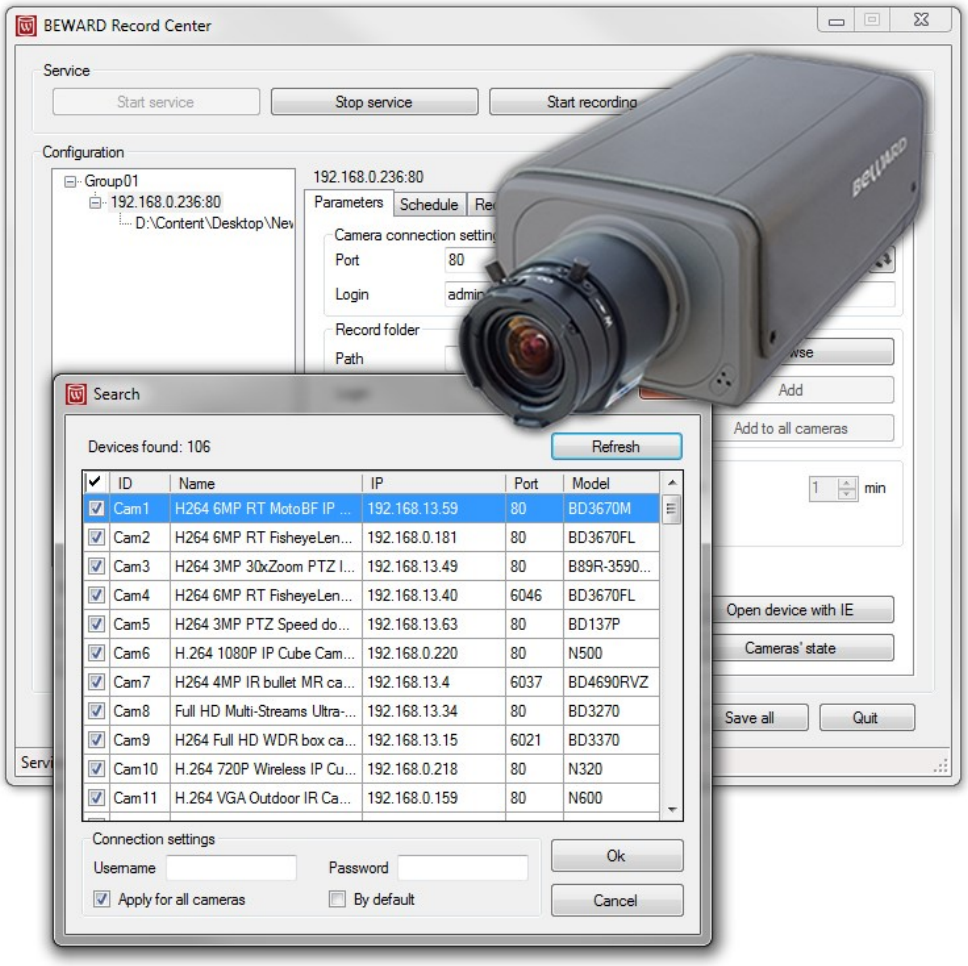
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# BEWARD Record Center

## Software Operation User Manual




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Please, read this Manual before using BEWARD Record Center software.

Some parts of the Manual, as well as menus of the application, could be changed without prior notice.

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# Chapter 1. General Information

## 1.1. Purpose of BEWARD Record Center

This manual contains information about installation and setting of the BEWARD Record Center software that is used for making a video surveillance system based on IP cameras, IP Door Panels and IP servers.

IP cameras are video surveillance cameras which have a built-in web server, a network interface and which are connected to the Ethernet networks.

Video servers digitize an analogue video signal and transmit it over IP networks, providing remote access to a real-time video stream through the local area network or Internet. A video server is equipped with a built-in motion detector and has powerful monitoring functions based on trigger and scheduled events.

BEWARD Record Center is feature-rich software that provides recording, storing and playing video information of centralized and remote video surveillance systems. Video record from up to 36 devices, including IP cameras and IP servers, is supported by the software.

## 1.2. Main Functions of BEWARD Record Center

BEWARD Record Center supports the following functions:

### 1.2.1. Simultaneous recording of up to 36 video channels.

- Simultaneous recording of up to 36 video channels in the most commonly used video format .avi;
- Rewriting is supported – You can set the free space limit on the disc, and the oldest files in the video archive are automatically deleted when free space is needed for new files;
- Support of saving recorded video into network folders;
- Record several video streams from a single device in different recoding modes.

### 1.2.2. Recoding in different modes

- Constant recording;
- Recording by user-defined schedule;
- Recording when the Talk mode in BEWARD IP Visor is enabled;
- Recording when the following events are triggered: motion detection, alarm input, call button press, tempering detection, person detection, face detection etc. (the actual list of events depends on the device model).



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### 1.2.3. Archive playback

- Playback of the video archive via built-in single-channel player.
- Playback from local archive or network folders.

### 1.2.4. Additional features

- Record audio streams from the device (if supported by the device);
- Record audio streams from the PC when Talk mode in BEWARD IP Visor is enabled;
- You may contact BEWARD sales managers to increase the maximum amount of available video channels according to your needs.

## 1.3. Advantages of IP Video Surveillance Systems

IP surveillance by means of IP cameras or IP servers replaces analogue surveillance systems and DVR systems. However, existent networks TCP/IP Ethernet are used for video surveillance needs. It helps to unify a net infrastructure and allows a customer to avoid costs of wiring separate cable lines.

IP systems have a variety of advantages in comparison with traditional analogue systems:

1. **More effective usage of network infrastructure**

   Surveillance systems which are based on IP technology don't need a layer of expensive coaxial cable as in analogue systems but use "twisted pair" cable or wireless communication systems for a connection. Using the "twisted pair" also means an absence of separate wire connection that is necessary for a transmission of control signals and energizing of a video camera. Furthermore, where laying cables are expensive or not practicable, wireless Wi-Fi technologies could be used.

2. **Openness and compatibility**

   In distinction from traditional analogue systems that represents "black boxes" and being closed technical decisions, equipment of IP surveillance systems is based on open standards that allow using equipment of different manufacturers in one surveillance system, for instance, switchboards, routers, servers and applicable software. All these considerably reduce surveillance systems' cost and increase its technical specification.

3. **Usage of network convergence**

   Most organizations generally use only Ethernet (based on IP protocol) networks for various data transmission that makes their control more effective and economically profitable.



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4. **Easy system integration**

   IP surveillance technology is an open, easy integrated platform. Because the integration of systems becomes a more and more important requirement, there must be assurance that systems of control access, conditioning, managing, applets and other systems could be easily and effective integrated into a whole system.

5. **Remote access**

   Users may get access to an image of any camera or displaying recorded video in real time from any place in the world by means of wired or wireless net connection.

6. **Expandability**

   If necessary, IP networks make possible to expand security surveillance system easily. In case of an additional video camera needs to be used, it is just connected to a local network and it is ready to work. Besides, it is possible not just to add cameras but increase a volume of data's storage by spreading information through the entire network. IP networks are possible to support a multiply subscriber's access to the same information at the same time.

7. **Intelligent processing of video image**

   A variety of built-in functions allows the IP camera to make decisions such as when to trigger alarm, when it is necessary to send a video, and even control the frequency and quality of transmitting video (it depends on a channel width). In this way, a video access and making decisions becomes better because of the basing on IP surveillance systems.

8. **Reliability**

   The ability of data's transmission using an IP protocol makes possible to use external data storage units, to realize reservation of the data, to use server and archive architectures. In case of using standard server and network equipment, the time of changing damaged devices is much less than in case of using analogue equipment. The software makes possible to observe the surveillance system's condition in real time and inform about different problems. Moreover, an arrangement of reserve power supply is much easier than in case of analogue systems.

9. **Quality of image**

   Modern IP systems use H.264 (MPEG-4 Part10) video compression format that allows using the network more effectively in comparison with Motion JPEG or MPEG-4 format. User gets the most qualitative image in conditions of using limit capacity channels. Furthermore, the space of hard drive is consumed slowly than in case of the codec of the previous generation.



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**10. Noise resistance**

Working with surveillance systems makes obviously that a process of installation and checking of such system is quite long and demands a lot of efforts. Quite often a noise appears in the image after the first start due to influence of some other electric devices. Removing the noise is always a difficult process. The process of installation and checking becomes faster with IP cameras because they are exposed to noises less than other cameras.

## 1.4. System requirements

**Minimal PC requirements**

**CPU:** 2.0 GHz and higher;

**RAM:** 1 GB;

**HDD:** 128 GB;

**Sound card:** is necessary in case of using a microphone or speakers (for feedback function), or alarm sounds;

**Video card:** compliant with DirectX 9; 128 MB memory size.

**Network interface controller:** 100 Mbit/s transfer rate.

**Supported operation systems**

Windows 7 SP1, Windows 8 Embedded, Windows 8.1, Windows 10, Windows 11.

**.NET Framework 4.8 is required for this software to operate**

It is pre-installed in modern OS, starting with Windows 10 (version 1903), older OS might require manual installation (see Chapter 2).

A computer that only meets the minimum requirements is only suitable for recording and storing a small video archive for a few cameras with low bitrate (about 1 Mbit/s). Use the storage calculator on our website (https://www.beward.ru/calculators/#calculator-videostorage) in order to approximately estimate the volume and quantity of disks for archive storage according to your needs Keep in mind that the size of the archive can be greatly reduced by not recording video constantly, and instead using record by schedule or event alarms (for example, motion detection).

BEWARD Record Center is very demanding to the data write speed. While several video channels are simultaneously being constantly recorded, the disk subsystems are being used intensely, thus reducing the disk write speed, which might result in record skips (see section 3.3).



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Always check the record statuses when setting up and adding new cameras to BEWARD Record Center, as described in section 3.3. To avoid record skips, use lower bitrate or faster disks, and try to distribute the workload across as many disks as possible.

Not all disks can handle constant data rewrites, so make sure to use purpose-built video surveillance disks. Physically install the OS and all required software on a separate disk (preferably SSD), set up BEWARD Record Center in a way that prevents recording to the system disk. Keep in mind that the disk write speed lowers as the disk is getting full. To keep high speed at all times, make sure to always have at least 20% of the disk space free. All forementioned advice is especially important for BEWARD Record Center builds with increased number of video channels (see section 1.2.4).

BEWARD Record Center is not demanding to CPU and RAM. If the computed is only used to operate 36-channel BEWARD Record Center, any modern dual-core CPU and 4GB of RAM will enough.



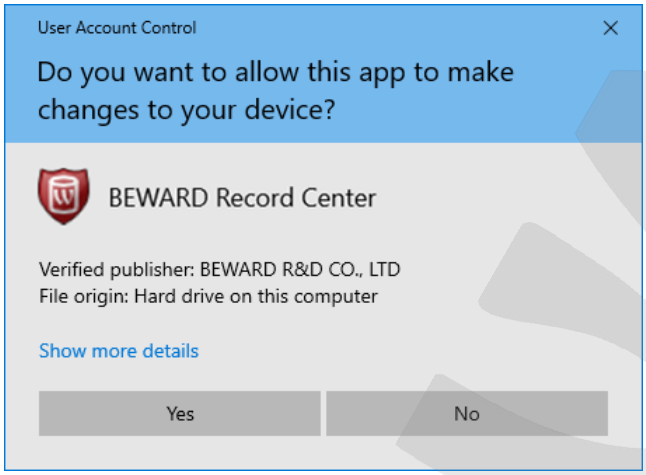
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# Chapter 2. Installation of BEWARD Record Center

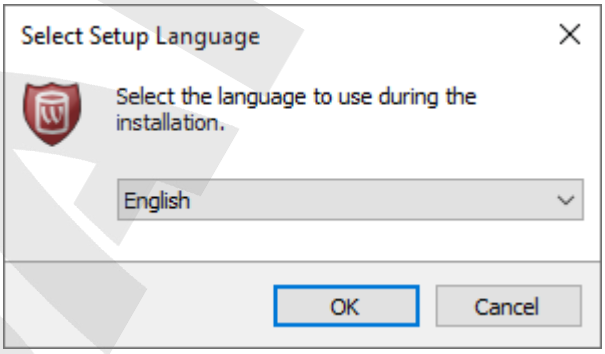
**Step 1**: insert the disc with the BEWARD Record Center software into the CD/DVD-ROM computer drive or download the Installation file from BEWARD website.

**Step 2**: open the disc using the File Explorer and run the installation program. User control window will pop up (Pic. 2.1), ensuring the authenticity of the installer software and BEWARD is a verified software publisher. Press **[Yes]** to proceed with installation.

**Step 3**: select the language you prefer from the list and click **[OK]** (Pic. 2.2). The selected language will be used for both the installer and BEWARD Record Center itself. The language can be changed later in BEWARD Record Center settings window.




*Pic. 2.1*




*Pic. 2.2*

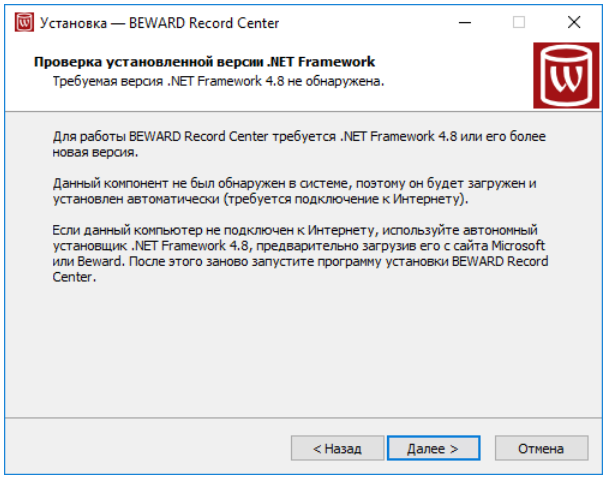
**Step 4**: click **[Next >]** in the Setup window to continue installation.

**Step 5**: BEWARD Record Center requires the installed .NET Framework 4.8. The setup wizard will check if .Net Framework 4.8 is installed on the PC. If it's not installed, a specific page with the installation info will appear (Pic. 2.3). If the PC is not connected to the Internet, you will need to cancel the BEWARD IP Visor installation, download the .Net Framework 4.8 installer file and install it. Once it is done, run the BEWARD IP Visor installer again. If the PC is connected to the Internet, the setup wizard will automatically download and install .Net Framework 4.8. Press **[Next >]**.

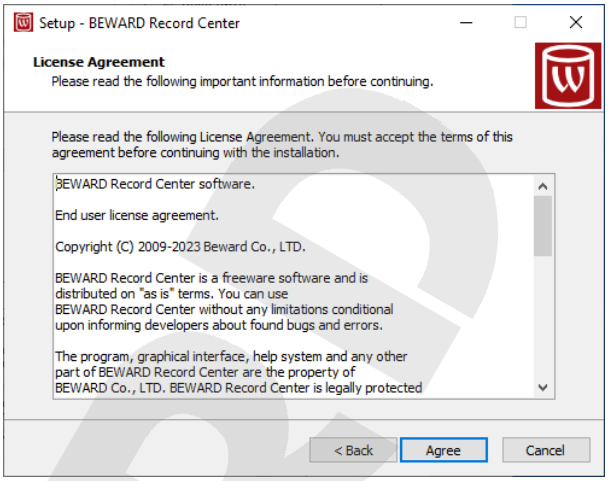
**Step 6**: the next page contains the License Agreement (Pic. 2.4). Read the text and click **[Agree]**.



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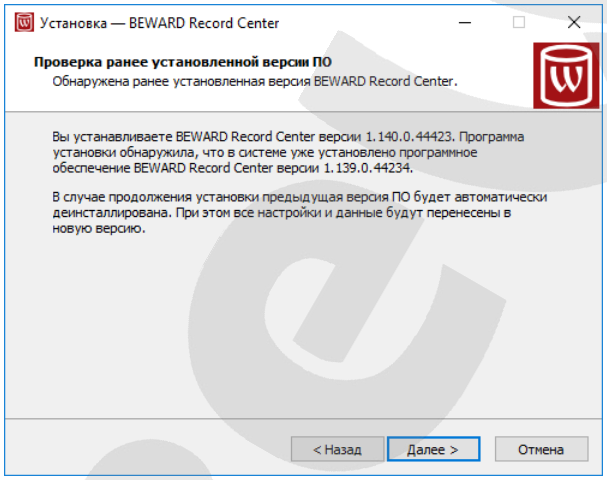

Pic. 2.3



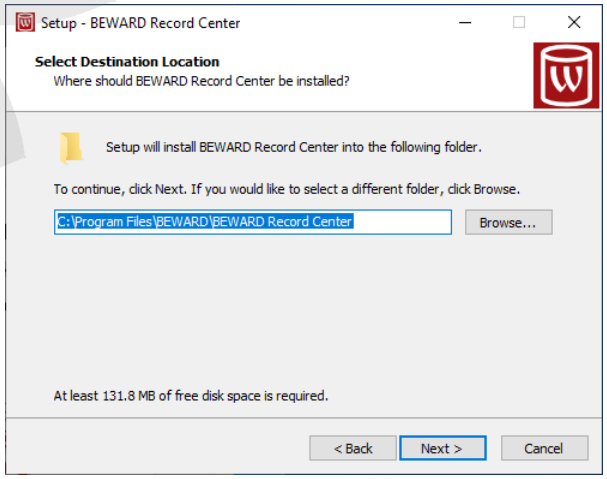

Pic. 2.4

**Step 7**: the setup wizard will run a check and inform you if any previous versions of BEWARD Record Center are already installed (Pic. 2.5). This page will not appear if BEWARD Record Center is being installed for the first time. When updating to the newer version, all application settings and data will transfer to the new version. Click **[Next >]**.

**Step 8**: select the destination location for BEWARD Record Center (keep in mind the available space). Click **[Browse…]** (Pic. 2.6). If there are no special requirements, you may keep the default destination folder “C:\Program Files\BEWARD\BEWARD Record Center”. Click **[Next >]**.




Pic. 2.5



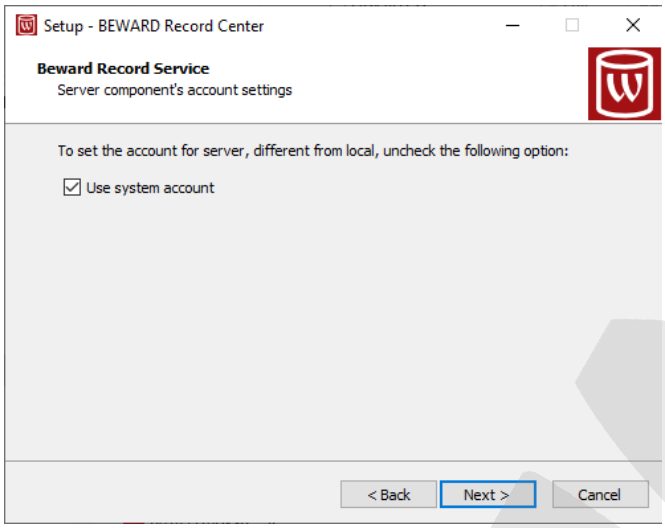

Pic. 2.6

**Step 9**: BEWARD Record Center requires Microsoft SQL Server. Full version of the BEWARD Record Center installer already contains the Microsoft SQL Server installer, so the connection to the internet is not required during installation. The setup wizard will check if Microsoft SQL Server is already installed on the PC. If it’s not installed, a specific page with the installation

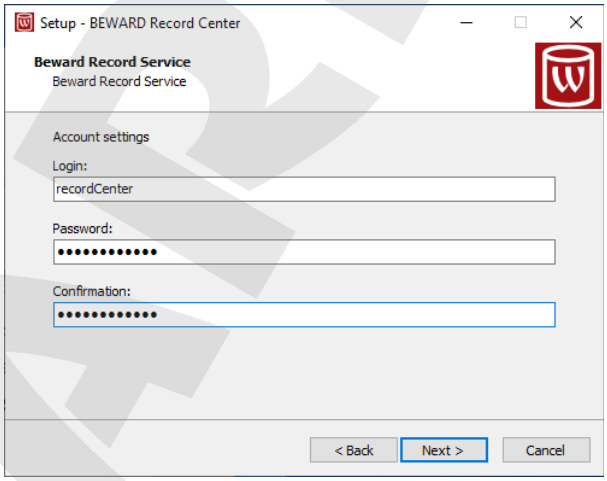


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info will appear (Pic. 2.7). You shouldn't refuse the installation of Microsoft SQL Server unless it's already installed on this or a different computer that BEWARD Record Center can access to create a manage video archive databases. You can set up the connection parameters to the existing Microsoft SQL Server instance in the BEWARD Record Center settings after the installation (see section 4.5). Click **[Next >]** to proceed.




Pic. 2.7




Pic. 2.8

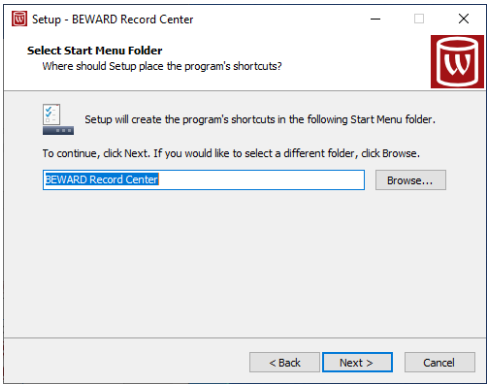
**Step 10**: server component of BEWARD Record Center is a Windows service that runs automatically when the OS is launched. Beward Record Service log service may use either the system account to log in, or a custom user-made account (which could be useful for access rights separation). In most cases you can use the system account, but if need to use another account, uncheck the **Use system account** on the "Server component's account settings" page. Click **[Next >]** to proceed.

**Step 11**: If you are required to use the a non-system user account, you will be shown the "Account settings" page (Pic. 2.8). Enter the login and password (with confirmation) of the account that intend to use for BEWARD Record Center. This page will not be shown If the **Use system account** option wasn't unticked in the previous page.

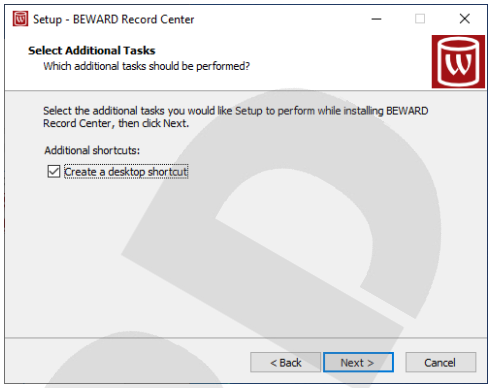
**Step 12**: specify the location for BEWARD Record Center shortcuts (the run program, troubleshooter, manuals and version history) in the Star Menu folder". Click **[Next >]** to proceed, or click **[Browse…]** if you want to specify a different folder (Pic. 2.9).



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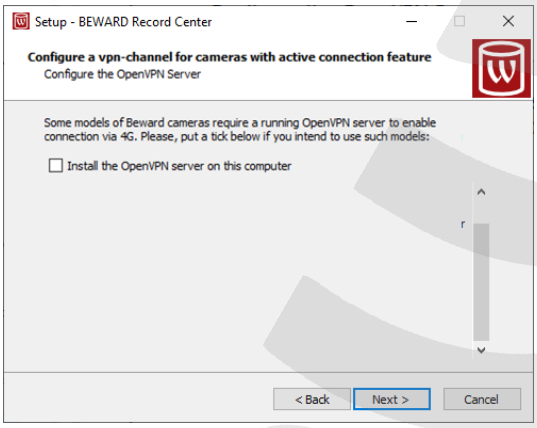

Pic. 2.9



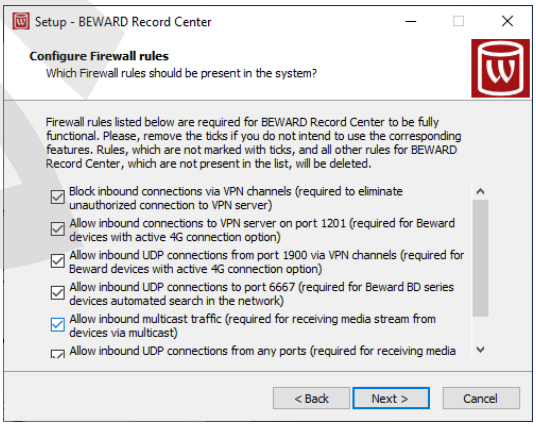

Pic. 2.10

**Step 13**: by default, the setup wizard will also create a desktop shortcut for BEWARD Record Center. If this is not necessary, untick the “Create a desktop shortcut” field. Click **[Next]** (Pic. 2.10).

**Step 14**: if you intend to use 4G-compatible devices (for example B1510-4G and B2710-4G cameras), you might require a VPN server. The setup wizard will offer to install the OpenVPN (Pic. 2.11). Tick the box of you intend to enable connection via 4G (see Chapter 5) and click **[Next >].**




Pic. 2.11




Pic. 2.12

**Step 15**: You will need to configure Firewall rules for BEWARD Record Center to be fully functional (see Pic. 2.12). Remove the ticks if you don’t intend to use the corresponding options and click **[Next >]**.

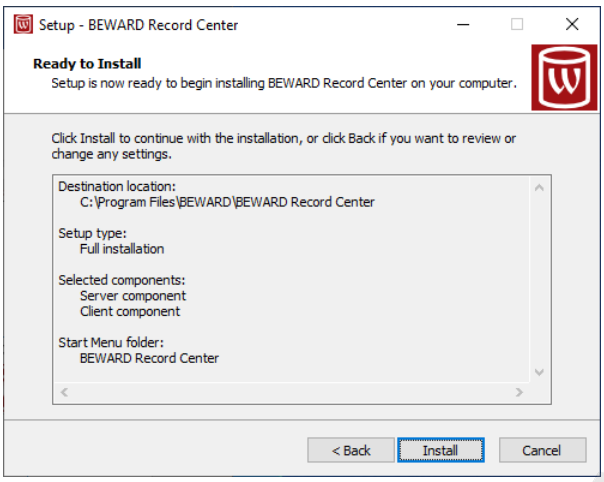
**ATTENTION!**

3rd-party antivirus, firewall and other software used to protect the system might block the incoming and/or outgoing traffic from installed programs which leads to incorrect work of BEWARD IP Visor. In order to avoid such issues, it is recommended to add BEWARD IP Visor into your antivirus/firewall software whitelist.

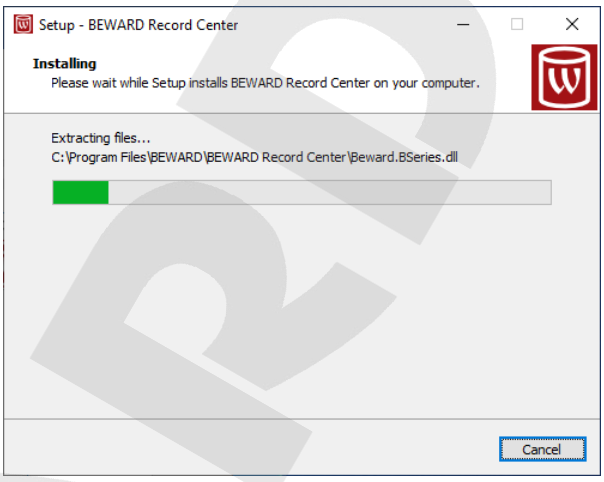


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**Step 16**: After configuring the selection of components to install, click **[Install]** in the next window, if necessary, click **[< Back]** for revision **(**Pic. 2.13).




Pic. 2.13




Pic. 2.14

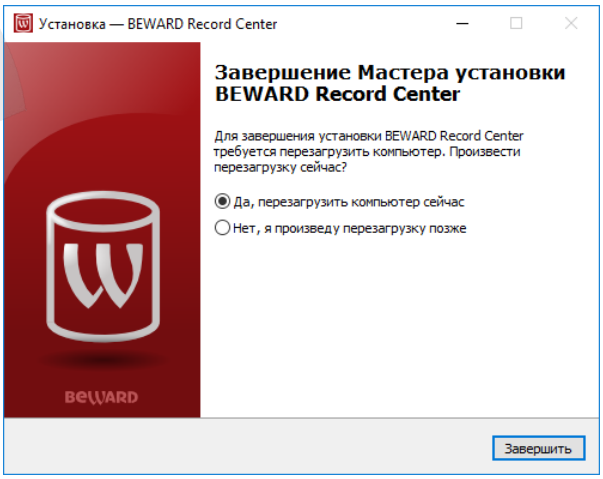
**Step 17**: wait until the installation process is complete (Pic. 2.14). Some components might take a while to install (for example, .NET Framework might take 3-20 minutes).

**Step 18**: Installation complete! If you don't need to run BEWARD Record Center right away, untick the "Launch BEWARD Record Center" box (Pic. 2.15). Click **[Finish]**.

In some cases, you might need to reboot your PC once the installation is complete (Pic. 2.16). If you would like to reboot the PC later, select "No, I will restart the computer later" option. Otherwise, simply click **[Finish]**.




Pic. 2.15




Pic. 2.16



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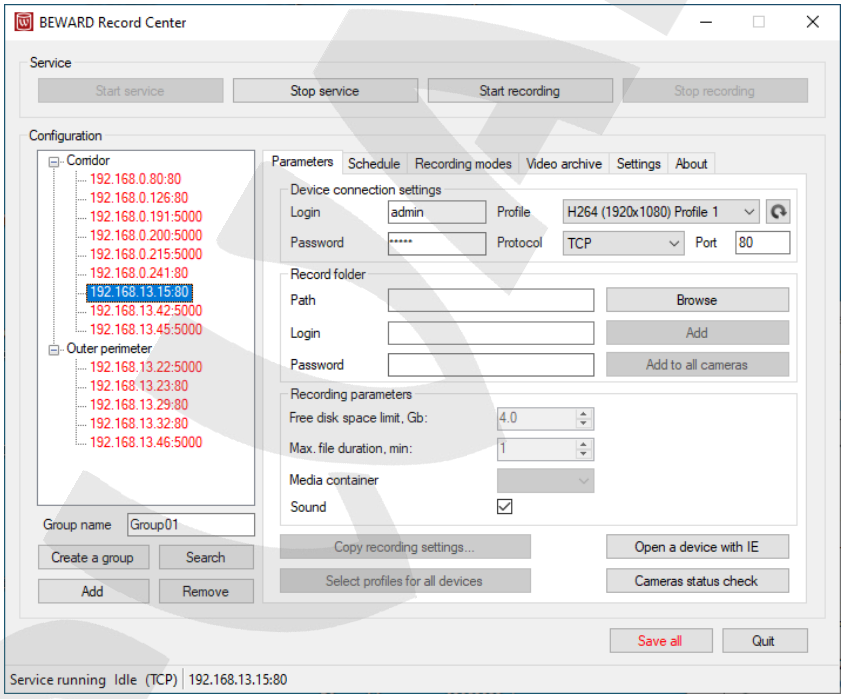
# Chapter 3. Working with BEWARD Record Center

## 3.1. Overview of BEWARD Record Center software complex

BEWARD Record Center software complex is made of the following components:

- BEWARD Record Center – graphic interface for setting up the recording service;
- BEWARD Record Service – Windows service that receives video streams from the cameras and saves them as files on the server or the network folder;
- Microsoft SQL Server – Windows service that is used for storing metadata of the video archives.

Run the application, using the desktop shortcut or the start menu shortcut (it has the following path: **Start \ BEWARD Record Center**. BEWARD Record Center main window will open (Pic. 3.1).




*Pic. 3.1*

The top part of the window contains buttons for starting and stopping BEWARD Record Service, as well as starting/ending video recording. The left part of the window contains the list of added devices, as well as buttons for editing the list. The right part of the window contains device connection settings, video archive parameters, schedule and recording modes.

BEWARD Record Service is set to start “automatically”, meaning that the Windows OS launches the service immediately after loading and the user doesn’t have to perform any additional actions. Video recording from the cameras also starts automatically when the service is launched. If needed, BEWARD Record Service can be stopped and restarted via Task Manager in the “Services” tab, the “Services” snap-in, or BEWARD Record Center.



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BEWARD Record Service requires Microsoft SQL Server to work properly. It's included in the BEWARD Record Center full version installation file and installed automatically. BEWARD Record Service uses Microsoft SQL Server to manage the video archive database. Newly recorded video files are registered in the database for easier navigation when searching for them in the video player. Also, the database keeps track of events that trigger the start of the recoding (see section 4.4). The database is also used by BEWARD Record Service when deleting old files from the video archive to free up space (see section 4.2).

**NOTE!**
In order to ensure continuous recording, it is recommended to use an uninterruptible power supply for the server. Also, in case of long-term power outage, it is advised to set up BIOS so that the server automatically turns on when the power is restored.

## 3.2. Start/Stop recording

The top part of the BEWARD Record Center main window contains buttons for starting and stopping BEWARD Record Service, as well as buttons for starting and stopping recording (*Pic. 3.2*).




*Pic. 3.2*

**[Start service]:** this button starts BEWARD Record Service and makes a request for the current settings. The button is active only if BEWARD Record Service is inactive.

**[Stop service]**: this button stops BEWARD Record Service. The button is active only if BEWARD Record Service is active.

**[Start recording]**: this button starts the recording of all devices in the list, according to the settings. This button is active only if BEWARD Record Service is active. Before starting recording, make sure to add cameras to BEWARD Record Center, as described in section 4.1.

**[Stop recording]**: this button stops recording of all added devices. The button is active only if the recording is active.

**NOTE!**
When the service is launched the recording automatically resumes if it was active when the service was last stopped.

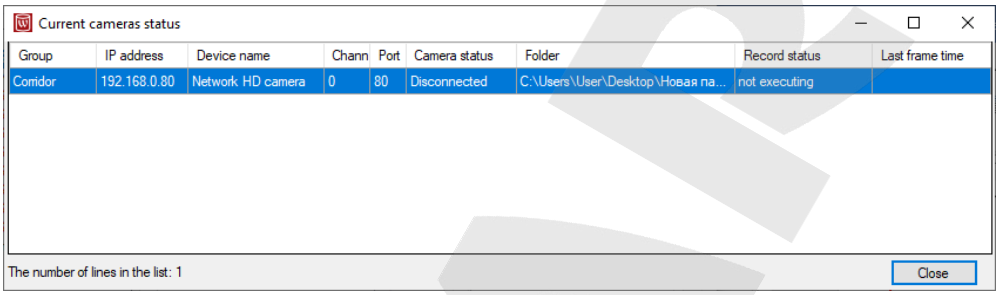


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## 3.3. Camera status check

BEWARD Record Service performs the video recording of cameras, and the status of these recordings can be checked via BEWARD Record Center.

**[Camera status check]**: click this button (Pic. 3.1) to open the “Current camera status" window (Pic. 3.3). This window displays the current statuses of all devices that were added to BEWARD Record Service (see section 4.1), as well as recording statuses from these devices to all folders. The data in this window is refreshed each half a second.




*Pic. 3.3*

**Group**: the group that includes the devices.

**IP address**: IP address of the device.

**Channel**: channel number for the camera that are connected to BEWARD Record Service via a multi-channel server. The value for other devices is 0

**Port**: device port.

**Camera status**: the current status of the device connected to BEWARD Record Service.

**Folder**: the full path to the recorded video files made by the device.

**Record status**: the current status of the record in the selected folder.

**Last frame time**: the time of last frame of the recorded file from the device.

### 3.3.1. Connected device status

The statuses of the connected devices are displayed in the “Camera status” column (Pic. 3.3). The following statuses are available:

- “Connected” – the device settings are loaded, BEWARD Record Service is receiving the video stream from the device. Recording by events may not start if the appropriate events do not occur.
- “Connecting” – the device settings are being loaded.
- “Video lost” – the connection with the device was established earlier, but currently no video stream is being received from the device.
- “Connection error” – error occurred while loading device settings.
- “Get video stream error” – error occurred while getting video stream from the device.



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- “Disconnected” – the device isn’t connected because the recording didn’t started.

### 3.3.2. Record status

The statuses of recordings from the connected devices are displayed in the “Record status” column (Pic. 3.3). The following statuses are available:

- <Record mode> – the recording is being performed in one of the available operating modes. The name of the current mode is shown in the settings (“constant”, “schedule”, motion detection” etc.). The available record modes are described in section 4.4.
- «Not executing» – no recording in progress. Either the record hasn’t started, or the event for recording hasn’t occurred yet.
- «Interrupt» – the recording has been interrupted due to connection loss (the “Camera status” is not “Connected”). Check the availability of the device, the stability of the network, as well as the stability of the device.
- «Skip» – data from the device is being properly received but disk writing is too slow, thus some frames are being “skipped” to reduce the workload on the disk. If this status occurs too often and on multiple devices, it means the disk subsystem cannot handle the workload. During playback the skips look like jerky stuttering. In such circumstances you should consider replacing with faster disks, or getting additional disks to redistribute the workload. You can also get rid of the skipping by reducing the data volume that’s being recorded per second. This can be done by using video profiles with lower bitrate, not using low-compression codec (for example, MJPEG), lowering screen resolutions and framerate. When recording to a network folder, the skips can be caused by low bandwidth between NAS and BEWARD Record Service.
- «Not enough free space» – the disk with the record folder contains insufficient space, less than 2 GB. This is a serious issue since none of the cameras are recording into this folder. Stop the recording and perform an archive check (see section 3.5), fix all found issues. If this didn’t solve the issue, that means the disk is filled with data other than BEWARD Record Center video archives. Free up the space and resume recording. Do not manually delete the files from the BEWARD Record Center video archives, it interferes with the automatic cleanup of the archives!
- “Access denied” – error occurred while getting access the record folder (lack of user rights, network issues etc.).
- «Error» – some other error occurred while recording. Perform the steps described in the Technical Support

You can find information on technical support on our official website: www.beward.ru Alternatively, you can contact out technical support service by email: support@beward.ru.



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Before contacting the support service, please prepare the following information:

Exact model name and IP address of your device;

Error messages were received since the problem appeared;

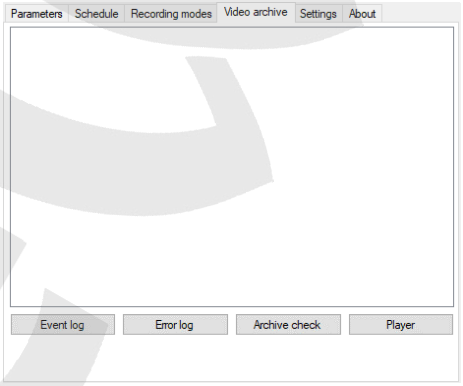
- Firmware version and name of equipment which the device operated with when the problem appeared;
- What did you do to solve the problem by yourself step by step;
- Screenshots of the settings and the connection parameters;
- Error report file, such as ErrorReport131011_170413.bbr.
- section of this manual.

**ATTENTION!**

Do not, under any circumstances, manually delete the files from the BEWARD Record Center video archives, it interferes with the automatic cleanup of the archives!

## 3.4. Video archive playback

The structure of the video archive of BEWARD Record Service is shown in the “Archive” tab of BEWARD Record Center (Pic. 3.4). The records in the tab are grouped by day, and inside each day – by device.

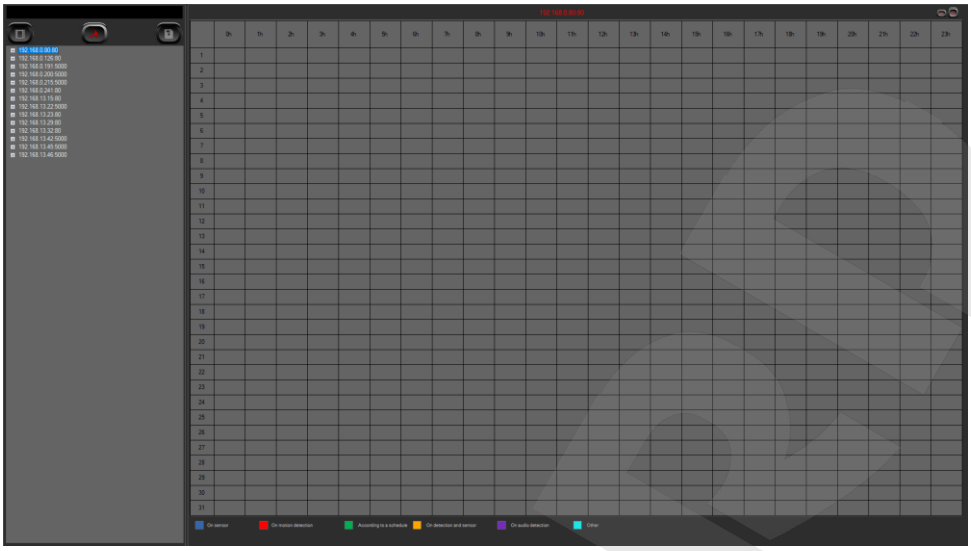



*Pic. 3.4*

**[Player]**: click this button to open the in-built single-channel video archive BEWARD player. This player window shows the archive structure in graphic (Pic. 3.5), as well as allows to playback selected parts of the recorded video and audio streams. BEWARD Player is described in detail in its own dedicated chapter of this operation manual.



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*Pic. 3.5*

## 3.5. Archive check

There can be different causes of errors in the video archive. For example, if electric supply of a PC is suddenly disconnected during recording video files from cameras, then the files, which were not completely recorded to the disc, will not be registered in the data base and can't be watched in the built-in player. One more possible reason is removing or replacing some video files by the user to another catalog on the disc. In these cases, the built-in player may still show that the files exist, but it will not be able to play them.

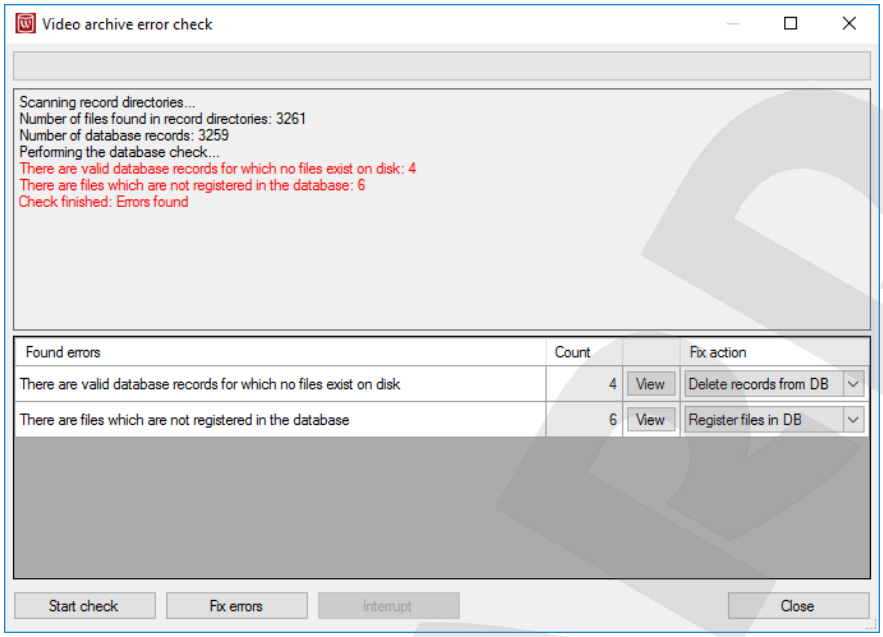
The "Archive check" function can find these and other types of errors and fix them automatically, synchronizing files in the data base with the ones on the disc.

**[Archive check]** click this button (Pic. 3.4) to display a form which is used to search for error in the video archive and fixing them (Pic. 3.6). This button is active only if BEWARD Record Service is active and the recording is stopped.

**[Start check]**: click this button (Pic. 3.6), to initiate the check procedure. All the actions, which are performed during the procedure, are shown in the upper part of the window. In case some errors are found during the check they are listed in the lower part of the window.

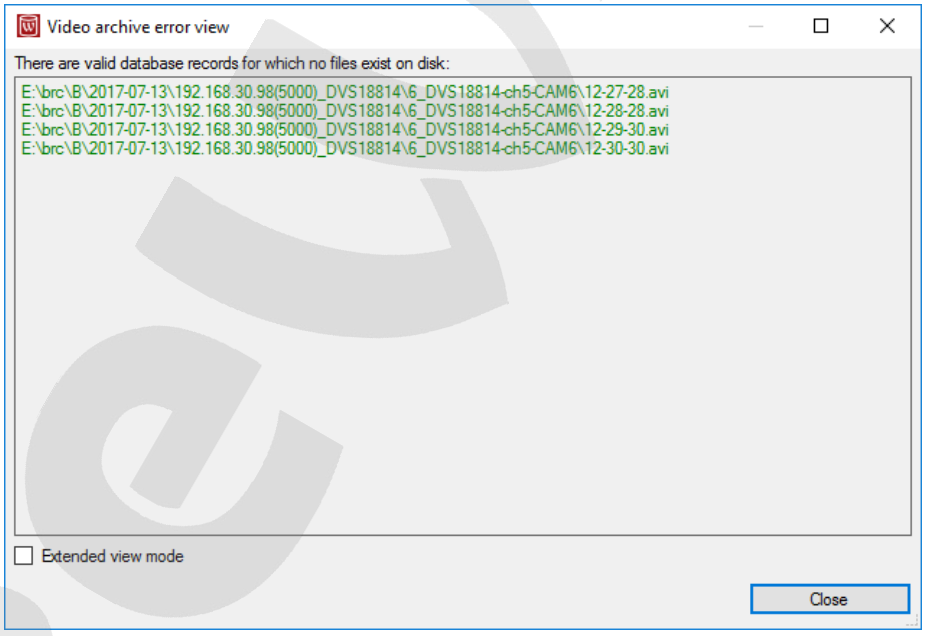


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*Pic. 3.6*

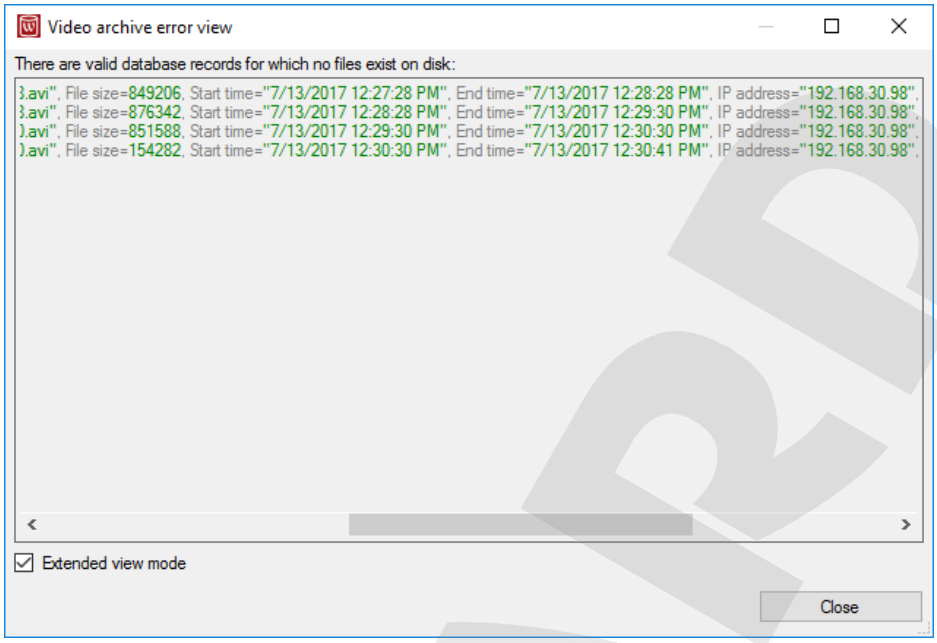
**[View]**: click this button to open a list of files or records in the database, which are related to each error. These lists can be looked in two modes: regular view (Pic. 3.7) or extended view mode (Pic. 3.8).




*Pic. 3.7*

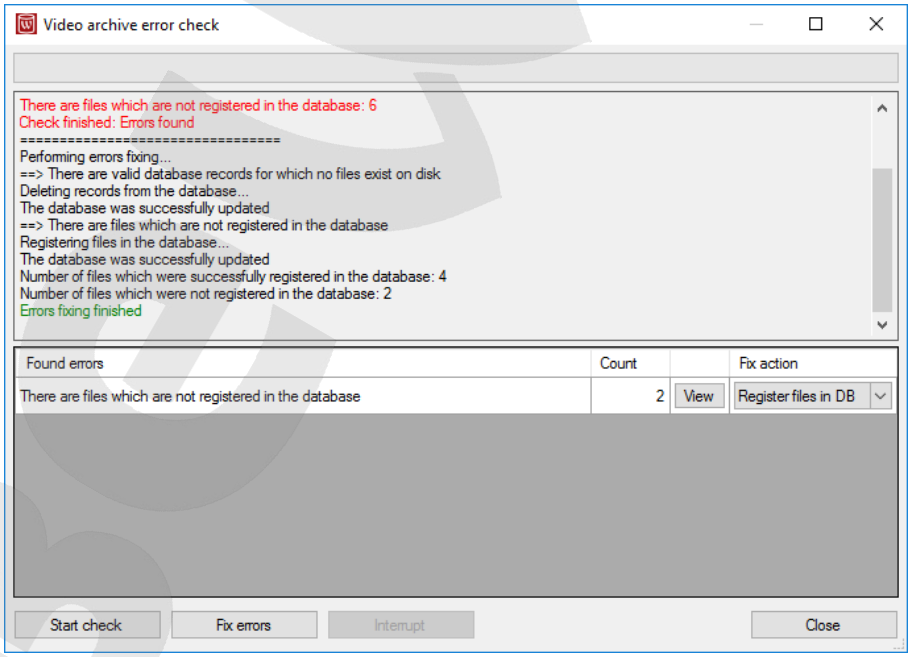


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*Pic. 3.8*

**[Fix errors]**: press this button to begin correcting all found errors. The fix action can be selected in advance for each found error, but in most cases the default action will be the most correct choice. If some files failed to be registered in the database while fixing errors, or some records already included in the data base can't be corrected, then the corresponding errors remain in the list (Pic. 3.9).



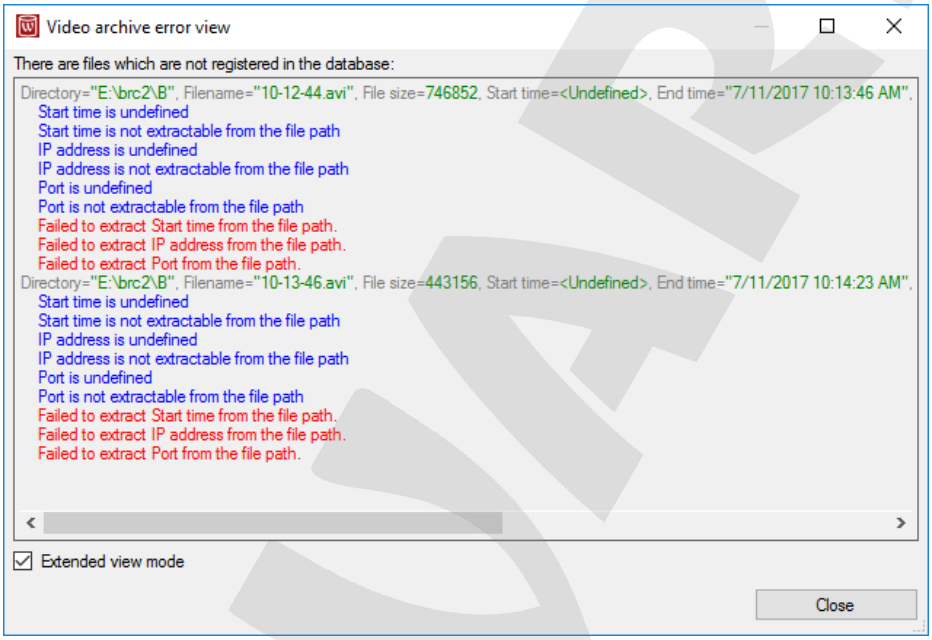

*Pic. 3.9*



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Press **[View]** (Pic. 3.9) to see the list of conflicting files and records. Each record contains the following information: list of problems that were found during the check (blue text), list of problems that were found during the fixing and couldn't be solved. (red text).

Pic. 3.10 shows that two files were not registered in the database because they were copied by the user to the one of video recording catalogs without saving a correct structure of the catalogs. To fix this error the user can replace the files to the correct catalog or remove them from the catalog at all and run the video archive check again.



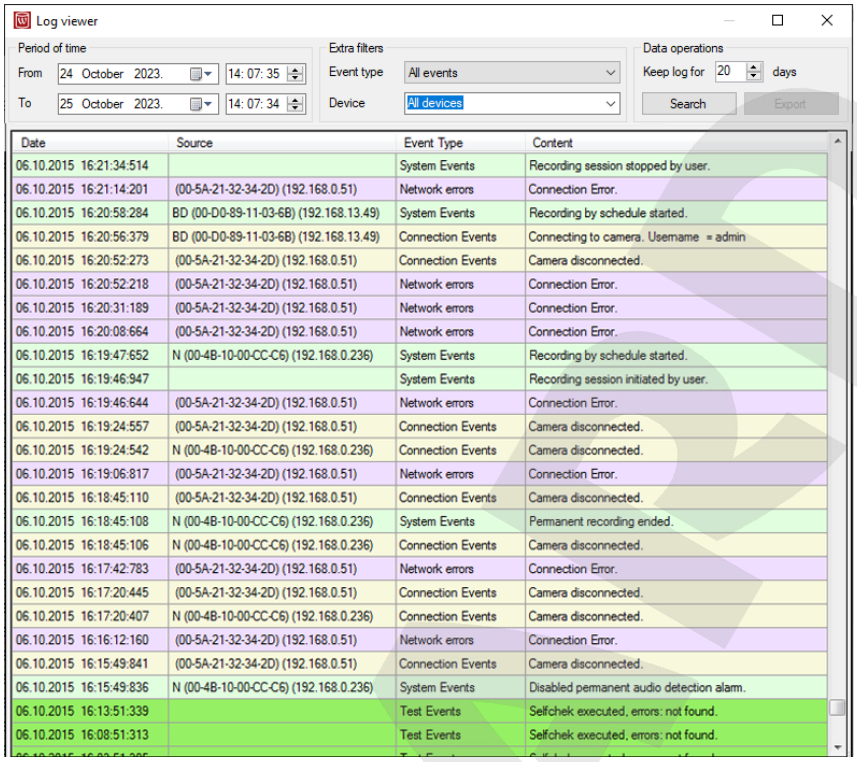

*Pic. 3.10*

## 3.6. Log viewer

**[Event log]**: click this button (Pic. 3.4), to open the Log viewer window (Pic. 3.11).



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*Pic. 3.11*

### 3.6.1. Event filtering

The log viewer supports event filters. The filters are located on the top part of the window (Pic. 3.11). You can combine different event filters to make event searching more convenient.

**From** and **To**: use the calendars in the top left part of the window to set the time range in order to filter the events by date.

**Event type**: use the drop-down list to select specific event types for filtering.

**Device**: use the drop-down list to select a specific device among the added ones. Only events from this device will be shown. The default value is set to “All devices”.

**[Search]**: click this button to find all necessary events in accordance with the filter parameters you specified.

### 3.6.2. Log export

**[Export]**: click this button (Pic. 3.11) to save data of the current log as the Excel (*.xls) file in the folder you need. Set the name of the export file and confirm your choice.

### 3.6.3. Clear log

BEWARD Record Center periodically clears the event log and deletes the events that are no longer relevant.



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**Keep log for**: set the duration for the events to stay in the log before they are deleted. The default value for all events is 20 days.

### 3.6.4. Event types

BEWARD Record Center supports the following event types:

- **System events**: events that are related to BEWARD IP Record Center (e.g., starting the application).
- **Settings changing**: events that are related to settings changes in BEWARD Record Center (e.g., confirmation of setting changes).
- **Devices adding and removing**: event that are related to adding and removing devices in BEWARD Record Center.
- **Connection events**: events of connection / disconnection of devices to BEWARD Record Center.
- **Network events**: events that are related to connection errors in BEWARD Record Center, video less.
- **Test events**: events of the tests which are automatically run by BEWARD Record Center.
- **Device events**: events that occur in the devices (e.g., motion detection).

Device events are the most common and significant among the event types. BEWARD Record Center supports recording by such events. Section 4.4 contains detailed information on how to set up the recording by device events. The events of other types can only be added to the log.



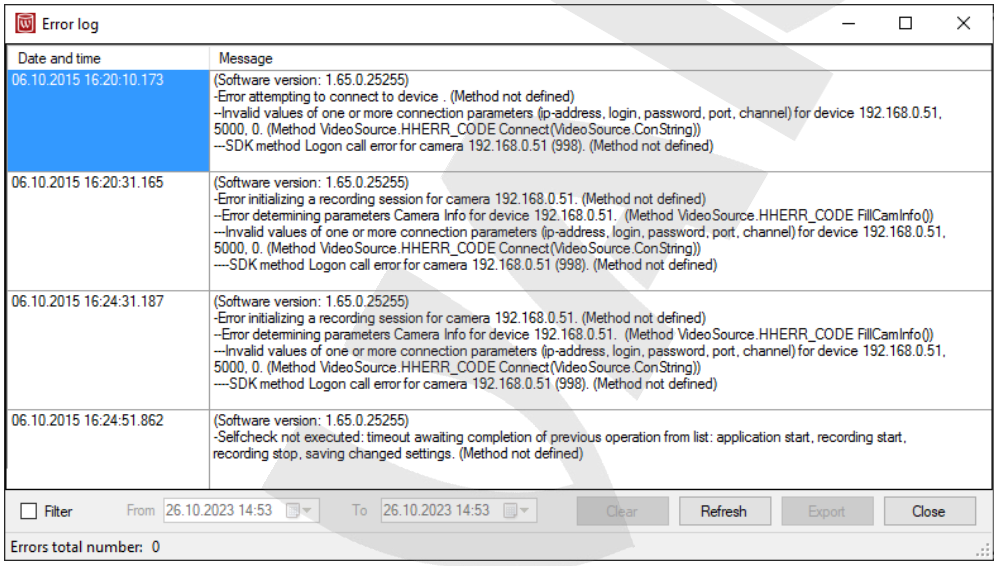
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## 3.7. Error log

**[Error log]:** press this button (Pic. 3.4) to open the Error log window (Pic. 3.12).

If the Service works correctly, the following message will appear: “Record service error log is empty, missing or temporarily unavailable”. The appearance of new entries in the Error log indicates that there are some kind of a connection issue, video stream retrieval issue, file recording issue and other problems. These issues have to be dealt with. If you can’t fix the errors on your own, please repeat the steps described in the Technical Support.

You can **[Clear]** the Error log entirely, or within the specified time range. Also, you can **[Export]** the Error log. Click **[Refresh]** to reload the Error log from the disk.




*Pic. 3.12*

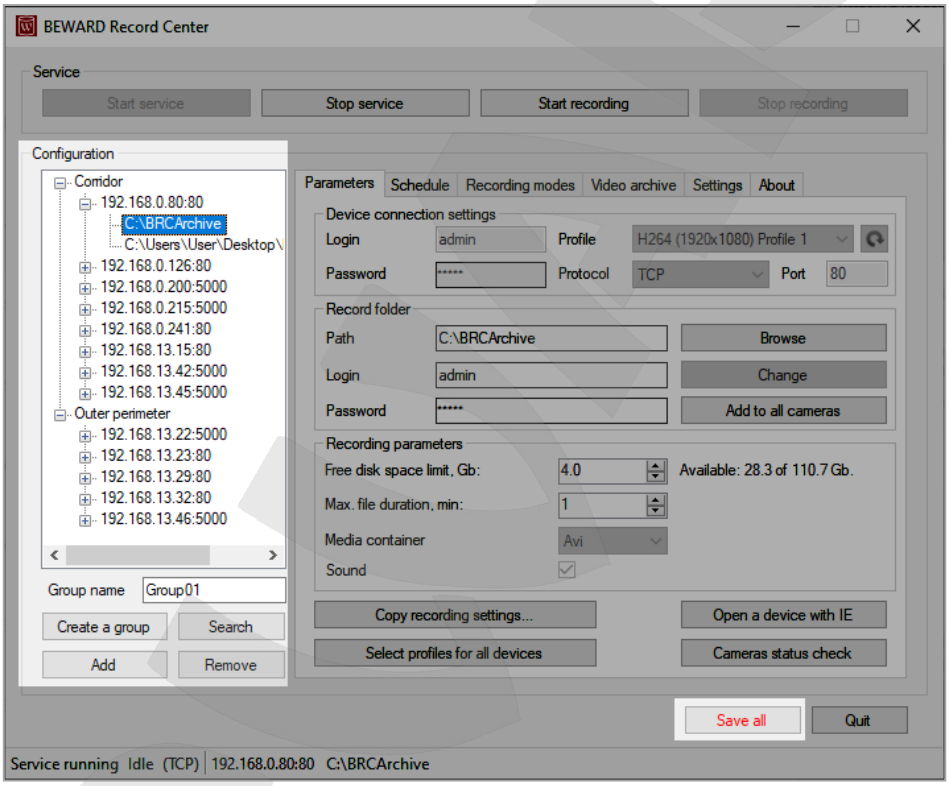


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# Chapter 4. BEWARD Record Center Settings

## 4.1. List of added devices

Before BEWARD Record Service can start recording video from a device (camera, video server, door panel), the device has to be added to the list which is located on the left part of the BEWARD Record Center main window (Pic. 4.1). There are 2 ways to add devices in BEWARD Record Service: 1) by searching the available devices in the local network, 2) manually by entering the network parameters for each device. For convenience, the added devices can be merged into groups.




*Pic. 4.1*

**[Create a group]**: enter the the name of the group in the «Group name» text field and press this button to create a new device group with the specified name. You can use the context menu to rename the group (see section 4.1.3). There's no limit on the number of groups.

**[Remove]**: press this button to delete the selected element (record folder, device, device group) from the BEWARD Record Service.

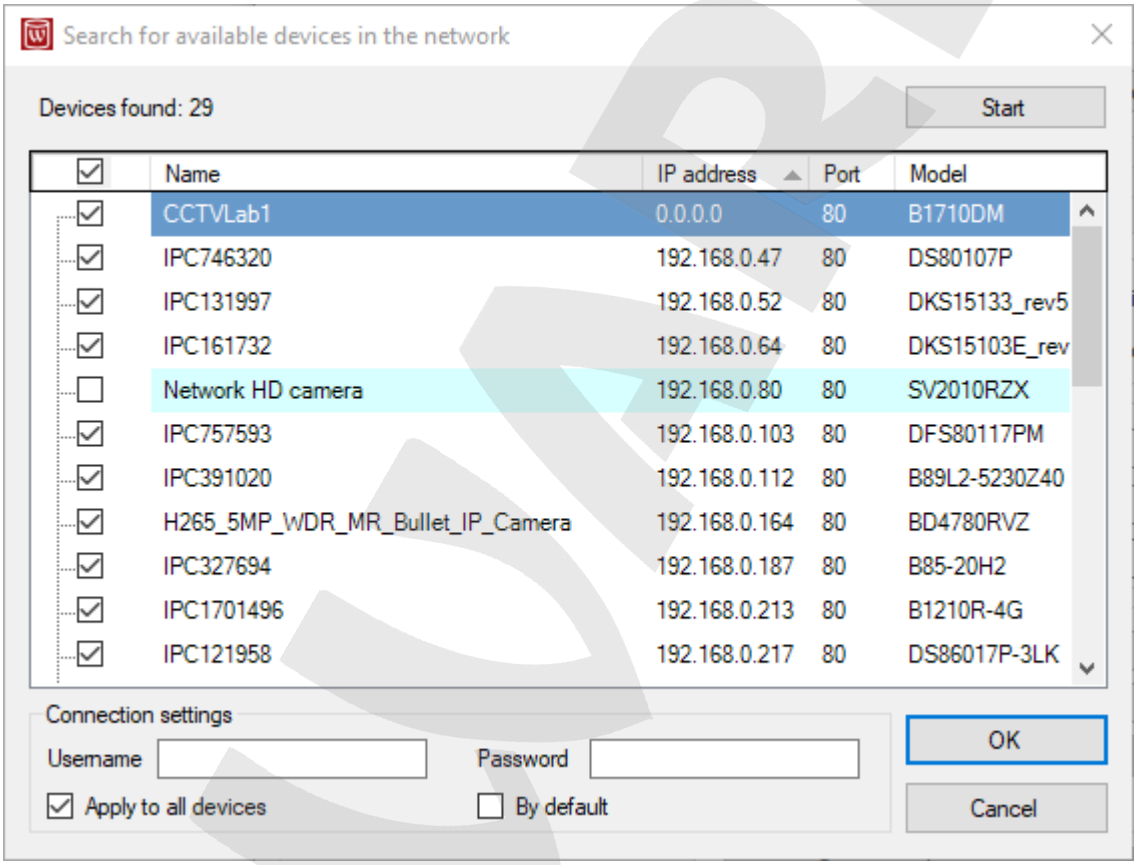
> **NOTE!**
> Only BEWARD devices can be added to BEWARD Record Service. Devices of other manufacturers are not supported.



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### 4.1.1. Searching devices in the local network

**[Search]**: press this button (Pic. 4.1), to start searching for devices in the local network. In the pop-up window (Pic. 4.2) you can see the available devices that were found during the search. It allows you to add multiple cameras from the same network at once, without entering the network parameters (IP address, port etc.) of each device manually, but it doesn't allow to add devices from other subnets.




*Pic. 4.2*

**[Stop]/[Start]**: the search begins automatically when the window appears, but it can be stopped and resumed when needed by pressing this button.

The already added devices are highlighted light-blue. Each device can be added to each group only once. When the search is complete, tick the checkboxes next to the devices you want to add.

**NOTE!**
For multichannel devices you can add separate channels. It is necessary to choose the numbers of the channels you need in the drop-down list for this purpose. For devices with several network interfaces, you must select the interface that BEWARD Record Center will use to connect to the device.



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**Username** and **Password**: enter the username (login) and the password in the corresponding text fields for each device.

**By default**: tick this checkbox so that the username and passwords fields will be filled in with "**admin"** / **"admin"** automatically.

**Apply to all devices**: if the selected devices have the same username and password, you can leave this option enabled. If need to add devices with different usernames and passwords, perform the following steps:

1. select the devices that you want to add;
2. enable" Apply to all devices";
3. Hold down Ctrl or Shift keys and select one or several devices (the selected devices will be highlighted dark blue;
4. enter the username and password or use the "By default" option;
5. repeat steps 3-4 as many times as necessary.

When you're done, click **[OK]**. The selected devices and/or channels (for multi-channel devices) will be added to BEWARD Record Center and appear in the list of devices. To save all changes in BEWARD Record Center, press **[Save all]** (Pic. 4.1).

> **ATTENTION!**
> Enabled Network Discovery function might be required for the N-series cameras to be detected via automatic search. Go **to Control Panel – All Control Panel Items – Network and Sharing Center – Advanced sharing settings** and select "Turn on network discovery" for required network profile(s).

### 4.1.2. Adding devices manually

**[Add]**: click this button (Pic. 4.1) to open the "Add a new device" window (Pic. 4.3). This function is useful for adding devices that cannot be discovered by searching within the local network.

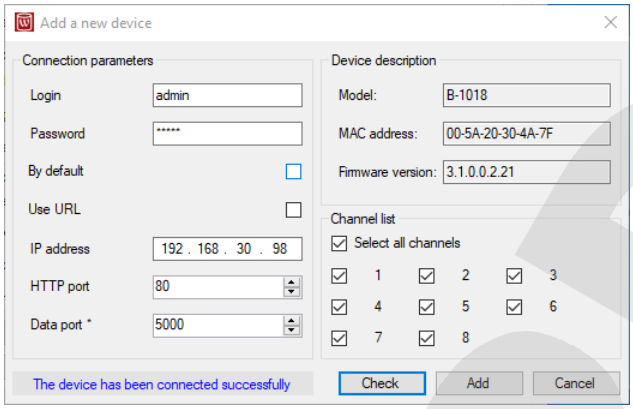
**Login** and **Password**: enter the username (login) and the password of the device you want to connect.

**By default**: tick this checkbox so that the text fields will be filled in automatically. The following values will be used: "admin" for **Login** and **Password**, "0.0.0.0" for **IP address**, "80" for **HTTP port**.

**IP address**: enter the IP address of the device.



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*Pic. 4.3*

**Use URL**: this option allows you to add the device using its URL address.

**HTTP port**: port for operating the device via HTTP protocol (e.g., for loading and editing settings)

**Data port**: this port has the default value of “5000” for B series devices, but it is necessary to leave “0” for other devices.

When the all parameters are specified, click the **[Check]** button to start connecting to the device (to stop connecting, click the **[Stop]** button). If all parameters are entered correctly, the connection will be established and the following device information will appear in the right part of the window:

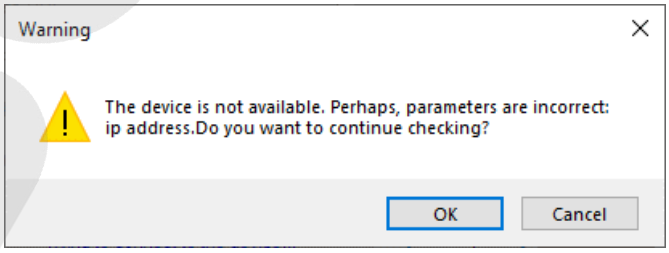
**Model**: model name of the connected device.

**MAC address**: MAC address of the connected device.

**Firmware version**: the current version of the connected device’s firmware.

**Channel list**: this parameter group is available only to multi-channel devices and it allows to select specific channels that will be added to BEWARD Record Service. All channels are selected by default.

If the parameters are entered incorrectly, a warning message will appear that will hint towards the incorrect parameter (Pic. 4.4). Press **[cancel]** to return to the window and fix the incorrect parameters. If you are sure that the parameter has been entered correctly, press **[OK]** to continue the check.




*Pic. 4.4*

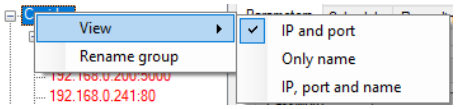


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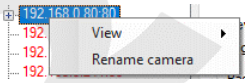
**[Add]**: press this button (Pic. 4.3) after successfully connecting the device to add the device/channels to the BEWARD Record Center device list. In order to save all changes in BEWARD Record Service, press **[Save all]** (Pic. 4.1).

### 4.1.3. Context menu

Context menu of the configuration list can be called by right-clicking a group (Pic. 4.5), a device (Pic. 4.6) or a record folder.




*Pic. 4.5*




*Pic. 4.6*

**View**: select the parameters that will be displayed in the added devices list for the selected device or devices within the selected group.

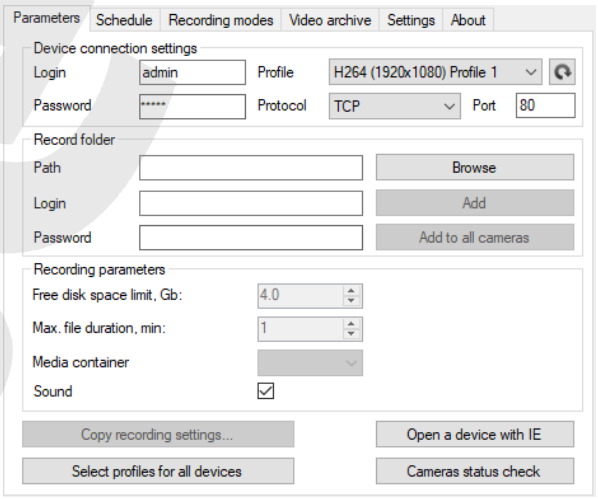
**Rename group**: click this element to rename the selected group. Enter a new name in the pop-up window and press **[OK]**.

**Rename camera** click this element to rename the selected device. Enter a new name in the pop-up window and press **[OK]**.

In order to save all changes in BEWARD Record Service press **[Save all]** (Pic. 3.1).

## 4.2. “Parameters” tab

BEWARD Record Center “Parameters” tab is shown on *Pic. 4.7*. This tab is meant for general settings for connecting with the devices, recording folders and cleaning the archives. The parameters are described in detail in sections 4.2.1, 4.2.2, 4.2.3 and 4.2.4.

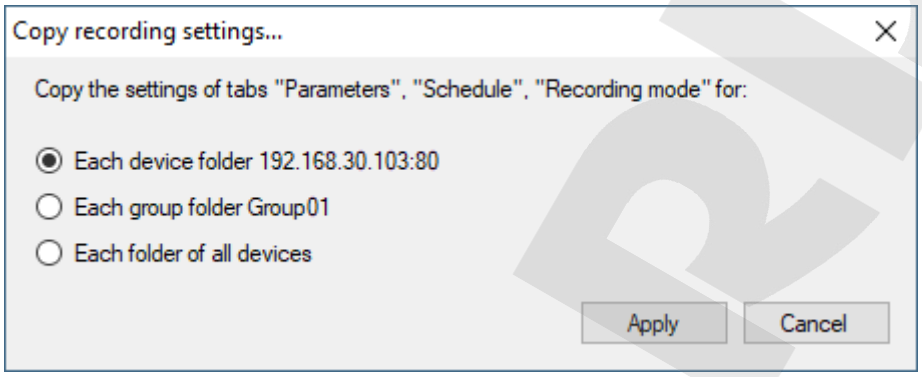



*Pic. 4.7*



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**[Copy recording settings…]**: use this button if you need to set identical parameters for several recording folders. Configure a single recording folder for a single device and press this button to open a dialog box (Pic. 4.8). Choose what folders the recording settings of the current folder need to be copied for.




*Pic. 4.8*

The following variants are available:

- **Each device folder <*device name*>** – copy recording settings for all folders of the current device;
- **Each group folder <*group name*>** – copy recording settings for all folders of the current group;
- **Each folder of all devices** – copy recording settings for all folders of all devices in the list.

The copying settings include: recording mode, durations of recording before and after alarm, file duration, recording schedule, and a record video format.

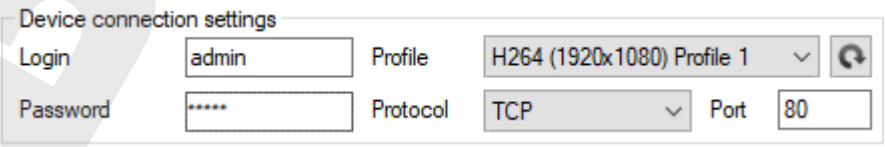
**[Open a device with IE]**: click this button to open the web interface of the device selected in the list, using Internet Explorer. In newer systems, Edge browser might launch instead of Internet Explorer

**[Select profiles for all devices]**: this button is explained in section 4.2.4.

**[Cameras status check]**: this button is explained in section 3.3.

### 4.2.1. Device connection settings

Device connection settings are shown on *Pic. 4.9.* It contains the connection settings of the currently selected device in BEWARD Record Center main window (Pic. 4.1).




*Pic. 4.9*



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**Login** and **Password**: these fields contain the username (login) and password that are used to connect to the device. If these parameters were changed on the device-side, you can enter the new username and password into their corresponding fields.

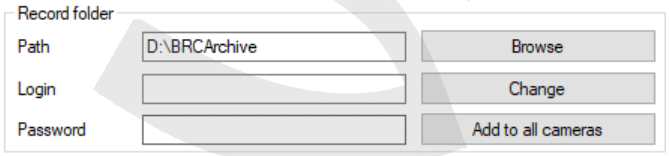
**Port**: this field contains the port that is used to connect the device to BEWARD Record Service. If this parameter was changed on the device-side, you can enter the new port value into the field.

The **Profile** and **Protocol** parameters are explained in section 4.2.4.

### 4.2.2. Record folder settings

Record folder settings are shown on Pic. 4.10. It contains settings of the currently selected folder in the BEWARD Record Center main window (Pic. 4.1). A single record folder for different devices will always have the same settings.

**Path**: enter a path to the folder which will be used for saving recorded files from the added device(s). You can also use the **[Browse]** button to specify the archive folder. Select a device or a group in the list with a left mouse click and press **[Browse]**. During recording, BEWARD Record Service will create the following structure of subfolders within the root folder of the archive: Date \ Device \ Channel \ Files. Filenames will correspond with the starting time of the recordings.




*Pic. 4.10*

**ATTENTION!**

It's forbidden to manually add, delete, rename, move, and modify the folders and files of the archive as it will lead to incorrect work of the BEWARD Record Service and media players. In extreme cases, it might lead to a full stop of the recording.

**NOTE!**

Recording in real time (see section 4.4) from a single device to a single root folder is not allowed, since it might lead to filename conflicts when you need to record in several modes simultaneously. In such cases it is recommended to use separate root folders for each recording mode.

**Login** and **Password**: if needed (e.g., when recording to a network folder), you can fill in these fields to gain access to the record folder.

**[Add]**: press this button to add a new task to record to the specified root folder of the archive for the selected device.

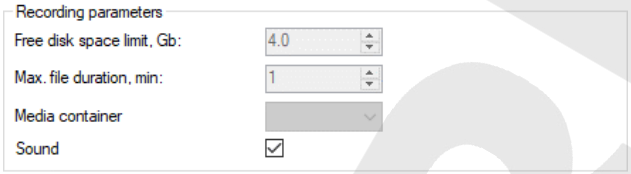


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**[Add to all cameras]**: press this button to add a new task to record to the specified root folder of the archive for all added devices.

### 4.2.3. Recording parameters

Recording parameters are shown on Pic. 4.11.




*Pic. 4.11*

**Free disk space limit, Gb:** the volume of disk space that BEWARD Record Service will keep free. The limit is set separately for each storage partition containing record folders. BEWARD Record Service will overwrite the data (remove the oldest files for recording new ones) when the limit is reached.

**NOTE!**
2 or more record folders within a single storage partition have the same free disk space limit.

**NOTE!**
Constant recording from several dozens devices via BEWARD Record Center might put a lot of workload on the disks. The disk writing speed slows down as the disks get full. To keep the disk writing speeds high, it is recommended to fill the disks up to 80-90% of their total space. Therefore, the recommended value for free disk space limit is 20-10% of the disk volume.

**Max. File duration, min**: set the maximum duration (in minutes) of the recorded files. The actual duration may differ from the set value: a) by a few seconds (GOP group size) b) depending on the event durations, as well as pre-buffer and post-buffer parameters (see section 4.4). The duration can be set within a single device and a record folder, e.g., the duration of files recorded from one device to several folders, as well as from several devices to one folder, may differ.

**Media container**: this field simply informs the users that the files are being recording in AVI media container. Alternative options are not supported by the newer versions of BEWARD Record Center.

**Sound**: if the camera has a built-in microphone or an external microphone is connected to it through the audio input, you can record both video and audio. Tick this checkbox to enable the sound recording. If the device doesn't support audio, this parameter will be greyed out and only video will be recorded.



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### 4.2.4. Media stream settings

BEWARD Record Service receives media streams (video + audio) directly from the devices (except when the media stream is received via Multicast). Almost all BEWARD devices are capable of sending several media streams with different sets of parameters (encoding, resolution etc.). When setting up recording from several dozens of devices, it is important to choose the right video stream parameters depending on how the streams are going to be used. For example, during constant recording it might be better to use lower resolutions to save up on storage space. It reduces the workload on the devices, network channels and disk subsystems, as well as ensures reliable simultaneous recoding of multiple video channels on a single disk, and increases the lifespan of recorded files on the existing disks. At the same time, you can record by events (e.g., motion detection) with the best quality (highest resolution, high bitrate).

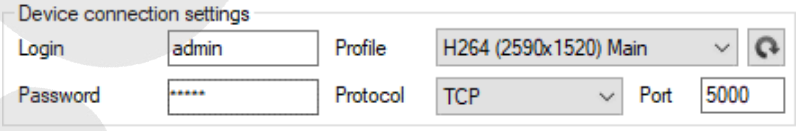
**ATTENTION!**

Pay attention to the workload on the disk and network systems when setting up parameters. As well as the statuses of the connected devices and records (see section 3.3). The record is set up correctly when the statuses of all connected devices say “Connected” and the record statuses of all devices don’t contain any issues.

**NOTE!**

The following parameters affect the workload on the disk and network subsystems the most: codec, resolution, and framerate. NJPEG codec has the lowest level of compression and thus the highest bitrate. Higher resolutions and framerates result in higher bitrate. High bitrate increases the workload on the network and disks.

In BEWARD Record Center, a set of encoding parameters that matches a single video stream of the device is called a Profile. By selecting a profile you choose which video stream will be sent from the device to BEWARD Record Service for recording into files. The profiles can be selected for each device individually in the “Device connection settings” part of the “Parameters” tab (Pic. 4.12).




*Pic. 4.12*

**Profile**: select the profile that suits your needs for recording. If you can afford it, use the highest quality profiles. If you need to optimize the workload, don’t use MJPEG codec and try to redistribute the workload across several disks. If that’s not enough, try to use profiles with lower resolutions and/or framerates.

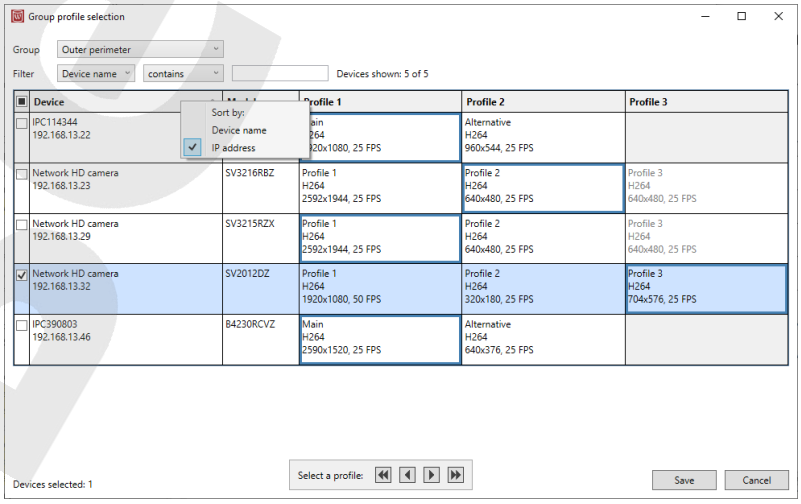


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**Protocol**: BEWARD IP Visor can receive video- and audio streams via one of the 3 protocols: TCP, UDP, Multicast. TCP ensures delivery delivery of data with high video quality, the image doesn't "fall apart" but can stutter in case of severe network errors. UPD might deliver video data with some packets missing, which leads to unwanted visual artifacts. When using TCP and UDP protocols the device sends a separate stream to each recipient, even if they all sent a request to the same profile, which increases the workload on the camera might lead to lower framerate. Multicast Protocol allows to decrease the workload of the camera by sending the same stream to multiple recipients. In this case, the workload of sending the stream to each recipient is taken up by the networking hardware. Multicast allows to organize complex surveillance system infrastructures with a large number of stream recipients. But it also requires high grade networking hardware and it is harder to configure. Recipients might experience the same issues as in UDP protocol, since Multicast also doesn't guarantee flawless delivery of data packets. TCP and UDP protocols are supported by all BEWARD devices, while the list of Multicast-supported devices is limited. TCP protocol results in more workload for the camera than UDP and Multicast. To ensure the best possible video quality by default, BEWARD Record Service is using TCP Protocol.

If you have a big number of devices, setting each individual media stream separately might be too time-consuming. For such cases, BEWARD Record Center allows to group select profiles by pressing **[Select profiles for all devices]** in the "Parameters" tab (Pic. 4.7).

In the "Group profile selection" window (Pic. 4.13), you can select a profile for several devices at once within one group. To do this, select the desired group from the "Group" drop-down list and select the desired devices by left-clicking the profiles individually or clicking the checkbox in the first column of the table. You can also select all devices by pressing ctrl + A on the keyboard or clicking the checkbox in the first column header. After selection, the profile selection buttons located below the bottom edge of the table will become active. Buttons allow you to select: the first profile, previous, next or last. In addition, you can select a profile by double clicking on its cell. The selected profiles are highlighted light-blue.




*Pic. 4.13*



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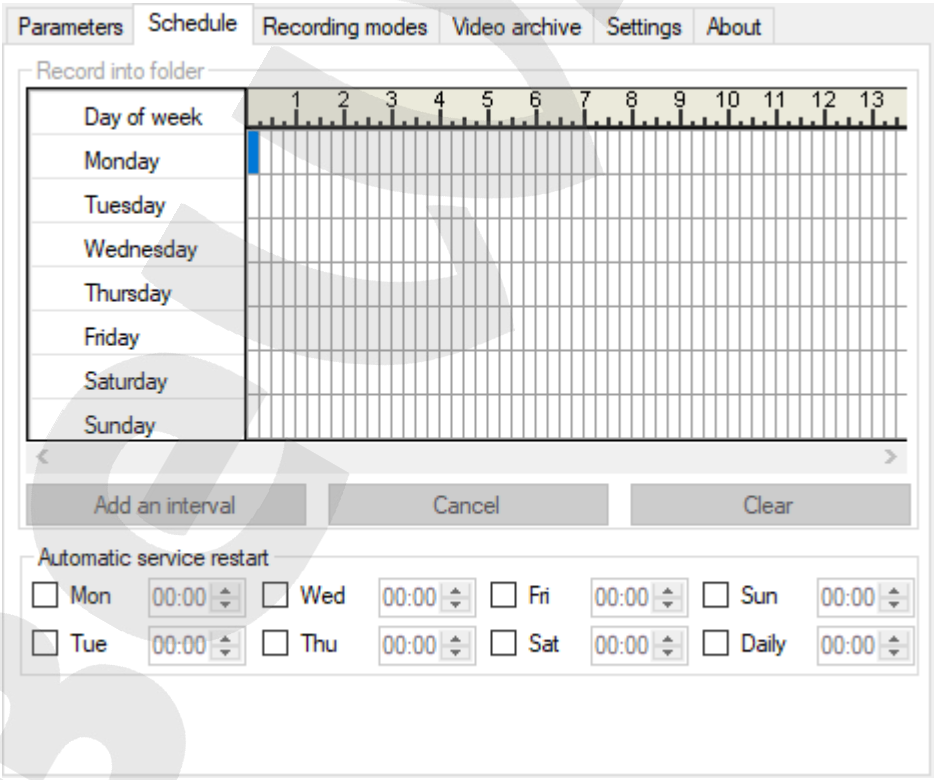
In some devices, the profiles can be disabled. The disabled profiles are greyed-out and can't be selected. The disabled profiles can be enabled or edited by accessing the Web UI of the device, or by editing the device settings via BEWARD IP Visor.

The list of displayed devices can be filtered by name, IP address, model name, codec name, resolution, frame rate. The list of displayer devices can be sorted by columns and by the values represented in these columns. To sort the list of devices by the desired column, you need to click the left mouse button on its header; when you click the header again, the sorting changes direction. To select the value to be sorted in the required column, click the header with the right mouse button and select a value from the context menu.

By pressing the **[Save]** button, the settings for all devices will be saved. By clicking on the **[Cancel]** button or on the "Cross" button in the upper right corner of the screen, the window will close without applying the changes.

### 4.3. "Schedule" tab

BEWARD Record Center "Schedule" tab is shown on Pic. 4.14. This tab is used for setting up weekly recording schedule for selected folders of selected devices, as well as the weekly schedule for rebooting BEWARD Record Service.




*Pic. 4.14*



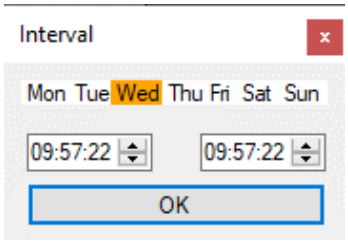
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### 4.3.1. Recording schedule

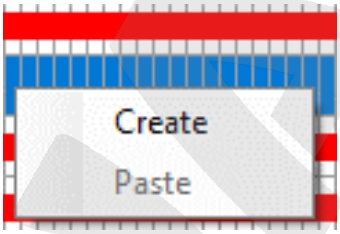
"Record into folder" group contains the timetable: its cells are formed by days of the week (horizontally) and time periods of a 24-hour day (vertically). Each cell is a 15 minutes time period. The timetable can be scrolled horizontally.

The recording intervals are depicted on the timetable as red lines the position and length of which corresponding with their specified start recording time and duration. If no recording intervals are set, the recording will be done in the "Constantly" mode.

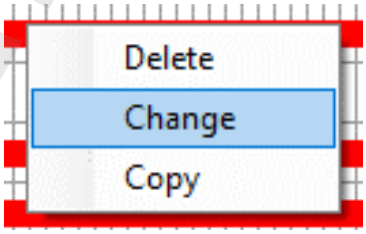
**[Add an interval]**: press this button to add a recording interval. Select one of the week days in the pop-up window (Pic. 4.15) and specify the start and end recoding times for the interval in the bottom fields. Press **[OK]** to add the new interval. Repeat these as steps to add as many recording intervals as you need. Multiple intervals can be assigned to a single weekday.




*Pic. 4.15*




*Pic. 4.16*




*Pic. 4.17*

There are other ways to add intervals (see Pic. 4.16). Click and drag on the timetable to select the needed time period and right-click it to summon the context menu, press **Create** to convert the selected time period into a recording interval. If wish to use the same time period for multiple weekdays, you can simply create a single interval for one weekday, click **Copy** in the context menu and then **Paste** it for other weekdays. You can **Delete** or **Change** the selected interval (Pic. 4.17). The interval can also be changed by double-clicking it to summon the pop-up window (Pic. 4.15). If you only want to change the start and end times of an interval, simply select it on the timetable and click-drag it left or right.

**[Cancel]**: press this button (Pic. 4.14) to cancel the most recent change in the Recoding schedule. You can use it repeatedly to cancel all changes in the Recording schedule.

**[Clear]**: press this button to delete all intervals in the current record folder.

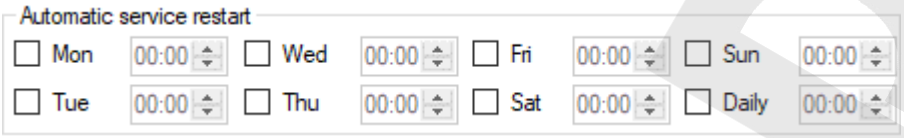
### 4.3.2. Service restart schedule

BEWARD Record Centers allows you to set up the schedule for "Automatic service restart" (Pic. 4.18). The schedule can be edited regardless which group/device element is active at the moment. To set the automatic service restart on a single weekday (or all weekdays), select the



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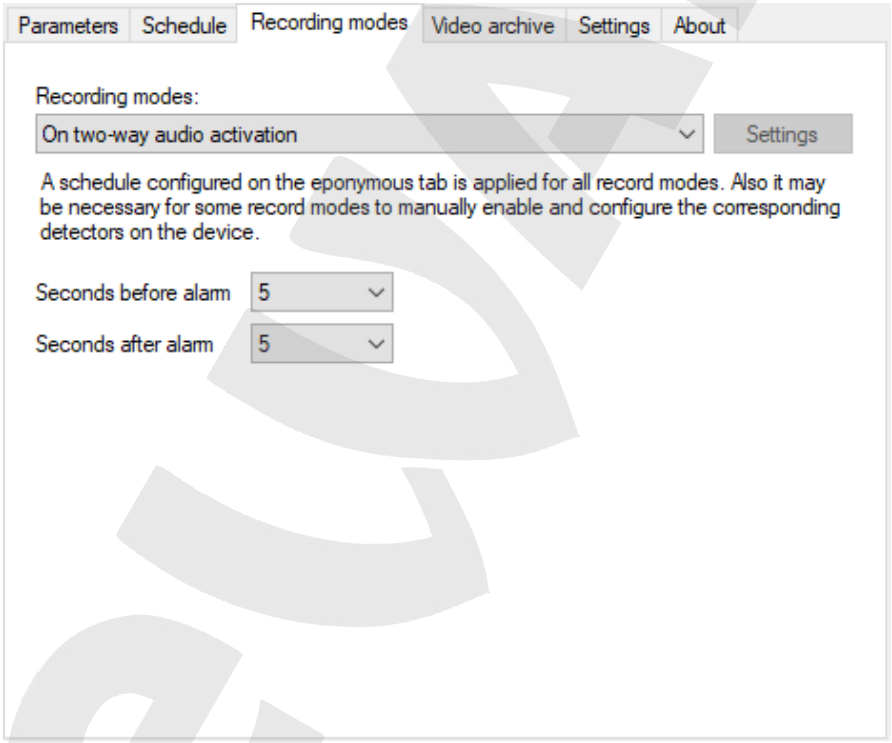
corresponding check box(es) and specify the appropriate time. Furthermore, you can select the check box “Daily” to set performing the restart every day in the specific time in addition to the week schedule. So, it is possible to set up to two daily service restarts at the specified times.




*Pic. 4.18*

## 4.4. “Recording modes” tab

“Recording modes” tab is shown on Pic. 4.19. It allows you to edit recording settings for selected record folder of a selected device.




*Pic. 4.19*

**Recording modes**: select one of the recording modes that are available for the selected device. The actual list of modes depends on the device. All possible recording modes are described in section 4.4.1.

**Seconds before alarm**: this parameter is available only for event recording modes and is unavailable during constant recording. This parameter specifies how long it needs to record video before the event alarm activation.



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**Seconds after alarm**: this parameter is available only for event recording modes and is unavailable during constant recording. This parameter specifies how long it needs to record video after the event alarm activation.

### 4.4.1. BEWARD Record Service Recording modes

> **NOTE!**
> All recording modes are affected by the recording schedule (see section 4.3). For some recording modes you might be required to manually enable and configure the device sensors.

**General recording modes**:

- **Constantly** – the recording is performed non-stop, regardless of any events.
- **On motion detection** – the recording starts once the in-built motion detector is triggered. When the motion stops, the recording ends. This mode is supported by most devices.
- **On sensor activation** – the recording starts once the alarm input of the device is triggered and goes into the signal status. Once it returns to non-signal status, the recording stops. This mode is supported by most devices that have at least one alarm input.
- **On two-way audio activation** – the recording starts when the user enables a two-way audio mode in the **BEWARD IP Visor** software and the recording is finished when this mode is disabled. In this mode the recorded data will include the sound from the device microphone as well as the sound from user's microphone. This mode is available for devices with in-built speakers and devices that support external speakers.

> **ATTENTION!**
> Both BEWARD Record Center and BEWARD IP Visor must be installed on the same computer to use «on two-way audio activation» mode. When this mode is enabeld, the selected device performs the recording with audio.

- **On audio detection** – the recording starts when the audio volume level reaches a specified threshold. When the audio volume level drops down, the recording stops. This mode is available for devices with in-built speakers and devices that support external speakers. The sound volume analysis is done by BEWARD Record center, the audio detector settings are described in section 4.4.2.



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**Door station recording modes:**

- **On call button press** – Only for BEWARD door stations (DS, DKS series, analog single-channel/multichannel door stations connected via DK103(M)). The recording starts when the call button is pressed on the door station. The recording stops after two minutes had passed since the last press of the call button. Repeating button presses extend the duration of the recording.

**Recording modes: Advanced video analysis events (Supported by SV-series cameras)**:

- **On region entrance detection** – the recording starts when a person enters the pre-defined region and ends in a few seconds.
- **On region exit detection** – the recording starts when a person leaves the pre-defined region and ends in a few seconds.
- **On human detection** – the recording starts when the device detects one or more people on the screen and ends in a few seconds.
- **On line crossing detection** – the recording starts when a person crosses the pre-defined virtual line and ends in a few seconds
- **On loitering detection** – the recording starts when a person stays in the pre-defined region for a specified amount of time, and ends in a few seconds.
- **On tamper detection** – the recording starts when there's an attempt to tamper with the camera lens by obscuring or flashing it, and ends in a few seconds.
- **On specified number of incoming people is reached** – The device counts people crossing the pre-defined virtual line in a certain direction, counting each instance towards the total counter. The recording starts when the counter has reached a pre-defined number, and ends after a few seconds.
- **On specified number of leaving people is reached** – same as "On specified number of incoming people is reached", but the device counts the people crossing the virtual line in the opposite direction.
- **On specified number of incoming and leaving people is reached** – a merge of the two above recording modes. Each new person, either incoming or leaving, makes the total counter go up by 1. The recording starts once the counter reaches a pre-defined number, and ends after a few seconds.
- **On specified number of people inside is reached** – the device counts each person entering (the counter goes up by 1) and leaving (the counter goes down by 1). The recording starts once the counter reaches a pre-defined number, and ends after a few seconds.



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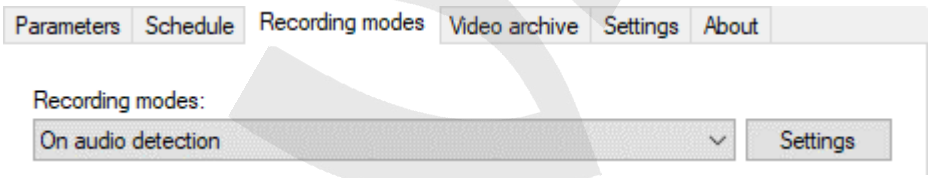
- **On advanced motion detection** – the recording starts once the in-built motion detector is triggered. When the motion stops, the recording ends. This detection type supports more configuration option than the regular motion detection.

**Access terminal recording modes:**

- **On high temperature detection** – the recording starts when a person passes the access terminal with temperature higher than the set value. Supported by access terminals with temperature measurement functionality.
- **On face detection** – the recording starts when a person (registered or unregistered) attempts to pass the access terminal. Supported by all access terminals.
- **On no face mask detection** – the recording starts activated when an unmasked person (registered or unregistered) attempts to pass the access terminal. Supported by all access terminals.

### 4.4.2. Setting up recording on audio detection

If you select the “On audio detection” recording mode, the **[Settings]** button (see Pic. 4.20) becomes available.

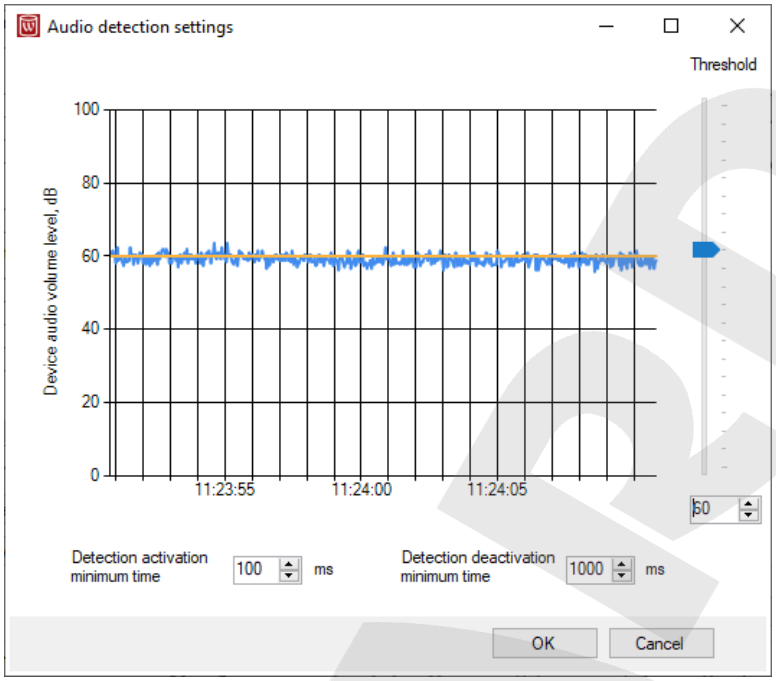



*Pic. 4.20*

**[Settings]** – press this button to open the audio detection settings window (Pic. 4.21). The main element of the windows is a graph that displays the current sound volume levels from the device microphone (Blue) and the sound threshold (Orange).



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*Pic. 4.21*

**Threshold**: use the right vertical slider or the text field below it to set the threshold value for the sound volume from the device. Reaching the threshold will trigger the “On audio detection” recording mode. The recording will end once the sound levels drop below the threshold.

**Detection activation minimum time**: set the minimum duration (in milliseconds) for the sound to be above the threshold before the recording mode is triggered. This prevents the recoding being triggered by short sounds (e.g., microphone clicks).

**Detection deactivation minimum time**: set the minimum duration (in milliseconds) for the sound to be below the threshold before the recording is stopped. This allows to continue the recording during situations when the sound levels might occasionally drop below the threshold (e.g., during conversations).

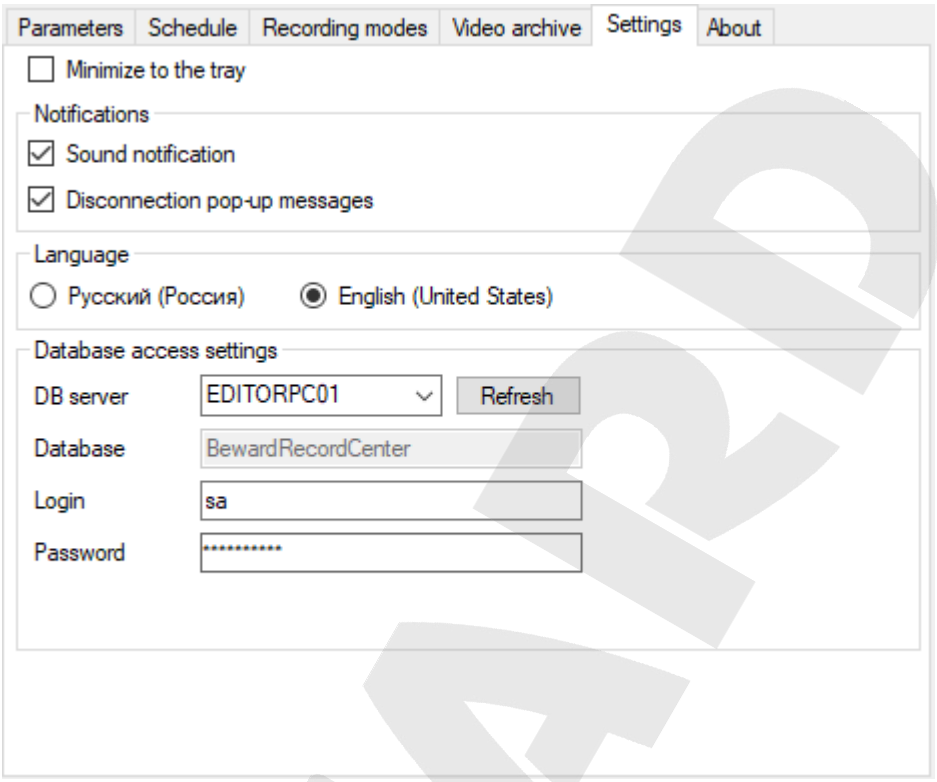
To save all changes, press **[OK]**, and then **[Save all]** in the BEWARD Record Center main window.

## 4.5. “Settings” tab

The “Settings” tab is shown on Pic. 4.22. It contains BEWARD Record Center settings, as well as parameters for connecting BEWARD Record Service to Microsoft SQL Server.



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*Pic. 4.22*

**Minimize to the tray**: enable this option to hide the application main window to the notification area (lower right corner of the desktop) of the Windows taskbar whenever you minimize BEWARD Record Center. Use this option if you want to receive notifications BEWARD Record Center but don't want it to take up space on the taskbar.

**Sound notification**: use this option to receive sound notifications whenever the device is disconnected. The sound comes from a built-in speaker in the computer case (if the speaker is installed). If the option is enabled the sound signal will be actuated anyway, regardless of whether the BEWARD Record Center is running or not.

**Disconnection pop-up messages**: use this option to receive pop-up message notifications from the taskbar whenever the device is disconnected. The option only works when the BEWARD Record Center is running.

**Language**: select the language for BEWARD Record Center interface.

"Database access settings" contains the parameters for connecting BEWARD Record Service to Microsoft SQL Server.

**DB server**: this field contains the name of the MS SQL Server that is used by BEWARD Record Service to store the video archive database. Select one of the MS SQL Servers in the drop-down list or enter the server name manually. Press **[Refresh]** to update the list of available MS SQL servers. Searching for available servers is a lengthy process.

**Database:** name of the video archive database, this field cannot be edited.



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**Login:** enter the Microsoft SQL Server login that will be used to access the video archive database user profile.

**Password:** enter the password of your Microsoft SQL Server user profile.

**ATTENTION!**

By default, BEWARD Record Service uses the login “sa” and password “SQL2005key”.

**ATTENTION!**

If BEWARD Record Service cannot access the Microsoft SQL Server, make sure that:

1. SQL Server service (MSSQLSERVER) is installed and running.
2. TCP/IP protocol is enabled in SQL Server settings.
3. “SQL Server authentication” is enabled in SQL Server settings.
4. The login that BEWARD Record Center is using to connect to the SQL MS server exists and has the rights to create databases and tables for them.



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# Chapter 5. Setting up active 4G-connection

The point of an active 4G-connection is that a device initiates the connection to client software by itself. Such a connection scheme needs a mediator on the client side and this mediator is a VPN server. If all settings are correct (devices are configured, the VPN server is set up and running, the Firewall is configured), the devices are added to the software via active connection the same way as the other devices, either using an automatic device search or manually (you need to know device VPN IP-addresses in this case).

**ATTENTION!**

In case of any issues with the devices connected via active 4G-connection, first of all, check the SIM-card balance, whether you have any internet traffic left.

To connect and set up the devices refer to their user manuals (all necessary user manuals you can find on http://www.beward.net/ or on the disc from the device package contents).

The steps below need to be done to ensure that all the settings on the client side are made correctly.

**Step 1**

A VPN server needs to be run on the client PC (the OpenVPN server is included in the BEWARD Record Center installer (see Pic. 2.12). You can check if it is run going to: *This PC* → *Manage* → *Services*. There you need to find the OpenVPN Service.

If the OpenVPN Service is absent, it needs to be installed (for this purpose it is recommended to use the BEWARD Record Center installer).

If the service is not running, it needs to be started. An OpenVPN Service Startup type needs to be “Automatic”. In case the type is different, you can change it, using the service properties (right click on the service name and select “Properties” in the context menu).

**Step 2**

BEWARD Record Center interoperates with the OpenVPN server through the “beward-openvpn-status.log” file. This file must be located in the OpenVPN install folder (usually *“C:\Program Files (x86)\OpenVPN\log”* for 64-bit versions of Windows and *“C:\Program Files\OpenVPN\log”* for 32-bit versions). This file must contain descriptions of the clients currently connected to the OpenVPN server (see Pic. 4.59). If this file is absent, empty or does not contain any client descriptions (highlighted with grey on the picture), restart the OpenVPN Service.



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```
OpenVPN CLIENT LIST
Updated,Thu Jul 06 07:39:33 2017
Common Name,Real Address,Bytes Received,Bytes Sent,Connected Since
BewardVPNClient,192.168.30.175:4066,4701,3715,Thu Jul 06 07:39:20 2017
BewardVPNClient,192.168.30.163:62581,260635,3715,Thu Jul 06 07:39:18 2017
ROUTING TABLE
Virtual Address,Common Name,Real Address,Last Ref
10.2.1.3,BewardVPNClient,192.168.30.175:4066,Thu Jul 06 07:39:26 2017
10.2.1.2,BewardVPNClient,192.168.30.163:62581,Thu Jul 06 07:39:27 2017
GLOBAL STATS
Max bcast/mcast queue length,2
END
```

*Pic. 4.59*

**Step 3**

The BEWARD Record Center installation program offers to configure Firewall rules to close access to the client computer via VPN-channels (see Pic. 2.12). If this option was chosen during the installation process, the installer should have added the following five inbound Firewall rules (if it was not done earlier):

Windows Firewall rules for correct operation of BEWARD Record Center

| № | Name | Action | Program | Local address | Protocol | Local port | Remote port |
|---|---|---|---|---|---|---|---|
| 1 | Block connections via Beward VPN-channels | Block | Any | 10.2.1.0/24 | TCP | Any | Any |
| 2 | Block connections via Beward VPN-channels | Block | Any | 10.2.1.0/24 | UDP | Any | 1-1899, 1901-65535 |
| 3 | Allow connections to Beward VPN-server | Allow | Any | Any | TCP | 1201 | Any |
| 4 | Allow search for Beward devices via active 4G-connection in BEWARD Record Center | Allow | Path[1] | 10.2.1.0/24 | UDP | Any | 1900 |

[1] – the path to the BEWARD Record Service executable.

These rules are required for BEWARD Record Center to work properly with the devices added via the active connection.

You can check whether the needed rules exist, having a look at the Windows Firewall Advanced settings (*Control Panel* → *Windows Firewall* → *Advanced settings* → *Inbound rules*).

**ATTENTION!**

If some Firewall rules are in conflict with ones given in the table above, correct operation of BEWARD Record Center with the devices added via the active connection is not possible.

If you need to change a VPN IP-address range (“server” parameter) or a port, used by the OpenVPN server for accepting inbound connection requests (“port” parameter), then you need to



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edit its configuration file “beward-server.ovpn”. This file is located in the OpenVPN install folder (usually *“C:\Program Files (x86)\OpenVPN\config”* for 64-bit versions of Windows and *“C:\Program Files\OpenVPN\config”* for 32-bit versions) and can be opened in the “Notepad” application

**ATTENTION!**

Make a backup of the OpenVPN configuration file before editing it. Restart the OpenVPN Service after editing this file.

VPN IP-address range changing requires the “Local address” parameter to be changed in the rules 1, 2, 4 and 5 of the Windows Firewall for correct operation of the BEWARD Record Center service (see the table above).

Port changing requires the “Local port” parameter to be changed in the rule 3.

When adding the devices connected via active 4G-connection to the BEWARD Record Center application, it is important to keep in mind that VPN IP-addresses of the devices can change, when they are disconnected from the VPN server. Thus, any of them may get a different VPN IP-address when reconnecting to the VPN server for any reason (OpenVPN service restart, device reboot, network errors).

**ATTENTION!**

For correct operation of BEWARD Record Center it is necessary to assign different main network interface (usually LAN) IP-addresses to the devices connected via the active connection, before adding them to the application. It is important, because exactly these addresses are used when creating record directory names. Moreover, these addresses are shown in the application in parenthesis next to the VPN IP-addresses for convenience.



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# Appendix A. Hotkeys

The default hotkey combinations for BEWARD IP Visor are described in the table below.

| | |
|---|---|
| F1 | Open a PDF file of the Operation User Manual |



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# Technical Support

You can find information on technical support on our official website: www.beward.ru Alternatively, you can contact out technical support service by email: support@beward.ru.

Before contacting the support service, please prepare the following information:

- Exact model name and IP address of your device;
- Error messages were received since the problem appeared;
- Firmware version and name of equipment which the device operated with when the problem appeared;
- What did you do to solve the problem by yourself step by step;
- Screenshots of the settings and the connection parameters;
- Error report file, such as ErrorReport131011_170413.bbr.

The more information you can give the quicker our engineers can help you to solve the problem.

In order to create an error report, run the “Bug Report BEWARD Record Center” application using the shortcut which was created during the installation. The default path: ***“Start” – “BEWARD Record Center” – “Bug report BEWARD Record Center”***. Follow the directions of the Bug Report application. The following information is collected by the Bug Report application: BEWARD Record Center and BEWARD Record Service settings and logs, info on the device and OS used, Windows error log.

**ATTENTION!**

The bug report making process may take a long time.



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