Linux OS Administrator's guide

Table of contents

1 Linux OS Administrator's Guide. Introduction 6
2 General information about Axxon One in Linux OS 7
3 Installing Axxon One in Linux OS 8
4 Starting and stopping Axxon One in Linux OS 9
5 Configuring Axxon One in Linux OS 10
6 Axxon One utilities for Linux OS 11
7 Creating system variables in Linux OS 12
8 Linux OS Administrator's Guide. Introduction 13
9 General information about Axxon One in Linux OS 14
9.1 Supported versions of Linux OS and PostgreSQL 14
9.2 Features and potential problems with Linux OS 14
9.2.1 Problems with installing the Axxon One Client 15
9.2.2 Problem with displaying a dialog box or a drop-down list 15
9.2.3 Peculiarities of detection tools operation on NVIDIA GPUs in Linux OS 15
9.2.4 Problem with incorrect CPU load when decoding on Intel GPU in detection tool configuration 16
9.2.5 Peculiarities of database operation when the PostgreSQL service is stopped 16
9.3 Limitations of Axxon One in Linux OS 16
10 Installing Axxon One in Linux OS 18
10.1 General information about installation in Linux OS 18
10.2 Axxon One quick installation in Linux OS 18
10.3 Installing the Axxon One Server in Linux OS 19
10.3.1 Installing from repository 19
10.3.2 Manual installation 20
10.3.3 Best practices for installing the Axxon One Server on Ubuntu 22
10.3.3.1 Before the installation 22
10.3.3.2 Installing the Axxon One Server 22
10.3.3.3 After the installation 23
10.3.3.3.1 Basic commands for checking the installation 23
10.3.3.3.2 Next steps 23
10.3.3.4 Possible errors during installation 24
10.3.3.5 Additional commands for the Server 24

10.3.3.6 Default folders ... 24
10.4 Installing the Axxon One Client in Linux OS ... 24
10.4.1 Installing the Client ... 25
10.4.2 Installing the Axxon One Client without Server ... 26
10.4.3 Running the Client ... 27
10.4.4 Installing the Axxon One Client from repository ... 28
10.5 Running the client as Flatpak ... 29
10.5.1 General information ... 30
10.5.2 Installation of Flatpak ... 30
10.5.3 Running Flatpak ... 31
10.5.4 Viewing the installed applications ... 31
10.5.5 Utilities and logging ... 31
10.5.5.1 Running Axxon One with the debug logging level ... 31
10.5.5.2 Log directory ... 31
10.5.5.3 Running the licensing utility ... 32
10.5.5.4 Running the backup utility ... 32
10.5.5.5 Collect a file with information about the system ... 32
10.5.5.6 Running the Watermark checker utility ... 32
10.5.6 Possible problems in operation ... 32
10.5.7 Uninstalling Flatpak ... 32
10.6 Installing add-ons to the basic DetectorPack in Linux OS ... 33
10.7 Installing and launching Axxon One using Docker ... 34
10.7.1 Installing the Docker Server ... 34
10.7.2 Starting Axxon One ... 34
10.7.3 Working with the Axxon One container ... 35
10.8 Creating a package for a standalone installation of Axxon One in Linux OS ... 36
10.8.1 General information ... 36
10.8.2 Creating a package ... 36
10.8.3 Possible problems and recommendations for creating a package ... 38
10.9 Updating Axxon One in Linux OS ... 38
10.10 Removing Axxon One in Linux OS ... 39
11 Starting and stopping Axxon One in Linux OS ... 41
11.1 Starting and stopping the Axxon One Server in Linux OS ... 41
11.2 Starting and stopping the Axxon One self-diagnostics service in Linux OS ... 41

12 Configuring Axxon One in Linux OS 43
12.1 Features of creating an archive in Linux OS 43
12.1.1 Features of creating an archive as a disk in Linux OS 43
12.1.2 Features of creating an archive as a file in Linux OS 44
12.1.3 Features of creating an object archive in Linux OS 44
12.1.4 Features of archives with ext and xfs file systems 45
12.1.5 Features of NAS archives 45
12.2 Configuration and log folders 46
12.3 Configuring the logging parameters of the Axxon One Client in Linux OS 46
12.4 Collecting system data in Linux OS 46
12.5 Changing the metadata storage path in Linux OS 47
12.6 Configuring the metadata storage in NAS in Linux OS 48
12.7 Changing the configuration of the Axxon One Server in Linux OS 49
12.8 Transferring the Axxon One configuration from Windows OS to Linux OS 52
12.9 Forwarding a Guardant USB key to a Docker container 53
13 Axxon One utilities for Linux OS 55
13.1 Activation utility for Linux OS 55
13.1.1 General information 55
13.1.2 Launching the utility 55
13.1.3 Closing the utility 57
13.1.4 Activating the Axxon One free license for Linux OS 57
13.1.5 Activating the Axxon One paid license for Linux OS 61
13.1.5.1 Creating an activation request in Linux OS 62
13.1.5.2 Activation by applying a license file in Linux OS 64
13.1.5.3 Activation with a serial number in Linux OS 68
13.1.6 Updating the Axxon One license in Linux OS 73
13.1.7 Deactivating a license in Linux OS 74
13.2 Additional actions in the Activation utility for Linux OS 76
13.2.1 Saving the license file in Linux OS 76
13.2.2 Changing the domain name in Linux OS 79
13.2.3 Excluding the current server from a domain in Linux OS 82
13.3 Backup and restore utility for Linux OS 85
13.3.1 General information 86
13.3.2 Launching the utility 86

13.3.3 Stopping the utility 88
13.3.4 Reverting to the original server configuration 88
13.3.5 Reverting to the original domain configuration 90
13.3.6 Creating a configuration backup 91
13.3.7 Restoring the configuration backup 93
13.3.8 Migrating a configuration from one operating system to another 95
13.4 Watermark checker utility for Linux OS 95
13.5 Collecting system information utility for Linux OS 97
14 Creating system variables in Linux OS 98
14.1 Creating system variables for the Axxon One server in Linux OS 98
14.2 Creating system variables for the Axxon One server in the failover mode in Linux OS 98
14.3 Creating system variables for the Axxon One client in Linux OS in Linux OS 99

1 Linux OS Administrator's Guide. Introduction

2 General information about Axxon One in Linux OS

- Supported versions of Linux OS and PostgreSQL(see page 14)
- Features and potential problems with Linux OS(see page 14)
- Limitations of Axxon One in Linux OS(see page 16)

3 Installing Axxon One in Linux OS

- General information about installation in Linux OS(see page 18)
- Axxon One quick installation in Linux OS(see page 18)
- Installing the Axxon One Server in Linux OS(see page 19)
    - Installing from repository(see page 19)
    - Manual installation(see page 20)
    - Best practices for installing the Axxon One Server on Ubuntu(see page 22)
- Installing the Axxon One Client in Linux OS(see page 24)
    - Installing the Axxon One Client from repository(see page 28)
- Running the client as Flatpak(see page 29)
- Installing add-ons to the basic DetectorPack in Linux OS(see page 33)
- Installing and launching Axxon One using Docker(see page 34)
    - Working with the Axxon One container(see page 35)
- Creating a package for a standalone installation of Axxon One in Linux OS(see page 36)
- Updating Axxon One in Linux OS(see page 38)
- Removing Axxon One in Linux OS(see page 39)

4 Starting and stopping Axxon One in Linux OS

- Starting and stopping the Axxon One Server in Linux OS(see page 41)
- Starting and stopping the Axxon One self-diagnostics service in Linux OS(see page 41)

5 Configuring Axxon One in Linux OS

- Features of creating an archive in Linux OS(see page 43)
  - Features of creating an archive as a disk in Linux OS(see page 43)
  - Features of creating an archive as a file in Linux OS(see page 44)
  - Features of creating an object archive in Linux OS(see page 44)
  - Features of archives with ext and xfs file systems(see page 45)
  - Features of NAS archives(see page 45)
- Configuration and log folders(see page 46)
- Configuring the logging parameters of the Axxon One Client in Linux OS(see page 46)
- Collecting system data in Linux OS(see page 46)
- Changing the metadata storage path in Linux OS(see page 47)
- Configuring the metadata storage in NAS in Linux OS(see page 48)
- Changing the configuration of the Axxon One Server in Linux OS(see page 49)
- Transferring the Axxon One configuration from Windows OS to Linux OS(see page 52)
- Forwarding a Guardant USB key to a Docker container(see page 53)

6 Axxon One utilities for Linux OS

- Activation utility for Linux OS(see page 55)
  - Activating the Axxon One free license for Linux OS(see page 57)
  - Activating the Axxon One paid license for Linux OS(see page 61)
    - Creating an activation request in Linux OS(see page 62)
    - Activation by applying a license file in Linux OS(see page 64)
    - Activation with a serial number in Linux OS(see page 68)
  - Updating the Axxon One license in Linux OS(see page 73)
  - Deactivating a license in Linux OS(see page 74)
- Additional actions in the Activation utility for Linux OS(see page 76)
  - Saving the license file in Linux OS(see page 76)
  - Changing the domain name in Linux OS(see page 79)
  - Excluding the current server from a domain in Linux OS(see page 82)
- Backup and restore utility for Linux OS(see page 85)
- Watermark checker utility for Linux OS(see page 95)
- Collecting system information utility for Linux OS(see page 97)

7 Creating system variables in Linux OS

- Creating system variables for the Axxon One server in Linux OS(see page 98)
- Creating system variables for the Axxon One server in the failover mode in Linux OS(see page 98)
- Creating system variables for the Axxon One client in Linux OS in Linux OS(see page 99)

8 Linux OS Administrator's Guide. Introduction

Linux OS Administrator's Guide provides only the features of installing and configuring *Axxon One* in Linux OS:

- General information about Axxon One in Linux OS(see page 14) describes the technical specifications for installing *Axxon One*. The section also provides solutions for the most common problems that occur during installation and working with *Axxon One*.
- Installing Axxon One in Linux OS(see page 18) describes the conditions and manuals required to install the *Axxon One* Server and Client in Linux OS.
- Updating Axxon One in Linux OS(see page 38) and Removing Axxon One in Linux OS(see page 39) provide manuals for updating and removing *Axxon One*.
- Configuring Axxon One in Linux OS(see page 43) describes the configuration of *Axxon One* in Linux OS.
- Limitations of Axxon One in Linux OS(see page 16) describes the functionality that isn't available when you run *Axxon One* in Linux OS.
- Features of creating an archive in Linux OS(see page 43) describes manuals and options for creating archives in *Axxon One*.

For recommendations for configuring and working with the user interface, see Configuration of Axxon One[1] and Working with Axxon One[2].

1 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246484211/Configuration+of+Axxon+One
2 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246485695/Working+with+Axxon+One

9 General information about Axxon One in Linux OS

9.1 Supported versions of Linux OS and PostgreSQL

Axxon One supports all 64-bit distribution packages of Linux OS:

- **Debian**: 12, 11, 10, 9;
- **Ubuntu**: 24, 22, 20, 19, 18.
- **Server in Docker container** (see the current list of supported distributions[3]);
- **Client as Flatpak** (supported starting with *Axxon One* 2.0.10, see the current list of supported distributions[4]).

Axxon One supports PostgreSQL versions from 9.5 to 14. For the current versions of distribution packages, the necessary versions of PostgreSQL are located in the regular repositories. If the versions are not available in the regular repositories of the distribution packages, you can find the installation repositories with the necessary versions in the official documentation: https://www.postgresql.org/docs/.

Attention!

- For *Axxon One* to operate correctly with Linux GUI, you must use one of the following graphical shells: GNOME, XFCE, CINNAMON, MATE.
- For the Failover cluster to operate correctly, you must use the same versions of PostgreSQL on the cluster servers.
- The stable operation of the client is not guaranteed on Ubuntu 18 and 19. We recommend installing only the *Axxon One* server. Both the client and the *Axxon One* server are supported on Ubuntu 20 and newer versions.
- The Face detector TV[5] cannot work on Debian 9.
- Hardware decoding on NVIDIA isn't supported when you run the client as Flatpak.

Installing the Axxon One Server in Linux OS(see page 19)
Installing the Axxon One Client in Linux OS(see page 24)
Installing and launching Axxon One using Docker(see page 34)
Running the client as Flatpak(see page 29)

9.2 Features and potential problems with Linux OS

On the page:

- Problems with installing the Axxon One Client(see page 15)
- Problem with displaying a dialog box or a drop-down list(see page 15)
- Peculiarities of detection tools operation on NVIDIA GPUs in Linux OS(see page 15)
- Problem with incorrect CPU load when decoding on Intel

3 https://docs.docker.com/engine/install/
4 https://flatpak.org/setup/
5 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/281553652/Face+detector+TV

GPU in detection tool configuration(see page 16)
- Peculiarities of database operation when the PostgreSQL service is stopped(see page 16)

9.2.1 Problems with installing the Axxon One Client

Sometimes when you install the *Axxon One* Client, you can have problems with packages, specifically with incompatible versions of mono packages. By default, version 6.8 is installed, but version 6.4 is required for *Axxon One* to work. To resolve the problem, do the following:

1. Completely remove mono packages by running the commands:

```
sudo apt purge mono* libmono*
sudo apt autoremove
```

2. Run the command again to remove all dependencies:

```
sudo apt autoremove
```

After that, you can repeat the installation of the *Axxon One* Client (see Installing the Axxon One Client in Linux OS(see page 24)).

9.2.2 Problem with displaying a dialog box or a drop-down list

In some cases, when you change the configuration of objects for which you need to set a location or select a value from the drop-down list, when you click on the button to select a location or list value, they do not open.

Note

In fact, the location selection window or a drop-down list are opened outside the interface shell, and therefore are not visible to the user.

To resolve this problem, select a different desktop environment and restart *Axxon One*. For example, use Gnome Classic instead of Gnome for Debian 11.

9.2.3 Peculiarities of detection tools operation on NVIDIA GPUs in Linux OS

By default, the Nouveau driver can be installed in Linux OS. This driver does not guarantee stable operation when using NVIDIA graphics cards for decoding *Axxon One* detection tools (see Detectors[6]).

To resolve the problem, you need to install the current graphics card driver from the official NVIDIA website and run the command in the terminal:

```
nvidia-smi
```

If the operating system uses the installed driver to work, the driver version will be displayed. Otherwise, if the current driver is installed, but the operating system uses the Nouveau driver, you need to add it to the exclusions list and restart the computer. Below is an example of Ubuntu commands to add the Nouveau driver to the exclusion list:

6 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246484616/Detectors

```
sudo bash -c "echo blacklist nouveau > /etc/modprobe.d/blacklist-nvidia-nouveau.conf"
sudo bash -c "echo options nouveau modeset=0 >> /etc/modprobe.d/blacklist-nvidia-nouveau.conf"
```

After restarting, the operating system will use the installed NVIDIA driver.

9.2.4 Problem with incorrect CPU load when decoding on Intel GPU in detection tool configuration

When enabling decoding on Intel GPU in detection tool configuration, the AVDetector and Decoder processes may cause incorrect CPU load. To solve this problem, do the following:

1. Change the package configuration using the command:

   ```
   sudo dpkg-reconfigure axxon-one-core
   ```

2. In the groups selection dialog box, set the checkbox next to the **render** group.

9.2.5 Peculiarities of database operation when the PostgreSQL service is stopped

If you stop the PostgreSQL service and then start it, the EventDatabase won't connect to PostgreSQL until the service is restarted manually.

To restore the database operation when manually stopping the PostgreSQL service, you must manually restart the EventDatabase service using the command:

- via service:

  ```
  service axxon-one-db restart
  ```

- via systemctl:

  ```
  systemctl restart axxon-one-db.service
  ```

You can also restart the device to restore the database operation.

9.3 Limitations of Axxon One in Linux OS

> **Attention!**
>
> To install, upgrade or modify *Axxon One* in Linux OS, you must use the programs and commands described in this document. If you use third-party programs, *Axxon One* can work incorrectly. For more information, see Features and potential problems with Linux OS(see page 14).

The following features are currently not available in *Axxon One* in Linux OS:

1. Working with POS devices (see Configuring POS devices[7]).
2. Working with Web Boards (see Working with Web Boards[8]).
3. Upgrading Servers within a cluster via the supervisor Web-interface (see Updating Servers within a cluster[9]).
4. *Axxon One* Tray Tool[10].

7 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246484502/Configuring+POS+devices
8 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246486316/Working+with+Web+Boards
9 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246485677/Updating+Servers+within+a+cluster
10 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246486655/Tray+Tool+utility

5. The Face detector TV[11] and Face detector VA[12] cannot work in Debian 9.

11 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/281553652/Face+detector+TV
12 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/281553654/Face+detector+VA

10 Installing Axxon One in Linux OS

10.1 General information about installation in Linux OS

Attention!

You must perform all steps to install *Axxon One* in the terminal as the **root** user, who has administrative access to the system.
You must use the **sudo** program and the commands described in this manual to install *Axxon One*. If you use third-party programs, such as Discover software center, you may have to reinstall *Axxon One*.

Axxon One installation types:

1. **Server**—installation of the server and additional services. This installation option is described in Manual installation(see page 20).
   The server is required for:
   a. Interacting with devices (cameras, microphones, sensors, relays, and so on) that constitute the security system.
   b. Storing the archive data on its own disk space and interacting with archives located in network or cloud storages.
   c. Storing the database of events and metadata of object movement.
   d. Analyzing incoming video images by detectors.
   e. Storing the security system configuration, user parameters, layouts created in the system, macros, and so on.
2. **Server in Docker container**—installation of the server using Docker image (see Installing and launching Axxon One using Docker(see page 34)).
3. **Failover server**—installation of the server and additional services with Failover technology. In case of emergency (server power failure, loss of network connection), the configuration of the server with Failover technology is restored on another server of the system. This option is described in Manual installation(see page 20).
4. **Client**—installation of the client application only that allows the user to connect to any server and perform administrative/management/monitoring operations with the protected facility based on the permissions granted by the administrator. This option is described in Installing the Axxon One Client in Linux OS(see page 24).
5. **Client as Flatpak**—starting with *Axxon One* 2.0.10, you can run the *Axxon One* client on any supported Linux distribution (see Supported versions of Linux OS and PostgreSQL(see page 14), Running the client as Flatpak(see page 29)).

   Attention!

   Hardware decoding on NVIDIA isn't supported.
6. **Server and client**—first you must install the server (see Manual installation(see page 20)), then you must install the client (see Installing the Axxon One Client in Linux OS(see page 24)).
7. **Failover server and client**—first you must install the Failover server (see Manual installation(see page 20)), then you must install the client (see Installing the Axxon One Client in Linux OS(see page 24)).

Note

You can install the **Client** only after you install the **Server** of the same version.

Updating Axxon One in Linux OS(see page 38)
Removing Axxon One in Linux OS(see page 39)
Limitations of Axxon One in Linux OS(see page 16)

10.2 Axxon One quick installation in Linux OS

For quick installation of the *Axxon One* Server and Client in Linux OS, do the following:

1. Add the repositories by sequentially running the following commands:

```
echo 'deb http://download.axxonsoft.com/debian-repository buster main backports/main' |
sudo tee -a /etc/apt/sources.list.d/axxonsoft.list
echo 'deb http://download.axxonsoft.com/debian-repository stretch backports/main' | sudo
tee -a /etc/apt/sources.list.d/axxonsoft.list
echo 'deb http://download.axxonsoft.com/debian-repository stable main' | sudo tee -a /etc/
apt/sources.list.d/axxonsoft.list
wget --quiet -O - "http://download.axxonsoft.com/debian-repository/
info@axxonsoft.com.gpg.key" | sudo apt-key --keyring /etc/apt/trusted.gpg.d/axxonsoft.gpg
add - && sudo apt-get update
```

2. Install the *Axxon One* Server:

```
sudo apt-get install axxon-one
```

3. If you use Ubuntu 20.04, Debian 11 or above, then install the mono-complete from the stretch repository:

```
sudo apt-get install mono-complete -t stretch
```

4. Install the *Axxon One* Client:

```
sudo apt-get install axxon-one-client
```

The Server and Client installation is complete.

10.3 Installing the Axxon One Server in Linux OS

10.3.1 Installing from repository

Installation from the repository is performed automatically, including all the system components.

To install from the repository, do the following:

1. Sequentially run the commands:

```
echo 'deb http://download.axxonsoft.com/debian-repository buster main backports/main' |
sudo tee -a /etc/apt/sources.list.d/axxonsoft.list
echo 'deb http://download.axxonsoft.com/debian-repository stretch backports/main' | sudo
tee -a /etc/apt/sources.list.d/axxonsoft.list
echo 'deb http://download.axxonsoft.com/debian-repository stable main' | sudo tee -a /etc/
apt/sources.list.d/axxonsoft.list
wget --quiet -O - "http://download.axxonsoft.com/debian-repository/
info@axxonsoft.com.gpg.key" | sudo apt-key --keyring /etc/apt/trusted.gpg.d/axxonsoft.gpg
add - && sudo apt-get update
```

> **Note**
>
> If the distribution packages based on Debian 10 are used, it may be necessary to install additional packages:
> `sudo apt-get install wget`
> `sudo apt-get install gnupg`

2. To install *Axxon One* Server, run the following command:

```
sudo apt install axxon-one
```

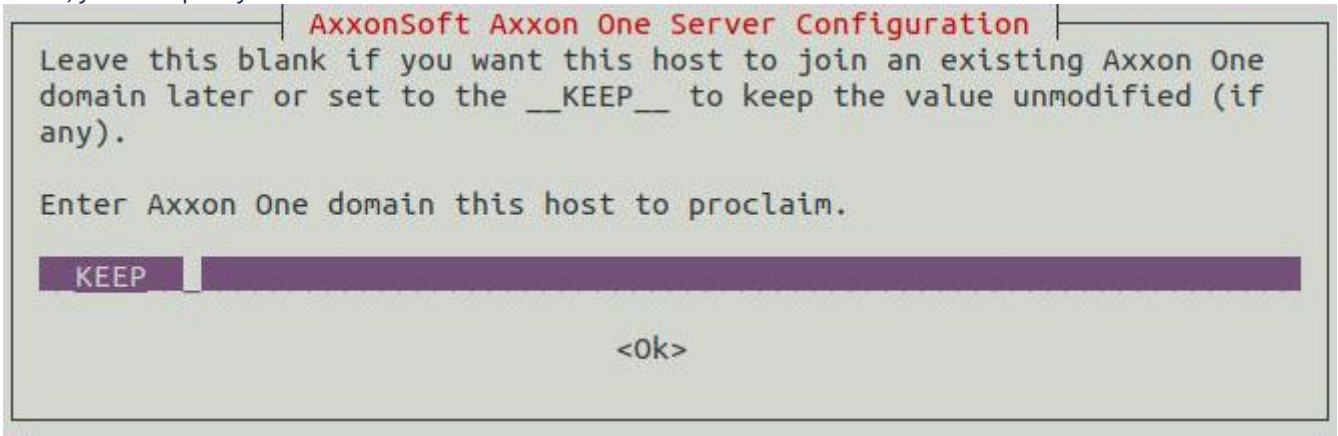
To install the FailOver Server, run the following command:

```
sudo apt install axxon-one-raft
```

Attention!

It is not allowed to simultaneously install the regular Server and the FailOver Server.

During the installation, the installer will request the name of the domain for the *Axxon One* Server. If you leave this field blank, you can specify it on the Client at the first connection.



10.3.2 Manual installation

To install the *Axxon One* server manually, do the following:

1. Copy all commands to the console and run the installation process:

```
sudo sh -ex - <<'EOF'
rm -f /etc/apt/sources.list.d/itvgroup.list
apt-get update || true
apt-get install --no-install-recommends -y wget ca-certificates apt-transport-https
export GPG_KEY_PATH="/usr/share/keyrings/itvgroup.gpg.key"
mkdir --parents "$(dirname "${GPG_KEY_PATH}")"
wget -O "${GPG_KEY_PATH}" https://download.itv.ru/mirrors/apt/intellectx-deb/public-keys.asc
tee /etc/apt/sources.list.d/itvgroup.list <<EOFSRCLIST
deb [signed-by=${GPG_KEY_PATH}] https://download.itv.ru/mirrors/apt/intellectx-deb stretch backports/main
deb [signed-by=${GPG_KEY_PATH}] https://download.itv.ru/mirrors/apt/intellectx-deb buster backports/main
deb [signed-by=${GPG_KEY_PATH}] https://download.itv.ru/mirrors/apt/intellectx-deb stable main
EOFSRCLIST
apt-get update
EOF
```

2. Download the necessary archive with packages to install *Axxon One*: https://www.axxonsoft.com/support/downloads/axxon-one-vms. You need either **Server** or **Failover server** from the **Linux 64-bit.deb** section. The difference between **Server** and **Failover server** is described in General information about installation in Linux OS(see page 18).
The archive contains all necessary packages to install the server:

Package name	Description
axxon-drivers-pack_%version.number%_amd64.deb	*DriversPack* is required for IP devices support in *Axxon One*
axxon-detector-pack_%version.number%_amd64.deb	The basic *DetectorPack* package includes only the Object tracker[13], Video clarity detector[14], Signal detector[15], Noise detector[16], Audio loss detector[17], and Motion detector[18]
axxon-one-core_%version.number%_amd64.deb	Required package to install the server
axxon-one_%version.number%_all.deb or axxon-one-raft_%version.number%_amd64.deb	Package to install the **Server** type or the package to install the **Failover server** type

3. Download video analytics packages if you plan to use them: https://www.axxonsoft.com/support/downloads/detector-pack (the **Add-ons** list in the **Linux 64-bit.deb** section).
4. Unzip the downloaded files.
5. Install *DriverPack, DetectorPack,* and additional packages (if available) using the following command:

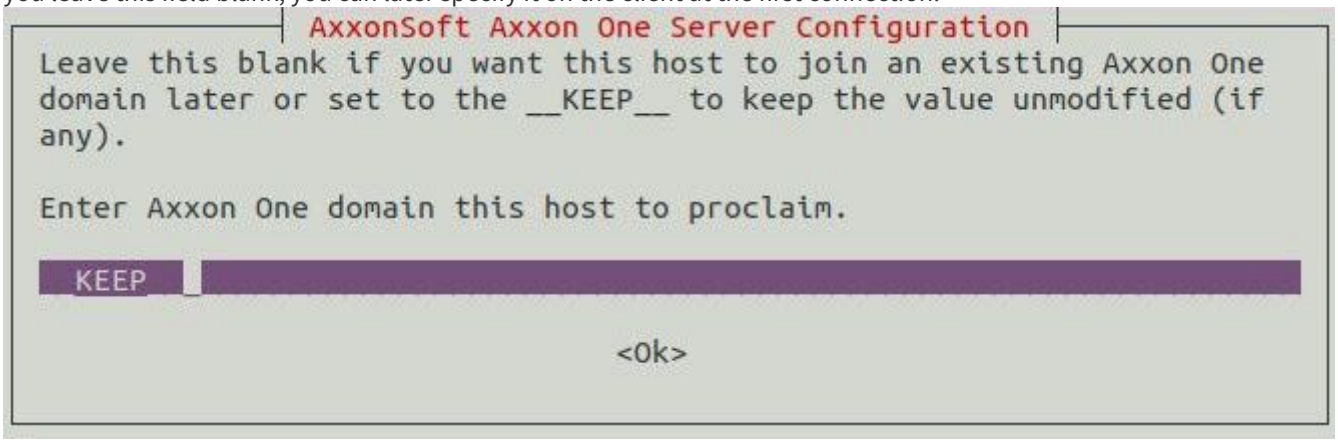
```
sudo dpkg -i axxon-d*.deb || sudo apt-get install -f
```

6. Install *Axxon One* using the following command:

```
sudo dpkg -i axxon-one*.deb || sudo apt-get install -f
```

> **Attention!**
>
> You cannot simultaneously install the regular **Server** and the **Failover server**.

7. When installing *Axxon One* of the **Server** type, the system will request the name of the domain for the *Axxon One* server. If you leave this field blank, you can later specify it on the client at the first connection.



8. If necessary, you can change the server configuration after installation (see Changing the configuration of the Axxon One Server in Linux OS(see page 49)).

Installation is complete.

13 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/281552663/Object+tracker
14 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246484645/Video+clarity+detector
15 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/303039555/Signal+detector
16 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/303039553/Noise+detector
17 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/303039551/Audio+loss+detector
18 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246484638/Motion+detector

10.3.3 Best practices for installing the Axxon One Server on Ubuntu

This is a manual for installing the *Axxon One* 2.0 Server on Ubuntu OS 18 version and later. The manual describes the silent installation from the repository.

- Before the installation(see page 22)
- Installing the Axxon One Server(see page 22)
- After the installation(see page 23)
  - Basic commands for checking the installation(see page 23)
  - Next steps(see page 23)
- Possible errors during installation(see page 24)
- Additional commands for the Server(see page 24)
- Default folders(see page 24)

10.3.3.1 Before the installation

All actions are performed in the terminal as the root user. If you use third-party programs, for example, Discover, you may need to reinstall *Axxon One*.

10.3.3.2 Installing the Axxon One Server

To install the *Axxon One* Server, do the following:

1. Add the AxxonSoft repositories by sequentially running the commands:

```
echo 'deb http://download.axxonsoft.com/debian-repository buster main backports/main' | sudo tee -a /etc/apt/sources.list.d/axxonsoft.list
echo 'deb http://download.axxonsoft.com/debian-repository stretch backports/main' | sudo tee -a /etc/apt/sources.list.d/axxonsoft.list
echo 'deb http://download.axxonsoft.com/debian-repository stable main' | sudo tee -a /etc/apt/sources.list.d/axxonsoft.list
wget --quiet -O - "http://download.axxonsoft.com/debian-repository/info@axxonsoft.com.gpg.key" | sudo apt-key --keyring /etc/apt/trusted.gpg.d/axxonsoft.gpg add - && sudo apt-get update
```

2. Install the required version of *Axxon One*.

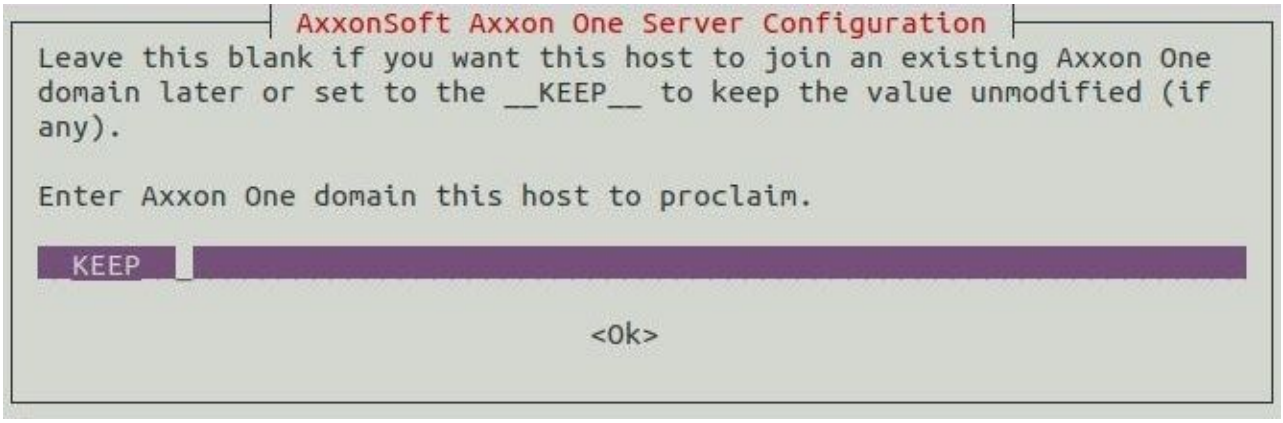
> ⚠ **Attention!**
>
> The installation command depends on your variant of the software package: either the Server or the Failover Server. These are two different types of the software package. You should install only one of them. Both variants are described below (for more information about the installation types, see Installation[19], General information about a failover system[20]).

   a. If you need to install only the Server part of *Axxon One*, sequentially run the commands:

```
sudo apt install axxon-one
sudo apt-get install -f -y
```

   During the installation, the installer will request the name of the Axxon-domain for the *Axxon One* Server. If you leave this field blank, you can specify the name on the Client at the first connection.

19 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246484136/Installation
20 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246485570/General+information+about+a+failover+system



b. If you need to install the Failover Server, sequentially run the commands:

```
sudo apt install axxon-one-raft
sudo apt-get install -f -y
```

10.3.3.3 After the installation

10.3.3.3.1 Basic commands for checking the installation

Check the versions of the installed *Axxon One* modules:

```
sudo dpkg -l | grep axxon
```

Check the server status:

```
sudo systemctl status axxon-one
sudo systemctl status axxon-one-raft # for Failover Server
```

Start and stop of the *Axxon One* Server (if it was installed):

```
sudo systemctl stop axxon-one
sudo systemctl start axxon-one
```

Start and stop of the *Axxon One* Failover Server (if it was installed):

```
sudo systemctl start axxon-one-raft
sudo systemctl stop axxon-one-raft
```

10.3.3.3.2 Next steps

For *Axxon One* Server: Configuring domains[21]

For *Axxon One* Failover Server: Creating a cluster[22] and Configure a Failover System Cluster[23]

21 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246484230/Configuring+domains
22 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246485579/Creating+a+cluster
23 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246485599/Configure+a+Failover+System+Cluster

10.3.3.4 Possible errors during installation

Packages from the unsigned repositories aren't loaded

Add [trusted=yes] to the repository path. Example:

```
deb [trusted=yes] http://download.axxonsoft.com/debian-repository stretch main backports/main
```

The repository key isn't added

Load the key. Run the command:

```
sudo apt-key add key_file_name
```

10.3.3.5 Additional commands for the Server

Use the required command depending on the version of the installed software package: only the Server (axxon-one) or the Failover Server (axxon-one-raft).

```
# display of the package dependencies
apt-cache depends
# display of the repositories with the package
apt-cache policy
# build reconfiguration
sudo dpkg-reconfigure axxon-one
sudo dpkg-reconfigure axxon-one-raft
```

10.3.3.6 Default folders

The following folders are used by default:

1. Logs and Client configuration: /home/USER/.local/share/AxxonSoft/
2. Server configuration: /opt/AxxonSoft/AxxonOne/

The path to the Support log collection utility: /opt/AxxonSoft/AxxonOne/bin/support

Manual installation of the *Axxon One* Server is described here: Manual installation(see page 20).
The section about *Axxon One* on Linux: Linux OS Administrator's guide(see page 6).

10.4 Installing the Axxon One Client in Linux OS

On the page:

- Installing the Client(see page 25)
- Installing the Axxon One Client without Server(see page 26)
- Running the Client(see page 27)

General information about installation in Linux OS(see page 18)

10.4.1 Installing the Client

Attention!

- The stable operation of the Client is not guaranteed on Ubuntu 18 and 19. We recommend installing only the *Axxon One* Server (see Installing the Axxon One Server in Linux OS(see page 19)). Both the Client and the *Axxon One* Server are supported on Ubuntu 20 and newer versions.
- The Client and Server versions must match.

To install the *Axxon One* Client in Linux OS, do the following:

1. Add the repositories by sequentially running the following commands:

```
echo 'deb http://download.axxonsoft.com/debian-repository buster main backports/main' |
sudo tee -a /etc/apt/sources.list.d/axxonsoft.list
echo 'deb http://download.axxonsoft.com/debian-repository stretch backports/main' | sudo
tee -a /etc/apt/sources.list.d/axxonsoft.list
echo 'deb http://download.axxonsoft.com/debian-repository stable main' | sudo tee -a /etc/
apt/sources.list.d/axxonsoft.list
wget --quiet -O - "http://download.axxonsoft.com/debian-repository/
info@axxonsoft.com.gpg.key" | sudo apt-key --keyring /etc/apt/trusted.gpg.d/axxonsoft.gpg
add - && sudo apt-get update
```

2. If you use Ubuntu 20.04, Debian 11 or higher, then install the mono-complete from the stretch repository:

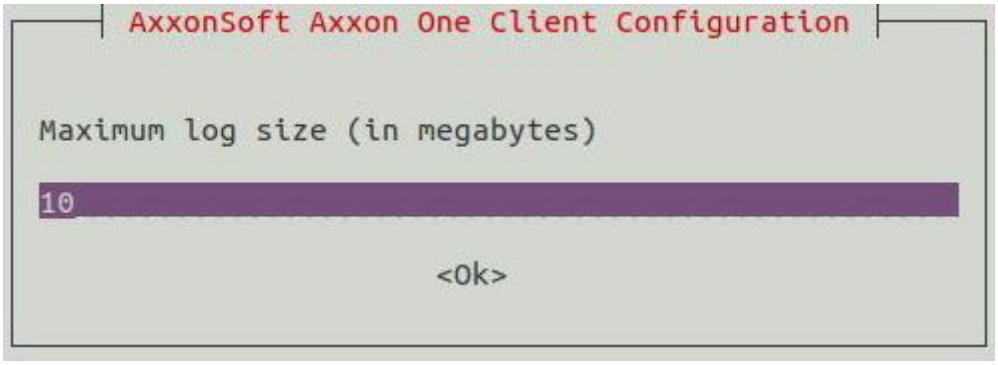
```
sudo apt-get install mono-complete -t stretch
```

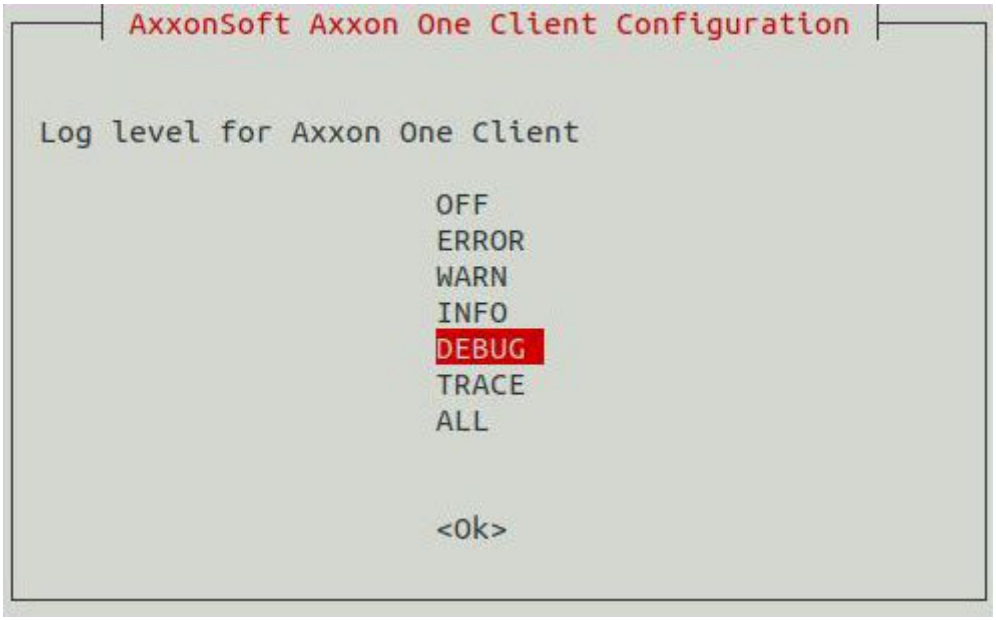
3. Download the *Axxon One* Client installation package from the AxxonSoft website[24] (the **Client** line in the **Linux 64-bit.deb** section).
4. Install the *Axxon One* Client by sequentially running the following commands:

```
sudo dpkg -i axxon-one-client-bin*.deb || sudo apt-get install -f
sudo dpkg -i axxon-one-client_*all.deb || sudo apt-get install -f
```

5. During installation, you must specify the maximum size of the log files in megabytes and the log level.

24 https://www.axxonsoft.com/support/downloads/axxon-one-vms





Note

Later you can change the specified value (see Configuring the logging parameters of the Axxon One Client in Linux OS(see page 46)). To do this, run the command:

```
sudo dpkg-reconfigure axxon-one-client
```

Installation of the *Axxon One* Client in Linux OS is complete. When the installation is complete, the Client icon will be displayed in the application menu.

10.4.2 Installing the Axxon One Client without Server

In Linux OS, you can install the *Axxon One* Client without installing the Server. To do this, do the folloiwng:

1. Add repositories as described in the Installing the Client section.
2. Download the archive with packages to install the *Axxon One* Client from the AxxonSoft website[25] (the **Client** line in the **Linux 64-bit.deb** section).
   The archive contains all necessary packages to install the Client:

Package name	Description
axxon-drivers-pack_%version.number%_amd64.deb	*DriversPack* is required for IP devices support in *Axxon One*

25 https://www.axxonsoft.com/support/downloads/axxon-one-vms

Package name	Description
axxon-detector-pack_%version.number%_amd64.deb	Basic *DetectorPack* package includes only Object tracker[26], Video clarity detector[27], Signal detector[28], Noise detector[29], Audio loss detector[30], and Motion detector[31]
axxon-one-core_%version.number%_amd64.deb	The **Client** installation packages
axxon-one-client_%version.number%_all.deb	
axxon-one-client-bin_%version.number%_amd64.deb	

3. Go to the folder with the downloaded archive and unzip it.
4. Install *DriverPack* and *DetectorPack* using the following command:

```
sudo dpkg -i axxon-d*.deb || sudo apt-get install -f
```

5. Install the axxon-one-core_%version.number%_amd64.deb package using the following command:

```
sudo dpkg -i axxon-one-core*.deb || sudo apt-get install -f
```

6. Install the Client packages using the commands described in the Installing the Client section up to the last step.

Installation of the *Axxon One* Client without Server in Linux OS is complete.

10.4.3 Running the Client

Attention!

- You cannot run the *Axxon One* Client as a Linux user with the root rights.
- You can authorize in the Client as any *Axxon One* user.

By default, at the first Client start, the OS interface language will be used. To change the language of the Client interface at the first start, do the following:

1. Run the command:

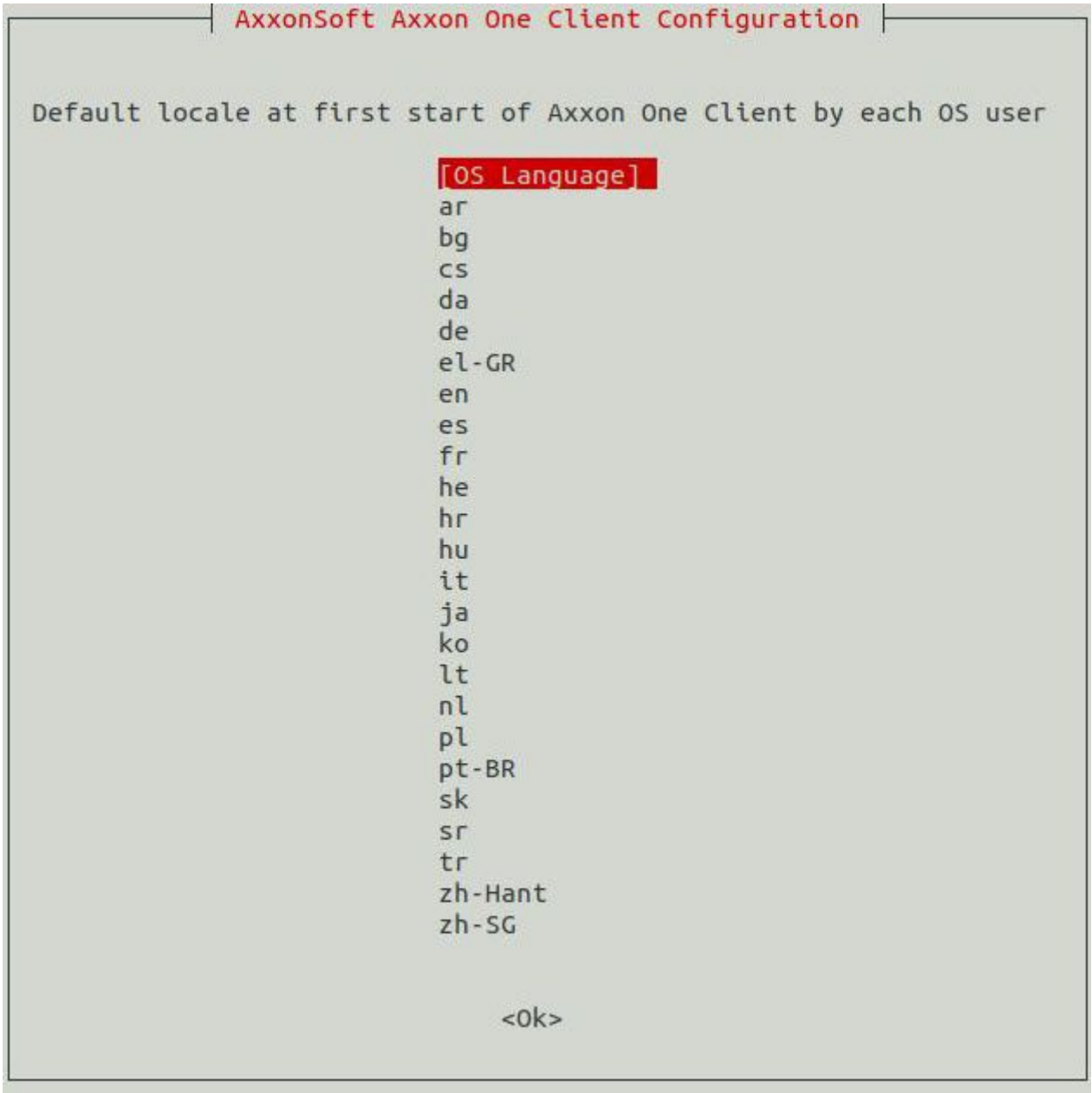
```
sudo dpkg-reconfigure axxon-one-client
```

2. Select the required language:

Attention!

- This setting must configured for each OS user separately.
- On the next launches the interface language can be changed in the Client settings (see Selecting the interface language[32]).

26 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/281552663/Object+tracker
27 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246484645/Video+clarity+detector
28 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/303039555/Signal+detector
29 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/303039553/Noise+detector
30 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/303039551/Audio+loss+detector
31 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246484638/Motion+detector
32 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246485475/Selecting+the+interface+language



10.4.4 Installing the Axxon One Client from repository

To install the *Axxon One* Client in from repository, do the following:

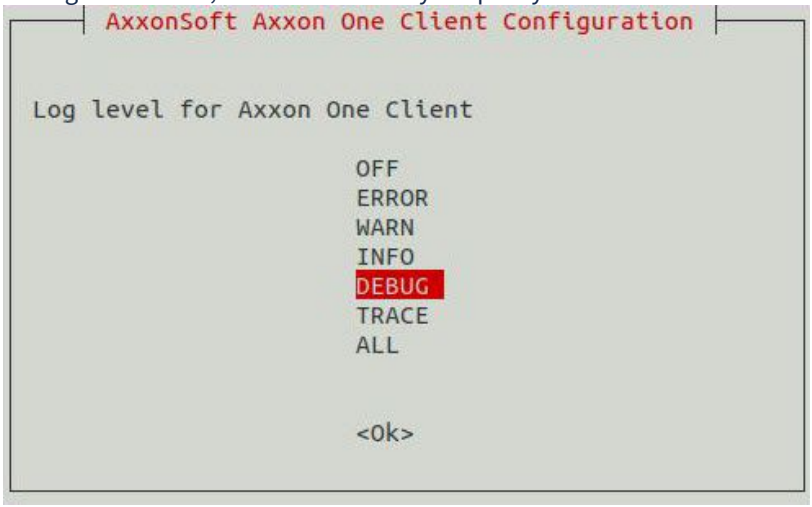
1. Install *Axxon One* Server (see Installing from repository(see page 19), Manual installation(see page 20)).
2. If you use Ubuntu 20.04, Debian 11 or above, then install the mono-complete from the stretch repository:

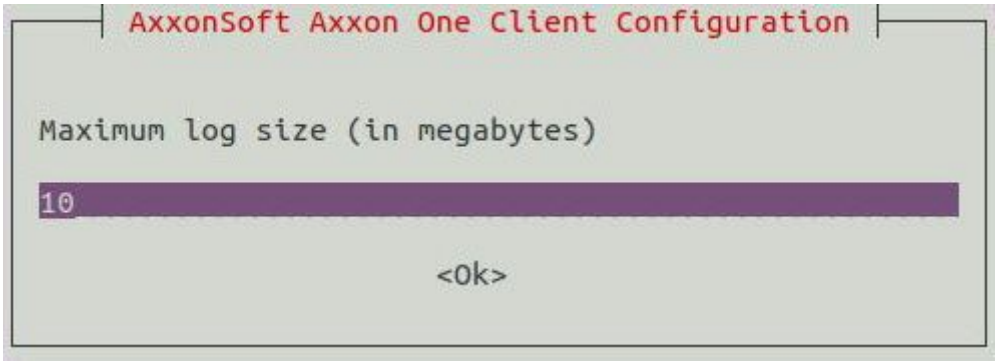
```
sudo apt-get install mono-complete -t stretch
```

3. To install *Axxon One* Client, run the following command:

```
sudo apt install axxon-one-client
```

4. During installation, it will be necessary to specify the maximum size of the log files in megabytes and the log level.





> **Note**
>
> Later you can change the specified value (see Configuring the logging parameters of the Axxon One Client in Linux OS(see page 46)). To do this, run the command:
> sudo dpkg-reconfigure axxon-one-client

Installation of the *Axxon One* in Linux OS is complete. When the installation is complete, the Client icon will be displayed in the application menu.

10.5 Running the client as Flatpak

On the page:

- General information(see page 30)
- Installation of Flatpak(see page 30)
- Running Flatpak(see page 31)
- Viewing the installed applications(see page 31)
- Utilities and logging(see page 31)

- Running Axxon One with the debug logging level(see page 31)
- Log directory(see page 31)
- Running the licensing utility(see page 32)
- Running the backup utility(see page 32)
- Collect a file with information about the system(see page 32)
- Running the Watermark checker utility(see page 32)

- Possible problems in operation(see page 32)
- Uninstalling Flatpak(see page 32)

10.5.1 General information

Starting with *Axxon One* 2.0.10, you can use Flatpak to run the client in Linux OS. This package allows you to run the *Axxon One* client on any supported Linux distribution, regardless of the operating system version, graphical shell, and so on (see the current list of supported distributions[33]).

> **Attention!**
>
> Hardware decoding on NVIDIA isn't supported.

10.5.2 Installation of Flatpak

To install Flatpak, do the following:

1. Install the package by running the command:

   ```
   sudo apt-get install flatpak
   ```

   For the Red Hat Enterprise Linux distribution, run the command:

   ```
   sudo yum install flatpak
   ```

2. Add the **Flathub** repository:

   ```
   sudo flatpak remote-add --if-not-exists flathub https://flathub.org/repo/flathub.flatpakrepo
   ```

3. Install **org.freedesktop.Platform**:

33 https://flatpak.org/setup/

```
sudo flatpak install flathub org.freedesktop.Platform/x86_64/20.08
```

4. Install the *Axxon One* client:

```
sudo flatpak install axxon-one-client*.flatpak
```

Installation of Flatpak is complete.

10.5.3 Running Flatpak

To start Flatpak, run the command:

```
flatpak run com.AxxonSoft.AxxonOne
```

Attention!

- You must run the command under the current user (**not** as the root user).
- In Ubuntu 24, there can be startup problems if you use this command. For the correct startup, we recommend using the commands from the Possible problems in operation(see page 32) section.

10.5.4 Viewing the installed applications

To view all installed applications via Flatpak, run the command:

```
flatpak list
```

You can also use this command to check if Flatpak is installed/uninstalled.

10.5.5 Utilities and logging

10.5.5.1 **Running Axxon One with the debug logging level**

```
flatpak run com.AxxonSoft.AxxonOne --debug
```

10.5.5.2 **Log directory**

Attention!

You must run the command under the current user (**not** as the root user).

```
~/.var/app/com.AxxonSoft.AxxonOne/data/AxxonSoft/AxxonOne/Logs
```

10.5.5.3 Running the licensing utility

```
flatpak run com.AxxonSoft.AxxonOne --licensetool
```

10.5.5.4 Running the backup utility

```
flatpak run com.AxxonSoft.AxxonOne --backuptool
```

Path to the backup file: **/home/user/AxxonSoft/Backups**.

10.5.5.5 Collect a file with information about the system

```
flatpak run com.AxxonSoft.AxxonOne --support /path/to/output
```

10.5.5.6 Running the Watermark checker utility

```
flatpak run com.AxxonSoft.AxxonOne --watermark
```

10.5.6 Possible problems in operation

If *Axxon One* doesn't start after you install Flatpak, you can run the command:

```
flatpak repair com.AxxonSoft.AxxonOne
```

This command checks installed files and fixes errors in Flatpak apps, updates dependencies, fixes permission errors, and can also detect configuration errors.

If *Axxon One* still doesn't start after you run the previous command, you can run the command:

```
xhost +si:localuser:$USER && flatpak run com.AxxonSoft.AxxonOne
```

If the *Axxon One* client starts after you run the command, then **xhost +si:localuser:$USER** must be:

1. Run on every new system startup.
2. Added to autostart.

10.5.7 Uninstalling Flatpak

To uninstall Flatpak, do the following:

1. Uninstall **com.AxxonSoft.AxxonOne**:

   ```
   flatpak uninstall com.AxxonSoft.AxxonOne
   ```

   After you run the command, the system can ask you to confirm the uninstallation. If unused dependencies are detected during the process, you will be prompted to uninstall them as well.
2. If necessary, you can uninstall all unused dependencies with the command:

```
flatpak uninstall --unused
```

Uninstalling Flatpak is complete.

10.6 Installing add-ons to the basic DetectorPack in Linux OS

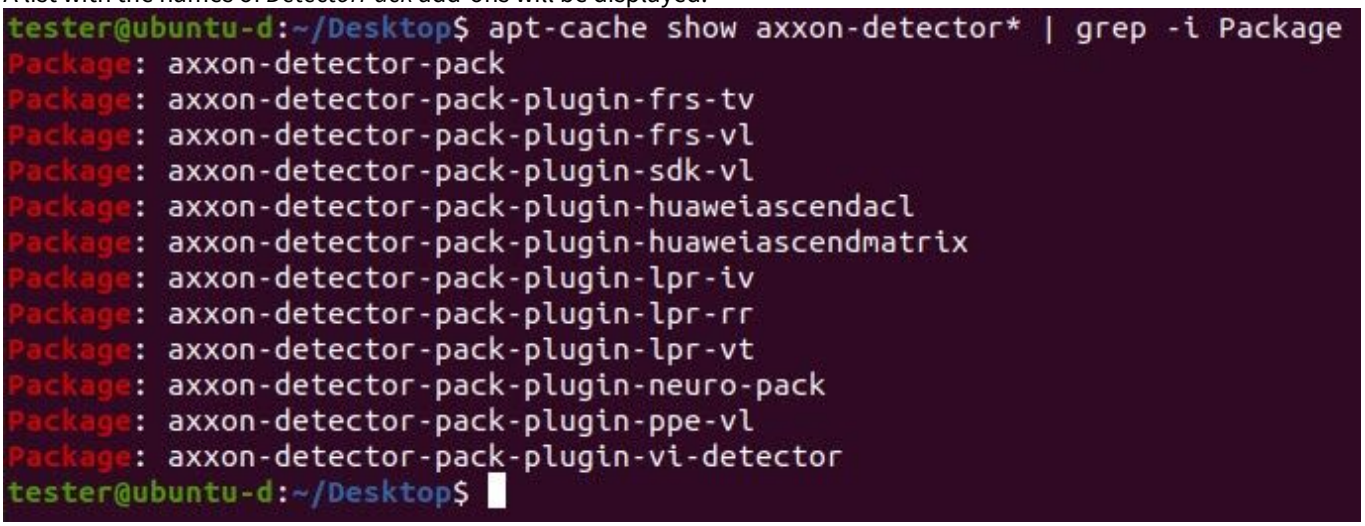
By default, *Axxon One* distribution package comes with only the basic *DetectorPack* (see Installing DetectorPack add-ons[34]).

To install the add-ons to the basic *DetectorPack* in Linux OS, do the following:

1. Run the command to get a list of *DetectorPack* add-ons:

   ```
   apt-cache show axxon-detector* | grep -i Package
   ```

   A list with the names of *DetectorPack* add-ons will be displayed.



2. Run the following command to install the necessary add-ons:

   ```
   apt-get install %add-on name%
   ```

   For example, to install the Neuro Pack add-on, run the command:

   ```
   apt-get install axxon-detector-pack-plugin-neuro-pack
   ```

3. After installing the necessary add-ons, restart the Server:

   ```
   service axxon-one restart
   ```

Attention!

It is required that the versions of the basic *DetectorPack* and the *DetectorPack* add-ons are the same. If the versions differ, it is necessary to update the version of the basic *DetectorPack* so it matches the version of the *DetectorPack* add-on.

34 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246484156/Installing+DetectorPack+add-ons

10.7 Installing and launching Axxon One using Docker

10.7.1 Installing the Docker Server

To install and launch *Axxon One* using Docker, do the following:

1. Install Docker using the official manuals:
   - Debian: https://docs.docker.com/engine/install/debian/.
   - Ubuntu: https://docs.docker.com/engine/install/ubuntu/.

     Note

     Minimum requirements to launch *Axxon One* using Docker on Ubuntu:
     - dual-core CPU;
     - 4 GB RAM;
     - 200 GB HDD.

   - Other distribution packages: https://docs.docker.com/engine/install/.
2. Download the latest version of the *Axxon One* Docker image using the following command:

   ```
   sudo docker pull axxonsoft/axxon-one:latest
   ```

3. Launch Docker using the following command:

   ```
   sudo docker run axxonsoft/axxon-one:latest
   ```

   Note

   If you need to install an earlier version of the *Axxon One* Docker image:
   a. Open the link[35] to select the required *Axxon One* Docker image.
   b. Next to the required Docker image, click the button to copy the command.
   Example of the command:

   ```
   sudo docker pull axxonsoft/axxon-one:2.0.10.42
   ```

   c. Paste the copied command into the terminal and run it.
   d. Launch Docker using the following command:

   ```
   sudo docker run <image version>
   ```

   For example:

   ```
   sudo docker run axxonsoft/axxon-one:2.0.10.42
   ```

10.7.2 Starting Axxon One

After installation, you can connect to the Docker Server with the separately installed *Axxon One* Client. To do this, when staring the Client, enter the IP address of the Docker Server, login and password in the authorization window (when you start *Axxon One*

35 https://hub.docker.com/r/axxonsoft/axxon-one/tags

for the first time, enter the following login and password: root/root). You can connect to the Docker Server using Flatpak package as well (see Running the client as Flatpak(see page 29)).

Commands that you might need:

- Determine the IP address to connect to:

```
docker inspect <container id> | grep "IPAddress"
```

- Learn <container id> as well as the container name and other information:

```
docker ps
```

or

```
docker container ls
```

- Check the availability of the Server:

```
ping <ip address>
```

- View the running processes:

```
docker top <container name>
```

Installing and starting *Axxon One* using Docker is complete.

10.7.3 Working with the Axxon One container

- The list of containers.

```
./axxon-one.sh list
```

- Launching the container.

```
./axxon-one.sh start 1.0.2.25
```

- Viewing the container status.

```
./axxon-one.sh status
```

- Stopping the container.

```
./axxon-one.sh stop
```

- Collecting the system data.

```
./axxon-one.sh support
```

The file will be saved in the '~/axxonone.docker/one/data/' directory.

- Viewing the installed packages version.

```
./axxon-one.sh versions
```

10.8 Creating a package for a standalone installation of Axxon One in Linux OS

On the page:

- General information(see page 36)
- Creating a package(see page 36)
- Possible problems and recommendations for creating a package(see page 38)

10.8.1 General information

You can run a standalone installation of *Axxon One* if external repositories aren't available. For a standalone installation, you must create a special package. To create a package, you need the following information:

1. Operating system version.
2. *Axxon One* version.
3. Versions of additional software (*DetectorPack*, *DriversPack*, and so on).

Attention!

For each operating system, you must create a separate set of packages for a standalone installation of *Axxon One*.

You must have either a virtual machine with the default operating system installed or use the Linux OS on a real computer that contains no other software. You must save the required dependencies and create a complete package that includes dependencies of both the OS and *Axxon One*.

10.8.2 Creating a package

To create a package for a standalone installation of *Axxon One*, do the following:

1. Configure the Linux OS environment by running the commands one by one:

```
sudo apt-get clean
sudo apt-get autoclean
sudo apt-get install --download-only wget ca-certificates
```

2. Add repositories:

```
echo "deb http://download.axxonsoft.com/debian-repository stretch main backports/main" >>
/etc/apt/sources.list.d/axxonsoft.list
echo "deb http://apt.postgresql.org/pub/repos/apt $(lsb_release -cs)-pgdg main" >> /etc/
apt/sources.list.d/pgdg.list
```

```
wget --quiet -O - "http://download.axxonsoft.com/debian-repository/
info@axxonsoft.com.gpg.key" | apt-key --keyring /etc/apt/trusted.gpg.d/axxonsoft.gpg add -
wget --quiet -O - https://www.postgresql.org/media/keys/ACCC4CF8.asc | sudo apt-key add -
&& sudo apt-get update
```

3. Check if the **mono** package version 6.4 is available on the device. If the **mono** version is different from 6.4, do the following:
   a. Completely remove the **mono** packages by running the commands:

   ```
   apt-get purge "mono*" "libmono*"
   apt-get autoremove
   ```

   b. Install new **mono** packages:

   ```
   rm -r /etc/apt/sources.list.d/mono-official*
   apt-get update && apt-get install -f
   ```

4. Download the necessary archives with packages to install *Axxon One*:

Archive name	Download link	Description
Server	https://www.axxonsoft.com/support/downloads/axxon-one-vms	The system requires either **Server** or **Failover Server** from the **Linux 64-bit.deb** section.The difference between **Server** and **Failover Server** is described in General information about installation in Linux OS(see page 18)
Failover Server		
Client		*Axxon One* client
DriversPack	https://www.axxonsoft.com/support/downloads/drivers-pack	*DriversPack* is required to support IP devices in *Axxon One*
Basic *DetectorPack*	https://www.axxonsoft.com/support/downloads/detector-pack	The basic *DetectorPack* includes only Object Tracker[36], Video clarity detector[37], Signal detector[38], Noise detector[39], Audio loss detector[40], and Motion detector[41]
Video analytics add-ons		Video analytics add-ons if you plan to use them (the **Add-ons** list is in the **Linux 64-bit.deb** section)

5. Unzip the downloaded packages.

> **Note**
>
> Once you download the necessary packages, you can run the following command to view the contents of the directory, as well as the files and their attributes:
>
> ```
> ls -la
> ```

6. Move the downloaded packages to **/var/cache/apt/archives/**.

36 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/281552663/Object+tracker
37 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246484645/Video+clarity+detector
38 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/303039555/Signal+detector
39 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/303039553/Noise+detector
40 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/303039551/Audio+loss+detector
41 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246484638/Motion+detector

```
mv * /var/cache/apt/archives/
```

7. Download dependencies from repositories:
   a. For a regular server:

```
apt-get install --download-only mono-complete -t stretch
apt-get install --download-only axxon-one
apt-get install --download-only axxon-one-client
```

   b. For the Failover server:

```
apt-get install --download-only mono-complete -t stretch
apt-get install --download-only axxon-one-raft
apt-get install --download-only axxon-one-client
```

A set of packages for a standalone installation of *Axxon One* is ready and can be found at **/var/cache/apt/archives/**.

To simplify the installation process, we recommend installing all dependencies first, then installing *Axxon One*.

10.8.3 Possible problems and recommendations for creating a package

Sometimes *Axxon One* can refuse to load some dependencies when you create a package. In this case, you must first install the **mono** package version 6.4 and then reload the dependencies for the *Axxon One* client.

10.9 Updating Axxon One in Linux OS

> **Attention!**
>
> Updating the OS doesn't affect the performance of *Axxon One*. However, before updating the OS, we recommend backing up the configuration (see Backup and restore utility[42]).

There are two options to update *Axxon One* in Linux OS: from the repository and from the folder.

1. To update *Axxon One* from the repository, sequentially run the commands as a **root**:

```
sudo apt-get update
sudo apt-get install <package name>
```

   Example of packages:
   - axxon-one (for the Server side);
   - axxon-one-raft (for the Server in the Failover mode);
   - axxon-one-client (for the Server and Client type).

   For example:

```
sudo apt-get update
sudo apt-get install axxon-one
```

2. To update *Axxon One* from the folder, do the following:
   a. Go to the folder with the downloaded packages.
   b. Run the following command:

42 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246486695/Backup+and+restore+utility

```
sudo dpkg -i *
```

Package examples

Example of packages required to update the Server side:

```
axxon-drivers-pack_3.73_amd64.deb
axxon-detector-pack_3.8_amd64.deb
axxon-one-core_1.9.0_amd64.deb
axxon-one_1.9.0_all.deb
```

Example of packages required to update the Server in the Failover mode:

```
axxon-drivers-pack_3.73_amd64.deb
axxon-detector-pack_3.8_amd64.deb
axxon-one-core_1.9.0_amd64.deb
axxon-one-raft_1.9.0_amd64.deb
```

Example of packages required for the Server and Client updating type:

```
axxon-drivers-pack_3.73_amd64.deb
axxon-detector-pack_3.8_amd64.deb
axxon-one_1.9.0_all.deb
axxon-one-core_1.9.0_amd64.deb
axxon-one-client-bin_1.9.0_amd64.deb
axxon-one-client_1.9.0_all.deb
```

These options describe an update within one version of *Axxon One* (for example, from 1.0 to 1.9). If you want to update from *Axxon One* 1.0 to *Axxon One* 2.0, you must first update the repositories. The repositories and the commands are specified in the step 1 on the page Installing from repository (see page 19).

Attention!

After the update is completed, you must check the access permissions of the archive file and the folder where it is stored.
The **ngp** user must be specified as the owner of both the file and the folder.

10.10 Removing Axxon One in Linux OS

To remove *Axxon One* but save the configuration, run the following command:

```
sudo apt remove axxon-*
```

To completely remove *Axxon One*, run the following commands in sequence:

```
sudo apt --purge remove axxon-* -y
```

```
sudo apt autoremove -y
```

```
sudo rm -r /opt/AxxonSoft/
```

11 Starting and stopping Axxon One in Linux OS

11.1 Starting and stopping the Axxon One Server in Linux OS

> **Note**
>
> The *Axxon One* Server starts automatically when the operating system starts.

Server start:

```
sudo service axxon-one start
```

Server stop:

```
sudo service axxon-one stop
```

Server restart:

```
sudo service axxon-one restart
```

Server status check:

```
sudo service axxon-one status
```

11.2 Starting and stopping the Axxon One self-diagnostics service in Linux OS

> **Note**
>
> The *Axxon One* self-diagnostics service is running by default.

Controlling the self-diagnostics service via service

Start the service:

```
service axxon-one-selfdiag start
```

Stop the service:

```
service axxon-one-selfdiag stop
```

Restart the service:

```
service axxon-one-selfdiag restart
```

Controlling the self-diagnostics service via systemctl

Start the service:

```
systemctl start axxon-one-selfdiag.service
```

Stop the service:

```
systemctl stop axxon-one-selfdiag.service
```

Restart the service:

```
systemctl restart axxon-one-selfdiag.service
```

Enable the automatic start of the service:

```
systemctl enable axxon-one-selfdiag.service
```

Disable the automatic start of the service:

```
systemctl disable axxon-one-selfdiag.service
```

12 Configuring Axxon One in Linux OS

12.1 Features of creating an archive in Linux OS

12.1.1 Features of creating an archive as a disk in Linux OS

To allocate the disk for recording, run the command as a root.

```
sudo su
```

```
fdisk -l
```

where

- /dev/sd**a**—the first physical disk;
- /dev/sda**1**—the first partition of the first physical disk;
- /dev/sda**2**—the second partition of the first physical disk;
- dev/sd**b**—the second physical disk.

To delete the disk partition, do the following:

1. Go to the disk on which you want to delete a partition.

   ```
   fdisk /dev/sdb
   ```

2. Delete the partition.

   ```
   d
   ```

3. Specify the partition number.

   ```
   2
   ```

4. Save the changes.

   ```
   w
   ```

To create apartition, do the following:

1. Go to the disk on which you want to create a partition.

   ```
   fdisk /dev/sdb
   ```

2. Create the partition.

   ```
   n
   ```

3. Specify the partition type: primary (p) or extended (e).

   ```
   p
   ```

4. Specify the partition number.

```
1
```

5. Specify the partition size. G—gigabytes, M—megabytes, K—kilobytes.

```
+5G
```

6. Save the changes.

```
w
```

To create the archive as a disk, do the following:

1. Create a new archive in the *Axxon One* Client (see Creating a local archive[43]).
2. Select the archive volume.
3. Specify the path to partition in the address window. For example: /dev/sdb1. If it is required to use the whole disk as an archive, specify the /dev/sdc, /dev/sdd, and so on.
4. Set the **Format** checkbox and click the **Apply** button.

> **Attention!**
>
> At this point you cannot change the archive size.

12.1.2 Features of creating an archive as a file in Linux OS

By default, in Linux OS, the **ngp** user has rights to record only in the /opt/AxxonSoft/AxxonOne/ directory.

To create an archive in another directory, do the following:

1. Create a folder with write permissions.

```
sudo mkdir -m755 /home/archive
```

2. Change the folder owner to **npg** user.

```
sudo chown -R ngp:ngp /home/archive/
```

3. Check the permissions on the created folder.

```
ls -lt /home/
```

If there is a string with the ngp user permissions in the result, it is now possible to create an archive as a file in this directory.

```
drwxr-xr-x   2 ngp    ngp    4096 aug.   8 15:18 archive
```

12.1.3 Features of creating an object archive in Linux OS

By default, in Linux OS, the **ngp** user has rights to record only in the /opt/AxxonSoft/AxxonOne/ directory.

---

43 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246484560/Creating+a+local+archive

To create an object archive, do the following:

1. Create a folder, for example:

```
sudo mkdir /home/"user"/archive
```

2. Change the folder owner to **npg** user.

```
sudo chown -R ngp:ngp /home/"user"/archive
```

3. Check the permissions on the created folder.

```
ls -l /home/"user"/
```

If there is a string with the **ngp** user permissions in the result, it is now possible to create an object archive by selecting the object storage type and specifying the path to this folder.

```
drwxr-xr-x  2 ngp  ngp  4096 aug.  8 15:18 archive
```

12.1.4 Features of archives with ext and xfs file systems

When you work with archives (both local and network) in the ext and xfs file systems, take into account the following features:

1. When you create an archive (see Creating an archive[44]), the displayed free disk space is calculated based on the actual used space.

> **Note**
>
> For example, the disk size is 60 GB, and a 10 GB archive is created on it, but it is only 1 GB full.
> When you try to create a second archive on this disk, 59 GB of free space will be displayed, not 50 GB.

2. Availability of the entire archive file size is not guaranteed in cases when other files run out of available space.

> **Note**
>
> Due to the ext and xfs file systems features, it is possible to create archives whose total size exceeds the free disk space.

> **Attention!**
>
> In such cases, it is necessary for the system administrator to control the free disk space.

12.1.5 Features of NAS archives

To connect to the NAS server, use the following versions of protocols:

- SMB2/SMB3 (2.02, 2.10, 3.00, 3.02, 3.1.1);
- NFSv3, NFSv4.

It is also possible to use the CIFS and iSCSI protocols.

44 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246486939/Creating+an+archive

12.2 Configuration and log folders

The following folders are used by default:

1. Logs and Client configuration: /home/USER/.local/share/AxxonSoft/
2. Server configuration: /opt/AxxonSoft/AxxonOne/

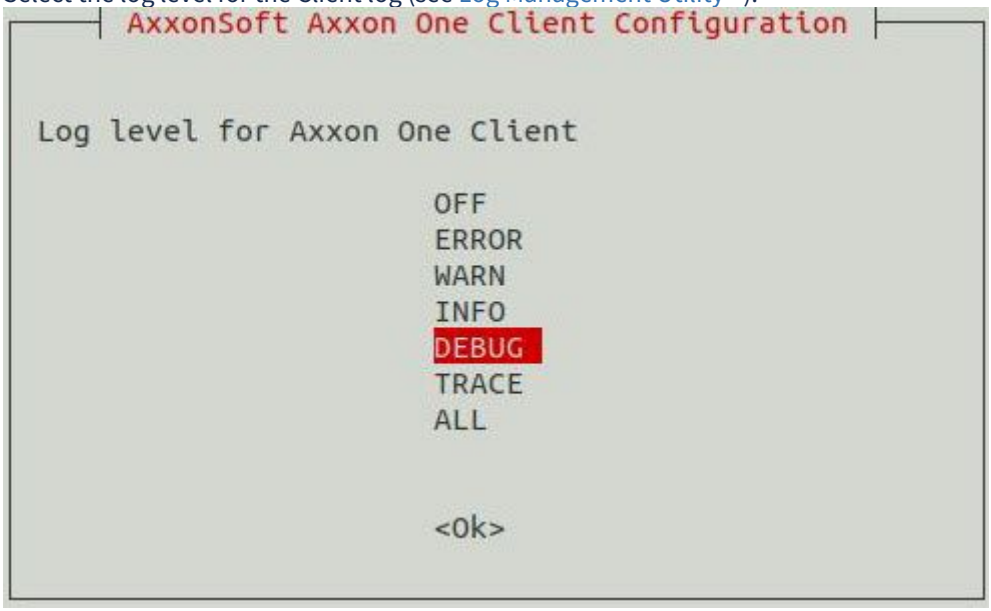
12.3 Configuring the logging parameters of the Axxon One Client in Linux OS

To change the logging parameters of the *Axxon One* Client, do the following:

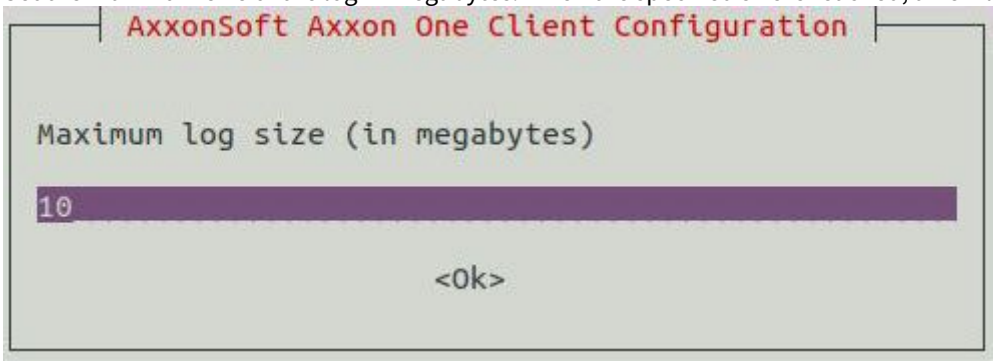
1. Run the following command.

```
sudo dpkg-reconfigure axxon-one-client
```

2. Select the log level for the Client log (see Log Management Utility[45]).



3. Set the maximum size of the log in megabytes. When the specified size is reached, a new log will be created.



12.4 Collecting system data in Linux OS

To collect the system data in Linux OS, run the following command:

```
sudo /opt/AxxonSoft/AxxonOne/bin/support /home/$USER/
```

where

45 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246486677/Log+Management+Utility

- /opt/AxxonSoft/AxxonOne/bin/support—the utility location directory;
- /home/$USER—the user's home directory.

If you do not want to delete the temporary repository, run the following command:

```
--debug
```

If you want to include dumps from currently running NGP processes, run the following command:

```
--dump-processes
```

If you want to collect process dumps and logs for a specific node, run the following command:

```
--node <node-name>
```

This can be used multiple times to specify multiple nodes. If a node is not specified, dumps and logs will be collected for all available nodes.

If you want to use a limited number of threads (N) to collect dumps of Server processes, run the following command:

```
--jobs N
```

If N = 0, then all available threads will be used to collect dumps. By default, N = 1.

By default, the system data report includes information from Linux OS log. To exclude this information from the report, run the following command:

```
--skip-journalctl
```

If you want the report not to include the information on the self-diagnostics service (see Self-diagnostics service[46]), run the following command:

```
--skip-prometheus
```

If errors occur, you can run the following command to try to resolve them:

```
--fix
```

If you want to see the list with all built-in commands, run the following command:

```
--help
```

12.5 Changing the metadata storage path in Linux OS

By default, metadata is stored in the directory /opt/AxxonSoft/AxxonOne/vmda_db.

To change the metadata storage path, do the following:

1. Create a folder for storing metadata. For example, create a folder named **Metadata** in the **/media** directory:

46 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246485685/Self-diagnostics+service

```
sudo mkdir /media/Metadata
```

2. Change the folder owner to **npg** user:

```
sudo chown -R ngp:ngp /media/Metadata
```

3. Check the permissions on the created folder.

```
ls -l /media
```

As a result, a line with permissions for the **ngp** user should be displayed:

```
drwxr-xr-x  3 ngp  ngp  4096 jul 18 12:05 Metadata
```

4. Launch the *Axxon One* Client and go to the **Options** → **Data storage** tab.
5. Enter the path to the new folder in the **Metadata storage path** field. For example, **/media/Metadata**.
6. Click the **Apply** 

button to save the changes.

Changing the metadata storage path is complete.

12.6 Configuring the metadata storage in NAS in Linux OS

To store the metadata in a network attached storage (NAS), do the following:

1. Create a shared network folder.
2. On the Server in Linux OS, create the **netdir** folder. For example, in the **/media** folder:

```
sudo mkdir /media/netdir
```

3. Install the **cifs-utils** utility.

```
sudo apt-get install cifs-utils
```

4. Attach the shared network folder to the created **netdir** folder.

```
sudo mount -t cifs //IP address/common /media/netdir -o
user=User,password=123,uid=1001,gid=1002,vers=2.0
```

where,

a. **IP address**—NAS address,
b. **common**—shared network folder,
c. **user**, **password**—NAS access credentials,
d. **uid**, **gid**—id of the user and ngp group. They can be obtained using the following command:

```
id ngp
```

5. In the *Axxon One* metadata storage settings, specify the /media/netdir path (see Configuring storage of the system log and metadata[47]).

After you restart Linux OS, the attached folder will be deleted. To configure the network folder to be attached on the OS loading, do the following:

47 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246485451/Configuring+storage+of+the+system+log+and+metadata

1. Open the /etc/fstab file.

```
sudo nano /etc/fstab
```

2. Add the following string to the file:

```
//IP address/common /media/netdir cifs user=User,password=123,uid=1001,gid=1002,vers=2.0 0
0
```

3. Save the file.

12.7 Changing the configuration of the Axxon One Server in Linux OS

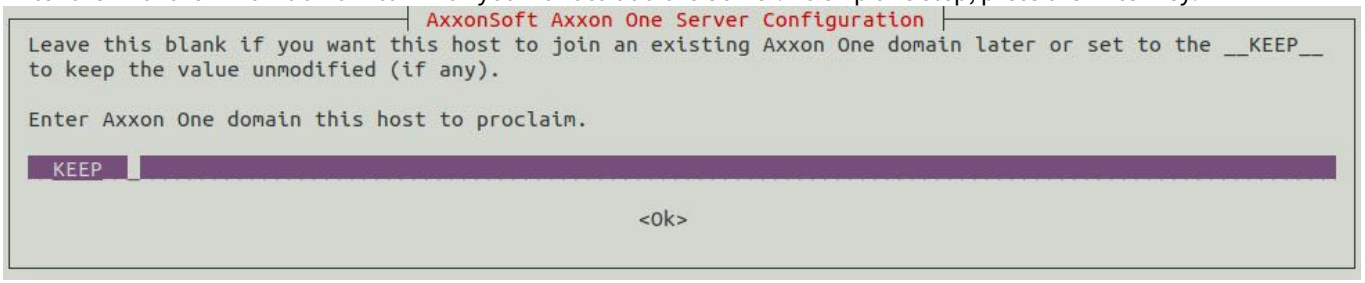
To change the configuration of the Server, do the following:

1. Run the following command.

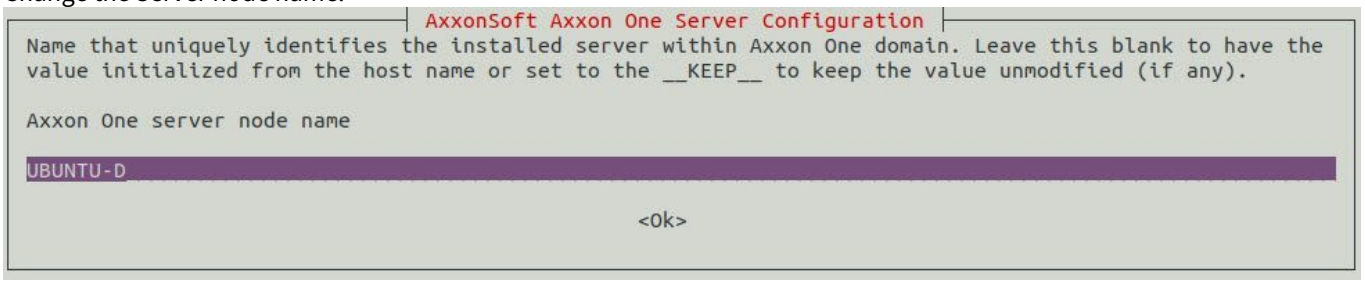
```
sudo dpkg-reconfigure axxon-one
```

> **Attention!**
>
> If you change the server configuration, the system variables previously added to the **instance.conf** file will be deleted (see Creating system variables in Linux OS(see page 98)).

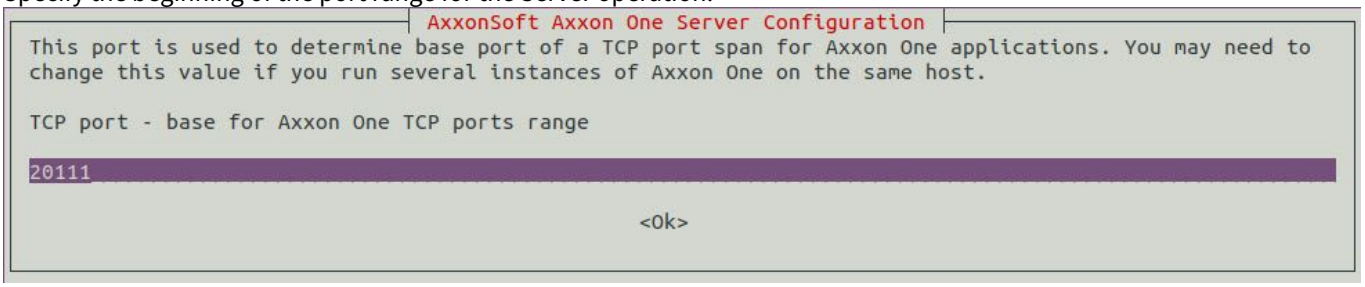
2. Enter the ID of the Axxon-domain to which you want to add the Server. To skip this step, press the Enter key.



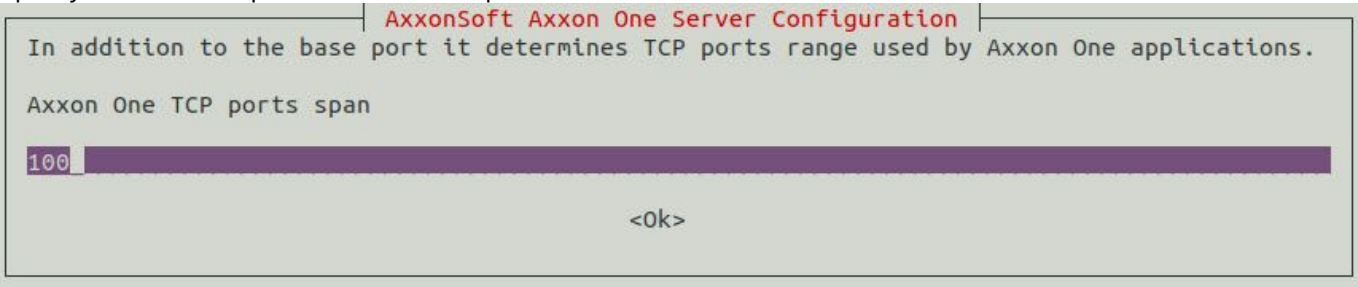
3. Change the Server node name.



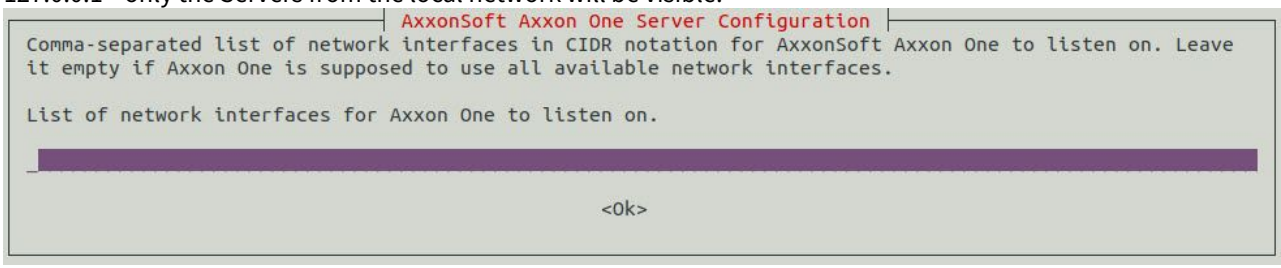
4. Specify the beginning of the port range for the Server operation.



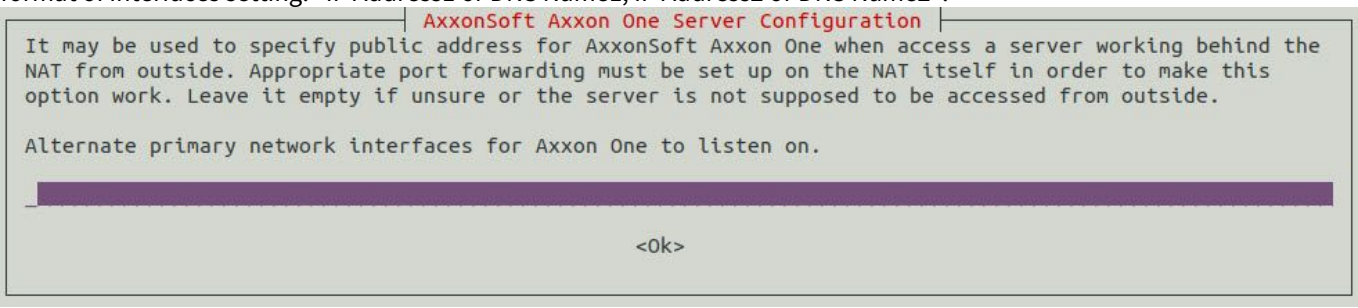
5. Specify the number of ports for the Server operation.



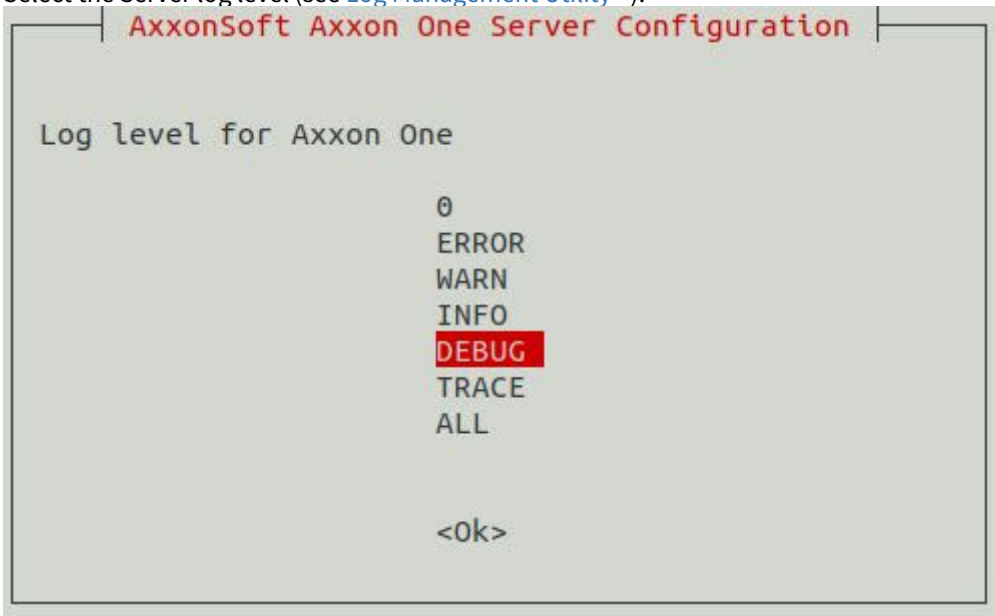
6. Restrict the visibility of Servers from various networks in the Servers list during *Axxon One* configuration. Possible values:
   a. 0.0.0.0/0—Servers from all networks will be visible.
   b. 10.0.1.23/32,192.168.0.7/32—only the Servers from the specified networks will be visible.
   c. 127.0.0.1—only the Servers from the local network will be visible.



7. Specify the alternative Server address—the external address of the switch if the Server is located behind the NAT[48]. The format of interfaces setting: "IP Address1 or DNS Name1, IP Address2 or DNS Name2".

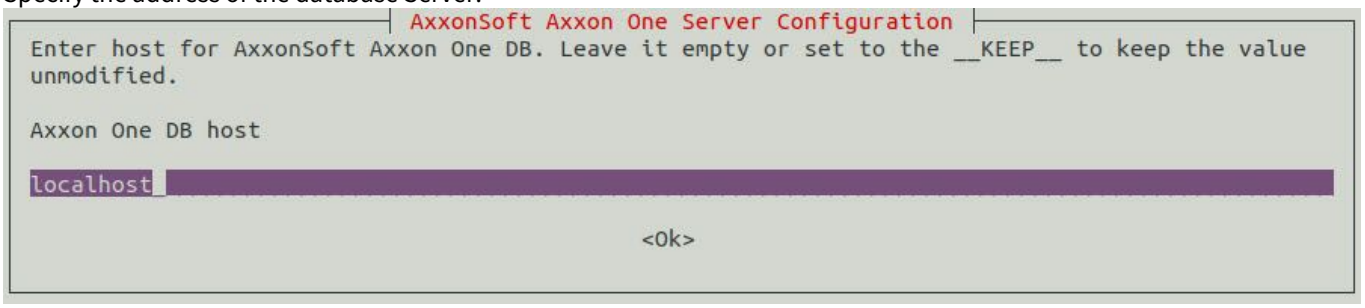


8. Select the Server log level (see Log Management Utility[49]).

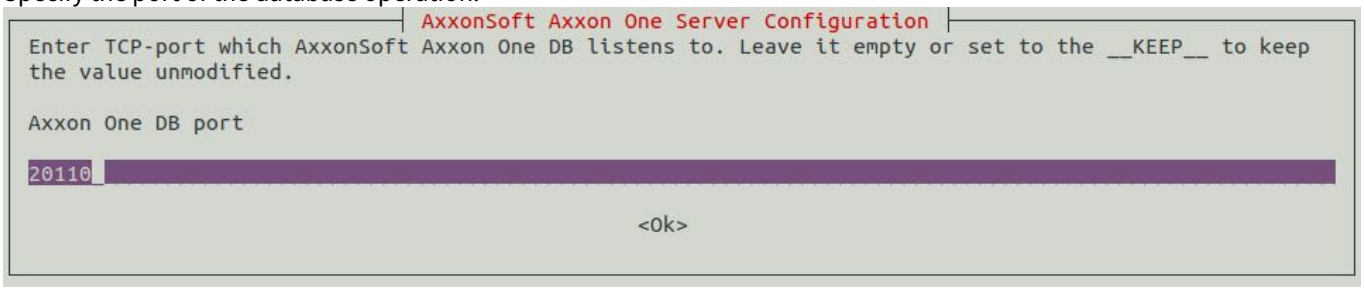


48 https://en.wikipedia.org/wiki/Network_address_translation
49 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246486677/Log+Management+Utility

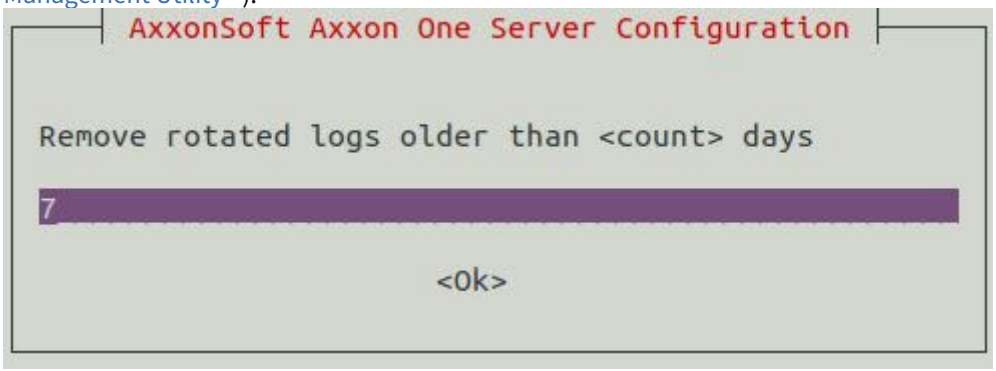
9. Specify the address of the database Server.



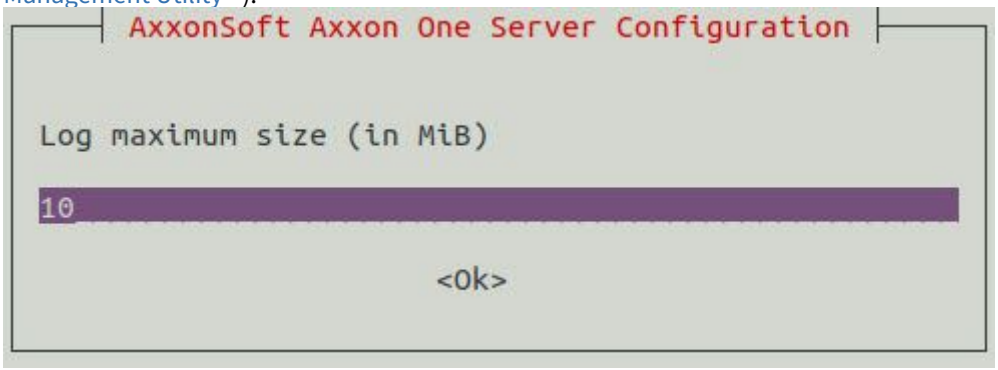
10. Specify the port of the database operation.



11. Specify the maximum time in days the log will be stored in the archive. After that time, the log will be deleted (see Log Management Utility[50]).

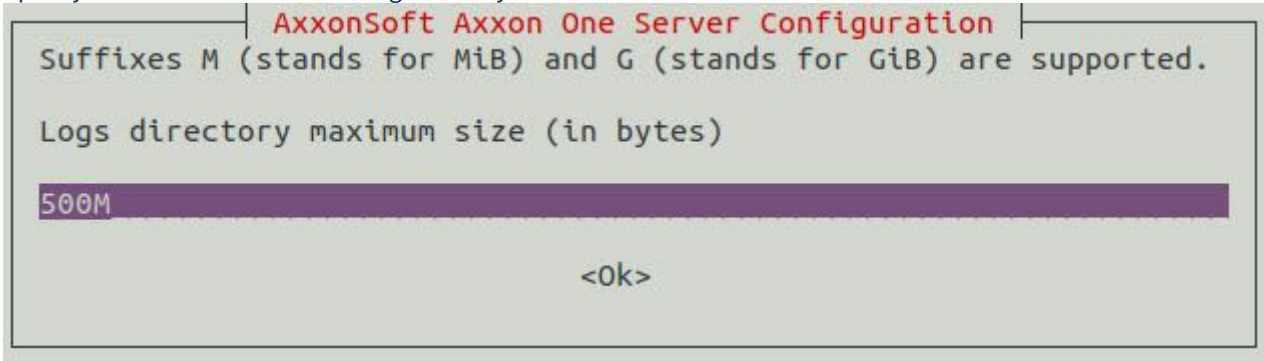


12. Specify the maximum size of the archive, above which the earliest logs will be deleted from the archive (see Log Management Utility[51]).



50 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246486677/Log+Management+Utility
51 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246486677/Log+Management+Utility

13. Specify the maximum size of the log directory.



Server configuration change is complete.

12.8 Transferring the Axxon One configuration from Windows OS to Linux OS

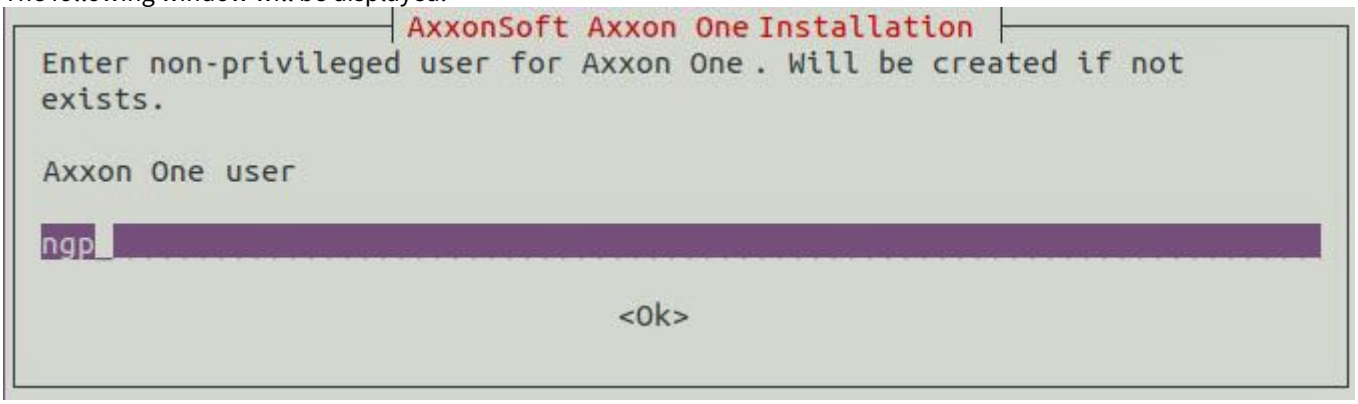
To transfer the *Axxon One* configuration from Windows OS to Linux OS, do the following:

1. Create the backup configuration in Windows OS (see Backup and restore utility[52]).
2. Run the following command in Linux OS:

```
sudo dpkg-reconfigure axxon-one
```

> **Attention!**
>
> The Server in Linux OS must belong to some Axxon-domain.

The following window will be displayed.



3. Press the Enter key several times until the Server node name change window is displayed.

4. Enter the Server node name which is used in Windows OS.
5. Run the backup and configuration recovery utility (see Backup and restore utility[53]) and select the specified Server on its launch.
6. Restore the configuration by selecting the saved backup.

52 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246486695/Backup+and+restore+utility
53 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246486695/Backup+and+restore+utility

7. Deactivate the license (see Deactivating a license[54]) and distribute the license file again (see Activation by applying license file[55]).

12.9 Forwarding a Guardant USB key to a Docker container

Forwarding a Guardant USB key to a Docker container is the process when a physical device connected to the host machine becomes available inside a Docker container to work with.

Attention!

Before you start, make sure that the Guardant key is compatible with Linux OS. GNU/Linux native support is implemented for the models:

- Guardant Sign;
- Guardant Time;
- Guardant Code;
- As well as for the network versions of the above models.

Models that aren't supported:

- Guardant Stealth III / Net III;
- Guardant Stealth II USB / Net II USB.

To forward a USB key to a Docker container, do the following:

1. Run the command to view the list of connected USB devices:

   ```
   lsusb
   ```

   Example of information output about USB devices connected to the system:

   ```
   Bus 001 Device 006: ID 0a89:0008 Aktiv Guardant Stealth 3 Sign/Time
   ```

   Memorize the **Bus** and **Device** values for the required device. In this example, they are **001** and **006**.
2. Open the **guardant-docker.service** file for editing:

   ```
   nano /etc/systemd/system/guardant-docker.service
   ```

3. Add the following lines to the file:

   ```
   [Service]
   Restart=always
   ExecStart=/usr/bin/docker run --rm --device=/dev/bus/usb/BUS value/Device docker_IMAGE
   value
   ExecStop=/usr/bin/docker stop CONTAINER_ID
   ```

   you must:
   a. Replace the **Bus** and **Device** values with the actual values from the output of the **lsusb** command.
   b. Instead of **docker_IMAGE**, specify the required Docker image (see Installing and launching Axxon One using Docker(see page 34)).
   c. Instead of **CONTAINER_ID**, specify the identifier of the container.
   For example:

54 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246486863/Deactivating+a+license
55 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246486847/Activation+by+applying+license+file

```
[Unit]
Description=Start Docker container with Guardant USB
After=network.target docker.service
Requires=docker.service

[Service]
Restart=always
ExecStart=/usr/bin/docker run --rm --device=/dev/bus/usb/001/006 ec03cff81943
ExecStop=/usr/bin/docker stop 71cfe3eb9019

[Install]
WantedBy=multi-user.target
```

4. Run the following commands to activate autostart:

```
sudo systemctl daemon-reload
sudo systemctl enable guardant-docker.service
sudo systemctl start guardant-docker.service
```

5. Restart the operating system.

After you restart the operating system, the container starts automatically. The Guardant USB key is available inside the container, and it will be correctly detected by the system when creating a license, for example.

13 Axxon One utilities for Linux OS

13.1 Activation utility for Linux OS

On this page:

- General information(see page 55)
- Launching the utility(see page 55)
- Closing the utility(see page 57)

13.1.1 General information

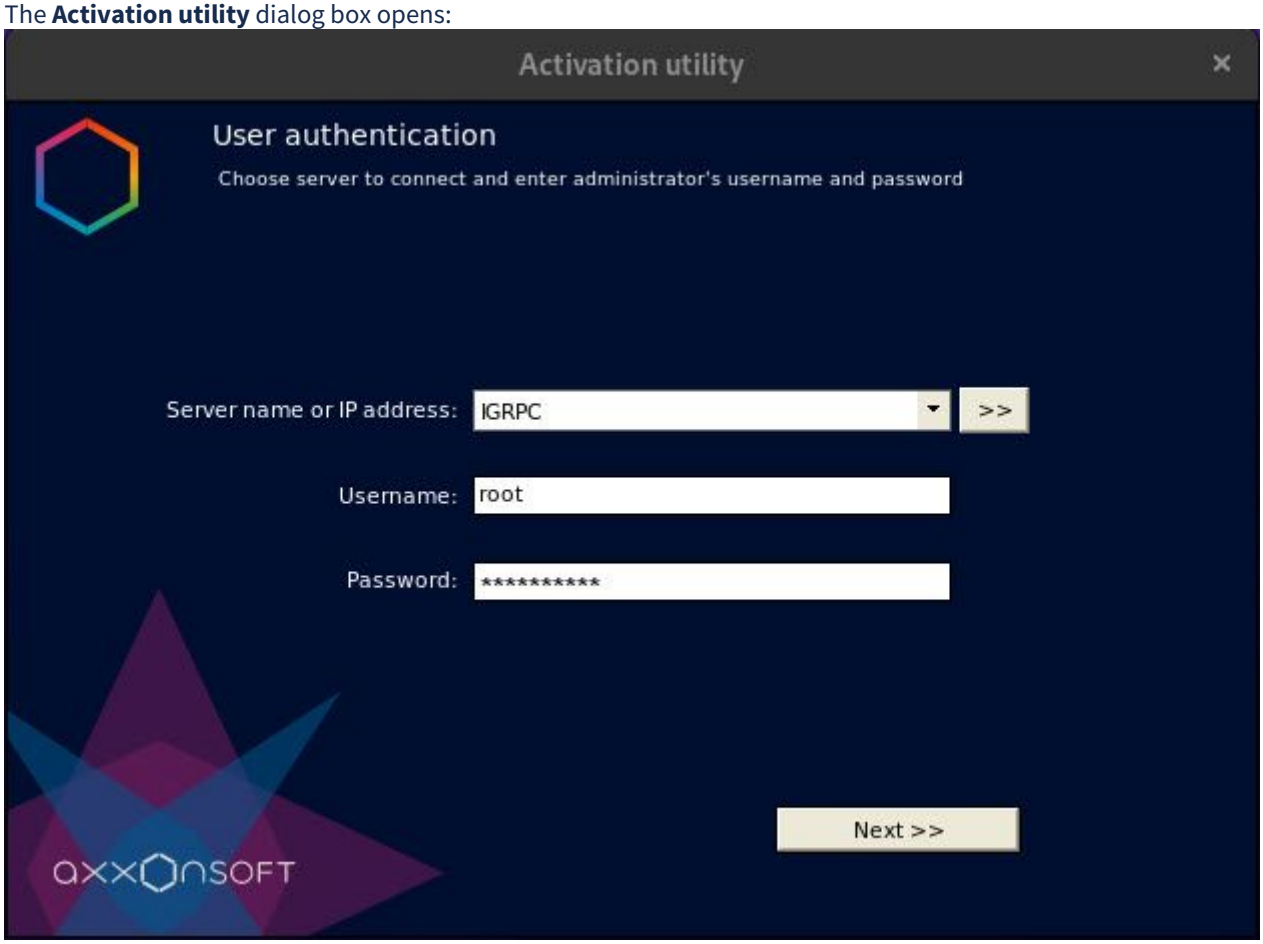
The **Activation utility** is designed to:

- activate a free license for *Axxon One* (see Activating the Axxon One free license for Linux OS(see page 57));
- create a request to activate a paid license (see Creating an activation request in Linux OS(see page 62));
- activate a license by distributing a license file (see Activation by applying a license file in Linux OS(see page 64));
- activate a license by distributing a serial number (see Activation with a serial number in Linux OS(see page 68));
- update a license (see Updating the Axxon One license in Linux OS(see page 73));
- deactivate a license (see Deactivating a license in Linux OS(see page 74));
- save a license file (see Saving the license file in Linux OS(see page 76));
- change a domain name (see Changing the domain name in Linux OS(see page 79));
- exclude a server from a domain (see Excluding the current server from a domain in Linux OS(see page 82)).

13.1.2 Launching the utility

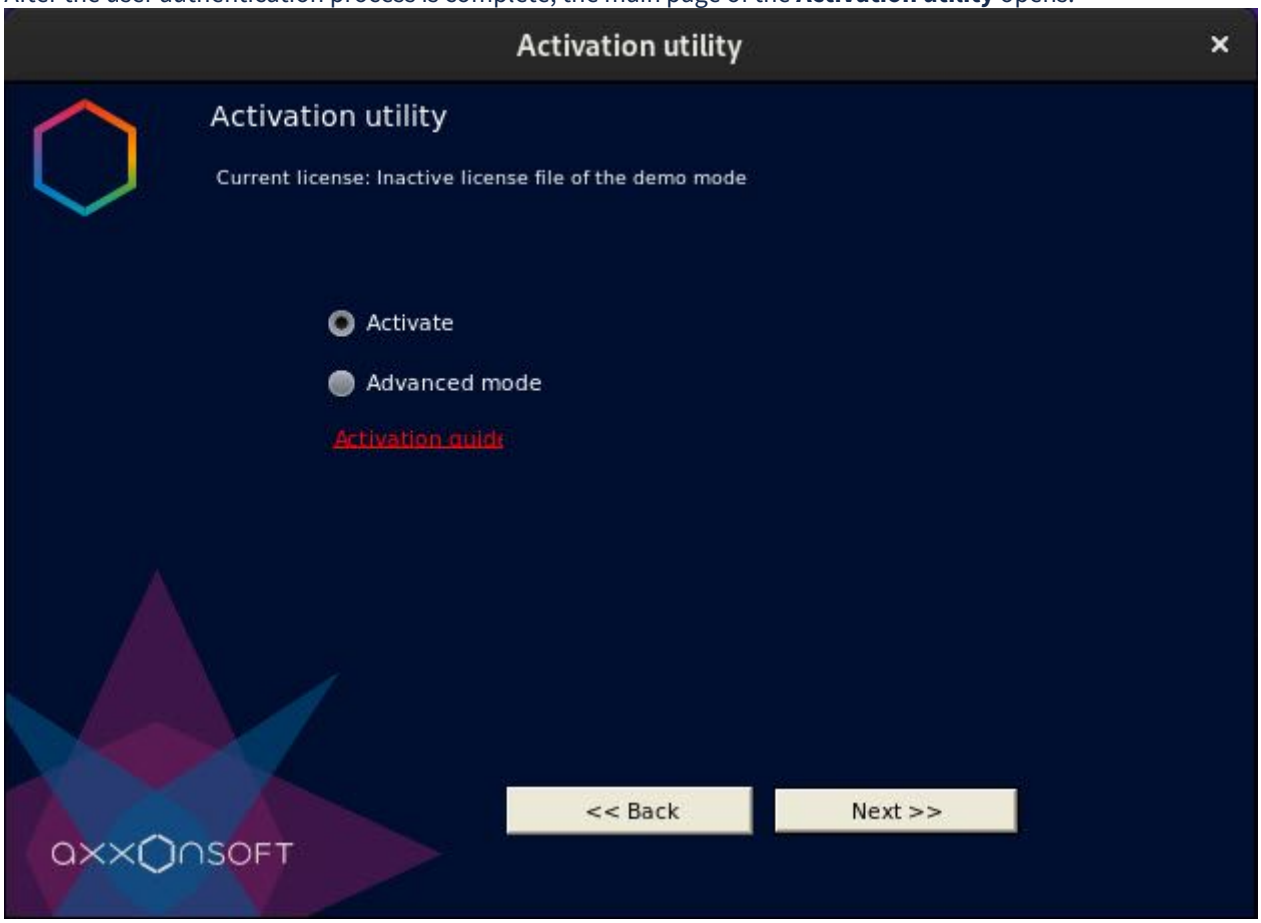
To launch the **Activation utility**, go to the apps menu and click the **LicenseTool** utility shortcut.

The **Activation utility** dialog box opens:



1. From the **Server name or IP address** drop-down list, select one of the domain servers.
2. In the **Username** field, enter the server user name.
3. In the **Password** field, enter the server user password.
4. Click the **Next >>** button. The user authentication process starts.

After the user authentication process is complete, the main page of the **Activation utility** opens:



The **Activation utility** is launched.

13.1.3 Closing the utility

To exit the **Activation utility**, click the button.

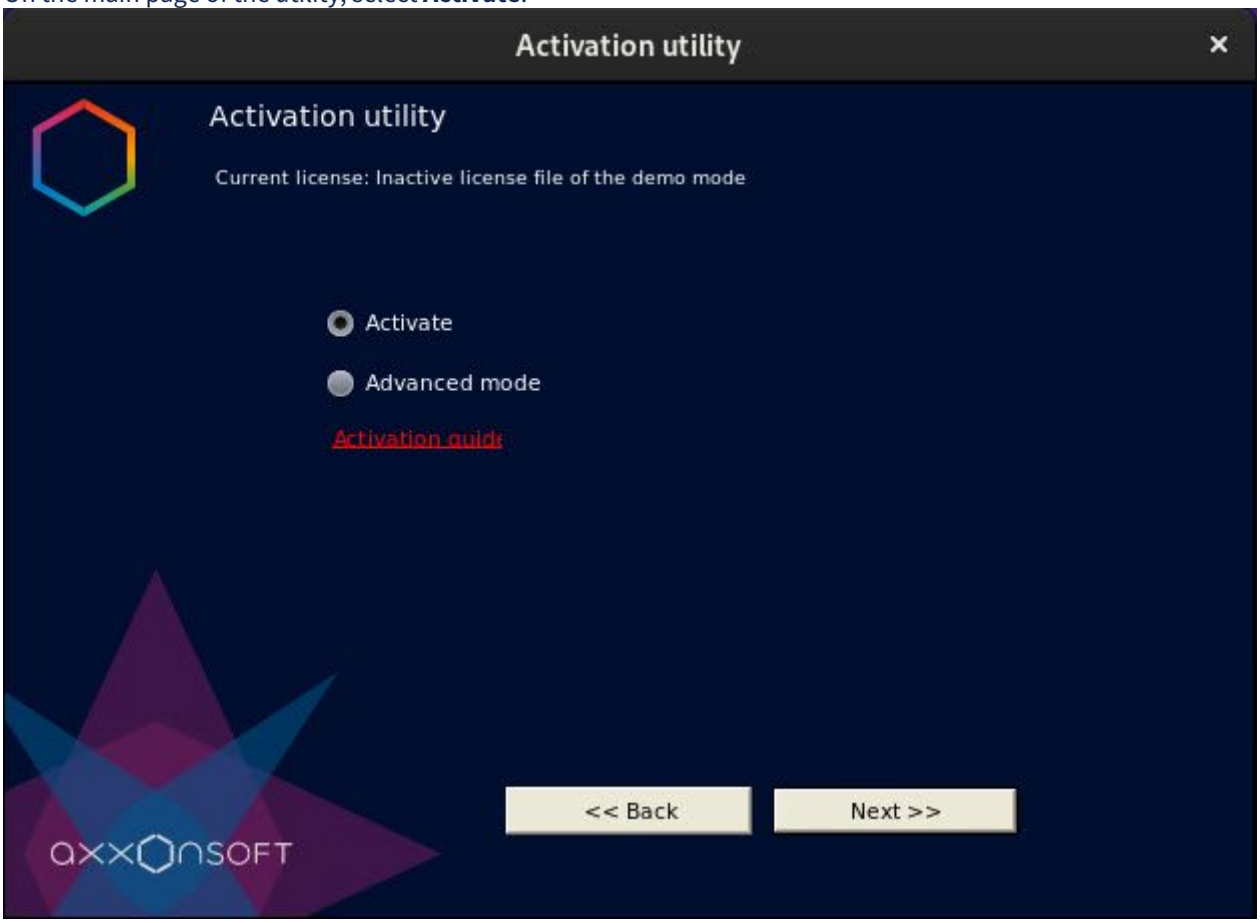
13.1.4 Activating the Axxon One free license for Linux OS

To activate the *Axxon One* free license, do the following:

> **Attention!**
>
> The number of cameras created in the system at the time of activation must not exceed four.

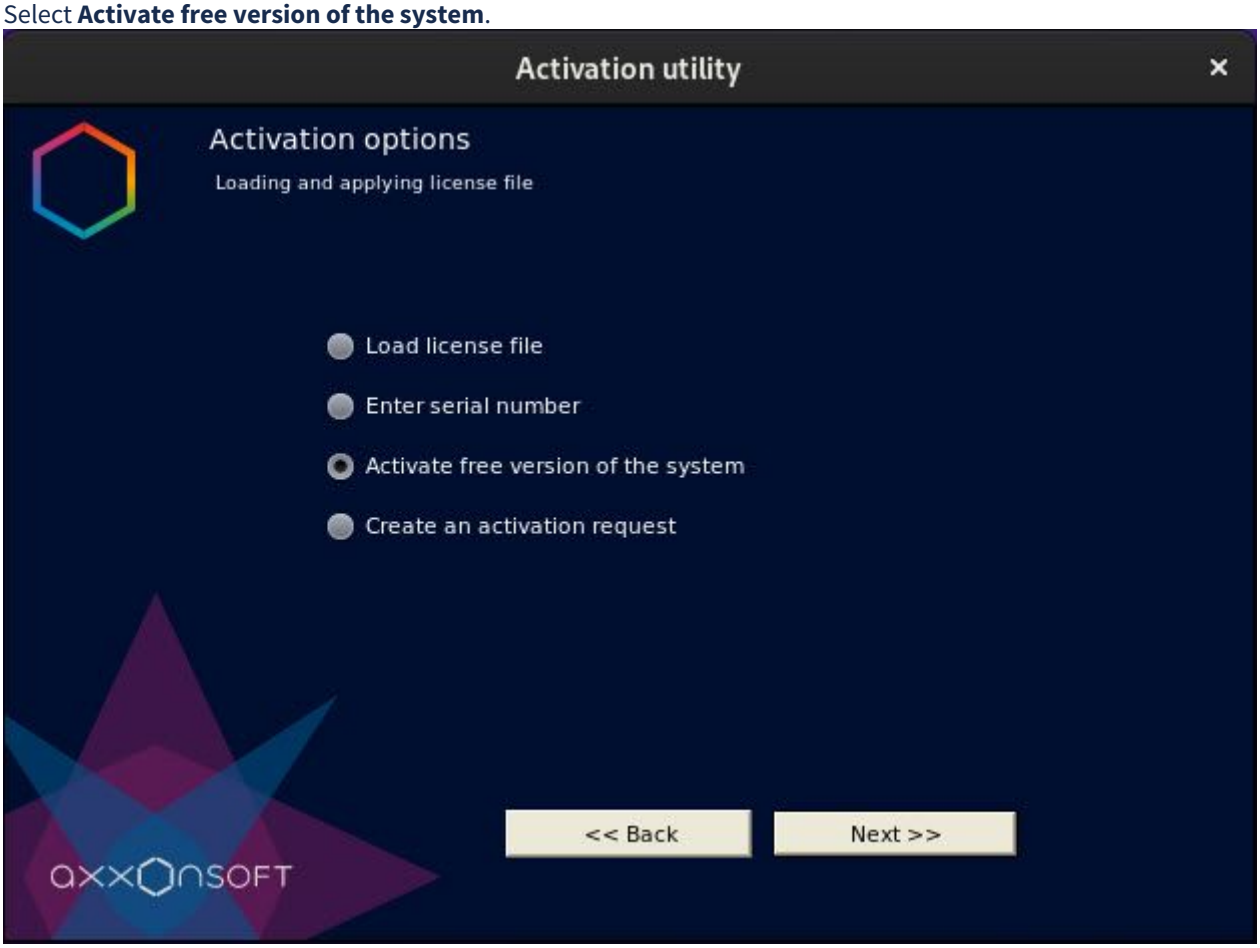
1. Launch the **Activation utility** (see Activation utility for Linux OS(see page 55)).

2. On the main page of the utility, select **Activate**.



3. Click the **Next >>** button.

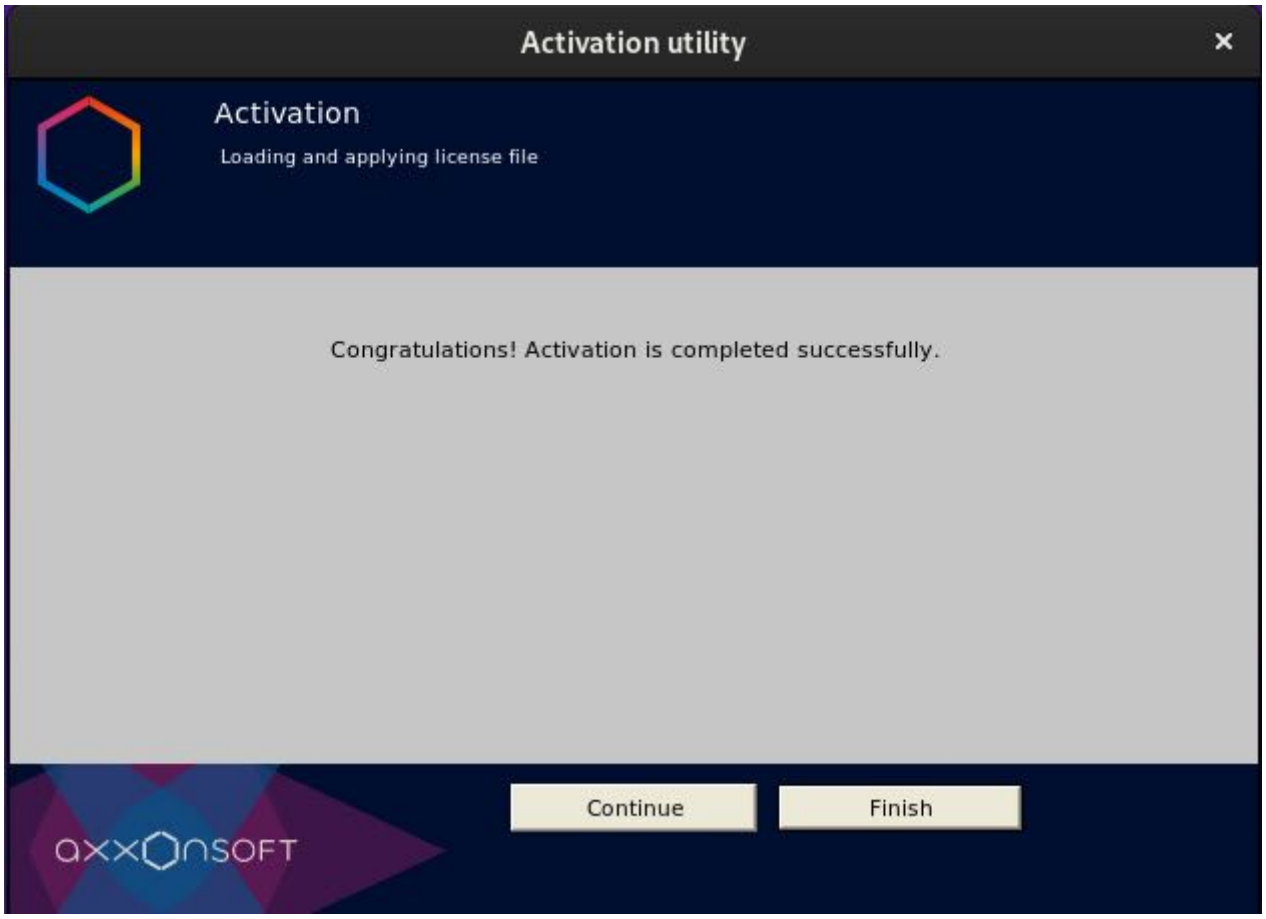
4. Select **Activate free version of the system**.



5. Click the **Next >>** button.

As a result, a request for activation is sent online. If activation is successfully completed on the *licensing service* (https://sale.axxonsoft.com/[56]), the license file is automatically downloaded and distributed within the system.

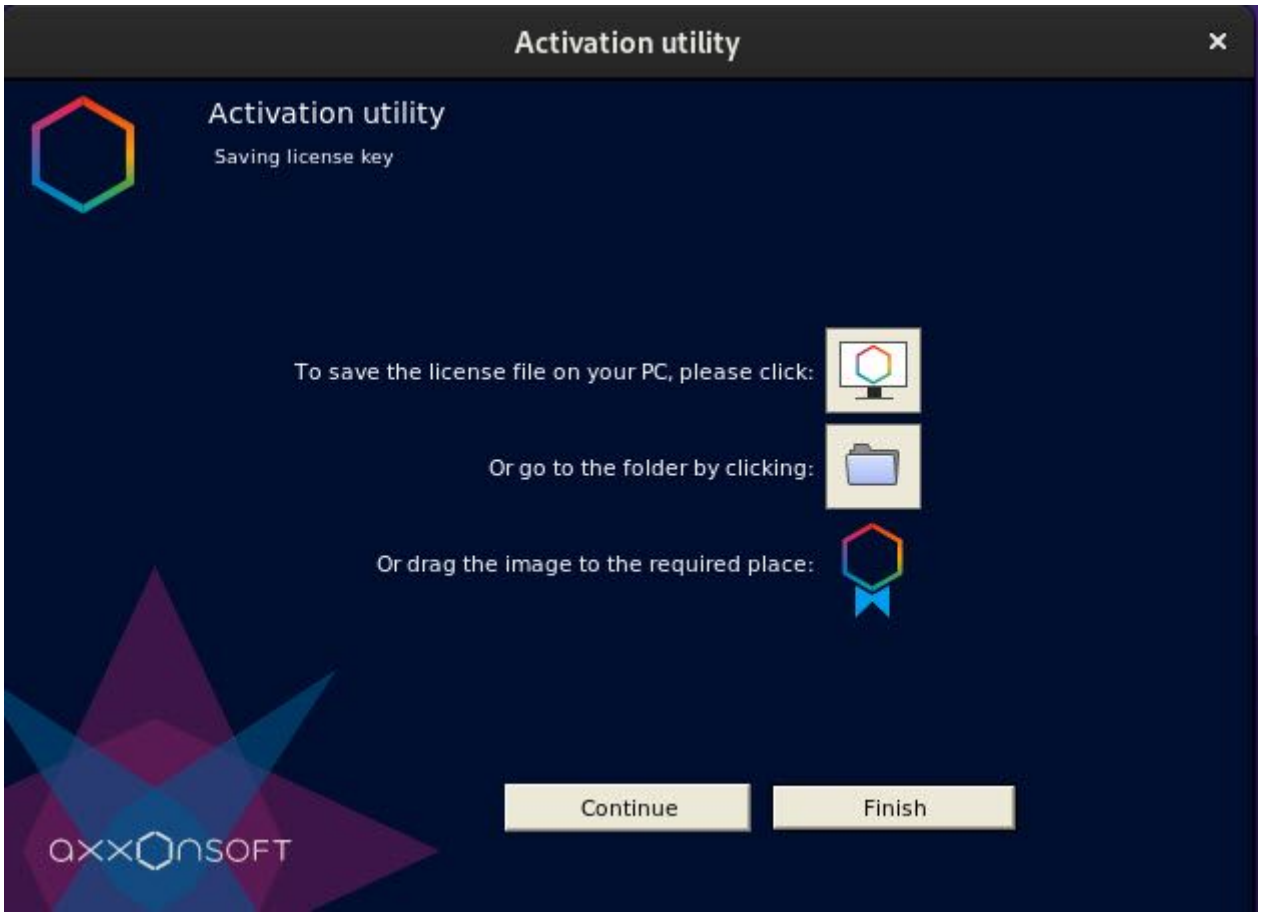
56 https://sale.axxonsoft.com/sale/



Activation of the *Axxon One* free license is complete. To return to the main page of the utility, click the **Continue** button. To exit, click the **Finish** button.

> **Attention!**
>
> To ensure the correct operation of *Axxon One,* you must restart the server after activating the license.

If your computer is offline, you are prompted to save the activation request file using any of the following methods:



1. Click the  button, and in the standard dialog window, specify the storage location and the name of the request file.
2. Click the  button. The folder that contains the request file opens.
3. Drag and drop the  image to the destination folder.

Submit the request file to an AxxonSoft representative. You can also generate a license file on the *licensing service* (see Generating license files via the web interface of the licensing service[57]) and then upload the license file to the system (see Activation by applying a license file in Linux OS(see page 64)).

13.1.5 Activating the Axxon One paid license for Linux OS

You can activate the *Axxon One* paid license according to the following steps:

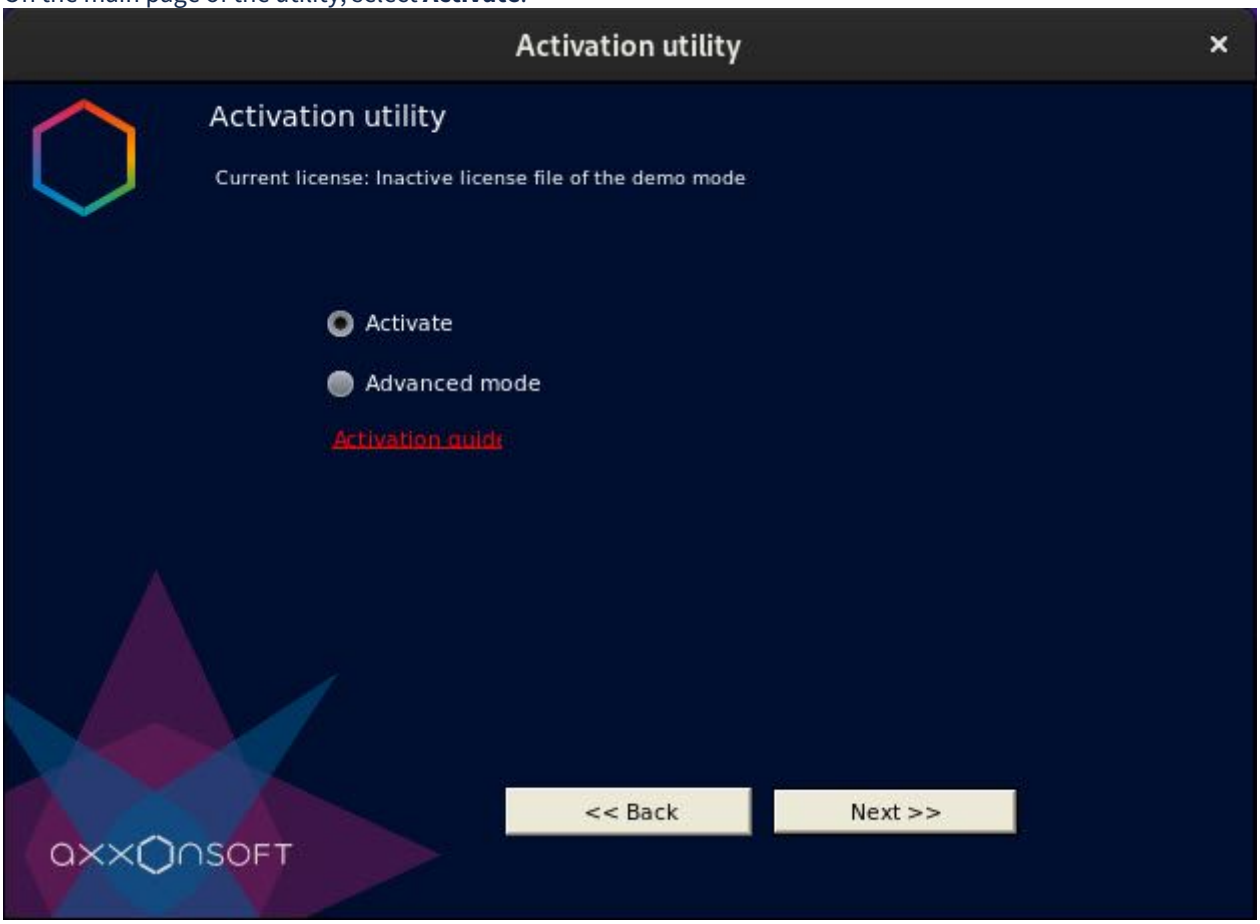
1. Create an activation request file and send it to the AxxonSoft manager (see Creating an activation request in Linux OS(see page 62)).
2. Pay for the order and receive a license file or a serial number.
3. Activate the license (see Activation by applying a license file in Linux OS(see page 64), Activation with a serial number in Linux OS(see page 68)).

57 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246486894/Generating+license+files+via+the+web+interface+of+the+licensing+service

13.1.5.1 Creating an activation request in Linux OS

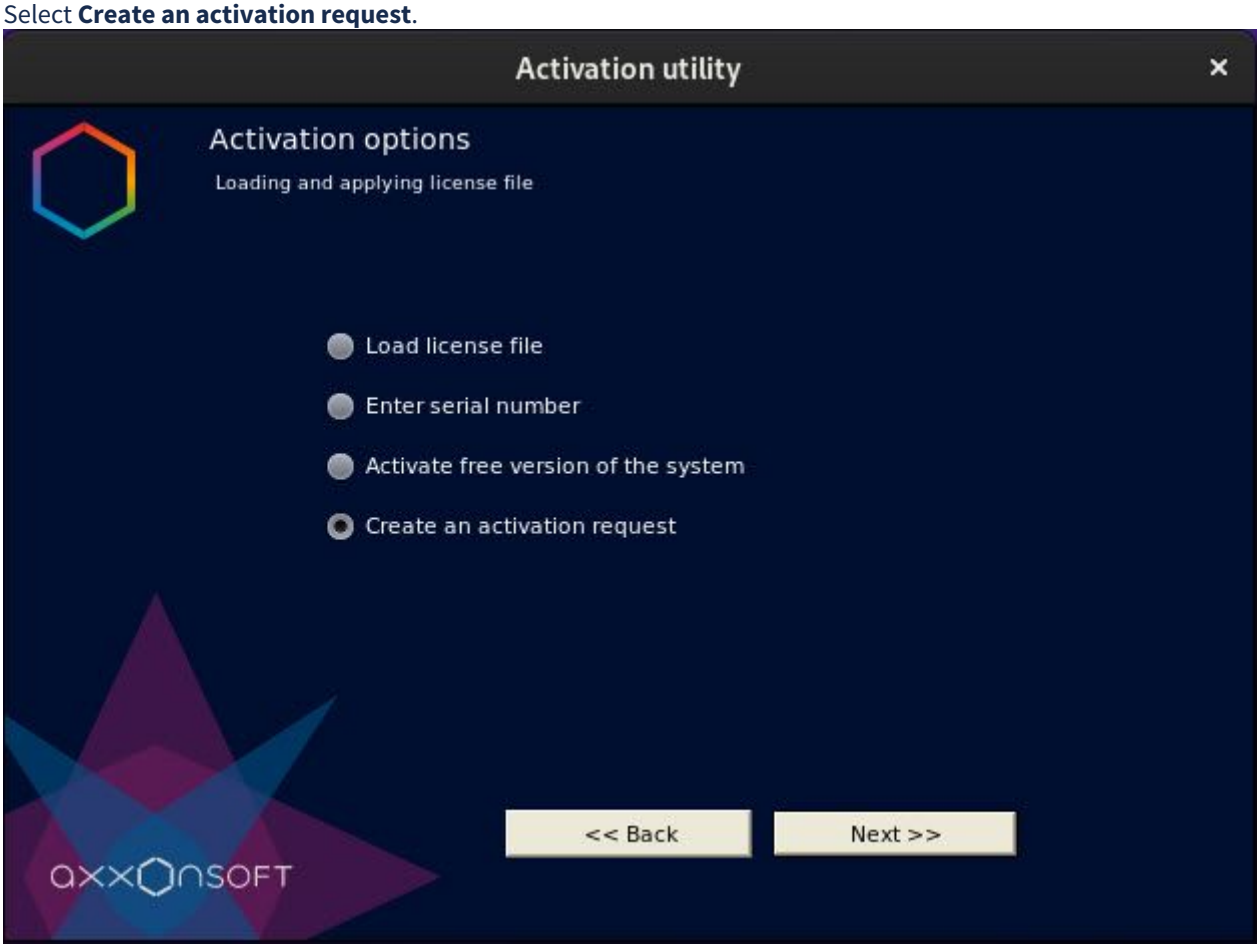
To create an activation request, do the following:

1. In the demo mode, you can add servers to your Axxon-domain if you want to create a distributed security system.
2. Launch the **Activation utility** (see Activation utility for Linux OS(see page 55)).
3. On the main page of the utility, select **Activate**.



4. Click the **Next >>** button.

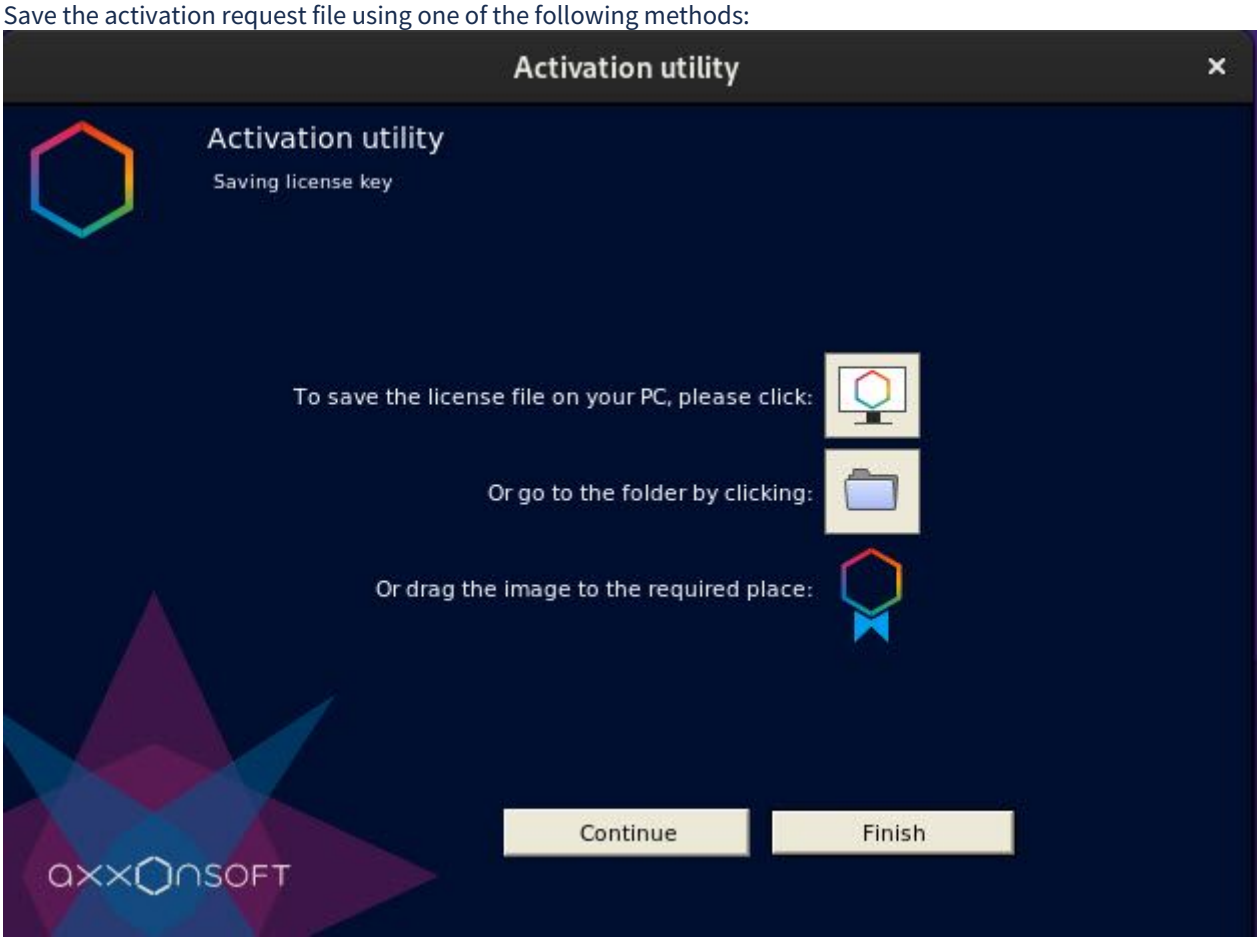
5. Select **Create an activation request**.



6. Click the **Next >>** button.

> **Note**
>
> When you create a request file, all domain servers for which the key is being created must be online. A request file isn't created if at least one of the selected servers is unavailable from the server on which you create a request file.

7. Save the activation request file using one of the following methods:



   a. Click the  button in the standard dialog box to browse for file location and enter the name.

   b. Click the  button. The folder that contains the request file opens.

   c. Drag and drop the  image to the destination folder.

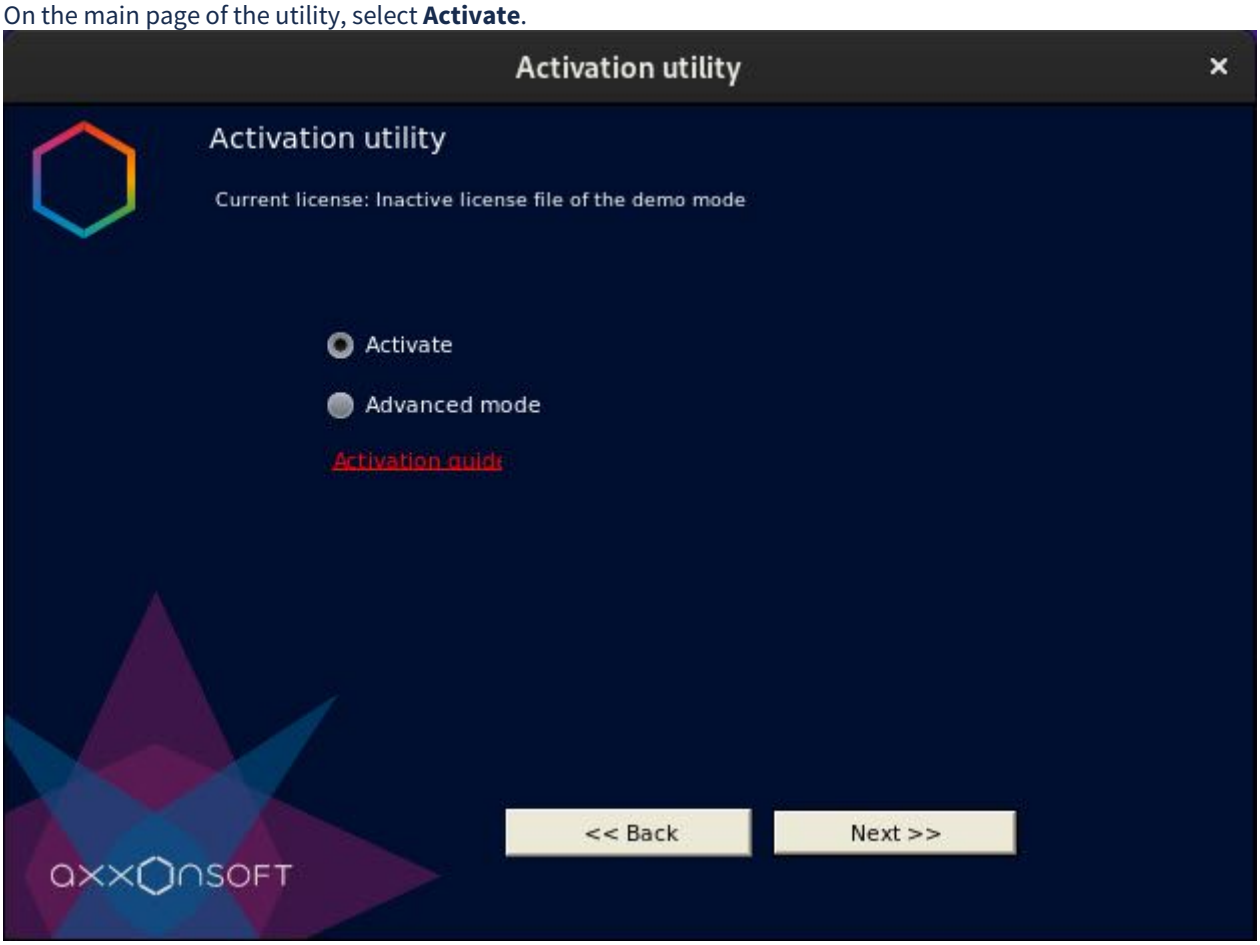
You have created an activation request file. To return to the main page of the utility, click the **Continue** button. To exit, click the **Finish** button.

13.1.5.2 Activation by applying a license file in Linux OS

If you have a license file, you can activate the *Axxon One* license as follows:

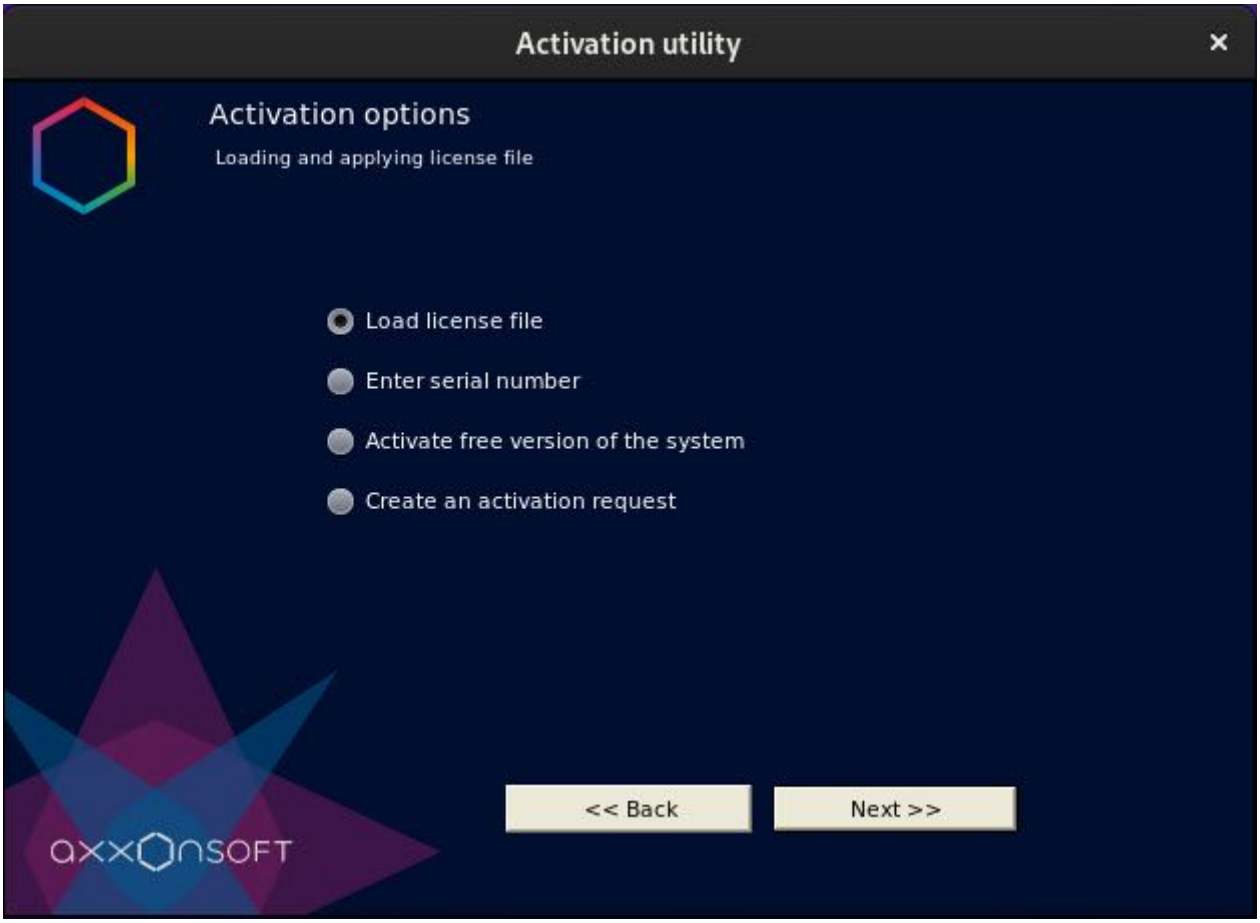
1. Launch the **Activation utility** (see Activation utility for Linux OS(see page 55)).

2. On the main page of the utility, select **Activate**.



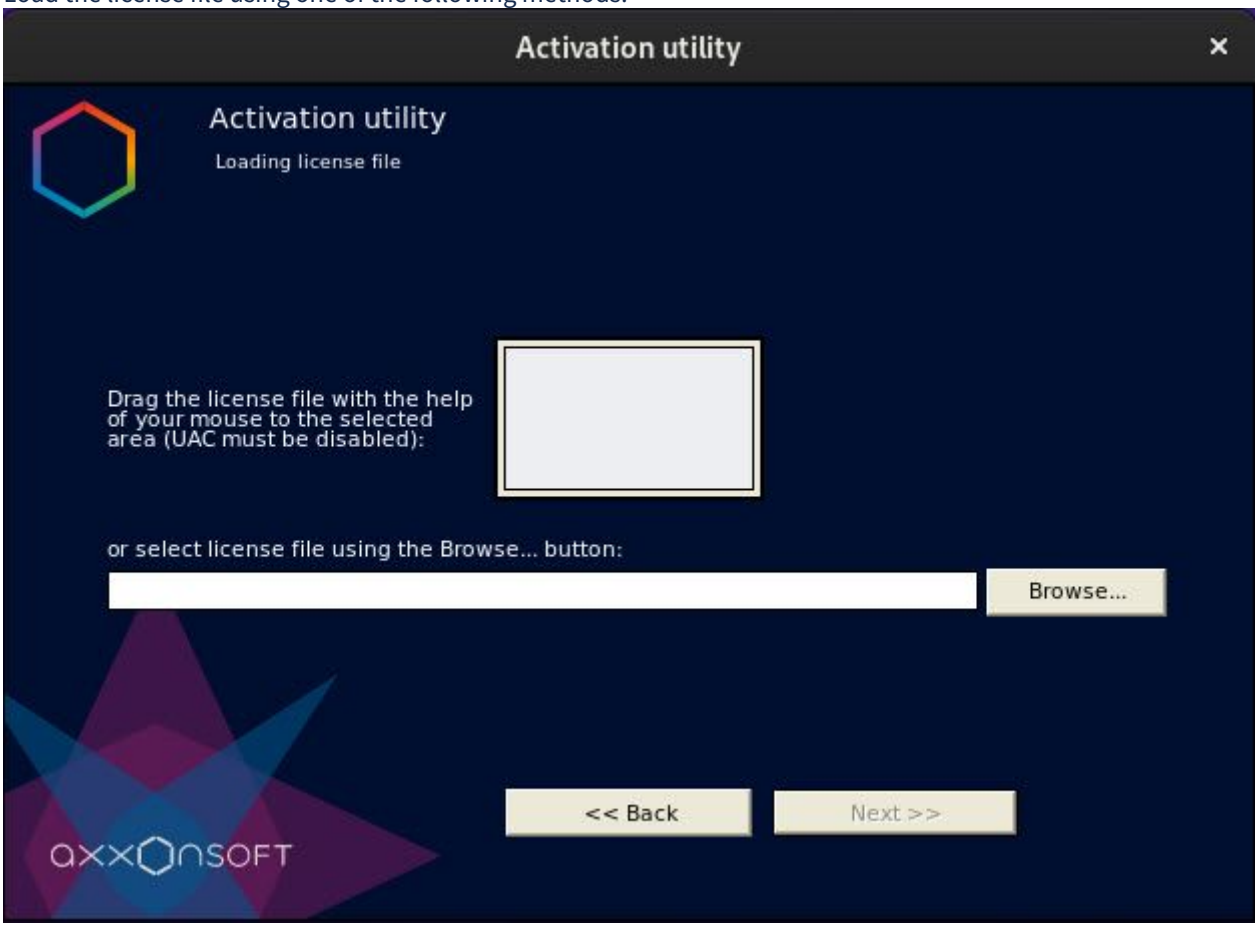
3. Click the **Next >>** button.

4. Select **Load license file**.



5. Click the **Next >>** button.

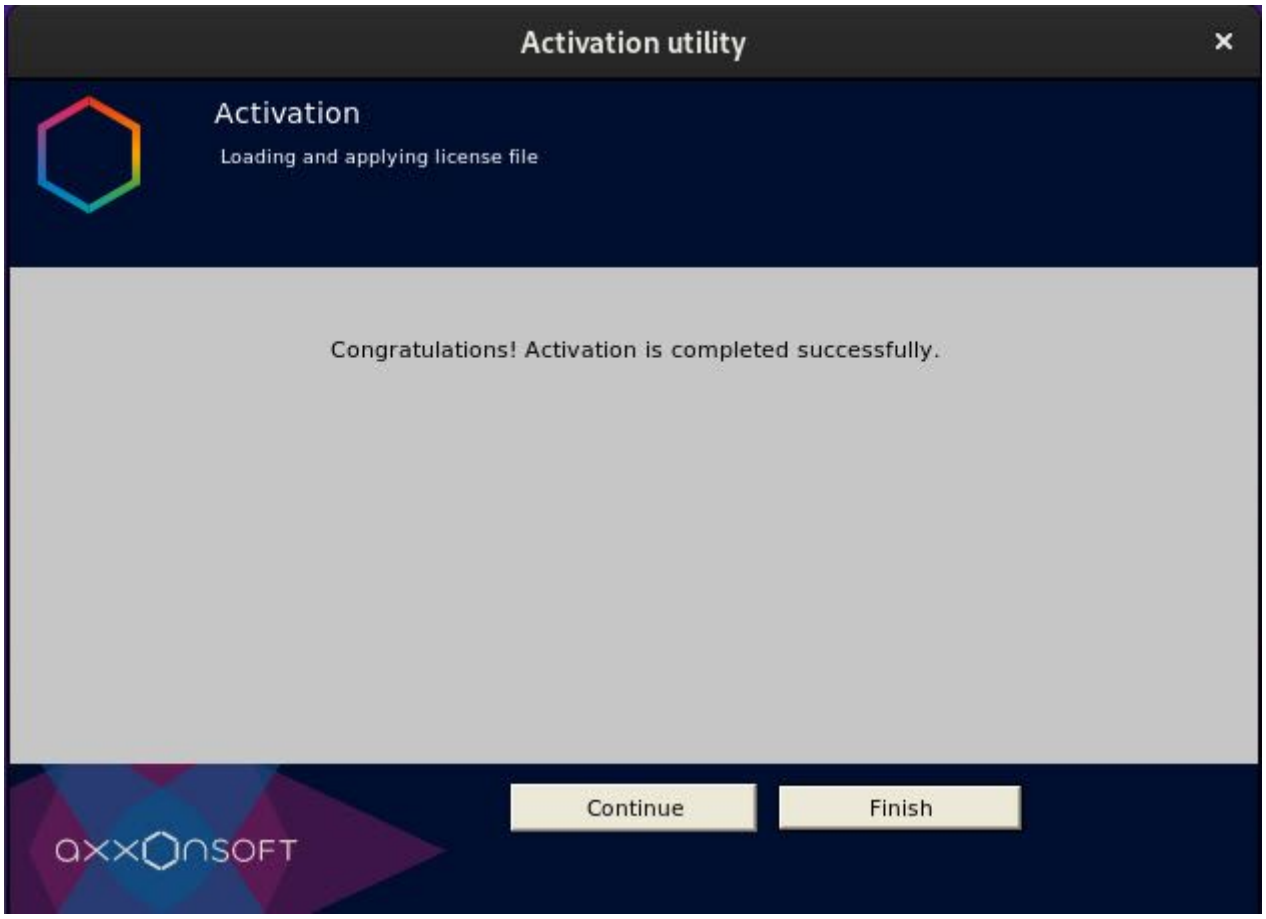
6. Load the license file using one of the following methods:



   a. Drag and drop the license file to the selected area.
   b. Click the **Browse...** button and select a license file.
7. Click the **Next >>** button. The license file is uploaded to the system.

> **Attention!**
>
> The system configuration (number of servers, video channels, and detectors) at the time of activation must not exceed the functionality specified in the license file.

If activation is completed successfully, a message is displayed.



You have activated the *Axxon One* license. To return to the main page of the utility, click the **Continue** button. To exit, click the **Finish** button.

Attention!

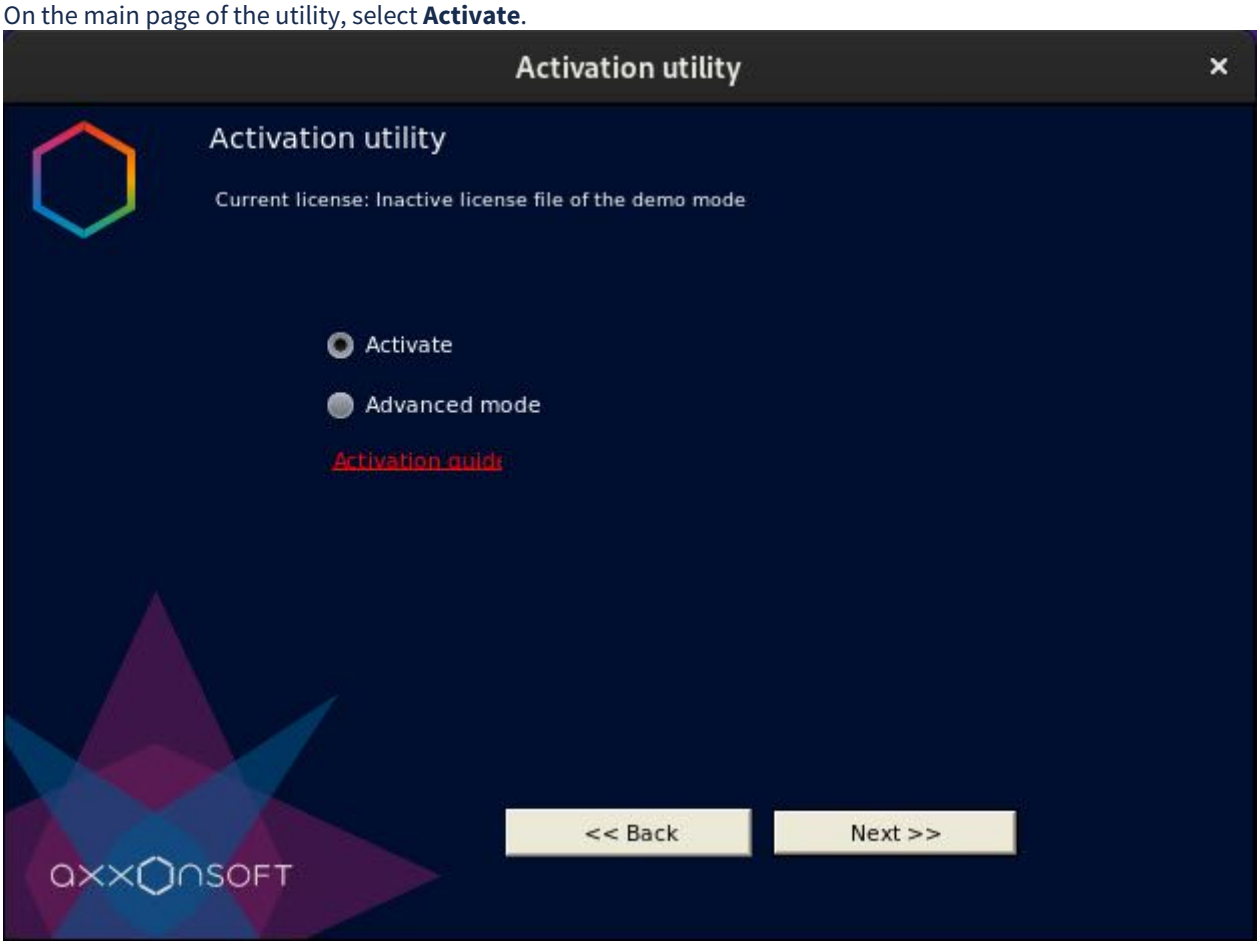
To ensure the correct operation of *Axxon One,* you must restart the server after activating the license.

13.1.5.3 Activation with a serial number in Linux OS

If you have a serial number, you can activate the *Axxon One* license as follows:

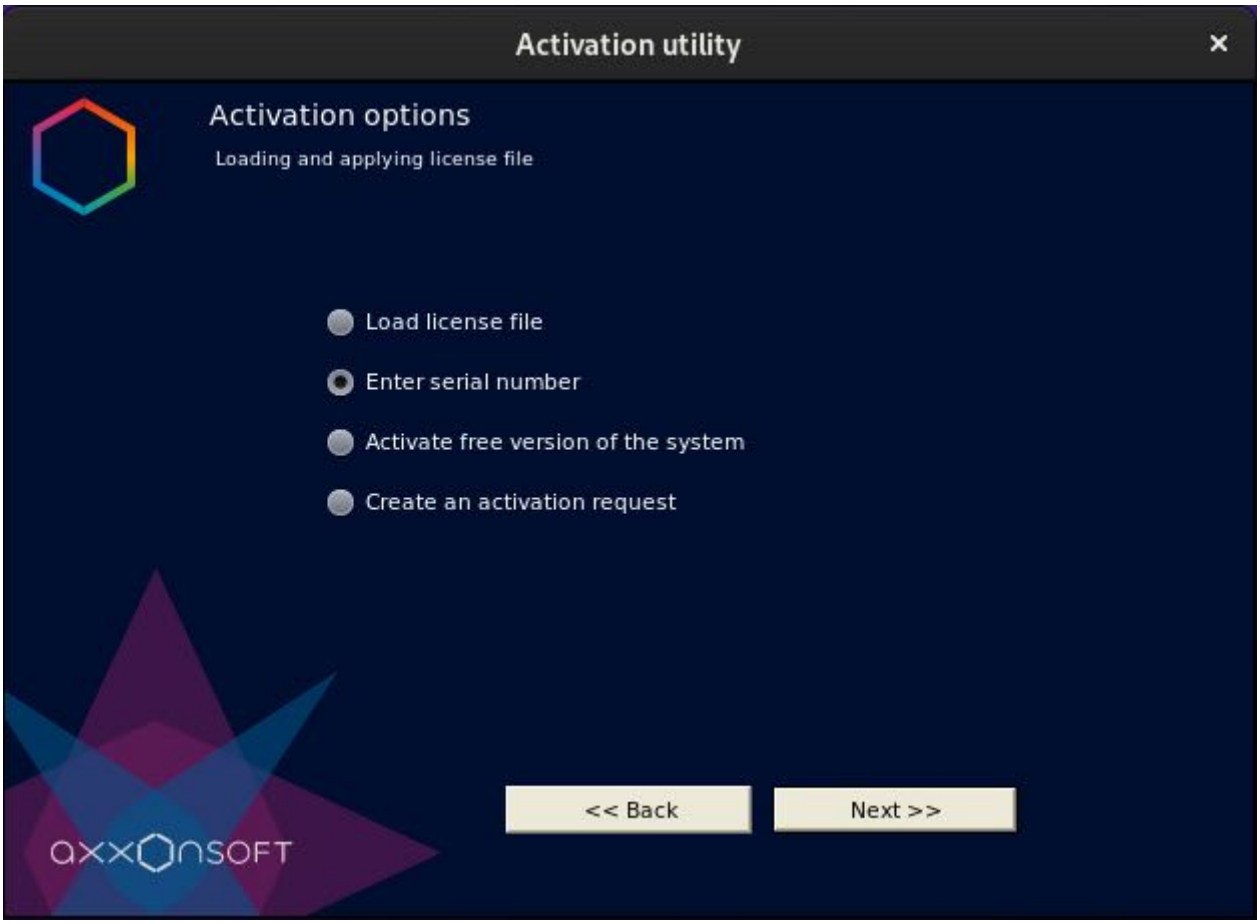
1. Launch the **Activation utility** (see Activation utility for Linux OS(see page 55)).

2. On the main page of the utility, select **Activate**.



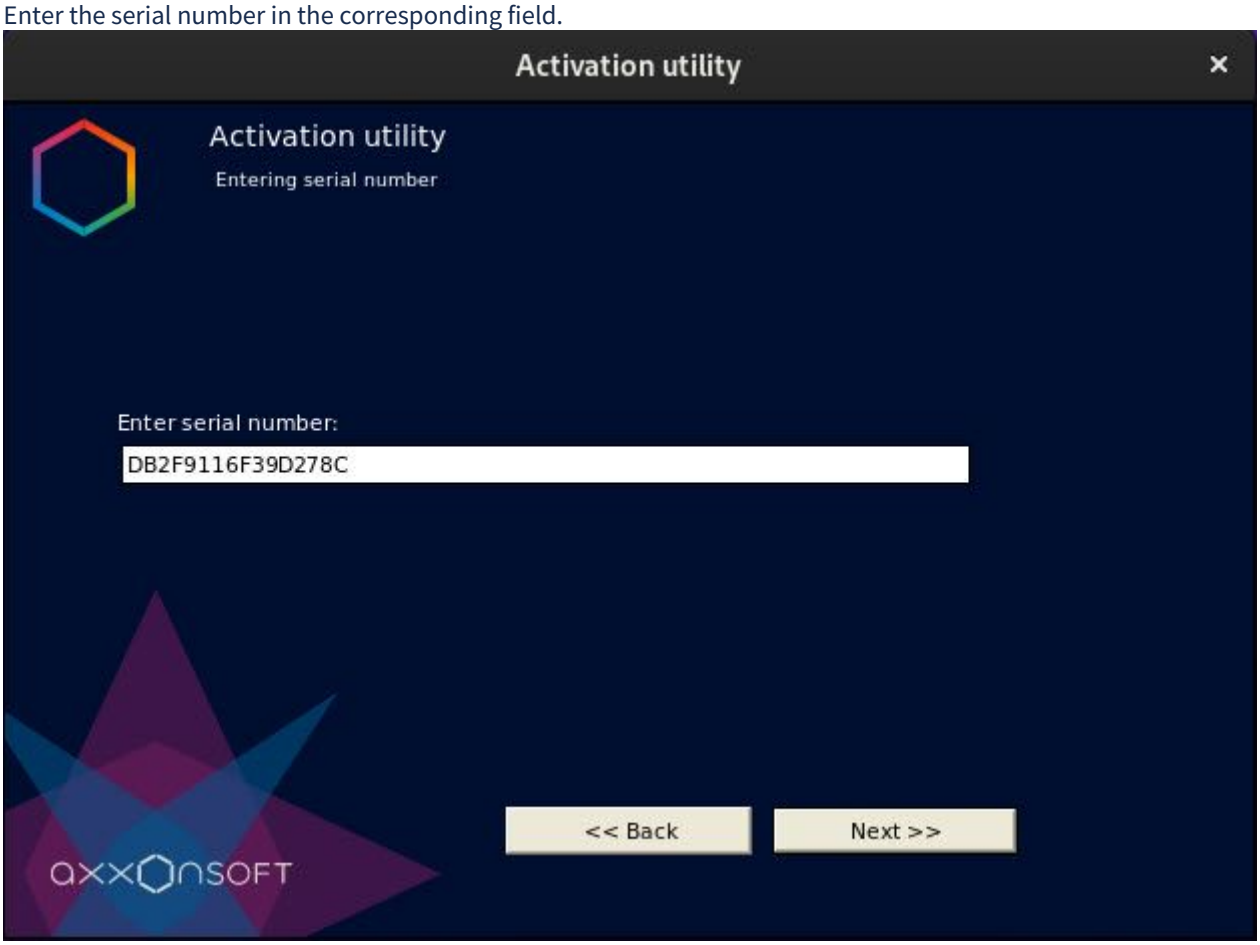
3. Click the **Next >>** button.

4. Select **Enter serial number**.



5. Click the **Next >>** button.

6. Enter the serial number in the corresponding field.



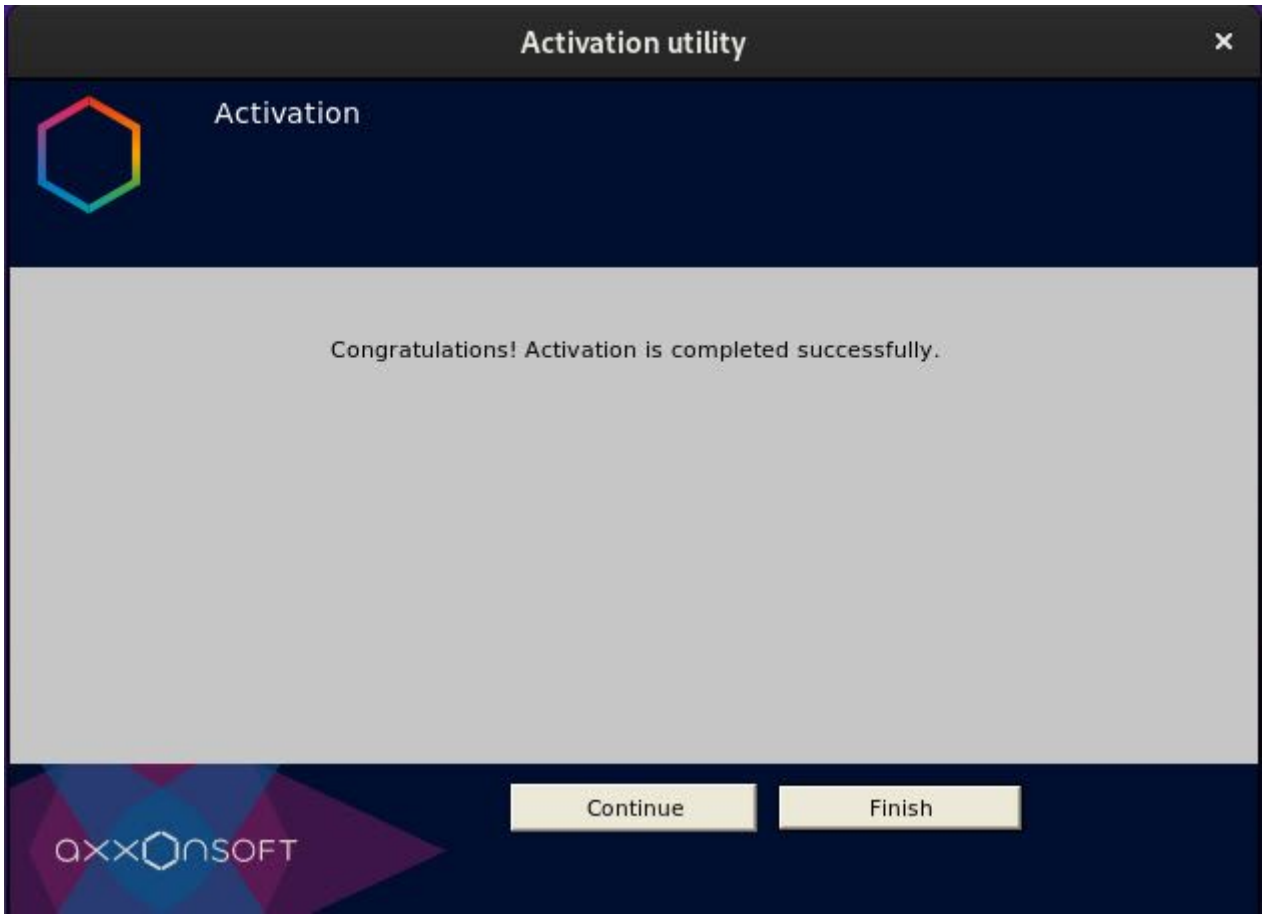
7. Click the **Next >>** button.
8. If there is more than one server in the Axxon-domain or in the license file, a window opens that shows the maximum number of modules for activation (see Creating an activation request in Linux OS(see page 62)). By default, the modules are divided equally between the servers.

> **Attention!**
>
> If there is only one computer in the license file and domain, all purchased modules are automatically activated on it.

9. Select the number of modules to activate and click the **Next >>** button.

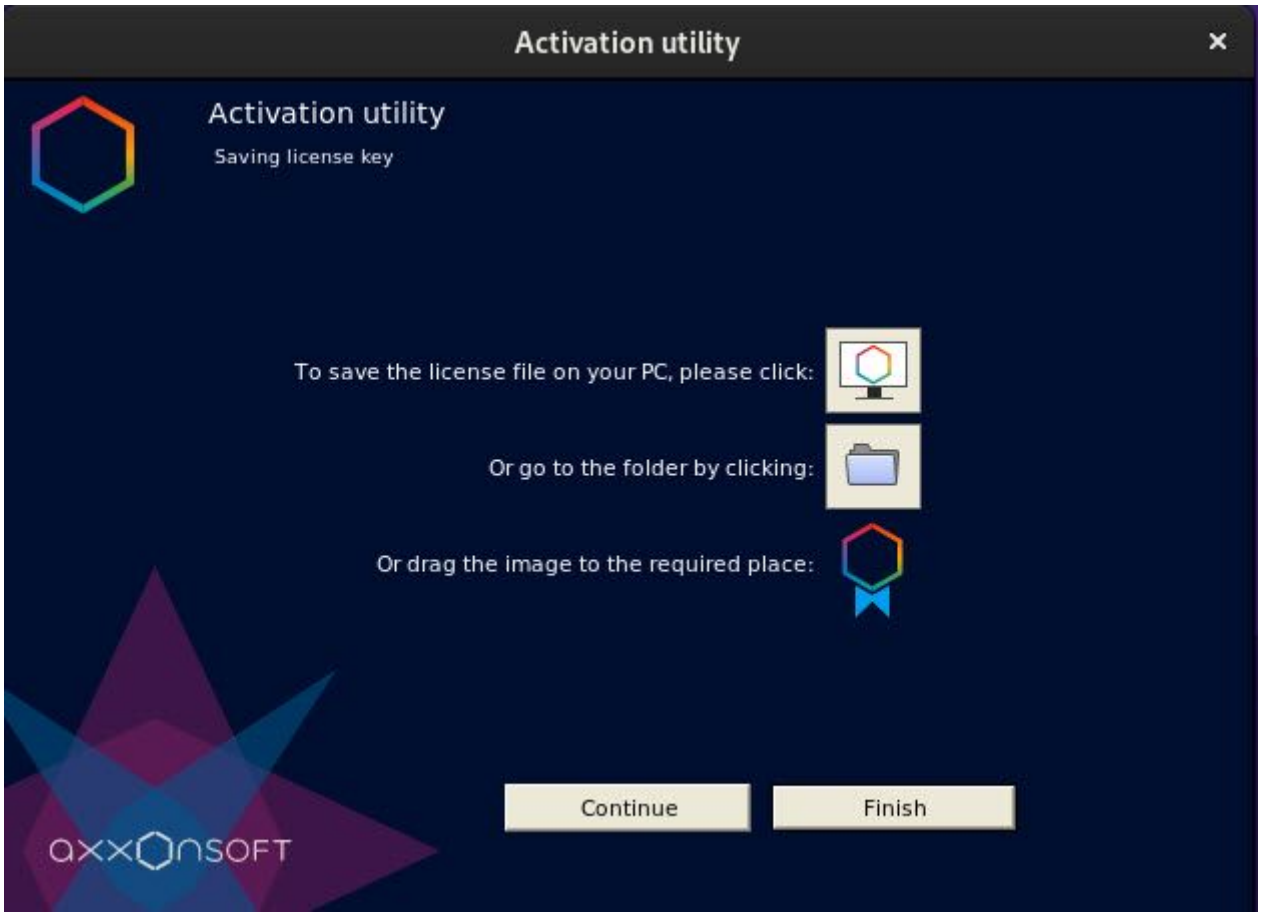
Your activation request is sent online.

If activation is completed successfully on the *licensing service* (https://sale.axxonsoft.com/), the license file is automatically downloaded and distributed within the system.



You have activated the *Axxon One* license. To return to the main page of the utility, click the **Continue** button. To exit, click the **Finish** button.

If your computer is offline, you are prompted to save the activation request file using any of the following methods:



1. Click the  button, and in the standard dialog window, specify the storage location and the name of the request file.
2. Click the  button. The folder that contains the request file opens.
3. Drag and drop the  image to the destination folder.

Submit the request file to an AxxonSoft representative. You can also generate a license file on the *licensing service* (see Generating license files via the web interface of the licensing service[58]) and then download the license file to the system (see Activation by applying a license file in Linux OS(see page 64)).

Attention!

To ensure the correct operation of *Axxon One,* you must restart the server after activating the license.

13.1.6 Updating the Axxon One license in Linux OS

To update the *Axxon One* license, do the following:

1. Deactivate the installed license (see Deactivating a license in Linux OS(see page 74)).
2. Create an activation request (see Creating an activation request in Linux OS(see page 62)). Proceed with payment.

58 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246486894/Generating+license+files+via+the+web+interface+of+the+licensing+service

> **Note**
>
> Skip this step if you want to activate already purchased system features.

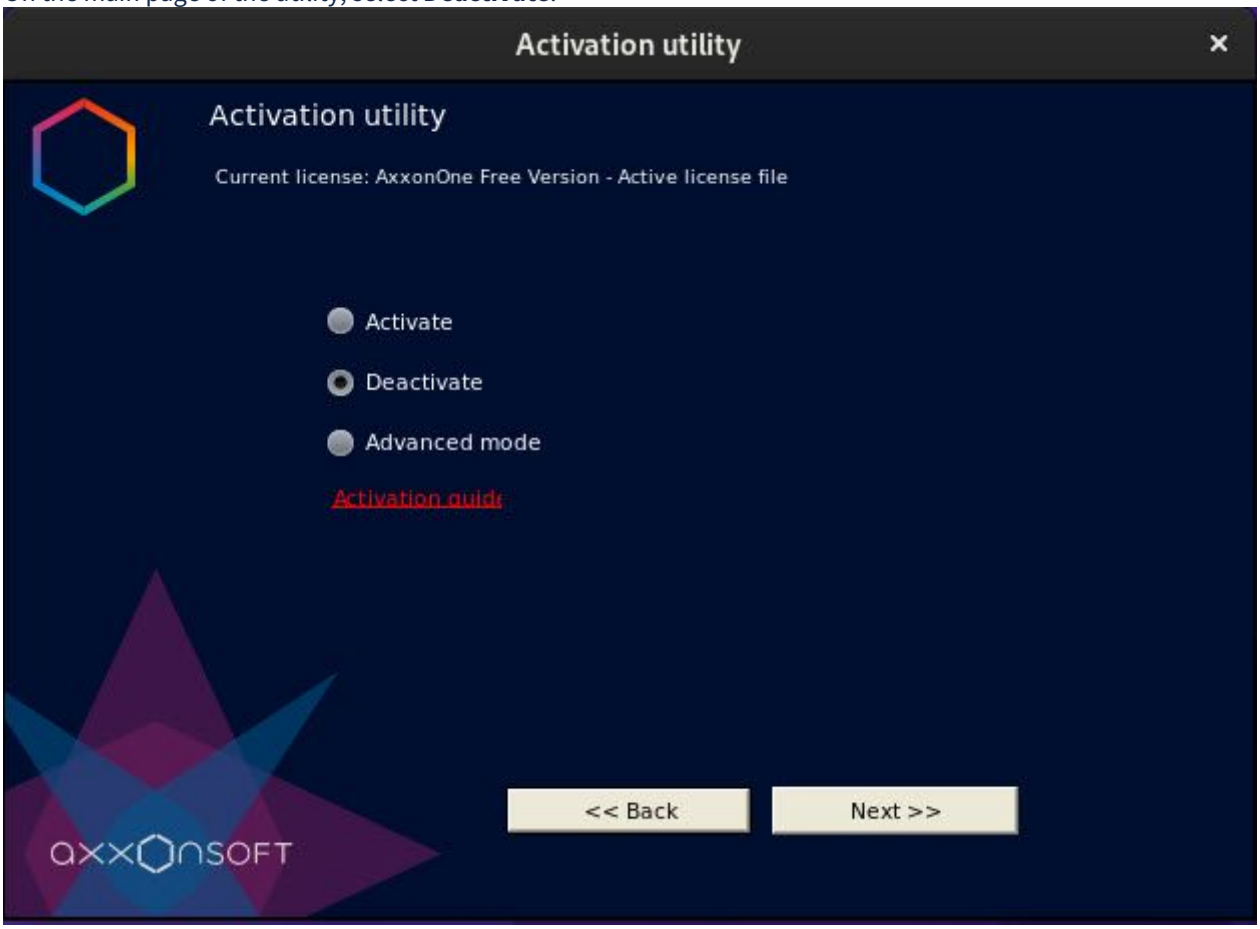
3. Activate your purchased license (see Activation by applying a license file in Linux OS(see page 64), Activation with a serial number in Linux OS(see page 68)).

As a result, the *Axxon One* license is updated.

13.1.7 Deactivating a license in Linux OS

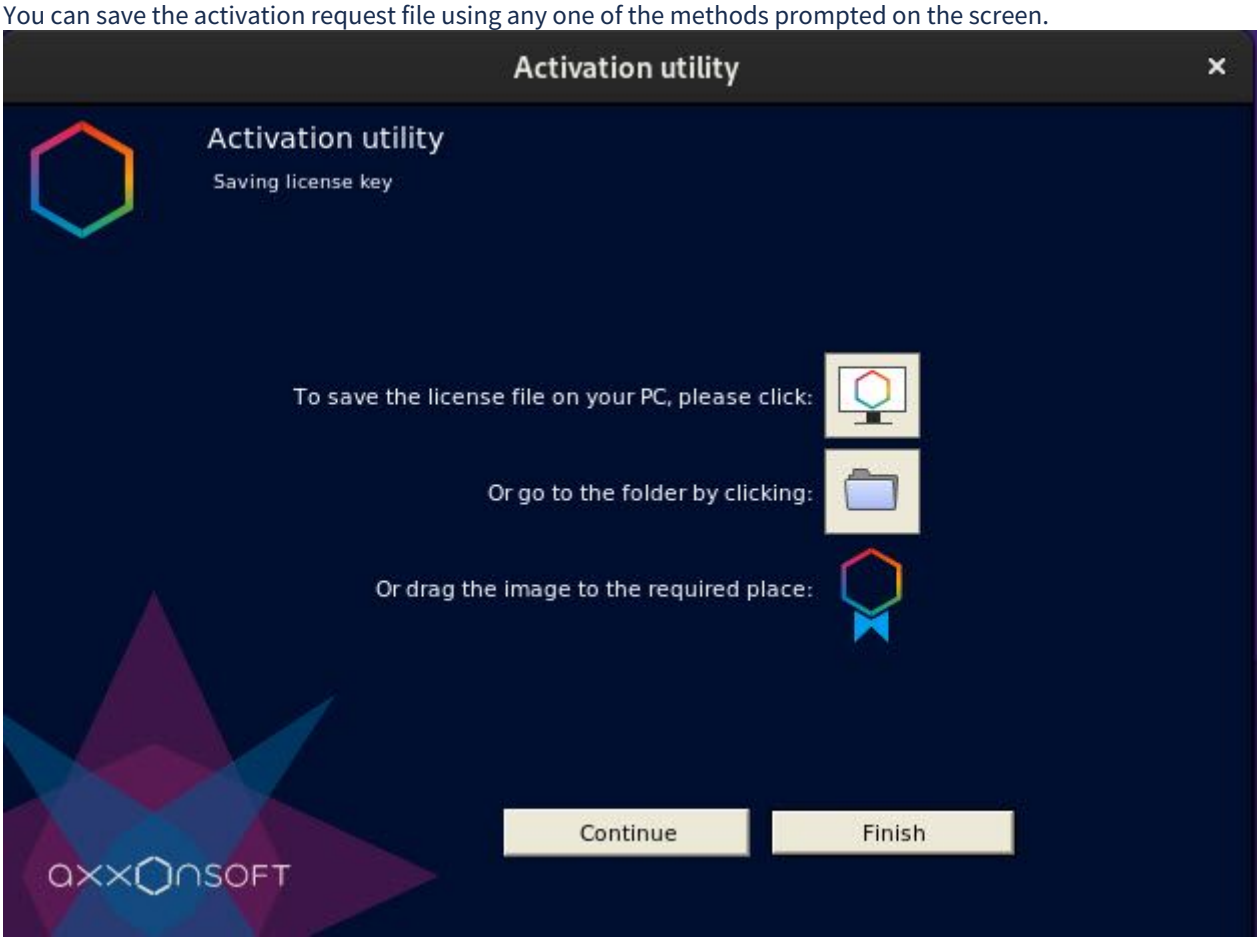
To delete the license file from the system, do the following:

1. Launch the **Activation utility** (see Activation utility for Linux OS(see page 55)).
2. On the main page of the utility, select **Deactivate**.



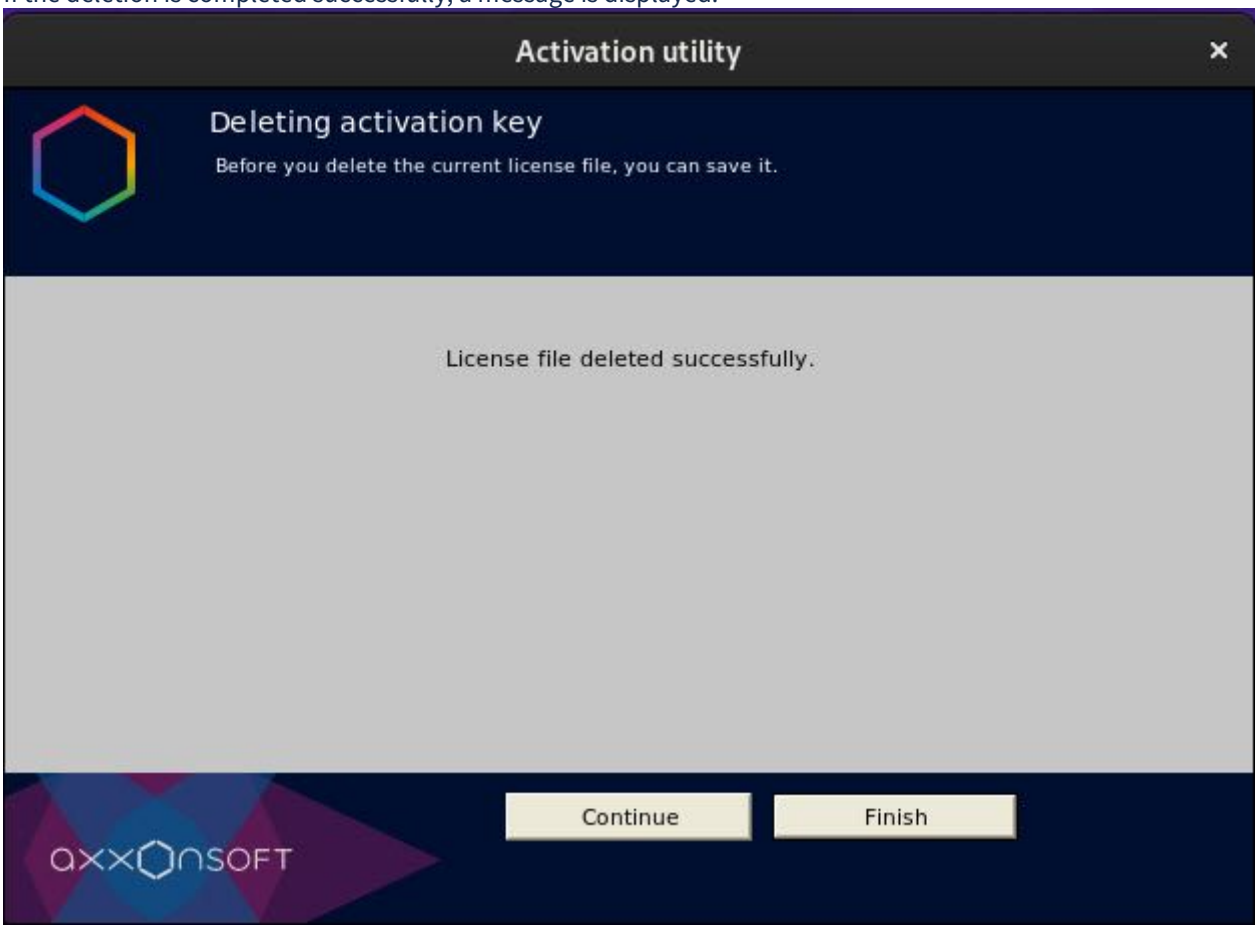
3. Click the **Next >>** button.

4. You can save the activation request file using any one of the methods prompted on the screen.



5. Click the **Continue** button.

6. Confirm the deletion of a license file.
   If the deletion is completed successfully, a message is displayed.



You have deleted a license file. After deleting the license file from the system, the demo license is activated. To return to the main page of the utility, click the **Continue** button. To exit, click the **Finish** button.

> **Attention!**
>
> To ensure the correct operation of *Axxon One*, you must restart the server after deactivating the license.

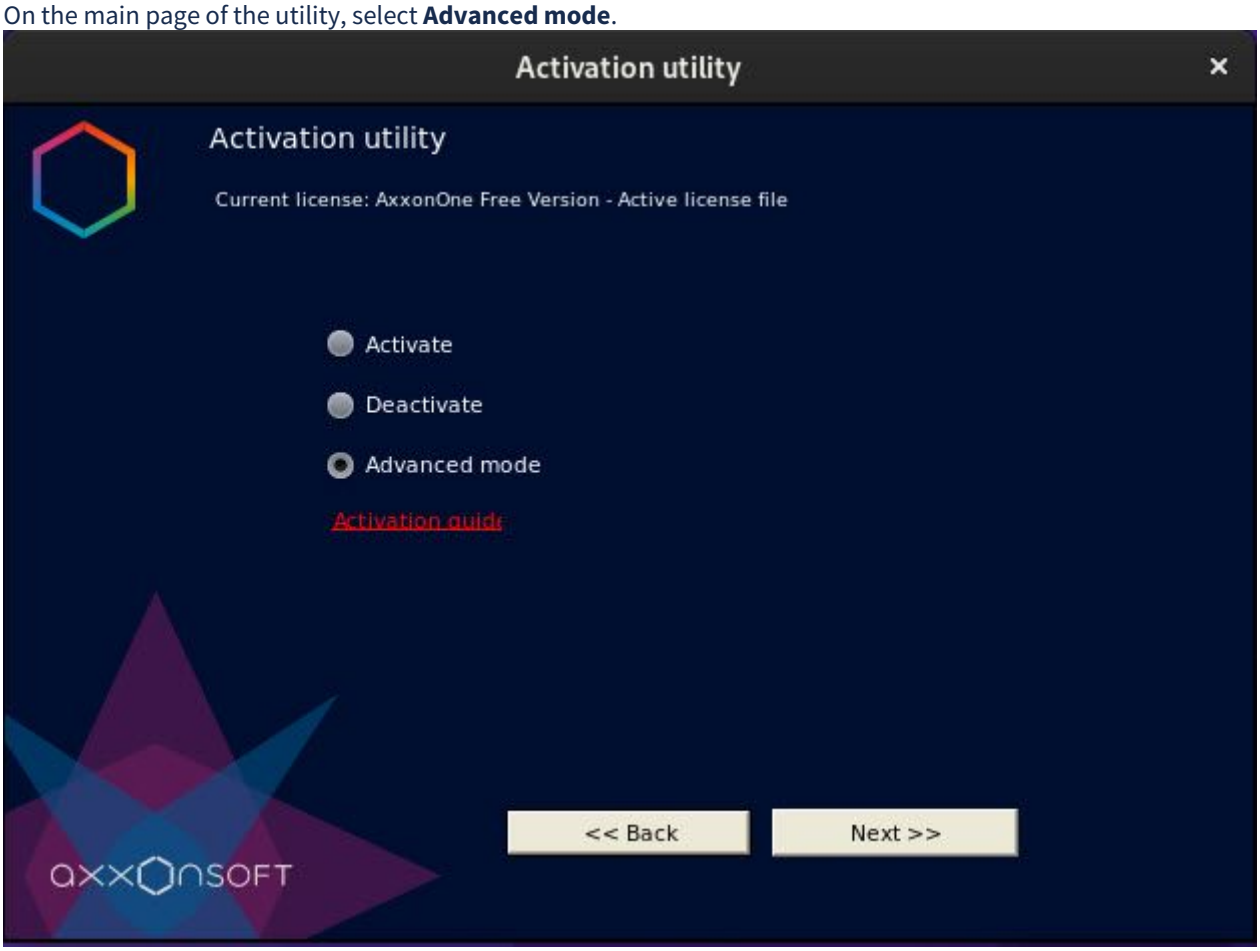
13.2 Additional actions in the Activation utility for Linux OS

13.2.1 Saving the license file in Linux OS

To save the license file, do the following:

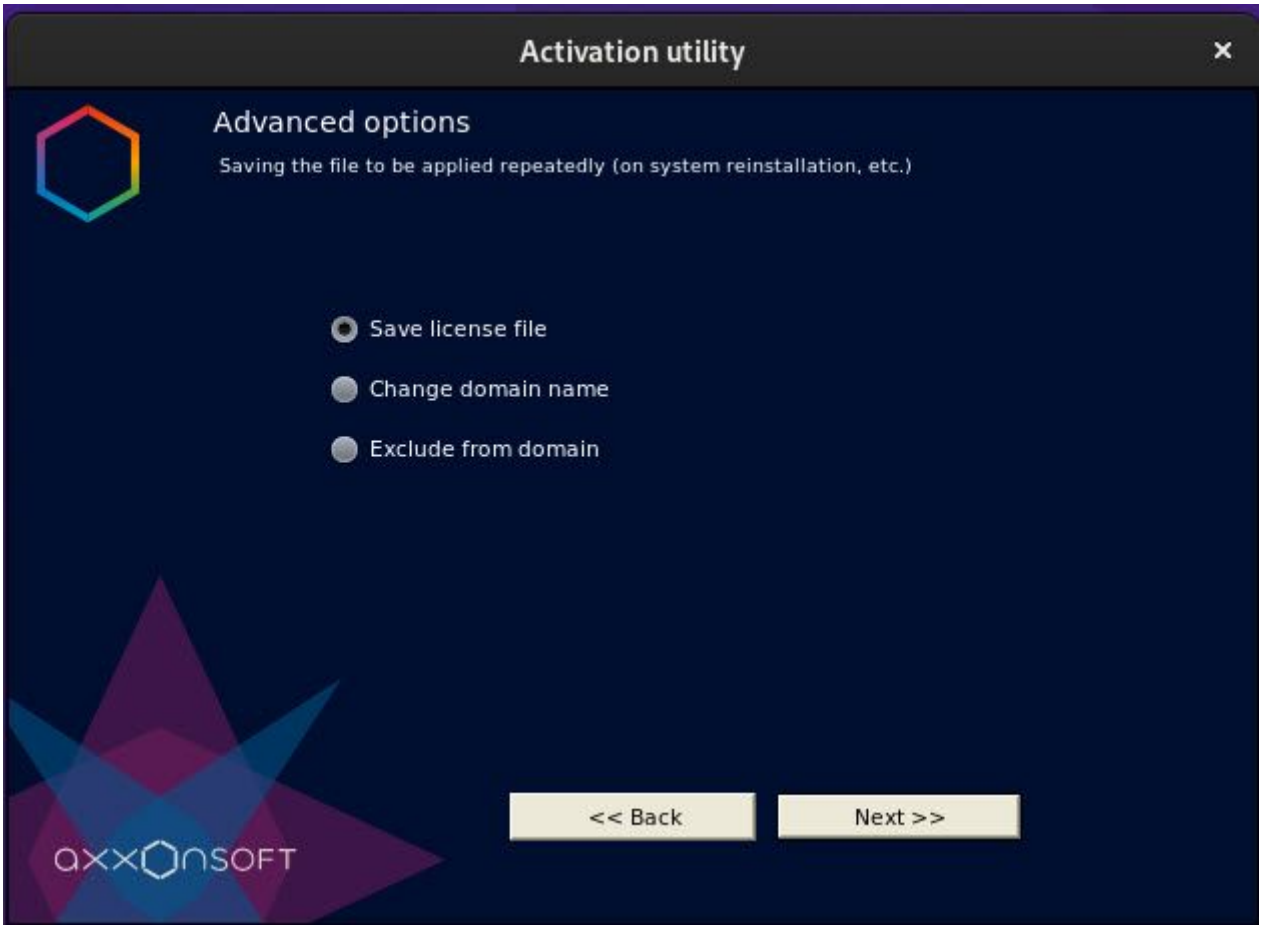
1. Launch the **Activation utility** (see Activation utility for Linux OS(see page 55)).

2. On the main page of the utility, select **Advanced mode**.



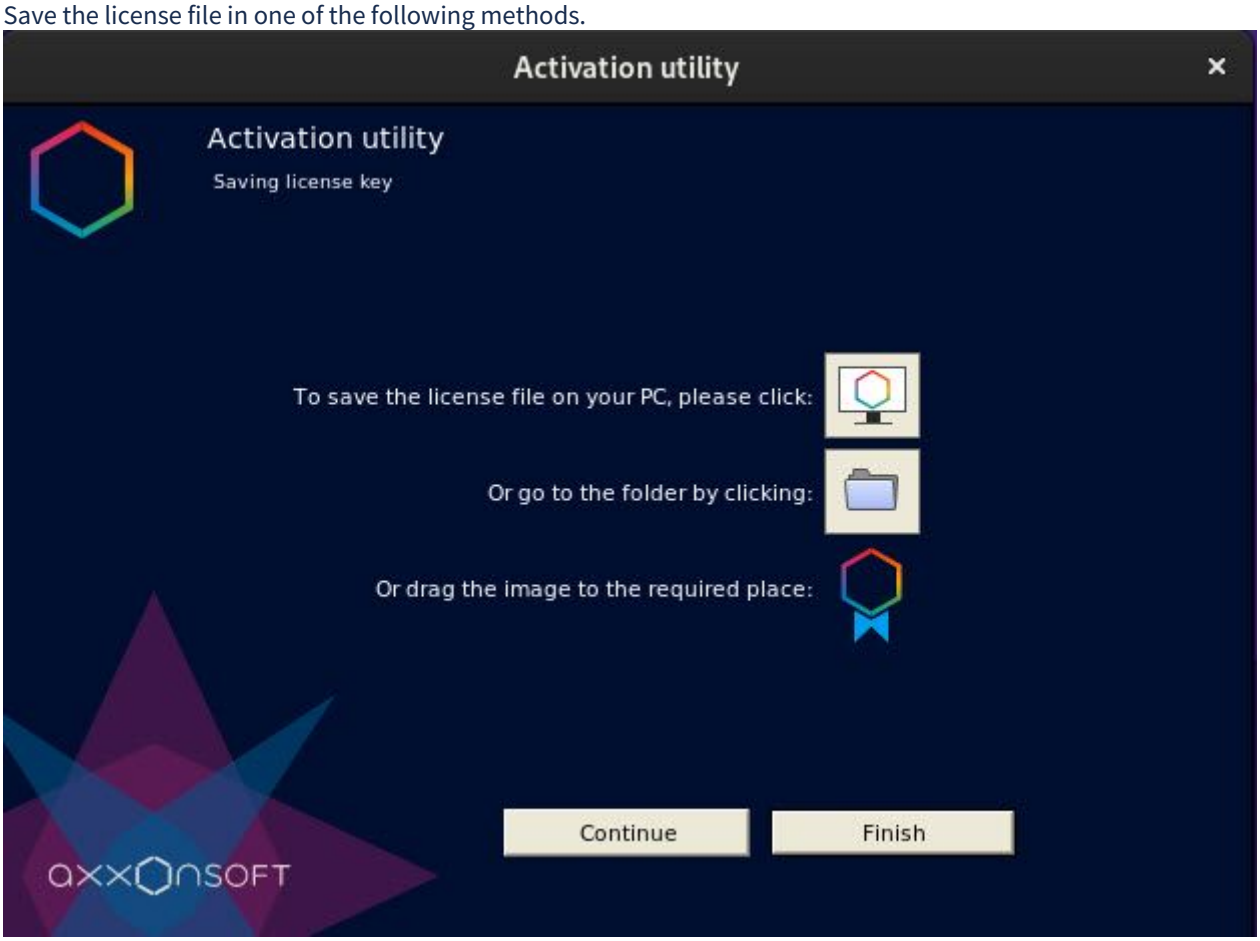
3. Click the **Next >>** button.

4. Select **Save license file**.



5. Click the **Next >>** button.

6. Save the license file in one of the following methods.



   a. Click the  button in the standard dialog box to browse for file location and enter the name.

   b. Click the  button. The folder that contains the request file opens.

   c. Drag and drop the  image to the destination folder.

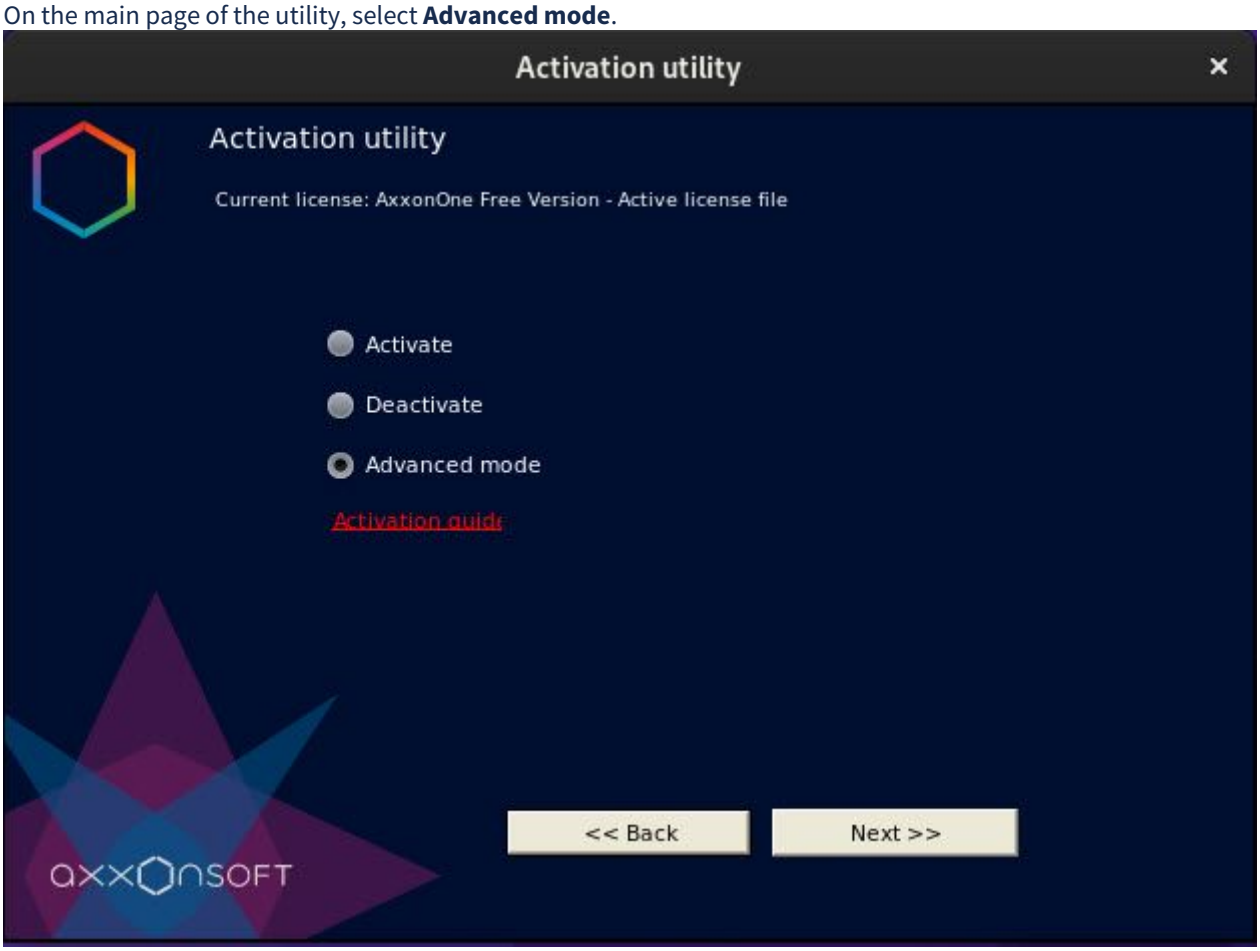
Saving the license file is complete. To return to the main page of the utility, click the **Continue** button. To exit, click the **Finish** button.

13.2.2 Changing the domain name in Linux OS

To change the domain name set when you install the system, do the following:

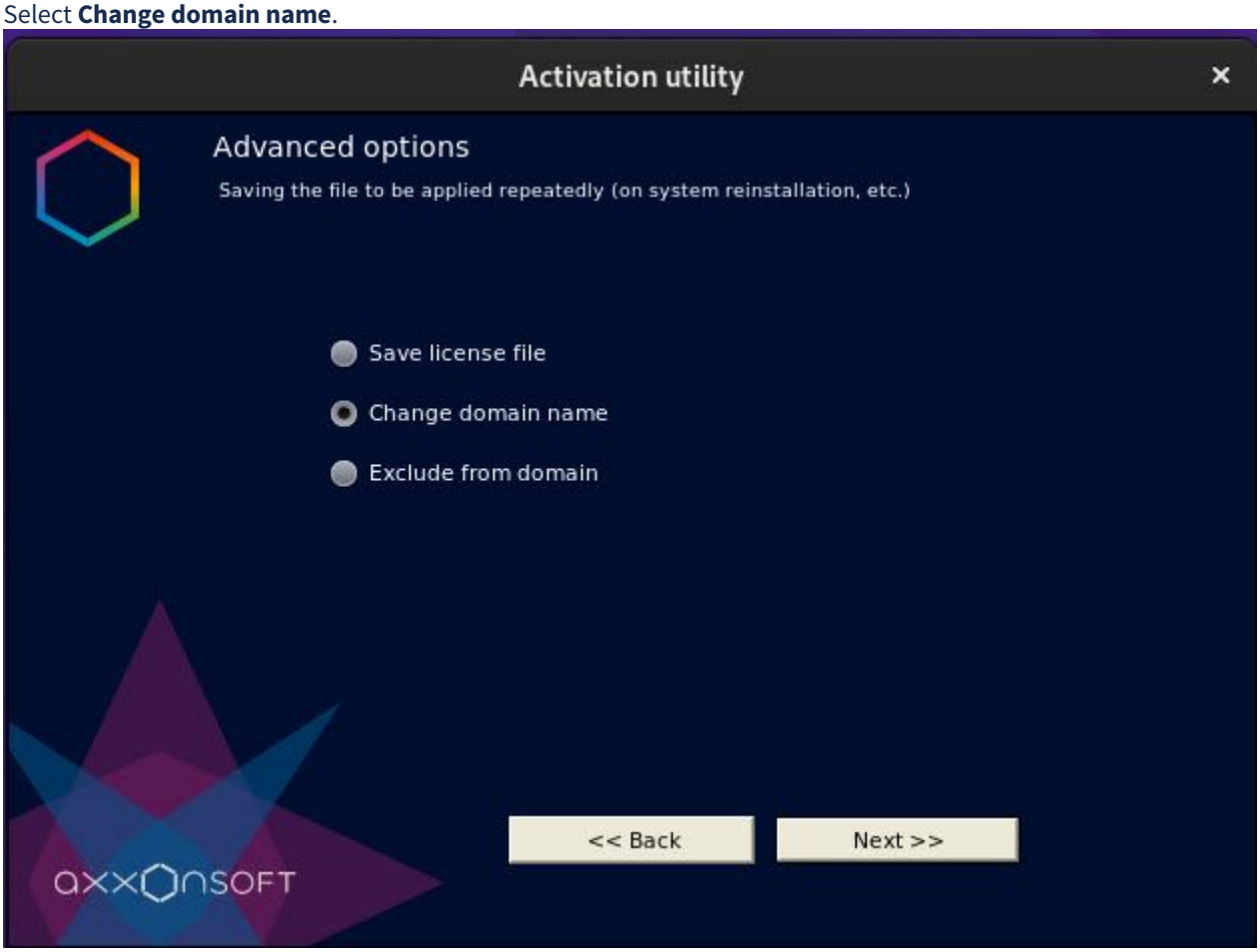
1. Launch the **Activation utility** (see Activation utility for Linux OS(see page 55)).

2. On the main page of the utility, select **Advanced mode**.



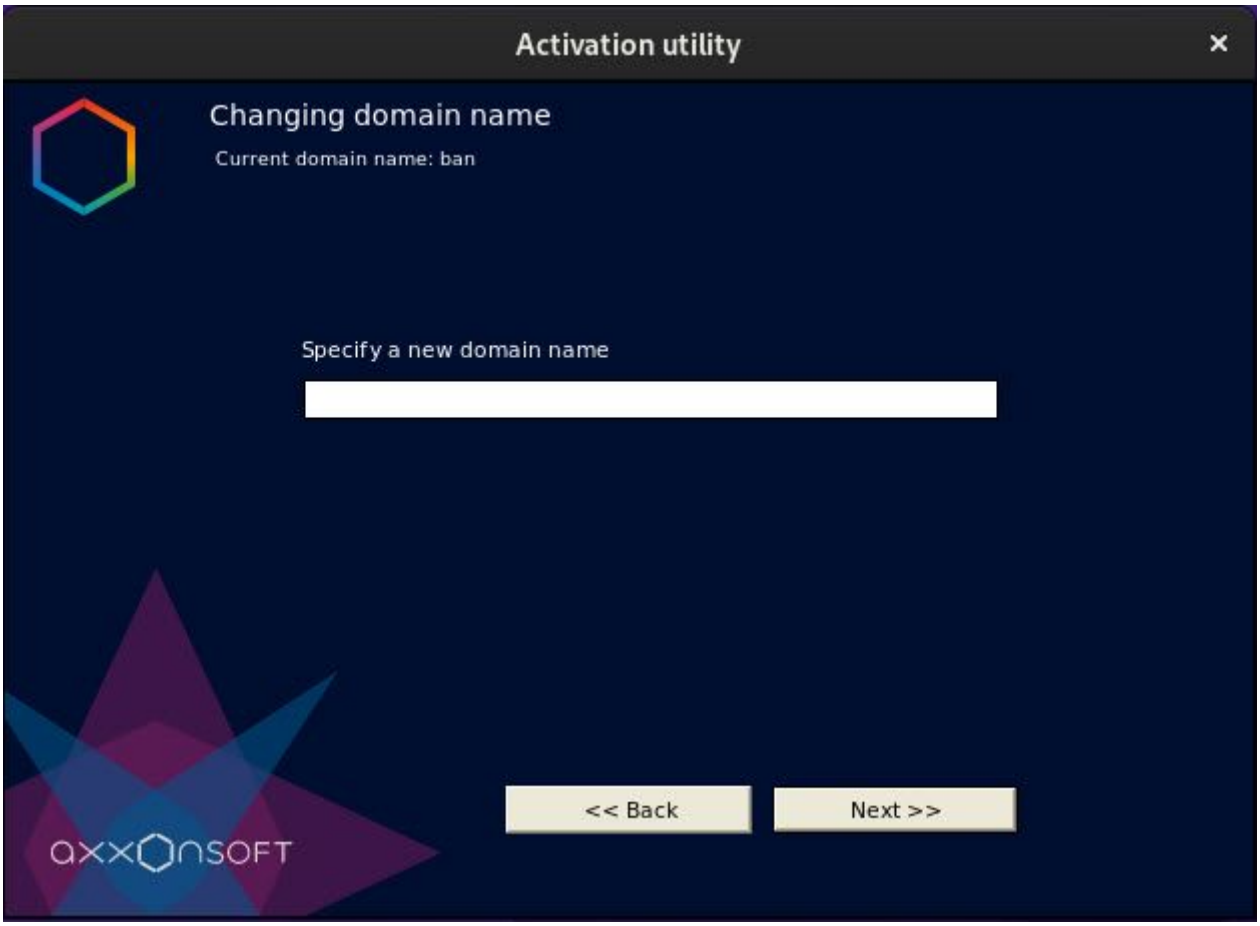
3. Click the **Next >>** button.

4. Select **Change domain name**.



5. Click the **Next >>** button.
6. Specify a new domain name and click the **Next >>** button.

> **Note**
>
> The domain name can only contain Latin letters, Arabic numerals, and the dash sign "–". The dash sign cannot be the first or last character in the name.



If the operation is successful, a message is displayed indicating that the domain has been successfully renamed.

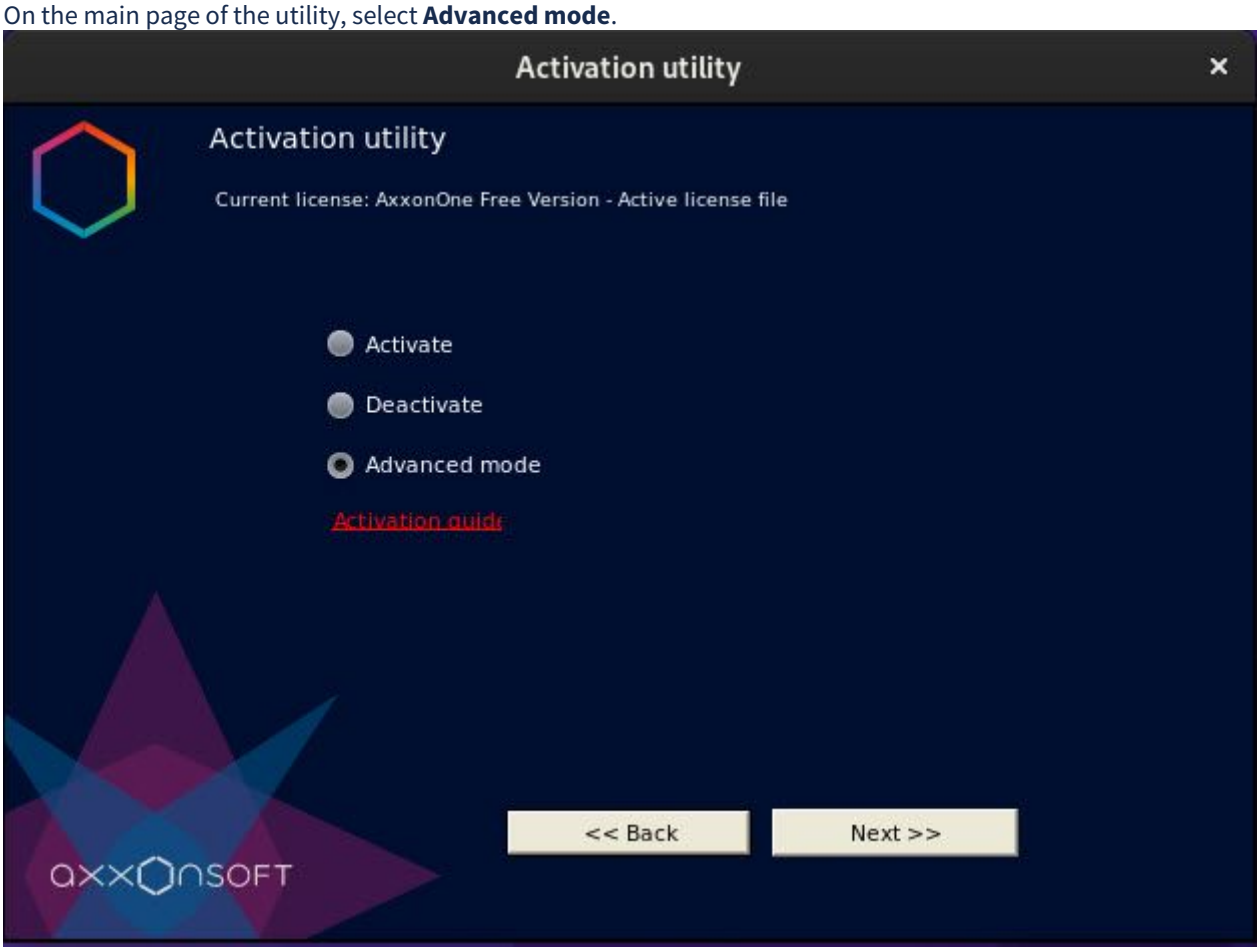
Changing the domain name is complete. To return to the main page of the utility, click the **Continue** button. To exit, click the **Finish** button.

13.2.3 Excluding the current server from a domain in Linux OS

You can exclude a server from the domain to which it is currently connected in the Activation utility. To do this, do the following:

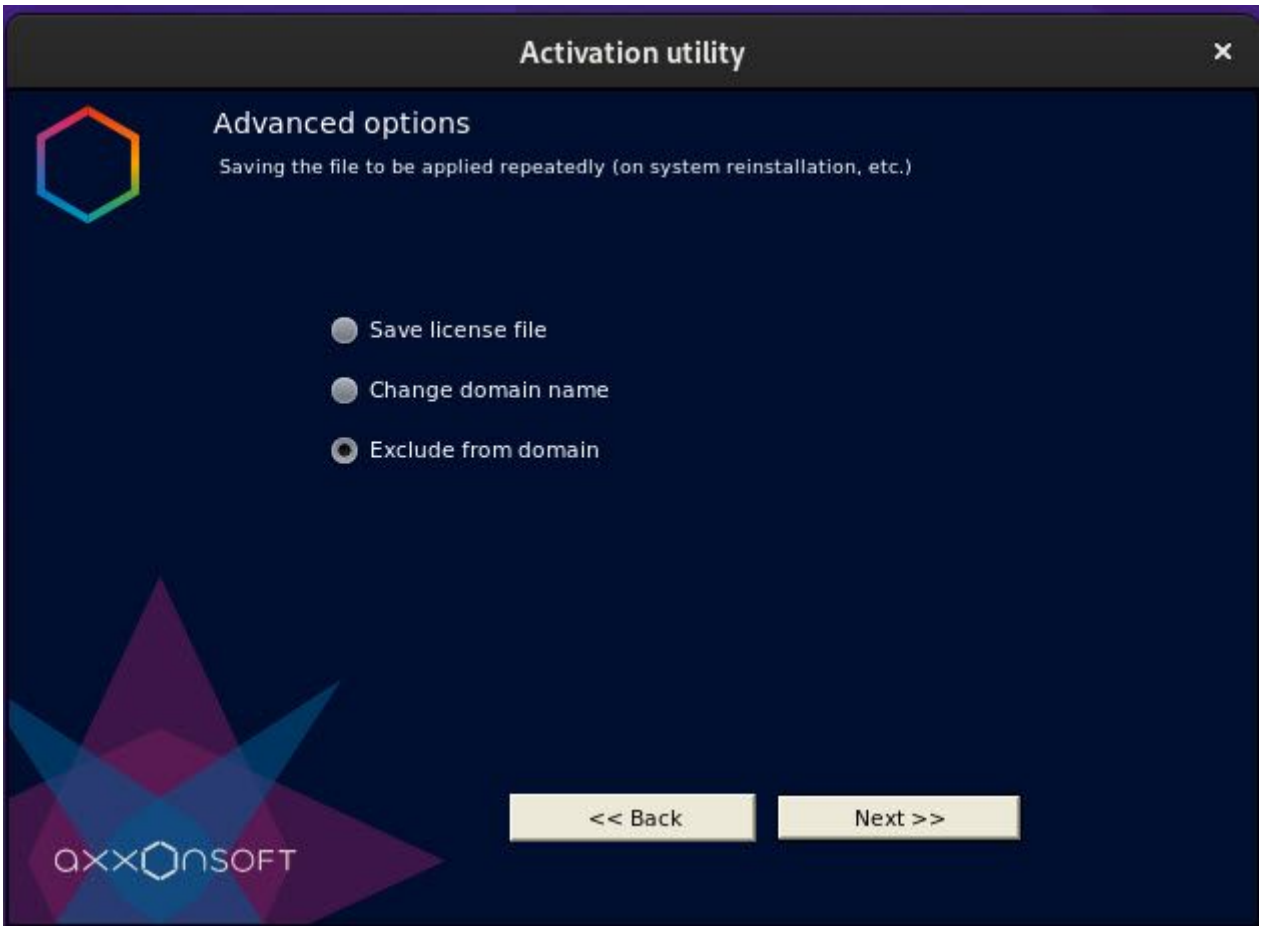
1. Launch the **Activation utility** (see Activation utility for Linux OS(see page 55)).

2. On the main page of the utility, select **Advanced mode**.



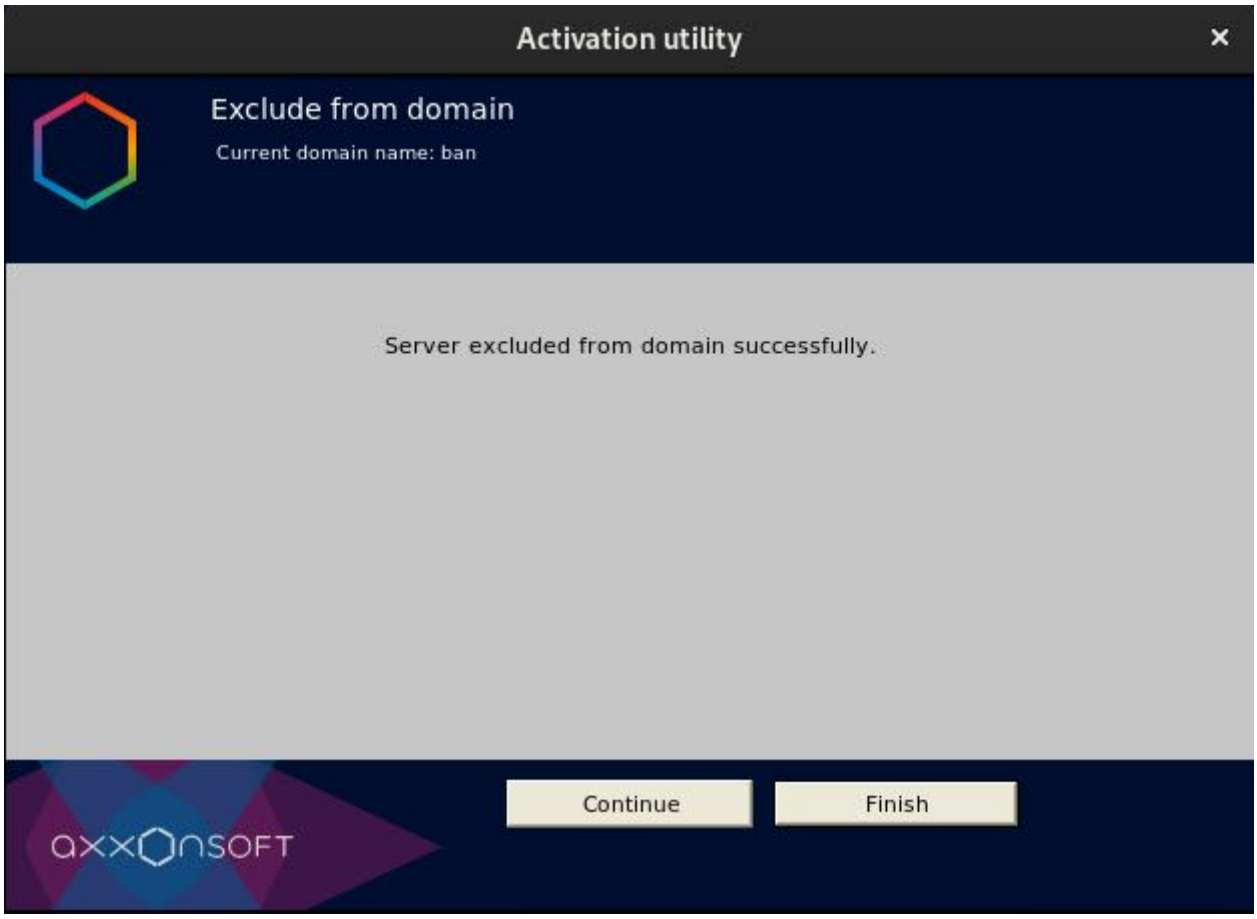
3. Click the **Next >>** button.

4. Select **Exclude from domain**.



5. Click the **Next >>** button.

If the operation is successful, a corresponding message is displayed.



The server is excluded from the domain. To return to the main page of the utility, click the **Continue** button. To exit, click the **Finish** button.

13.3 Backup and restore utility for Linux OS

On the page:

- General information(see page 86)
- Launching the utility(see page 86)
- Stopping the utility(see page 88)
- Reverting to the original server configuration(see page 88)
- Reverting to the original domain configuration(see page 90)
- Creating a configuration backup(see page 91)
- Restoring the configuration backup(see page 93)

- Migrating a configuration from one operating system to another(see page 95)

13.3.1 General information

The **Backup and restore** utility is used to:

- revert to the original server configuration (see Reverting to the original server configuration(see page 88)),
- revert to the original domain configuration (see Reverting to the original domain configuration(see page 90)),
- back up the configuration (see Creating a configuration backup(see page 91)),
- restore the configuration backup (see Restoring the configuration backup(see page 93)),
- migrate a configuration from one operating system to another (see Migrating a configuration from one operating system to another[59]).

Attention!

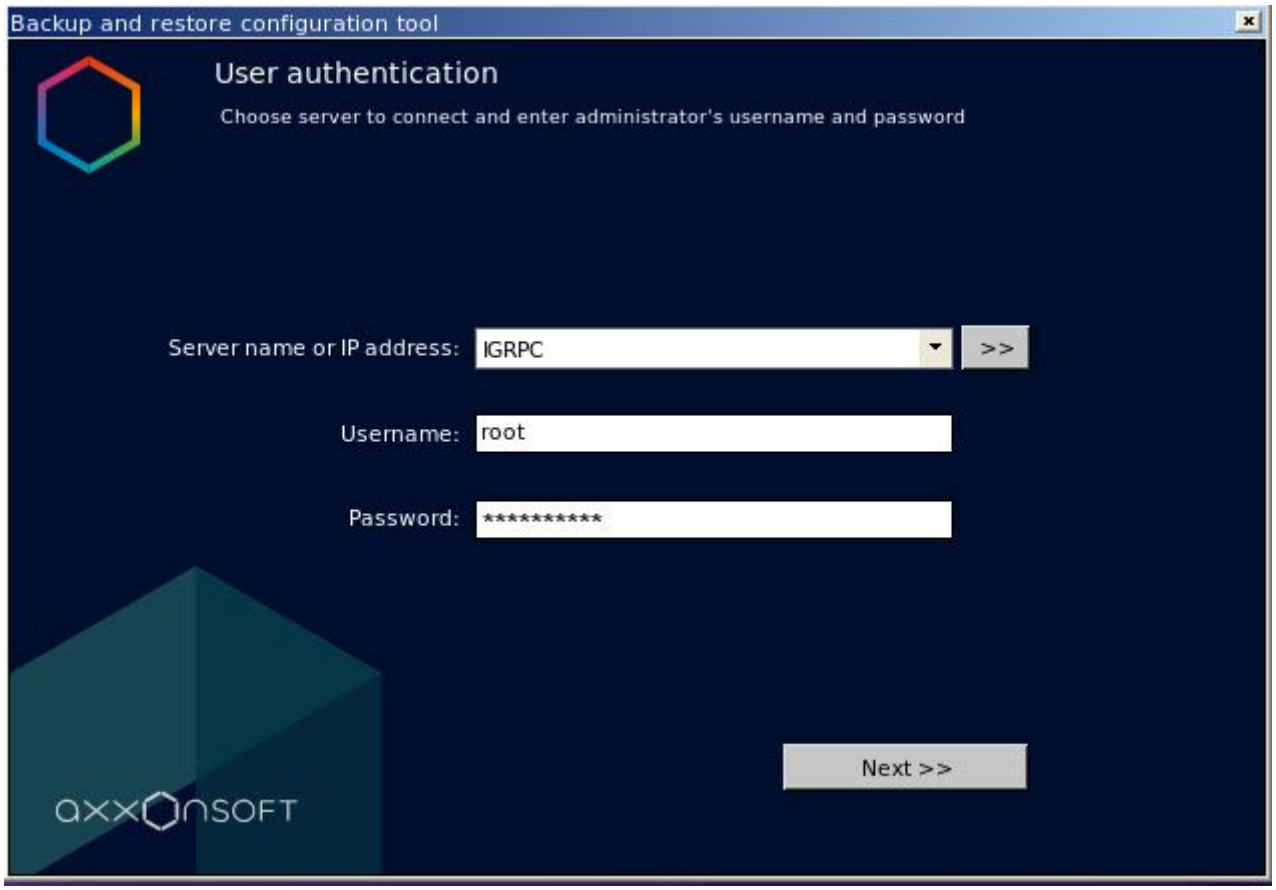
The **Backup and restore** utility works both with the local configuration of the selected server (cameras, archives, detectors, event sources, logging levels) and with the general configuration of the domain (users, maps, layouts, and so on).

13.3.2 Launching the utility

To launch the **Backup and restore** utility, go to the apps menu and click the **BackupTool** shortcut.

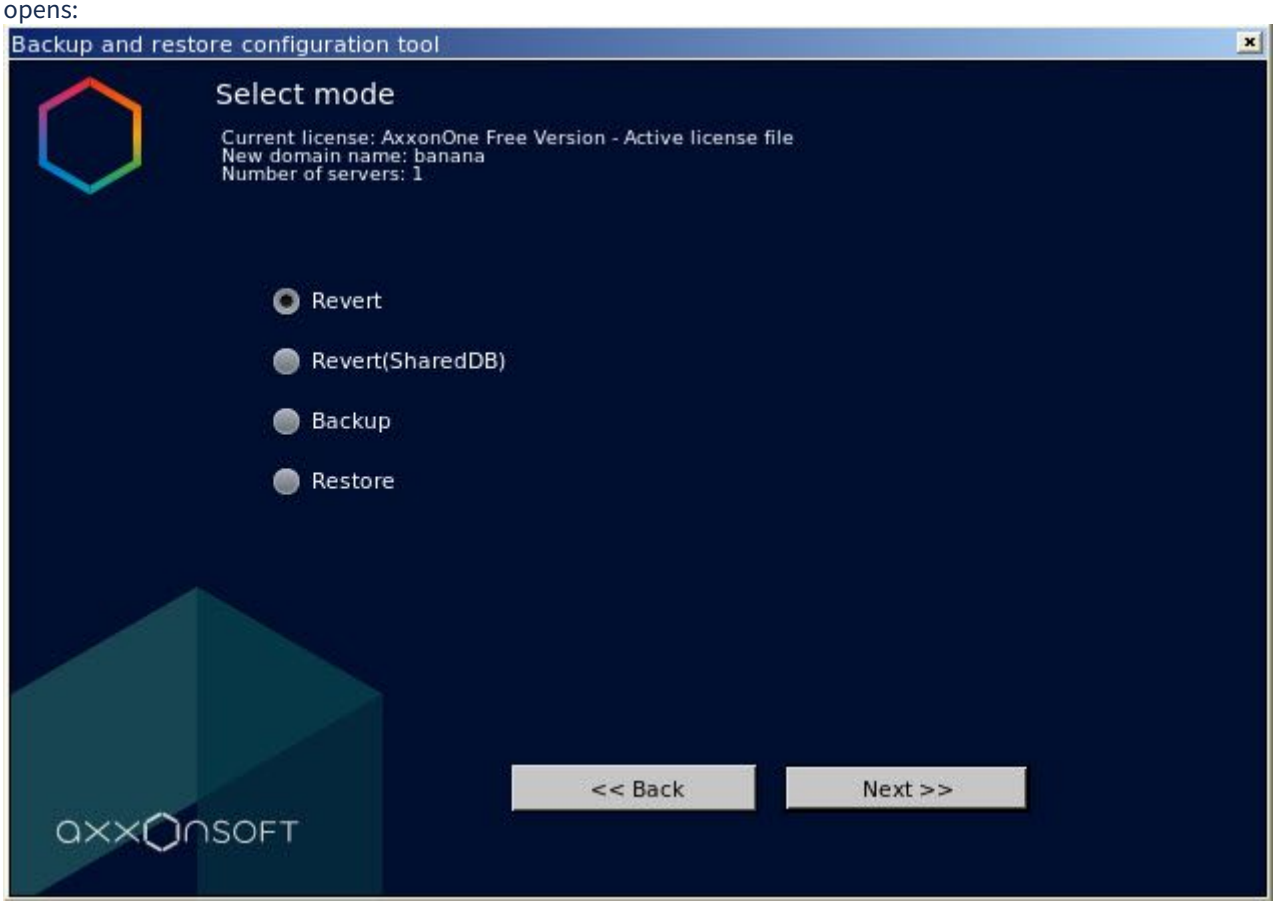
As a result, the **Backup and restore configuration tool** window opens:

59 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/314517222/Migrating+a+configuration+from+one+operating+system+to+another



1. From the **Server name or IP address** drop-down list, select one of the domain servers.
2. In the **Username** field, enter the username of the server user.
3. In the **Password** field, enter the password of the server user.
4. Click the **Next >>** button. The user authentication process starts.
   After the user authentication process is complete, the main page of the **Backup and restore configuration tool** window

opens:



The launch of the **Backup and restore configuration tool** utility is complete.

13.3.3 Stopping the utility

To close the **Backup and restore configuration tool** utility, click the  button.

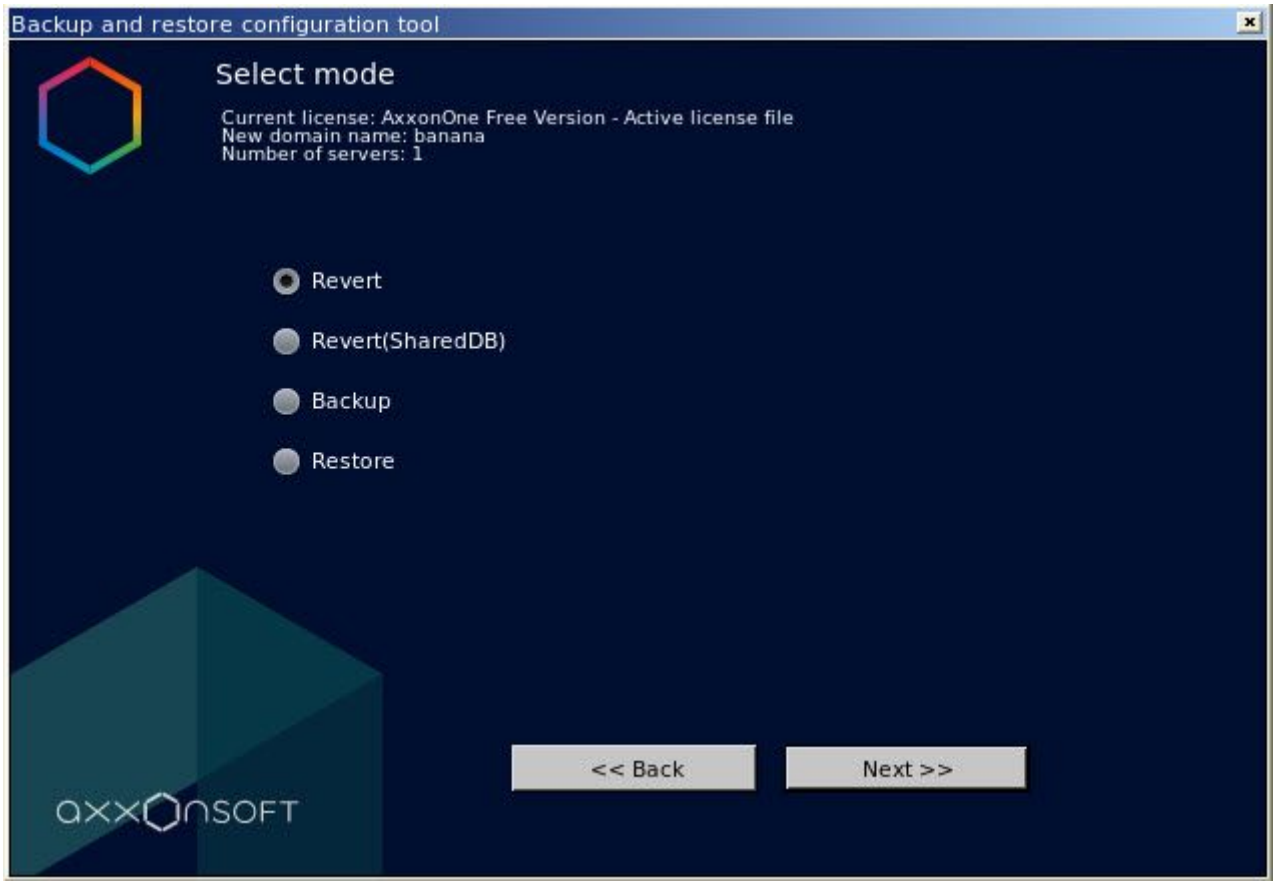
13.3.4 Reverting to the original server configuration

If you make any change to the local server configuration (create/delete any objects, change cameras binding to archives, change settings of any objects), a revision for backup is created.

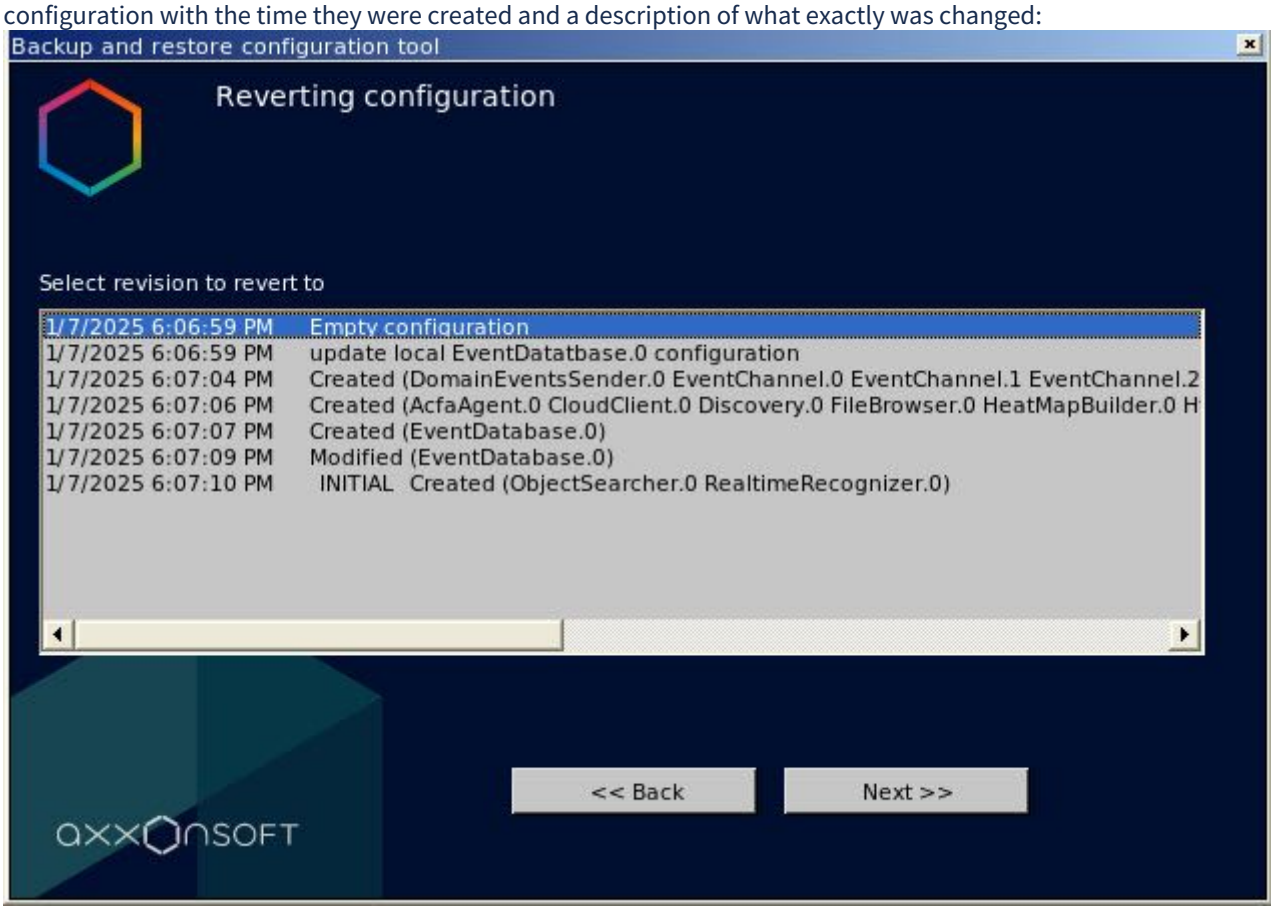
To revert the server configuration to one of the backup revisions, do the following:

1. Launch the **Backup and restore** utility (see Launching the utility(see page 86)).

2. Select **Revert**.



3. Click the **Next >>** button. A window opens. This window contains a list of available revisions for restoring the server configuration with the time they were created and a description of what exactly was changed:



4. Select a revision to restore the server from the list.

> **Note**
>
> - If you make several changes to the server configuration, but click the **Apply** button once, only one revision is created in the list to restore the configuration.
> - The **Empty configuration** position corresponds to the initial configuration.

5. Click the **Next >>** button. The process of reverting the server configuration before the selected revision starts. When the process of reverting the server configuration is complete, a window opens with a message that the operation was successful.
6. Click the **Finish** button.

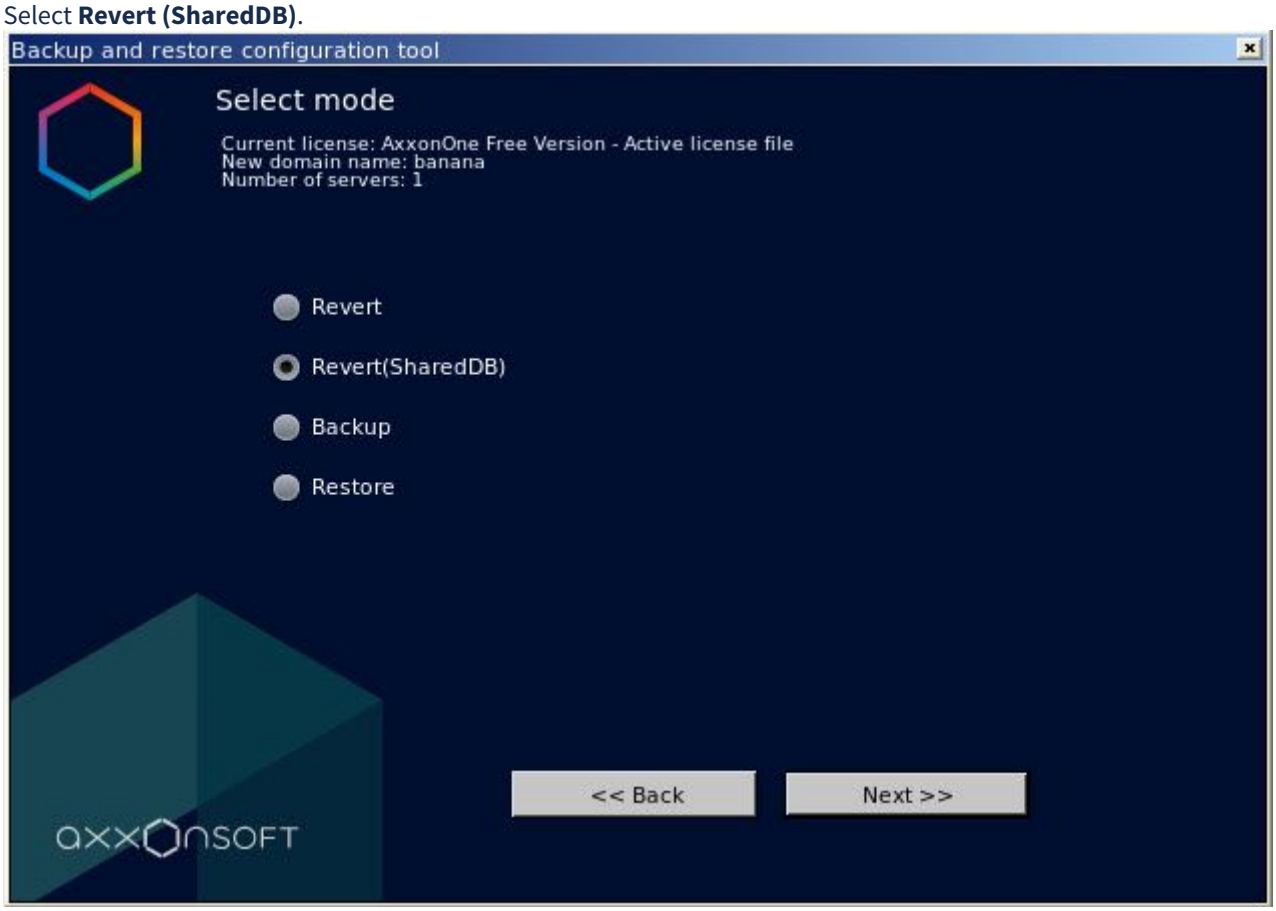
Reverting the server configuration to the selected revision is complete.

13.3.5 Reverting to the original domain configuration

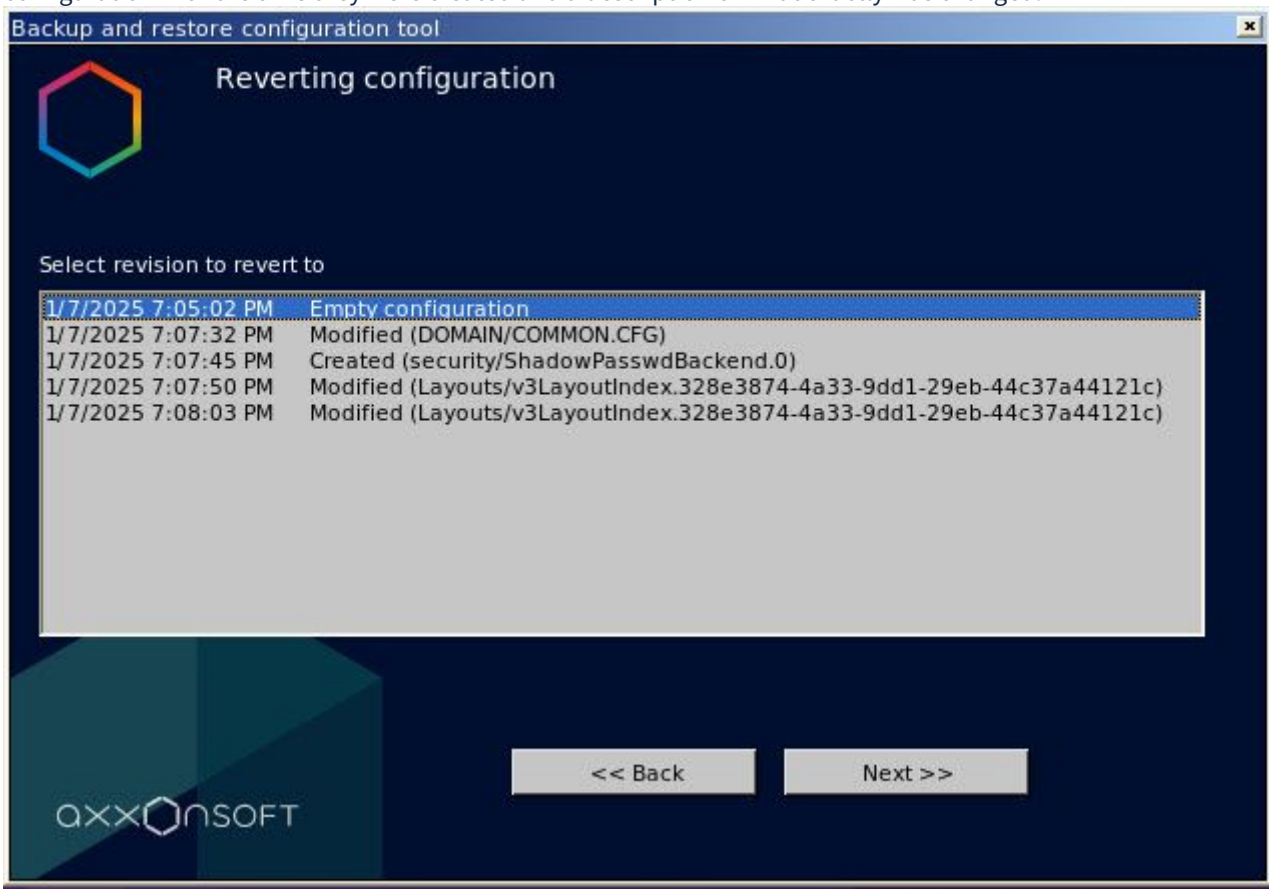
If you make any change to the general configuration of the domain (create/delete roles, users, maps, layouts, and so on), a revision for backup is created.

To revert the domain configuration to one of the backup revisions, do the following:

1. Launch the **Backup and restore** utility (see Launching the utility(see page 86)).
2. Select **Revert (SharedDB)**.



3. Click the **Next >>** button. A window opens. This window contains a list of available revisions for restoring the domain configuration with the time they were created and a description of what exactly was changed:



4. Select a revision to restore the domain from the list.

> **Note**
>
> - If you make several changes to the domain configuration, but click the **Apply** button once, only one revision is created in the list to restore the configuration.
> - The **Empty configuration** position corresponds to the initial configuration.

5. Click the **Next >>** button. The process of reverting the domain configuration before the selected revision starts. When the process of reverting the domain configuration is complete, a window opens with a message that the operation was successful.
6. Click the **Finish** button.

Reverting the domain configuration to the selected revision is complete.

13.3.6 Creating a configuration backup

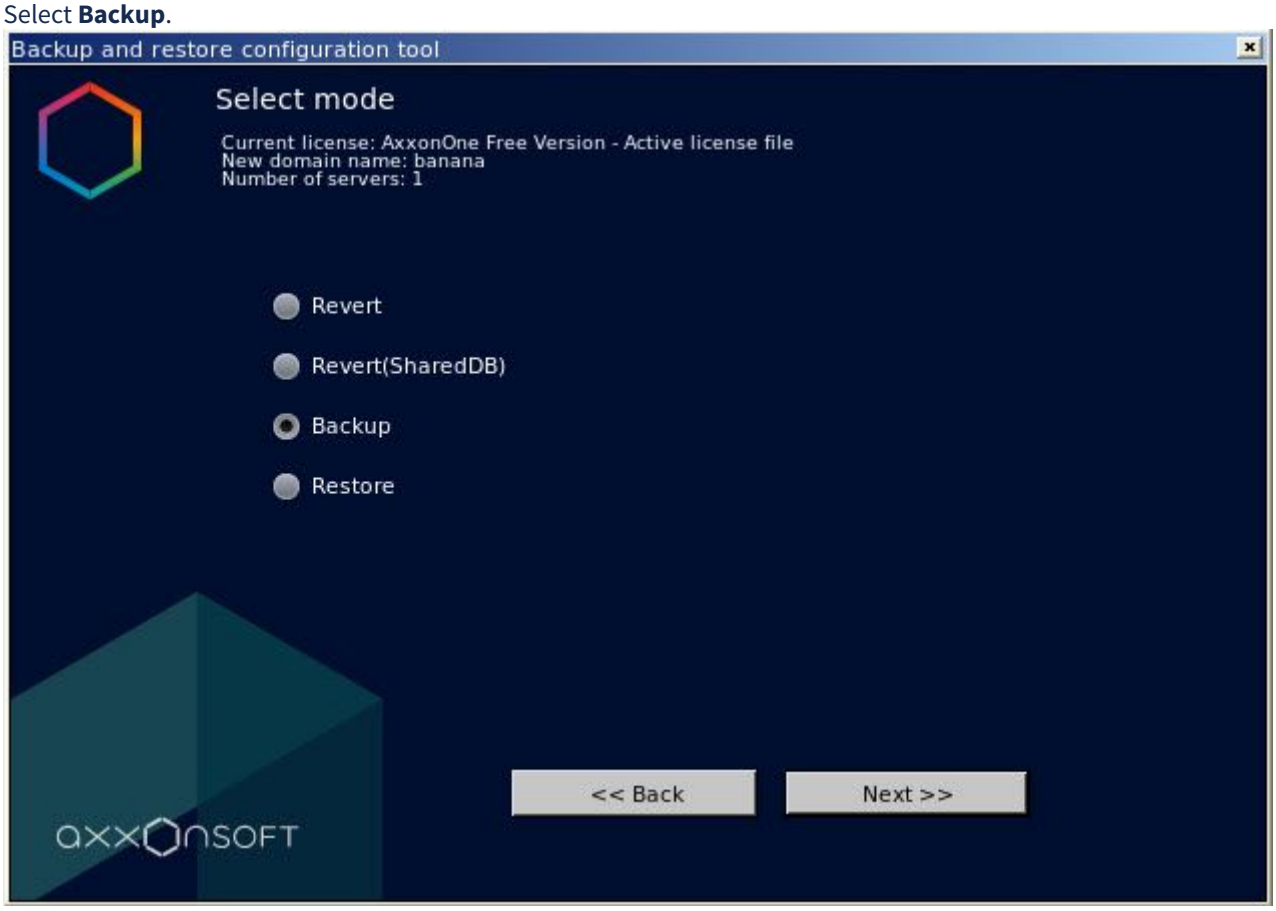
> **Attention!**
>
> We recommend backing up the configuration after any significant configuration change.

Backing up the configuration involves creating and saving copies of the license key, domain structure, all created objects, their parameters and connections with change history, as well as the database containing users, groups, passwords, and layouts.

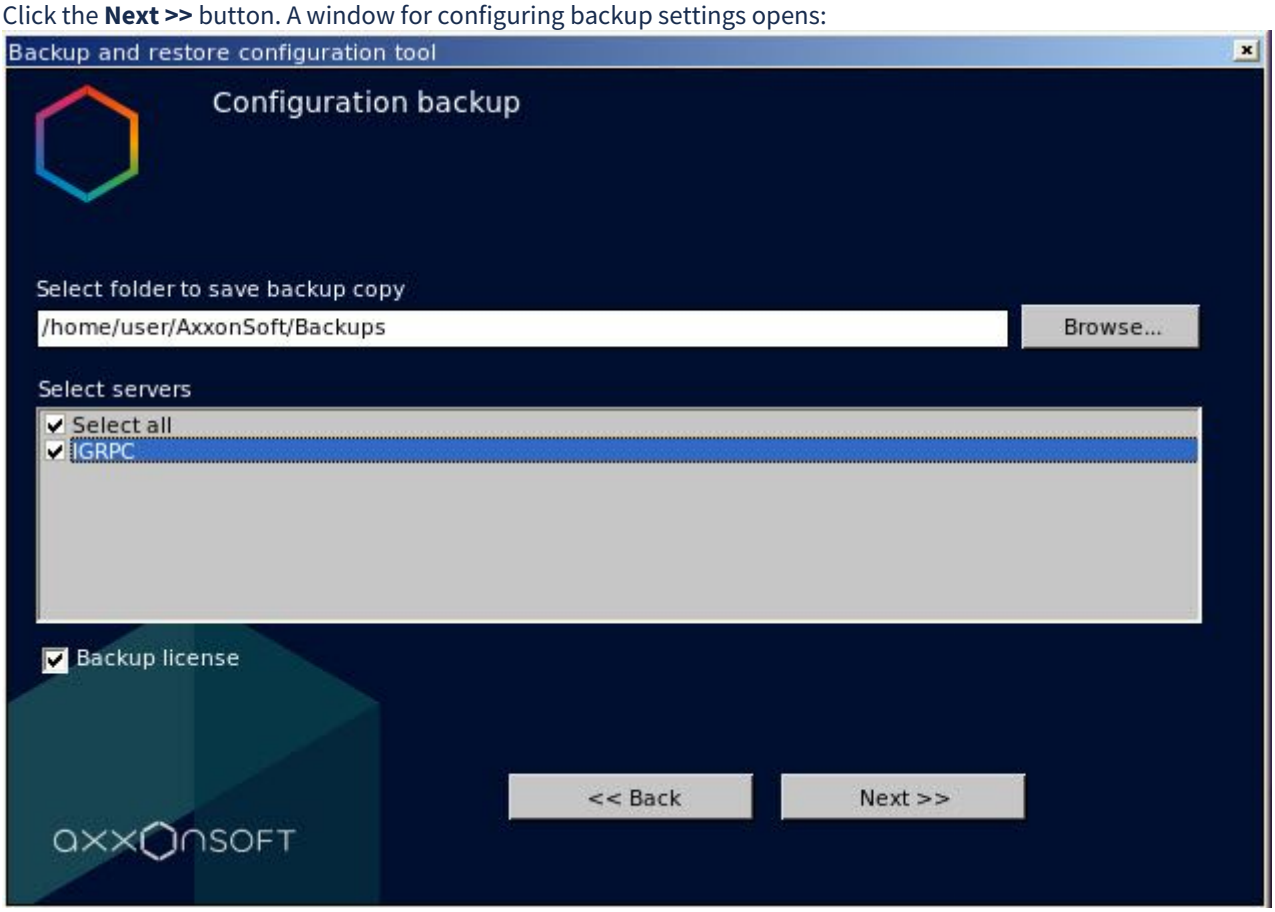
To back up the configuration, do the following:

1. Launch the **Backup and restore** utility (see Launching the utility(see page 86)).

2. Select **Backup**.



3. Click the **Next >>** button. A window for configuring backup settings opens:



4. In the **Select folder to save backup copy** field, enter the full path to the directory where the configuration backup will be saved. The default directory is **home/<Current Linux user>/AxxonSoft/Backups**. To specify the path using standard Linux tools, click the **Browse...** button.
5. In the **Select servers** section, set the checkbox next to the name of the server to back up. You can select several servers. To select all servers, set the **Select all** checkbox.
6. Set the **Backup license** checkbox to save the license key to a configuration backup. When restoring a copy of the configuration, it is possible to restore the configuration with the license key. If you don't restore the configuration with the license key, the system will work in the demo mode.
7. Click the **Next >>** button. The configuration backup process starts.
   When configuration backup is complete, a window opens with a message that the operation was successful.
8. Click the **Finish** button.

Creating a configuration backup is complete.

13.3.7 Restoring the configuration backup

Attention!

If the backup copy doesn't match the current version of the product (including the build number), critical errors can occur in the system during the configuration restore, and the configuration restore process will be completed incorrectly. We can guarantee that your configuration will be fully recovered if:

- the backup was created on the same software version (including the build number),
- the backup was created on the same computer if licensing without the Guardant key was used (see Licensing methods[60]),
- the name of the current server matches the name of the server in the configuration backup.

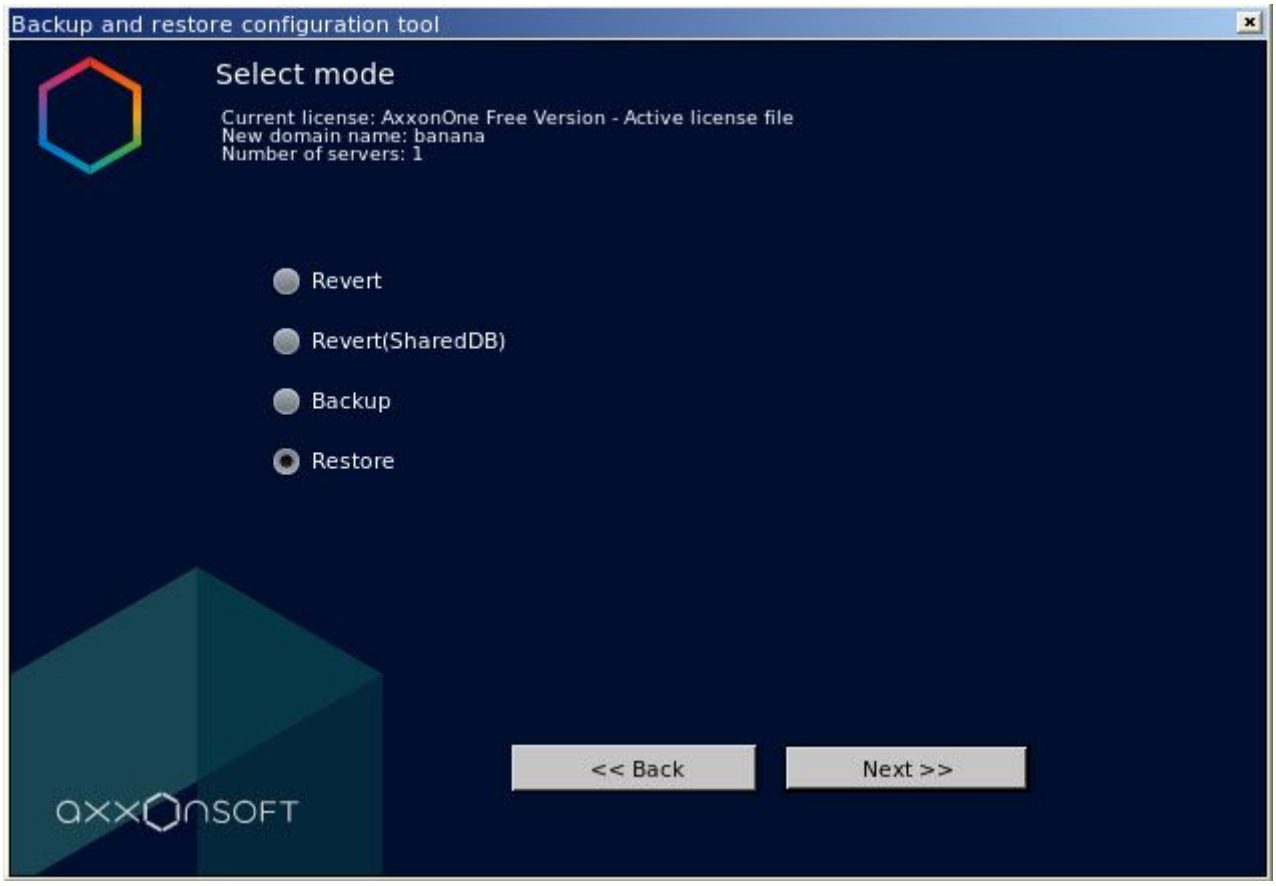
You can find the information about the product version and computer HID in a JSON file in the saved configuration folder.

To restore a configuration backup, do the following:

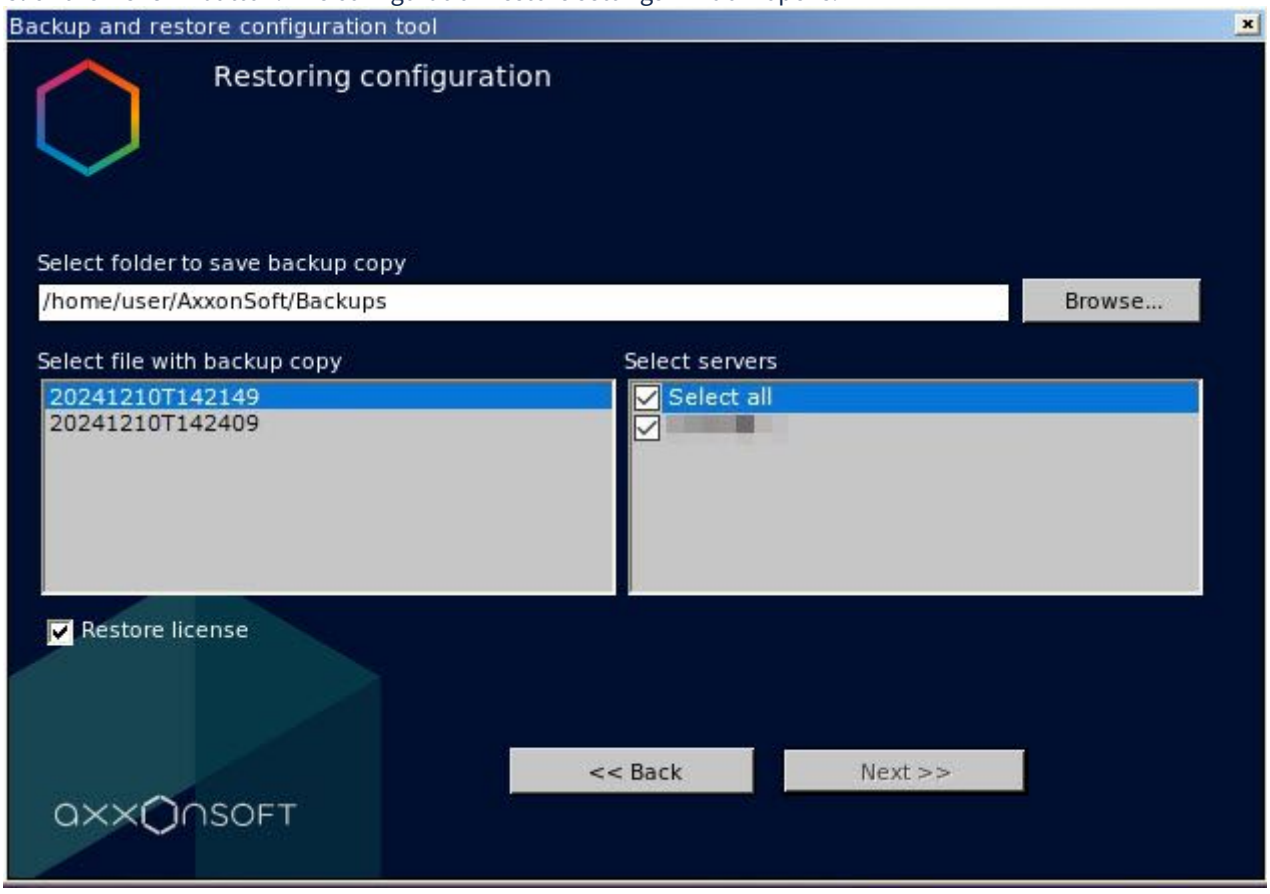
1. Launch the **Backup and restore** utility (see Launching the utility(see page 86)).

60 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246484178/Licensing+methods

2. Select **Restore**.



3. Click the **Next >>** button. The configuration restore settings window opens:



4. In the **Select folder to save backup copy** field, enter the full path to the directory where the configuration backup is saved. The default directory is **home/<Current Linux user>/AxxonSoft/Backups**. To specify the path using standard Linux tools, click the **Browse...** button.
5. In the **Select file with backup copy** section, select the file with the configuration backup.
6. In the **Select servers** section, select the required server/servers in the current domain. You can select a server in the list only if it is present in the domain and its corresponding backup is present in the open file.
7. Set the **Restore license** checkbox to restore the license key that was stored at the time you backed up the configuration (see Creating a configuration backup(see page 91)). If you don't restore the license, *Axxon One* will work in the demo mode.
8. Click the **Next >>** button. The process of restoring the configuration backup starts.
   When configuration restore is complete, a window opens with a message that the operation was successful.
9. Click the **Finish** button.
10. Restart the *Axxon One* server (see Starting and stopping the Axxon One Server in Linux OS(see page 41)).

Restoring the configuration backup is complete.

13.3.8 Migrating a configuration from one operating system to another

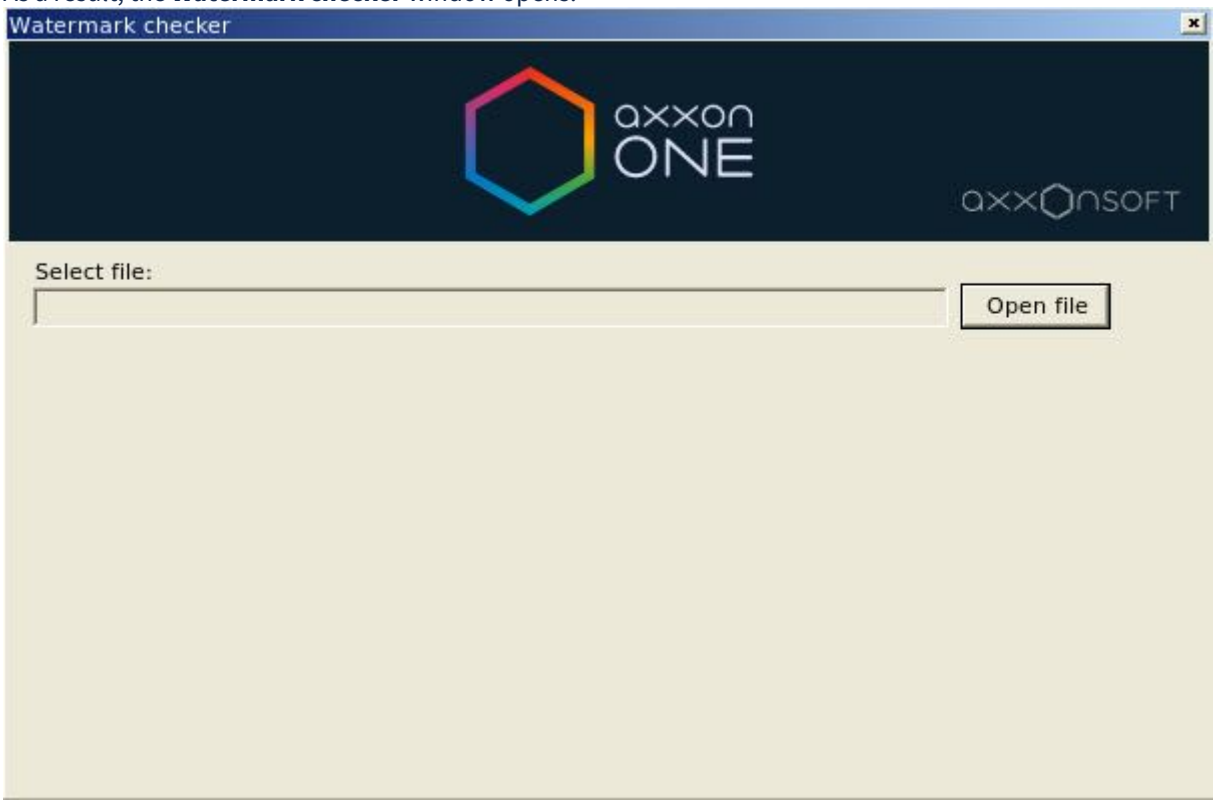
You can also migrate the *Axxon One* configuration from one operating system to another (see Migrating a configuration from one operating system to another[61]).

13.4 Watermark checker utility for Linux OS

The **Watermark checker** utility is used to verify a watermark that is added during the export of videos and frames from *Axxon One*.

To verify a watermark, do the following:

1. Launch the **Watermark checker** utility from the apps menu by clicking the **WatermarkCheck** shortcut.
   As a result, the **Watermark checker** window opens:



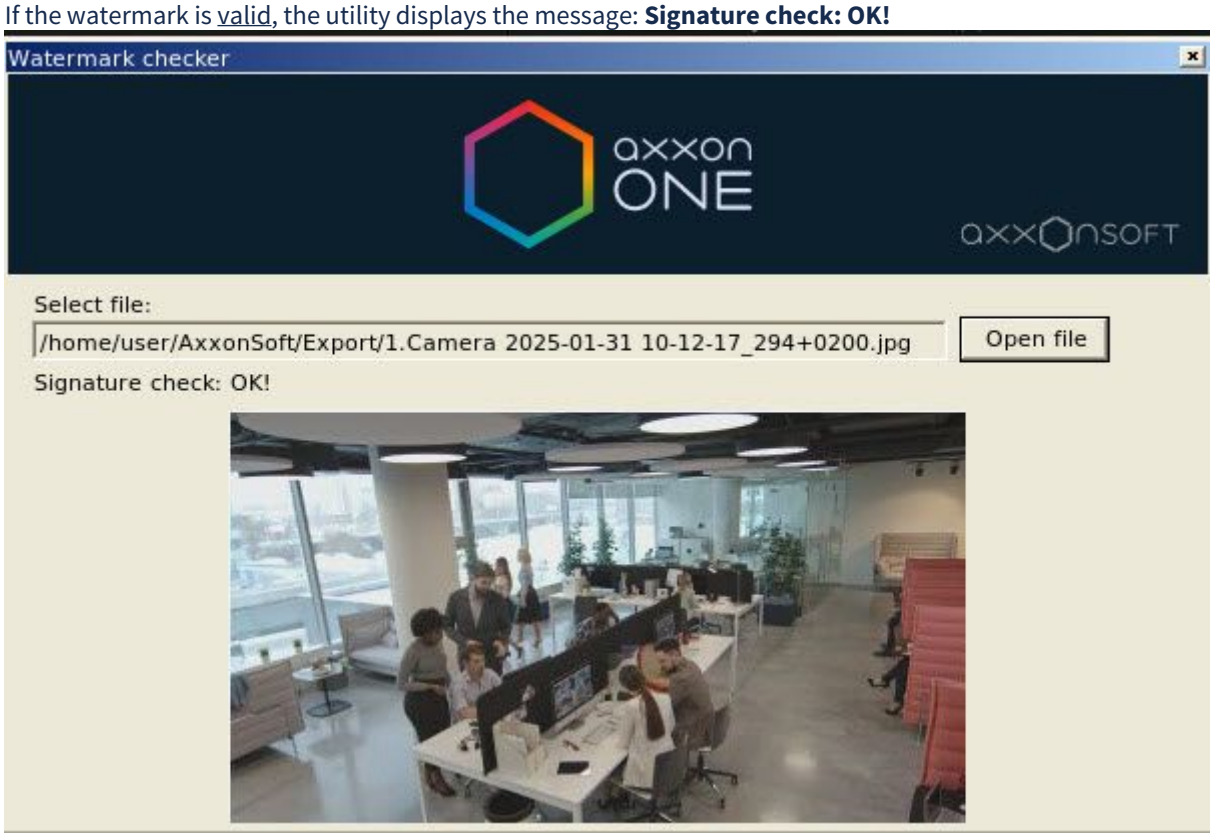
2. Click the **Open file** button.
3. In the **Select file** field, enter the full path to the exported frame or video.

61 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/314517222/Migrating+a+configuration+from+one+operating+system+to+another

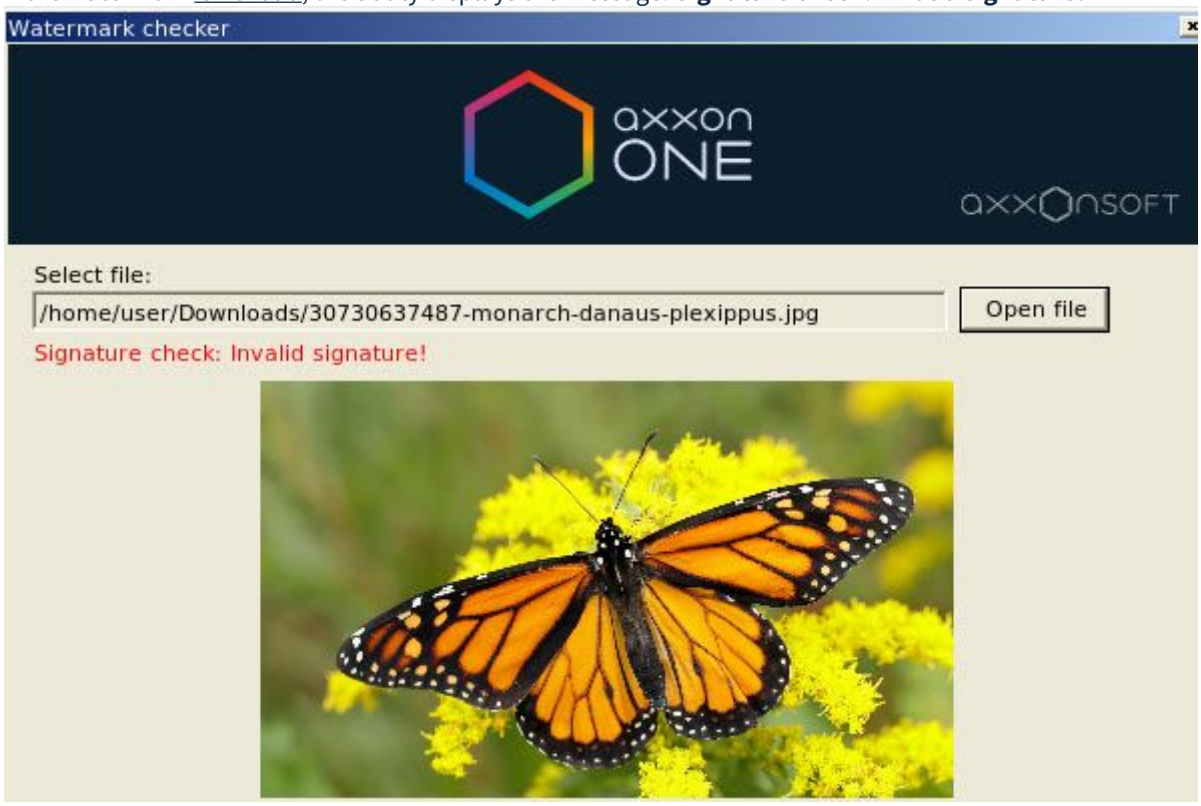
Note

During verification of a watermark on a frame or video, the thumbnail is displayed in the **Watermark checker** utility window. You cannot preview videos and frames that have been exported to pdf format.

- If the watermark is valid, the utility displays the message: **Signature check: OK!**



- If the watermark isn't valid, the utility displays the message: **Signature check: Invalid signature!**



4. To exit the **Watermark checker** utility, click the  button.

Watermark verification is complete.

13.5 Collecting system information utility for Linux OS

The **Collecting system information** utility is used to:

- collect information about configuration,
- collect information about status of hardware,
- collect information about operation of the Linux OS security system,
- collect dumps of running *Axxon One* processes.

To launch the utility, do the following:

1. Go to the apps menu and click the **Support** utility shortcut.
2. In the window that opens, enter the Linux OS administrator password.

> **Note**
>
> You can also launch the utility from the terminal. To do this:
>
> 1. Go to the directory where the utility is located:
>
>    ```
>    cd /opt/AxxonSoft/AxxonOne/bin
>    ```
>
> 2. Run the command:
>
>    ```
>    ./support -h
>    ```
>
>   Hints on using all attributes and collecting individual components will be displayed.

As a result, the generated archive **support_[date]_[time].tar.gz** appears in the directory **/home/Documents**. To solve the required tasks, submit a request at https://support.axxonsoft.com/ with the problem description and attach the **support_[date]_[time].tar.gz** archive.

14 Creating system variables in Linux OS

14.1 Creating system variables for the Axxon One server in Linux OS

To create a system variable for a regular *Axxon One* server in Linux OS, do the following:

1. Stop the *Axxon One* server:

   ```
   sudo service axxon-one stop
   ```

2. Create a backup of the configuration:

   ```
   cp ~ngp/instance.conf ~ngp/instance.conf_bak
   ```

   Attention!

   This step is mandatory.

3. Open the server configuration file for editing:

   ```
   sudo nano ~ngp/instance.conf
   ```

4. Add the required variable as the first line in the configuration file:

   ```
   export %system_variable=value%
   ```

   For example, a variable to increase the export timeout:

   ```
   export NGP_EXPORT_TIMEOUT_MS=60000
   ```

5. After you make the changes and save the configuration file, start the *Axxon One* server:

   ```
   sudo service axxon-one start
   ```

As a result, the system variable is set permanently for the *Axxon One* server.

Attention!

System variables previously added to the **instance.conf** file will be removed:

- When you change the server configuration with the command:

  ```
  sudo dpkg-reconfigure axxon-one
  ```

- After you upgrade to a new version of *Axxon One*.

14.2 Creating system variables for the Axxon One server in the failover mode in Linux OS

To create a system variable for the *Axxon One* server in the failover mode in Linux OS, do the following:

1. Stop the required server (see Suspending a Server within a cluster[62]).
2. Go to the /etc/AxxonSoft directory.
3. Create a backup of the configuration:

```
cp axxon-one.conf axxon-one.conf_bak
```

> **Attention!**
>
> This step is mandatory.

4. Open the server configuration file for editing:

```
nano axxon-one.conf
```

5. Add the required variable as the first line in the configuration file:

```
export %system_variable=value%
```

For example, a variable to enable or disable the observer mode for the self-diagnostics service:

```
export DRMONKEY_OBSERVER_MODE=0
```

where **0**—the observer mode is off, **1**—the observer mode is on.

6. After you make the changes and save the configuration file, start the server.

As a result, the system variable is set permanently for the *Axxon One* server in the failover mode.

14.3 Creating system variables for the Axxon One client in Linux OS in Linux OS

To create a system variable for the *Axxon One* client in Linux OS, do the following:

1. Create a backup of the script for starting the client that is located in the /usr/bin/ directory, using the command:

```
cp /usr/bin/AxxonOne /usr/bin/AxxonOne_back
```

2. Open the script for editing:

```
nano /usr/bin/AxxonOne
```

3. Add the required variable as the first line in the script:

```
export %system_variable=value%
```

For example, a variable to control periodic polling of events from the server for remote clients to ensure reliable delivery of events under NAT conditions:

```
export NGP_POLL_EVENTS=1
```

4. After you make the changes and save the script, stop the *Axxon One* client.
5. Start the client.

62 https://docs.axxonsoft.com/confluence/spaces/one20en/pages/246485639/Suspending+a+Server+within+a+cluster

As a result, the system variable is set permanently for the *Axxon One* client.