created in dependence of time, there can be a situation when at temporary file forming name of the main file will be changed. Then temporary file will be added to the end of newly created file.
- **Display a message and stop work** - data will be lost until dialog window is closed.

You can set up your message text, which will be displayed at writing error to data file. The sound signal can be on for an additional indication. You can also enable writing a message to a protocol file.

4.6.3.3 Log deletion

The deletion of files (fig. 4.3.1) will help you to avoid stuffing your hard disk with needless information. Log files can be deleted either depending on the time of storing or when the maximal number of files is exceeded.

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When deleting files by the time of their storage, the files that were modified last time before the specified period are deleted.

When controlling the number of files, the files with the oldest modification dates are deleted first.

You can select both variants of file deletion. In that case files will be deleted when either of the conditions is true.

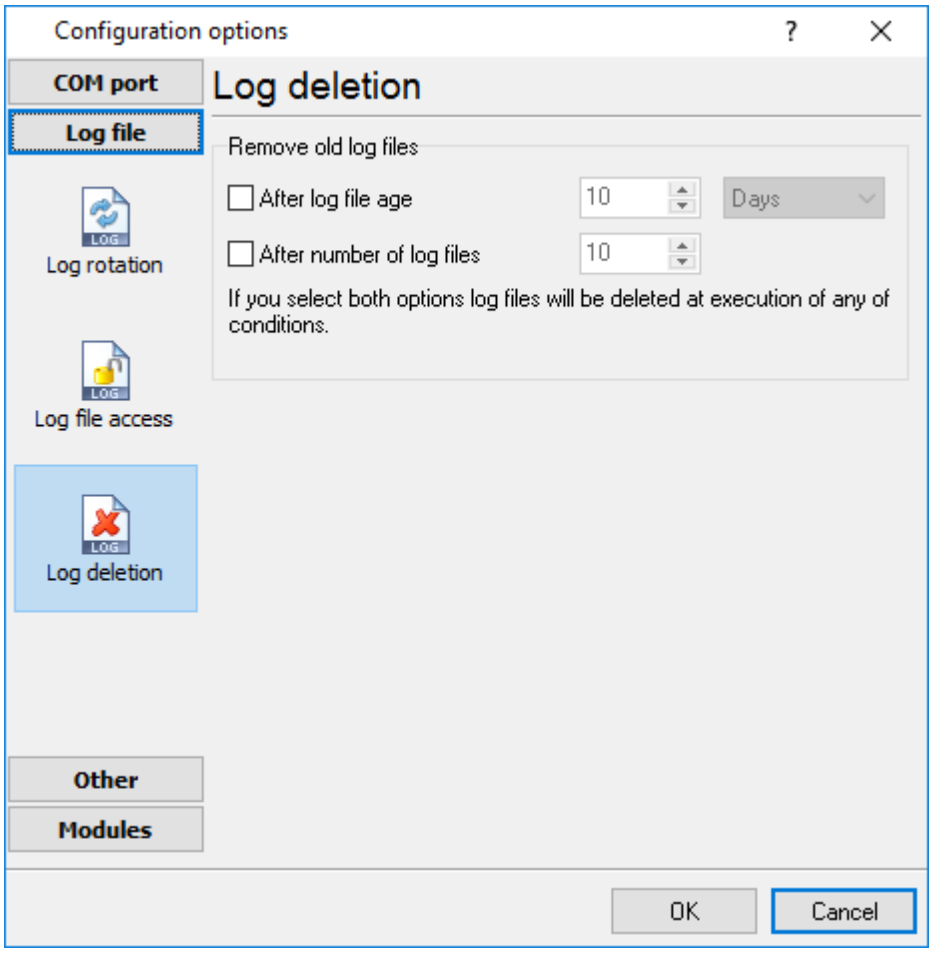

Fig. 4.3.1 Log deletion

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4.6.3.4 CSV file logging

By default the program is writing data to a text file that isn't compatible with the CSV format. But you can create Excel compatible CSV files. Simply activate logging to a CSV file..

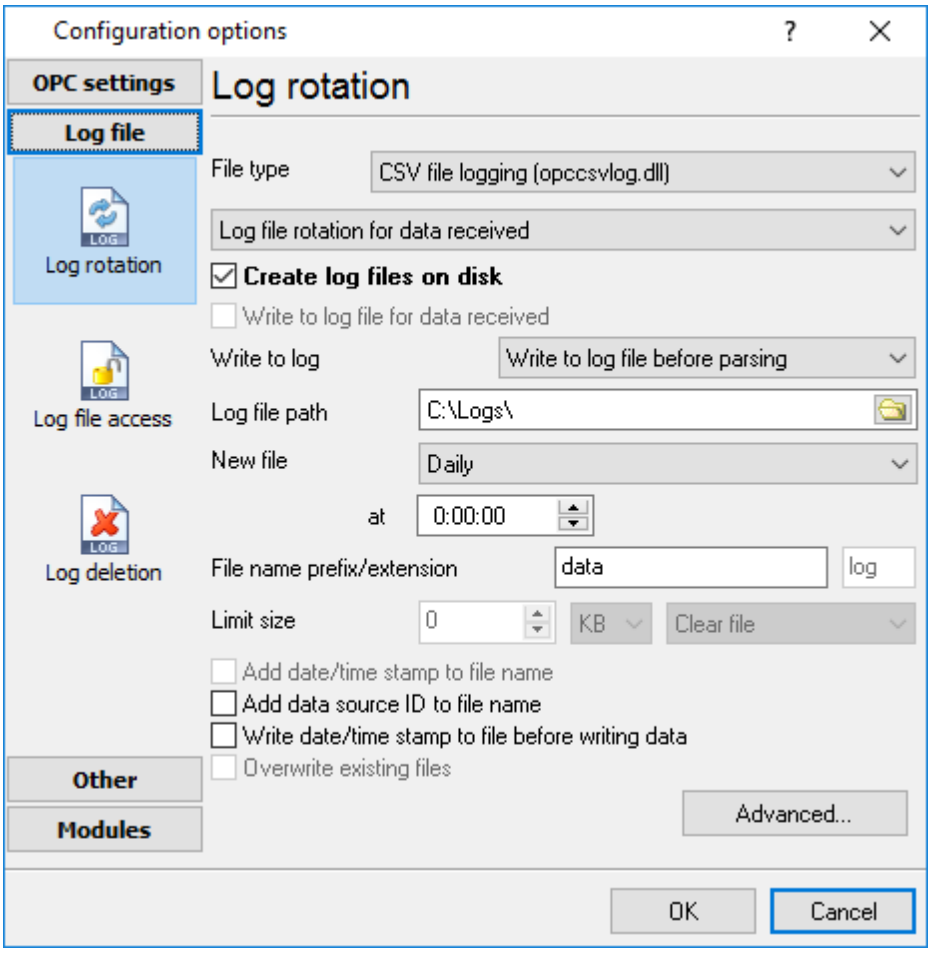

Fig. 4.4.1 CSV logging

4.6.4 Modules

4.6.4.1 Introduction & setup

To extend program functionality we implemented plug-ins modules. Module structure lets reduce your program size and purchase costs (you pay only functionality, which you need), to low down program distributive download time, your computer processor load and reduce disk space.

USB HID Logger supports few types of modules (fig. 5.1.1 - 5.1.3):

Events handling (fig.12) - an external plug-ins used to handle events generated by the USB HID Logger software. Once an event occurs (for example: "Data source is opened" or "Configuration changed"), the plug-in creates a text message using the specified template and sends a notification, do some actions, such as execute programs, scripts and etc. The form of the notification or actions depends on the plug-in settings.

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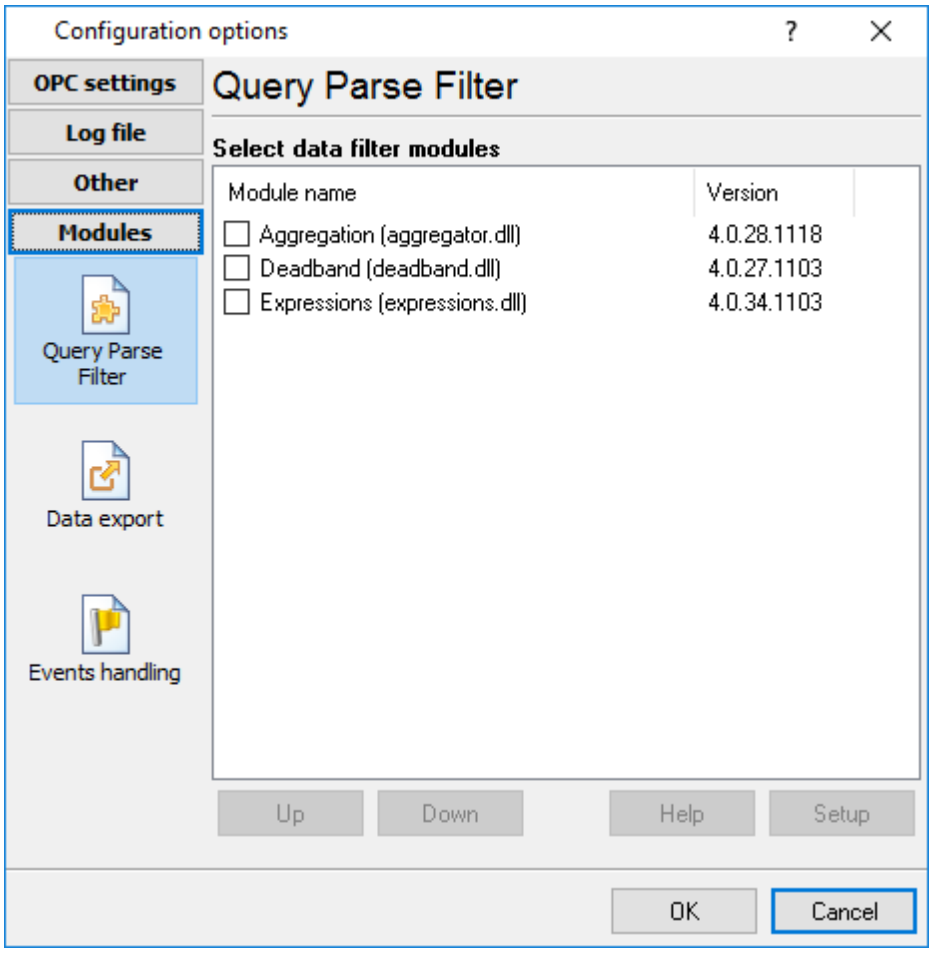

Fig. 5.1.1. Activating plug-ins

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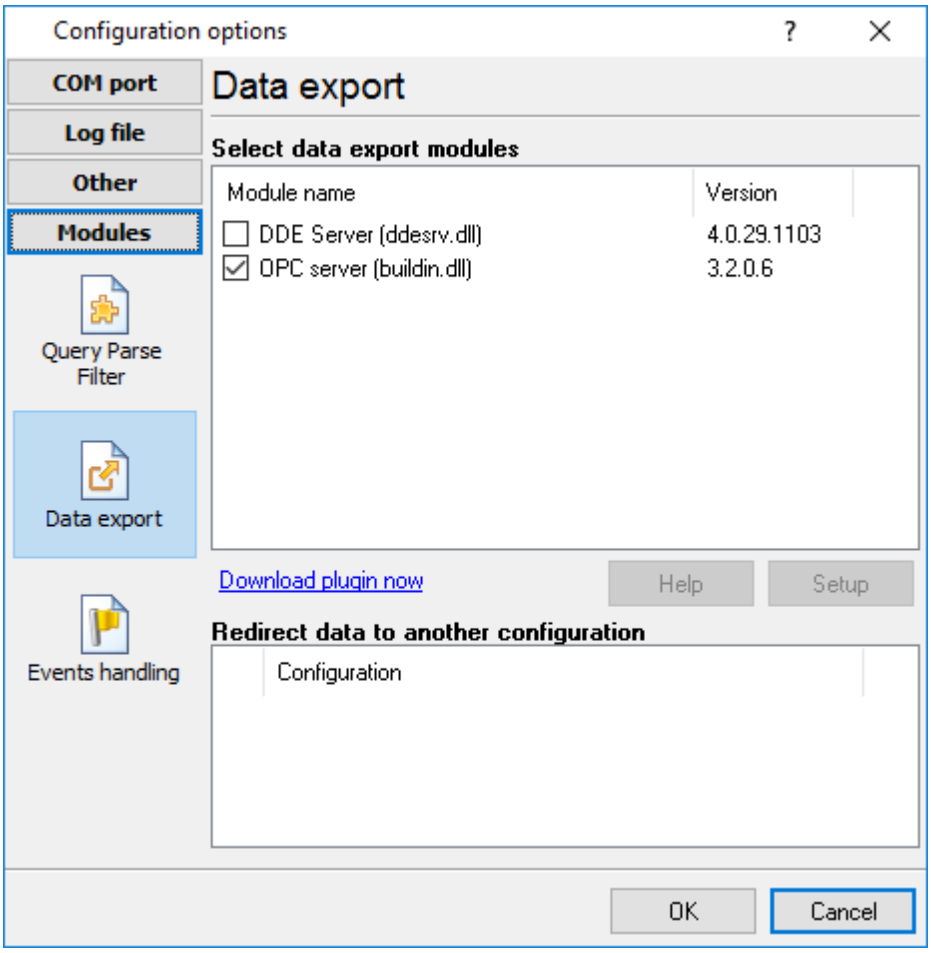

Fig. 5.1.2 Activating data export plug-ins

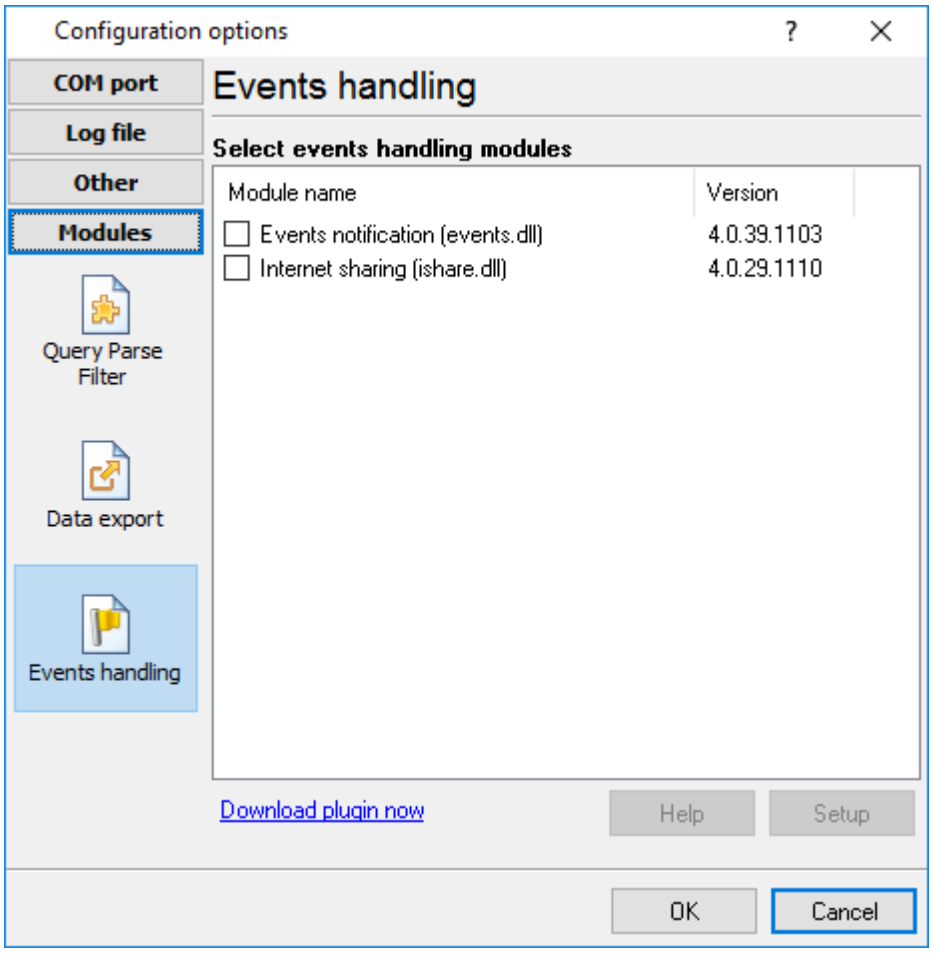

Fig. 5.1.3 Activating events handling plug-ins

Installation

You can easily install a new module. usually, you should start the installation file and click the "Next" button for few times. The installation wizard will detect a place of your USB HID Logger software and place a plug-in module and all distributive files to the "Plugins" folder, which is in the program folder (by default X:\\Program Files\USB HID Logger\Plugins).

After program restart a module will be loaded and initialized. If module is supported with our software, its short description you will see in modules list (Fig. 5.1.1-5.1.3). Most modules require additional settings. If you want to configure the plug-in module, simply click the "Setup" button near it. If you selected the module and the "Setup" button is not active, then module doesn't have additional settings and can work without additional settings. Please, read users manual of a corresponding plug-in for additional information.

Configuration steps

1. Select and configure a query module. You may use a module of this type if you need to send some data to your device (for example, initialization strings or request strings).
2. Select and configure a parser module. This step is necessary, because filter and export modules can use parsed data only. If you didn't select the parser module, then you can't configure the data

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filter and data export modules.

3. Activate and configure data export modules. You can select one or more modules simultaneously. The program will use selected modules simultaneously. Please, note, the program can' use the data export module, if you didn't configure the parser module.
4. Activate and configure event modules. You can select one or more modules simultaneously.

4.6.4.2 OPC server

Since the version 2.1.1 USB HID Logger has an internal OPC server. It means, that any OPC compatible client application can get data from USB HID Logger without any additional software. For connecting to the OPC server our OPC server has an unique attributes (Fig. 5.2.1). Before using the OPC server on your PC you should download and install the OPC Core Components Redistributable from www.opcfoundation.org (registration required).

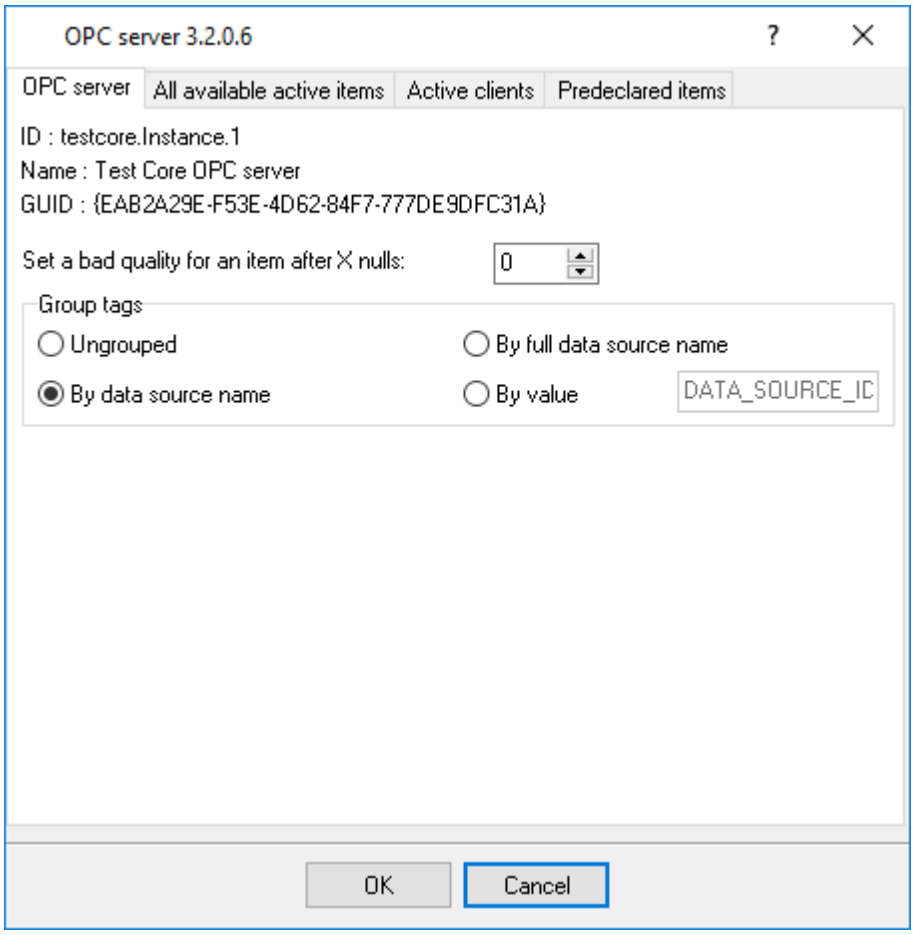

Fig. 5.2.1 OPC server parameters

USB HID Logger are parsing all incoming data to one or more variables and OPC client are getting it (fig. 5.2.2). After connecting to the OPC server you will get list of all variables.

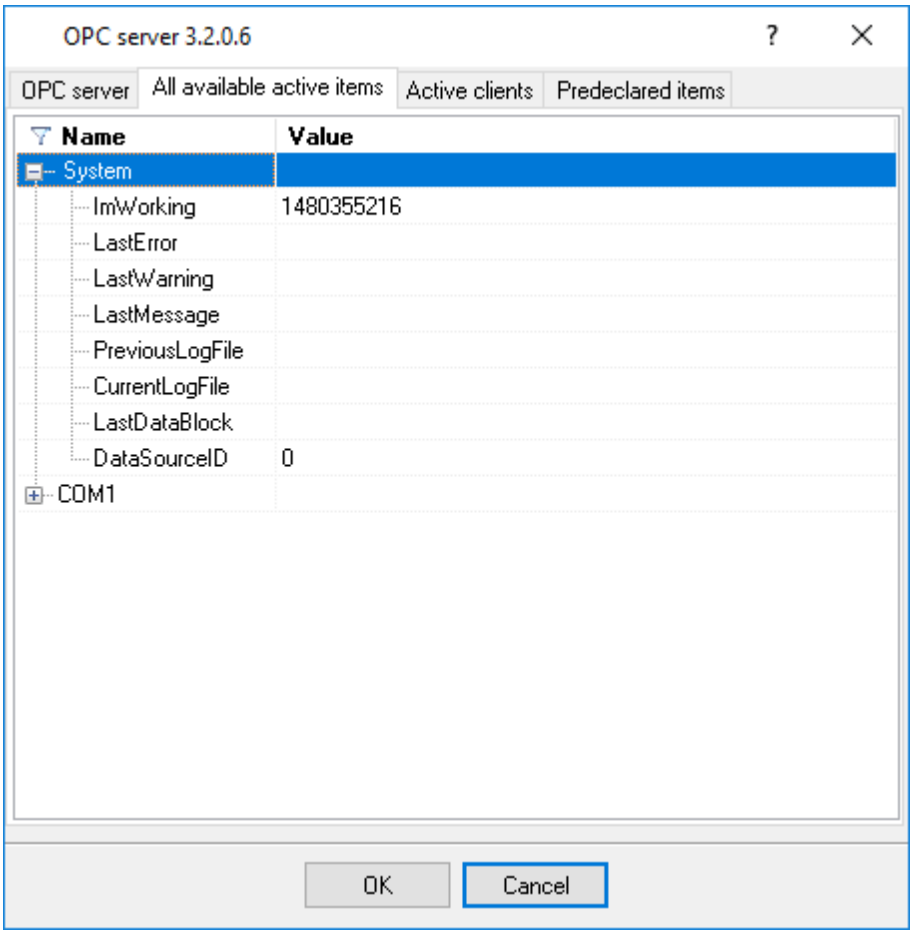

Fig. 5.2.2 OPC server active items

Clients activity is showed on the "Active clients" tab. The top node is client, below is group of items and connected items. By double-clicking, you can get a detailed information about each node.

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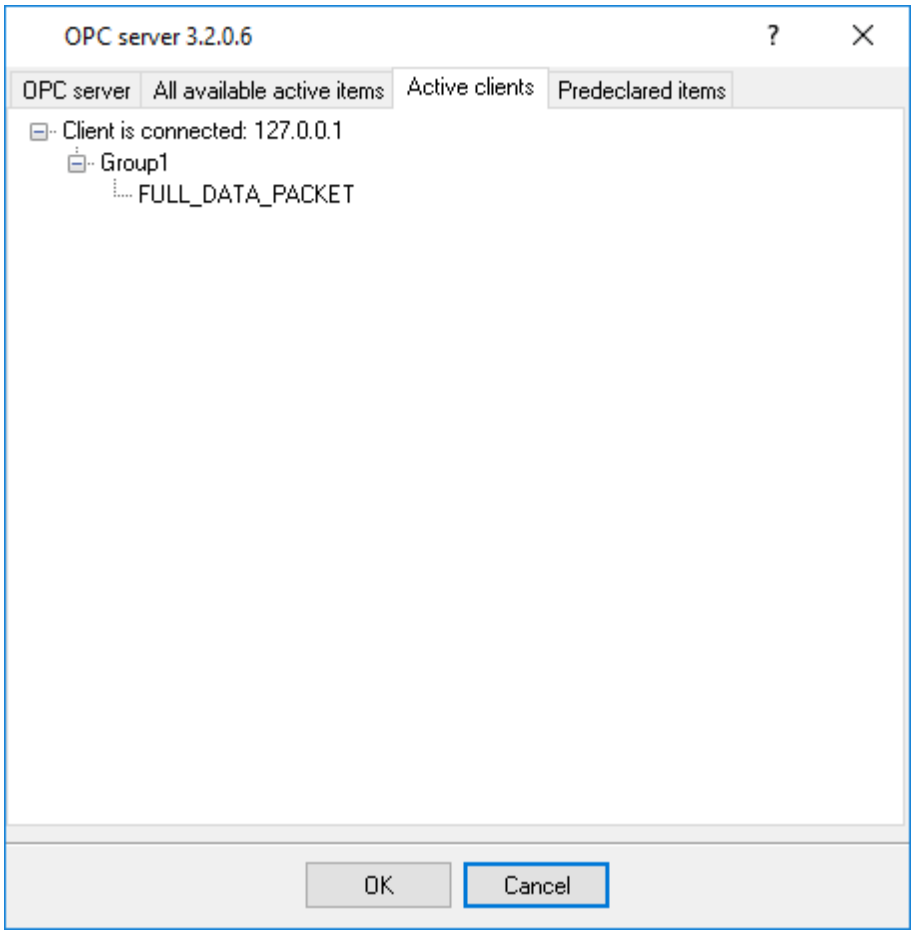

Fig. 5.2.3 OPC server clients

USB HID Logger creates new variables at "on-the-fly" mode. The USB HID Logger starts without any variables and get it only after first data had been received. If your client OPC will connect to the OPC server before, than data had been processed, then it will get empty list of variables and your OPC client should poll the OPC server for updating list of variables. If your OPC client doesn't allow it, then your can pre-define all variables (fig.5.2.4). In this case the OPC server will create these variables with empty values, immediate after starting and your OPC client will get these names while connecting.

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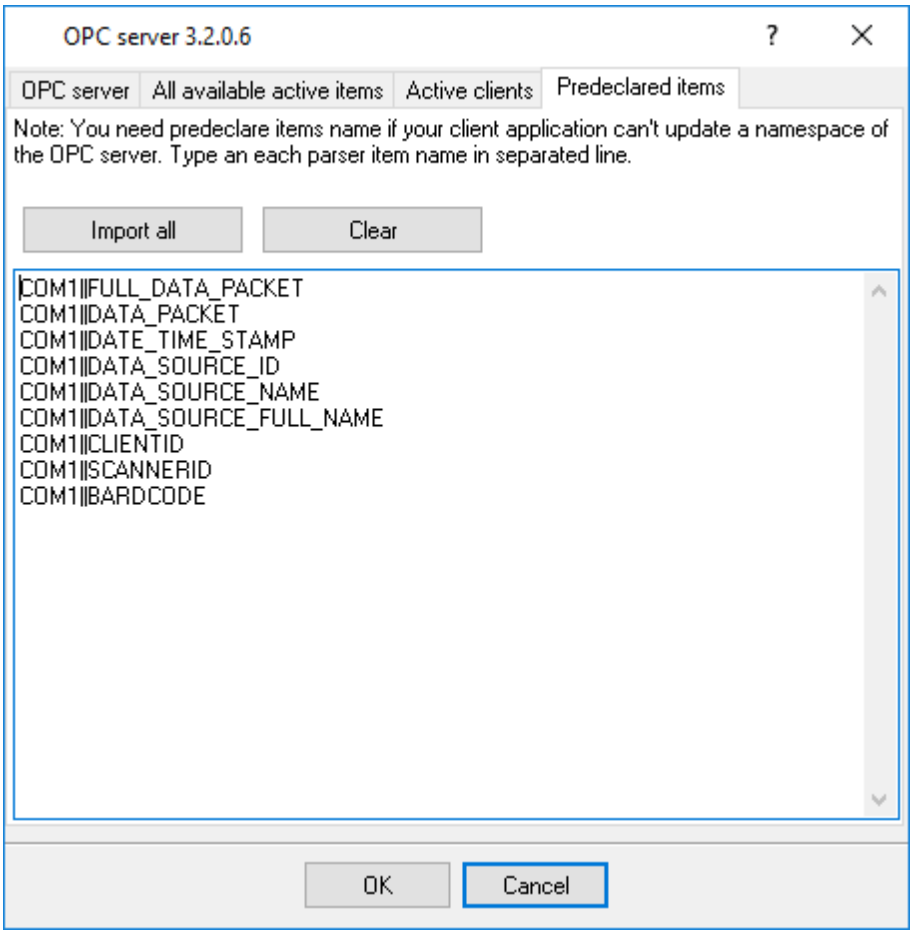

Fig. 5.2.4 OPC server pre-declaration

4.7 Program options

4.7.1 Window view

This tab in program options (fig. 6.1.1) allows you to customize appearance of the main window of the program (fig.1.1.1 5). You can access this tab through the "Options -> Program options" menu item in the main window.

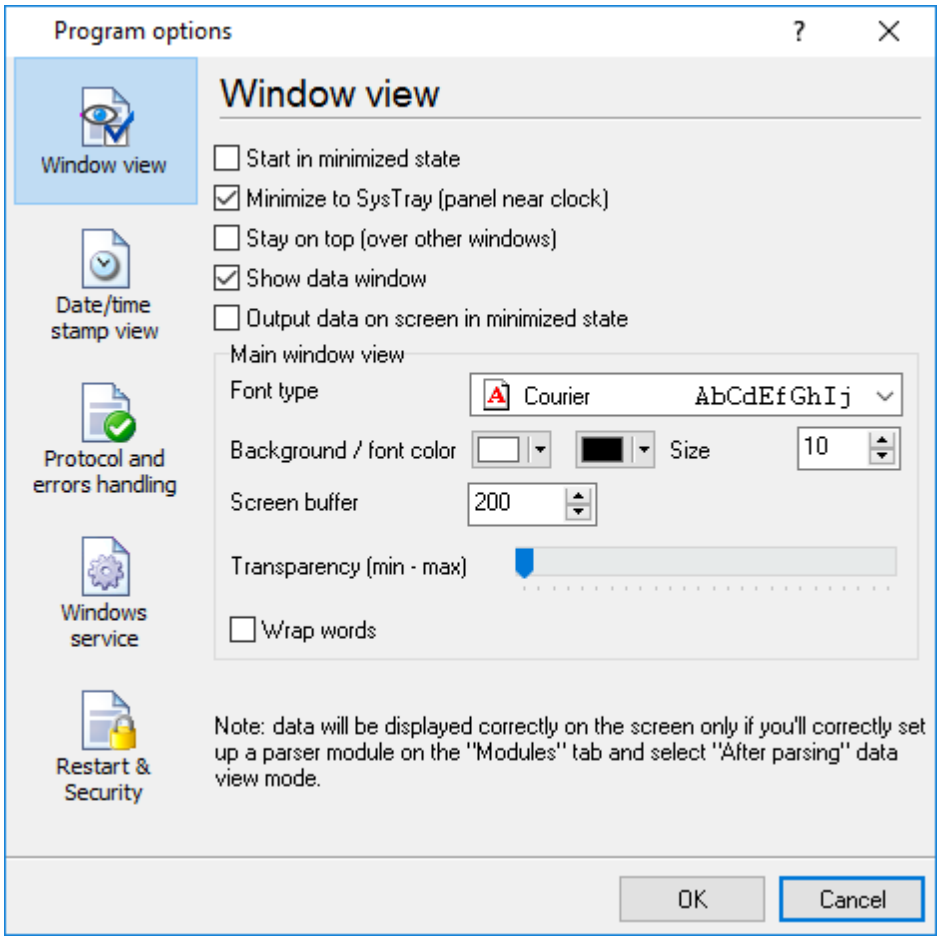

Fig. 6.1.1 Window view setting

You can set following parameters:

- **Start in minimized state** - at start USB HID Logger will automatically put its icon on panel near clock (SysTray fig. 6.1.2);
- **Minimize to SysTray** - while the main window of USB HID Logger minimizes, the program will automatically put its icon to the panel near clock;
- **Show data window** - if you specify this option, then the program will display all data in the main window. If you are logging many ports on slow PC, then you can computer CPU load rate with disabling of this option;
- **Output data on screen in minimized state** - if you'll enable this option, then the program will display processed data in minimized state. If you are logging many data sources on slow PC, then you can decrease computer central processor load rate with disabling of this option;
- **Font type** - the data will be displayed with this font type in the main window only. We recommend to use mono-spaced fonts in this field, such as: Terminal, Courier etc.;
- **Screen buffer** - at exceeding of value specified the data window will be cleaned;
- **Window view** - will let you setup data window view (font color, font type, background color).
- **Transparency** - in Windows 2000 and later will let you set transparency of the main window. The most left position is normal window view and most right position is maximum transparency.
- **Wrap words** - if you didn't configure a parser module or your data flow doesn't contain a blocks separator, then your data without this option enabled will be displayed as one long string in the data window.

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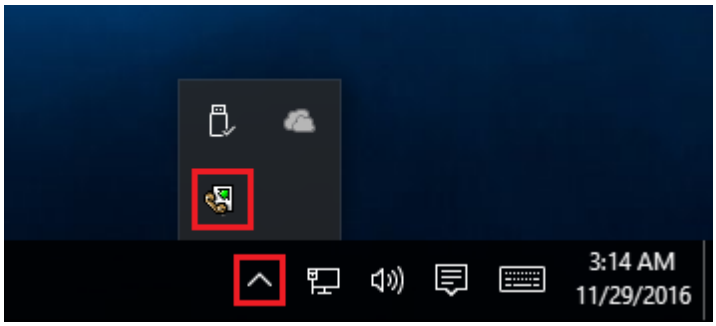

Fig. 6.1.2 Systray - panel near clock

4.7.2 Date/time stamp view

This group of options (fig. 6.2.1) allows to configure the format of date/time stamps that will be used in the main program window and log files.

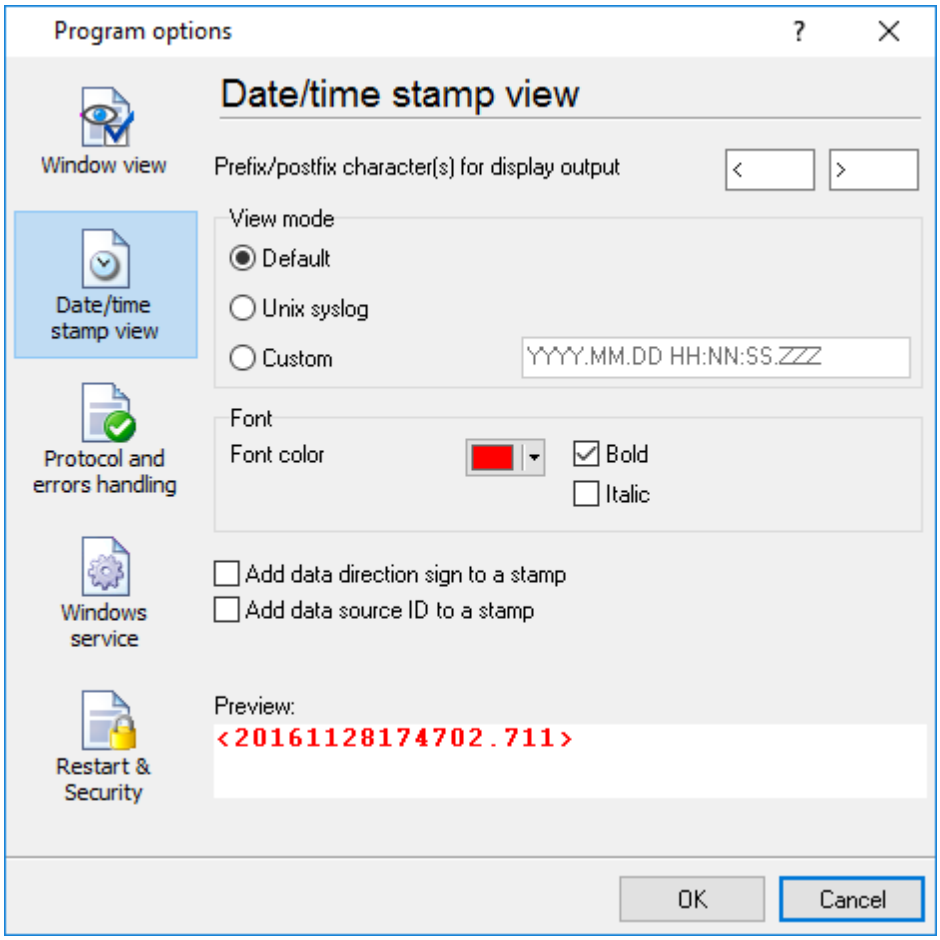

Fig. 6.2.1 Configuring data/stamp view

Prefix/Postfix characters for display output - these options allow to define beginning and ending characters of a date/time stamp that will be showed in the program window. When outputting data to

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a log file the program uses individual characters 12 for each configuration.

View mode - allows to select the standard or define the custom format of the date/time stamp.

Font - this group allows to define the color and font of date/time stamp.

Add data direction sign to a stamp - if this option is activated then the program will append TX or RX to the end of the stamp.

Add data source ID to a stamp - if this option is activated then the program will data append data source ID at the beginning of the stamp. For example, COM1.

4.7.3 Protocol and errors handling

While the program execute, she generates many messages about errors and events. All these messages are being registered in a protocol file. This can be start or stop of the program, some messages from plug-in modules etc. On this tab you can define the kind of messages, which you want to put a protocol file (fig. 6.3.1). Here you can set maximum protocol file size and a formatting mode. Usually, the protocol file is in a program folder and has the name of the program with the 'log' extension.

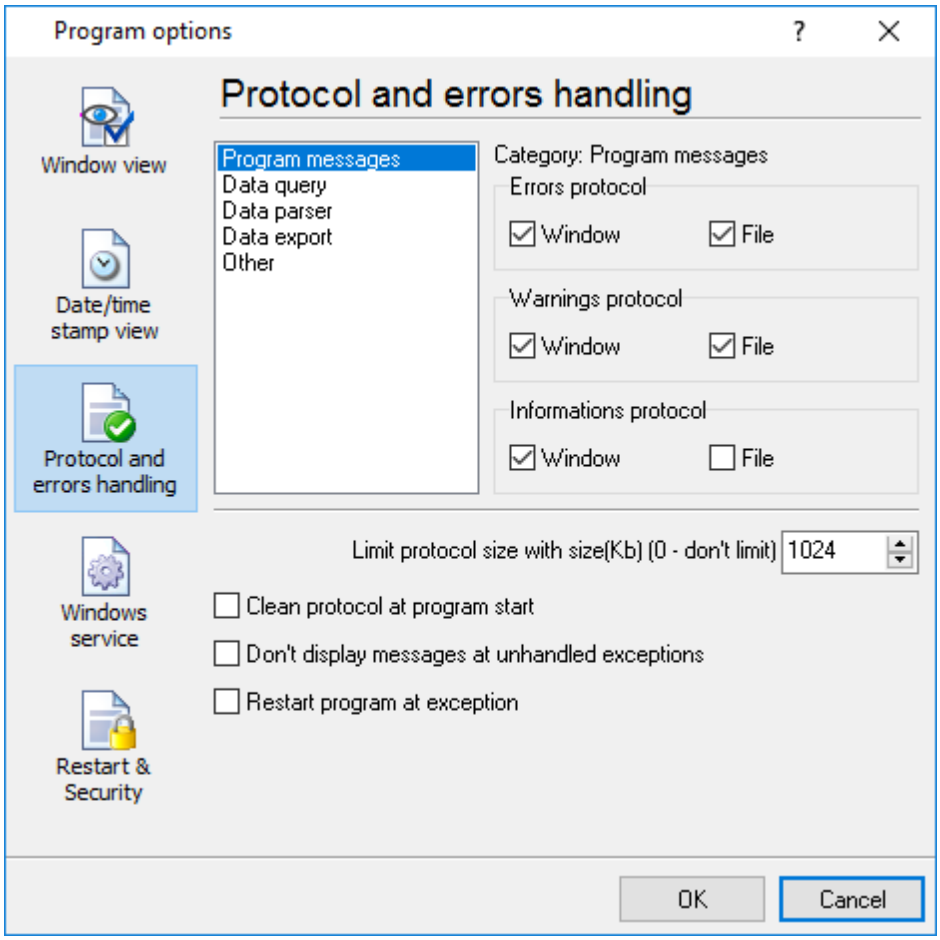

Fig. 6.3.1 Protocol settings

USB HID Logger works with three types of messages:

- **Information messages** - this type of messages informs you on operations which are fulfilled in the current time;
- **Warnings** - warns you of possible failures or possible errors. Interference of the user is not required, but check is required;
- **Errors** - the program has detected an error which elimination needs involvement of the user.

There is the possibility to log following events:

- **Program messages** - messages about start or stop of the program, etc.;
- **Data query** - messages which are generated in a data query module;
- **Data parser** - messages which are generated in a data parser module;
- **Data export** - messages which are generated in a data export module;
- **Other** - messages that can not be associated with types above.

You can write each type of messages to a protocol file or/and to the list in the main window. Please, specify necessary options for each message type at "Window" and "File" fields.

If you don't want to allow to grow a protocol file size to an unlimited size, then you can enable the "Clean protocol at program start" or limit protocol file size in the "Size" field.

Some exceptional messages can occur while the program execute. In most cases these messages crash the program and the most safe way is to restart the program. Please, specify the "Restart program at exception" option and the program will be restarted automatically.

If you want look all program messages, then you can disable the "Don't display messages at unhandled exceptions" check box and the program will open the exception message window with detailed information.

4.7.4 Service mode on Windows 2000+

4.7.4.1 Configuration

Windows NT+ services use will let you:

- control service on local and remote computers, including remote computers with Windows NT 4.0 system;
- setup actions on emergency service restore in case of failure, for example auto service or computer restart (only on computers with Windows 2000 or later);
- create for services other names and descriptions, to find them easier (only on computers with system Windows 2000 or later);
- run service before user login (password input);
- service can be setup on automatic start after operation system load.

Note 1: you must be logged in as an administrator in order to change the configuration or control the service in any way (start, stop, pause, continue).

Note 2: On Windows Vista and later you should start the program with elevated administrator

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privileges.

If you want to use the program as a service application, then, please, go to the "Options -> Program options -> Windows service" tab (fig. 6.4.1), then enable the "Use program as a service" check box. Later, please, specify the startup type of the service. There can be following variants:

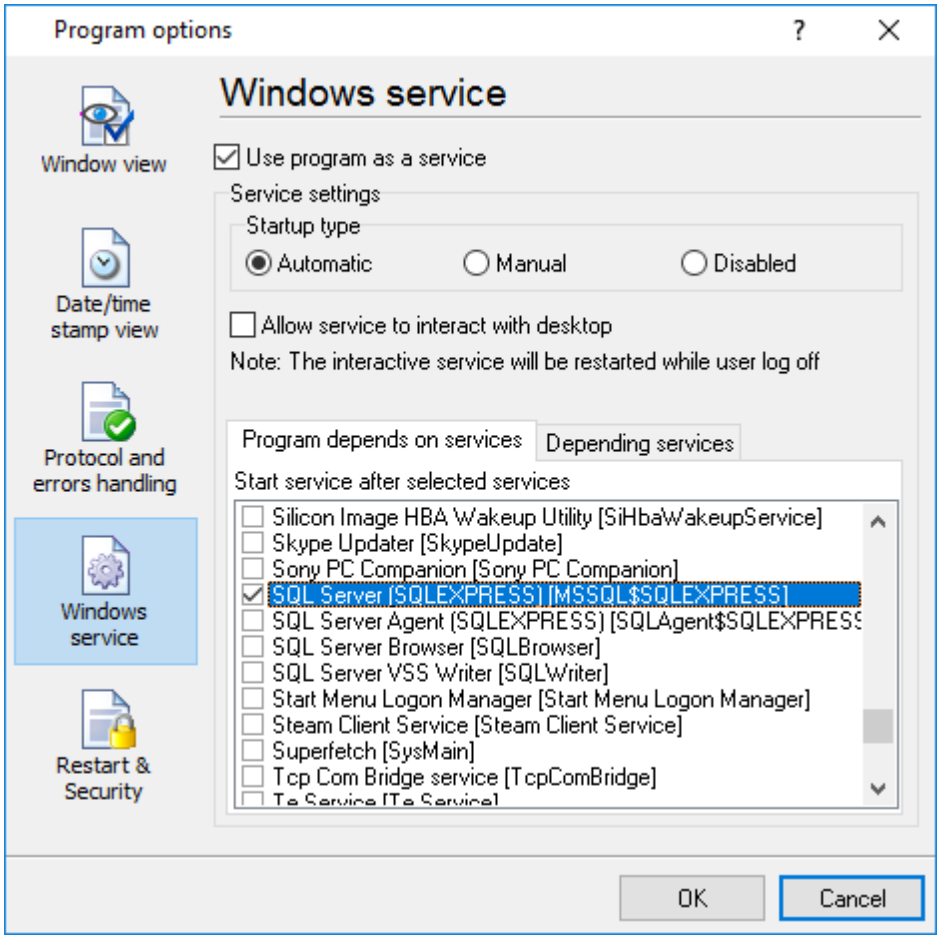

Fig. 6.4.1 Service settings

1. **Automatic** - service will be started automatically at every Windows start, before user login;
2. **Manual** - you can start the service application in the "Services" window in the Control panel (fig. 6.4.2);
3. **Disabled** - service can't be started.

If you want to change program settings while service mode, then enable the "Allow service to interact with desktop" option. In this case, the program will put the icon to the SysTray (fig. 6.4.2). But then your interactive service will be restarted while user log off.

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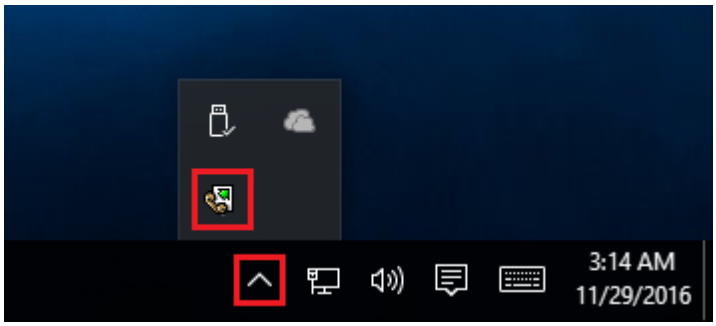

Fig. 6.4.2 Service icon in Systray

If you use data bases or special drivers, before service run, these applications must be run. You can specify what services should be started before USB HID Logger in the "Program depends on services" window (fig. 6.4.3).

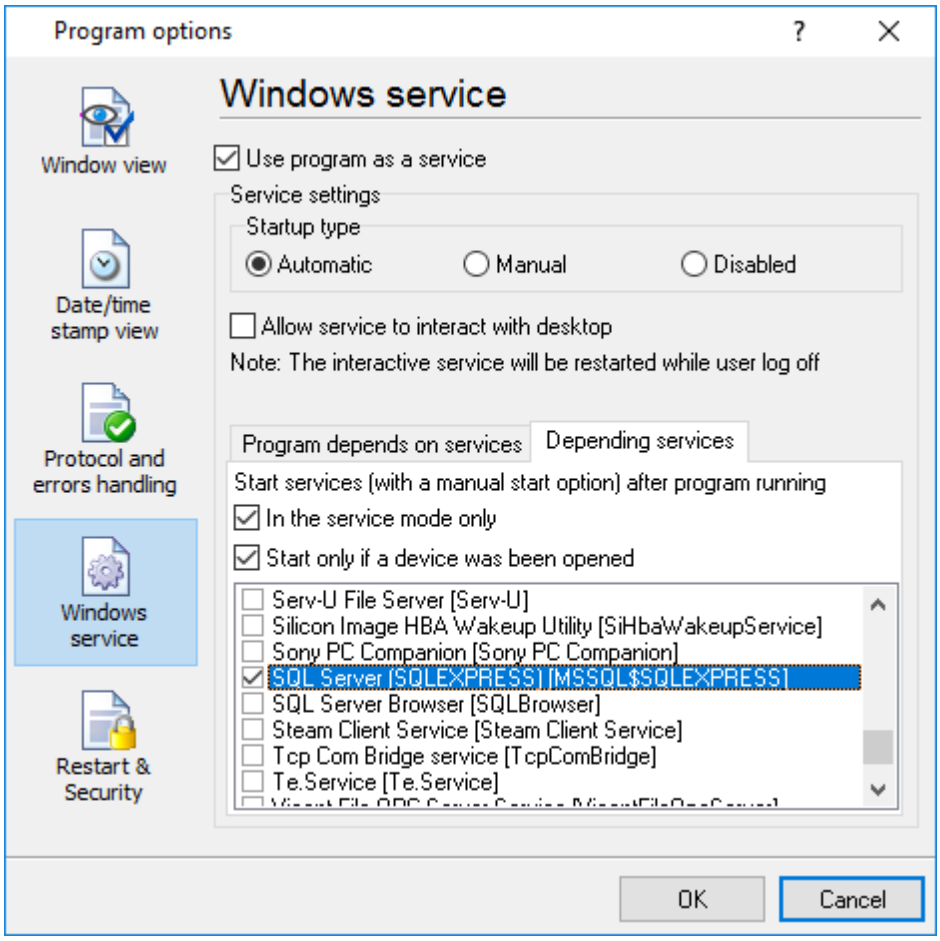

Fig. 6.4.3 Service settings #2

In some case you need to start USB HID Logger before starting other services. In this case you should:

- Switch a start mode of a target service to "Manual";
- Start USB HID Logger;

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- Set on the target service at the "Services depend on ASDL" tab;
- Select mode when you need start these service;
- Restart USB HID Logger.

After you installed the service mode of the program, restart a computer or run the service manually from the "Services" window in the Control panel (fig. 6.4.4)

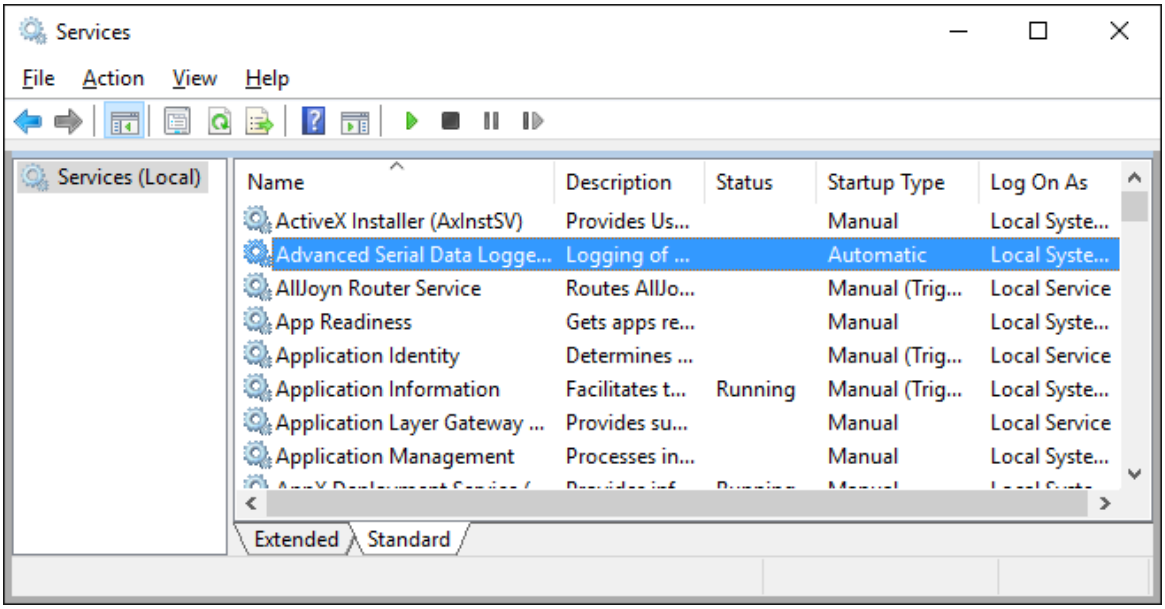

Fig. 6.4.4 Manual service run (in Windows 2000)

After start of the service, the service processes names will be displayed in a process list: usbloggersrv.exe and usblogger.exe (fig. 6.4.5). The 'usbloggersrv.exe' application makes interface between the service manager and the USB HID Logger software. Unlike srvany.exe utility, our service stops safely.

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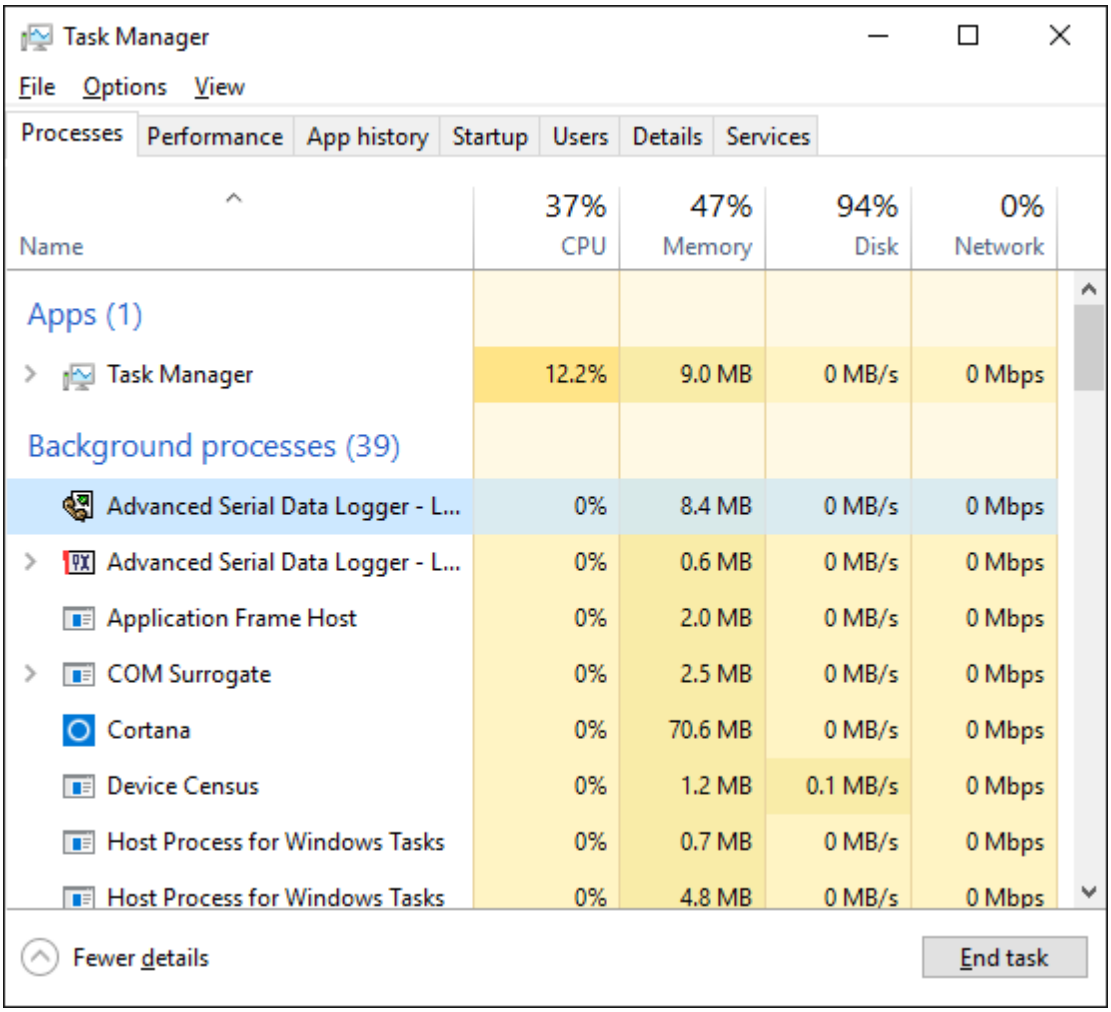

Fig. 6.4.5 Process list

If you want to configure the program as a service, then you must be logged with administrator rights. The service application can be controlled, stopped or removed with help of a command line string. Run usbloggersrv.exe with following parameters:

- /? - short help;
- /I - install service for start in manual mode;
- /A - install service for start in automatic mode;
- /D - install service in off state;
- /R - remove service from computer.

4.7.4.2 Windows Vista+ notes

One of the ways Vista's security was improved was by separating system services and user applications into separate 'sessions'. Keeping the system services isolated helps to better secure them, but also makes any interactive interface unavailable to the user. That's where the Interactive Services Detection service comes in. When a service needs to interact with the user, Interactive Services Detection presents a dialog that will switch the user to the session where the service is running so they can interact with the service. For an excellent, detailed description of this, see next

paragraph.

Many sites recommend disabling this service, but doing so will result in you not being able to interact with any services that require your attention. This service is run manually by default, so there is little point to disabling it unless you don't want to be bothered by important information from the software you may be trying to run.

- **Display Name**: Interactive Services Detection
- **Service Name**: UI0Detect
- **Process Name**: UI0Detect.exe
- **Description**: Enables user notification of user input for interactive services, which enables access to dialogs created by interactive services when they appear. If this service is stopped, notifications of new interactive service dialogs will no longer function and there may no longer be access to interactive service dialogs. If this service is disabled, both notifications of and access to new interactive service dialogs will no longer function.
- **Path to Executable**: %windir%\system32\UI0Detect.exe
- **Default Startup**:
  * Home Basic: Manual
  * Home Premium: Manual
  * Business: Manual
  * Enterprise: Manual
  * Ultimate: Manual

4.7.5 Restart & Security

Sometimes the program should be restarted. For example, if you've changed the program settings remotely and want to reload program automatically with the new settings. To do that, specify the time for restarting the program on the "Restart & Security" tab in program options "Options->Program options". Just specify the time of day, when the program should be being restarted.

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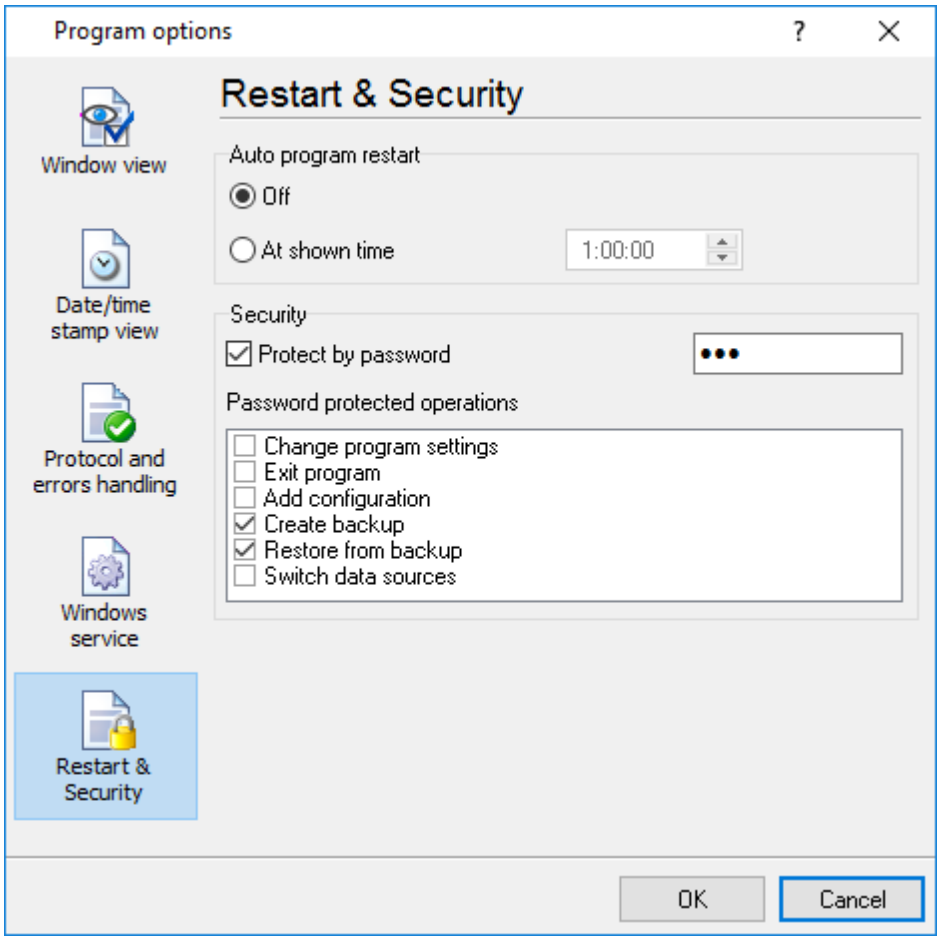

Fig. 6.5.1 Program restart settings

On this tab you can also protect some actions with the program by a password. To do that, activate the "Protect by password" option, define a password and select protectable actions.

5 Having problems?

5.1 Program doesn't run or work

It is necessary to make sure in proper time installation on your computer, so as if you put clock after program installation, protection from use after trial period works.

Also program won't work, if you started SoftIce application debug environment or some other. In any other case, please, inform our developers about your problems, our address support@aggsoft.com.

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