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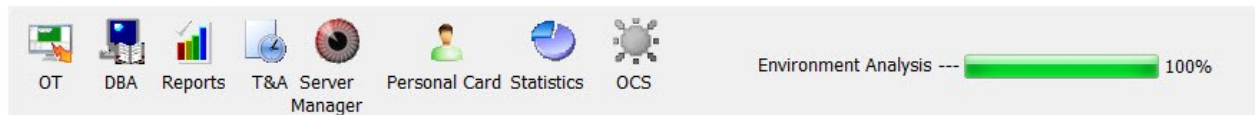
## 7. Scanning Core

### 7.1. Scanning Core

The Orion Pro Scanning Core software module is used to poll and control devices connected to a specific workstation via RS-232, RS-485, and Ethernet.

Scanning Core starts automatically when the System Shell is started (If the Scanning Core is selected to run on this workstation).

Further, the Scanning Core (🔥 CoreOrion.exe in the folder with installed Orion Pro) is started from the System Shell: if the Scanning Core is allowed on this workstation, click the corresponding icon as shown in the figure below:



When you start Scanning Core, it performs the following:

- Communicating with all devices connected to the workstation when the Scanning Core is running;
- Synchronizing the current date and time between a workstation and connected devices;
- Obtaining (from the Site Occupants module) each employee location (with resolution as much as to an Access Zone), please refer to *Chapter 10 Site Occupants*;
- Polling states of devices and device zones
- Obtaining occurred events from devices

When the above actions completed, the Scanning core will control devices connected to the current workstation. (For more details about devices events and system control, please see Chapters 8.1.4 *Fetching Occurred Events* and 8.1.5 *System Automated Control*)

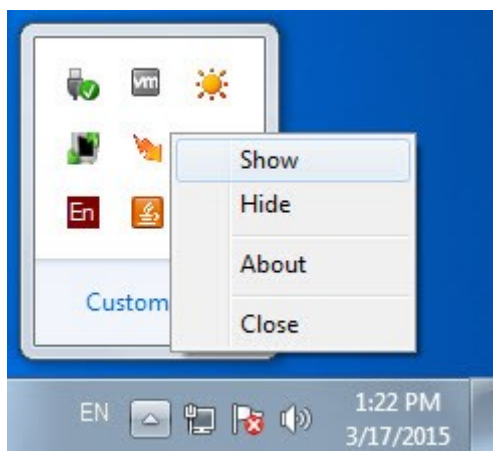


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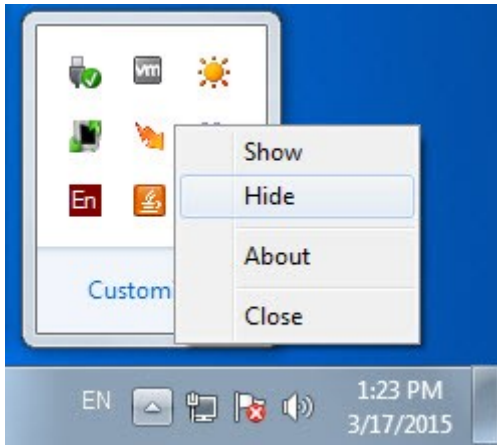
If biometric readers are added to a workstation in the Database Administrator, the BIOAccess Driver module will be started automatically, when the Scanning Core is started on the current workstation (Refer to Chapter 7.4 BIOAccess Driver).

---

When started, the Scanning Core minimizes to the system tray icon (🔥). To show the Scanning Core window, please double click the Scanning Core icon (🔥) or right click the icon in the System Tray and select **Show**



To hide the Scanning Core window, please double click the window title area or left click the Scanning Core icon in the system tray and select **Hide**:

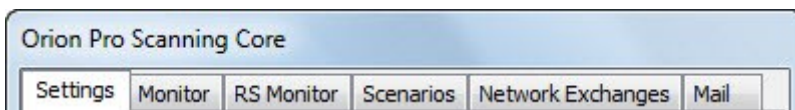


To close Scanning Core, click the Scanning Core System Tray icon and select the **Close** item in the context menu:



When the System Shell is closed, the Scanning Core is closed automatically. When the System Monitor is closed, the Scanning Core will be closed automatically as well, if there is only one workstation in the system, or there is no any workstation receiving events transmitted from the current workstation.

The Scanning Core window includes five tabs with each showing specific information: Settings, Monitor, RS Monitor, Scenarios, and Network Exchanges:



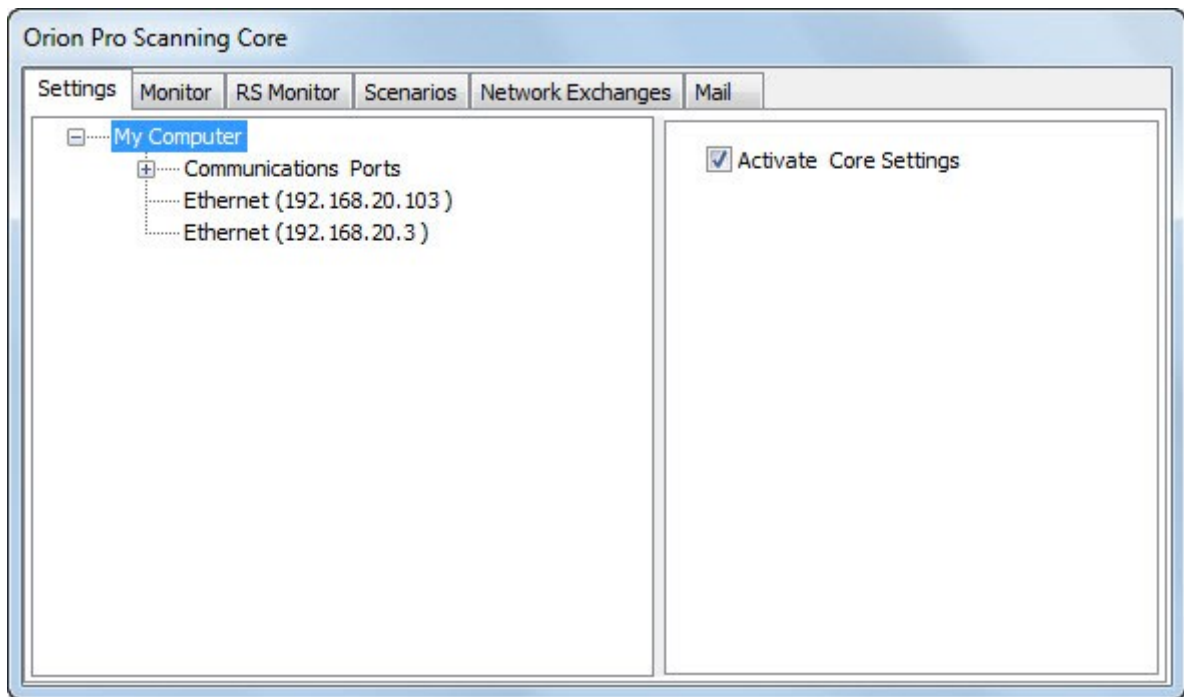
### 7.1.1 The Settings Tab

The **Settings** tab shows system devices connected to the workstation as configured in the Database Administrator.

The connected devices are arranged as a tree structure. Further, the nodes of the connected devices tree will be discussed.

#### 7.1.1.1 My Computer

The main node of the tree is the **My Computer** node. When the Scanning Core is started, Core Settings will be activated automatically as selected in the relevant checkbox in the right pane of the window (Activate Core Settings):



When you start the system first time (to configure the database), please select the **Activate Core Settings** option.

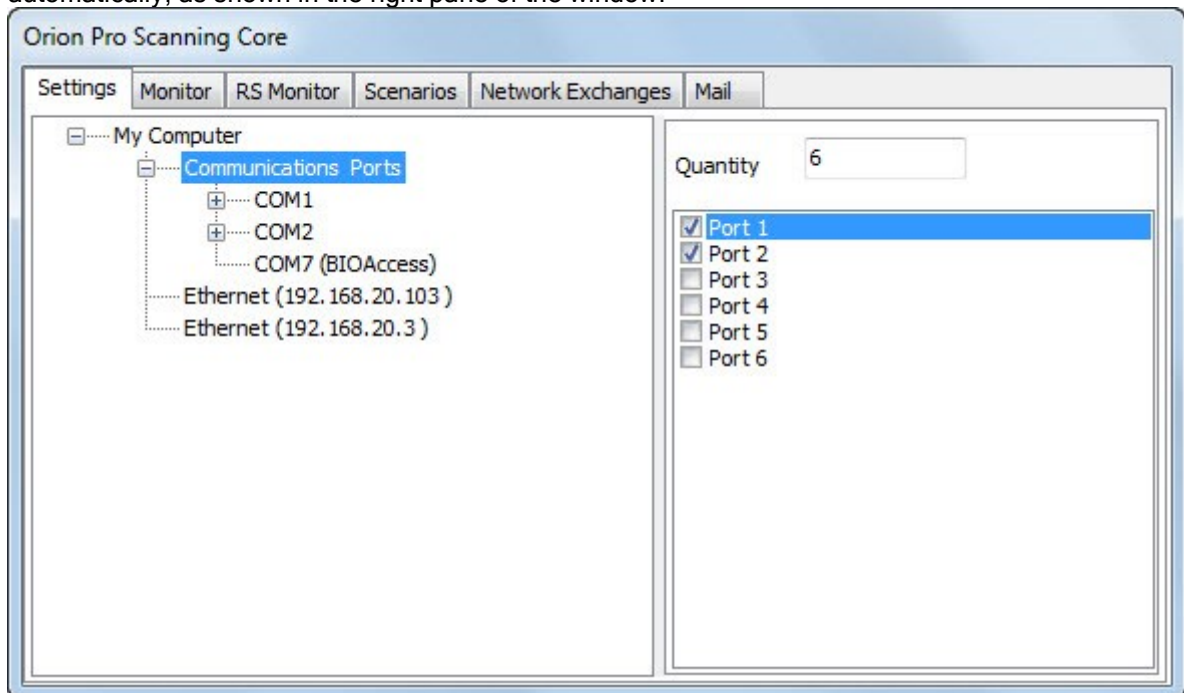
My Computer servers as a node where two other entities are associated to:

- The **Communications Ports** entity
- The **Ethernet** entity

#### 7.1.1.2 Communications Ports

Devices can be connected to several COM ports of one workstation

When the Scanning Core is started, the COM ports (with connected devices) will be activated automatically, as shown in the right pane of the window:



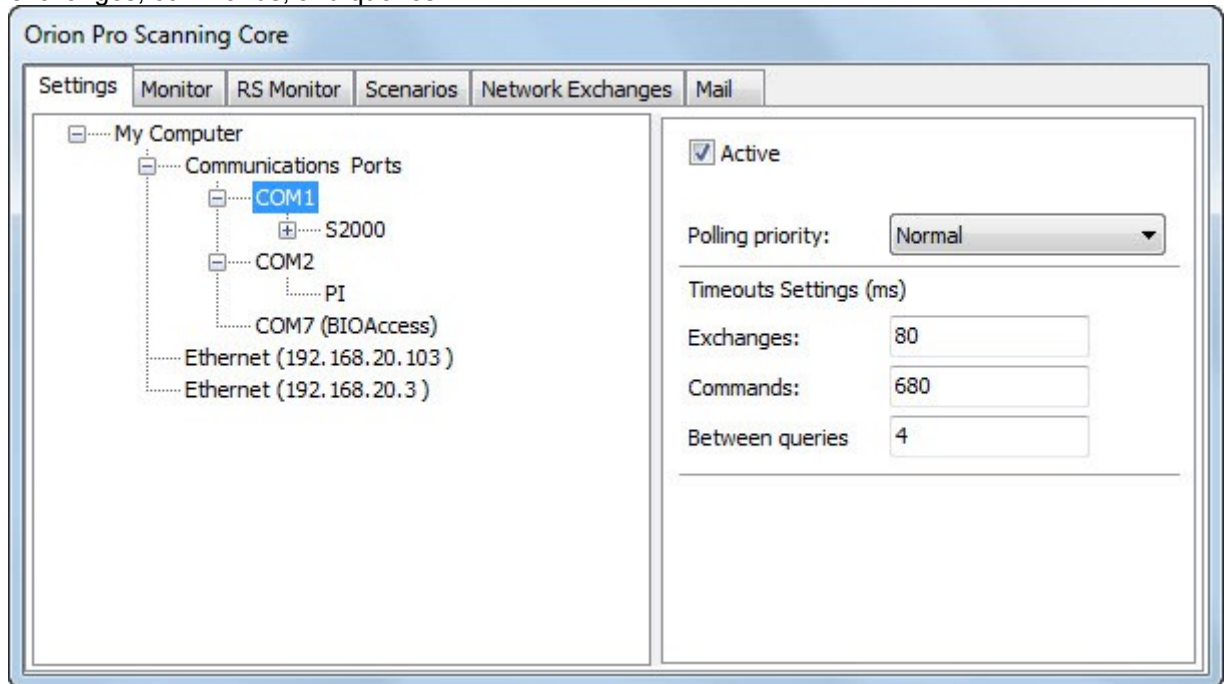


When the system started first time (to configure the database), please activate required COM ports manually

### 7.1.1.2. COM Port

As said above, when the Scanning Core is started, device-occupied COM ports are activated (enabled) automatically as configured in the database.

Polling priority is set for each COM ports in accordance with database settings, and time outs between exchanges, commands, and queries:



Change of these settings of the Scanning core is not recommended

Please use the Database Administrator (recommended) to modify COM Port settings (if needed, you can use the RS Settings utility)

#### 7.1.1.2.2 Interface Converter

The Interface Converter (Shown as PI) is another entity of the tree.

As configured in the database, it shows the type of interface converter and protocol:

1. The Orion protocol:

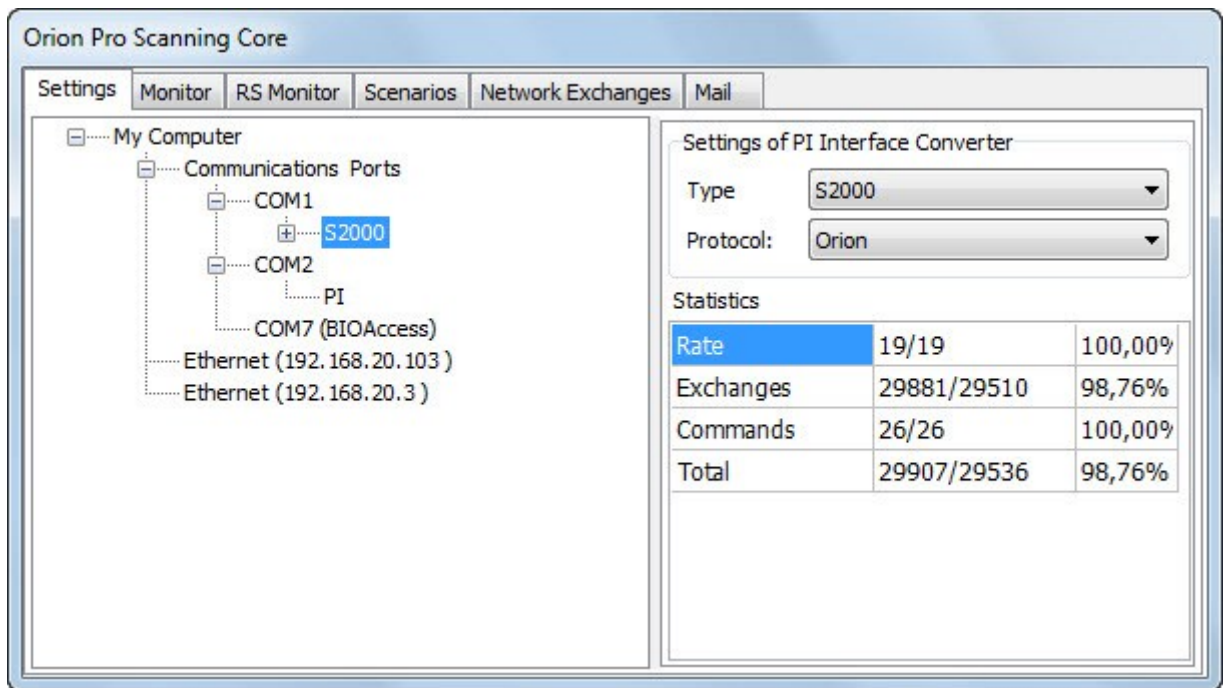
- Interface Converter **Type** of S2000-PI or PI-GR devices or S2000/S200M panels in the **PI-Reserve** mode
- Polling **Protocol**: is Orion (Communications with Devices)
- Device are connected to COM Port using PI Interface Converter or S2000/S2000M

The Statistics area shows the following:

- **Rate** (polling)
- **Exchanges** (the number of exchanges with devices)
- **Commands** (the number of commands)
- **Total** (exchanges and commands)

The first number indicates the number of queries; the second one indicates the number of responses. The third column shows the percentage ratio that helps to identify the communications quality

The following figure shows the example of devices working in the Orion protocol:

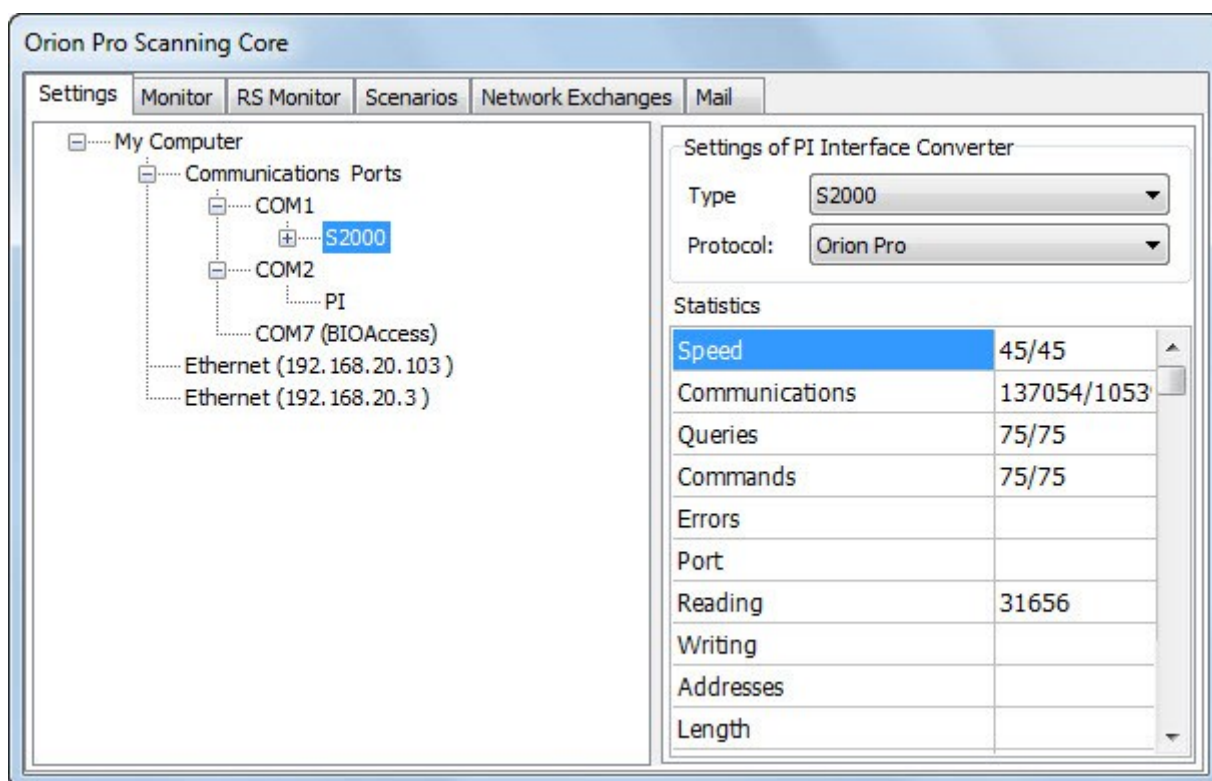


1. The Orion Pro protocol:

- Interface Converter **Type** : S200M panels in the Computer mode
- Protocol **Orion Pro**
- Devices are connected to the S200M, in turn it is connected to a COM Port
  - Rate (polling)
  - Exchanges (the number of exchanges with devices)
  - Queries
  - Commands (the number of commands)
  - Other information

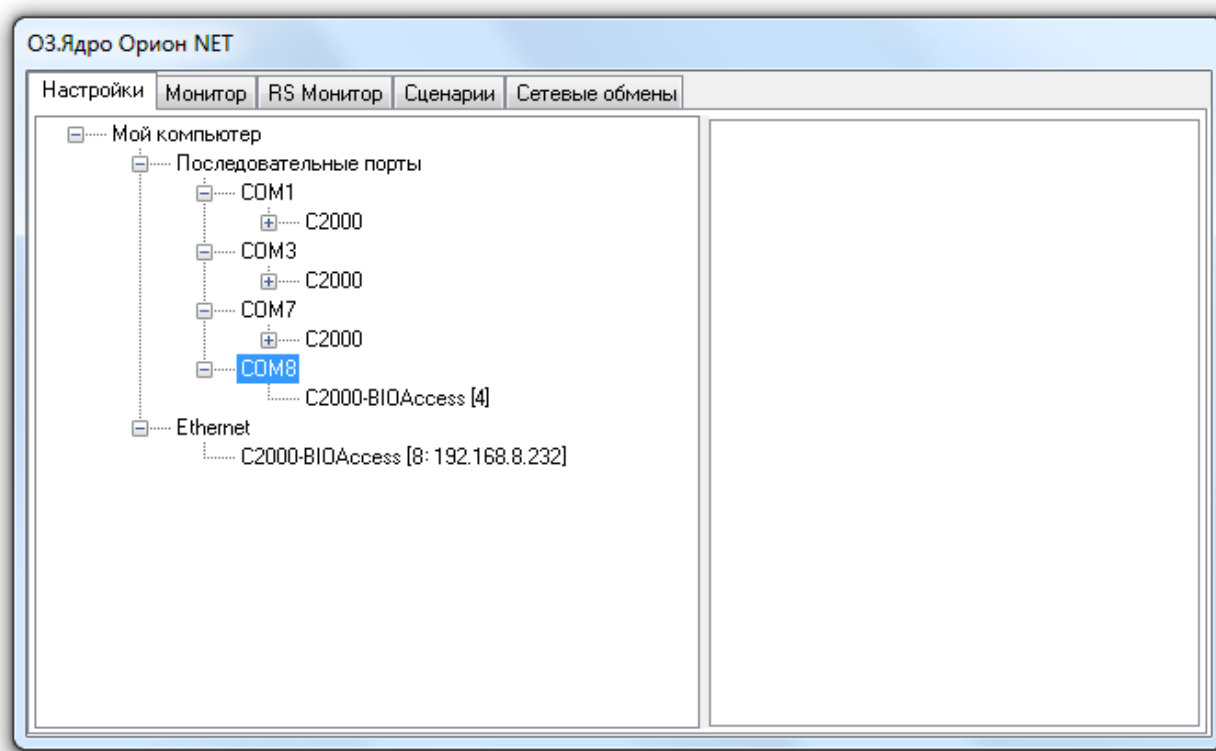
*The first number indicates the number of queries; the second one indicates the number of responses. The third column shows the percentage ratio that helps to identify the communications quality*

*The following figure shows the example of devices working in the Orion protocol:*



## 2. Biometric Reader Protocol.

In this case, an interface converter is not shown for the COM port. All information is available when a specific device is selected.



## 3. COM ports that accommodate connections of keyboxes, UOPs and other devices, as well as interface converters are not displayed in the tree of connected devices.



### 7.1.1.2.3 Lists of Devices

The entity of the tree is Device

You can select a device to get the following information:

1. Device Address

[38]: S2000-4, version 2.04 ID=38

2. Device Type

[38]: S2000-4, version 2.04 ID=38

3. Device Version

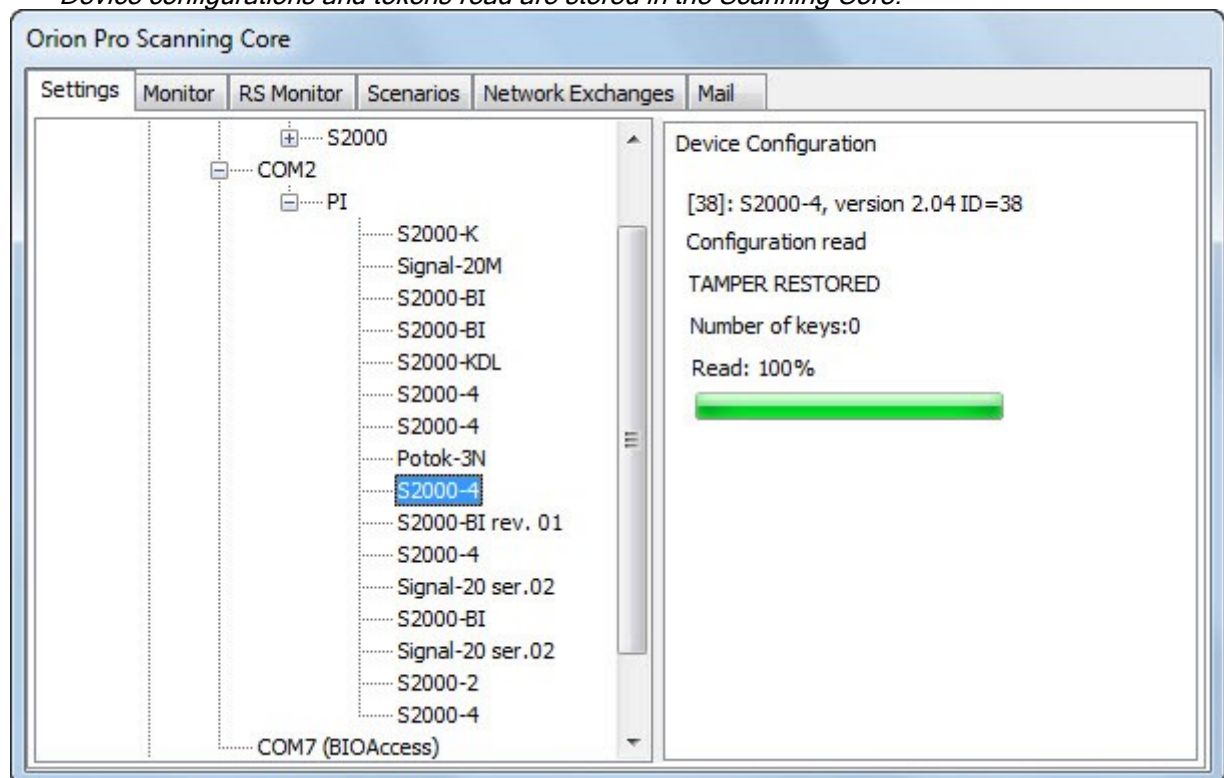
[38]: S2000-4, version 2.04 ID=38

4. Device ID as in the database

[38]: S2000-4, version 2.04 ID=38

5. Whether configuration read is successful.

*Device configurations and tokens read are stored in the Scanning Core:*



14

The information displayed may be as follows:

1. A device version is not available (0.00 is shown), but device ID is identified;

[12]: С2000-КДЛ, версия 0,00 ID=35

This means that the device had been added to the database, but could not be found by the Scanning Core as connected to the interface.

2. A device version is identified, but a device ID is not available (indicated by the "1" value):

[13]: С2000-КДЛ, версия 1,21 ID=-1

It means the device had not been added to the database, but it could be by the Scanning Core as connected to the interface.

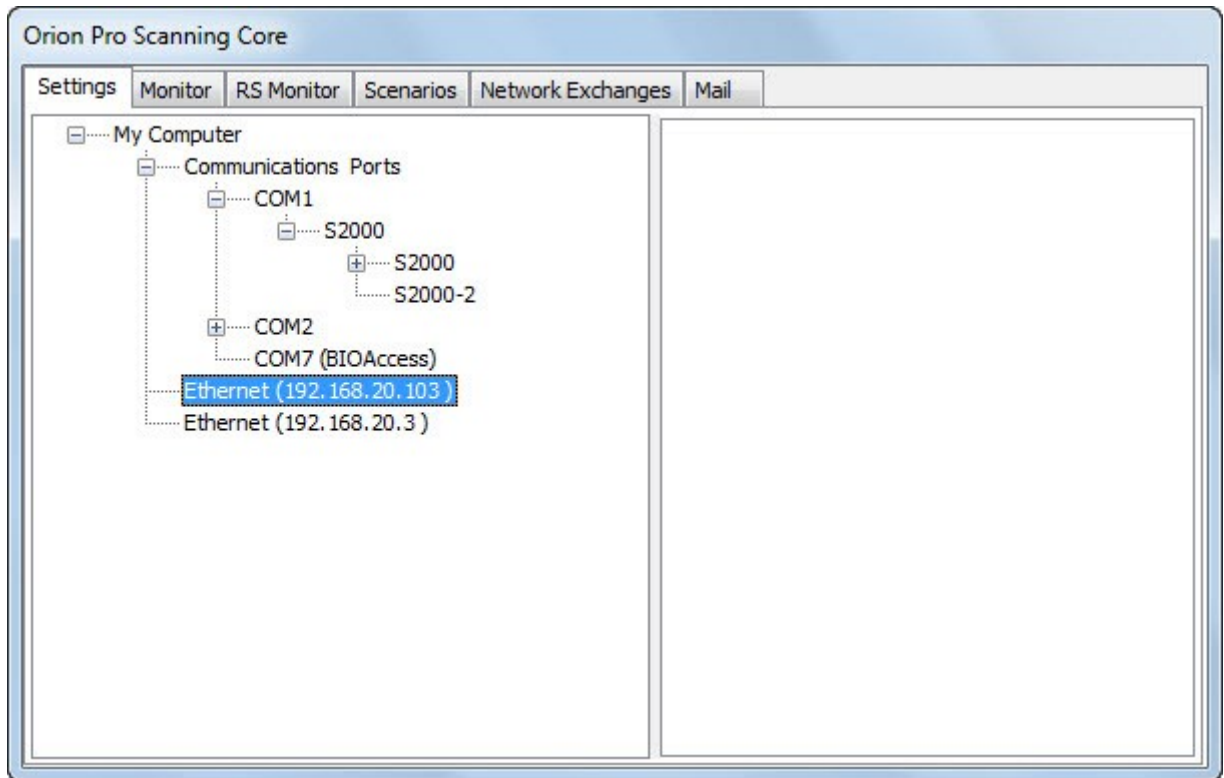
3. Neither Version nor ID identified:



[10]: С2000-КДЛ, версия 1,21 ID=33

This operating situation means this device is in the database and can be found as connected to the interface by the Scanning core.

### 7.1.1.3 The Ethernet Entity

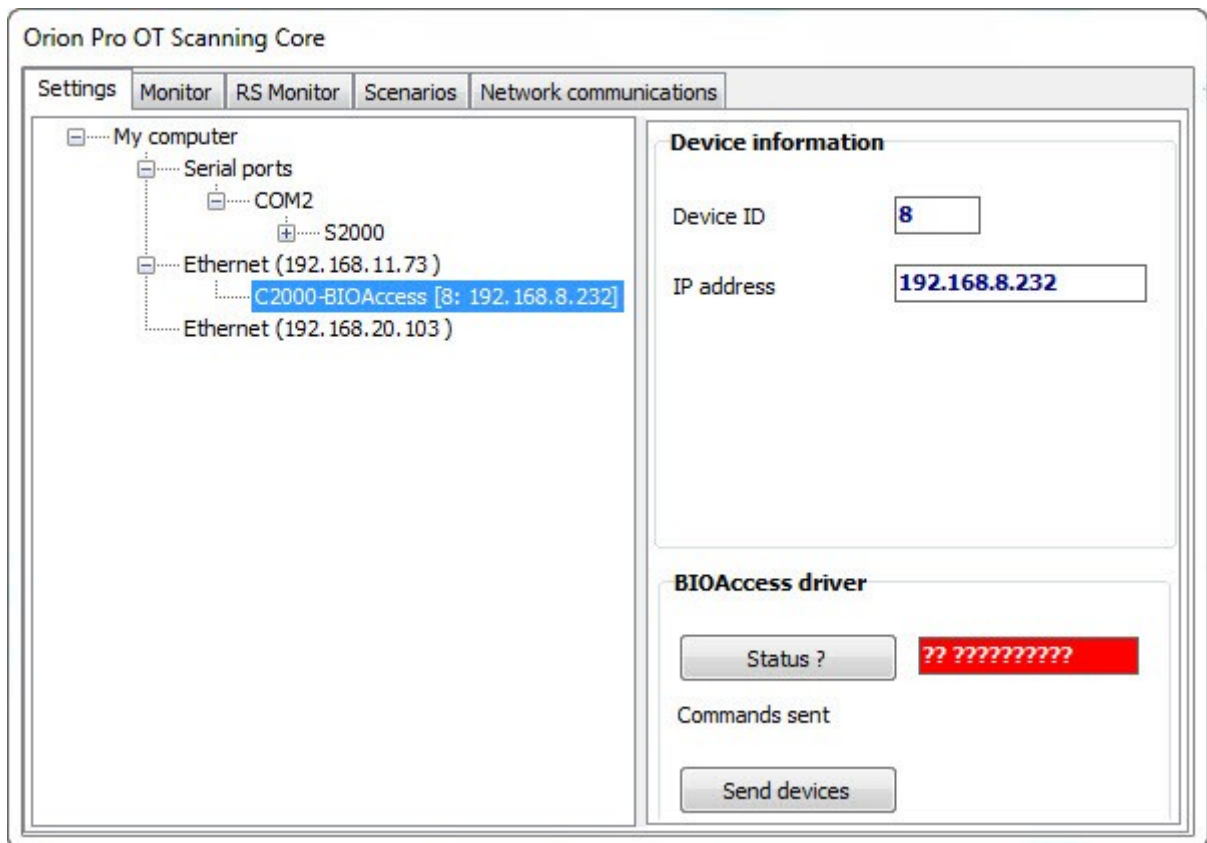


No information is shown for the Ethernet entity; this information is available when a specific device will be selected.

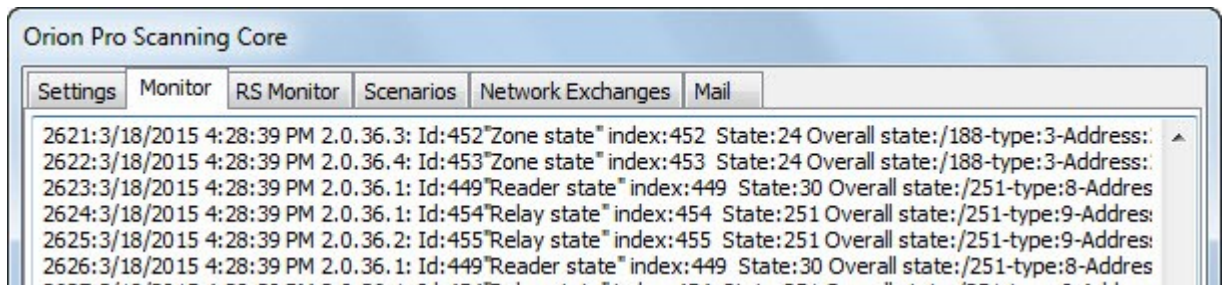
#### 7.1.1.3.1 Devices

The information displayed for a biometric reader is as follows:

1. Device's ID
2. IP address

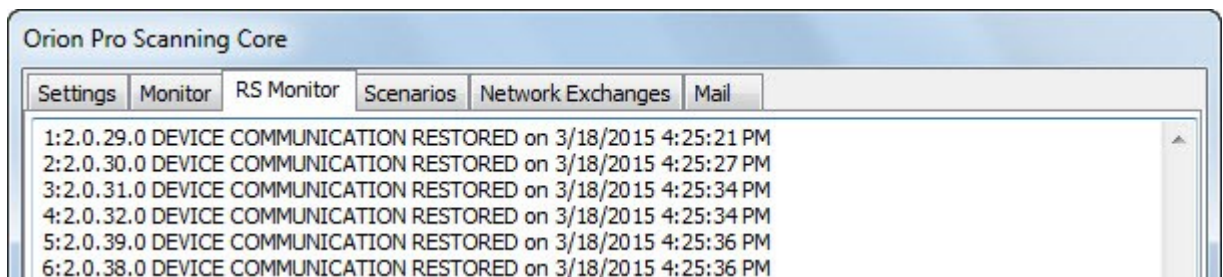


### 7.1.2 The Monitor Tab



This tab shows responses to inquiries about system devices states.

### 7.1.3 The RS Monitor



This tab shows the events of system entities

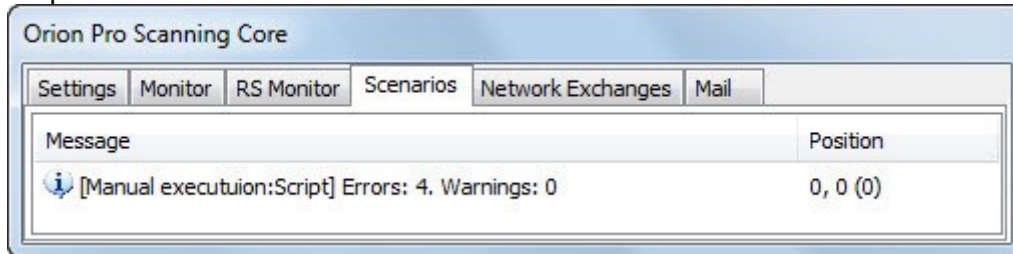
### 7.1.4 The Scenario Tab

The tab shows management scenarios running

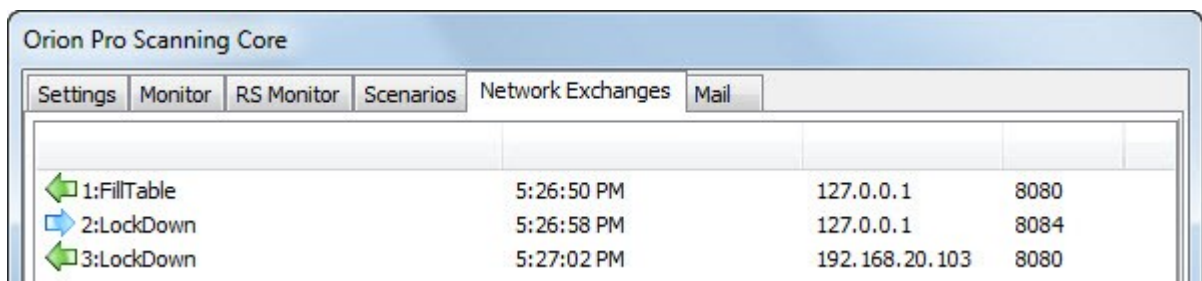
When the scenario is started (by event or by hot key, etc.) this tab shows the following information:

1. Scenario running errors if the scenario scripts based on ORION\_Scripts language includes errors
2. A text message displayed if the Display a text message in the Scanning Core scenario step

Example of text message displayed as triggered by the *Display a text message in the Scanning Core* script:



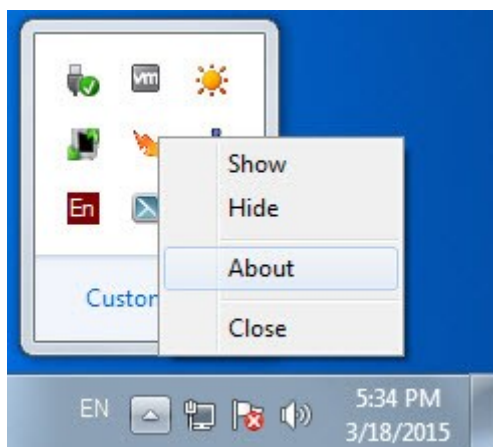
### 7.1.5 Network Exchanges



This tab shows the service information that Developers may need to debug the system.

### 7.1.6 The About Tab

To open the **About** window, please right click on the Scanning Core icon (🔥) in the system tray, then select the **About** item in the contextual menu select.



This window shows the following information:

- Version, release, and built of the Scanning Core
- Version and release of the Orion Pro suite
- ID of protection key (security dongle) and number of devices permitted by the license key
- About the Bolid company



If there is a license to use keyboxes, the ID of security dongle will be displayed as shown in the figure:

ID ключа 562595465, Лицензия на 10 приборов  
Поддержка СК-24.

If no protection key is available or nor license drivers are installed, the Demo mode message will be displayed rather than the ID of the security dongle:



In this case, the Scanning Core will be closed after two-hour runtime of the Scanning Core


Also if a temporary license key is used, it shows hours left for a temporary license key to be effective

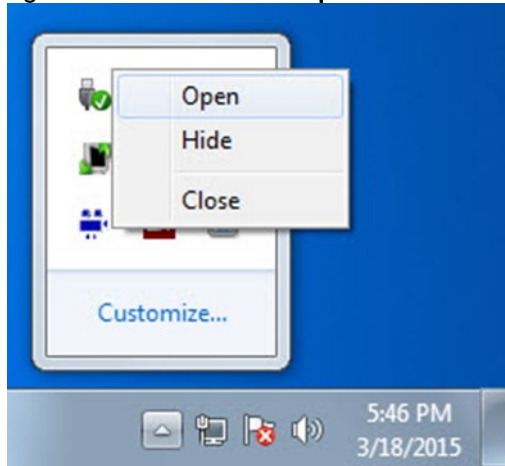
## 7.2 Video System



If the Video System is set in the database to run on the current workstation, the Video System software module (🖥️ VideoDriver.exe) will be started automatically when the System Shell is started

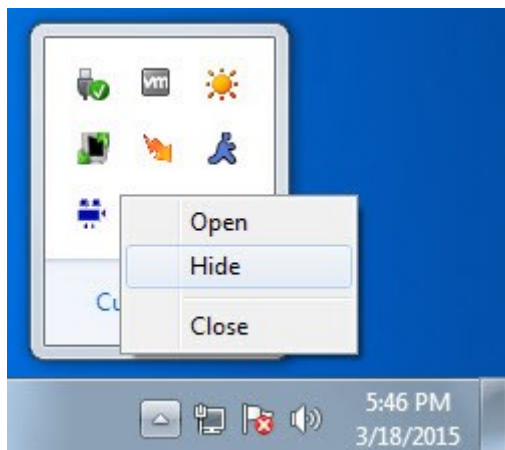
The Video System actually serves as a driver of Scanning Core to interact with IP cameras, servers, digital video recorders, and third party video systems

When started, Video System is minimized as  icon to the system tray.

To show the Video System window please double click the Video System icon () in the system tray or right click it to select the **Open** item in the contextual menu



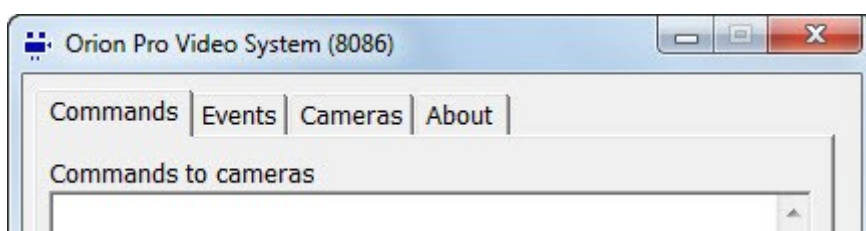
To hide the Video System window, please click the title of the window in the task bar, or click the  **Minimize** button, you can also hide the window by clicking the () in the system tray and selecting the **Hide** item in the contextual menu:



We do not recommend closing Video System manually, as it is closed automatically when the System Shell is closed.

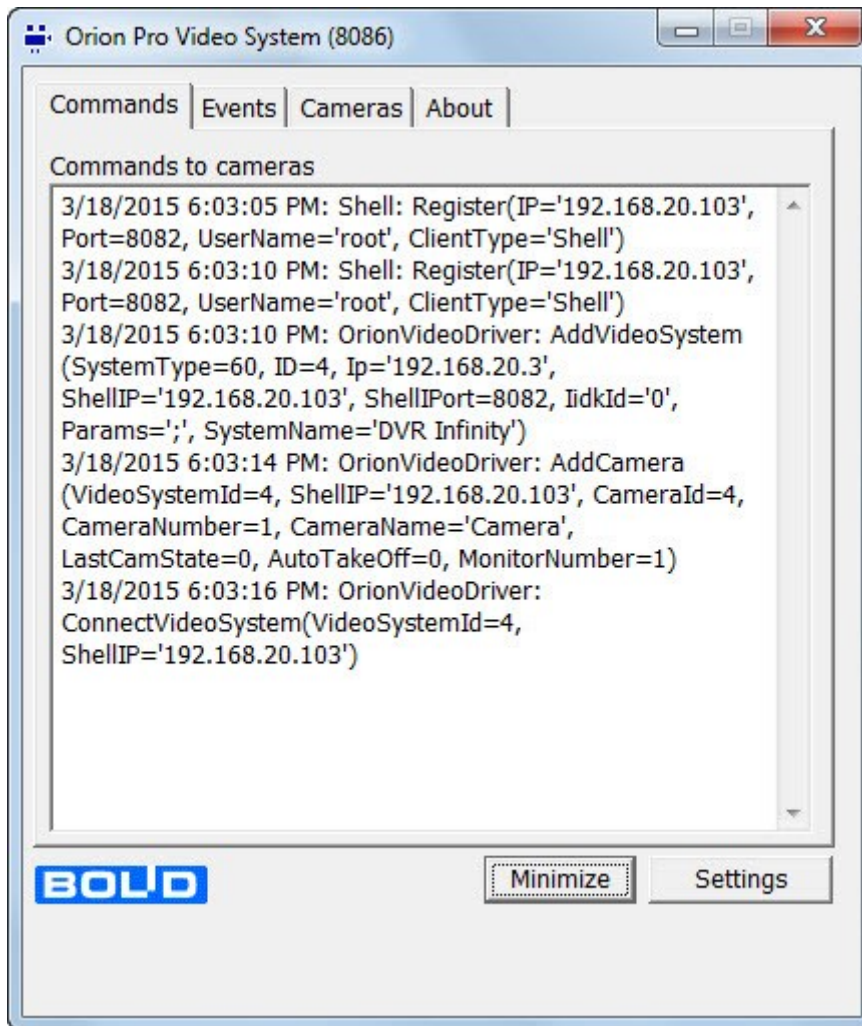
The Video System window is a tabbed window including Commands, Events, Cameras, and About tabs:

### 7.2.1 Commands



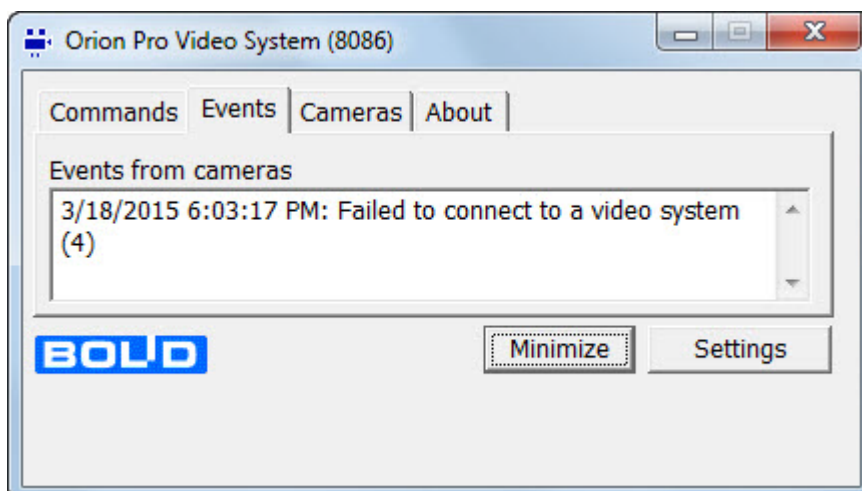
This tab shows incoming commands of the video system





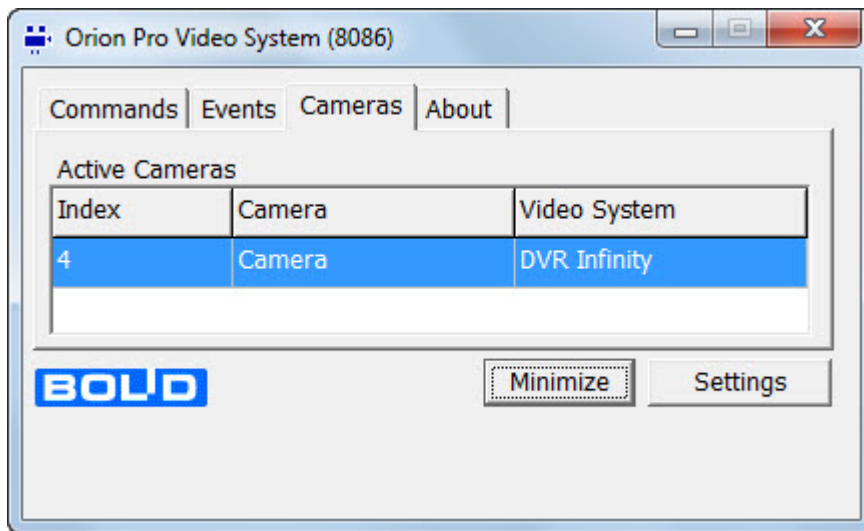
### 7.2.2 Events

This tab shows events coming from IP cameras, DVR recorders, servers, and third-party video subsystems, including events related to configuration, connection, and disconnection of video cameras, and activation and deactivation of video subsystems



### 7.2.3 Cameras

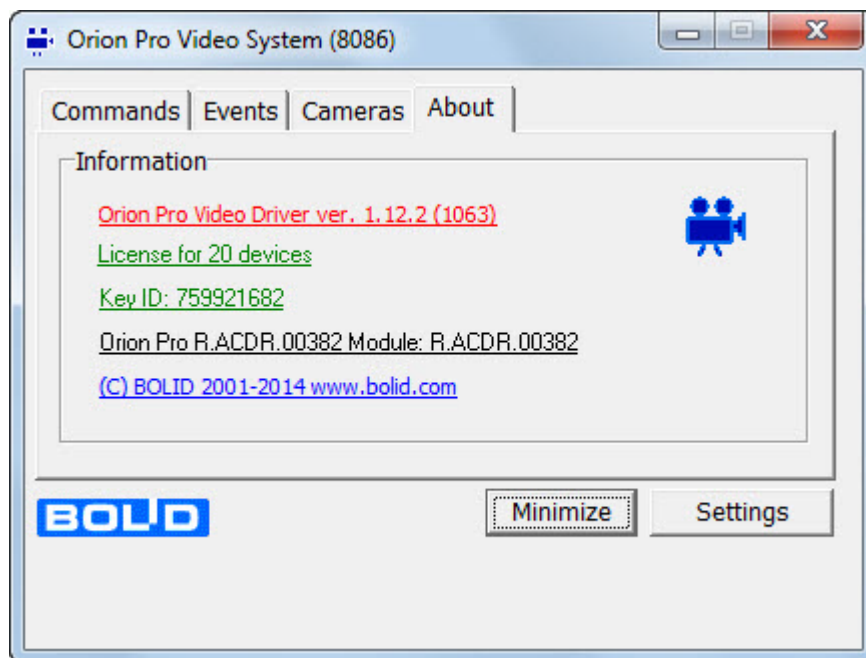
This tab shows working (on-line) cameras.



#### 7.2.4 About

This tab shows:

- The version of the Video System
- ID of software security dongle, the number of devices (cameras) allowed by the license
- About the Bolid Company



Attention! If no security key (dongle) is provided or no drives are installed, the tab will show the **Demo mode** notification rather than ID number of the security key.

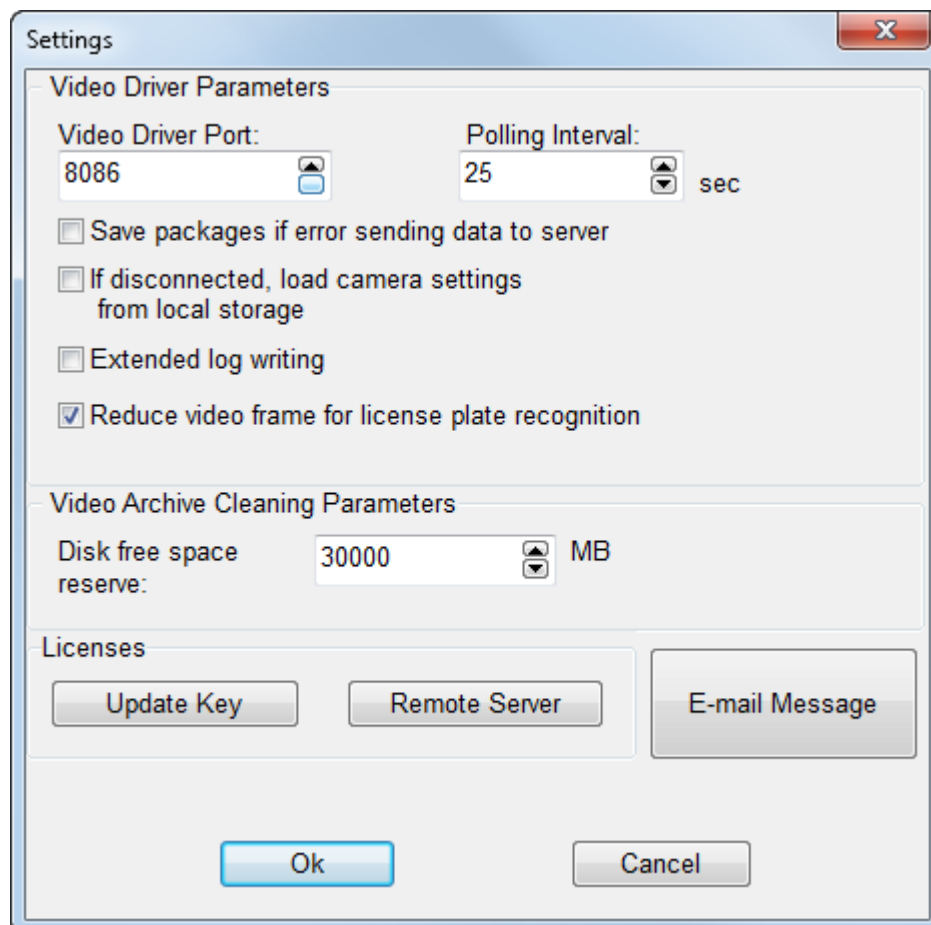




*In such a case, Video System will be closed after two hour's runtime.*

### 7.2.5 Video System Settings

To access video system settings, please click the **Settings** button



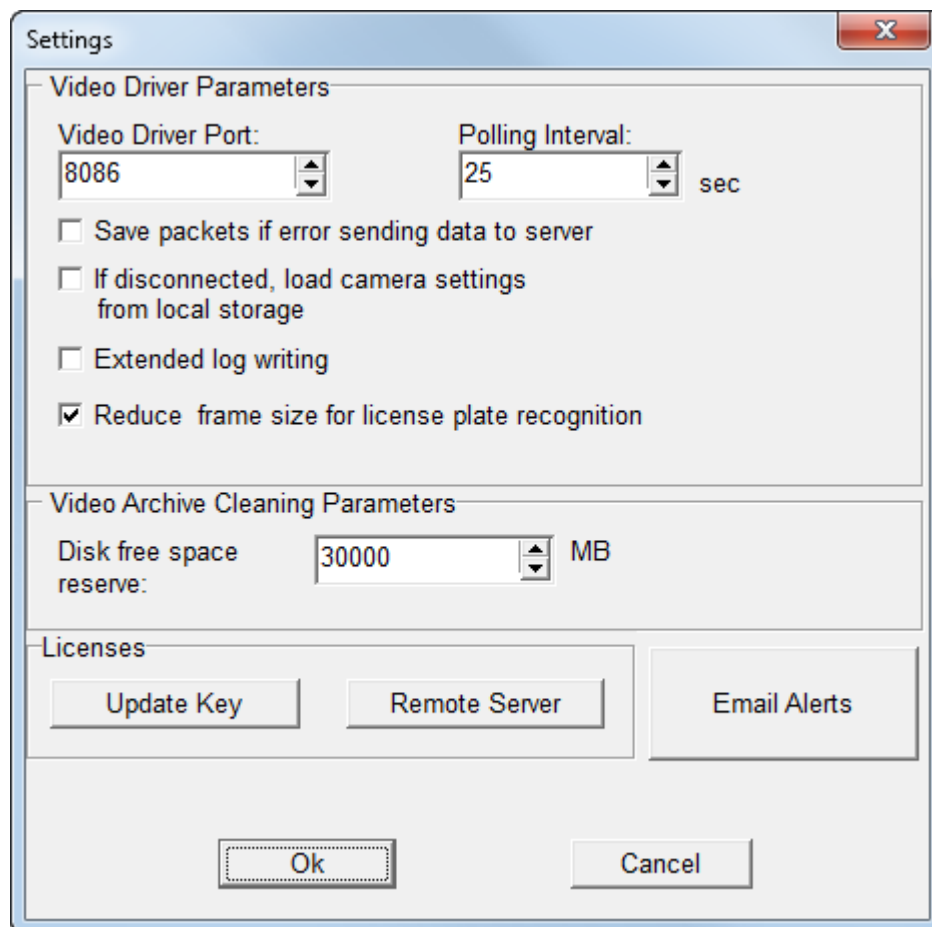
- **Video Driver Parameters :**

- **Video Driver Port:** TCP port address used by a video system.
  - **Polling Interval:** Interval of polling cameras
  - **If disconnected, load camera settings from local storage:** if no connection to the server, the video system goes into the off-line mode
  - **Save packets if error sending to server:** this parameters defines whether to save camera events if it disconnects from the System Shell, in order to send all events to the database when connection restores. If the parameters in not selected in the checkbox, the events occurred during disconnected time, will not be sent to the database and seen nowhere.
- Video Archive cleaning parameters:
    - **Disk free space reserve:** free space on a hard disk drive in MB Video Archive Cleaner service check for remain free a hard disk space through all paths (including network ones), where video data is recording at the moment. If the space is less the set in this parameter, the software decides to delete the oldest files
- **Licenses:**
    - Clicking the **Update Key** button, open Windows Explore to open a security key file (<key number>.buk).

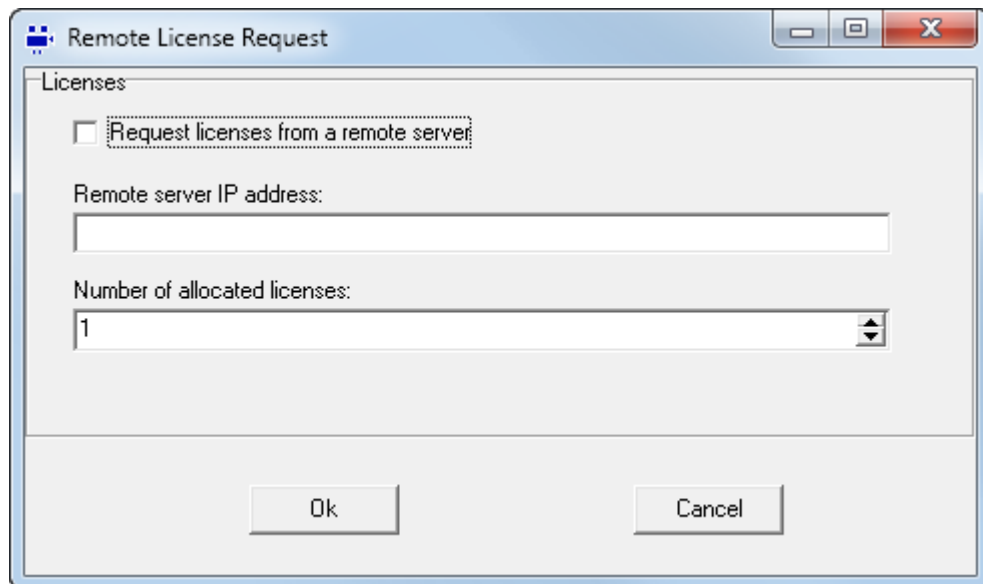
### 7.2.6 Additional License Information

The Orion Pro Video System is capable of distributing the camera licensed located in the USB key among any number of network servers. To do that, please specify a key server address on remote servers and number of licenses allocated for this remote server.

On a remote computer, please click the Settings button in the Video System module.



Click the Remote Server button to open the **Remote License Request** window.



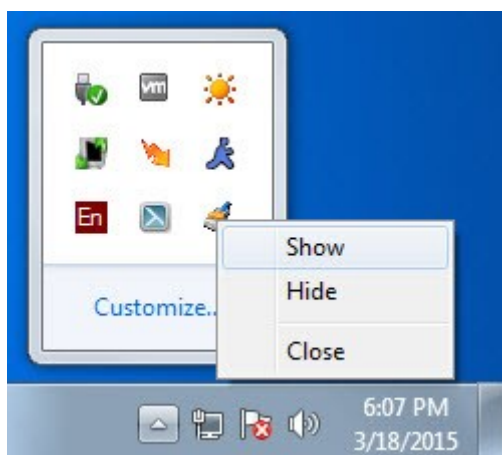
### 7.3 Video Archive Cleaner

The Database Administrator guide describes the each camera records cleanup by time, but in case of great number of cameras and multiple cleaning settings for each camera, the additional cleaning option should be used to prevent the hard disk from being full. The archive cleanup service is used for this purpose.

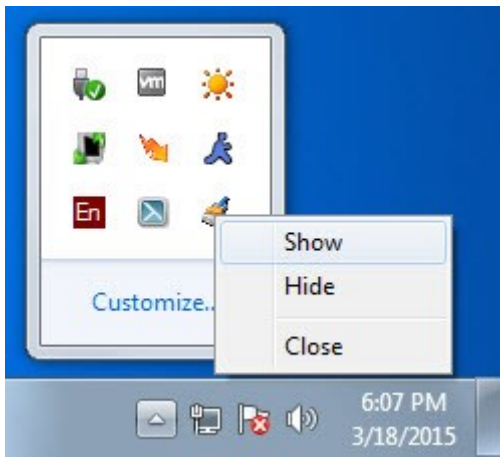
If the **Video System** item is selected in DBA to run on the current workstation, the Video System software module will be launched automatically, when the System Shell is started.



In this case, the Video Archive Cleaner module will be launched as well (🖥️ **VideoCleaner.exe** in the folder of installed Orion Pro software).

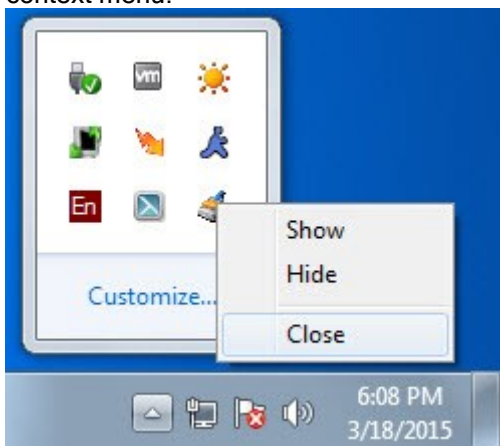
When started, the archive cleaner module minimizes to the system tray to be shown as the 🖥️ icon. To show the Video Archive Cleaner's window, please double click the icon in the system tray, alternatively you can right click the icon and select **Show** in the appeared context menu.



To hide the window, please click the title of the module window in the task bar, or the 🖥️ button or the **Hide** button, or right click the 🖥️ icon in the system tray and select **Hide** in the context menu:



We do not recommend closing the Video Archive Cleaner module. If you have to do that, please click the  button or right click the  icon in the system tray and select the **Close** item in the appeared context menu:



The main purpose of this program is to search and delete old files from the storage. The hard disk must be cleaned up for new files as it becomes full. For this purpose, the cleaner looks through all paths (including network ones), where the recording is in progress at the moment to check for the free space remaining on a hard disk. If the space is less than defined in the <orion.ini> file, the program decides to delete the oldest files.

The cleaning is provided for all IP video systems associated to the workstation (remote launches of these video systems can be provided as well). If data from several cameras are recorded on the same hard disk, the cleaning will delete old files of all these cameras.

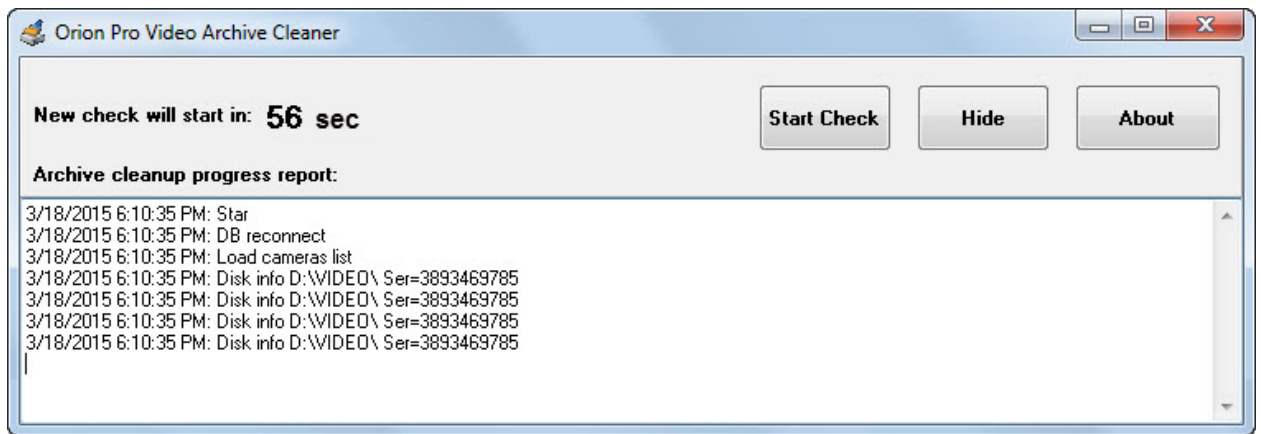
By default, Default value of the Disk **free space reserve** parameter is 30 0000 megabytes, but it can be decreased or increased as required *Chapter 7.2.5 Video System Settings*.

Also, this can be adjusted manually in the configuration file. To do that, please open the orion.ini file, and add (or modify if available) the MinDiskSpace parameter to the VideoCleaner:

```
[VideoCleaner]
MinDiskSpace=< megabyte>
```

Then define the size of minimum free disk space for the server, which will be monitored by the application.

### 7.3.1 Main Video Archive Cleaner Window



The window shows all events occurred since the system start including: connection to the database, retrieval of the list of cameras, check of the archive location paths, check of disk free space, removal of old files. If disk free space size is less than one defined in the Minimum Disk Free Space, it will start deleting old files with logging information on files deleted.

The archive status is check every minute according a set timer, but you can start checking manually by clicking the relevant the **Start Check** button.

### 7.3.2 About



Clicking the **About** button, open the corresponding window



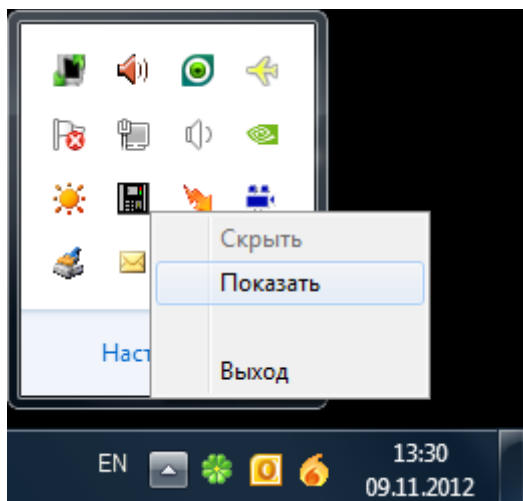
This window shows the following information:

- Version, release, and build of the Video Archive Cleaner Module;
- Version and release of the Orion Pro Suite;
- About Bolid Company.

## 7.4 BIOAccess Driver

As said above, if Biometric readers are added to the current workstation, the BIOAccess Driver module (  badriver.exe in the software folder) will be automatically launched, when the System Shell is started. When started, BIOAccess Driver minimizes automatically to the system tray and shown as the  icon

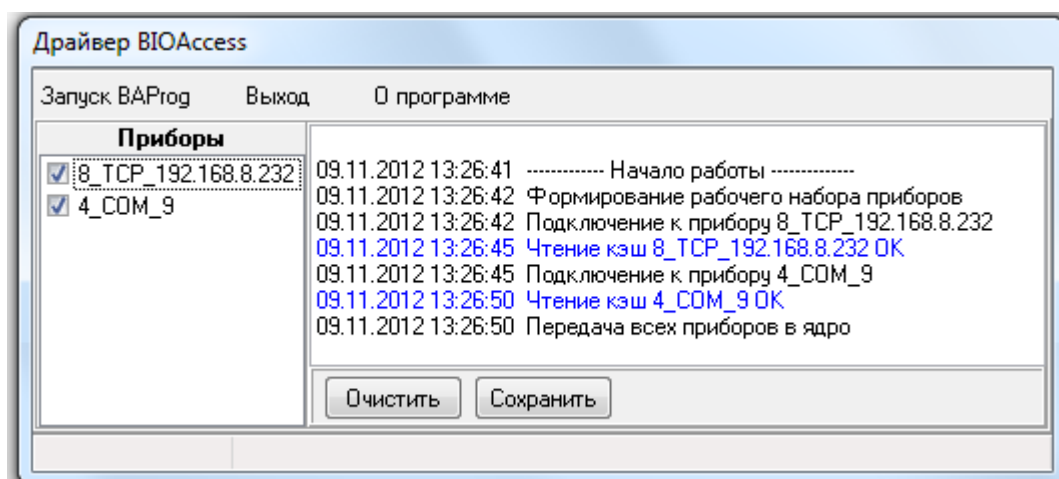
To show the BIOAccess driver, please double-click the BIOAccess driver icon, or left click the icon and selected **Show** in the appeared context menu:



To hide, the BIOAccess driver, please double click the window title or left click the BIOAccess driver icon in the system tray and select Hide in the context window:

Manually quitting BIOAccess Driver is not recommended, for the applications closes automatically when the System Shell is closed.

#### 7.4.1 The BIOAccess Driver Main Window



The window of the BIOAccess Driver consists of two parts:

- List of biometric readers
- Event log.

The event log shows all events of biometric readers and the driver itself.

Using the **Clear** button you can clear the event log.

Using the **Save** button you can save event log as a BAACCESS.rtf file located in the folder where the Orion Pro system is installed. Each saving action replaces the file with new one.

The list of biometric readers shows the readers found in the database.

The logic of work with biometric readers list is as follows:

- The application attempts to connect to devices found in the database. The search of new devices (not added to the database) is not performed at this stage.
- If the connection is successful, this will be indicated by the ☒ tick next to the relevant device. Further, on-line devices will be queried and commands will be sent to them.
- If connection is not established, it will be indicated by the empty check box next to a relevant device with no further connection attempts.

To establish connection with devices that were not connected before, please use of the following method:

- Tick the checkbox next to a required device. If connection attempts fails, it will clear the check box, but in case of successful connection this tick will remain:
- Attempt to connect to biometric readers by selecting any biometric reader in the device tree and clicking the Send Devices button in the Scanning Core window.

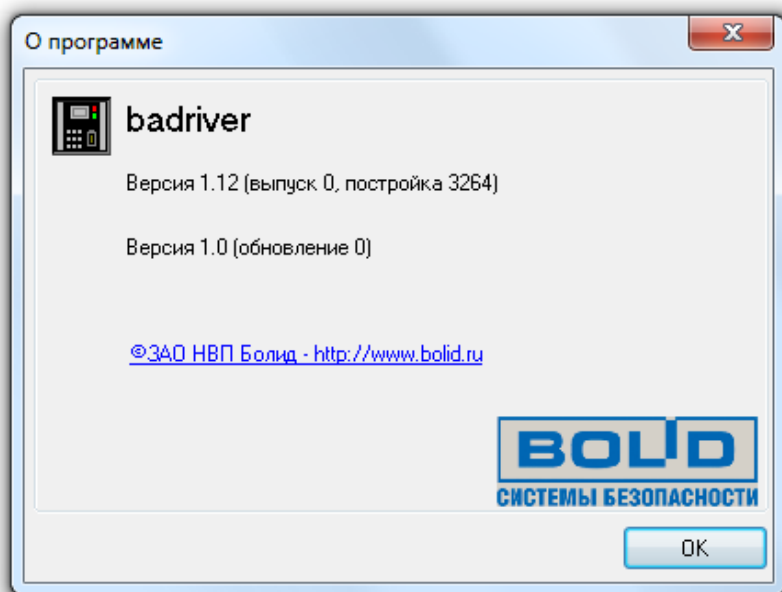
Initiate total database update with the **Update Database in Operative Task** command in the Database Administrator.

- Restart the Scanning Core (BIOAccess Driver will be restarted as well).

Using the Start BAplog, one can start the utility to view and modify (if needed) the configuration of biometric readers connected via Ethernet

#### 7.4.2 The About Window

The About menu item is used to open the About window.



The window shows the following:

- Version, release, and built of the Scanning Core:
- Version, release of the BIOAccess Driver