



## VisionLabs LUNA KIOSK

v.2.3.0

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## 1. Glossary

Term	Definition
Bestshot	The frame of the video stream in which the face is captured in the best angle for further use in a face recognition system
Liveness	Software method that enables you to confirm whether a person in one or more images is "real" or a fraudster using a fake ID (printed face photo, video, paper or 3D mask)
Detection	Actions to find areas of the image containing faces
Spoofing attack	Substitution of a real person for a fake image (for example, a photograph) to deceive the system

## 2. Introduction

This document describes:

- the process of installing as well as uninstalling the VisionLabs LUNA KIOSK application,
- hardware and software requirements of the equipment.

VisionLabs LUNA KIOSK (hereinafter referred to as System) is a set of libraries that provide the possibility of realizing real-time operation to perform face detection in a frame, check the vitality of a person and transfer data to an external system.

The System is designed for:

- receiving and processing a color video stream from a video recording device,
- checking the image quality,
- selecting the bestshot,
- face detection by machine calculation method on two images,
- checking the presented image by Liveness-algorithms,
- protection against image spoofing by depth map analysis,
- subsequent transfer of the bestshot to device integration systems.

### 3. System requirements

The minimum system requirements below (Table 1 and Table 2) must be met in order to install the full System package.

**Table 1.** Minimum system requirements for x64 architecture

Required Resource	Recommended
Processor	Intel(R) Core(TM) i3-10110U
RAM	4GB or more
Hard disk drive	HDD or SSD at least 1,4 GB
Operating system	<ul style="list-style-type: none"><li>• Windows 10 (64 bit);</li><li>• Ubuntu 18.04 x64;</li><li>• Debian 10 x64</li></ul>
Instruction Support	Advanced Vector Extensions 2 (AVX2)

To run the application on Windows, install the [Visual C++ Redistributable package](#).

**Table 2.** Minimum system requirements for ARM architecture

Required Resource	Recommended
Processor	Rockchip RK3588S
RAM	4GB or more
Hard disk drive	HDD or SSD at least 128GB
Operating system	Armbian 23 (aarch64)

Correct operation of the System is ensured by Intel® RealSense™ Camera D400-Series 3D cameras with firmware version 5.15.0.2, VLS LUNA CAMERA 3D cameras and VLS LUNA CAMERA 2D IR cameras:

- Intel® RealSense™ Depth Cameras D415;
- Intel® RealSense™ Depth Cameras D435;
- Intel® RealSense™ Depth Cameras D435i;
- VLS LUNA CAMERA 3D / VLS LUNA CAMERA 3D Embedded;
- VLS LUNA CAMERA 2D.

For information about VLS LUNA CAMERA 3D / VLS LUNA CAMERA 3D Embedded, please contact your VisionLabs representative.

Use USB 3.0 to work with Intel® RealSense™ Camera D400-Series 3D cameras, VLS LUNA CAMERA 3D and VLS LUNA CAMERA 2D.

## 4. Licensing

To obtain a license, contact a Visionlabs representative—a reply letter will contain license activation data.

The license activation data for running on Windows and Ubuntu/Debian/Armbian is the same. For the license activation process, see the [Installation](#) section.

## 5. Installation

There are 2 types of the system distribution set, which differ in the sources of configuration settings:

- bundled under Ubuntu 18.04 x64, Debian 10 x64 and Armbian 23 the system uses configuration files that are located in the `/client` folder. These files are named `server.conf` and `rsengine.conf`:
- `server.conf` contains the settings for configuring server operation and logging levels;
- `rsengine.conf` contains settings of thresholds for performing Liveness checks;
- the Windows registry is used by default in the distribution set under Windows OS, where the settings for RSE Server and RSEngine libraries are stored after the System installation.

By default there are no configuration files in the `/client` folder in the Windows distribution, as the recommended method of configuration is through the Windows registry. Request configuration files from VisionLabs if you are using them as a configuration method.

### 5.1 Description of installation on Windows

RSE Server is installed as a Windows service.

To install the System on Windows, you need to follow the steps below:

#### 5.1.1 License activation

It is necessary to specify the license data in the license file parameters.

To do this, specify the appropriate values in the `data/license.conf` file.

Licensing parameter values are taken from the license letter upon request from a VisionLabs representative.

**Table 2.** Description of variables in `data/license.conf` file

Variable	Description	Example
Server	License Server Address	https://
EID	Access Authorization Identifier	00000000-0000-0000-0000-0000-0000-000000000000



Variable	Description	Example
ProductID	Product Identifier	00000000-0000-0000-0000-0000-0000-000000000000
LICENSE_FILENAME	The name of the license file. It is not recommended to change	license.dat
LICENSE_CONTAINERMODE	Running the license in a container. The system supports only local license	0 - running in a container 1 - local

### 5.1.2 Preparing for system installation

The installation location of the System is the place where the System distribution kit is located.

To install the System it is necessary to run the batch file `InstallService.bat`, which is located in the root folder of the distribution kit.

Run `InstallService.bat` as an administrator.

When installing the System, a directory for logging will be created (the default address is `C:\RSE\logs`).

Logging levels change in:

- Windows registry, if the Service is installed on Windows;
- in `server.conf` if the Service is installed on Ubuntu 18.04 x64, Debian 10 x64 and Armbian 23.

### 5.1.3 System configuration

Configuration settings can be customized through the Windows Registry.

The System configuration parameters are written to the Windows registry (all values are set by default) and can be edited by the administrator (see the description of parameters in the "Administrator's Guide", Appendix 1).

### 5.1.4 System management

After the installation is complete, you can manage RSE Sever using the `services.msc` service manager.

The location of RSE Server and `*.conf` files must not be changed after installation. Otherwise, the System functionality will be impaired.

### 5.1.5 Troubleshoot metadata sampling issues for RealSense camera sensors

Windows requires a special registry entry for each unique video device to provide metadata. Metadata, or metadata attributes, refer to additional information provided by the `librealsense` library and are necessary for proper interaction with RealSense camera sensors.

To activate the functionality related to metadata attributes, the `realsense_metadata_win10.ps1` file is included with LUNA KIOSK. A script in the file creates and modifies entries in the Windows registry to ensure that the RealSense camera sensors work correctly. For more information on activating metadata, see [librealsense library documentation](#).

## 5.2 Description of installation on Ubuntu 18.04 x64, Debian 10 x64 and Armbian 23 operating systems

Use Ansible to install the System on a target machine running Ubuntu 18.04 x64, Debian 10 x64 and Armbian 23. Install ansible in advance:

```
apt-get install ansible
```

To check that Ansible was installed correctly, enter the following command:

```
ansible --version
```

If the installation is successful, the console will display the Ansible version and other information:

```
ansible [core 2.12.4]
  config file = /etc/ansible/ansible.cfg
  configured module search path = ['/home/vivek/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python3/dist-packages/ansible
  ansible collection location = /home/vivek/.ansible/collections:/usr/share/ansible/collections
  executable location = /usr/bin/ansible
  python version = 3.8.10 (default, Mar 15 2022, 12:22:08) [GCC 9.4.0]
  jinja version = 2.10.1
  libyaml = True
```

## 5.2.1 Pre-action and license activation

Before running the installation:

- add addresses ( `ip` or `hostname` ) of target devices to the `ansible/hosts` file to install the distribution. Each line contains one address.

Example:

```
[rse]
12.16.58.33
```

- adjust the shared variables and license data (Table 3) in the `group_vars/all.yml` file for the installation Ansible scripts.

LICENSE\_SERVER, LICENSE\_EID, LICENSE\_PRODUCTID are responsible for licensing of the System—this information is taken from the license letter upon request from a VisionLabs employee

**Table 3.** Description of variables for Ansible installation scripts in `group_var/all.yml` file

Variable	Description	Possible values
RSE_HOME	Installation directory. It is not recommended to change the path	/var/lib/kiosk
RSE_VERSION	System version. The value must match with the name of the archive	ub1804_x64_v1.0.4_rc2

Variable	Description	Possible values
RSE_ZIP_LOCATION	Location of the distribution. Absolute or relative path to the RSE Server distribution within the distribution package	../distr/rse-server_v.2.3.0.zip
LICENSE_SERVER	Address of the license server. Request data from Visionlabs	https://.com
LICENSE_EID	Access License Identifier. Request data from Visionlabs	00000000-0000-0000-0000-0000-000000000000
LICENSE_PRODUCTID	Product Identifier Request data from Visionlabs	00000000-0000-0000-0000-0000-0000-000000000000 0
LICENSE_FILENAME	License file name. t is not recommended to change	license.dat

Variable	Description	Possible values
LICENSE_CONTAINERMODE	Run the license in a container. System supports only local license	0 –run in container. 1 –local.

### 5.2.2 System installation

The installation location of the System is the path specified in the RSE\_HOME variable.

To start the installation process:

- go to the `ansible` folder;
- if the installation is performed on several devices at once (more than one ip address is specified in the host), run the command:

```
ansible-playbook -I hosts install_rse.yml
```

During installation, Ansible attempts to connect as the System user (root by default) via the appropriate SSH key pair. If a password is used instead of keys, add the `--ask-pass` flag to the install command.

- if the installation is performed locally on one device, run the command:

```
ansible-playbook -i hosts--connection=local--inventory 127.0.0.1, install_rse.yml
```

### 5.2.3 System setup

When starting the RSE Server, the System uses the settings from the `server.conf` and `rsengine.conf` configuration files (see "Admin manual", Appendix 1 for a description of the settings).

If you need to change the client configuration settings, make changes in the `server.conf` and `rsengine.conf` files and restart the RSE Server.

If the installation is successful, the logs will be written to log files in the default directory `./logs` after the System is launched. Change the corresponding path to it in the `log-path` parameter in the `server.conf` file.

### 5.2.4 System management in Linux

After the installation is complete, manage RSE Server using the `systemctl` command line utility.

To start RSE Sever, run the following command:

```
systemctl start kiosk
```

To stop the RSE Sever, run the following command:

```
systemctl stop kiosk
```

## 5.3 Offline license activation

Offline activation is performed when there is no Internet access on the device on which the license is to be activated. In this case, your device fingerprint is used and the license is activated on any other device with Internet access.

Request the license server address and EID from VisionLabs staff.

### On the device on which the license is to be activated

Open the `license.conf` file in the `data` directory, enter the EID and save the changes.

- On Ubuntu 18.04 x64, Debian 10 x64 or Armbian 23, navigate to the `extras` directory where the `FingerprintViewer` utility is located.
- Grant access rights to the `FingerprintViewer` utility:

```
chmod +x FingerprintViewer
```

- Run the utility by specifying the path to the `license.conf` file:

```
./FingerprintViewer ../data/license.conf
```

- On Windows, open the root folder of the distribution where the `FingerprintViewer` utility is located and run `FingerprintViewer.exe`.

The print will be displayed in the console. Copy and save it.

### On a device with Internet access

Go to the site to activate the license (the address was obtained in the beginning).

Enter your EID to log in to the site and activate the license using your device fingerprint.

Download the license certificate.

Note that the default name of the license file is `licenseFile.v2c`. Rename the file using one of the methods below:

Move the `licenseFile.v2c` file to the `data` directory.

- Change the `Filename` parameter in the `license.conf` file according to the example:

```
xml <param name="Filename" type="Value::String" text="licenseFile.v2c"/>
```

- Rename `licenseFile.v2c` to `license.dat`. The `Filename` parameter in the `license.conf` file does not need to be changed and remains the default:

```
xml <param name="Filename" type="Value::String" text="license.dat"/>
```

### **On the device on which the license is to be activated**

Copy the obtained `license.dat` license key to the `data` directory.

## 6. Deletion

### 6.1 Uninstall on Windows

To uninstall RSE Server and logs on Windows OS, run the `uninstallService.bat` batch file, which is located in the root folder of the distribution.

The `uninstallService.bat` batch file:

- removes all settings from the registry;
- stops and removes the RSE Server service.

The logs folder is not automatically deleted, it must be deleted manually.

### 6.2 Uninstall on Ubuntu 18.04 x64, Debian 10 x64 and Armbian 23

Uninstalling RSE Server and logs on Ubuntu 18.04 x64, Debian 10 x64 and Armbian 23 is done manually by the administrator, there is no executable batch file supplied. This requires:

Delete data from the `RSE_HOME` directory;

Delete the `systemd service` file from the `/etc/systemd/system/system/kiosk.service` directory.