SECURITY code

Sobol
Version 4

Sobol Software

Administrator guide

Mailing address:	**P.O. Box 66, Moscow, Russian Federation, 115127**
Phone:	**+7 495 982 30 20**
E-mail:	**info@securitycode.ru**
Web:	**https://www.securitycode.ru**

Table of contents

List of abbreviations

API	Application Programming Interface
BIOS	Basic Input/Output System
IC	Integrity Check
M.2	PCI Express M.2 (Type 2230-D4-A-E)
Mini PCIe	Mini PCI Express
Mini PCIe Half	Mini PCI Express Half
NVRAM	Nonvolatile Random Access Memory
PCIe	PCI Express
RNG	Random Number Generator
SMBIOS	System Management BIOS
UEFI	Unified Extensible Firmware Interface

Introduction

This document is designed for administrators of Hardware Trusted Boot Module Sobol, Version 4 (hereinafter — Sobol). It contains information about setup and operation of Sobol software.

This administrator guide has the following structure:

- **Chapter 1** provides an overview of Sobol software (its purpose and the system requirements);
- **Chapter 2** describes the setup and operation procedures of Sobol software for Windows;
- **Chapter 3** describes the setup and operation procedures of Sobol software for Linux;
- **Appendix** contains information about **scheck** tool operation.

Web-site. Information about SECURITY CODE LLC products can be found on https://www.securitycode.ru.

Technical support. You can contact technical support by phone: +7-800-505-30-20 or by email: support@securitycode.ru. Technical support web-page:

https://www.securitycode.ru/.

Training. You can learn more about hardware and software products of SECURITY CODE LLC in authorized education centers. List of the centers and information about learning environment can be found on https://www.securitycode.ru/. You can contact a company's representative for more information about trainings by email: education@securitycode.ru.

Chapter 1
Overview

Purpose

Sobol software configures the IC mechanism and performs additional operations while working with Sobol.

Note. The Sobol IC mechanism starts before an OS is loaded and ensures that software and hardware components of a protected computer cannot be modified without permission.
For detailed information about the IC mechanism, see [**1**].

Sobol software contains the following components:

- Sobol driver;
- IC template management program;
- API library (snellock.dll) for Sobol driver.

Sobol driver enables Sobol to interact with other OSs.

The IC template management program allows you to:

- create and modify the list of objects that will be checked for integrity violations, and save these lists to files — IC templates;
- modify original IC templates — add/remove objects and restore original files;

  Note. Original IC templates are created during Sobol software installation. If you do not need to modify the original IC templates, to configure the IC mechanism, calculate reference checksums while initializing Sobol (see document [**1**]).
- create reports about controlled objects;
- create a file to export the Sobol log;
- create a file to save UEFI Option ROM.

Using the IC template management program in Windows you can configure IC for the following objects:

- files;
- hard drive sectors;
- registry items;
- PCI devices;
- SMBIOS structures.

Using the IC template management program in Linux you can configure IC for files and hard drive sectors.

System requirements

Sobol software is compatible with the FAT16, FAT32, NTFS, EXT2, EXT3, EXT4 file systems and the following operating systems:

OS	Requirement
MS Windows	• 10 x64/x86; • 8.1 with KB2919355; • 7 (SP1); • Server 2008 R2 (SP1); • Server 2012 R2; • Server 2016; • Server 2019
Linux	• ALT Linux 9.1; • ALT Linux SP 8; • ALT Linux SP 8.1; • Lotos 2.1; • RED OS MUROM 7.2; • RED OS MUROM 7.3; • ROSA Cobalt 7.3; • Astra Linux Special Edition 1.4; • Astra Linux Special Edition 1.5; • Astra Linux Special Edition 1.6; • Astra Linux Special Edition 1.7; • AstraLinux Common Edition 2.12.40(42); • CentOS 7.3.1611; • CentOS 7.5.1804; • CentOS 8; • CentOS 8.2 (2004); • ContinentOS 4.2; • Debian 10.1; • Debian 10.5; • ESxi Version: 6.5.0; • Oracle Linux 7.2; • Oracle Linux 7.3; • ROSA RED X4; • SUSE Linux Enterprise 15; • Ubuntu 18.04.2 LTS; • Ubuntu 18.04.5 LTS; • Ubuntu 20.04 LTS. **Note.** Sobol software is compatible with other operating systems within Linux family. For detailed information, contact the service department (https://www.securitycode.ru/services/).

System hard drive must be a GPT structure and contain at least 50 MB of free space.

While creating IC templates and before running reference checksum calculation, remove all USB Mass Storage devices (CD, DVD, flash drives, etc.) from your computer.

When using Fast Startup in Windows 10, errors in IC templates and checksum calculations may occur. Thus, we recommend disabling Fast Startup.

Chapter 2
Sobol software for Windows

Install Sobol software

Note. We recommended installing Sobol software before inserting Sobol card into the computer. If you have earlier versions of Sobol software on your computer, remove them.

1. Insert the installation disk into the DVD/CD-ROM drive and run the SblAutorun.exe file.

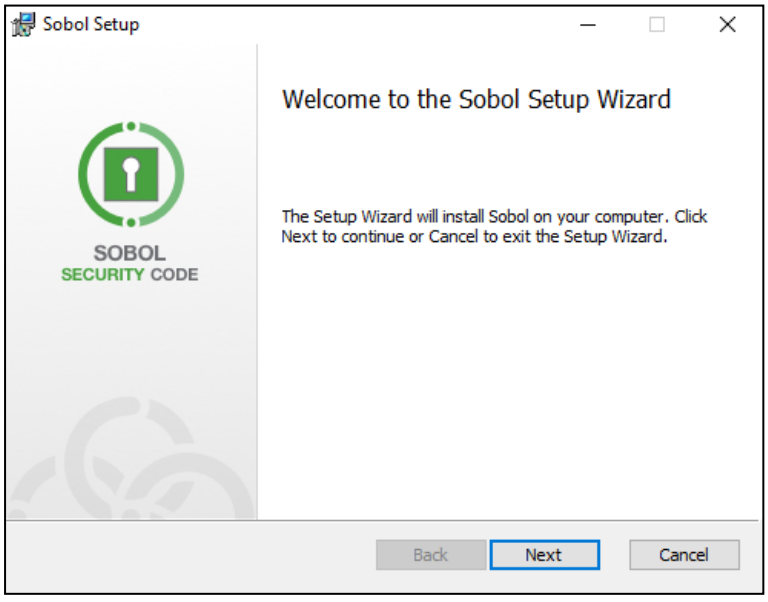
   Note. If the program has not started automatically, run the SblAutorun.exe file located in the Setup folder of the installation disk. The program language is set automatically depending on the OS language.

   The autorun dialog box appears.

   Note. To change the language of the autorun program, click English or Russian depending on the previously selected option.

2. To install Sobol software, select **Sobol software for Windows**.

   The Installation Wizard prepares for the installation. After the preparations are completed, the Installation Wizard starting dialog box appears.

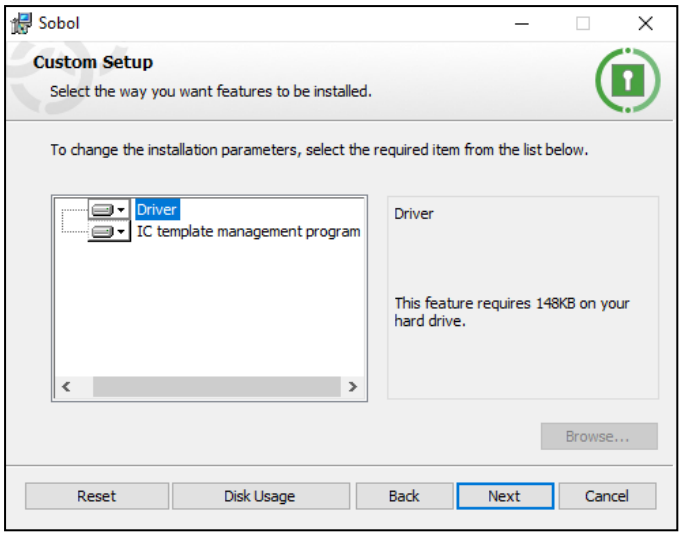


3. Read the information in the starting dialog box and click **Next** to continue the installation.

   The dialog box containing the text of the license agreement appears.

4. Read the license agreement. Click **I accept the terms** in the license agreement, then click **Next**.

The dialog box prompting you to select components to install appears.



To install the driver:

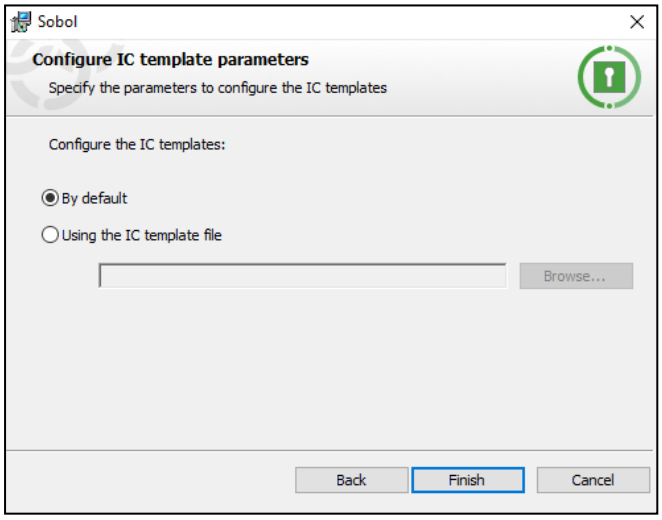
1. Select the **Driver** component in the custom setup window.

   In the **Driver** field, information about the amount of free space on hard drive necessary for the installation appears.

   Note. To obtain the summary information about the disk usage, click **Disk Usage**.

2. Click **Next**.

   The dialog box prompting you to select the file containing the list of objects for integrity check appears.



   Note.
   - By default, the list of objects for integrity check is located in the SICInstall64.xml file. The file is located in the %Program Files%\Sobol folder. To view the list of objects stored in IC templates by default is, see on p. 38
   - You can select a different file. To do so:
     - select the **Using the IC template file** check box and click **Browse**;
     - select the necessary file;
     - click **Open**.

3. Click **Finish**.

   The process of the driver installation starts. The installation progress can be seen on the progress bar.

   The Installation Wizard registers Sobol driver in the system.

   After the procedure is successfully completed, the installation success dialog box appears.

4. Click **OK**.

To install the IC template management program:

1. In the custom setup window, select the **IC template management program** component.

   In the **IC template management program** field, the information about the amount of hard drive free space necessary for the component installation appears.

   Note. To obtain the summary information about the disk usage, click **Disk Usage**.

2. To change the folder for the component installation, click **Browse**.

   Select a folder for the component installation. Click **OK**.

3. In the custom setup window, click **Next**.

   The dialog box prompting you to select the file containing the list of objects for integrity check appears.

   Note.
   - By default, the original list of objects for integrity check is located in the SICInstall64.xml file. The file is stored in the %Program Files%\Sobol folder. The list of objects that IC templates contain by default is given on p. 38.
   - You can select a different file. To do so:
     - select the **Using the IC template file** field and click **Browse**;
     - select a necessary file;
     - click **Open**.

4. Click **Finish**.

   The installation of the IC template management program starts. The installation progress can be seen on the progress bar.

   After the installation procedure is successfully completed, the Installation Wizard success dialog box appears. For the autosetup of the IC templates management program, click **Run IC templates management program** after the installation is completed.

5. Click **OK**.

Uninstallation

To uninstall Sobol software, use the Installation Wizard or Windows standard tools.

To uninstall Sobol software using the Installation Wizard:

1. Insert the installation disk into DVD/CD-ROM.

   The Installation Wizard appears.

   Note. If the wizard does not appear, run the file SblAutorun.exe from the folder Setup on the installation disk.

2. Click **Sobol software for Windows**

   The **Change, Repair or Remove** dialog box appears.

3. Click **Remove**.

   The dialog box to remove Sobol appears.

4. Click **Remove**.

   When the operation is complete, the respective dialog box appears.

5. Click **Finish**.

Update

To update the IC template management program:

1. Insert the installation disk into DVD/CD-ROM.

   The Installation Wizard appears.

   Note. If the wizard does not appear, run the file SblAutorun.exe from the folder Setup on the installation disk.

2. Click **Sobol software for Windows**. If updates are available, you will be asked to update the program.
3. Click **Yes**. The setup window appears.

   Note. If the OS is not supported or there is not enough space on the disk, the update aborts and the respective message appears.

4. Read the information and click **Next >**.

   The Installation Wizard starts to update the IC template management program.

When the update is completed, the respective dialog box appears.

5. Click **Finish**.

Repair

When repairing components, errors are fixed by means of restoring missing and corrupted files, shortcuts, and registry elements.

To repair components:

1. Insert the installation disk into DVD/CD-ROM.

   The Installation Wizard appears.

   Note. If the wizard does not appear, run the file SblAutorun.exe from the folder Setup on the installation disk.

2. Click **Sobol software for Windows**

   The **Change, Repair or Remove** dialog box appears.

3. Click **Repair**.

   The dialog box to repair Sobol appears.

4. Click **Repair**.

   You can see the progress of the installation on the progress bar. When the operation is complete, the respective dialog box appears.

5. Click **Finish**.

Change

To change Sobol components:

1. Insert the installation disk into DVD/CD-ROM.

   The Installation Wizard dialog box appears.

   Note. If the program does not start automatically, run the SblAutorun.exe file located in the Setup folder of the installation disk.

2. Select **Sobol software for Windows**.

   After the preparation is completed, the **Change, Repair or Remove** dialog box appears.

3. Click **Change**.

   The change dialog box appears. Select a component to be changed.

4. Click **Change**.

   When the operation is completed, the respective dialog box appears.

5. Click **Finish**.

IC data model

The parameters that define Sobol IC operation and are configured using the IC template management program for Windows are combined into a data model.

The IC data model is a hierarchical description of objects and relations between them. The model uses 5 categories of objects presented in the table below:

Object	Description
Resource	A file, a disk sector, a registry item, a PCI device, a SMBIOS structure. It is defined by the location and type of the resource
Resource group	Multiple descriptions of the same type resources (files, disk sectors, registry items, PCI device, SMBIOS structures). It is defined by the type of the resources included into the group
Task	A set of resource groups of the same or different types, e.g. a task can include a group of system files and sectors at the same time
Job	A set of tasks and resource groups to be controlled
Control actors	A computer protected by Sobol

Objects of one category are subordinate or superior in relation to objects of another category. Thus, resources are subordinate to resource groups, the latter — to tasks. Combining resources to groups, resource groups to tasks, tasks to jobs is called object linking. As a result, control actors assign jobs.

Configuring IC

To configure IC using the IC template management program for Windows, take the following steps:

1. Modify IC templates (see p. **13**).
2. Enable IC if it was disabled (see document [**1**], **Integrity check**).
3. Calculate the reference checksums (see p. **25**).

Additionally, the IC template management program allows you to:

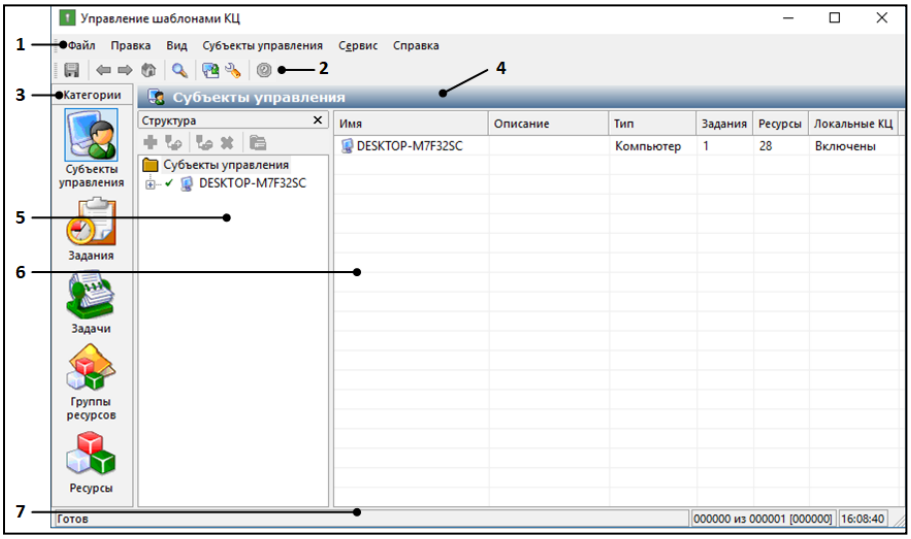
- generate reports about the controlled objects (see p. **25**);
- save, import and export data models (see p. **25**);
- create files export logs (see p. **27**) and save the UEFI/BIOS extension code (see p. **28**).

Run the IC template management program

According to the OS version:

- for Windows 10/8.1/8/Server 2012 R2 — in the **Start** menu, go to **Security Code** and run **Sobol IC Templates Configuration**;
- for Windows 7 — in the **Start** menu, go to **All Programs** | **Sobol** | **Sobol IC Templates Configuration**.

A window appears as in the figure below.



The main window contains the following interface elements:

(1) Menu
Contains program management commands
(2) Toolbar
Contains shortcut buttons for management commands and software tools
(3) Categories (Категории)
Contains object categories (shortcuts of commands in the **View (Вид)** tab). To display the object of the required category, click its shortcut e.g. to display the task list, click **Tasks (Задания)**. If there is not enough space to display all shortcuts, scroll buttons appear at the top and/or bottom of the panel. Use these buttons to move to the required shortcut
(4) Heading
Displays the heading of the selected object category
(5) Structure (Структура)

Contains a hierarchical list of objects. The root element of the hierarchy is the selected category. To create the structure of objects, create nested objects or link objects of different categories.
The shortcuts of objects that require the link with other objects have special signs:

- (the lower half of the circle is red) — the object does not include other objects;
- (the upper half of the circle is colored red) — the object is not included in other objects;
- — the object is not linked to any other objects;
- ✓ — the object has all the required links to other objects.

At the top of the section, there is the Quick Access Toolbar

(6) Objects

Displays the list of objects included in the object selected in **Structure (Структура)**. Information about the objects is presented in the table.
Table rows have different color:

- if the object has all the required links to other objects — the row is white;
- if the object requires a link but the link is missing — the row is pink;
- if the resource is not controlled — the row is gray

(7) Status bar

Contains service messages of the program. In the right part of the status bar, there are zones containing the following information (from left to right respectively):

- the sequence number of the selected object, the total number of objects, the number of selected objects in the object list;
- the current time

Modifying IC templates

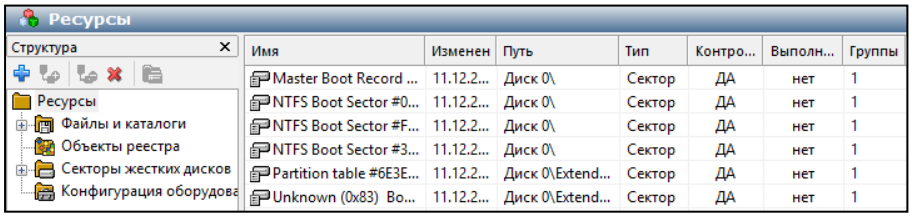
To modify IC templates using the IC templates management program for Windows, take the following steps:

- create new objects for IC:
  - create single resources (see p. **13**);
  - create resource groups: groups of files (see p. **15**), disk sectors (see p. **19**), registry items (see p. **20**);
- add resource groups to the IC job for Sobol (see p. **23**);
- remove objects that do not require IC (see p. **24**).

Create single resources

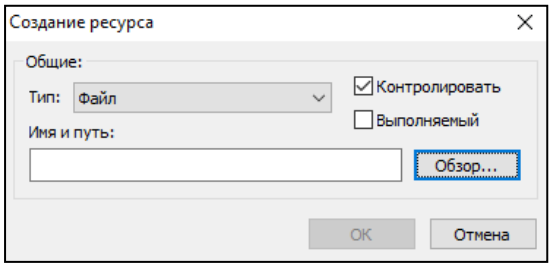
To create a single resource (a file, a disk sector, a registry item, a PCI device, a SMBIOS structure):

1. In **Categories (Категории)** (see p. **12**), go to **Resources (Ресурсы)**.
   You will see the list of resources as in the figure below.



Note. The **Files and directories (Файлы и каталоги)**, **Registry objects (Объекты реестра)**, **Disk sectors (Секторы жестких дисков)**, **Device configuration(Конфигурация оборудования)** folders are created by default while installing IC template management program.

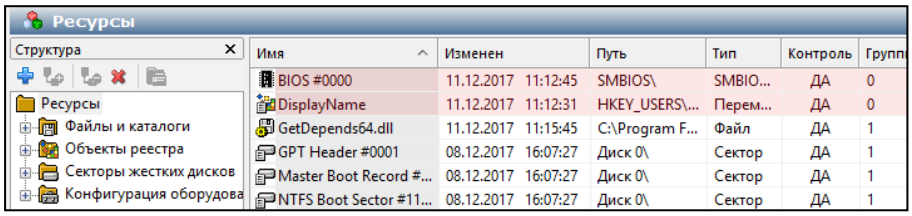
2. In **Structure (Структура)**, click **Add new (Добавить новый)**.
   The **Create resource (Создание ресурса)** dialog box appears.



3. Take the following steps:
   - In the **Type (Тип)** drop-down list, select the required resource: **File (Файл)**/**Registry variable (Переменная реестра)**/**Registry key (Ключ реестра)**/**Disk sectors (Секторы диска)**/**Device configuration (Конфигурация оборудования)**.
   - Click **Browse (Обзор)**.
   - In File Explorer, select the required resource and click **Open (Открыть)/OK**.

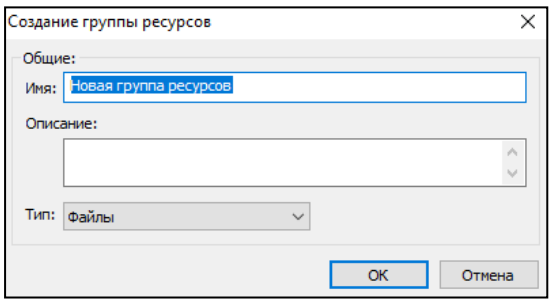
     In the **Name and path (Имя и путь)** field, you will see the path to the selected resource.
   - Click **OK**.

     You will see the list of resources as in the figure below.



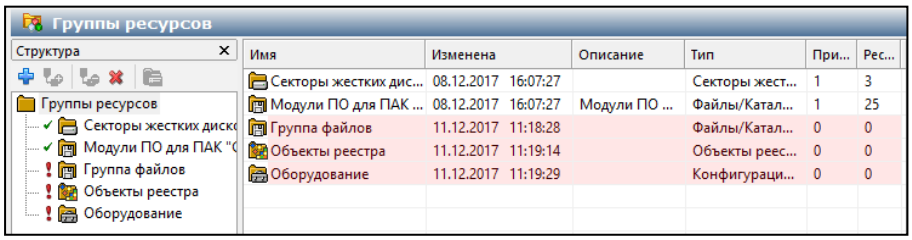
4. Add the selected single resources to resource groups. To do so:
   - In **Categories (Категории)**, go to **Resource groups (Группы ресурсов)**.
   - In **Structure (Структура)**, click **Add new (Добавить новый)**.

     The **Create resource group (Создание группы ресурса)** dialog box appears.



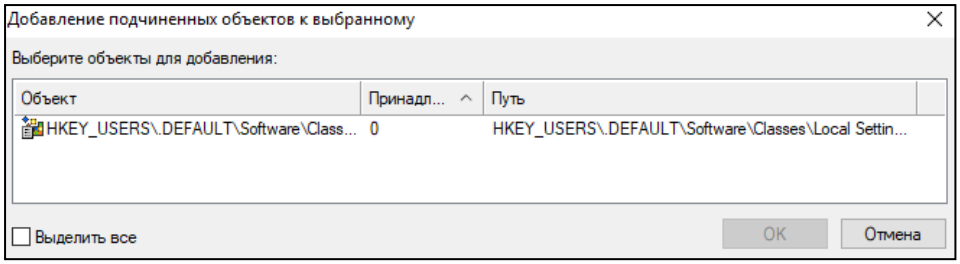
   - Take the following steps:
     - in the **Name (Имя)** and **Decription (Описание)** fields, enter the required name and a group description if necessary;
     - in the **Type (Тип)** drop-down list, select: **File (Файл)** / **Registry variable (Переменная реестра)** / **Registry key (Ключ реестра)** / **Disk sectors (Секторы диска)**/**Device configuration (Конфигурация оборудования)**;
     - click **OK**.

     You will see the list of resource groups as in the figure below.



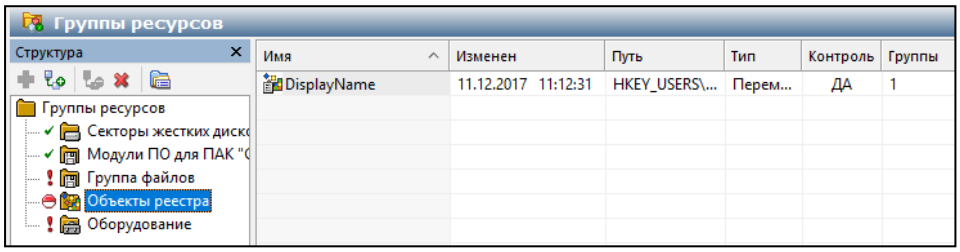
5. In **Structure (Структура)**, right-click the created folder select **Add resources (Добавить ресурсы)** and click **Existing (Существующие)**.

   A dialog box appears as in the figure below.



6. Select the required reource and click **OK**.

   In **Structure (Структура)** and the list of objects, the selected objects appear.



Create a resource group

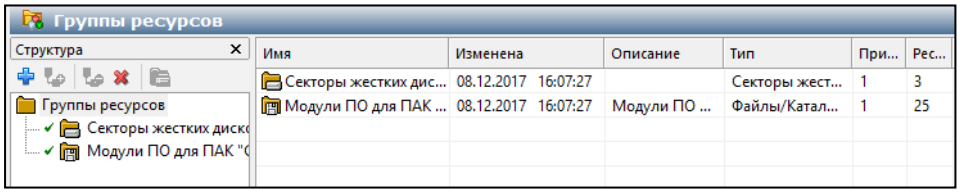
You can create resource groups using task generator or the following commands:

- **By directory (По каталогу)**;
- **Manually (Вручную)**.

To create a resource group (By directory (По каталогу)):

1. In **Categories (Категории)**(see p. **12**), go to **Resource groups (Группы ресурсов)**.

   You will see the list of resource groups as in the figure below.



2. In **Structure (Структура)**, right-click the **Resource groups (Группы ресурсов)** folder, select **Create group (Создать группу)** and click **By directory (По каталогу)**.

   The File Explorer appears.

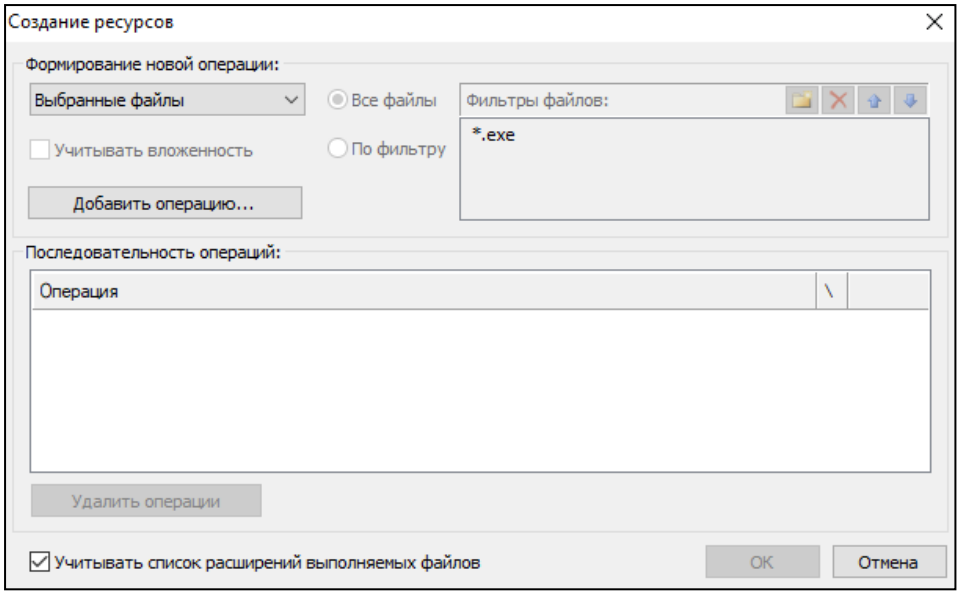
3. Select the required directory and click **OK** . In the **IC templates management (Управление шаблонами КЦ)** dialog box, click **OK**.

To create a resource group (Manually (Вручную)):

1. In **Categories (Категории)**(see p. **12**), go to **Resource groups (Группы ресурсов)**. In **Structure (Структура)**, click **Add new (Добавить новый)**

   The Resource group creation dialog box appears (see p. **14**).

2. Take the following steps:
   - in the **Name (Имя)** and **Description (Описание)** fields, enter the required name and a group description if necessary;
   - in the **Type (Тип**) drop-down list, select **Files (Файлы)**;
   - click **OK**.
3. In **Structure (Структура)**, right-click the created folder select **Add resources (Добавить ресурсы)** and click **Multiple new (Несколько новых)**.



The **Create resources (Создание ресурсов)** dialog box consists of two parts:

- the **Generate new operation (Формирование новой операции)** group of fields allows you to specify an option for selecting resources and setting additional conditions. You can set several conditions for one option. Adding resources by an option and an additional condition is called an operation. Multiple operations can be performed for one option.

  To perform an operation, select an option, set additional conditions and click **Add operation (Добавить операцию)**.
- the **Sequence of operations (Последовательность операций**) group of fields displays the sequence of the performed operations.

You can find the parameters used for adding new files for IC in the table below:

Parameter	Description
Resource selection option	Two options are available: • **Selected files (Выбранные файлы)** (standard file selection procedure; no additional conditions available); • **Files by directory (Файлы по каталогу)** (files included in the specified directory are added; nesting is taken into account; you can use a filter)
Consider the nested structure. **All files.** **By filter**	Parameters available only if the **Files by directory (Файлы по каталогу)** option is selected

4. Configure resource selection parameters.

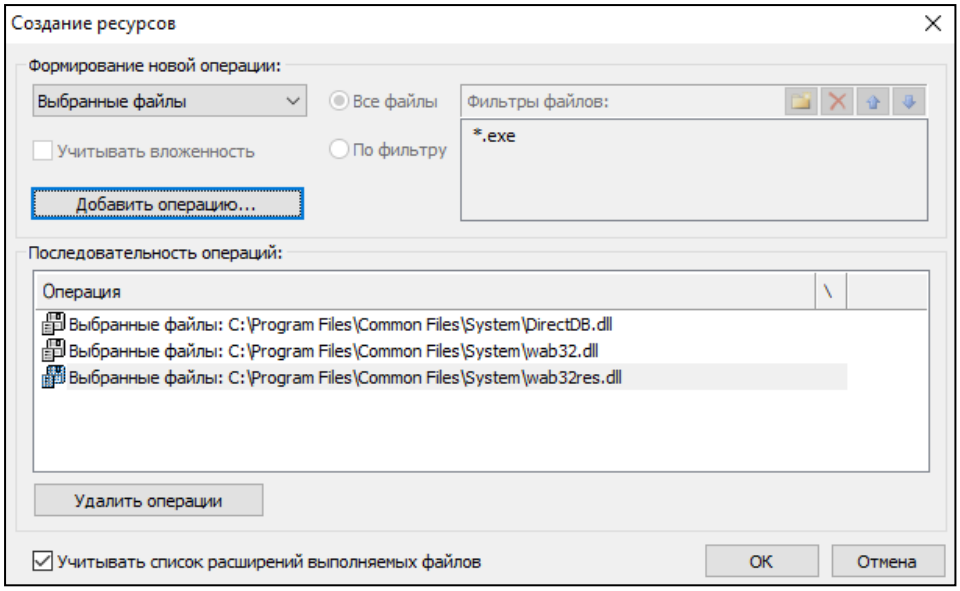
   Then, proceed to one of the following steps depending on the selected option:

If you selected...	...proceed to step:
Selected files (Выбранные файлы)	**5**
Files in folder (Файлы по каталогу)	**7**

5. Click **Add operation (Добавить операцию)**.

   Windows Explorer appears.
6. Select the required files.

   The new operations are added to the list in the **Operation sequence (Последовательность операций)** section.



Each file has the respective operation.

Note. If you need to delete operations, select them in the list and click **Delete operations (Удалить операции)**.

Then:

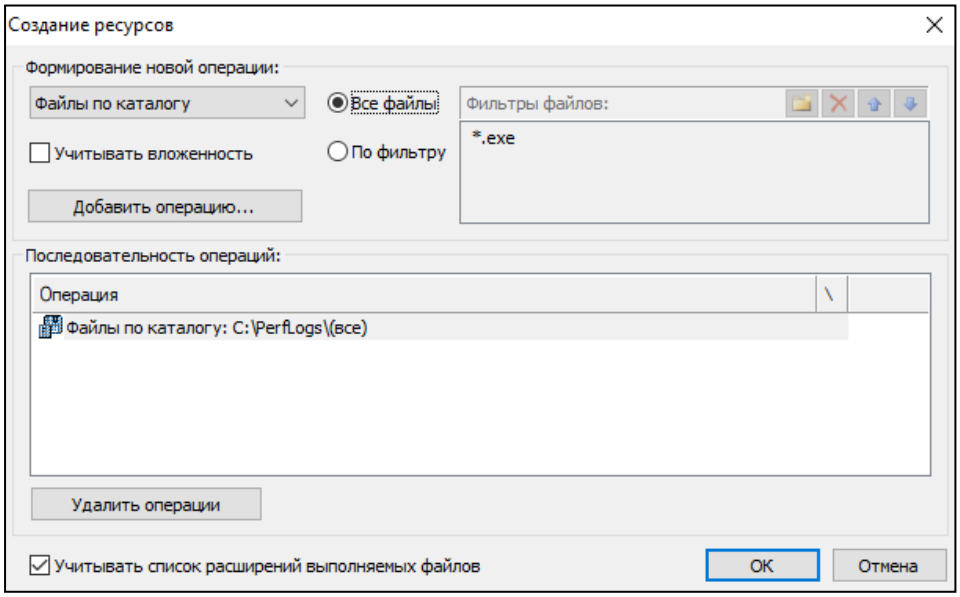
- if you do not need to add other resources, proceed to step **9**.
- if you need to add other resources, return to step **4**.

7. Configure additional parameters (to use the filter, double-click a line in the **File filters (Фильтры файлов)** list) and click **Add operation (Добавить операцию)**.

Windows Explorer appears.

8. Select the required folder and click **OK**.

The new operation is added to the list in the **Operation sequence (Последовательность операций)** section.

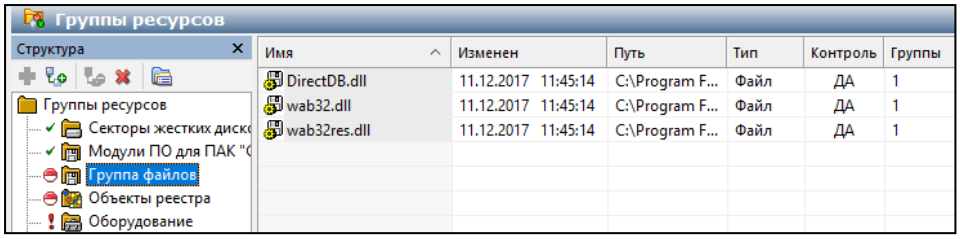


Then:

- if you do not need to add other resources, proceed to step **9**.
- if you need to add other resources, return to **4**.

9. Make sure that you added all the required resources. Click **OK**.

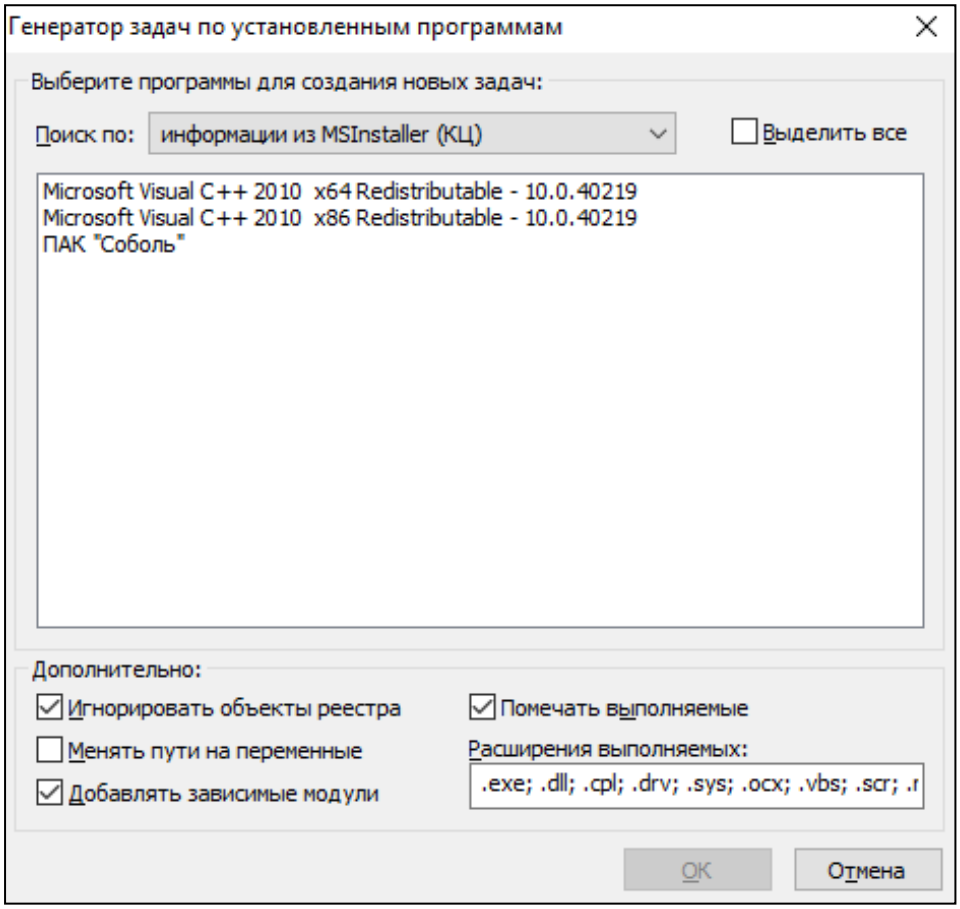
The **Create resources (Создание ресурсов)** dialog box is closed. The new resources are added to the data model.



To create a group of files (using Task generator):

1. In the **Categories (Категории)** section (see p. **12**), select **Resource groups (Группы ресурсов)**. In the menu, select **Service | Task generator (Сервис I Генератор задач)**.

   A dialog box appears as in the figure below.



2. In the **Search by (Поиск по)** drop-down list, select a source to search for programs.
3. Select the required programs in the list and, in the **Advanced (Дополнительно)** section, set the additional conditions (see the table below).

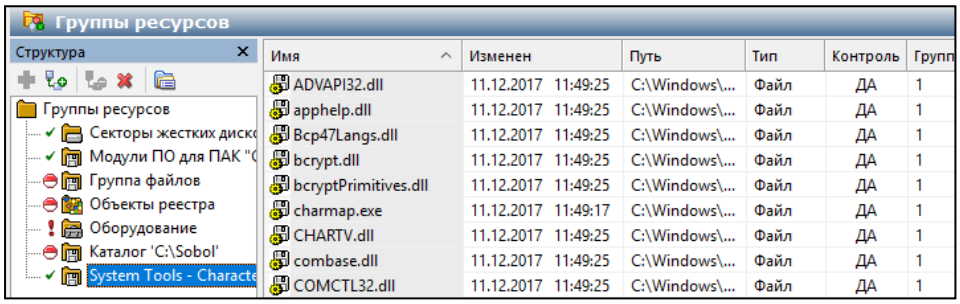
Note. To select multiple programs, use **<Ctrl>**. To select all objects in the list, select the **Select all (Выделить все)** check box.

Condition	Description
Ignore regsistry items (Игнорировать объекты реестра)	Registry items are not added to tasks
Replace paths with variables (Менять пути на переменные)	Absolute paths to files and folders are replaced with Windows environment variables
Add dependence modules (Добавлять зависимые модули)	Dependent modules are added to a resource group where the source file is located. Dependent modules are files that determine source file execution. For example, drivers and libraries that are not parts of applications run directly by user but without these drivers and libraries the application cannot run.

Mark executables (Помечать выполняемые)	File with extensions specified in the **Executing (Выполняемый)** field are marked

Note. If you select **data from MSInstaller (информации из MSInstaller)** in the **Search by (Поиск по)** drop-down list, you can configure all the additional conditions listed above.
If you select **shortcuts in the Start menu (ярлыкам из меню "Пуск")** in the **Search by (Поиск по)** drop-down list, you can set only the **Replace path with variables (Менять пути на переменные)** and **Mark executables (Помечать выполняемые)** conditions.

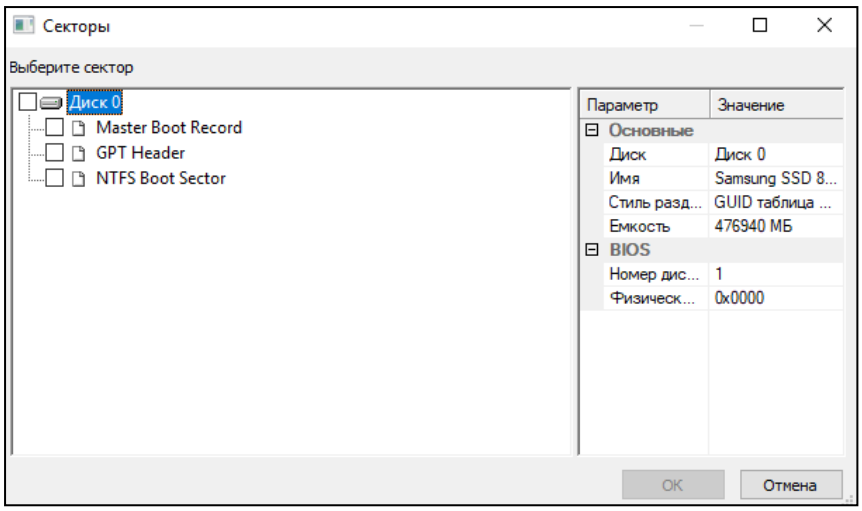
4. Click **OK**.
   When the generation process is completed, you receive the respective message.
5. Click **OK**.
   The new resources are added to the data model.



Create a sector group

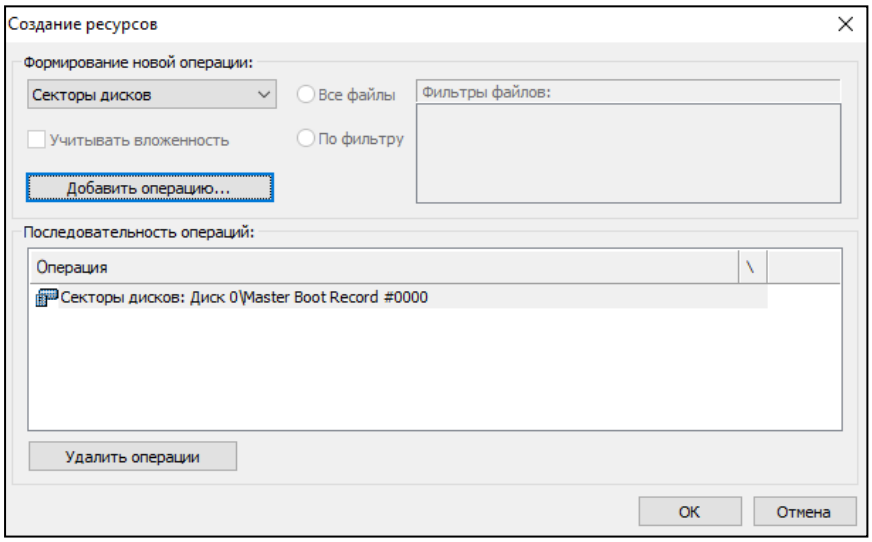
To create a hard drive sector group:

1. In the **Categories (Категории)** section, click **Resource groups (Группы ресурсов)**.
2. In **Structure (Структура)**, right-click **Resource groups (Группы ресурсов)** and select **Create group | Manually (Создать группу I Вручную)**.
   The **Create resource group (Создание группы ресурсов)** dialog box appears (see. p. **14**).
3. Take the following steps:
   - in the **Name (Имя)** and **Description (Описание)** text boxes, enter the group name and some additional information if necessary;
   - in the **Type (Тип)** drop-down list, select **Hard drive sectors (Секторы жестких дисков)**;
   - click **OK**.
4. In **Structure (Структура)**, right-click a folder of the group created earlier and select **Add | New resources (Добавить ресурсы I Несколько новых)**.
   The **Create resources (Создание ресурсов)** dialog box appears.
5. Click **Add operation (Добавить операцию)**.
   A dialog box appears as in the figure below.



6. Select the required sectors and click **OK**.

   The selected operation is added to the list in the **Operation sequence (Последовательность операций)** section.



Note. If you need to delete operations, select them in the list and click **Delete operations (Удалить операции)**.

7. Click **OK**.

   The **Create resources (Создание ресурсов)** dialog box is closed.

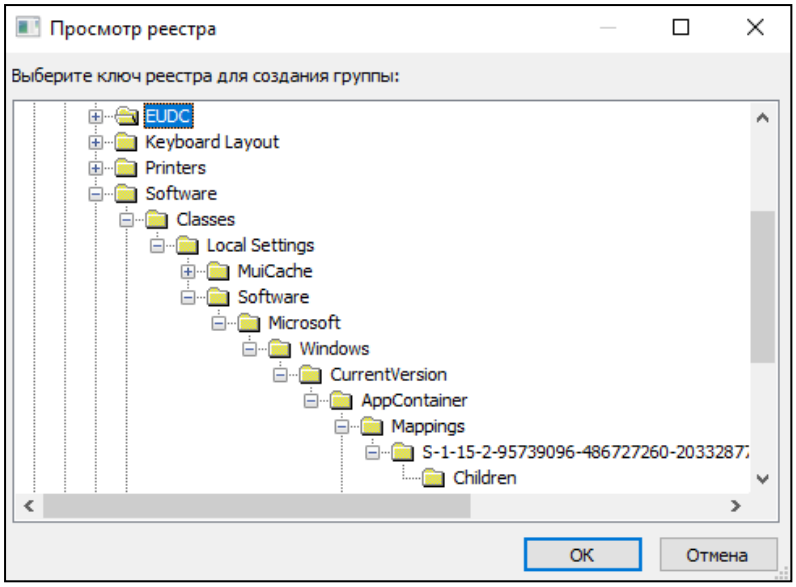
Create a group of registry items

IC template management program allows you to create the following groups of registry items: registry keys with variables (using the **By registry key (По ключу реестра)** and **Manually (Вручную)** commands) and registry items with variables.

To create a group of registry keys with variables (the By registry key (По ключу реестра) command):

1. In the **Categories (Категории)** section, click **Resource groups (Группы ресурсов)**.
2. In **Structure (Структура)**, right-click **Resource groups (Группы ресурсов)** and select **Create group | By registry key (Создать группу I По ключу реестра)**.

   The **Registry (Просмотр реестра)** dialog box appears as in the figure below.



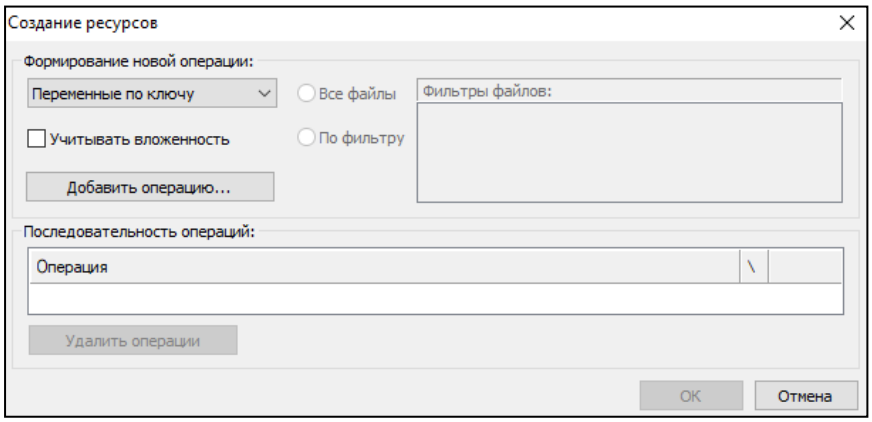
3. Select the required registry item and click **OK**. In the appeared dialog box, click **OK**.

To create a group of registry keys with variables (the Manually (Вручную) command):

1. In the **Categories (Категории)** section (see p. **12**), click **Resource groups (Группы ресурсов)**.
2. In **Structure (Структура)**, right-click **Resource groups (Группы ресурсов)** and select **Create group | Manually (Создать группу I Вручную)**.

   The **Create resource (Создание группы ресурсов)** group dialog box appears (see p. **14**).
3. Take the following steps:
   - in the **Name (Имя)** and **Description (Описание)** text boxes, enter the group name and some additional information if necessary;
   - in the **Type (Тип)** drop-down list, select **Registry items (Объекты реестра)**;
   - click **OK**.
4. In the **Structure (Структура)** section, right-click a folder of the created group and select **Add | New Resources (Добавить ресурсы I Несколько новых)**.

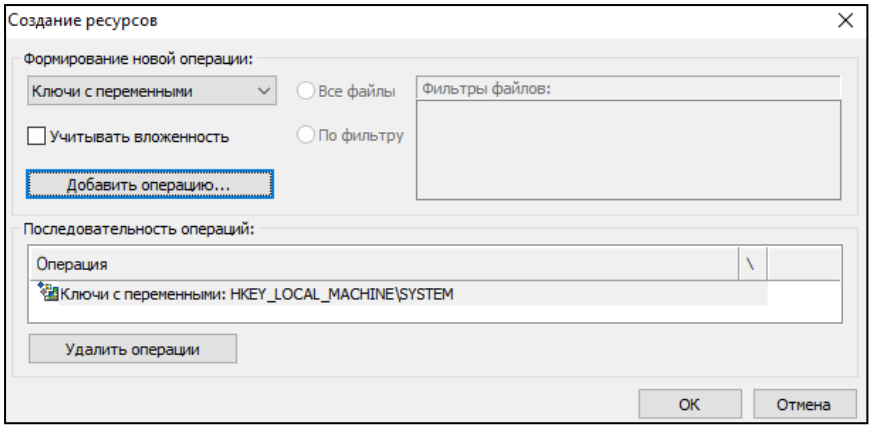
   The **Create resources (Создание ресурсов)** dialog box appears as in the figure below.



5. In the **Create new operation (Формирование новой операции)** drop-down list, select **Keys with variables (Ключи с переменными)**. Click **Add Operation (Добавить операцию)**.

   The **Registry (Просмотр реестра)** dialog box appears.
6. Select the required registry items and click **OK**.

   The new operation is added to the list in the **Operation sequence (Последовательность операций)** section.



7. Click **OK**.

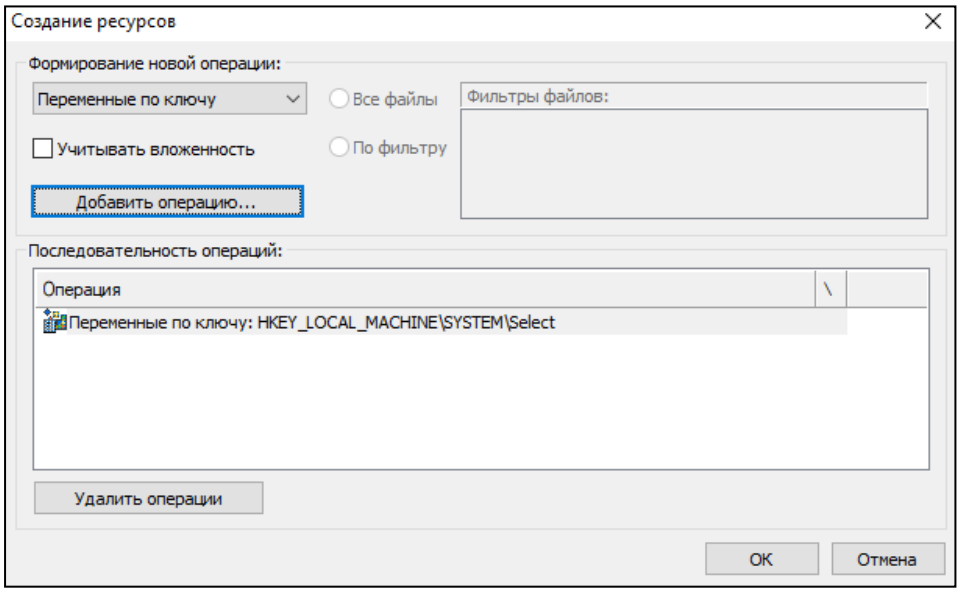
   The **Create resources (Создание ресурсов)** dialog box is closed.

To create a group of registry key variables:

1. Take steps **1–4** of the previous procedure.
2. In the **Create new operation (Формирование новой операции)** drop-down list, select **Variables by key (Переменные по ключу)**. Click **Add operation (Добавить операцию)**.

   The **Registry (Просмотр реестра)** dialog box appears.
3. Select the required registry items and click **OK**.

   The new operation is added to the list in the **Operation sequence (Последовательность операций)** section.



4. Click **OK**.

   The **Create resources (Создание ресурсов)** dialog box is closed.

To create a group of PCI devices and SMBIOS structures:

1. In the **Categories (Категории)** section (see p. **12**), click **Resource groups (Группы ресурсов)**.
2. In **Structure (Структура)**, right-click **Resource groups (Группы ресурсов)** and select **Create group | Manually (Создать группу I Вручную)**.

   The **Create resource group (Создание группы ресурсов)** dialog box appears (see p. **14**).
3. Take the following steps:
   - in the **Name (Имя)** and **Description (Описание)** text boxes, enter the group name and some additional information, if necessary;
   - in the **Type (Тип)** drop-down list, select **Device configuration (Конфигурация оборудования)**;

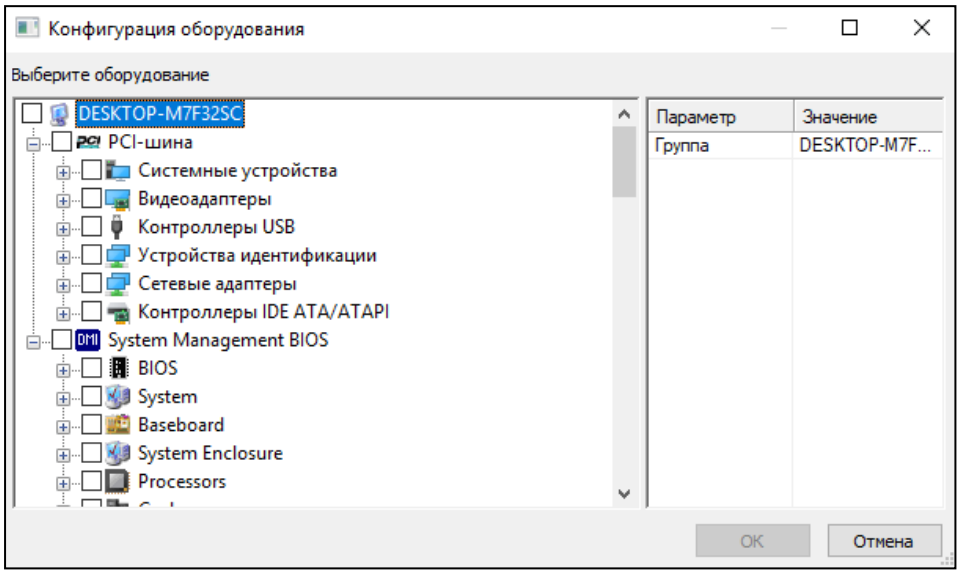
- click **OK**.

4. In **Structure (Структура)**, right-click a folder of the created group and select **Add | New resources (Добавить ресурсы I Несколько новых)**.

   The **Create resources (Создание ресурсов)** dialog box appears.

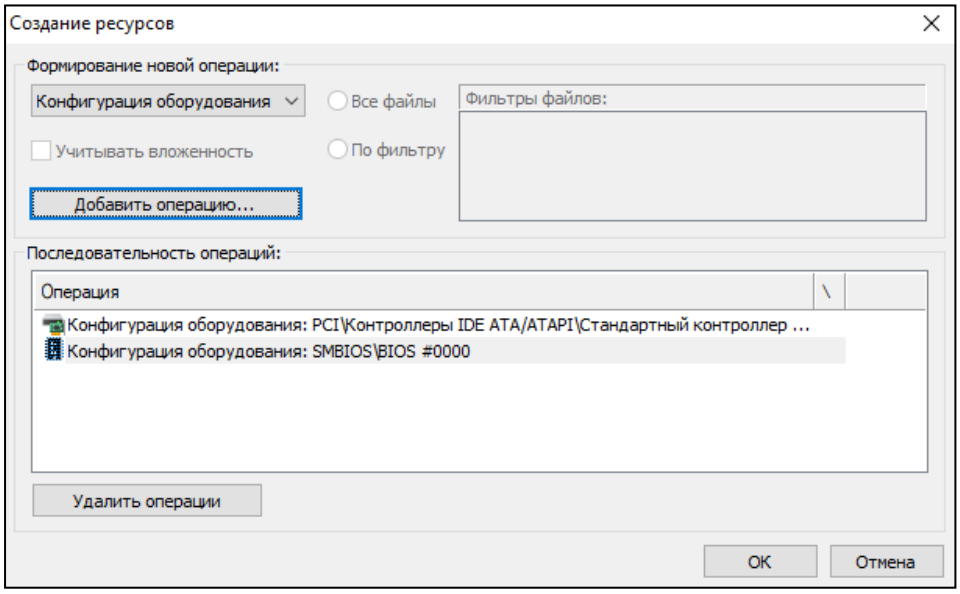
5. Click **Add operation (Добавить операцию)**.

   A dialog box appears as in the figure below.



6. Select the required resources and click **OK**.

   The new operations are added to the list in the **Operation sequence (Последовательность операций)** section.



Note. If you need to delete operations, select them in the list and click **Delete operations (Удалить операции)**.

7. Click **OK**.

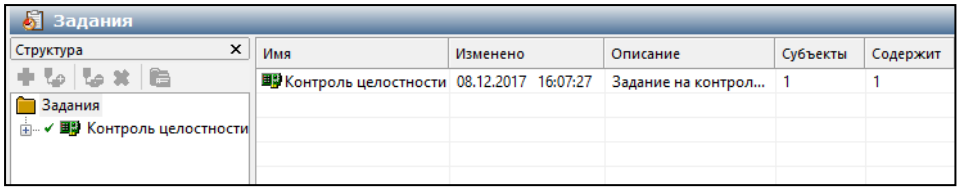
   The **Create resources (Создание ресурсов)** dialog box is closed.

Add objects to a job

To add objects:

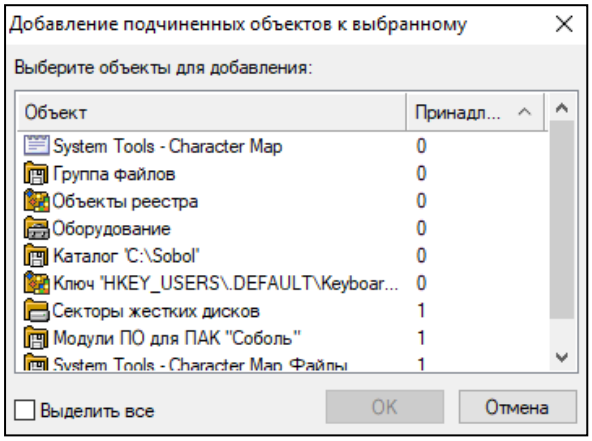
1. In the **Categories (Категории)** section, click **Jobs (Задания)**.

   The **Jobs (Задания)** panel appears as in the figure below.



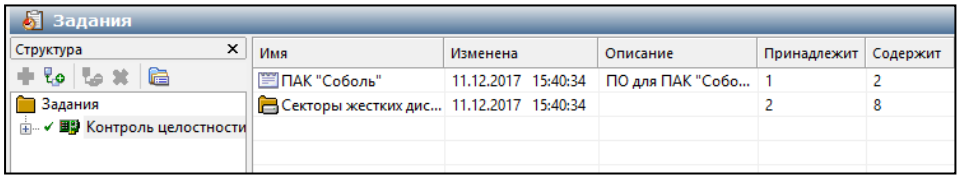
2. In Structure (Структура), right-click **Integrity check (Контроль целостности)** and select **Add tasks/groups | Existing (Добавить задачи/группы I Существующие)**.

   A dialog box appears as in the figure below.



3. Select objects to be added an click **OK**.

   The new objects are added to **Structure (Структура)** and to the list of objects.



Removing objects from a job

You can either remove objects softly or remove them permanently.

To soft remove objects:

1. In the **Categories (Категории)** section (see p. **12**), select **Jobs (Задания)**.
2. In **Structure (Структура)** or in the list of objects, right-click the object folder to be soft removed. For a resource group, select **Remove from | Task/Job (Исключить из I Задачи/Задания)**; for a task, select **Remove from | Job (Исключить из I Задания)**.

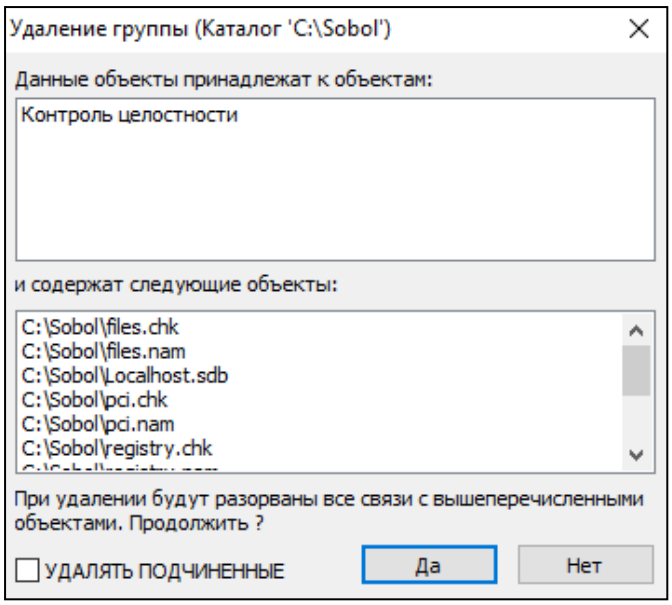
   A dialog box prompting you to confirm the procedure appears.
3. Click **Yes (Да)**.

   The object is removed from the job.
4. To restore the object, perform steps **2** and **3** of the **Add objects to job (Добавление объектов в задание на КЦ)** procedure (see p. **23**).

To remove objects permanently:

1. In the **Categories (Категории)** section (see p. **12**), select **Jobs (Задания)**.
2. In **Structure (Структура)** or in the list of objects, right-click the required object and click **Remove (Удалить)**.

   A dialog box appears as in the figure below.



3. Click **Yes (Да)**.

   The object is removed from the job.

Calculate reference checksums

After you configured and saved the IC list, you must calculate reference checksums.

Attention! Before calculating reference checksums, remove all USB Mass Storage devices from your computer (USB, CD, DVD and removable drives, etc.).

To calculate reference checksums:

1. Restart your computer and log on to the system as Sobol administrator (see document [**1**]).
2. Enable the IC mechanism (see document [**1**]).
3. In the administrator menu, go to **Integrity Check**, in the **Calculate checksums** section, select **Start**.

   Reference checksums are being calculated. A window that displays the calculation progress appears.

   To cancel the calculation, either press **<Esc>** or select **Cancel**. If an error occurs, the calculation will be stopped and you will receive the respective message. Read the message and press any key to continue.

Reference checksums are calculated successfully if no errors occurred during the calculation (the Errors field has 0 value).

If an error occurs, identify and fix the problem. For detailed information about error messages, see p. **38**.

Create a report about controlled objects

The IC template management program allows you to create an **.rtf** file that contains the list of controlled objects. The list also contains paths to each added object.

To create a report:

1. Run the IC template management program. In the Menu (see p. **12**), select **Service | Reports | Computer resources (Сервис I Отчеты I Ресурсы рабочей станции)**.
2. In the **Computer resources (Ресурсы рабочей станции)** dialog box, if necessary, change the report file name and its destination folder. To configure report view parameters, click **Advanced (Дополнительно)**.
3. Click **Create (Построить)**.

Saving, importing and exporting a data model

Replace environment variable

To ensure proper operation of a data model that was moved from one computer to another and while exporting specific resources, tasks and jobs, you might need to replace absolute paths with environment variables.

This procedure is performed on a computer from which a data model (or its items) is moved.

Replacing environment variables with absolute paths is a reverse procedure that is performed to restore absolute paths.

To replace environment variables:

1. In a data model, right-click the required resource and click **Environment variables (Переменные окружения)**.

   A dialog box that contains the list of existing environment variables appears.
2. Selected the objects to be replaced:
   - To replace absolute paths with environment variables, keep the default option.
   - To replace environment variables with absolute paths, select **Environment variable names with path values in files and folders (Имена переменных окружения на значение путей в файлах и папках)**.
3. Select the required variables in the list.
4. Click **OK**.

Save a data model

You can save any changes in a data model's configuration performed during IC template management program operation.

To save a data model:

Take one of the following actions:

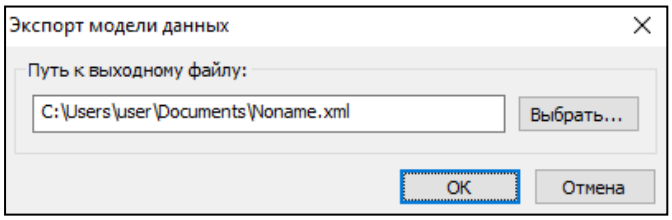
- on the toolbar, click **(Сохранить модель)**;
- press **<Ctrl>+<S>**;
- in the **File (Файл)** menu, click **Save (Сохранить)**.

Export a data model

To export a data model:

1. In the **File (Файл)** menu, click **Export model to XML (Экспорт модели в XML)**.

   The **Export data model (Экспорт модели данных)** dialog box appears.



2. In the **Output file path (Путь к выходному файлу)** text box, enter the full file name (its path and its name). You can also use Windows Explorer. To open Windows Explorer, click **Browse (Выбрать)**.
3. Click **OK**.

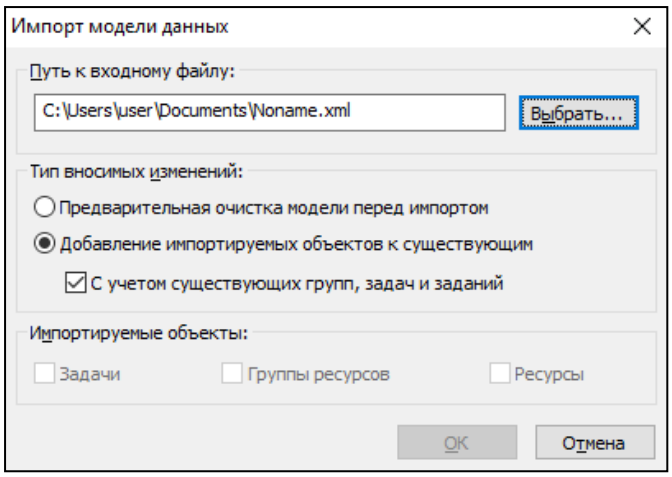
   When the export is completed, you receive the respective message.
4. Click **OK**.

Import a data model

To import a data model:

1. In the **File (Файл)** menu, click **Import model from XML (Импорт модели из XML)**.
2. If you have not saved changes performed earlier, you will receive the respective warning message. Click **Yes (Да)**.

   The **Import data model (Импорт модели данных)** dialog box appears.



3. In the **Input file path (Путь к входному файлу)** text box, enter the path and the full name of the file that contains data about the model object. You can also use Windows Explorer. To open Windows Explorer, click **Browse (Выбрать)**.
4. In the **Change type (Тип вносимых изменений)** section, select the required import option. To do so, select one of the following:

Clear model before the import **Предварительная очистка модели перед импортом**
All objects of the current data model are deleted. When the import is completed, the data model contains only the objects that were added from the imported file
Add new objects to existing ones **Добавление импортируемых объектов к существующим**
The data model contains both the imported objects and the objects from the previous data model. Some objects can be duplicated during the import if you have selected the **Keep existing groups, tasks and jobs (С учетом существующих групп, задач и заданий)** or the data model already contained objects with the same names. For **Tasks (Задачи)** and **Resource groups (Группы ресурсов)**, the objects are duplicated and the duplicate object has the following name format: **object_name<N>** where **N** is the sequence number of the duplicate object. For **Resources (Ресурсы)**, the objects are not duplicated

5. In the **Objects for import (Импортируемые объекты)** section, select the required object types. If the selected file does not contain data about object of some type, the respective check box will be disabled.
6. Click **OK**.

   When the objects are imported, you receive the respective message.
7. Click **OK**.

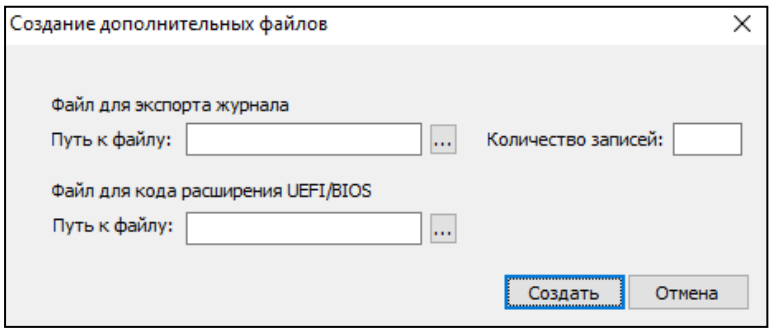
Create a file to export the Sobol log

Sobol software allows you to create a file to export the event log with the specific number of events.

To create a file to export log:

1. In the main menu (see p. 12), select **Service | Additional files (Сервис l Дополнительные файлы)**.

   The **Additional files (Создание дополнительных файлов)** dialog box appears.



2. Enter the full file name (the path and the name):
   - either type the full name in the **Path to file (Путь к файлу)** text box;
   - or use Windows Explorer, click  , select a destination folder and enter a name for the file.

   Note. The file must be in the .csv format.
3. In **the Number of events (Количество записей)** text box, specify the required number of events to be exported.
4. Click **Create (Создать)**.

   The file is created in the specified destination folder.

   Note. If you create less than two files at the same time, you receive the error message. Click **OK**, then, in the **Additional files (Создание дополнительных файлов)** dialog box, click **Cancel (Отмена)**. The specified files will be created anyway. .

Create a file to save UEFI Option ROM

Sobol software allows you to create a file to save UEFI Option ROM.

To create a file to save UEFI Option ROM:

1. In the main menu (see p. **12**), select **Service | Additional files (Сервис l Дополнительные файлы)**.

   The **Additional files (Создание дополнительных файлов)** dialog box appears.
2. Enter the full file name (the path and the name):
   - either type the full name in the **Path to file (Путь к файлу)** text box;
   - or use Windows Explorer, click  , select a destination folder and enter a name for the file.

   Note. The file must be in the .bin format.
3. Click **Create (Создать)**.

   The file is created in the specified destination folder.

   Note. If you create less than two files at the same time, you receive the error message. Click **OK**, then, in the **Additional files (Создание дополнительных файлов)** dialog box, click **Cancel (Отмена)**. The specified files will be created anyway.

Chapter 3
Sobol software for Linux

Installation

The IC template management program is installed using vib/rpm/deb packages respectively to a Linux distribution.

To install Sobol software on other operating systems within Linux family:

1. Insert the installation disk. Run a terminal emulator. Go to a program installation directory for the respective Linux distribution.
2. According to the selected distribution and the architecture run the following command to install Sobol driver:
   - for rpm packages:
     ```
     rpm -ivh <PACKAGE NAME>
     ```
   - for deb packages:
     ```
     dpkg -i <PACKAGE NAME>
     ```

Sobol driver is installed on the computer.

3. To install Sobol software, run the following command:
   - for rpm packages:
     ```
     rpm -ivh <PACKAGE NAME>
     ```
   - for deb packages:
     ```
     dpkg -i <PACKAGE NAME>
     ```

Sobol software is installed on the computer and the default list of IC templates is created.

Note. You can find the default IC objects on p. 39.

Uninstallation

You can use different commands to uninstall Sobol software respectively to the distribution and the architecture.

To uninstall Sobol software on other operating systems:

1. To uninstall Sobol software, run the following command:
   - For rpm packages:
     ```
     rpm –e sobol-scheck
     ```
   - For deb packages:
     ```
     dpkg --purge sobol-scheck
     ```

The IC template management program is uninstalled.

2. To uninstall Sobol driver, run the following command:
   - For rpm packages:
     ```
     rpm –e sobol
     ```
   - For deb packages:
     ```
     dpkg --purge sobol
     ```

Sobol driver is uninstalled.

Integrity check configuration

You can configure the IC mechanism in Linux using either the graphical interface or the command line.

To configure the IC mechanism, perform the following procedures:

1. Modify the lists of IC objects (see p. **30**, p. **33**).

Attention! After modifying the lists of IC objects, calculate reference checksums (see step **3**).

2. Enable the IC mechanism if it was disabled (see document [**1**], **Integrity Check**).
3. Calculate reference checksums (see p. **36**).

The IC template management program also allows you to:

- create reports about controlled objects (see p. **32**);
- create a file to export Sobol logs (see p. **36**);
- create a file to save UEFI Option ROM (see p. **36**).

Configuring the IC mechanism using the graphical interface

Run the IC template management program

To run Sobol software:

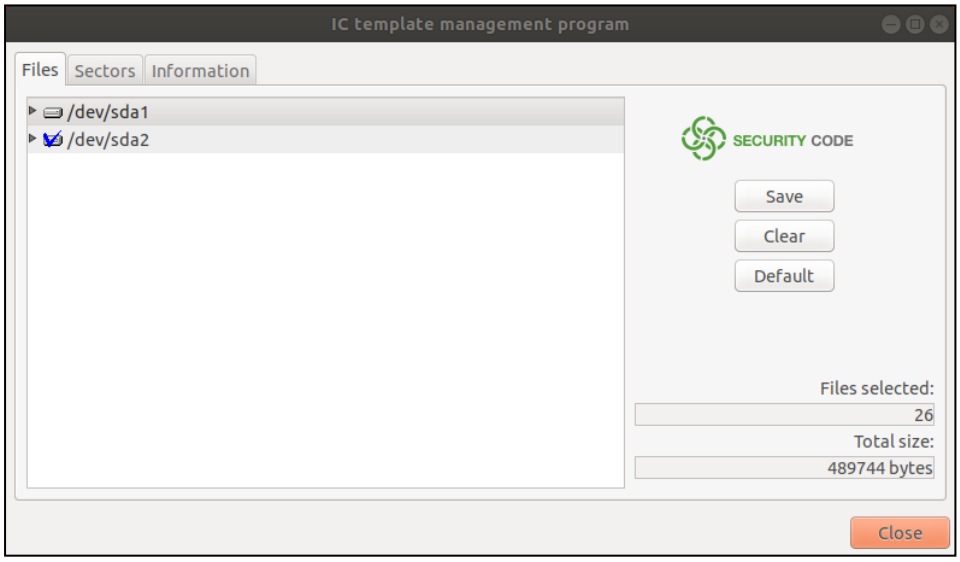
1. Run the IC template management program.To do so, perform one of the following actions :
   - use the **IC template management** shortcut;
   - run **gtk-scheck** file from terminal emulator using the following command:

```
/usr/bin/gtk-scheck
```

Note. If IC template management program cannot run, the previous session is not ended yet. Make sure that **gtk-scheck** file is in **/var/log** directory. Delete the file and run the program again.

2. In the appeared dialog box, enter the administrator password and press **<Enter>**.

   A dialog box appears as in the figure below.



Note. The provided screenshots are taken in Ubuntu 14.04 LTS Desktop with Unity graphical shell.

If Sobol card is not attached to a computer, you receive the respective warning message. To continue working with the program, click **OK**.

Modify the lists of IC objects

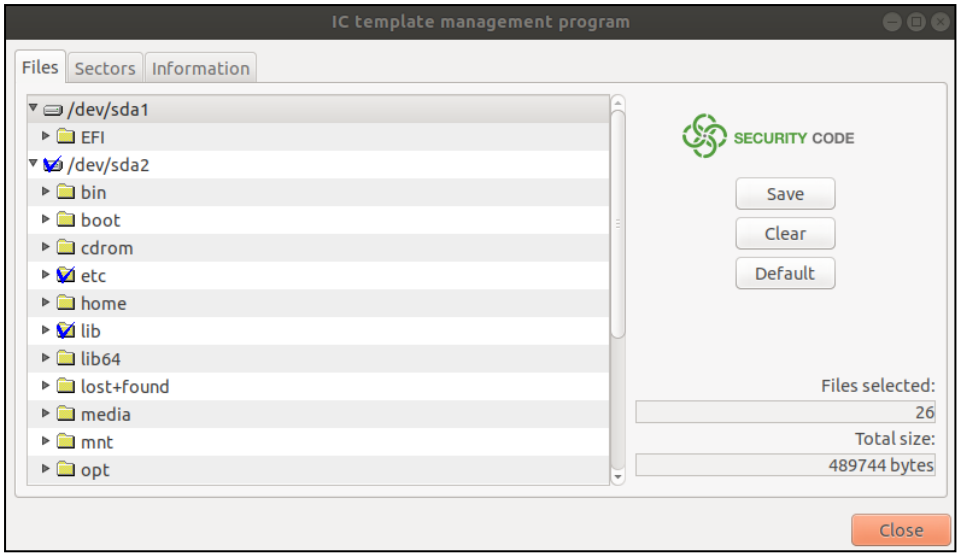
The original lists of files and sectors are created after Sobol software is installed. You can add/remove IC objects to/from these lists.

Attention! After modifying the lists, calculate reference checksums (see p. **36**).

To modify the list of files:

1. Run the IC template management program (see above).
2. Select the **Files** tab.

   A hard drive (drives) file structure appears as in the figure below.



3. Manage the list of files to be checked by the IC mechanism:

Attention! You cannot add the following files to the list:
- files of logical drives included in LVM volumes;
- files located in unsupported file systems;
- non-regular files;
- temporary files;
- files with names longer than 253 characters;
- file with names longer than 8 characters located in FAT sections.

- to select/remove files from the list, right-click ☐ (☑);

  Note.
  - To select multiple files in a row, click the first file in the row. Then hold **<Shift>** and right-click ☐ (not the file name) next to the last file in the row. While removing multiple files in a row make sure that the last file in the row is marked with ☑.
  - To select/remove all the files of a hard drive or its section, right-click 🖴 (☑) or 🗀 (☑) next to the required object in the list.
- to select/remove files located in a drive or directory and its subdirectories, right-click 🖴 (☑) or 🗀 (☑) next to the required object in the list;
- to select files from the default IC template, click **Default**. In the appeared dialog box, click **Yes**;
- to remove all the files, click **Clear**. In the appeared dialog box, click **Yes**.

4. After you selected all the required files, click **Save**.

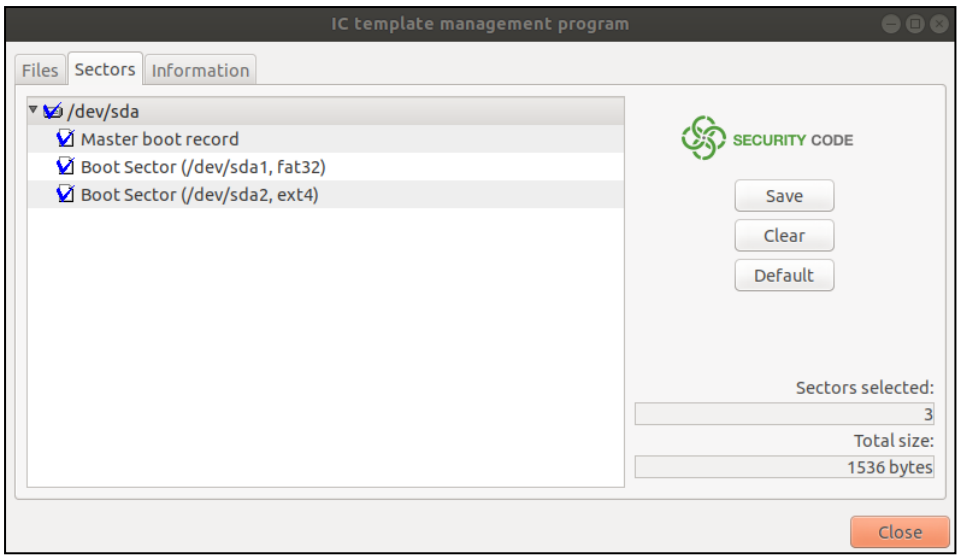
   In the appeared dialog box, click:
   - **Yes** — to save all changes and rewrite the template file;
   - **No** — to discard all changes.
5. To exit the program, click **Close**.

The list of selected files is saved to a **files.nam** file.

To modify the list of sectors:

1. Run the IC template management program (see p. **30**).
2. Select the **Sectors** tab.

   A hard drive (drives) structure appears as in the figure below.



3. Select the sectors to be checked by the IC mechanism.

   To select/remove sectors:

   - right-click ☐ (☑);

     Note.
     - To select multiple sectors in a row, click the first one in the row. Then, hold **<Shift>** and right-click ☐ (not the sector name) next to the last sector in the row. While removing multiple sectors in a row make sure that the last sector in the row is marked with ☑.
     - To select/remove all sectors of a hard drive or its section, right-click (☑) or (☑) next to the required object in the list.

   - to restore the original template, click **Default** and click **Yes** in the appeared dialog box. All existing sectors will be selected;
   - to remove all sectors, click **Clear** and click **Yes** in the appeared dialog box.

4. After you selected all the required sectors, click **Save**.

   In the appeared dialog box, click:

   - **Yes** — to save all changes and rewrite the template file;
   - **No** — to discard all changes.

5. To exit the program, click **Close**.

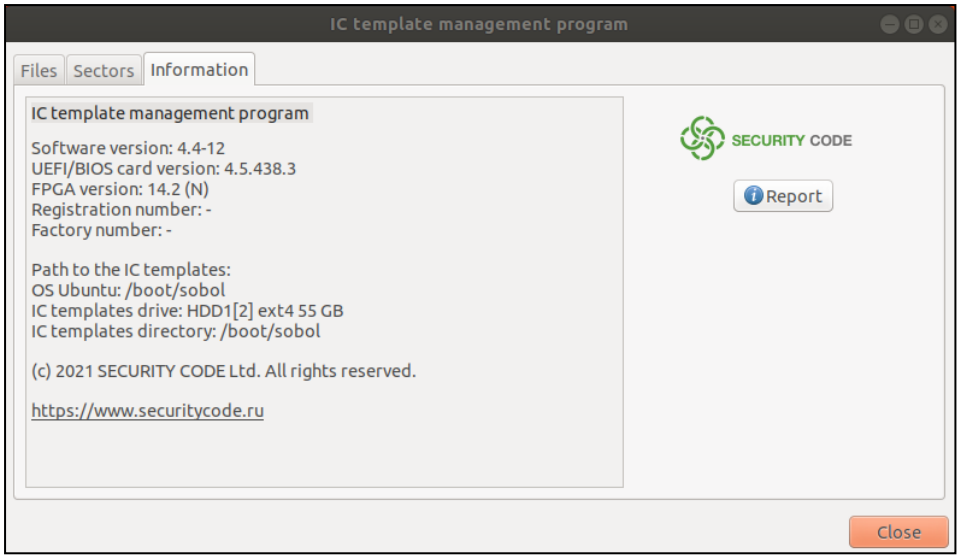
The list of selected sectors is saved to **sectors.nam** file.

Create a report about controlled objects

To create a report:

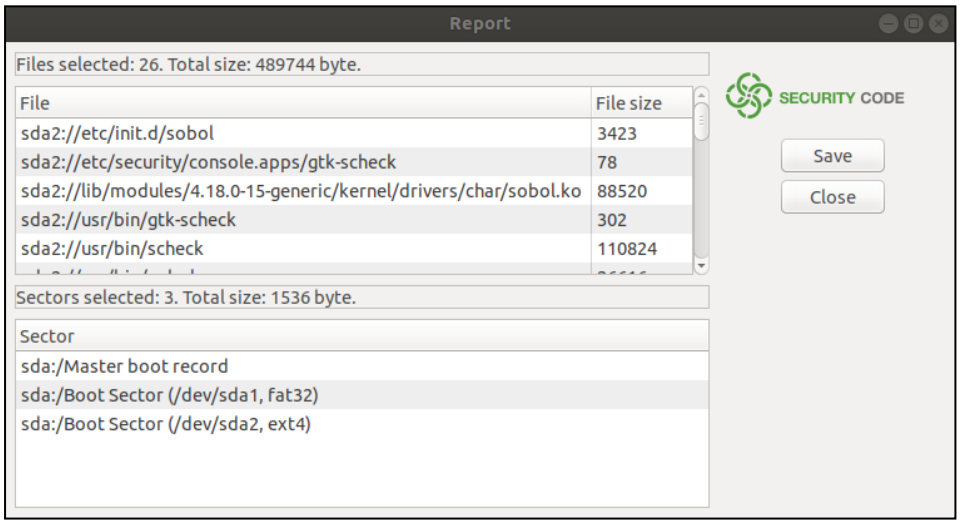
1. Run the IC template management program (see p. **30**).
2. Select the **Information** tab.

   This tab contains information about the IC template management program.



3. Click **Report**.

   A dialog box appears as in the figure below.



4. To save the report to file, click **Save**.
5. In the appeared dialog box, set a directory where the file will be saved, the file name and its format. Click **Save**.
6. To exit the program, click **Close**.

Configuring the IC mechanism using the command line

To configure the IC mechanism in Linux using the command line, use **scheck** tool. It is designed to manage IC templates. For detailed information about **scheck** tool, see p. **37**. Error messages that occur during **scheck** operation are described on p. **38**.

Attention! **Scheck** command must be run by the root user.

Modify the list of controlled files

Scheck allows you to add/remove files to/from the IC list separately or as a list.

To add/remove a single file:

1. To add a file, run the following command:

```
scheck --add-file <PATH><FILE>
```

   where **<PATH>** is the path to the file, **<FILE>** is the file name.

Example 1. To configure IC for **sshd_config** file that is located in **bin** directory with **mnt** mount point, run the following command:

```
scheck --add-file /mnt/bin/sshd_config
```

or

```
scheck --add-file sda3:/bin/sshd_config
```

2. To remove a file, run the following command:

```
scheck --rm-file <PATH><FILE>
```

where **<PATH>** is a path to the file, **<FILE>** is the file name.

Example 2. To remove **sshd_config** file located in **bin** directory, **sda3** section with **mnt** mount point, run the following command:

```
scheck --rm-file /mnt/bin/sshd_config
```

or

```
scheck --rm-file sda3:/bin/sshd_config
```

3. To remove a non-existing file, run the following command:

Note. A non-existing file is a file that was deleted from the drive but not removed from the IC template.

```
scheck --rm-file <PATH><FILE>
```

where **<PATH>** is the path to the file with a logical drive, **<FILE>** is the name of a non existing file.

Example 3. To remove the non existing file **sshd_config** located in **bin** directory, on the computer drive, first, run the command that displays all files in the list:

```
scheck --ls-files
```

then, find the path to the file and remove it from the list:

```
scheck --rm-file /bin/sshd_config
```

To add/remove multiple files:

1. To add files, run the following command:

```
scheck --add-ls-files <PATH><FILE>
```

where **<PATH>** is the path to the file, **<FILE>** is the name of the file that contains the list of files for IC.

To create a list of files, set **<PATH><FILE>** in each line where **<PATH>** is the path to the file, **<FILE>** is the name of the file.

Example 4. Add a list of files located in **list_files.txt**, in **bin** directory, on the drive to the IC template. An example of **list_files.txt** contents:

```
sda4:/usr/share/locale/ru/LC_MESSAGES/gtk-scheck.mo
sda4:/usr/share/locale/ru/LC_MESSAGES/scheck.mo
sda4:/usr/share/gtk-scheck/images/folder_marked.png
```

To add the files, run the following command:

```
scheck --add-ls-files /bin/list_files.txt
```

2. To remove files, run the following command:

```
scheck --rm-ls-files <PATH><FILE>
```

where **<PATH>** is the path to the file, **<FILE>** is the name of the file that contains a list of files to be removed.

Example 5. Remove a list of files located in **list_files.txt**, in **bin** directory, on the drive from the IC template list.

To remove the files, run the following command:

```
scheck --rm-ls-files /bin/list_files.txt
```

Modify the list of controlled sectors

Scheck allows you to add/remove sectors to/from the IC list separately or as a list.

Attention! ESXi format has the following view:
t10.ATA_____WDC_WD5000AAKX2D001CA0_____WD2DWCAYUHH63857:0.

To add/remove a single sector:

1. To add a sector, run the following command:

   ```
   scheck --add-sector <DEVICE>:<NUMBER>
   ```

   where **<DEVICE>** is the name of the drive (or drive section) where the required sector is located, **<NUMBER>** is the number of the drive sector (or the number of sector inside the drive section). Sectors are numbered starting with 0.

   Example 6. To add a boot sector of the **sda** device for IC, run the following command:

   ```
   scheck --add-sector sda:0
   ```

2. To remove the sector run the following command:

   ```
   scheck --rm-sector <DEVICE>:<NUMBER>
   ```

   where **<DEVICE>** is the name of the drive (or drive section) where the required sector is located, **<NUMBER>** is the number of the drive sector (or the number of the sector inside the drive section). Sectors are numbered starting with 0.

   Example 7. To remove a controlled sector 1 from the IC section **sda3**, run the following command:

   ```
   scheck --rm-sector sda3:0
   ```

3. To remove a non existing sector, run the following command:

   ```
   scheck --rm-sector <DEVICE>:<NUMBER>
   ```

   where **<DEVICE>** is the hexadecimal number of the hard drive that contains the required sector, **<NUMBER>** is the number of the drive sector. Sectors are numbered starting with 0.

   Example 8. To remove sector 1 from the non existing drive **0x81**, first, run the following command:

   ```
   scheck --ls-sectors
   ```

   then, find the required sector in the list and remove it form the IC template:

   ```
   scheck --rm-sector 0x81:0
   ```

To add/remove multiple sectors:

1. To add sectors, run the following command:

   ```
   scheck --add-ls-sectors <PATH><FILE>
   ```

   where **<PATH>** is the path to the file, **<FILE>** is the name of the file that contains the list of sectors for IC.

   To create a list, set **<DEVICE>:<NUMBER>** in each line where **<DEVICE>** is the name of the drive (or drive section) where the required sector is located, **<NUMBER>** is the number of a drive (or the number of the sector inside the drive section).

   Example 9. Add sectors located in the **list_sectors.txt** file, in the bin directory, on C drive. An example of **list_files.txt** contents:

   ```
   sda:0
   sda1:0
   sda2:0
   ```

   To add sectors to the IC template, run the following command:

   ```
   scheck --add-ls-sectors C:/bin/list_sectors.txt
   ```

2. To remove sectors, run the following command:

   ```
   scheck --rm-ls-sectors <PATH><FILE>
   ```

   where **<PATH>** is the path to the file, **<FILE>** is the name of the file that contains the list of sectors for IC.

   The list of sectors to be removed is created the same way as the list of added sectors.

   Example 10. Remove sectors located in the **list_sectors.txt** file, in the bin directory, on C drive (see **Example 9**).

   To remove sectors from the IC template, run the following command:

   ```
   scheck --rm-ls-sectors C:/bin/list_sectors.txt
   ```

Calculate reference checksums

After you configured and saved the IC list, you must calculate reference checksums.

To calculate reference checksums:

1. Restart you computer (or VM server) and log on to the system as Sobol administrator (see document [**1**]).
2. Enable the IC mechanism (see document [**1**]).
3. In the administrator menu, go to **Integrity Check**, in the **Calculate checksums** section, click **Start**.

   Reference checksums are being calculated. The window that displays the calculation progress appears.

   To cancel the calculation, press **<Esc>**. If an error occurs, the calculation will be stopped and you will receive the respective message. Read the message and, to continue, press any key.

Reference checksums are calculated successfully if no errors occurred during the calculation (the **Errors** field has **0** value).

If an error occurs (the specified file or sector is not found, etc.), determine and fix the problem. For example, if specified files are not found, modify the IC template (remove these files from the IC template). After you fix all the problems, calculate reference checksums again. For detailed information about error messages, see document [**1**] or p. **38**

Create a file to export the Sobol log

Sobol software allows you to create a **.csv** file to export the event log with the specific number of events.

To create a file to export the log, run the following command:

```
scheck --create-csvfile <PATH><FILE> --record-count <N>
```

where **<PATH>** is the path to the file, **<FILE>** is the name of the file, **<N>** is the number of events in the log being exported.

Example 17. To create a file to export **sb_exp.csv** log with 1000 events located in the bin directory, run the following command:

```
scheck --create-csvfile /bin/sb_exp.log --record-count 1000
```

Create a file to save UEFI Option ROM

Sobol software allows you to create a .**bin** file to save UEFI Option ROM.

To create a file to save UEFI Option ROM, run the following command:

```
scheck --create-romfile <PATH><FILE>
```

where **<PATH>** is the path to the file, **<FILE>** is the name of the file.

Example 18. To create **sobol_pcie.bin** file to save UEFI Option ROM located in **bin** directory, run the following command:

```
scheck --create-romfile /bin/sobol_pcie.bin
```

Appendix

Scheck format

Scheck has the following format: **scheck [key] [argument]**.

Key	Description	Argument	Comment
--help (-h)	Show Help	None	
--version (-V)	Show program version	None	
--verbose (-v)	Show messages about program operation	None	Does not function using VMware vSphere ESXi 6
--ls-path	Show paths to IC template files	None	
--ls-drives	Show information about used devices and sections	None	
--ls-files	Show the list of controlled files	None	
--ls-sectors	Show the list of controlled sectors	None	
--add-file	Add a file to the list of controlled files	**<PATH><FILE>**	**<PATH>** is the path to the file. **<FILE>** is the name of the file
--rm-file	Remove a file from the list of controlled files		
--add-sector	Add a sector to the list of controlled sectors	**<DEVICE>: <NUMBER>**	**<DEVICE>** is the drive (drive section) name where a sector being added/removed is located. **<NUMBER>** is the sector number on the drive (or the sector number inside the drive section)
--rm-sector	Remove a sector from the list of controlled sectors		
--add-ls-files	Add files of a specific text file to the list of controlled files	**<PATH><FILE>**	**<PATH>** is the path to the file. **<FILE>** is the name of the text file that contains the list of controlled files or sectors
--rm-ls-files	Remove files of a specific text file from the list of controlled files		
--add-ls-sectors	Add sectors of a specific text file to the list of controlled files		
--rm-ls-sectors	Remove sectors of a specific text file from the list of controlled files		
--clear-files	Clear the list of controlled files	None	
--reset-files	Restore the default list of controlled files	None	
--clear-sectors	Clear the list of controlled sectors	None	
--reset-sectors	Restore the default list of controlled sectors	None	
--create-romfile	Create a file to save UEFI Option ROM	**<PATH><FILE>**	**<PATH>** is the path to the file. **<FILE>** is the name of the file
--create-csvfile	Create a file to export the log	**<PATH><FILE> --record-count**	**<PATH>** is the path to the file. **<FILE>** is the name of the file **--record-count** — the number of events (see below)
--record-count	The number of events to export within the log	**<N>**	**<N>** is the number of events. This key is an argument for the **--create-csvfile** key

Scheck error messages

The following messages will appear if an error occurs during **scheck** operation:

Error	Cause	Solution
Only root can run this program	The command is run by a user without administrator privileges.	Run the command as the root user.
scheck: (null) is invalid option	The command does not contain the required key or the key is not valid.	Add a valid key. For detailed information about **scheck** commands, see p. **37**.
Error adding file to integrity check templates: file <PATH><FILE> is not found	The command might contain the invalid path or name of the required file, or the file is not supported by Hardware Trusted Boot Module Sobol IC mechanism.	Determine the cause of the problem. Specify the full name of the file.
Error adding file to integrity check templates: file <PATH><FILE> is already in templates	The command might contain a file that was added to the IC list earlier.	If necessary, add another file.
Error removing file from integrity check templates: file <PATH><FILE> is not in templates	The command might contain the invalid path or name of the required file, or the file no longer exists.	Determine and fix the problem. If the file no longer exists, remove or from the IC list (see p. **33**).
Error adding files list to integrity check templates: file <PATH><FILE> is not in templates	The command might contain the invalid path or name of the required file with the list of controlled files.	Determine the cause of the problem. Specify the valid name of the file.
Error removing files list from integrity check templates: file <PATH><FILE> is not found	The command might contain the invalid path or name of the file with the list of controlled files.	Determine the cause of the problem. Specify the valid name of the file.
Error adding sector to integrity check templates: sector <DEVICE>:<NUMBER> is not found	The command might contain the invalid name of the drive (drive section) or sector number on the drive (the sector number within a section).	Determine the cause of the problem. Specify valid parameters.
Error adding sector to integrity check templates: sector <DEVICE>:<NUMBER> is already in templates	The command might contain a sector that was added to the IC list earlier.	If necessary, add another sector.
Error adding sector to integrity check templates: sector <DEVICE>:<NUMBER> is not found	The command might contain a sector that was added to the IC list earlier, or the sector does not exist.	Determine and fix the problem. If the required sector does not exist, remove it from the IC list (see p. **34**).
Error adding sectors list to integrity check templates: file <PATH><FILE> is not found	The command might contain the invalid path or name of the file with the list of controlled sectors.	Determine the cause of the problem. Specify the valid name of the file.
Error removing sectors list from integrity check templates: file <PATH><FILE> is not found	The command might contain the invalid path or name of the file with the list of controlled sectors.	Determine the cause of the problem. Specify the valid name of the file.
scheck options error: --record-count is not specified!	The command does not contain the number of events to be exported.	Create a file to export the log again and specify the number of events (see p. **36**).

Default IC objects for Windows

During Sobol software installation with the parameters set by default, the IC templates contain:

- disk sectors;
- files given in the table below.

File name	File path
BCGCBPRO100u90.dll	\Program Files\Sobol
GetDepends64.dll	
SblPassportRpt64.dll	
SblResourceRpt64.dll	
SCore64.dll	
SICheck64.exe	
SnCmdSequence64.dll	
SnError64.dll	
SnReportBuilder64.dll	
SnReportForms64.dll	
Sobol64.cat	
Sobol.inf	
Sobol64.sys	
Uc64.dll	
wdfcoinstaller01009_64.dll	
XmlDocument64.dll	
repPassport.xsl	
repResourceWS.xsl	
SDevInfo64.dll	
sblapi64.dll	\Windows\System32
snellock64.dll	
sblapi.dll	\Windows\SysWOW64
snellock.dll	
Sobol64.sys	\Windows\System32\Drivers

Default IC objects for Linux

During Sobol software installation, the IC templates contain:

- sectors that are compatible with Sobol;
- files given in the table below.

File full name
/usr/share/application-registry/gtk-scheck.applications
/usr/share/locale/ru/LC_MESSAGES/gtk-scheck.mo
/usr/share/locale/ru/LC_MESSAGES/scheck.mo
/usr/share/gtk-scheck/images/folder_marked.png
/usr/share/gtk-scheck/images/folder_normal.png
/usr/share/gtk-scheck/images/disk_marked.png
/usr/share/gtk-scheck/images/disk_normal.png
/usr/share/gtk-scheck/images/file_marked.png
/usr/share/gtk-scheck/images/file_normal.png
/usr/share/applications/gtk-scheck.desktop
/usr/share/gtk-scheck/gtk-scheck.glade
/usr/share/gtk-scheck/gtk-scheck.png

File full name
/etc/security/console.apps/gtk-scheck
/etc/security/console.apps/gtk-scheck
/usr/share/gtk-scheck/logo.png
/usr/share/icons/gtk-scheck.png
/usr/lib/pkgconfig/sobol.pc
/usr/include/sobol/sobol.h
/etc/tc.d/init.d/sobol
/usr/bin/gtk-scheck
/usr/share/polkit-1/actions/ru.securitycode.gtk-scheck.policy
/usr/lib/libsobol.so
/usr/sbin/gtk-scheck
/usr/bin/scheck
/usr/bin/sobol
/lib/modules/<driver>/kernel/drivers/char/sobol.ko

Documentation

1. Hardware Trusted Boot Module Sobol. Version 4. Administrator guide. Sobol Software.
2. Hardware Trusted Boot Module Sobol. Version 4. User guide. Basic Operations.