

Access Control System

ACCO NET

System version 1.8

EN

CE



INSTALLATION MANUAL

acco_net_i_en 07/23

Satel® 

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The following symbols may be used in this manual:



- note,



- caution.

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1 General

The ACCO NET access control system is designed for protection of buildings against access by unauthorized persons. The ACCO NET system is made up of software and SATEL's devices (access control panels, access control modules, expansion modules, keypads, proximity card readers, etc.).

This manual covers installation of the software which enables configuration and then management of the system (in version 1.8). It also describes the ACCO NET update procedure as well as the method of transferring the databases to the updated system. The system may include many objects with any number of access control panels. Communication with the control panels takes place via the Ethernet network.

2 Software components

For the ACCO NET (version 1.8) system to operate, the Debian operating system is required. Installation of the Debian 11 ("bullseye") system for the 64-bit PC (amd64) architecture is described further in this manual, but if it has already been installed, you may skip this section. The software necessary for proper operation of the system is offered as an installation package which includes:

1. server environment software. It is not developed by the SATEL company (addresses of websites on which licenses for each of the programs are available are given in parentheses):
 - Apache (<http://www.apache.org/licenses/LICENSE-2.0.html>),
 - PHP (http://php.net/license/3_01.txt),
 - MySQL and JDBC MySQL (<http://www.gnu.org/licenses/gpl-2.0.html>),
 - Java and JAVA SE (<http://www.gnu.org/licenses/gpl-2.0.html>, <https://adoptopenjdk.net/about.html>),
 - ModSecurity (<http://www.apache.org/licenses/LICENSE-2.0.html>),
 - Fail2Ban (<http://www.gnu.org/licenses/gpl-2.0.html>),
 - MariaDB (<https://mariadb.com/kb/en/mariadb/mariadb-license/>),
 - WildFly (<http://www.gnu.org/licenses/old-licenses/lgpl-2.1.html>).



Please remember to legalize the server environment required by the system.

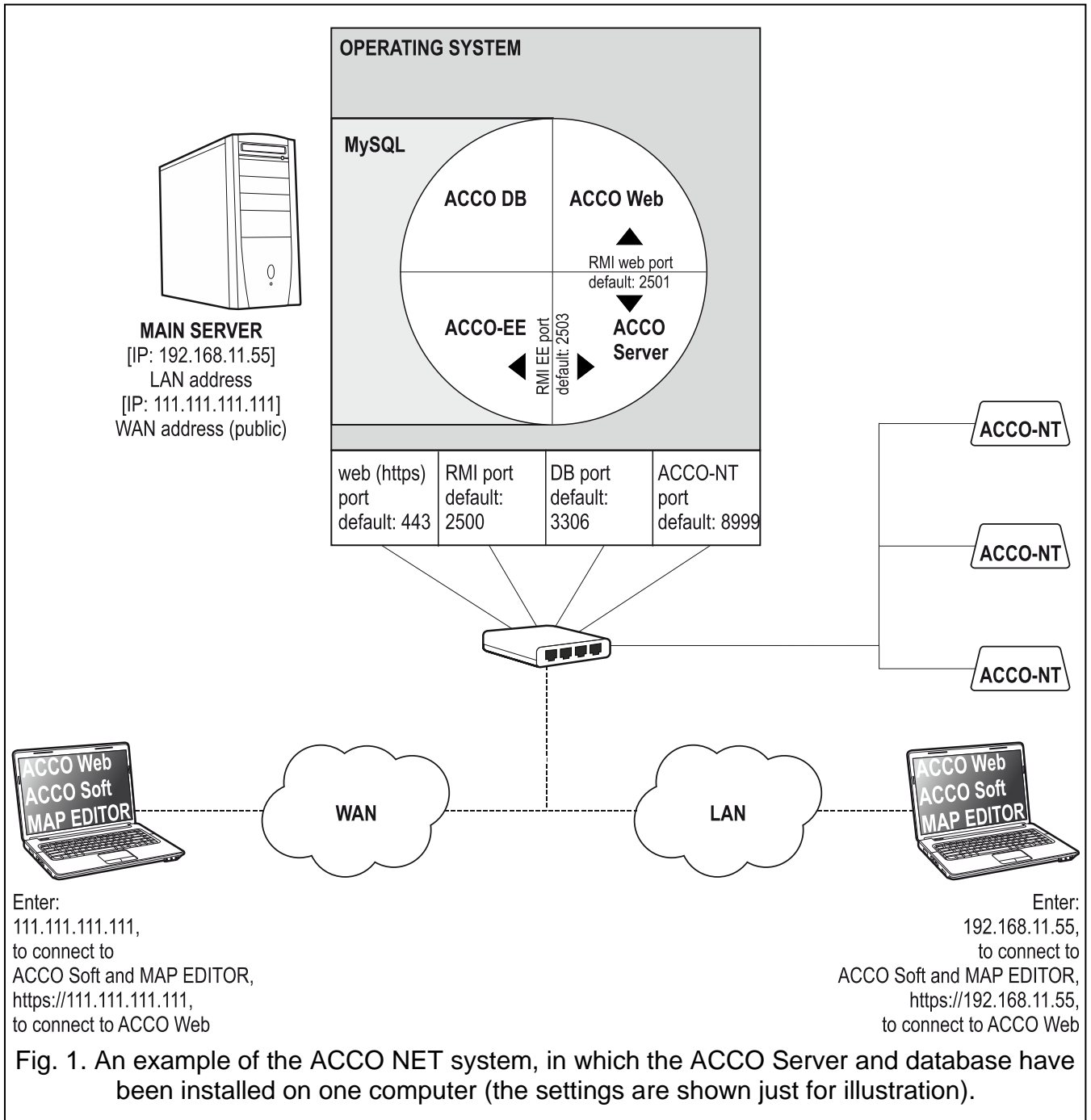
If you have already installed these programs, please verify that their versions meet the requirements. If so, you may skip installation thereof.

2. ACCO NET access control system firmware:
 - ACCO Server – program enabling data exchange between the access control panels, database, and the ACCO Soft and ACCO Web programs,
 - ACCO DB – database to which all system related data are saved, including configuration and events,
 - ACCO-EE – JavaEE component providing map data,
 - ACCO Web – application for remote management and operation of the system,
 - ACCO-NT Conf – installation file for the network settings configuration program (for more information on the program and how it should be used, refer to the ACCO-NT control panel installation manual),
 - ACCO Soft – installation file for the system configuration program,
 - Map Editor – installation file for the object map creating program.



The system owner / administrator is obliged to carry out the diagnosis of errors, ongoing supervision and backup of the program and database with the frequency consistent with generally accepted practices (daily, weekly and monthly backups). This will ensure proper and reliable operation of the program, in particular the possibility of full and immediate recovery of all data from backups without incurring excessive costs. Considering this obligation of the system owner / administrator, SATEL is not responsible for the loss of data or costs resulting from the recovery of distorted or lost data by the owner / administrator of the system.

3 System architecture



The ACCO NET system can be installed on one device. Alternatively, it can be shared by multiple devices, in which case distributed architecture will be used. The applications: ACCO Soft for system configuration, and Map Editor for creating site plans, can be installed

on several devices. All you need to use the ACCO Web application for remote management of the system is the web browser running on your computer, smartphone or tablet. An example of the ACCO NET system is shown in Fig. 1.

4 Network requirements

- Internet protocol version 4 (TCP/IPv4).
- IP address for each connected ACCO-NT control panel.
- If the ACCO Web application is to be accessible from another subnet, the web port (https; default: 443), on which communication between ACCO Server and ACCO Web application is to take place, should be redirected.
- If the ACCO Soft program is to be accessible from another subnet, the following ports should be redirected:
 - RMI port (default: 2500), on which communication between ACCO Server and ACCO Soft program is to take place,
 - DB port (default: 3306), on which communication between ACCO Server and database is to take place.
- SATEL recommends to purchase and install an SSL certificate for encryption support and proper validation of the domain on which the ACCO Web application will be running.



If the ACCO NET system is connected to a public network, SATEL recommends to apply additional security measures, including e.g. a firewall, intrusion detection and prevention systems (IDS / IPS), in addition to the standard encryption techniques (SSL).

5 Suggested hardware requirements

Hardware requirements for the device on which the ACCO NET access control system will be installed depends on the system size:

exemplary system 1 (1 ACCO-NT control panel, 30 access control modules, 30 users)

- RAID (redundant array of inexpensive disks) level 1 (requires at least two hard drives),
- 4 GB of RAM memory,
- processor: Intel Core i3 or AMD A4,
- network card, Fast Ethernet standard,
- Debian 11 („bullseye”) operating system for the 64-bit PC (amd64) architecture;

exemplary system 2 (3 ACCO-NT control panels, 100 access control modules, 300 users)

- RAID (redundant array of inexpensive disks) level 5 (requires at least three hard drives),
- 8 GB of RAM memory,
- processor: Intel Xeon or AMD Opteron,
- network card, Fast Ethernet standard,
- Debian 11 („bullseye”) operating system for the 64-bit PC (amd64) architecture.



Components of the device on which the access control system will be installed must meet the requirements of the Debian 11 operating system (“bullseye”) for the 64-bit PC architecture (amd64).

One of the installed disks must have at least 10 GB of free space for installation of the ACCO NET system. The size of the remaining disks to be installed must be selected taking into account the following:

- number of events generated in the system (2 to 5 millions events will occupy 1 GB),*
- number of users simultaneously running the ACCO Soft or Map Editor programs or the ACCO Web application,*
- size of graphic files assigned to the maps,*
- size of user photographs,*
- length of defined names of objects, control panels, controllers, expanders, partitions and users.*

6 Installation of the ACCO NET system software

6.1 Installing the Debian operating system



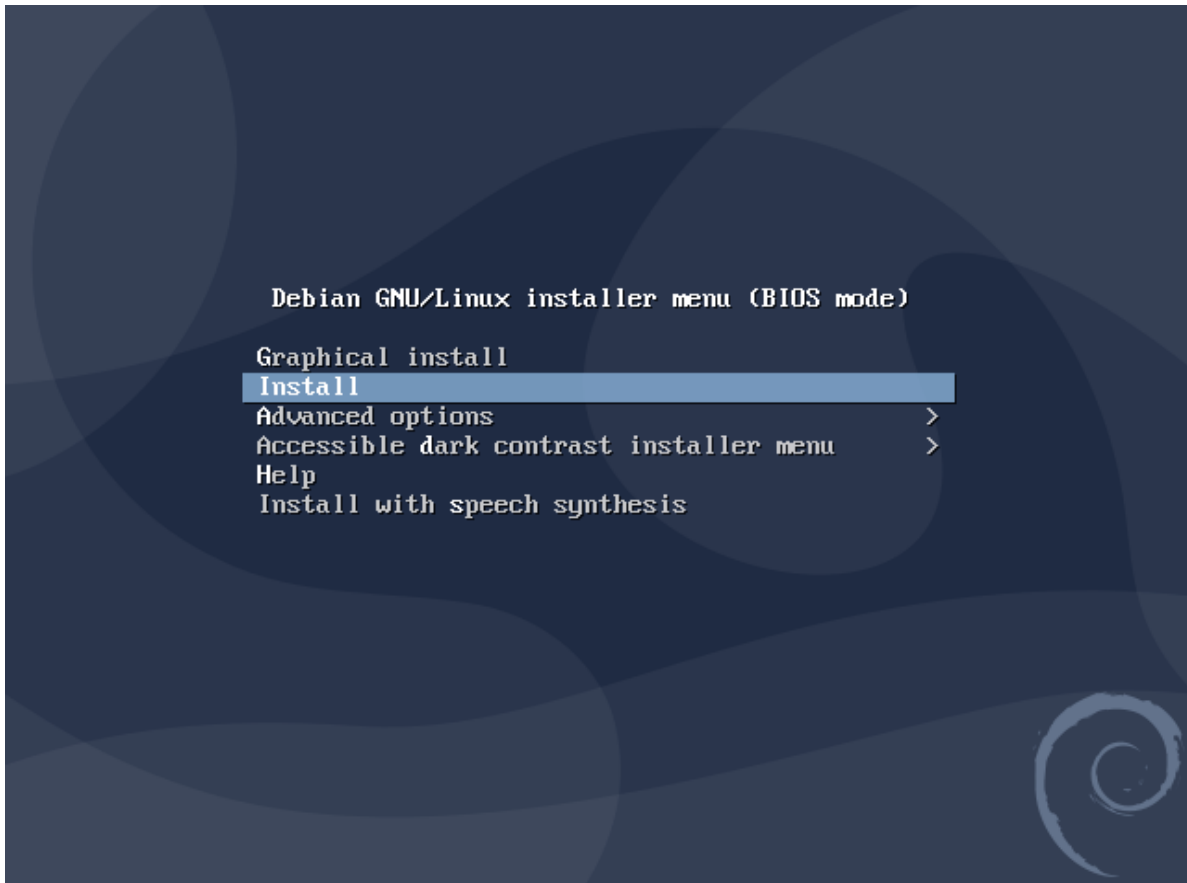
It is recommended that the Debian operating system be installed on a computer / virtual machine, where no other operating system is installed.

The computer(s) / virtual machine(s) on which the ACCO NET system and database are to be installed must have access to the Internet.

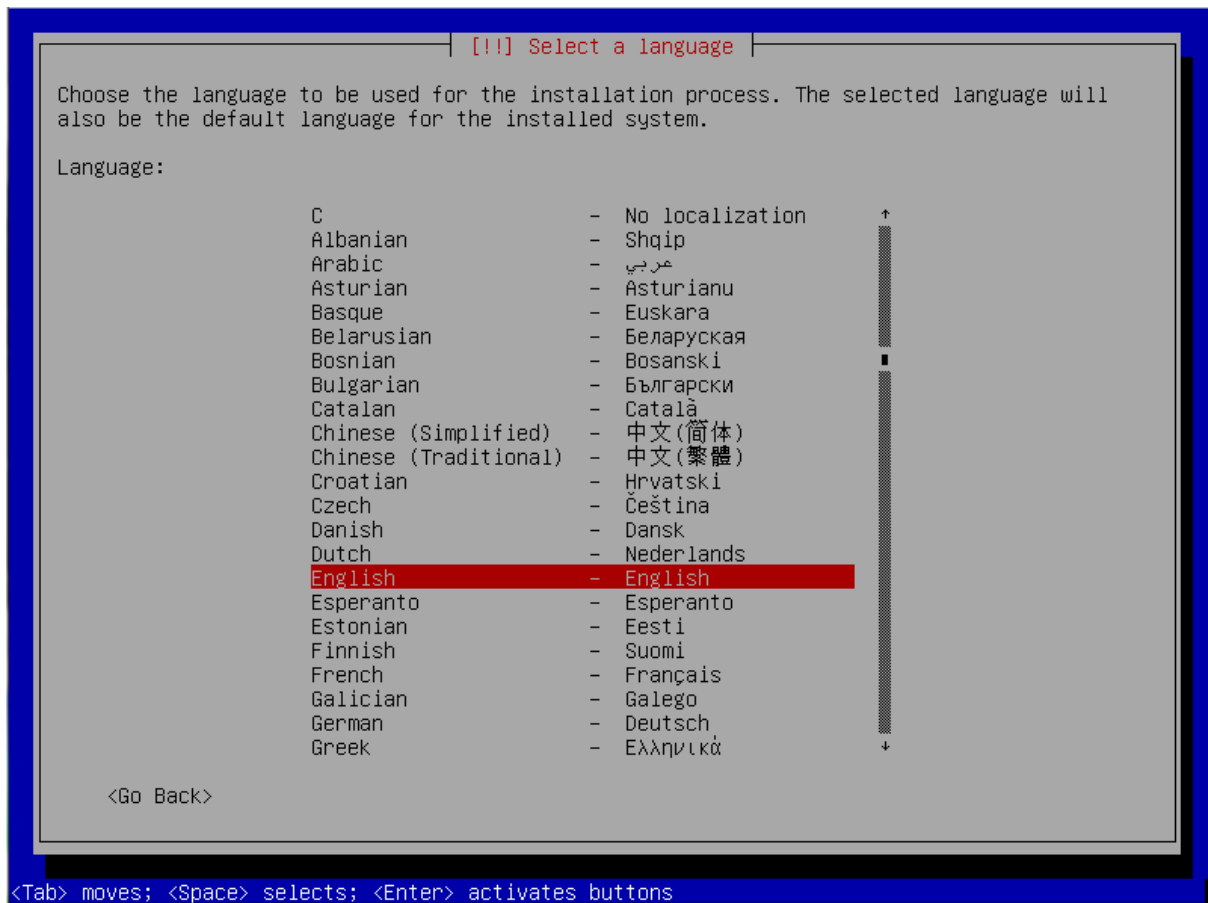
The Debian 11 („bullseye”) system for 64-bit PC (amd64) architecture is required. Below, we present an example installation of the Debian operating system version 10.8.

1. On the <https://www.debian.org/releases/bullseye/debian-installer/> website, select the appropriate image “amd64” from among the CD “netinst” images and save it to the hard disk. Having downloaded the ISO image, burn it to a CD or another carrier, e.g. a pendrive.
2. Insert the burned CD into the computer optical disk drive or the pendrive into the computer USB port. The splash screen of Debian system installer will be displayed.

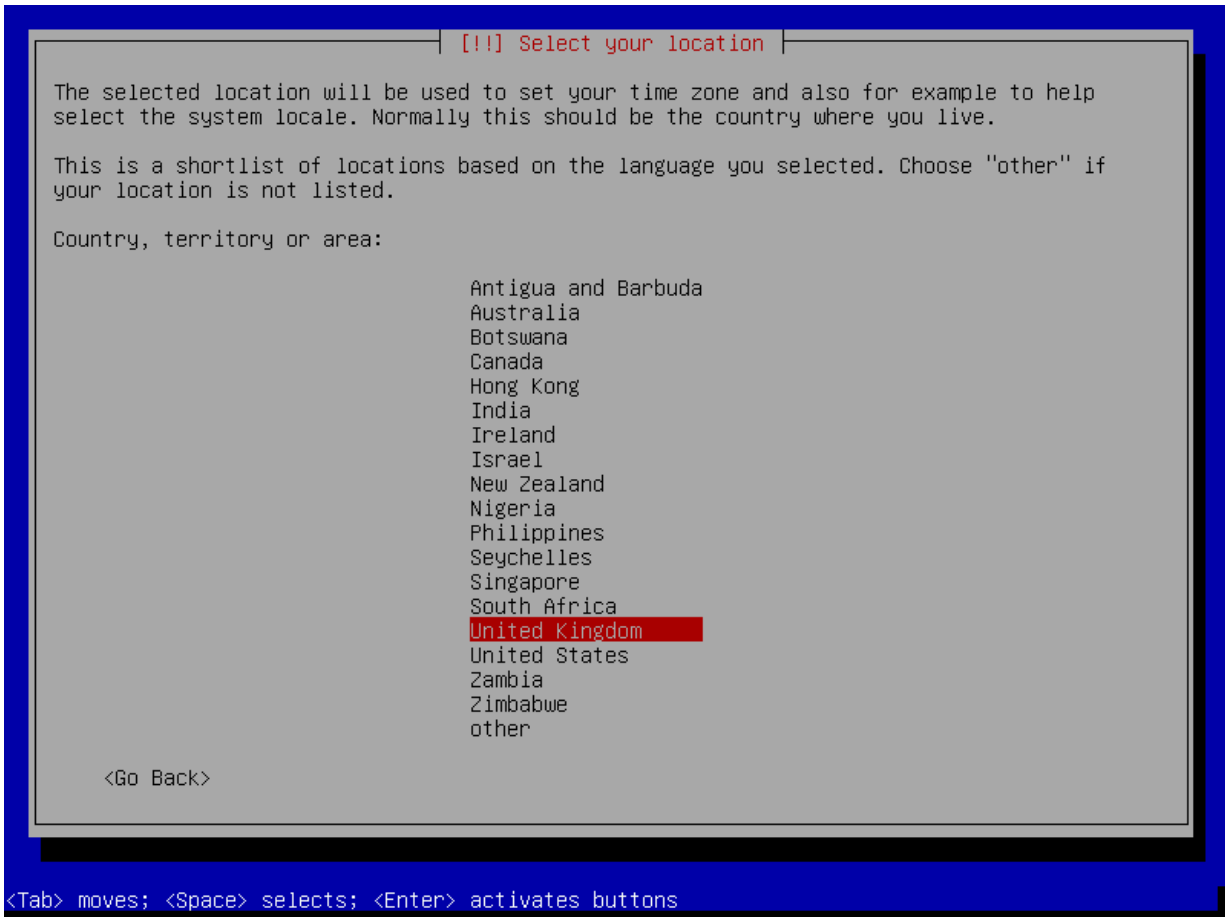
3. Select the "Install" command and press ENTER.



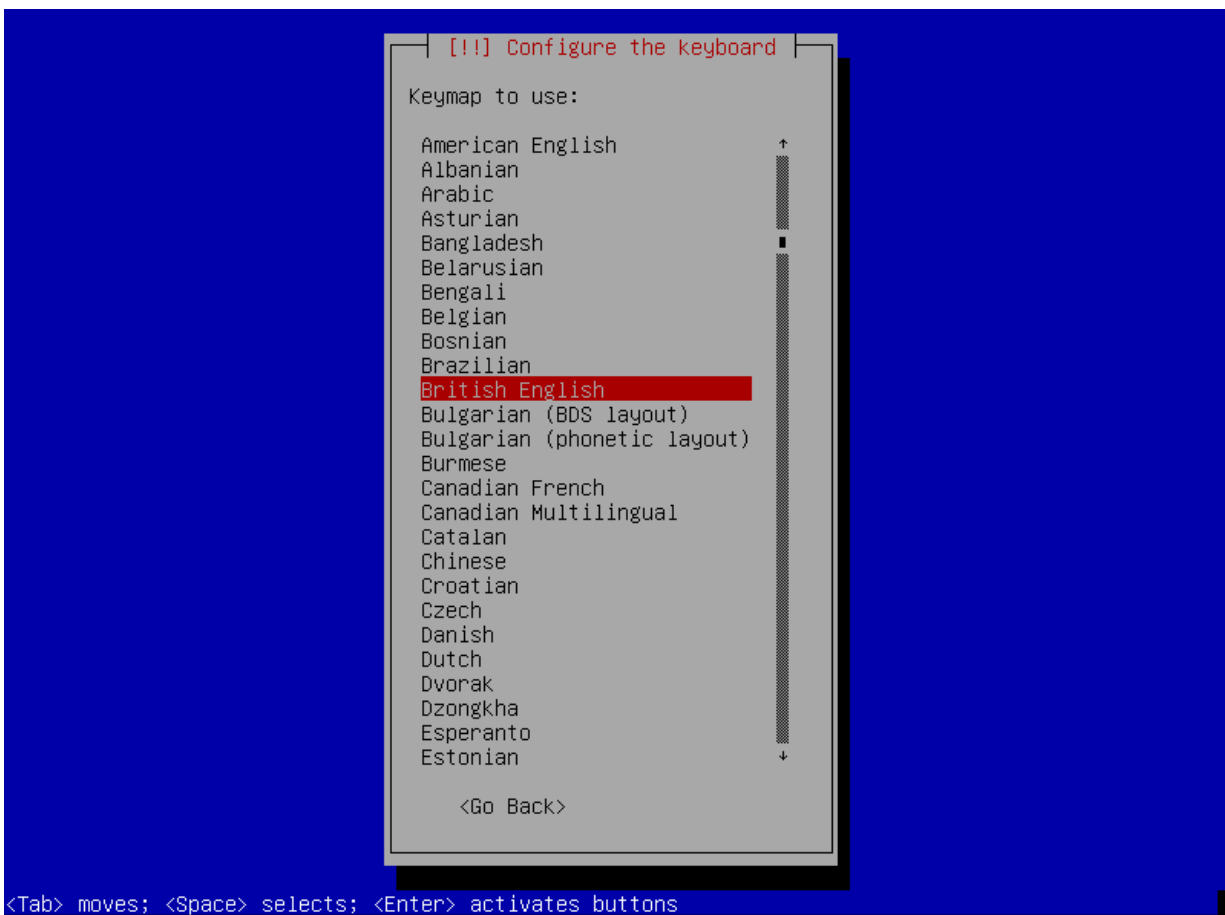
4. Select the language to be used for the installation process and press ENTER.



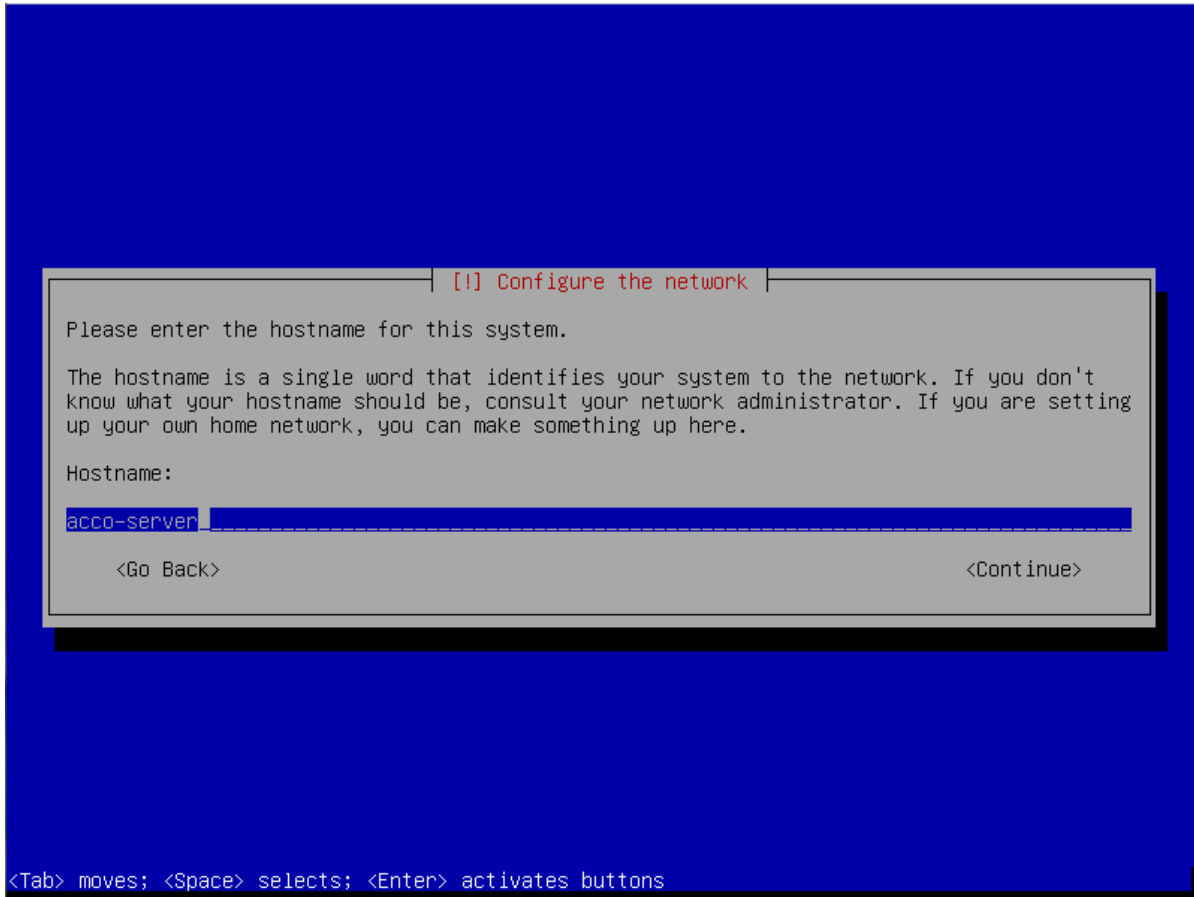
5. Select the location and press ENTER.



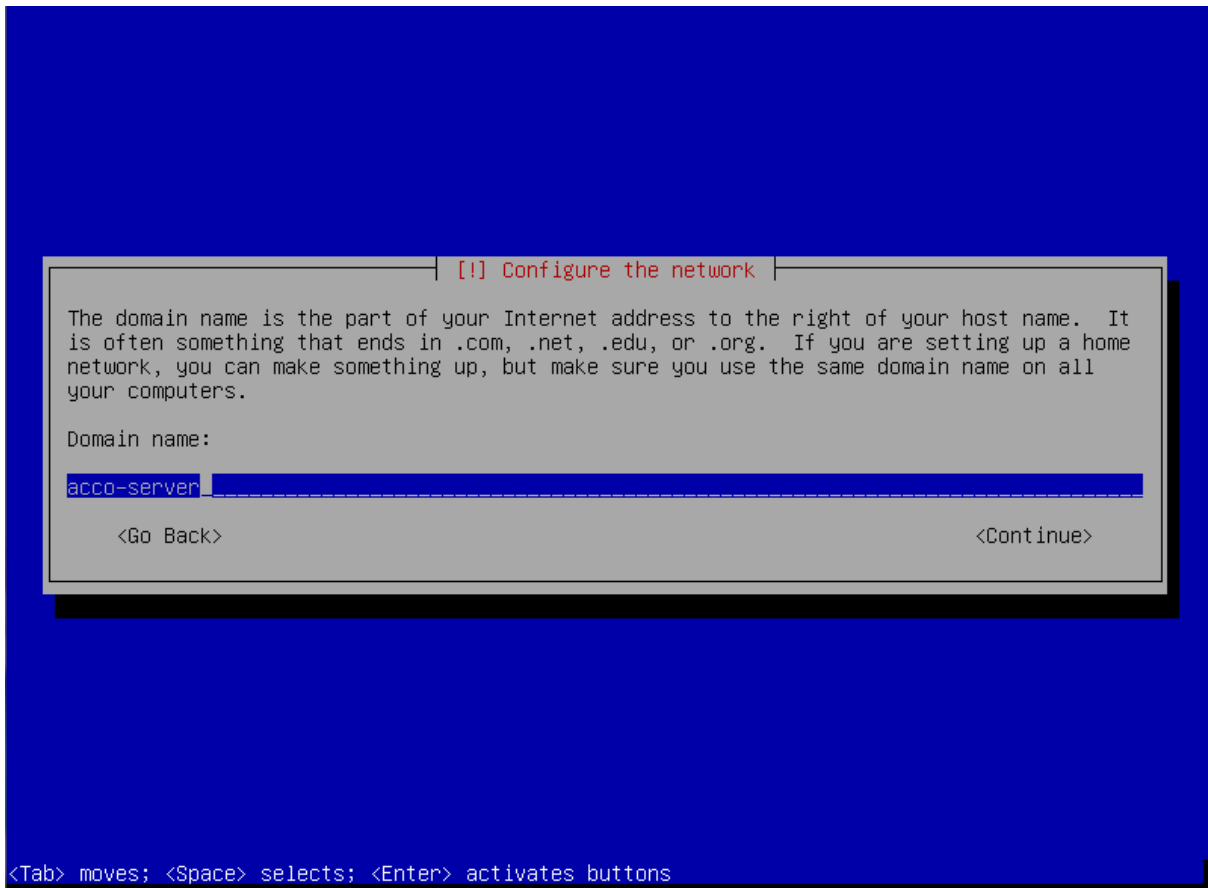
6. Select the keyboard layout language and press ENTER.



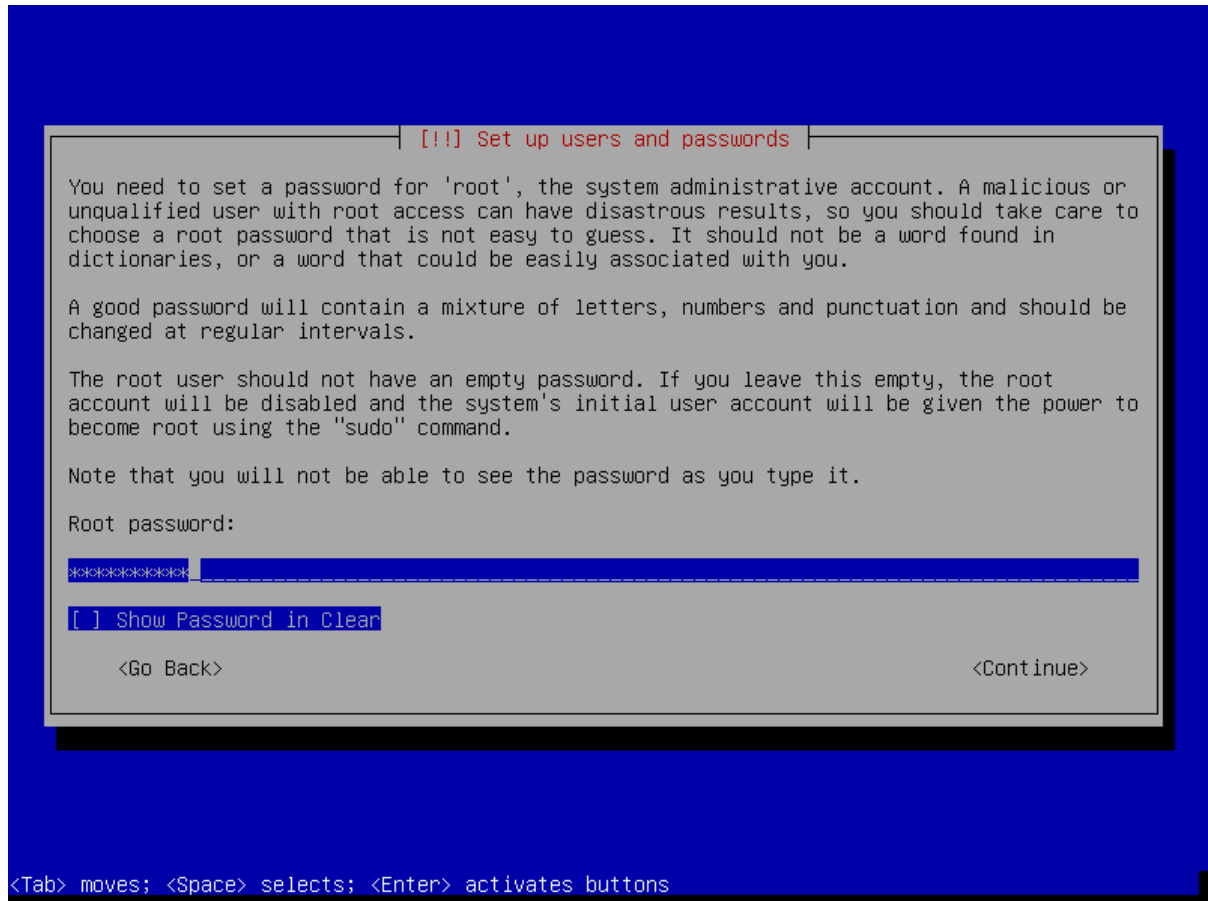
- 7. Windows indicating the installation progress will be displayed successively.
- 8. Enter the host name to configure the network and press ENTER.



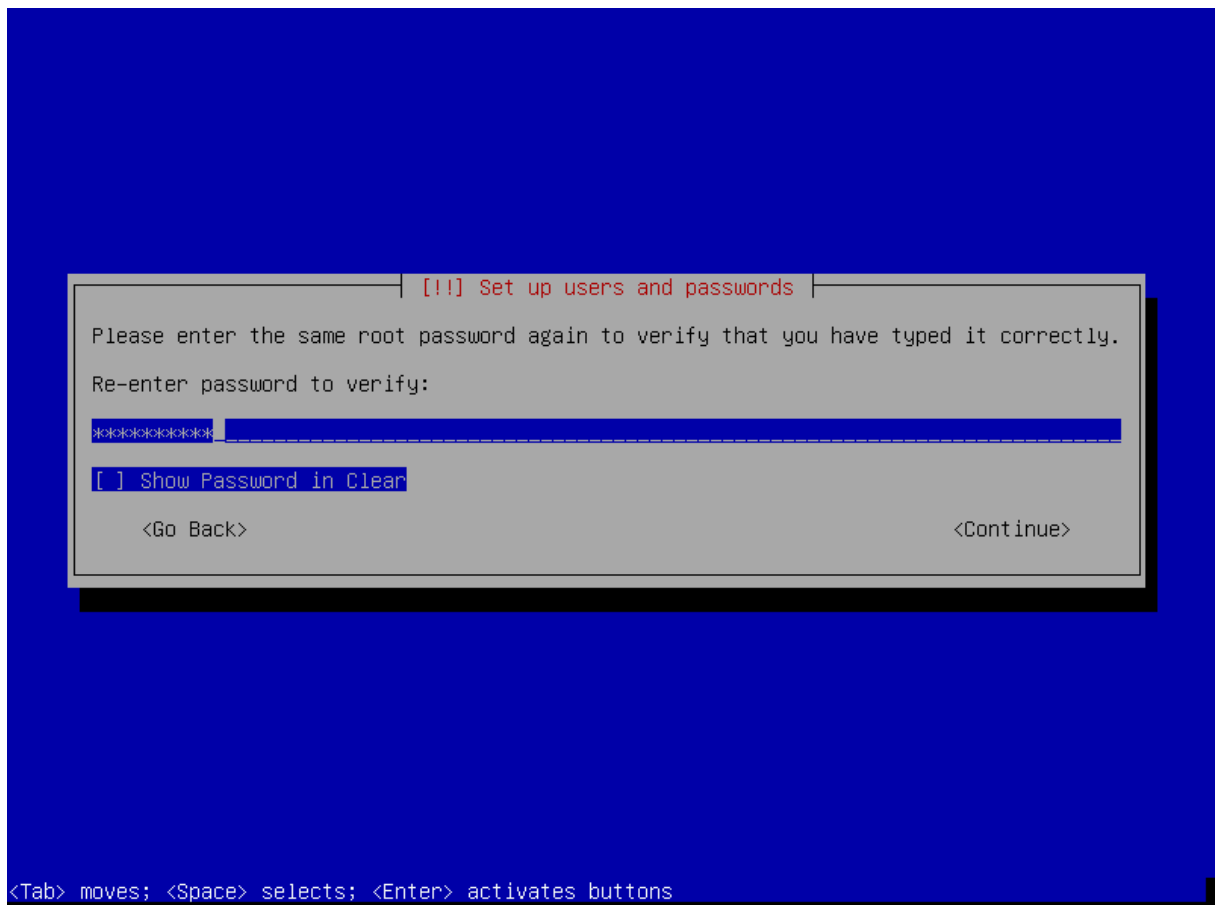
- 9. Enter the domain name and press ENTER.



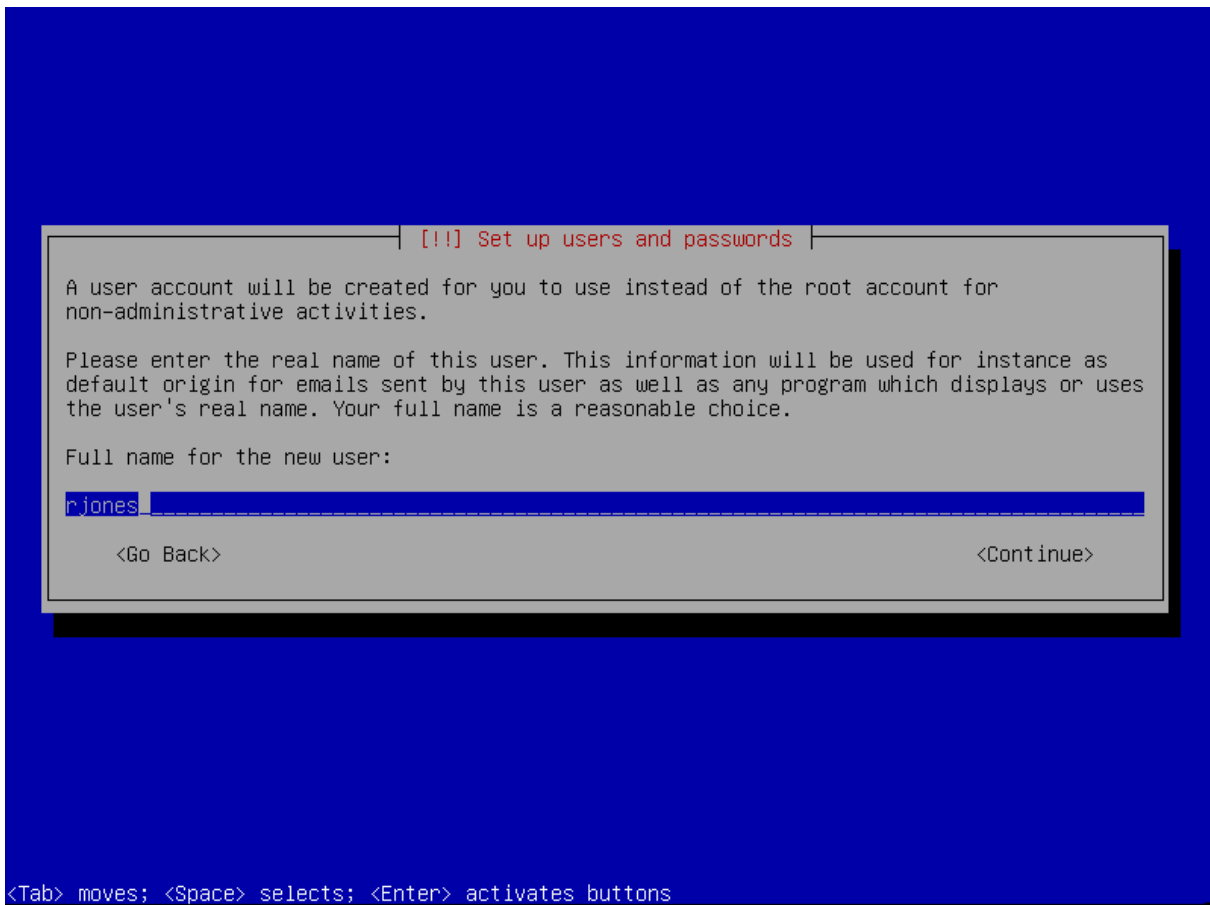
10. Define the password for the administrator (login: root) and press ENTER.



11. Repeat the password and press ENTER.

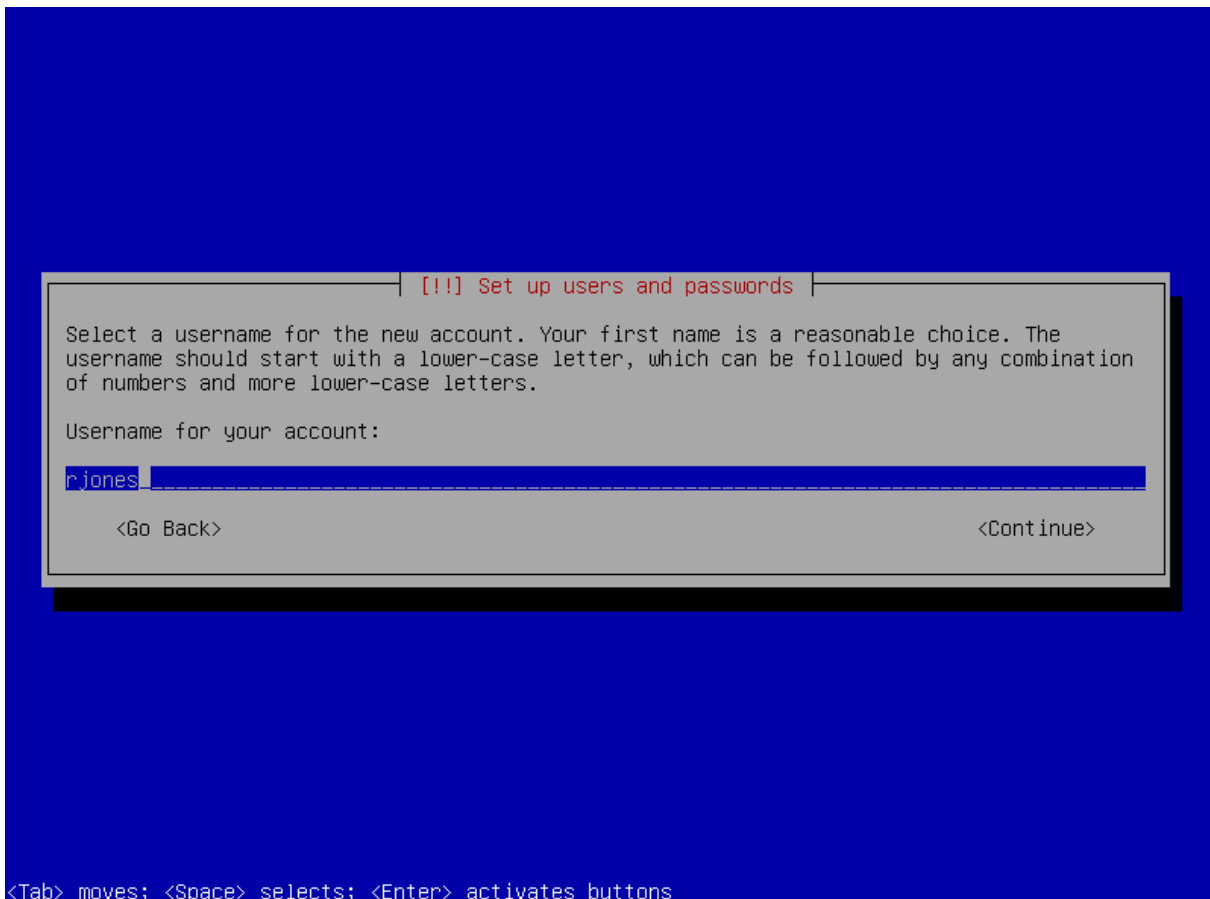


12. Give a name to the user (your additional account) and press ENTER. The “rjones” user name shown on the screenshot is just an example.



<Tab> moves; <Space> selects; <Enter> activates buttons

13. Enter the name for the new account (e.g. “rjones”) and press ENTER.



<Tab> moves; <Space> selects; <Enter> activates buttons

14. Enter the new user password and press ENTER.

!!! Set up users and passwords

A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.

Choose a password for the new user:

Show Password in Clear

<Go Back> <Continue>

<Tab> moves; <Space> selects; <Enter> activates buttons

15. Re-enter the password and press ENTER.

!!! Set up users and passwords

Please enter the same user password again to verify you have typed it correctly.

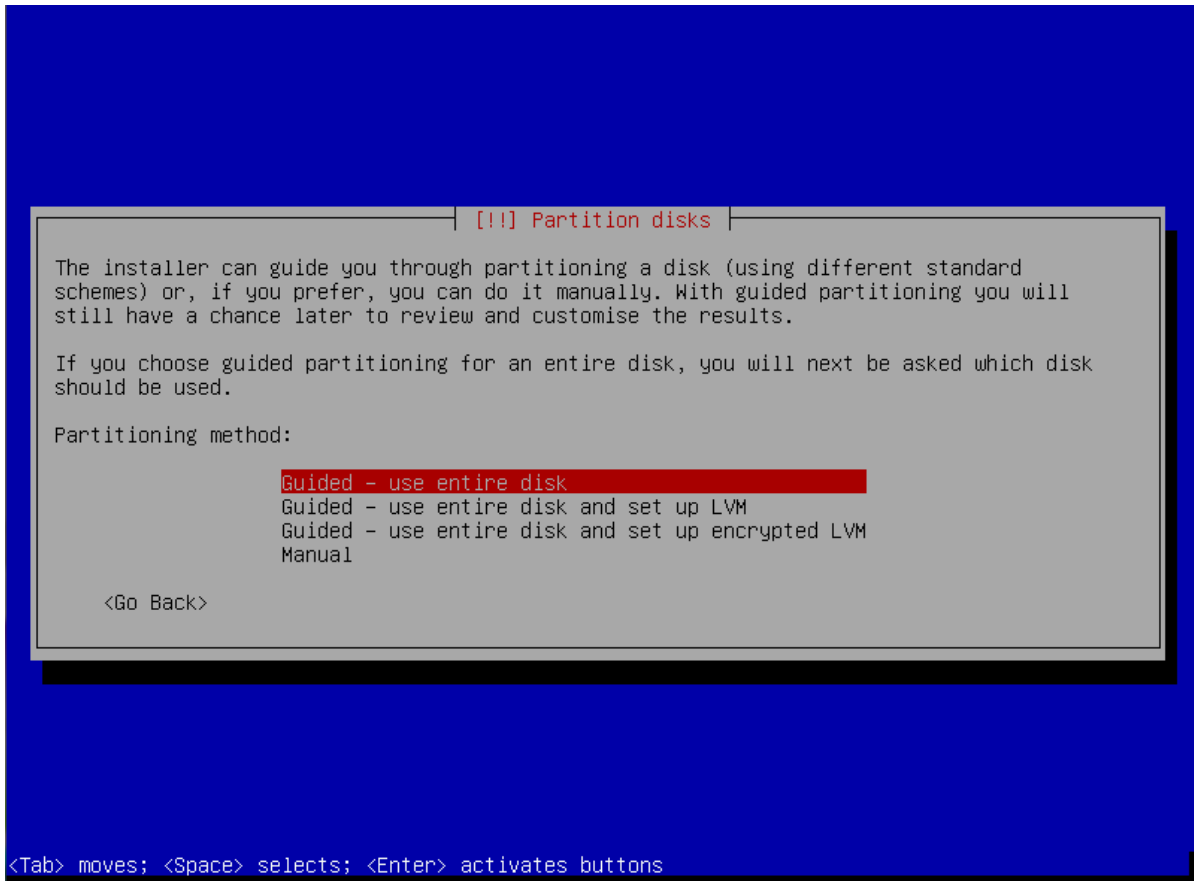
Re-enter password to verify:

Show Password in Clear

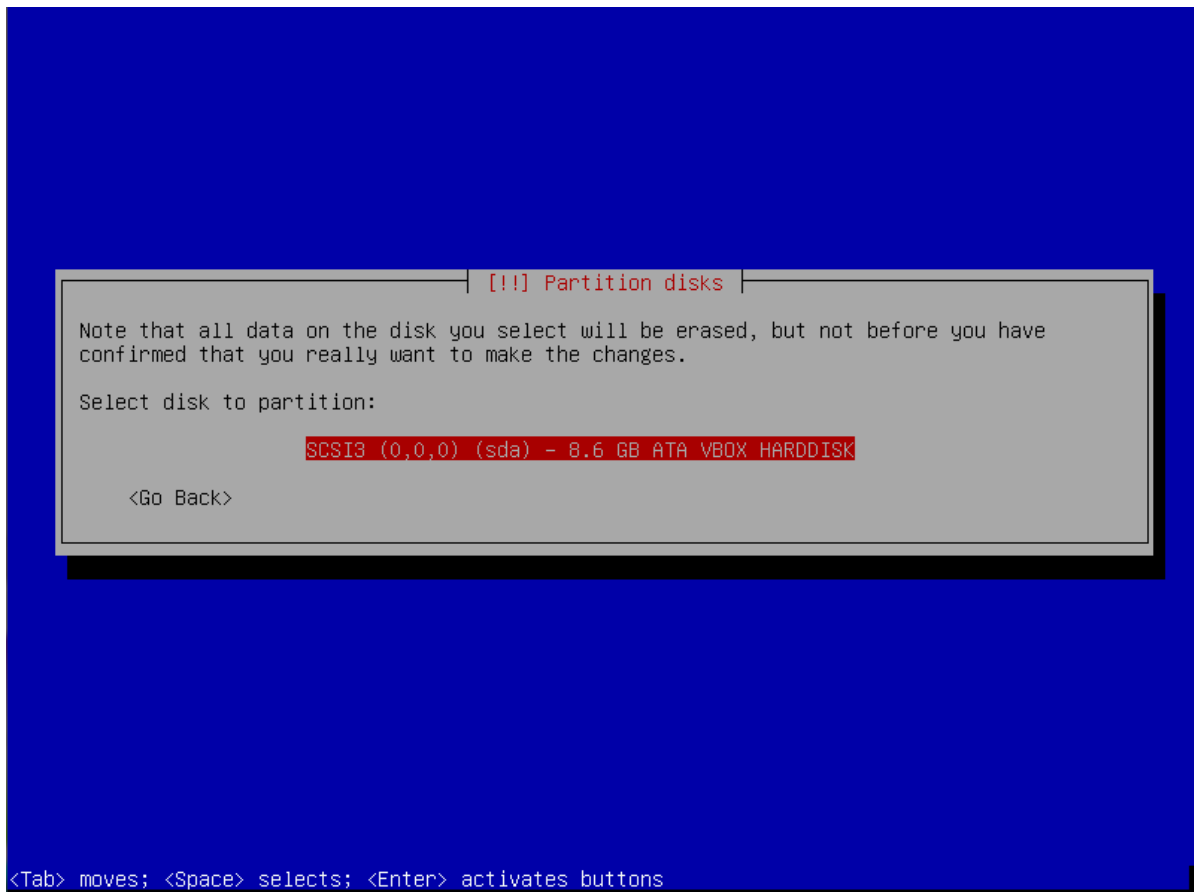
<Go Back> <Continue>

<Tab> moves; <Space> selects; <Enter> activates buttons

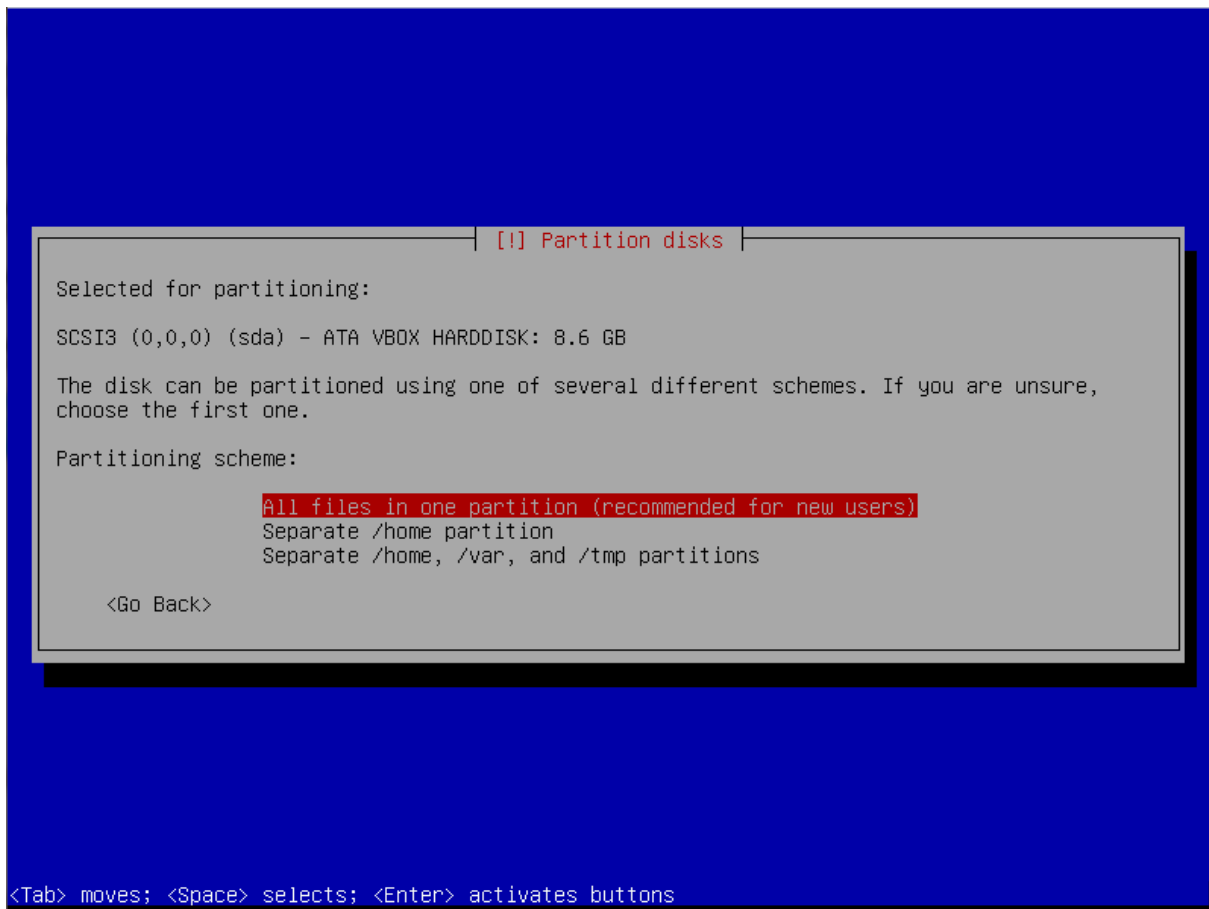
16. At the disk partitioning stage, select the "Guided – use entire disk" and press ENTER.



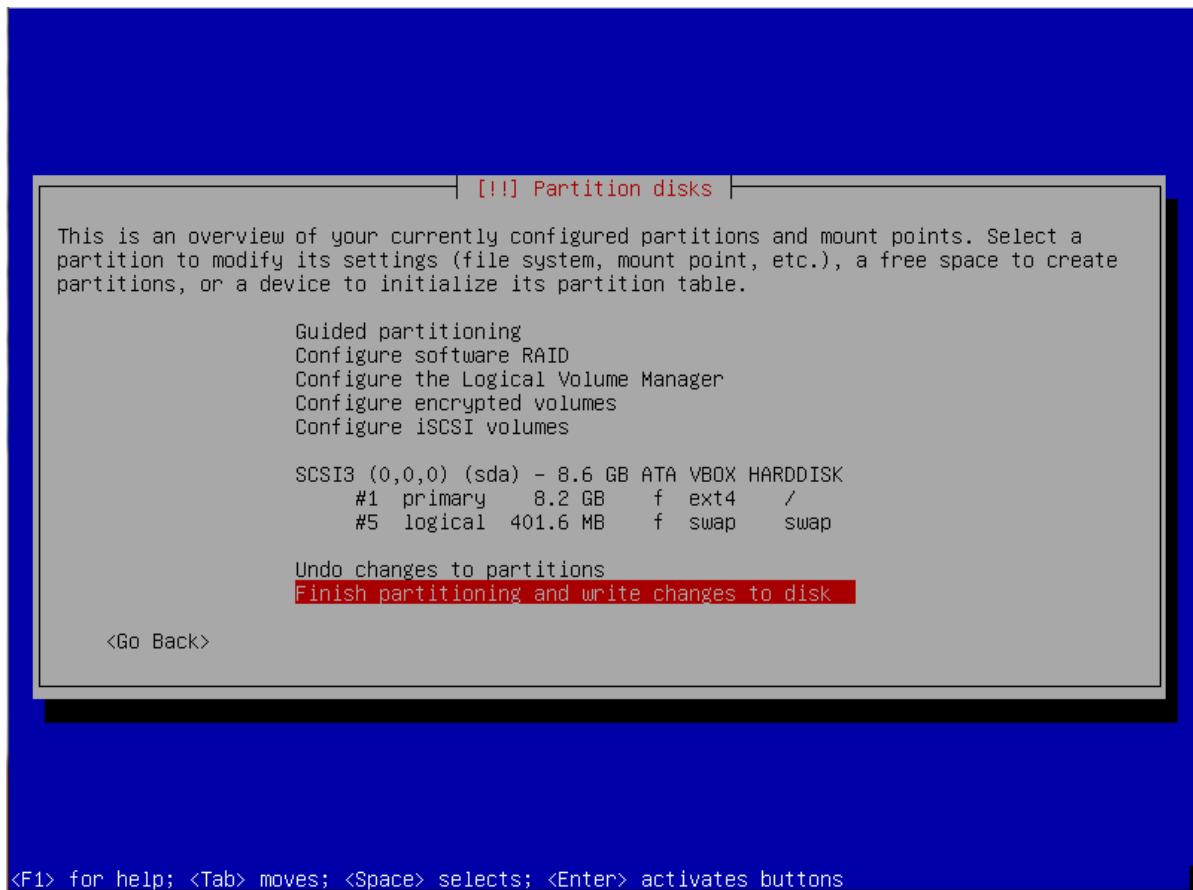
17. When a command prompt to specify the disk to be partitioned is displayed, press ENTER.



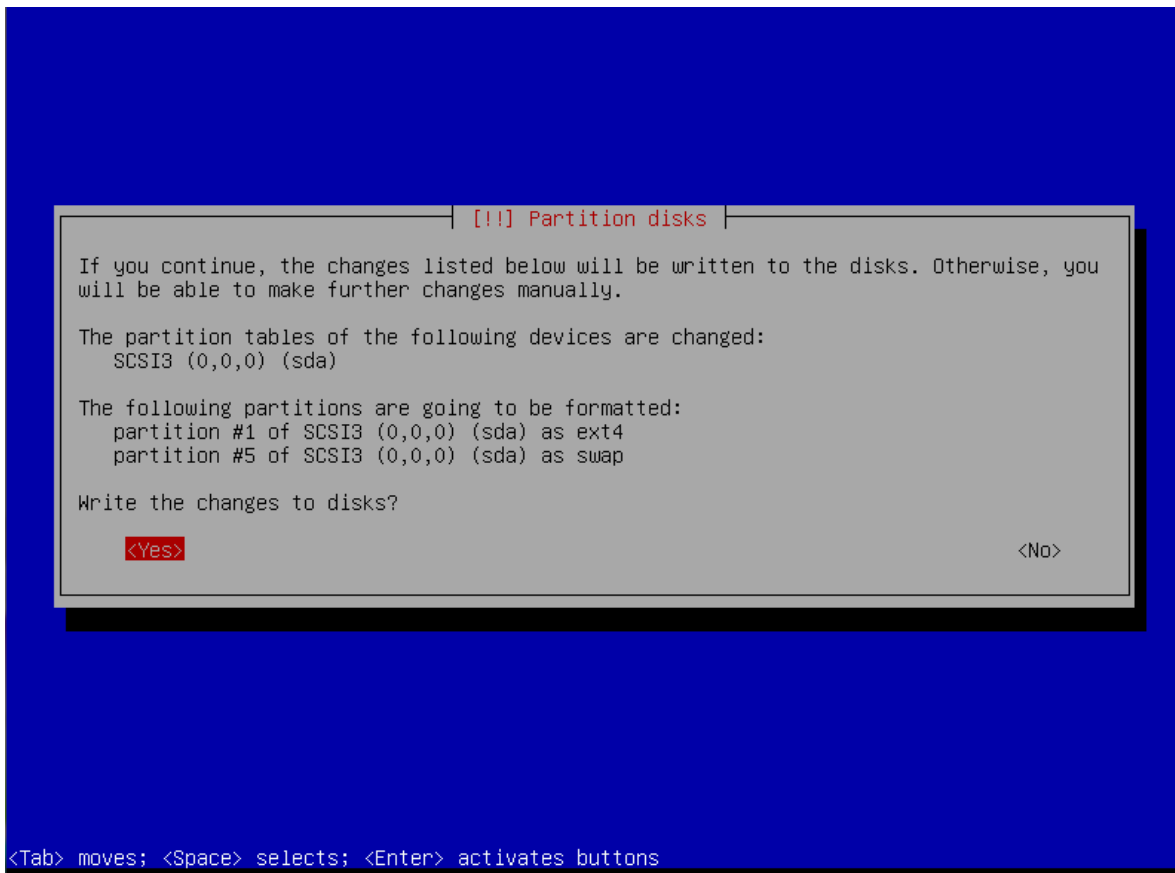
18. Select the “All files in one partition (recommended for new users)” partitioning method and press ENTER.



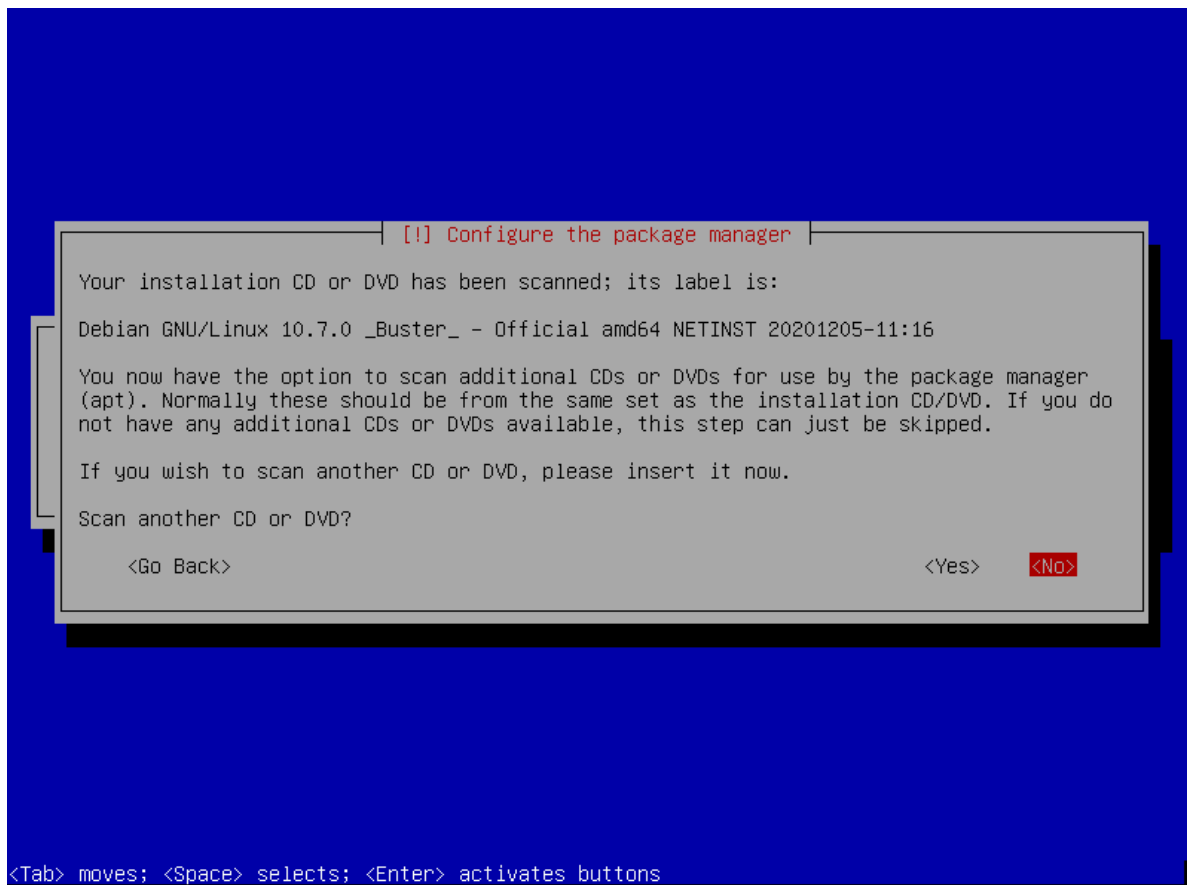
19. Select the “Finish partitioning and write changes to disk” option and press ENTER.



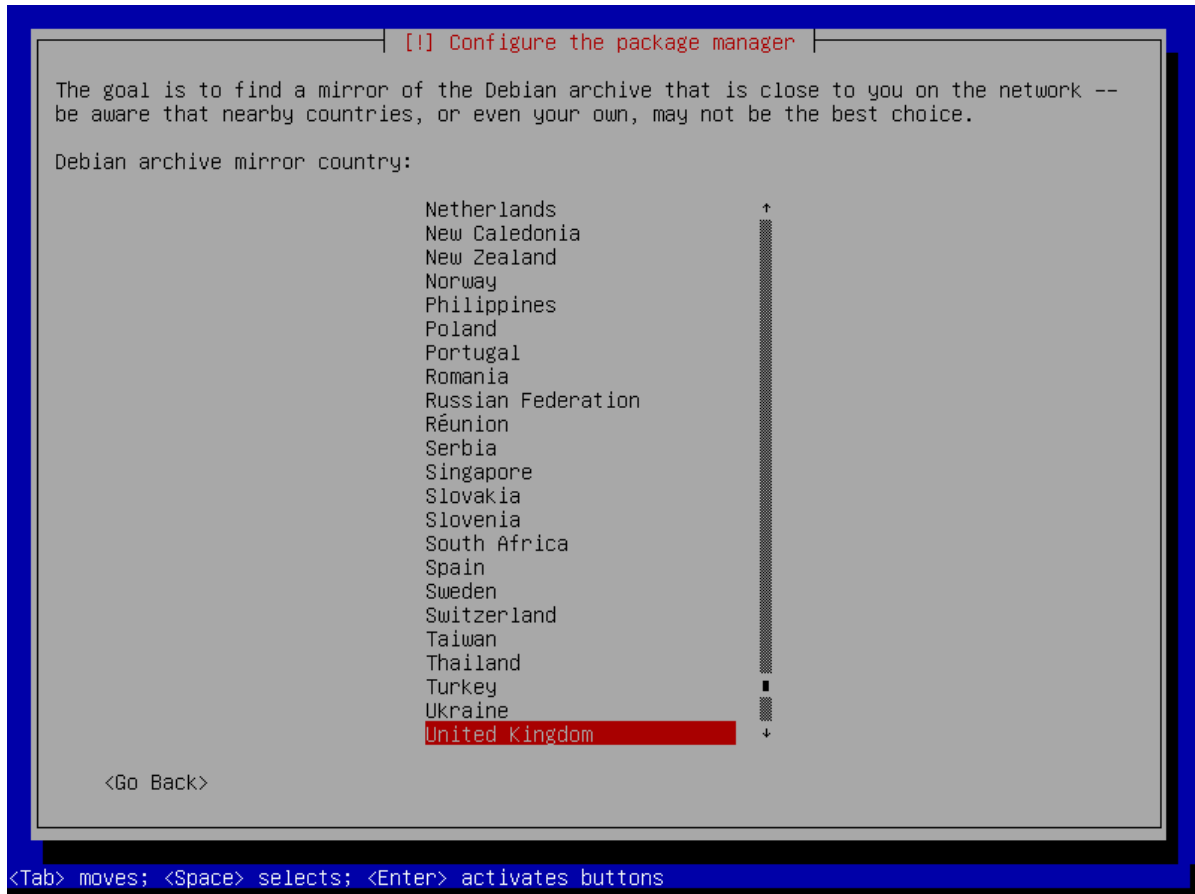
20. When a prompt appears asking whether you wish to save the changes, select “Yes” and press ENTER.



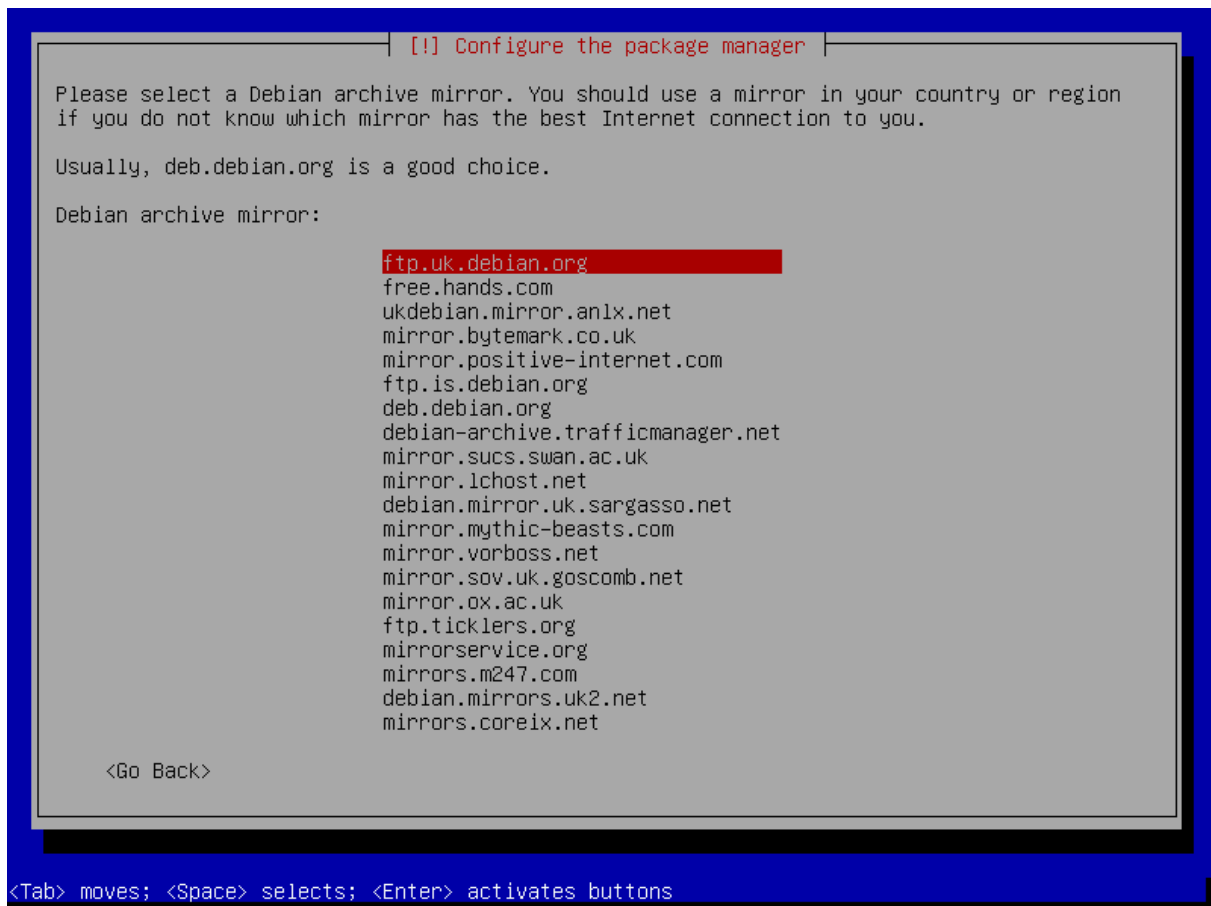
21. You will be asked if you want to scan another CD/DVD. Select one of the available options and click ENTER.



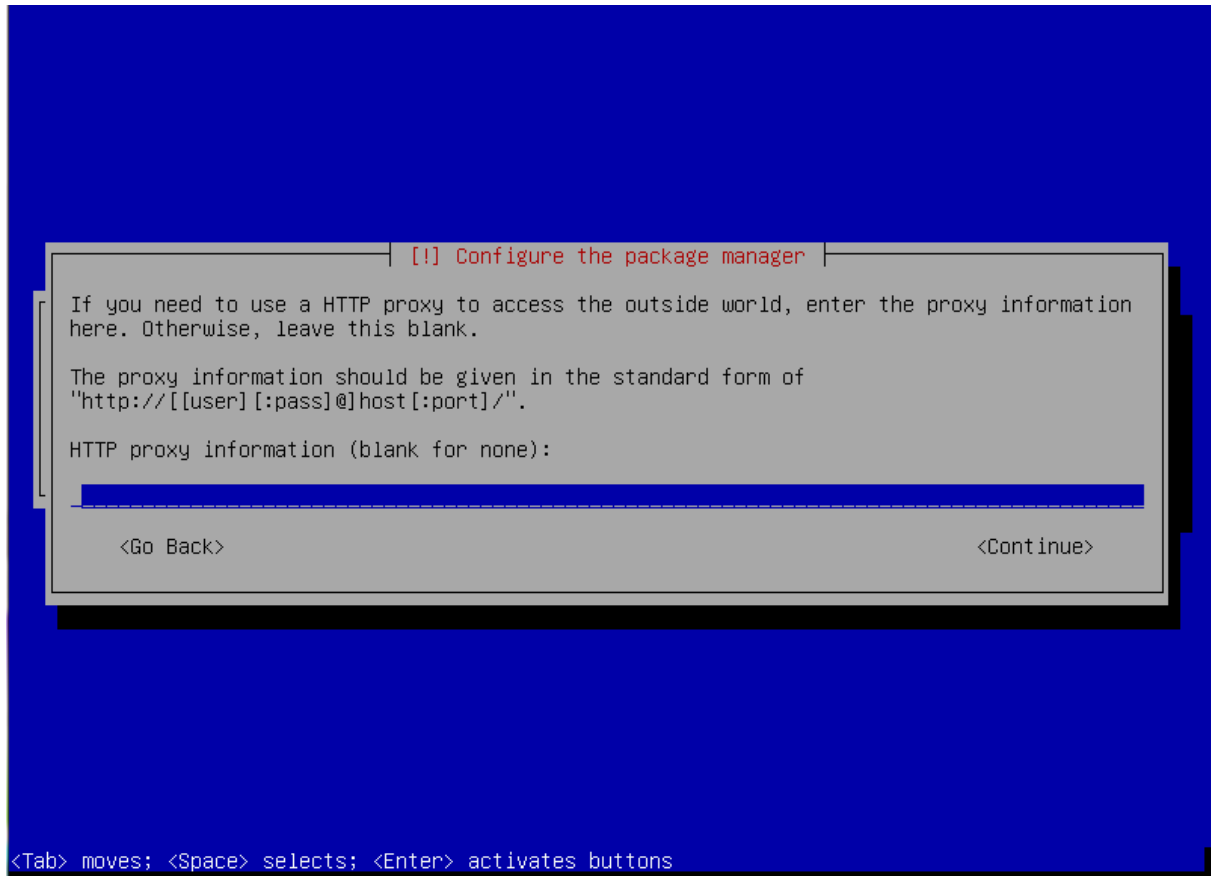
22. Select the country for the http proxy server and press ENTER.



23. Select the archive name for http proxy server and press ENTER.

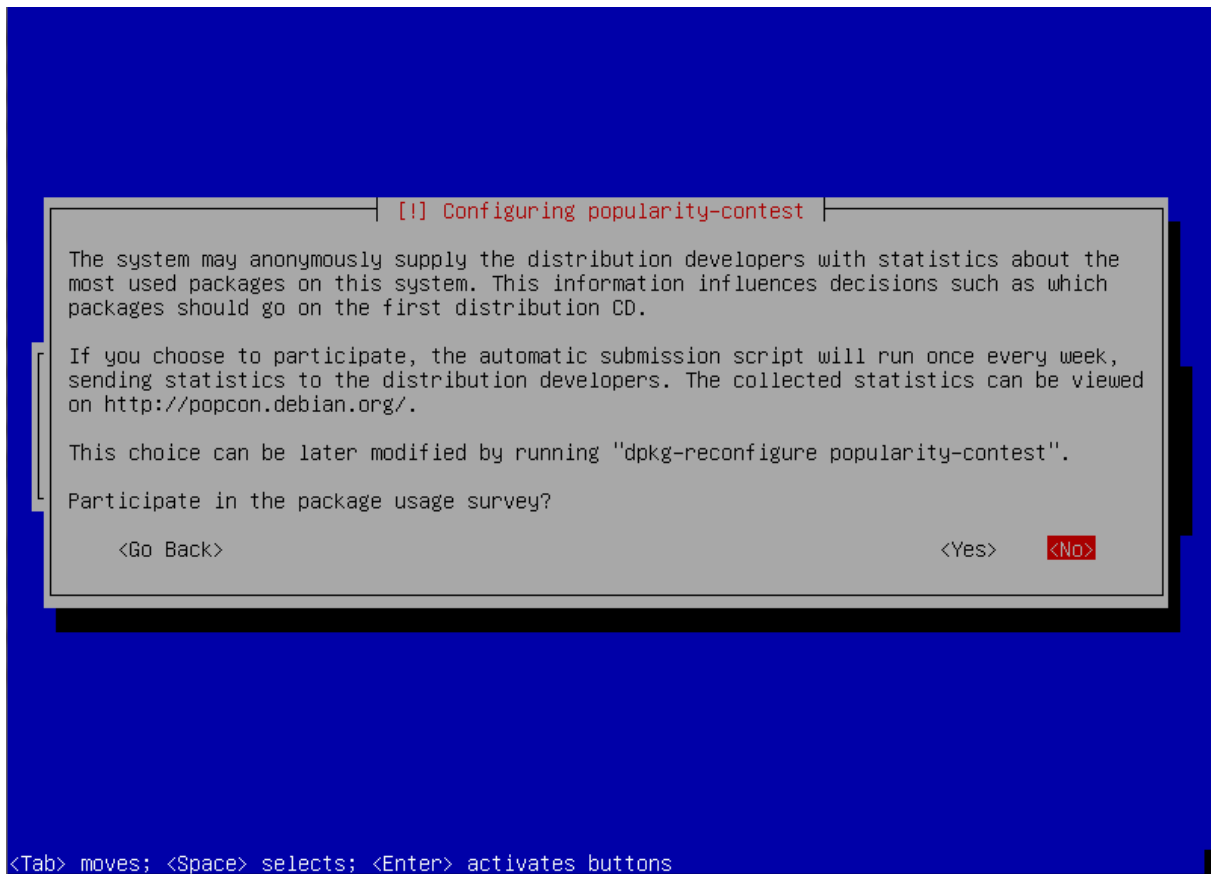


24. Do not enter any http proxy related data, but select "Next" and press ENTER.

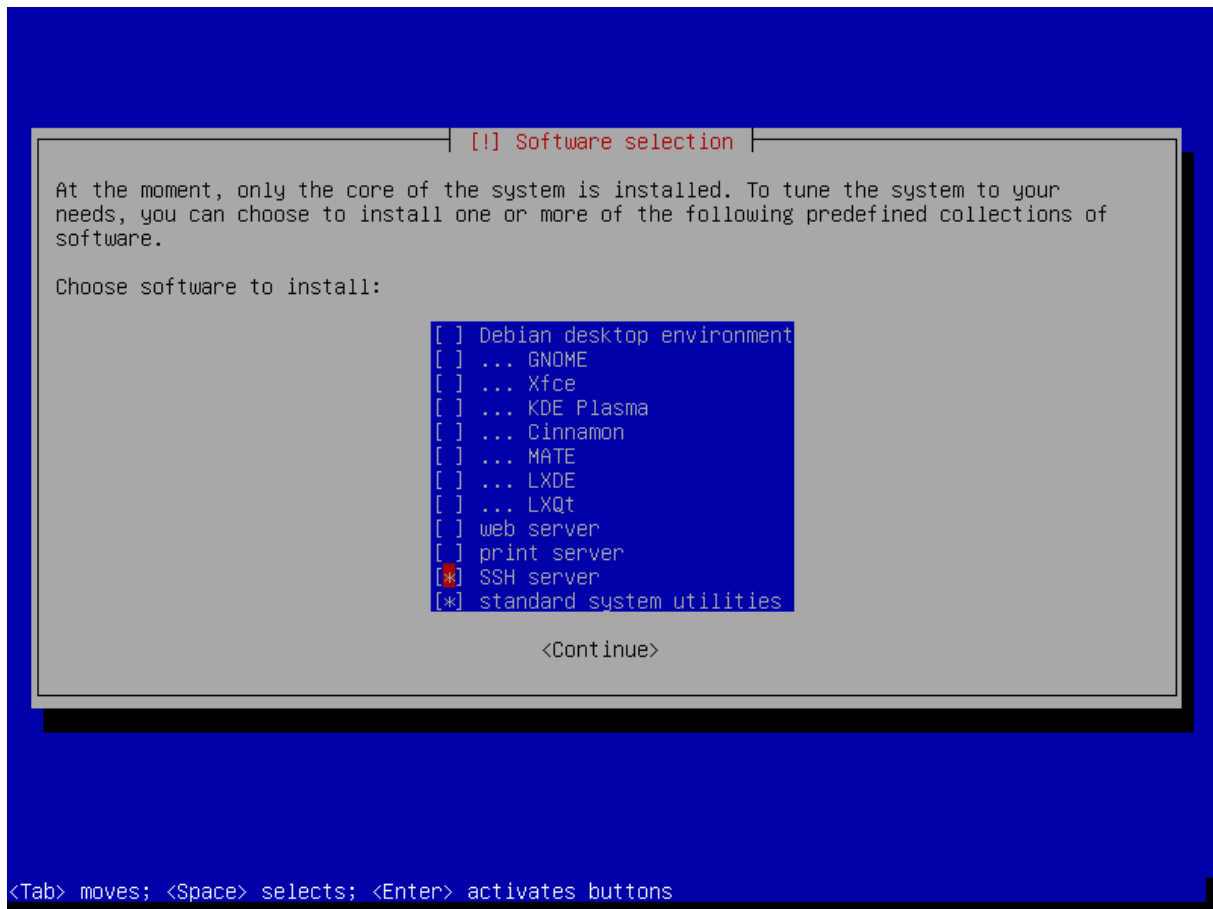


25. Next windows indicating the installation progress will be displayed.

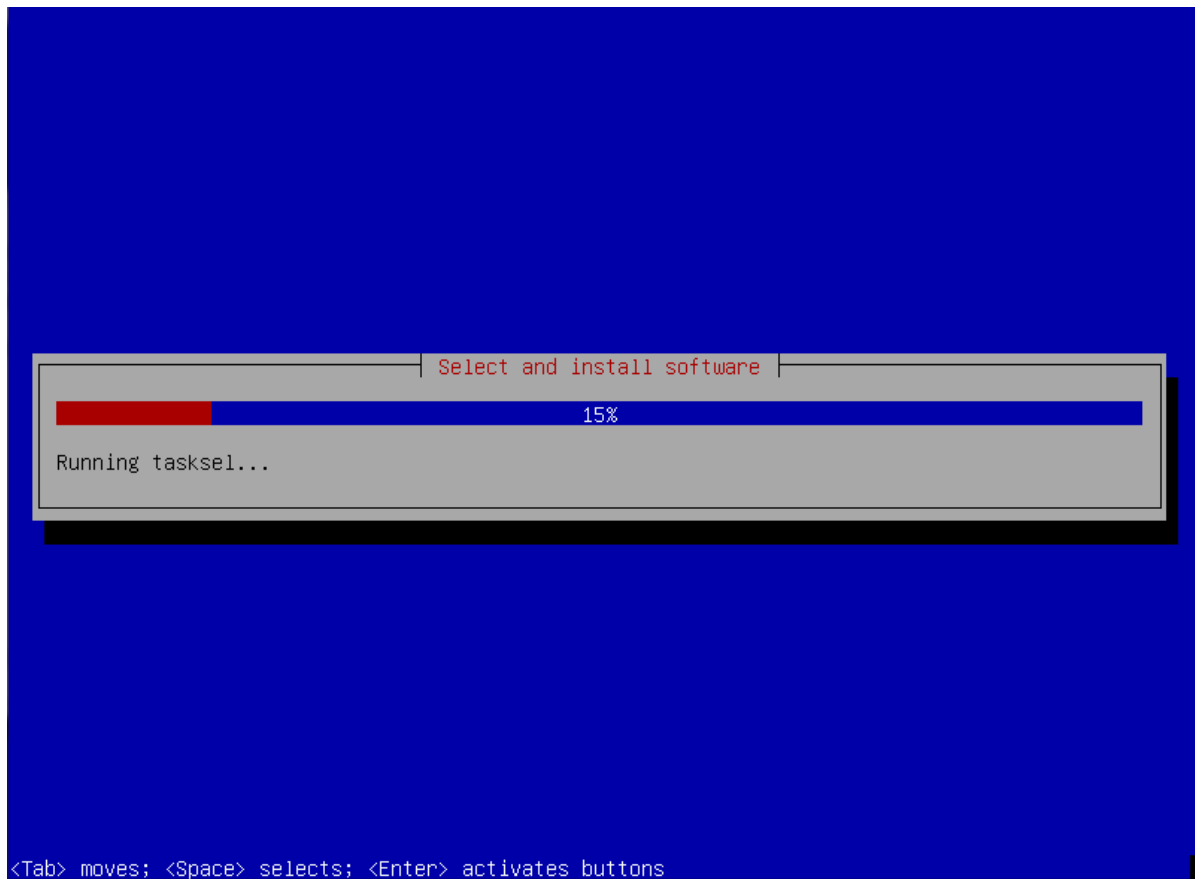
26. When the "Configuration of popularity-contest package" window is displayed, select one of the available options and press ENTER.



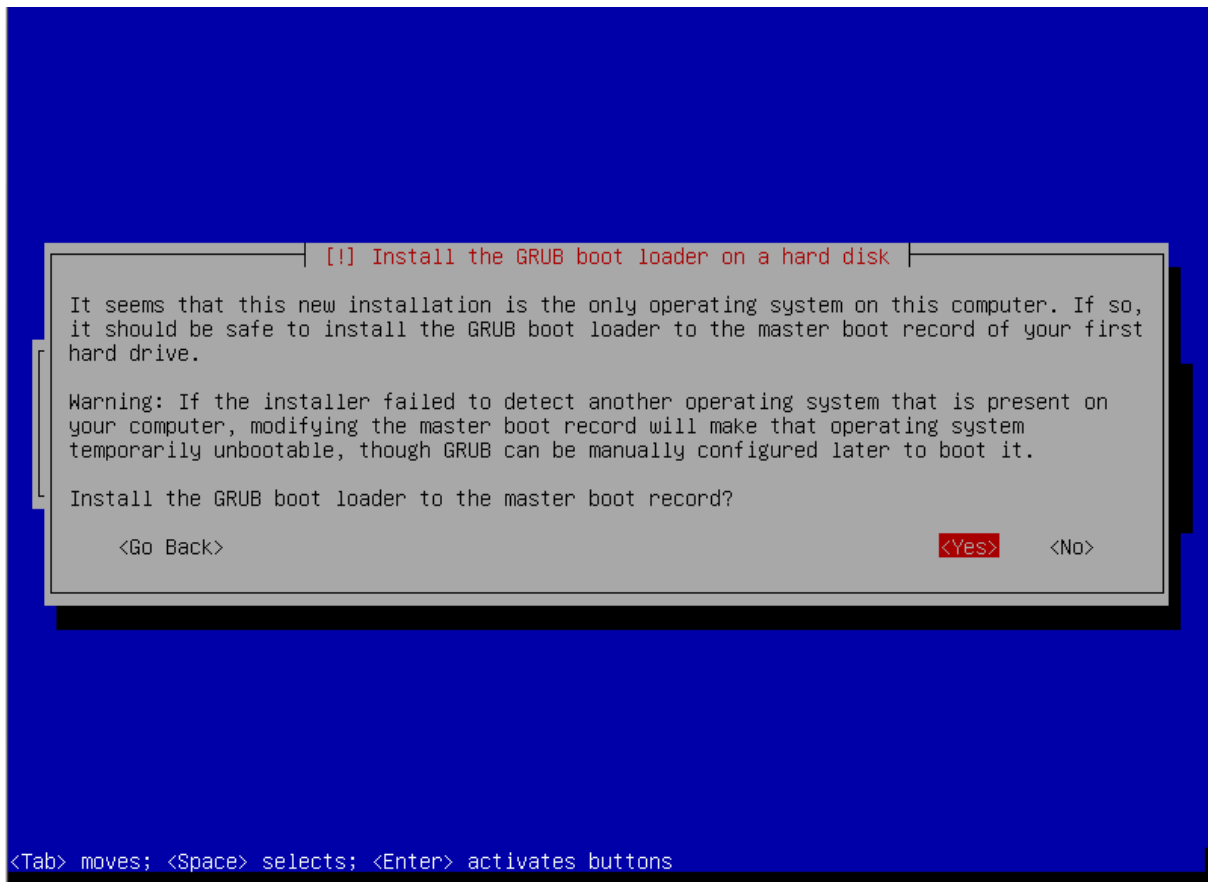
27. Press repeatedly the space key to select software you want to install: “SSH server” and “Standard system utilities” (leave the other fields unselected). Then, press ENTER.



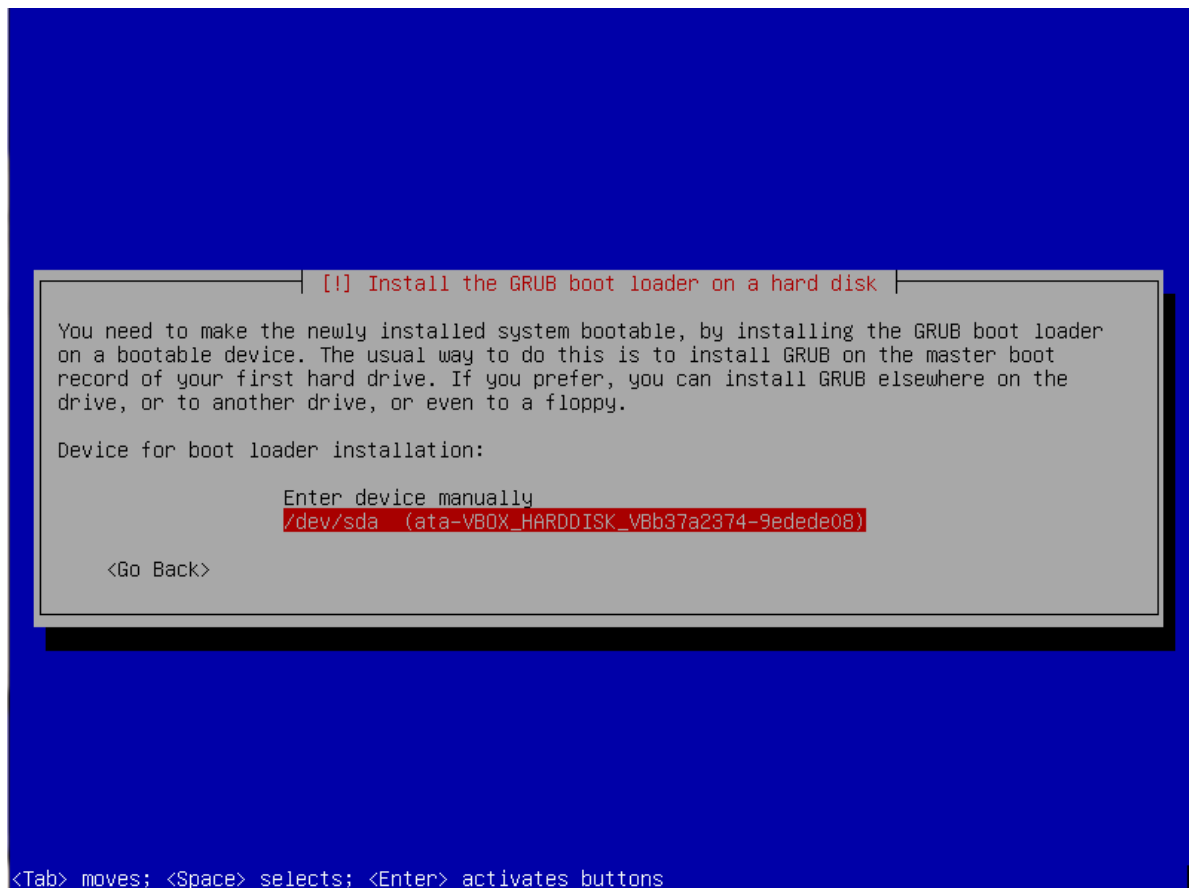
28. Windows indicating the progress of installation will be displayed successively.



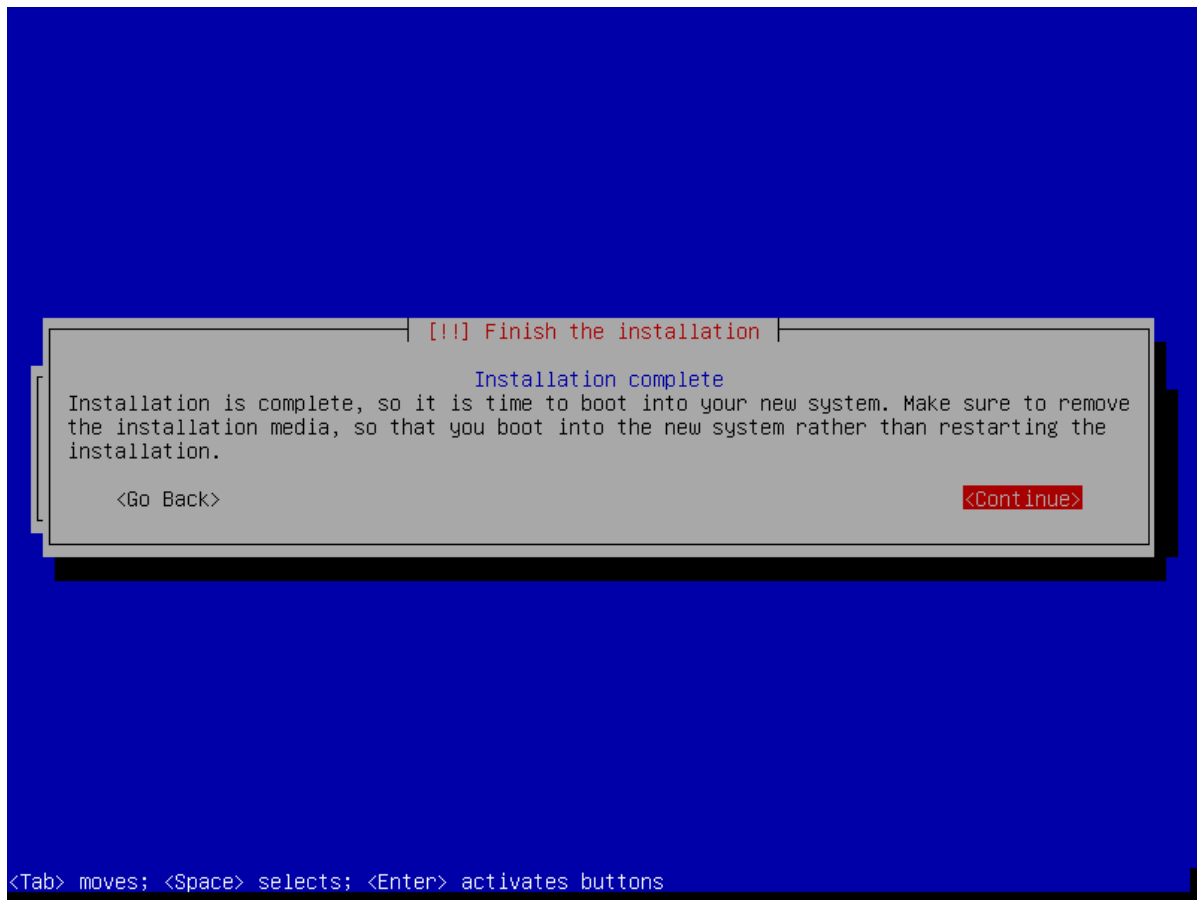
29. When a prompt appears asking whether you wish to install the GRUB boot loader, select "Yes" and press ENTER.



30. Highlight the name of the master boot record of the first hard disk on which the GRUB boot loader will be installed and press ENTER.



31. When information on installation completion is displayed, press ENTER. Restart of the system will follow.



6.2 Installing the server environment and ACCO NET system



Each time before starting the system installation procedure, make sure that this manual applies to the system version you want to install.

The server environment and the ACCO NET system can be installed using:

- a console running from the command line on a computer / virtual machine where the ACCO NET system is to be installed,
- SSH using, for example, the PuTTY program, if you connect remotely to a computer / virtual machine where the ACCO NET system is to be installed.



If you connect remotely via SSH using the PuTTY program to the computer / virtual machine where the ACCO NET system is to be installed, perform the following steps before starting the installation procedure:

1. *Change the PuTTY program settings. In the main window, select “Terminal”, and then “Features”. Check the “Disable application keypad mode” option. Select “Session” and click on the “Save” button to confirm the changes.*
2. *Set the screen resolution (minimum of 1280x800).*

If the remote database is to be used, before you start the installation procedure, go to the “Installing the ACCO NET system with remote database” section and follow the steps described there.

Below we present installation of the ACCO NET system in the PuTTY program.

1. Enter the user login and press ENTER.

```
login as: rjones
rjones@192.168.11.55's password:
```

2. Enter the password and press ENTER.

```
login as: rjones
rjones@192.168.11.55's password:
Linux acco-server 4.19.0-14-amd64 #1 SMP Debian 4.19.171-2 (2021-01-30) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Mon Mar  8 08:32:52 2021 from 192.168.9.11
rjones@acco-server:~$
```

3. Switch to administrator account by using the command:

su -l

```
login as: rjones
rjones@192.168.11.55's password:
Linux acco-server 4.19.0-14-amd64 #1 SMP Debian 4.19.171-2 (2021-01-30) x86_64

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the exact distribution terms for each program are described in the
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permitted by applicable law.
Last login: Mon Mar  8 08:32:52 2021 from 192.168.9.11
rjones@acco-server:~$ su -l
```

4. Enter the administrator password and press ENTER.

```
login as: rjones
rjones@192.168.11.55's password:
Linux acco-server 4.19.0-14-amd64 #1 SMP Debian 4.19.171-2 (2021-01-30) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Mon Mar  8 08:32:52 2021 from 192.168.9.11
rjones@acco-server:~$ su -l
Haslo:
root@acco-server:~#
```

5. Open the file with configuration settings for the systemd-timesyncd service, using the command:

```
nano /etc/systemd/timesyncd.conf
```

6. Delete the # comment tag at the front of the #NTP= line.

7. Enter the time server IP address or domain name. In the UK, enter e.g.:
NTP=uk.pool.ntp.org



Where the ACCO NET system is integrated with the INTEGRA / INTEGRA Plus alarm system, the time server IP address must be entered in the time synchronization settings of the alarm control panel.

8. Save and close the file.

9. Start the procedure of automatic synchronization of the Debian operating system with the NTP time server by using the command:

```
timedatectl set-ntp true
```

10. To download the installation package of ACCO NET system, use the command:

```
wget https://updates.satel.pl/acco_net_latest/installer/acco-installer-online.sh
```

```
login as: rjones
rjones@192.168.11.55's password:
Linux acco-server 4.19.0-14-amd64 #1 SMP Debian 4.19.171-2 (2021-01-30) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Mon Mar  8 08:32:52 2021 from 192.168.9.11
rjones@acco-server:~$ su -l
Haslo:
root@acco-server:~# wget https://updates.satel.pl/acco_net_latest/installer/acco-installer-online.sh
--2021-02-25 11:00:04-- http://updates.satel.pl/acco_net_latest/installer/acco-installer-online.sh
Resolving updates.satel.pl (updates.satel.pl)... 104.26.1.148, 172.67.72.46, 104.26.0.148
Connecting to updates.satel.pl (updates.satel.pl)|104.26.0.148|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 472389 (461K) [application/x-sh]
Saving to: 'acco-installer-online.sh'

acco-installer-online.sh  100%[=====>] 461,32K  --.-KB/s
in 0,09s

2021-02-25 11:00:05 (5,22 MB/s) - 'acco-installer-online.sh' saved [472389/472389]

root@acco-server:~#
```

11. Give permissions to run the installation package by using the command:

chmod 755 acco-installer-online.sh

```
login as: rjones
rjones@192.168.11.55's password:
Linux acco-server 4.19.0-14-amd64 #1 SMP Debian 4.19.171-2 (2021-01-30) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Mon Mar  8 08:32:52 2021 from 192.168.9.11
rjones@acco-server:~$ su -l
Haslo:
root@acco-server:~# wget https://updates.satel.pl/acco_net_latest/installer/acco-installer-online.sh
--2021-02-25 11:00:04-- http://updates.satel.pl/acco_net_latest/installer/acco-installer-online.sh
Resolving updates.satel.pl (updates.satel.pl)... 104.26.1.148, 172.67.72.46, 104.26.0.148
Connecting to updates.satel.pl (updates.satel.pl)|104.26.0.148|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 472389 (461K) [application/x-sh]
Saving to: 'acco-installer-online.sh'

acco-installer-online.sh  100%[=====>] 461,32K  --.-KB/s
in 0,09s

2021-02-25 11:00:05 (5,22 MB/s) - 'acco-installer-online.sh' saved [472389/472389]

root@acco-server:~# chmod 755 acco-installer-online.sh
root@acco-server:~#
```

12. Run the installation package by using the command:

./acco-installer-online.sh -i



Before starting the installation package, enter the **acco-installer-online.sh -h** to open help for the installation script: (see section “Starting help for the installation script”).

```
root@acco-server:~# wget https://updates.satel.pl/acco_net_latest/installer/acco
-installer-online.sh
--2022-02-18 12:58:41-- https://updates.satel.pl/acco_net_latest/installer/acco
-installer-online.sh
Resolving updates.satel.pl (updates.satel.pl)... 104.26.0.148, 104.26.1.148, 172
.67.72.46, ...
Connecting to updates.satel.pl (updates.satel.pl)|104.26.0.148|:443... connected
.
HTTP request sent, awaiting response... 200 OK
Length: 470918 (460K) [application/x-sh]
Saving to: 'acco-installer-online.sh'

acco-installer-onli 100%[=====>] 459.88K  2.56MB/s  in 0.2s

2022-02-18 12:58:41 (2.56 MB/s) - 'acco-installer-online.sh' saved [470918/47091
8]

root@acco-server:~# chmod 755 acco-installer-online.sh
root@acco-server:~# ./acco-installer-online.sh -i
Starting installation wizard...
Extracting, please be patient...
```

13. When you are asked if you want to install the “curl” package, enter y.

```
root@acco-server:~# wget https://updates.satel.pl/acco_net_latest/installer/acco
-installer-online.sh
--2022-02-18 12:58:41-- https://updates.satel.pl/acco_net_latest/installer/acco
-installer-online.sh
Resolving updates.satel.pl (updates.satel.pl)... 104.26.0.148, 104.26.1.148, 172
.67.72.46, ...
Connecting to updates.satel.pl (updates.satel.pl)|104.26.0.148|:443... connected
.
HTTP request sent, awaiting response... 200 OK
Length: 470918 (460K) [application/x-sh]
Saving to: 'acco-installer-online.sh'

acco-installer-onli 100%[=====>] 459.88K  2.56MB/s   in 0.2s

2022-02-18 12:58:41 (2.56 MB/s) - 'acco-installer-online.sh' saved [470918/47091
8]

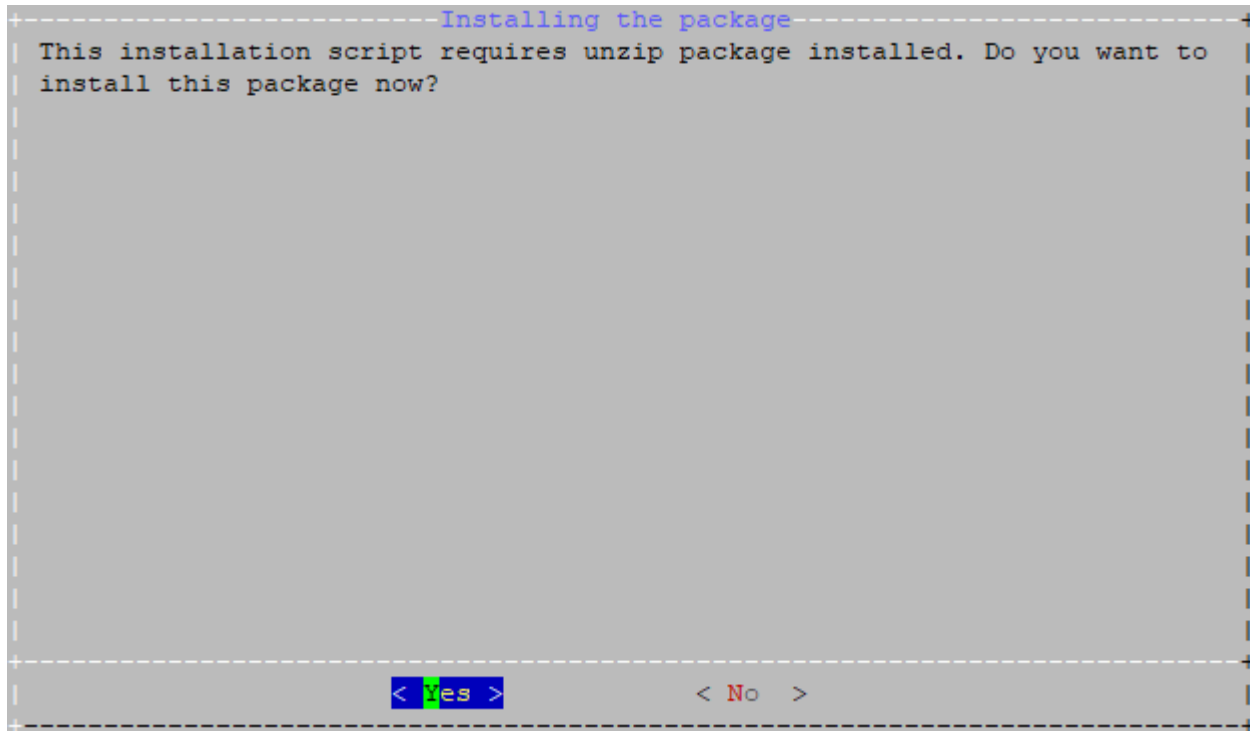
root@acco-server:~# chmod 755 acco-installer-online.sh
root@acco-server:~# ./acco-installer-online.sh -i
Starting installation wizard...
Extracting, please be patient...
Installation of curl package is required. Do you want to install it? YES [y] / N
O [n]
█
```

14. The “dialog” package is required for ACCO NET installation. Enter Y or y to install it.

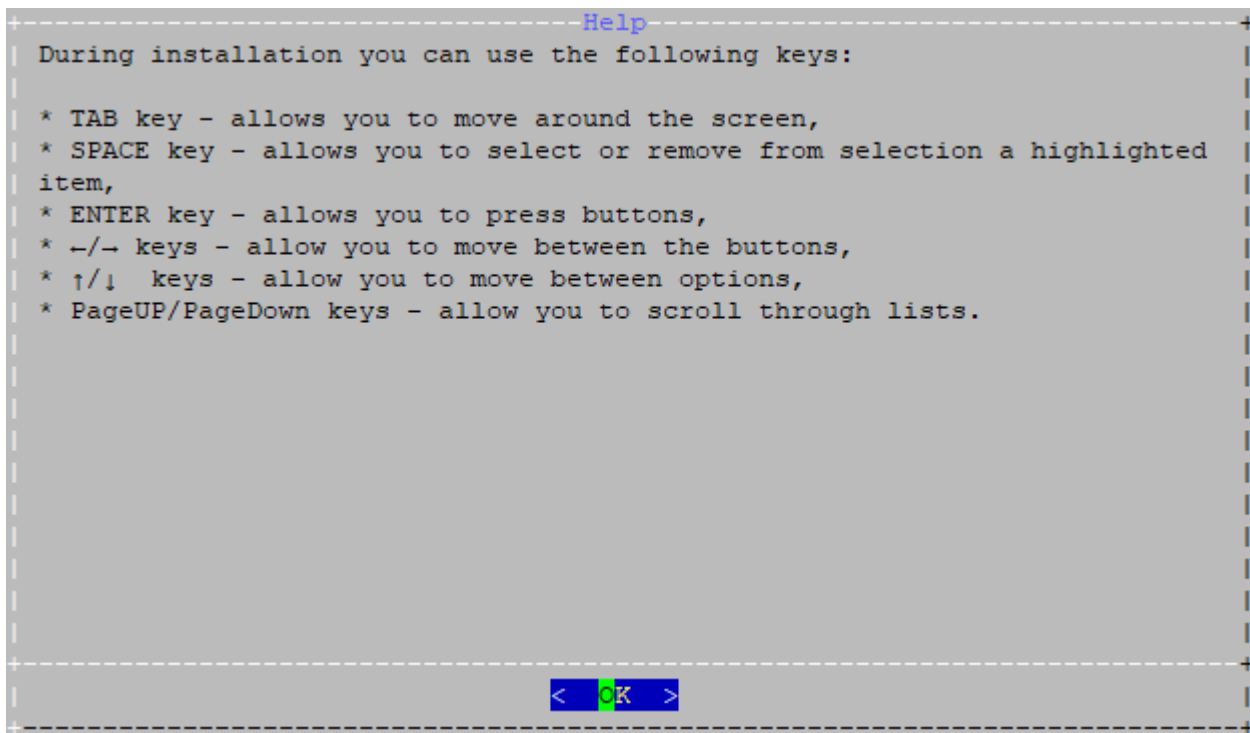
```
Preparing to unpack ../libcurl4_7.64.0-4+deb10u2_amd64.deb ...
Unpacking libcurl4:amd64 (7.64.0-4+deb10u2) ...
Selecting previously unselected package curl.
Preparing to unpack ../curl_7.64.0-4+deb10u2_amd64.deb ...
Unpacking curl (7.64.0-4+deb10u2) ...
Setting up libcurl4:amd64 (7.64.0-4+deb10u2) ...
Setting up curl (7.64.0-4+deb10u2) ...
Processing triggers for man-db (2.8.5-2) ...
Processing triggers for libc-bin (2.28-10) ...
Checking for new version of installation script in the current release.
Checking for new version of installation script in the latest release.

Installing online
Checking whether the installation script is running with root privileges.
The script has been executed with root user privileges.
Checking the operating system architecture.
Checking whether the operating system is supported.
The supported operating system has been found: debian, 10
Checking an internet connection.
Checking operating system current time.
Trying to apply a lock to the installation script.
[WARNING] No dialog package installed. Do you want to install it? YES[Yy] / NO[N
n].
█
```


17. When you are asked if you want to install the “unzip” package, select “Yes”.



18. Additional information about which keys to use during system installation will be displayed. Click “OK” to go to the next window.



19. Information about progress of the installation will be displayed ([>>] – in progress; [✓] – finished). At the screen header, in square brackets, the installation progress bar is displayed by means of asterisks [* _____]. Such screens will be displayed several times during different stages of installation. Not all of them are mentioned.

```
-----Please wait... [ _____ ]-----
[✓] Connecting to https://updates.satel.pl
[✓] Selecting the language.
[✓] Checking ACCO Web and ACCO Server binaries availability.
[✓] Checking whether the packages required during installation are
    present.
[✓] Checking whether ACCO NET is already installed.
[>>] Displaying the ACCO NET software license.
```

20. Information about the license content will be displayed in the next window.

```
-----Information-----
The ACCO NET software license content will be displayed in the next
window.

To:

- move across document use PageUP / PageDOWN,
- quit viewing the license use 'q'.

-----
[ < OK > ]
```

21. Read the terms and conditions of the License Agreement for the ACCO NET software. To scroll through the text, use the PageDown / PageUp keys.

```
Before you start installing, copying or using the ACCO NET system (hereinafter referred to as the "ACCO NET Software") as further described in this Agreement, read carefully the following term and conditions. Installation and/or copying and/or use of the ACCO NET Software is equivalent to agreeing to the terms set forth below.
This license applies to the ACCO NET software which consists of the ACCO Server program and the ACCO WEB application.

LICENSE AGREEMENT

This license agreement (hereinafter referred to as "the Agreement"), concluded between the Licensee and the Licensor, constitutes an obligation binding upon both Parties. The Agreement becomes effective at the moment the Licensee accepts it by clicking the "Yes" button and installs the ACCO NET Software, or after the Licensee installs, copies or starts using the ACCO NET Software in any other way. Each of these actions means that the Licensee confirms that it has read this Agreement, understands it and undertakes to comply with its provisions. If the Licensee does not agree to the terms of this Agreement, it shall not use the ACCO NET Software but shall close and remove it from the Licensee's system as well as destroy all copies of the ACCO NET Software in its possession. This Agreement shall remain in effect for the entire duration of the copyright in the ACCO NET Software, unless otherwise provided in this Agreement or other terms set forth in a written agreement between the Licensee and the Licensor, taking into consideration.
./licenseText.txt
```

22. When you have read the terms and conditions of the license agreement, enter 'q'.
23. Select "Yes" if you accept the terms of the ACCO NET software license agreement and want to proceed with the installation.

```
-----Do you accept the license agreement?-----
Do you accept the license agreement?

< Yes >          < No >
```

24. Select "Yes" to update the operating system packages. Updating the packages may take up to 20 minutes.

```
----- Updating the operating system -----
Do you want to update the operating system packages first?

< Yes >                < No >
```

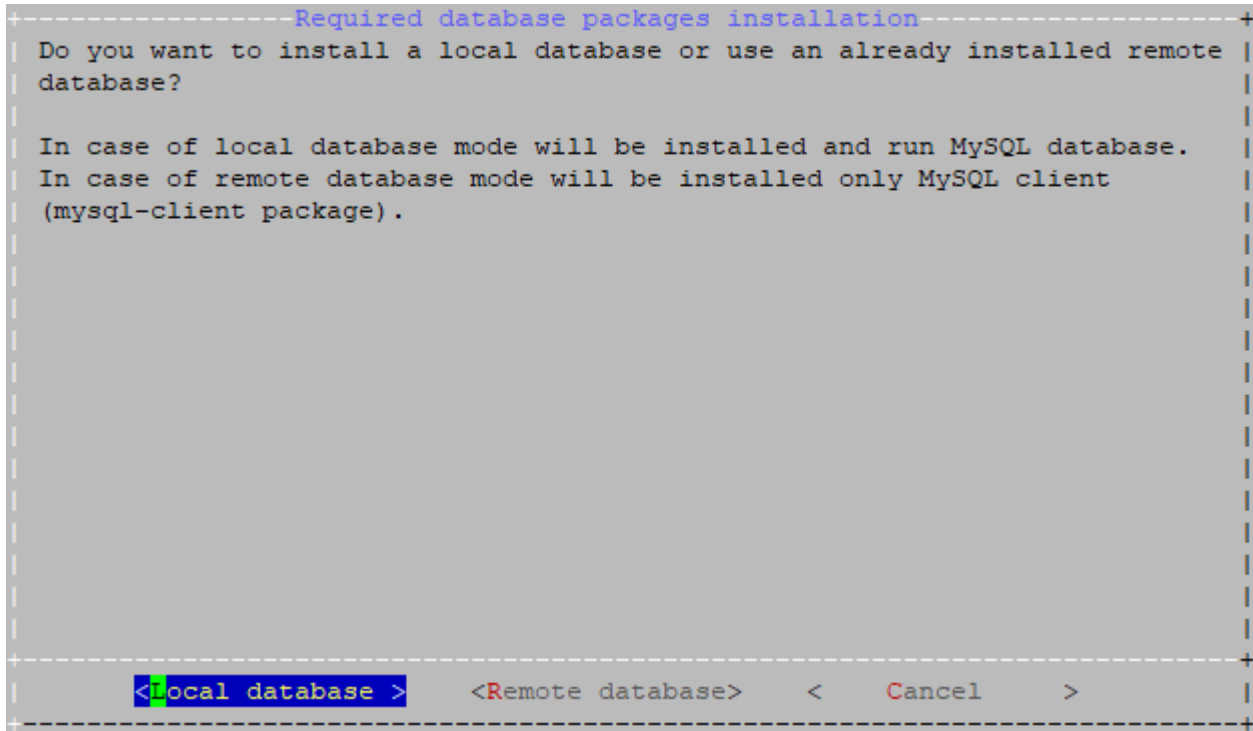
25. Decide whether or not to install the system packages required for ACCO NET installation. If yes, select "Continue". If no, select "Interrupt", and then make the system ready for the ACCO NET installation manually.

```
----- Installing the required system packages -----
It is necessary to install packages and services listed below.

- packages: apache2,libapache2-modsecurity,fail2ban,openjdk-8-jre,php,
php-common,some php modules,libapache2-mod-php5,curl,wget,unzip
- services: apache2,mysqld.

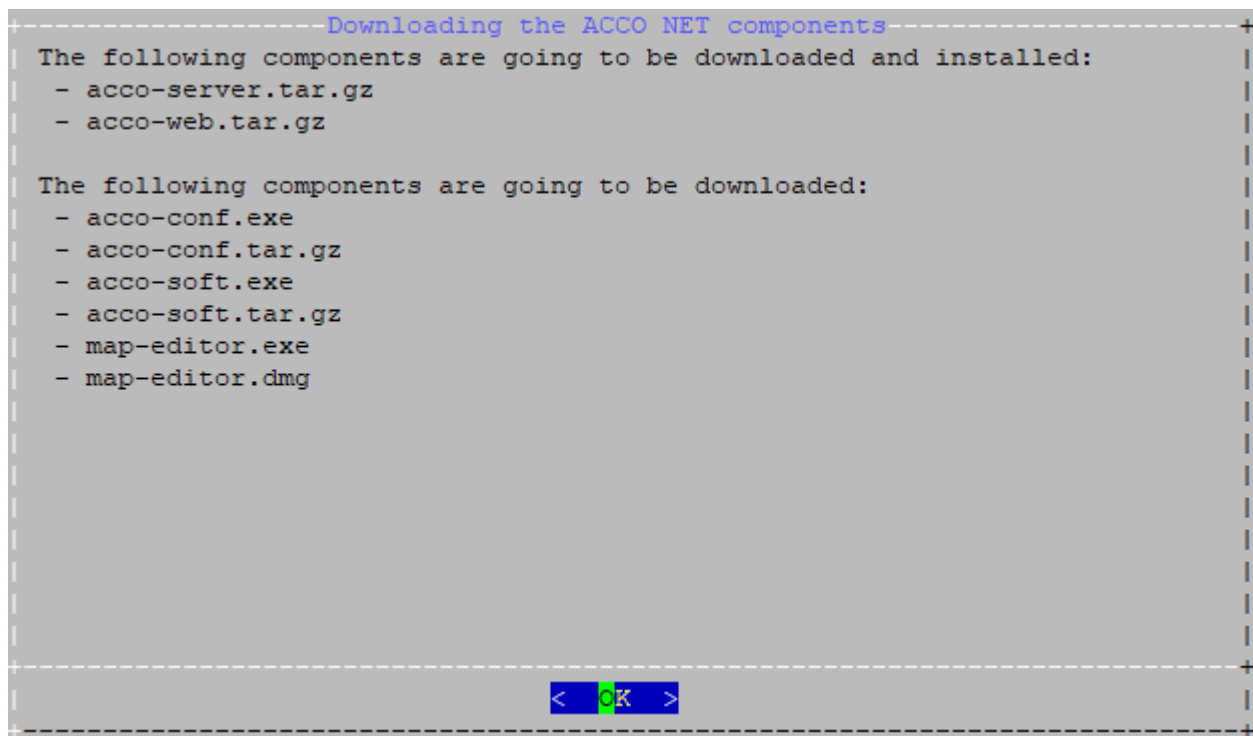
<Continue >           <Interrupt>
```

26. Define whether database is to be installed locally or not. If it is to be installed locally, select “Local database” (see “Installing a local database”). If the database is to be installed on another device, select “Remote database” (see “Installing a remote database”).

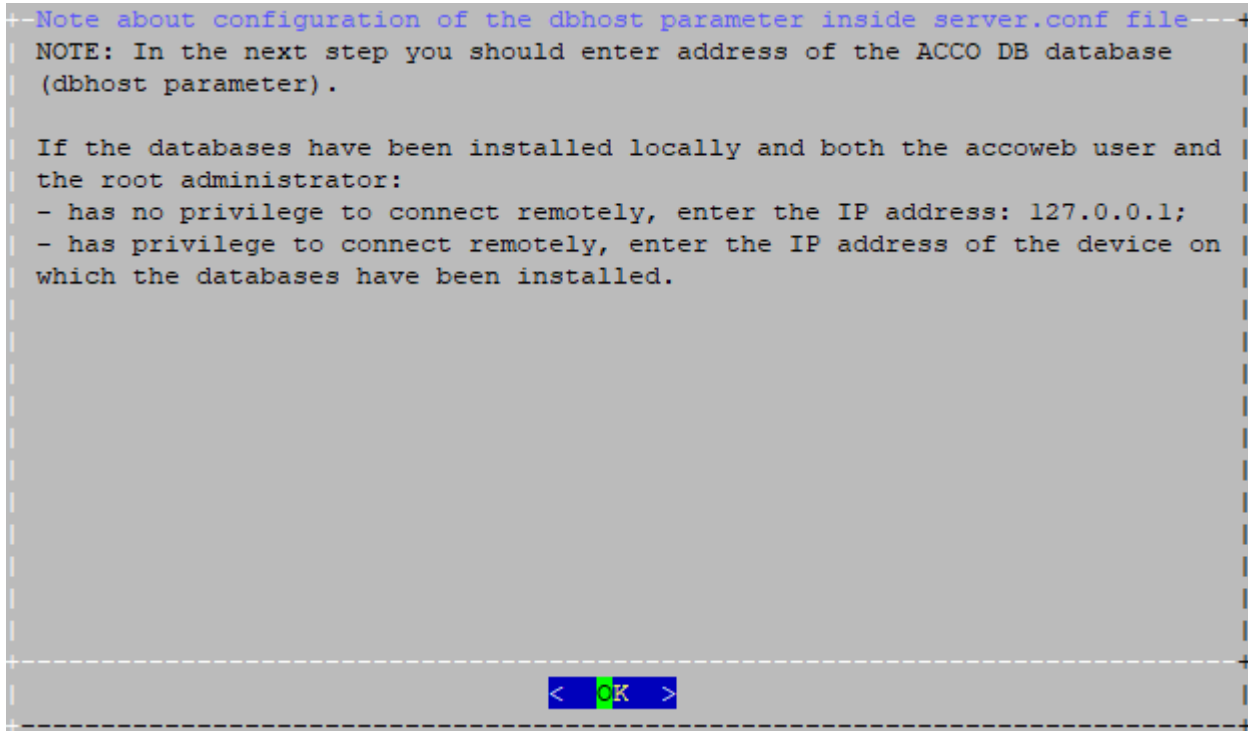


6.2.1 Installing a local database

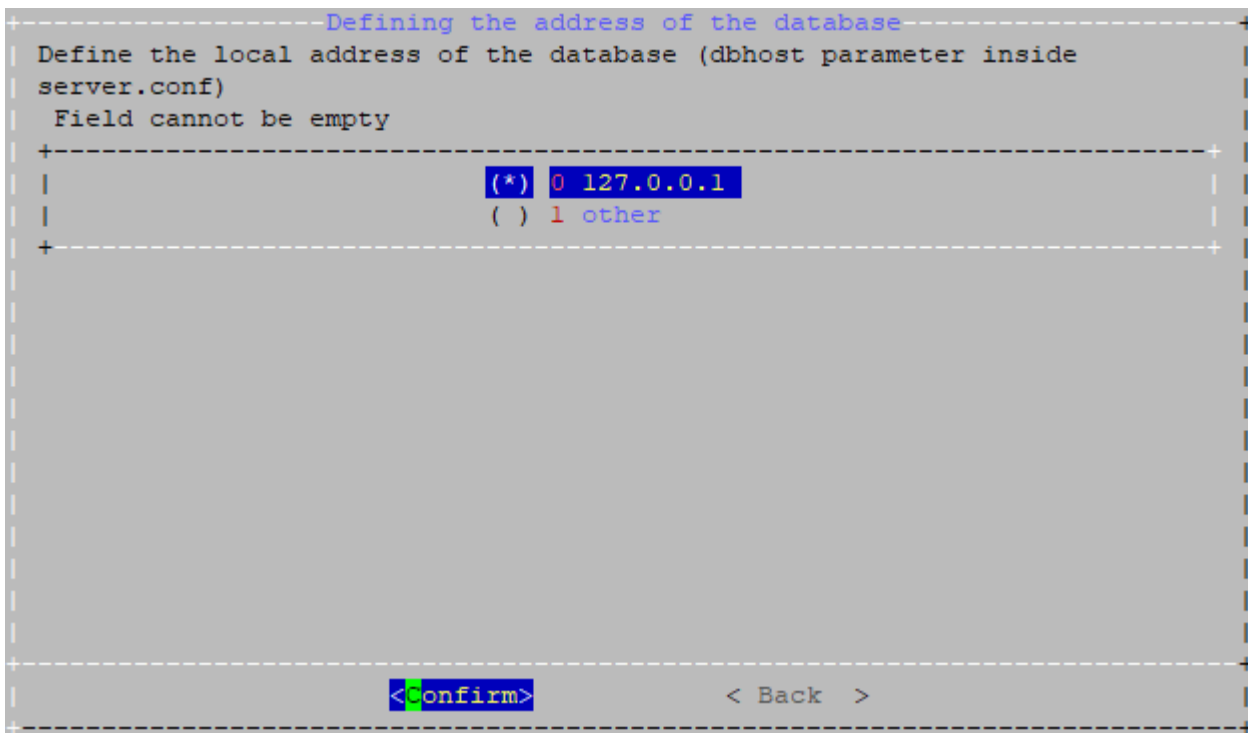
1. When the list of ACCO NET system components to be downloaded and installed at this stage of installation is displayed, click “OK”.



4. When information about the database configuration will be displayed, click "OK".



5. Select the IP address of the device through which ACCO Server will connect to the databases, and then select "Confirm".



and select "Confirm".

```
-----SSL certificate-----
Enter the data for SSL certificate:

+-----+
|Country code, e.g. EN(*)|GB
|Province(*)           |Dorset
|City(*)              |Dorchester
|Organization(*)      |Read End
|Organization unit(*) |Trade dept.
|Host name(*)         |acco-server
|Email address(*)     |trade.dept@readend.com
+-----+

< Confirm >          < Back >
```

8. When information about forwarding TCP ports is displayed, click "OK".

```
-----TCP ports forwarding-----
The ACCO NET system listen on some TCP ports which need to be open /
forwarded on the router from external network into internal network where
ACCO NET system is installed.

Remember to forward following TCP ports on your network router:

HOST IP: dbhostsoft = 192.168.11.55

ACCO WEB:
rmieeport = 2503
https = 443

ACCO SOFT:
dbport = 3306
rmiport = 2500

< OK >
```

9. Decide whether downloading and installing the third party software is necessary for installation of ACCO-EE or not. If so, select "Yes". If you select "No", you will have to install these programs yourself.

```
-----Installing the third party software-----
[PageDOWN / PageUP to scroll text down / up]

The following third party software required by ACCO-EE will be downloaded
and installed:

- server J2EE WildFly 12,
https://updates.satel.pl/mapeditor/wildfly/12.0.0/wildfly-install.sh

http://download.jboss.org/wildfly/
12.0.0.Final/wildfly-12.0.0.Final.tar.gz

- connector JDBC <-> MySQL 5.1.
http://dev.mysql.com/get/Downloads/Connector-J/mysql-connector-java-5.1.4
7.zip

< Yes > < No >
```

10. Addresses of websites where you can find the terms and conditions of third-party software licenses are given in the "Software components" section. Read them carefully and if you agree with them, select "I accept / Continue installation". If you do not accept these conditions, select "I don't accept / Exit installation". This will be tantamount to aborting the installation.

```
-----Third party software licenses-----
[PageDOWN / PageUP to scroll text down / up]

By clicking on the "I accept/Continue installation" button you agree to
terms and conditions of the third party software licenses:

1) MySQL or MariaDB software.

2) MySQL Connector/J.

3) Oracle Java JRE (optional).

4) Wildfly software.

In the ACCO NET system installation manual you will find the links to the
licenses of above mentioned software.

< I accept/Continue installation > < I don't accept/Exit installation >
```

11. Decide if you want to install the JAVA Runtime Environment (JRE) required for the ACCO NET system installation. Read the terms and conditions of the license available on the website provided. If you accept them, select "Yes". If you do not accept them, select "No". This will cancel the installation process.

```
----- Adoptium.net license agreement -----
In the next step, the JAVA runtime environment (JRE) will be installed
from https://adoptium.net project.

Do you want to continue and accept the terms and conditions of GPL v2 with
Classpath Exception license, which content is available on
https://openjdk.java.net/legal/gplv2+ce.html web page.

< Yes > < No >
```

12. Information about the installation progress will be displayed. It may take up to 20 minutes.

```
----- Please wait... [ *****_ ] -----
[√] Creating the ACCO DB database schema - .sql part (update
_2_66.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_67.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_68.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_69.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_70.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_71.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_72.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_73.sql).
[√] ACCO Web scripts invoking and ACCO DB configuring.
[√] Starting the ACCO NET.
[√] Checking the ACCO Server status. This may take a while.
[√] Enabling ACCO NET services to be launched at system startup.
[√] Installation summary.
```

13. When a summary of the installation process and the status of the installed ACCO NET system is displayed, click “OK”.

```
----- System status -----
| ACCO Web version: 1.08.008
| ACCO Server version: 1.18.17
| ACCO DB version: 2.73
| ACCO Server service status: is active
| ACCO DB database status: OK
| ACCO-EE database state: OK
| ACCO Web scripts running status: OK
| MySQL server custom configuration status: verification correct
| Apache server custom configuration status (php.ini): verification correct
| Apache version: Apache/2.4.38 (Debian) 2021-12-21T16:50:43
| Apache server status: is running
| PHP version: 7.3.31-1~deb10u1
| MySQL local database version: 8.0.28-1debian10
| MySQL local database status: is running
| Local database listening state: listening properly (0.0.0.0:3306)
| MySQL database version (local or remote): 8.0.28
| JAVA version: 1.8.0_312 (OpenJDK)
| WildFly server version: WildFly Full 12.0.0.Final (Core 4.0.0.Final)
| WildFly server status: is running
----- 90% -----
| < OK >
```



After MySQL or Apache database server custom configuration has been verified, the following statuses may be displayed:

- correct verification,
- incomplete verification (password to MySQL database in the configuration file is incorrect or changes made in the configuration file were not saved to database),
- incorrect verification (MySQL database server is not running or the configuration file was created incorrectly),
- manual settings required (remote database – see section “Preparing the database for remote connection”).

```

-----System status-----
ACCO DB version: 2.73
ACCO Server service status: is active
ACCO DB database status: OK
ACCO-EE database state: OK
ACCO Web scripts running status: OK
MySQL server custom configuration status: verification correct
Apache server custom configuration status (php.ini): verification correct
Apache version: Apache/2.4.38 (Debian) 2021-12-21T16:50:43
Apache server status: is running
PHP version: 7.3.31-1~deb10u1
MySQL local database version: 8.0.28-1debian10
MySQL local database status: is running
Local database listening state: listening properly (0.0.0.0:3306)
MySQL database version (local or remote): 8.0.28
JAVA version: 1.8.0_312 (OpenJDK)
WildFly server version: WildFly Full 12.0.0.Final (Core 4.0.0.Final)
WildFly server status: is running
ACCO-EE status: J2EE necessary files of ACCO-EE software were deployed
successfully
-----100%-----
< OK >

```

14. The last screen will inform you that the installation process has been completed.

```

-----End [ ***** ]-----
_2_67.sql).
[✓] Creating the ACCO DB database schema - .sql part (update
_2_68.sql).
[✓] Creating the ACCO DB database schema - .sql part (update
_2_69.sql).
[✓] Creating the ACCO DB database schema - .sql part (update
_2_70.sql).
[✓] Creating the ACCO DB database schema - .sql part (update
_2_71.sql).
[✓] Creating the ACCO DB database schema - .sql part (update
_2_72.sql).
[✓] Creating the ACCO DB database schema - .sql part (update
_2_73.sql).
[✓] ACCO Web scripts invoking and ACCO DB configuring.
[✓] Starting the ACCO NET.
[✓] Checking the ACCO Server status. This may take a while.
[✓] Enabling ACCO NET services to be launched at system startup.
[✓] Installation summary.
[✓] Removing the temporary files.
[✓] End

```

6.2.2 Installing the ACCO NET system with remote database

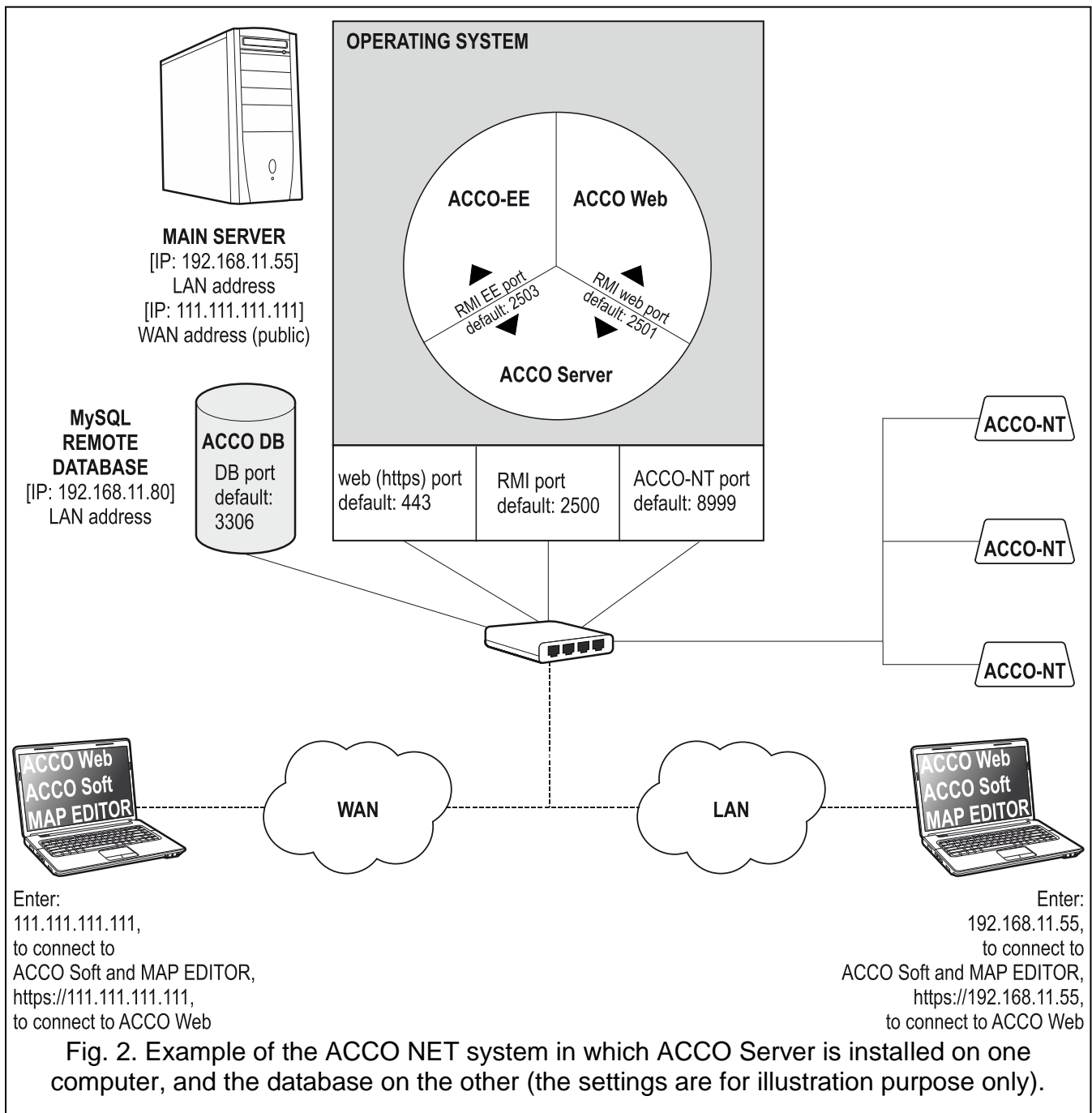


Each time before starting the system installation procedure, make sure that this manual applies to the system version you want to install.

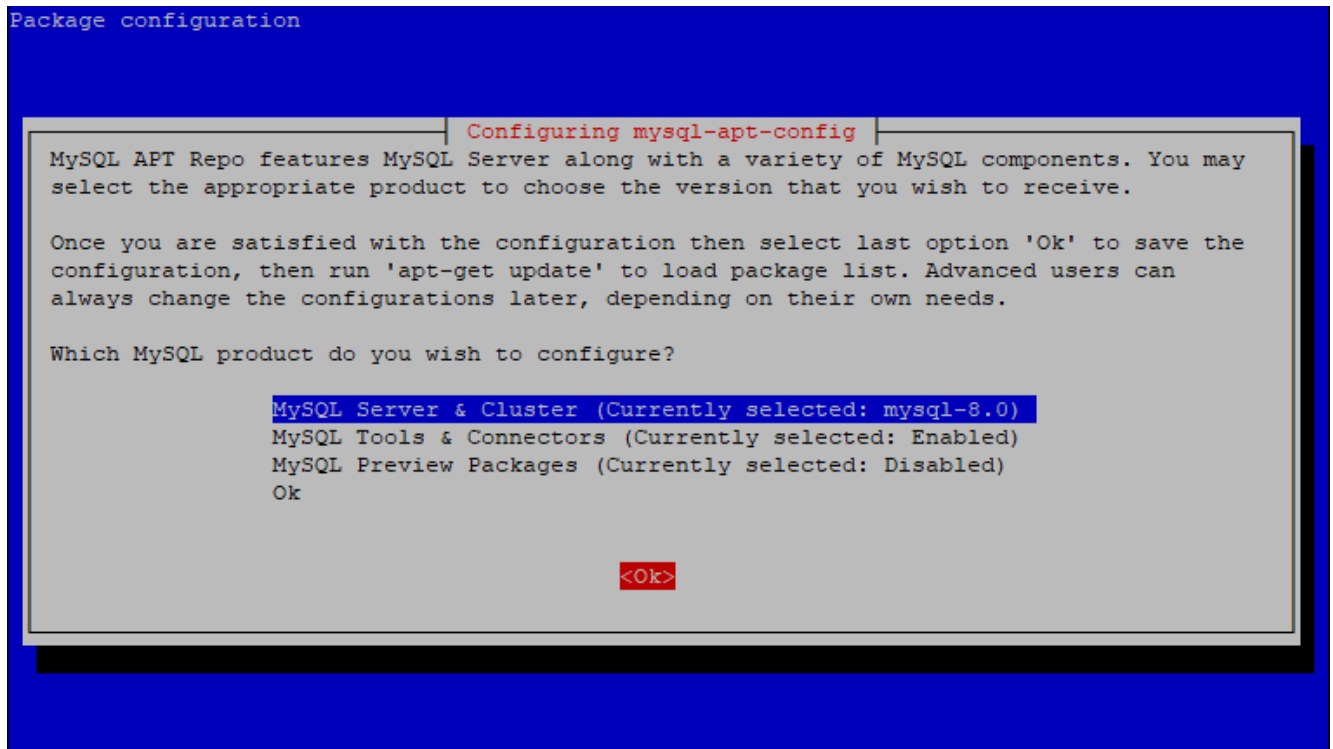
For security reasons, you cannot log into the Debian operating system remotely as a root user by default. If you want to have root user's privileges, log in as the user whose account you created e.g. during installation of the system. Enter the **su -l** command followed by the root user password.

6.2.2.1 Preparing the database for remote connection

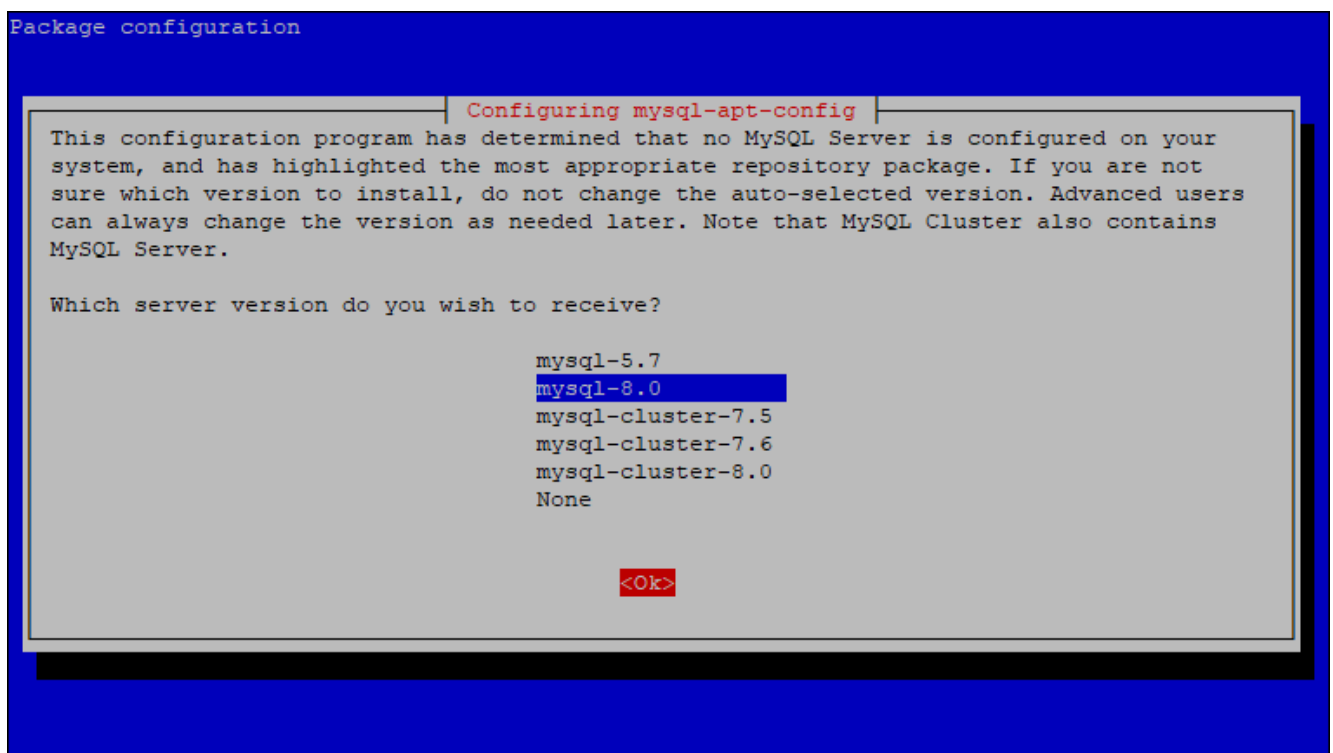
If you have decided to use a remote database in the ACCO NET system, then, you need to perform the steps described below on the device on which the remote database will be installed. In this case, it is a device with the Debian operating system.



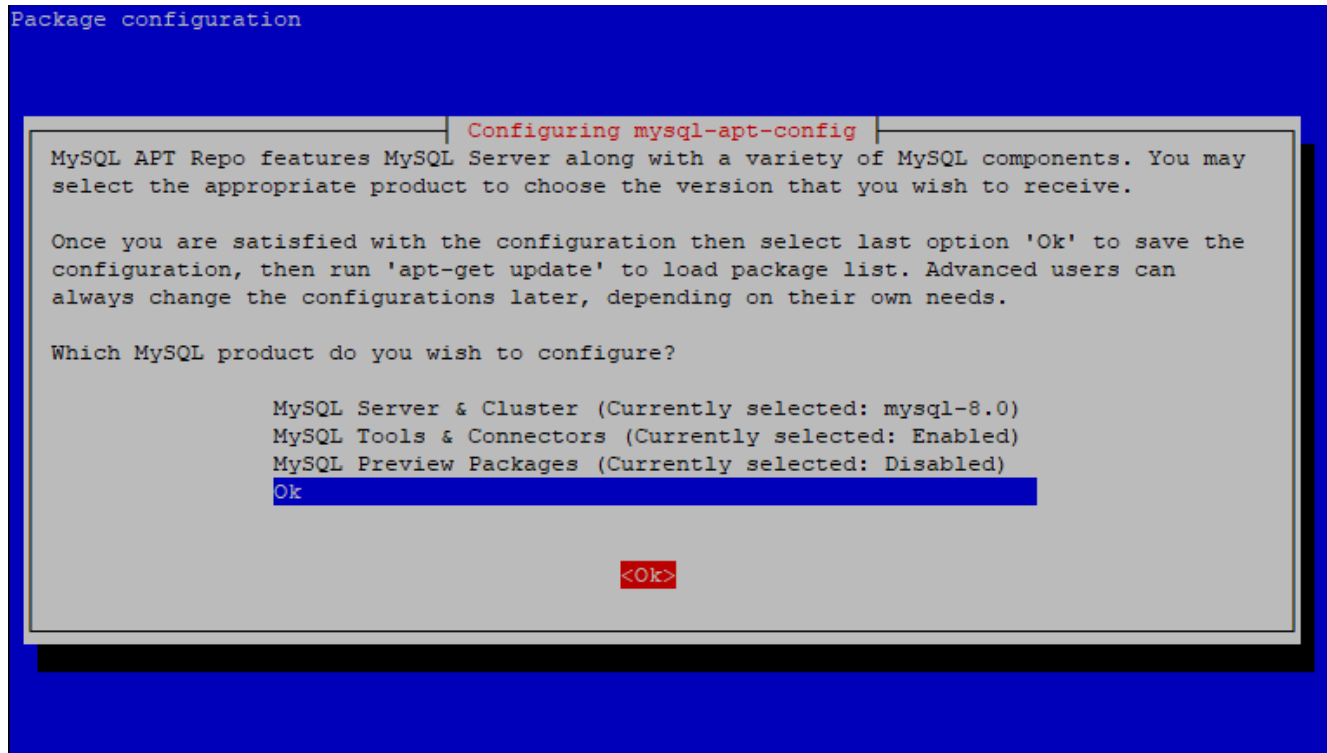
1. Install the curl program by using the command:
apt install curl
2. Add the MySQL repository to the system by using the command:
FILE='curl -s https://dev.mysql.com/downloads/repo/apt/ |grep -o mysql-apt-config_[.0-9_-]*_all.deb'; curl "http://repo.mysql.com/\$FILE" -O && apt install ./\$FILE
3. When you will be asked if you want to continue, enter "Y".
4. In the configuration window, select "MySQL Server & Cluster (Currently selected: mysql-8.0)" and press "OK" to confirm.



5. Select the "mysql-8.0" server version and press "OK" to confirm.



6. Select the "Ok" option and press "OK" to confirm.



7. Update the list of packages in the APT repositories by using the command:

apt update

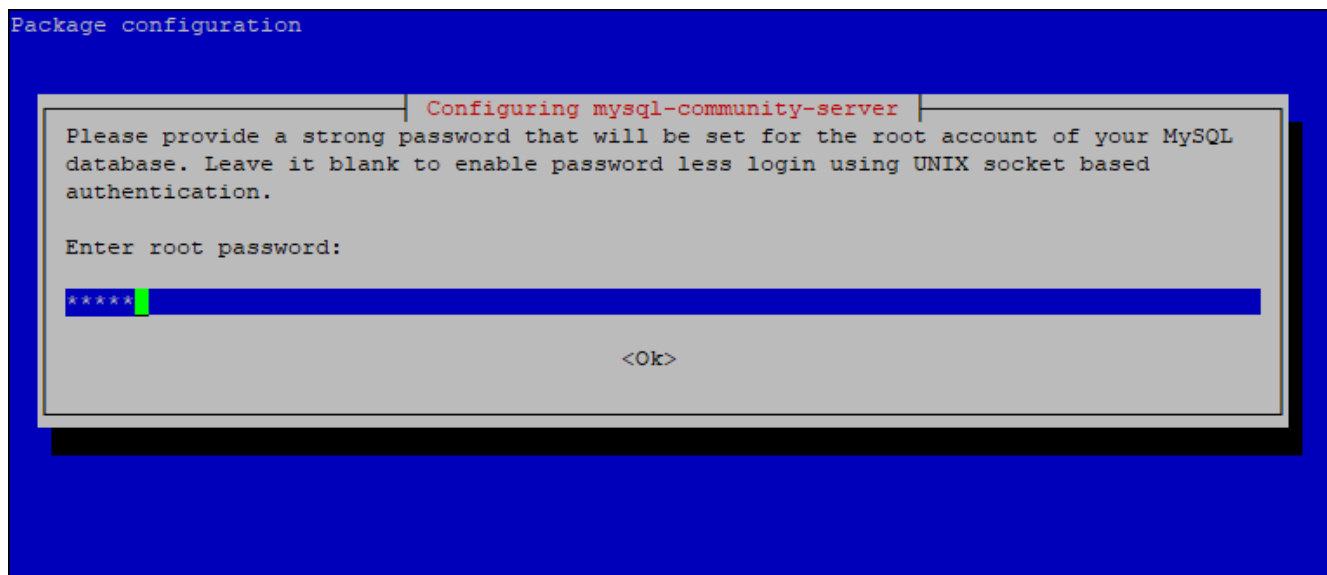


APT is a package management system used by the Debian operating system.

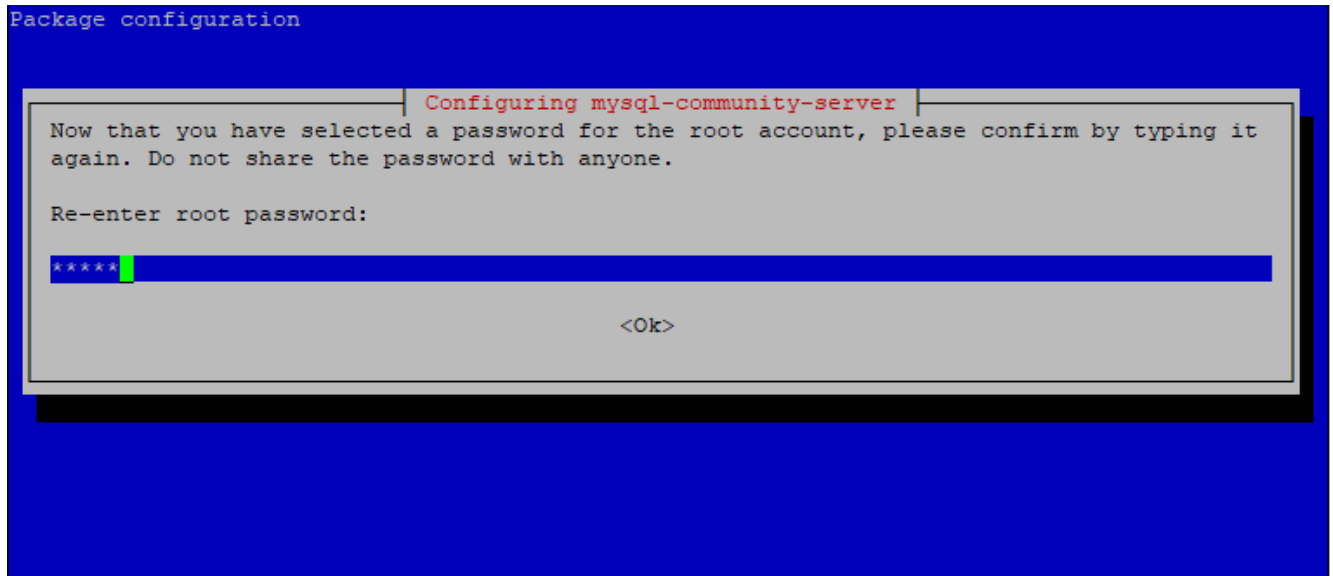
8. Install the MySQL server by using the command:

apt install mysql-server

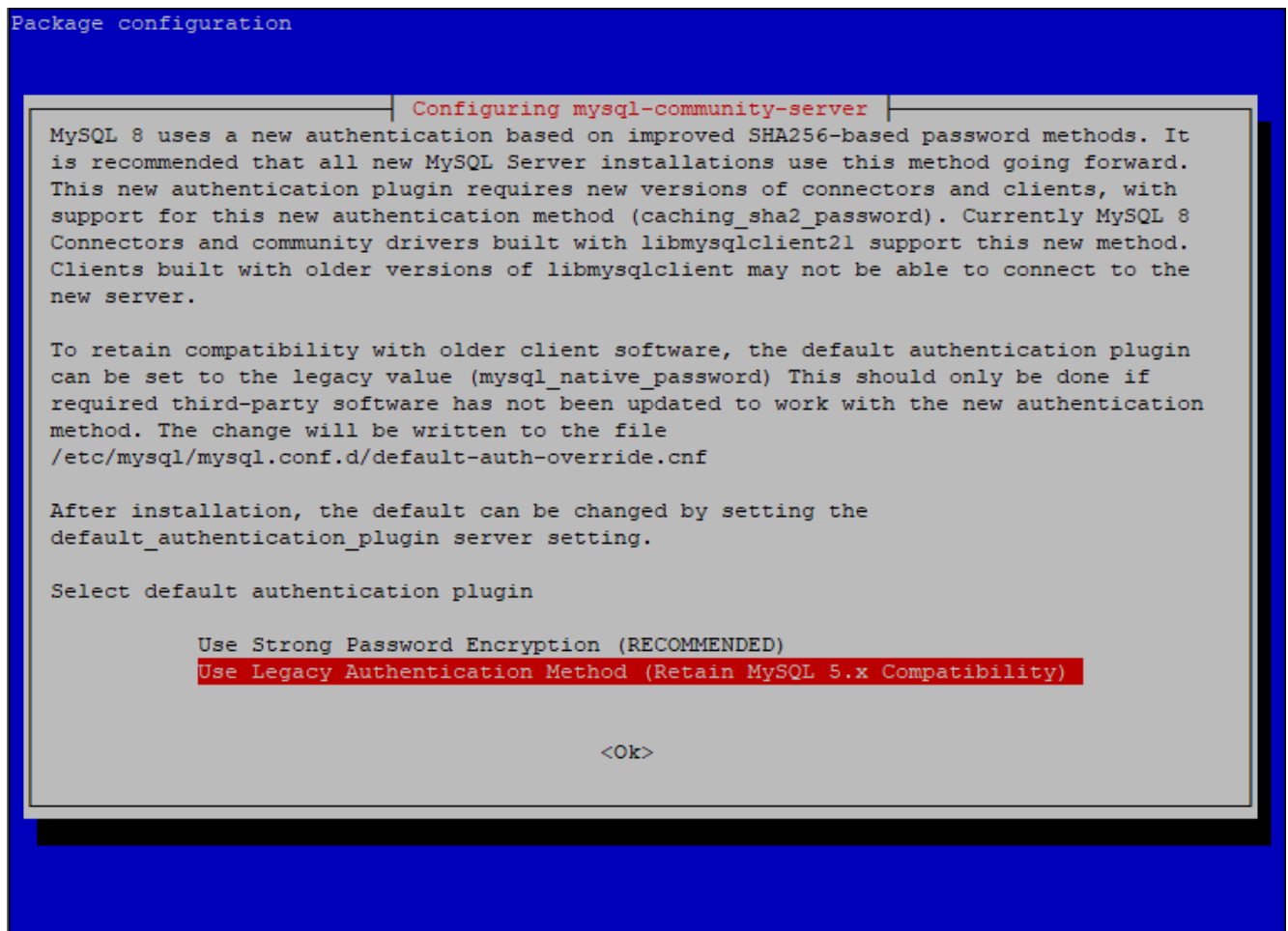
9. In the configuration window, enter a password for the root administrator of the MySQL database and press "OK" to confirm.



10. Re-enter the password you have just created and press “OK” to confirm.



11. Select the “Use Legacy Authentication Method (Retain MySQL 5.x Compatibility)” option and press “OK” to confirm.



12. Log in to the database by using the command:

```
mysql -u root -p
```

13. Enter the password of the user with root administrator privileges.

14. Create the root user with privileges to access the database remotely from a device with the ACCO Server program installed and to manage other users. Use the following commands:

```
CREATE USER 'root'@'192.168.11.55' IDENTIFIED BY 'password';
GRANT ALL PRIVILEGES ON *.* TO 'root'@'192.168.11.55' WITH GRANT OPTION;
GRANT USAGE ON *.* TO 'root'@'192.168.11.55' WITH GRANT OPTION;
FLUSH PRIVILEGES;
```



This command includes an IP address of a computer on which the ACCO Server program is installed. The IP address used above is an example (see fig. 2).

In place of 'password' enter the password you set for the root administrator.

15. Exit the database console by using the command:

```
EXIT
```

16. Allow remote access to the database by editing the configuration file. Enter the command:

```
nano /etc/mysql/conf.d/acco.cnf
```

17. Enter the following data:

```
[mysqld]
bind-address = 0.0.0.0
wait_timeout = 31536000
interactive_timeout = 31536000
event_scheduler = ON
log_bin_trust_function_creators = ON
```

18. Save and close the file.

19. Restart the program to save the changes made by using the command:

```
systemctl restart mysqld
```

6.2.2.2 Testing the remote access to the MySQL database

You can verify the MySQL database remote access settings on the computer / virtual machine on which the ACCO NET system is to be installed. In order to do so, follow the steps below:

1. Install the curl program by using the command:

```
apt install curl
```

2. Add the MySQL repository to the system by using the command:

```
FILE='curl -s https://dev.mysql.com/downloads/repo/apt/ |grep -o mysql-apt-config_[.0-9_-]*_all.deb'; curl "http://repo.mysql.com/$FILE" -O && apt install /$FILE
```

3. Update the list of packages in the APT system repository by using the command:

```
apt update
```

4. Install the MySQL Client program by using the command:

```
apt install mysql-client
```

5. Check if you are able to connect to the database remotely by using the command:

```
mysql -uroot -h192.168.11.80 -p
```



This command includes an IP address of a remote database. The IP address used above is an example (see fig. 2).

6. Enter the password for the user with root administrator privileges.

7. If the MySQL database remote access settings were correctly defined, **mysql>** will be displayed.
8. Check if the values were correctly saved to database by using the following commands:
show variables where variable_name like 'bind_address';
show session variables like 'wait_timeout';
show session variables like 'interactive_timeout';
show global variables like 'event_scheduler';
show global variables like '%log_bin_trust_function_creators%';
9. Exit the database console by using the command:
EXIT

6.2.2.3 Installing a remote database

If you have decided to use a remote database in the ACCO NET system, please follow the instructions below when installing the system:

1. Information about continuation of installation in the remote database mode will be displayed.

```
-----Please wait... [ * _____ ]-----
[√] Connecting to https://updates.satel.pl
[√] Selecting the language.
[√] Checking ACCO Web and ACCO Server binaries availability.
[√] Checking whether the packages required during installation are
    present.
[√] Checking whether ACCO NET is already installed.
[√] Displaying the ACCO NET software license.
[√] Upgrading the operating system.
[√] Installing the required system packages.
[√] Checking availability and download rate of external PHP 7.x
    (remi).
[√] PHP interpreter installation. (remi)
[>] Continuation in the remote database mode.
```

2. Configure the settings necessary for remote connection to the database:
 - **Host** – IP address of the device on which the remote database will be installed;
 - **Port** – number of the port for communication between ACCO Server and database (DB port);
 - **Login** – login of the (root) administrator of the MySQL database;
 - **Password** – password of the MySQL database administrator;and select “Confirm”.

4. When the list of ACCO NET system components to be downloaded and installed at this stage of installation is displayed, click "OK".

```
-----Downloading the ACCO NET components-----
The following components are going to be downloaded and installed:
- acco-server.tar.gz
- acco-web.tar.gz

The following components are going to be downloaded:
- acco-conf.exe
- acco-conf.tar.gz
- acco-soft.exe
- acco-soft.tar.gz
- map-editor.exe
- map-editor.dmg

< OK >
```

5. Information about progress of the installation will be displayed ([>>] – in progress; [✓] – finished). At the screen header, in square brackets, the installation progress bar is displayed by means of asterisks [* * _____]. Such screens will be displayed several times during different stages of installation. Not all of them are mentioned.

```
-----Please wait... [ * * _____ ]-----
[✓] Connecting to https://updates.satel.pl
[✓] Selecting the language.
[✓] Checking ACCO Web and ACCO Server binaries availability.
[✓] Checking whether the packages required during installation are
present.
[✓] Checking whether ACCO NET is already installed.
[✓] Displaying the ACCO NET software license.
[✓] Upgrading the operating system.
[✓] Installing the required system packages.
[✓] Continuation in the remote database mode.
[✓] Creating the ACCO-EE database.
[✓] Creating the ACCO-EE database schema (essential_2_0_0.sql)
[✓] Creating the ACCO-EE database schema (essential_2_1_0.sql)
[✓] Creating the ACCO-EE database schema (essential_2_1_1.sql)
[✓] Downloading the ACCO NET software clients.
[>>] Installing the ACCO NET software.
```


8. When information about the database configuration is displayed, click “OK”.

```
+-----Note about configuration of the dbhost parameter inside server.conf file-----+
NOTE: In the next step you should enter address of the ACCO DB database
      (dbhost parameter).

If the databases have been installed locally and both the accoweb user and
the root administrator:
- has no privilege to connect remotely, enter the IP address: 127.0.0.1;
- has privilege to connect remotely, enter the IP address of the device on
which the databases have been installed.

                                     < OK >
```

9. Select the IP address of the device (in this case “other”) through which ACCO Server will connect to the database server, and then select “Confirm”.

```
+-----Defining the address of the database-----+
Define the local address of the database (dbhost parameter inside
server.conf)
Field cannot be empty
+-----+
|                                     ( ) 0 192.168.11.55
|                                     (*) 1 other
+-----+

                                     < Confirm >          < Back >
```

10. Enter the IP address of the device through which ACCO Server will connect to the database server and then select "Confirm".

```
-----Defining the custom public address of the database-----+
Define the local address of the database (dbhost)
Field cannot be empty
+-----+
|IP          192.168.11.80|
+-----+
+-----+
<Confirm>          <Cancel >
+-----+
```

11. Information about the progress of the installation will be displayed.

```
-----Please wait... [ **_____ ]-----+
[✓] Connecting to https://updates.satel.pl
[✓] Selecting the language.
[✓] Checking ACCO Web and ACCO Server binaries availability.
[✓] Checking whether the packages required during installation are
present.
[✓] Checking whether ACCO NET is already installed.
[✓] Displaying the ACCO NET software license.
[✓] Upgrading the operating system.
[✓] Installing the required system packages.
[✓] Continuation in the remote database mode.
[✓] Creating the ACCO-EE database.
[✓] Creating the ACCO-EE database schema (essential_2_0_0.sql)
[✓] Creating the ACCO-EE database schema (essential_2_1_0.sql)
[✓] Creating the ACCO-EE database schema (essential_2_1_1.sql)
[✓] Downloading the ACCO NET software clients.
[✓] Installing the ACCO NET software.
[>] Checking the connection to database (dbhost parameter inside
server.conf file).
+-----+
```


6.3 Installing the ACCO-NT Conf / ACCO Soft / Map Editor programs

You can install the ACCO-NT Conf, ACCO Soft and Map Editor programs by using ACCO Web application.



All you need to use the ACCO Web application is a web browser installed on your computer. The application works correctly with updated versions of the following browsers: Google Chrome, Mozilla Firefox, Internet Explorer and Edge.

Communication with the ACCO-WEB application is secured using the SSL protocol. A message about untrusted certificate for the page will be displayed in the browser window until you accept the SSL certificate or put a registered certificate on the computer on which the ACCO Web application has been installed.

If the application fails to open correctly in the Internet Explorer browser, check that the address you have entered is on the “Websites you've added to Compatibility View” list. To do this, open the “Tools” menu and select “Compatibility View Settings”. If the address you have entered in the browser is included in the list of websites for which compatibility view is enabled in the browser, remove the address. Do not enable the following options: “Display intranet sites in Compatibility View” and “Use Microsoft compatibility lists”. Click on the “Close” button.

1. Start the web browser. Enter the address: `https://[address of the device on which the ACCO Server is installed]` and log into the ACCO Web application as the Administrator (default login: “admin”; default password: “admin”).
2. Click on the “Programs” command in the menu on the left side of the screen. Links to the installation files of ACCO-NT Conf, ACCO Soft and Map Editor programs will be displayed.
3. Click on the selected link to download, and then install the required program.

6.3.1 Using the Map Editor program

Communication between the program and the system takes place remotely via Ethernet.



It is recommended that you update the Map Editor program to the latest available version after each update of the ACCO NET system.

6.3.1.1 Logging into the program

Access to the program is password protected. In the “Username” and “Password” fields, enter the login and password required to log into the ACCO Web app and ACCO Soft program of the system. In the “IP” field, enter the address of the device on which the ACCO Server is installed.



If the web (https) port used for communication between the ACCO Web application and the Map Editor program is different from the default port 443, enter `https://[ACCO Server address]:[port number]` in the “IP” field.

6.3.1.2 Hardware requirements

Hardware requirements for the machine on which the Map Editor program will be installed:

- operating system Windows 7 or newer,
- graphics card driver with WebGL support (OpenGL ES version 2.0).

7 Configuring the settings

You can configure the settings of the ACCO NET system components in the console window or in the PuTTY program.

7.1 ACCO NET system components (without ACCO Web)

If you wish to display the contents of configuration file of the ACCO NET system components (without the ACCO Web application), enter in the console window the following command:

```
cat /etc/acco/server.conf
```

and press ENTER.

If you wish to edit the contents of that configuration file, enter the command:

```
nano /etc/acco/server.conf
```

and press ENTER.

Presented below is the contents of the ACCO NET system components (without the ACCO Web application configuration file, based on the ACCO NET system shown in Fig. 1. In the square brackets, the meanings of individual lines are given.

dbhost=127.0.0.1	[IP address of the database with privileges to connect to the ACCO Server program]
dbhostsoft=192.168.9.11	[IP address of the database with privileges to connect to the ACCO Soft program]
dbname=essential	[name of essential database]
dbname=accoDb	[name of accoDb database]
dbuser=accoweb	[name of user having access to the database]
dbpassword= 1db4e9f4e7d6ea6366b64e3becb6314d	[password of user having access to the database]
dbport=3306	[number of network port (DB port) on which communication between ACCO Server and database will take place]
serverport=8999	[number of network port on which communication between ACCO Server and ACCO-NT control panel will take place]
rmipublichost=192.168.9.11	[public IP address ACCO Server]
rmiport=2500	[number of network port (RMI port) on which communication between ACCO Server and ACCO Soft program will take place]
rmieeport=2503	[number of network port (RMI EE port) on which communication between ACCO Server and WildFly server will take place]
rmiport_www=INET:2501	[number of network port on which communication between ACCO Server and ACCO Web application will take place]

7.2 ACCO Web application

If you wish to display the contents of configuration file of ACCO Web application, enter in the console window the command:

```
cat /var/www/html/satel/protected/config/servers.php
```

If you want to edit the contents of that configuration file, enter the command:

```
nano /var/www/html/satel/protected/config/servers.php
```

Presented below is the contents of ACCO Web application configuration file, based on the ACCO NET system shown in Fig. 1. In the square brackets, the meanings of individual lines are given.

const DATABASE_NAME = 'accoDb'	[name of accoDb database]
const ESSENTIAL_DATABASE_NAME = 'essential'	[name of essential database]
const DATABASE_IP = '127.0.0.1'	[IP address through which ACCO Server will connect to the database]
const DATABASE_SOFT_IP = '192.168.9.11'	[IP address through which ACCO Soft will connect to the database]
const DATABASE_USER = 'accoweb'	[name of user having access to the database]
const DATABASE_PASSWORD = '1db4e9f4e7d6ea6366b64e3becb6314d'	[password of user having access to the database]
const RMI_IP = '192.168.9.11'	[IP address of ACCO Server]
const RMI_PORT = '2501'	[number of network port on which communication between ACCO Server and ACCO Web application will take place]

7.3 Useful commands

Commands entered in the console window may facilitate management of the ACCO NET system:

- to check the ACCO Server program status:
systemctl status acco-server
- to stop the ACCO Server program:
systemctl stop acco-server
- to start the ACCO Server program:
systemctl start acco-server
- to restart the ACCO Server program:
systemctl restart acco-server
- to check the currently installed version of the operating system:
cat /etc/debian_version
- to start help for the installation script:
./acco-installer-online.sh -h

7.3.1 Starting help for the installation script

Help for the installation script will be available after you have downloaded the ACCO NET installation package. Enter the `./acco-installer-online.sh -h` command to display the list of parameters for running particular functions. If you want to run a function, enter a command in the console that consists of the name of the script – in this case `./acco-installer-online.sh`, then a **space** and the parameter name – e.g. `-v` (i.e.: `./acco-installer-online.sh -v`). The function will display on the screen the version numbers of the:

- installation script,
- ACCO NET system,
- ACCO Server program,
- ACCO Web application,

available for download at the <https://updates.satel.pl> web page, to which the installation script connects automatically during the procedure of ACCO NET system installation or update. Description of the parameters you can see on the screenshot below.

```
Wizard run syntax:
./script_name -parameter

Parameters:

-a about
-v versions currently downloadable

-h
--help display this info and quit

-su update this script online (current version)
-sul upgrade this script online (latest version)

-sc operating system check

-i online install
-I online install in unattended mode
-u online upgrade
-U online upgrade in unattended mode

-o download ACCO NET Software
-O download ACCO NET Software in unattended mode

-r remove ACCO NET installation
-R remove ACCO NET installation in unattended mode

-s ACCO NET configuration change

-m ACCO NET migration

-c check ACCO NET installation
-C check ACCO NET installation in unattended mode
```

8 Updating the ACCO NET system software to version 1.8



Each time before starting the system update procedure, make sure that this manual applies to the version to which you want to update the system.

Version 1.8 of the ACCO NET system is only compatible with the Debian 11 (“bullseye”) operating system for the 64-bit PC (amd54) architecture. You can run the ACCO NET system update on a computer / virtual machine where the Debian operating system is installed in version specified above. If your device runs on a different version of Debian, you must migrate the system to a new device.

Before updating the system, make sure to provide sufficient disk space amounting to at least 8 times the size of the databases.

Before updating the ACCO NET system, the owner or the administrator of the system is required to make:

- backup copies of the databases,*
- snapshot of the virtual machine on which the ACCO NET system and / or the databases are installed.*

This will ensure that all data can be retrieved from the backup copies. SATEL will not be held responsible for any loss of data or any costs of retrieving damaged or lost data by the owner / administrator of the system.

*For security reasons, you cannot log into the Debian operating system remotely as a root user by default. If you want to have root user's privileges, log in as the user whose account you created e.g. during installation of the system. Enter the **su -l** command followed by the root user password.*

8.1 Updating the ACCO NET system from version 1.7 to 1.8

1. In the console window, log in as the root administrator.



*If you are logged into the console as another user, enter the **su -l** command and then enter the root administrator password.*

2. Update the list of packages in the APT system repository by using the command:
apt update



APT is a package management system used by the Debian operating system.

3. Run the installation package by using the command:
./acco-installer-online.sh -u
4. Follow the instructions that will be provided on the following screens.

8.2 Updating the ACCO NET system when migration to new device is required



If the version of the Debian operating system is incorrect, the process of installation and then updating the software must be carried out on a computer / virtual machine on which no system is currently installed. Both computers / virtual machines – one with the existing version of the system and one with no operating system – must have access to the Internet. Furthermore, they must be connected to the same network so that it is possible to access them remotely via SSH in the PuTTY program.

There are two ways in which you can update the system by using the installation script: with database migration performed manually or automatically.

Below is an example of how to update the ACCO NET system software from version 1.6 to version 1.8.

8.2.1 Updating the system with database migration performed manually

1. Install the Debian operating system on the new device (see “Installing the Debian operating system”).



During the system installation procedure, add a user (e.g. “rjones”) and create a password for it to log into the system.

2. After the system is restarted, the console window will open. Install the ACCO NET in version 1.8 by using the console (see „Installing the server environment and ACCO NET system”).
3. Having installed the new versions of the Debian and ACCO NET systems, delete the new databases created during the installation (see: “Deleting databases”).
4. On the device where the ACCO NET system was installed, export the previously used databases to SQL files (see “Exporting databases”).
5. Copy the exported databases to the new system (see “Copying databases from the old system to a new one”).
6. Import the databases copied from the existing system to the new system (see “Importing databases”).
7. Update the databases in the new system (see „Updating databases”).



*If the system installation was carried out in a standard way (the database was installed locally), the root password of the MySQL database was saved in the configuration file during the installation procedure. You can check the password by using the command:
cat /root/.my.cnf*

8.2.1.1 Deleting databases

During installation of the ACCO NET system, databases are created. In the case of the system transfer procedure, it is necessary to delete them so that they can be replaced by the databases previously exported to SQL files i.e. the map essential, the primary accoDb and the secondary accoDb_temporary.

In the console window, on a computer or virtual machine with new versions of Debian and ACCO NET installed:

1. Log in as the root administrator.
2. Stop the ACCO Server program by using the command:
systemctl stop acco-server
3. Stop the WildFly program by using the command:
systemctl stop wildfly
4. Log in to the database by using the command:
mysql
5. Delete the newly created primary database by using the command:
DROP DATABASE accoDb;
6. Delete the newly created secondary database by using the command:
DROP DATABASE accoDb_temporary;
7. Delete the newly created map database by using the command:
DROP DATABASE essential;



Do not use this command if you are updating the ACCO NET system from version 1.4 to 1.8.

- Exit the database by using the command:

EXIT

8.2.1.2 Exporting databases

When transferring the ACCO NET system, **the current databases must be exported to SQL files:**

- map – essential,
- primary – accoDb,
- secondary – accoDb_temporary.

In the next step, the databases that have been exported will be copied and then imported to the system.

In the console window, on the computer or virtual machine where the databases are located:

- Log in as the root administrator.
- Stop the ACCO Server program by using the command:
systemctl stop acco-server
- Stop the WildFly program by using the command:
systemctl stop wildfly
- Go to the directory to which you want to export the SQL files by using the command:
cd /home/asmith



The following random names are used in the command:

asmith – name of user of the existing system;

/home/asmith – name of the “asmith” user's home directory. This directory is created during the procedure of adding a user to the system.

- Export the map database named essential to the SQL file by using the command:

mysqldump --databases essential --routines > essential.sql



Do not use this command if you are updating the ACCO NET system from version 1.4 to 1.8.

- Export the primary database named accoDb to the SQL file by using the command:

mysqldump --databases accoDb --routines > accoDb.sql

- Export the secondary database named accoDb_temporary to the SQL file by using the command:

mysqldump --databases accoDb_temporary --routines > accoDb_temporary.sql

- Check whether the database files have been exported to the required directory, whether the export date and the size of the exported files are correct by using the command:

ls -lh /home/asmith/*.sql



Three files will be saved in the /home/asmith directory:

essential.sql – map database file exported;

accoDb.sql – primary database file exported;

accoDb_temporary.sql – secondary database file exported.

8.2.1.3 Copying databases from the old system to a new one

In the console window, on a computer or a virtual machine with the existing versions of the operating and ACCO NET systems installed:

1. Log in as the root administrator.
2. Go to the directory to which the SQL files have been exported by using the command:
cd /home/asmith
3. Copy the map database file to the new system by using the command:
scp essential.sql rjones@192.168.11.55:/home/rjones/essential.sql



Do not use this command if you are updating the ACCO NET system from version 1.4 to 1.8.

This command includes sample data:

rjones – username in the new system;

192.168.11.55 – IP address of the device on which the new system was installed;

/home/rjones – name of the “rjones” user’s home directory. This directory is created when the user is added to the system. It is the target directory for the copied database files.

4. Enter the password of the user in the new system.
5. Copy the primary database file to the new system by using the command:
scp accoDb.sql rjones@192.168.11.55:/home/rjones/accoDb.sql
6. Enter the password of the user in the new system.
7. Copy the secondary database file to the new system by using the command:
scp accoDb_temporary.sql rjones@192.168.11.55:/home/rjones/accoDb_temporary.sql
8. Enter the password of the user in the new system.

8.2.1.4 Importing databases

In the console window, on a computer or virtual machine with new versions of the Debian and ACCO NET systems installed:

1. Log in as the root administrator.
2. Check whether the database files have been copied to the required directory, and whether the date of the copy and the size of the copied files are correct by using the command:
ls -lh /home/rjones/*.sql
3. Go to the directory to which the database files from the old system have been copied by using the command:
cd /home/rjones
4. In order to make the map database compatible with the current MySQL program version, use the command:
sed -i -e s/,NO_AUTO_CREATE_USER//g essential.sql



Do not use this command if you are updating the ACCO NET system from version 1.4 to 1.8.

5. In order to make the primary database compatible with the current MySQL program version, use the command:
sed -i -e s/,NO_AUTO_CREATE_USER//g accoDb.sql

6. In order to make the secondary database compatible with the current MySQL program version, use the command:

```
sed -i -e s/,NO_AUTO_CREATE_USER//g accoDb_temporary.sql
```

7. Log in to the database by using the command:

```
mysql
```

8. Import the map database file to the new system by using the command:

```
SOURCE essential.sql
```

9. Import the primary database file to the new system by using the command:

```
SOURCE accoDb.sql
```

10. Import the secondary database file to the new system by using the command:

```
SOURCE accoDb_temporary.sql
```

11. Grant the **accoweb** user (accoweb – name of the user who had access to the previous database) access to the essential database by using the command:

```
GRANT ALL ON essential.* TO 'accoweb'@'%';
```

12. Grant the **accoweb** user access to the accoDb database by using the command:

```
GRANT ALL ON accoDb.* TO 'accoweb'@'%';
```

13. Grant the **accoweb** user access to the accoDb_temporary database by using the command:

```
GRANT ALL ON accoDb_temporary.* TO 'accoweb'@'%';
```

14. If a remote database is used in the system, grant the **root** administrator privileges to manage other users by entering the command:

```
GRANT ALL PRIVILEGES ON *.* TO 'root'@'192.168.11.55' WITH GRANT OPTION;
```



This command includes sample data:

192.168.11.55 – IP address of the device on which the new system was installed.

15. Refresh the settings of edited privileges by using the command:

```
FLUSH PRIVILEGES;
```

16. Exit the database console by using the command:

```
EXIT
```

17. Run the WildFly program by using the command:

```
systemctl start wildfly
```

18. Run the ACCO Server program by using the command:

```
systemctl start acco-server
```

8.2.1.5 Updating databases

In the console window, on a computer or virtual machine with new versions of Debian and ACCO NET installed:

1. Log in as the root administrator.



*If you are logged into the console as another user, enter the **su -l** command and then enter the root administrator password.*

2. Run the installation package by using the command:

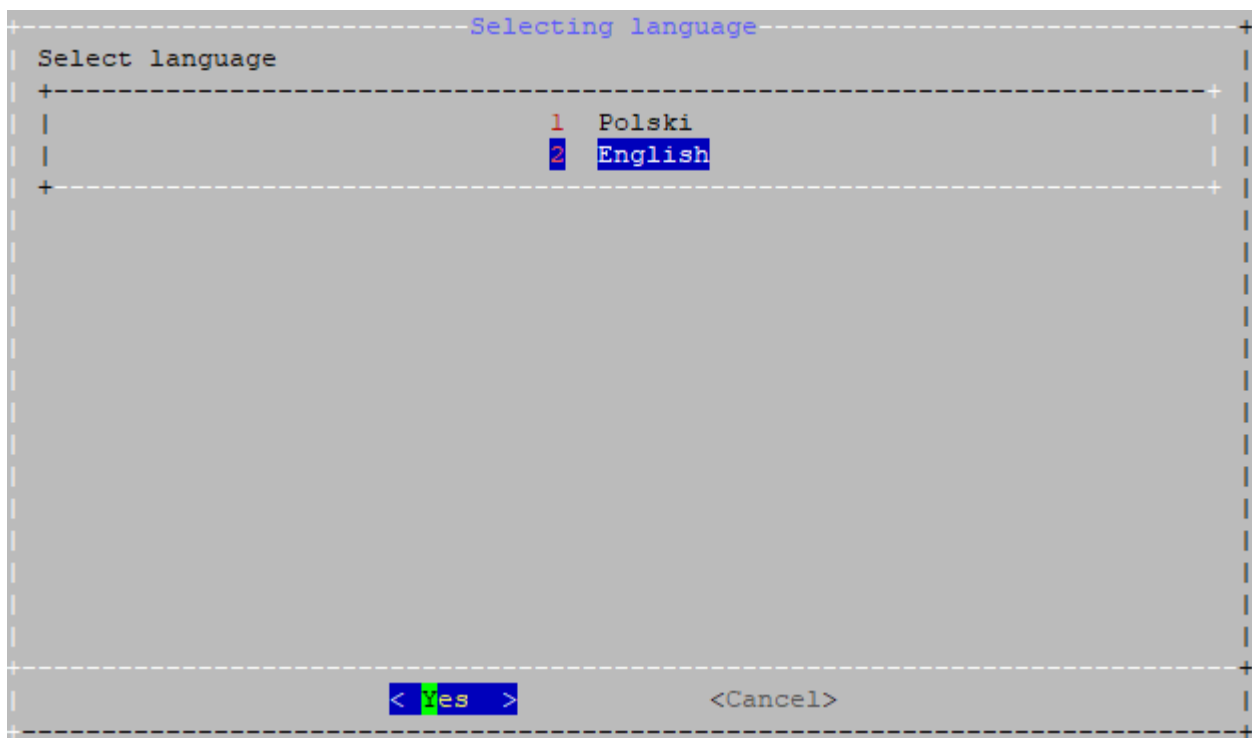
```
./acco-installer-online.sh -m
```

```
login as: rjones
rjones@192.168.11.55's password:
Linux acco-server 4.19.0-14-amd64 #1 SMP Debian 4.19.171-2 (2021-01-30) x86_64

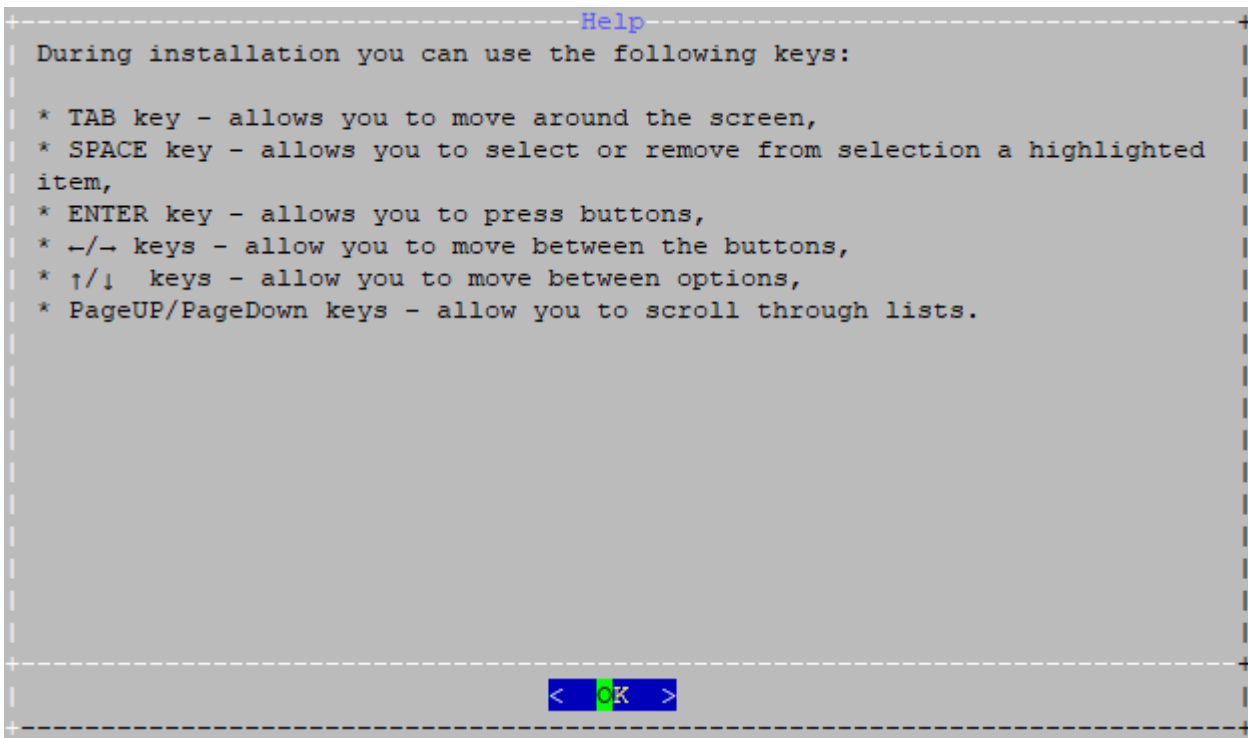
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Mon Mar  8 08:32:52 2021 from 192.168.9.11
rjones@acco-server:~$ su -l
Haslo:
root@acco-server:~# ./acco-installer-online.sh -m
```

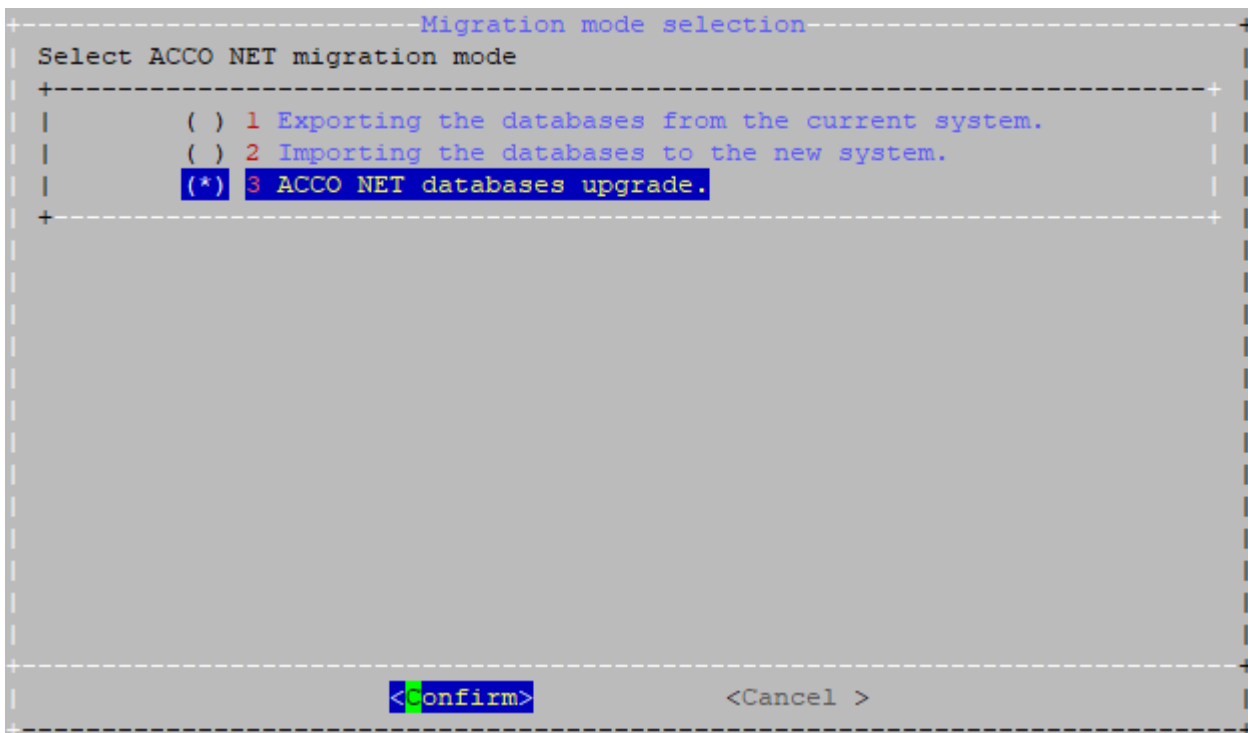
3. Use the arrow keys to select the installation language. Then select "Yes" or press Y.



4. Additional information about which keys to use when updating databases will be displayed. Click „OK” to go to the next window.



5. Select the “ACCO NET databases upgrade” migration mode and then select “Confirm”.



10. When the ACCO NET system status is displayed, click "OK".

```

-----System status-----
ACCO Web version: 1.08.008
ACCO Server version: 1.18.17
ACCO Server service status: is active
ACCO DB database status: OK
ACCO-EE database state: OK
Apache version: Apache/2.4.38 (Debian) 2021-12-21T16:50:43
Apache server status: is running
PHP version: 7.3.31-1~deb10u1
MySQL local database version: 8.0.28-1debian10
MySQL local database status: is running
Local database listening state: listening properly (0.0.0.0:3306)
MySQL database version (local or remote): 8.0.28
JAVA version: 1.8.0_312 (OpenJDK)
WildFly server version: WildFly Full 12.0.0.Final (Core 4.0.0.Final)
WildFly server status: is running
ACCO-EE status: J2EE necessary files of ACCO-EE software were deployed
successfully

< OK >

```

11. The last screen will inform you that the databases update has been completed.

```

-----End [ ***** ]-----
_2_67.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_68.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_69.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_70.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_71.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_72.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_73.sql).
[√] Updating the essential database.
[√] Awaiting the WildFly server start.
[√] Starting the ACCO Server service.
[√] Starting the ACCO WEB.
[√] Checking whether the ACCO NET is working properly.
[√] Removing the temporary files.
[√] End

```

12. Start the web browser.

13. Enter in the address bar: [https://\[address of the device on which the ACCO Server is installed\]](https://[address of the device on which the ACCO Server is installed]).

14. Log into the ACCO Web application as the Administrator of the previous system.

15. Click on the "Programs" command in the menu on the left side of the screen. Links to the installation files will be displayed.

16. Download the installation files and install the new versions of the programs.

17. Update firmware for the devices in the system: the ACCO-NT control panel and all of the access control modules.

8.2.2 Updating the system with database migration performed automatically

1. Install the Debian operating system on the new device (see “Installing the Debian operating system”).



During the system installation procedure, add a user (e.g. “rjones”) and create a password for it to log into the system.

2. After the system is restarted, the console window will open. Install the ACCO NET in version 1.8 by using the console (see „Installing the server environment and ACCO NET system”).

3. On the device where the ACCO NET system was installed, export the previously used databases to SQL files (see “Exporting databases”).

4. Import the databases from the previous system to the new system, and then update the databases on the device with the new system installed (see “Importing and updating databases”).

8.2.2.1 Exporting databases

Use the installation script to export the current databases to SQL files:

- map – essential,
- primary – accoDb,
- secondary – accoDb_temporary.

In the console window, on a computer or virtual machine on which the databases are stored:

1. Log in as the root administrator.
2. Enter the sequence of commands:

```
rm acco-installer-online.sh ;  
wget https://updates.satel.pl/acco_net_latest/installer/acco-installer-online.sh ;  
chmod 755 acco-installer-online.sh ; ./acco-installer-online.sh -m
```

```
login as: root  
root@192.168.7.208's password:  
  
The programs included with the Debian GNU/Linux system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.  
  
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent  
permitted by applicable law.  
Last login: Tue Sep 22 10:16:46 2020 from 192.168.9.11  
root@localhost:~# rm acco-installer-online.sh ; wget https://updates.satel.pl/ac  
co_net_latest/installer/acco-installer-online.sh ; chmod 755 acco-installer-onli  
ne.sh ; ./acco-installer-online.sh -m
```

3. It is required to install the “curl” package in order to be able to export databases. Select “Yes” to install the package.

```
root@acco-server:~# rm acco-installer-online.sh ; wget https://updates.satel.pl/
acco_net_latest/installer/acco-installer-online.sh ; chmod 755 acco-installer-on
line.sh ; ./acco-installer-online.sh -m
[INFO] Following file was found: acco-installer/acco-installer.md5
Starting installation wizard...
Extracting, please be patient...
Checking for new version of installation script in the current release.
Checking for new version of installation script in the latest release.

Migration
Checking whether the installation script is running with root privileges.
The script has been executed with root user privileges.
Checking the operating system architecture.
Checking whether the operating system is supported.
The supported operating system has been found:debian, 8
Checking an internet connection.
Checking operating system current time.
Trying to apply a lock to the installation script.
Installation of curl package is required. Do you want to install it? YES [y] / N
O [n]
█
```

4. Use the arrow keys to select the installation language. Then select “Yes” or press Y.

```
-----Selecting language-----
Select language
+-----+
|                1  Polski                |
|                2  English                |
+-----+

< Yes >                <Cancel>
```

5. Additional information about which keys to use when exporting databases will be displayed. Click "OK" to go to the next window.

```
-----Help-----
During installation you can use the following keys:

* TAB key - allows you to move around the screen,
* SPACE key - allows you to select or remove from selection a highlighted
item,
* ENTER key - allows you to press buttons,
* ←/→ keys - allow you to move between the buttons,
* ↑/↓ keys - allow you to move between options,
* PageUP/PageDown keys - allow you to scroll through lists.

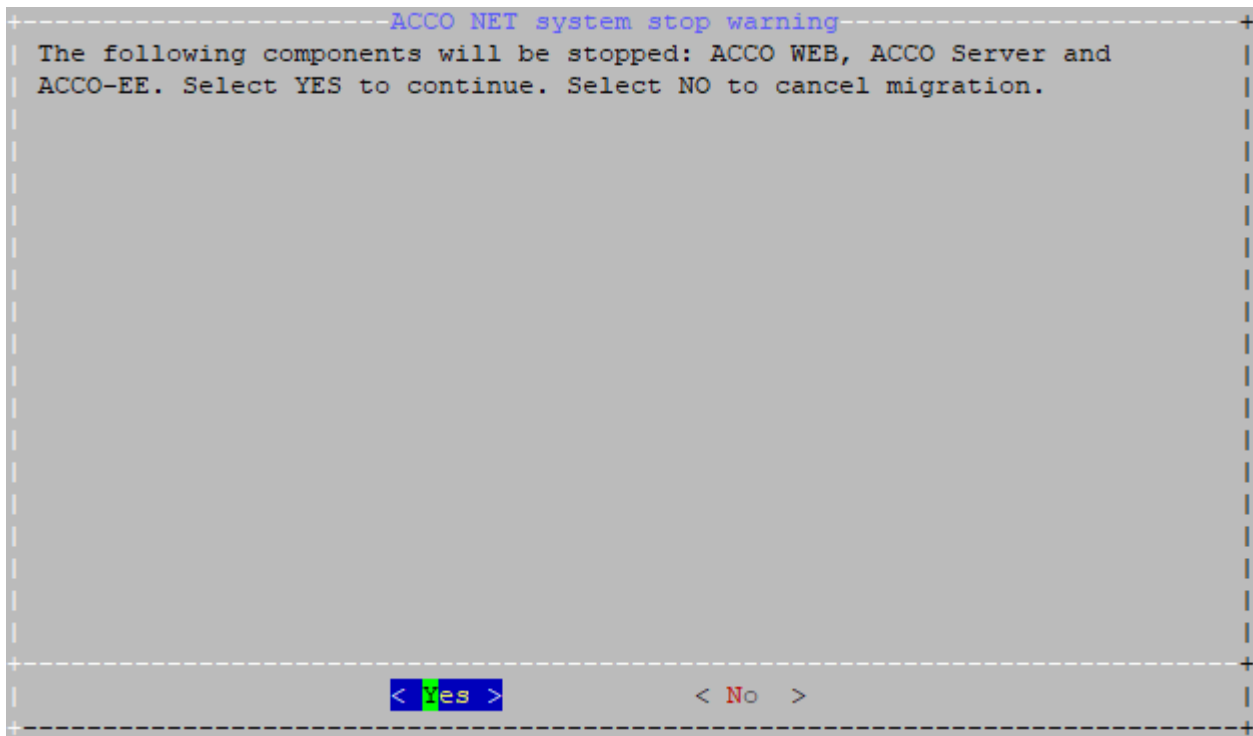
-----
< OK >
```

6. Select the "Exporting the databases from the current system" migration mode and then select "Confirm".

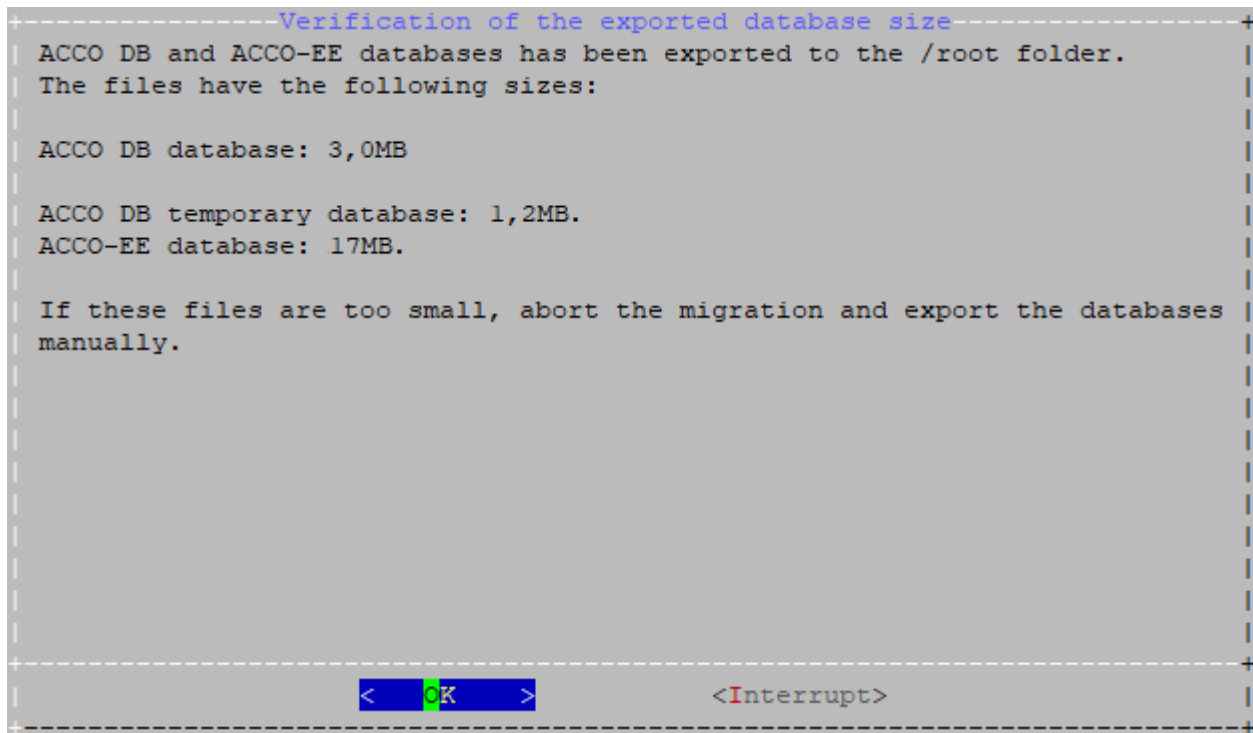
```
-----Migration mode selection-----
Select ACCO NET migration mode
+-----+
|      (*) 1 Exporting the databases from the current system.      |
|      ( ) 2 Importing the databases to the new system.           |
|      ( ) 3 ACCO NET databases upgrade.                          |
+-----+

-----
< Confirm >          < Cancel >
```

7. You will be warned that the ACCO NET system programs will be stopped while the databases export is in progress. Select "Yes" to continue the process.



8. Information will be displayed about the size of the exported databases and the name of the folder to which the databases have been exported. Check if the exported databases are correct in size. If the sizes are correct, select "OK". If not, select "Interrupt" and export the databases manually (see section "Exporting databases").



11. Enter the user password (for example: rjones).

```
-----Please wait... [ ***** _____ ]-----
[√] Connecting to https://updates.satel.pl
[√] Selecting the language.
[√] Detecting ACCO NET system in the Operating System
[√] Checking whether the packages required during installation are
    present.
[√] Selecting the migration mode.
[√] Stopping the ACCO WEB.
[√] Awaiting ACCO Server stop.
[√] Awaiting the WildFly server stop.
[√] Detection of ACCO NET system parameters
[√] Exporting the ACCO DB database.
[>] Copying the ACCO DB database to the new system.

rjones@192.168.11.54's password: █
```

12. Information will be displayed about the name of the folder to which the databases were copied. Click "OK".

```
-----Summary of copying-----
The databases were copied to new system to /home/rjones folder.

< OK >
```


8.2.2.2 Importing and updating databases

Use the installation script to import to the new system the databases exported to SQL files:

- map – essential,
- primary – accoDb,
- secondary – accoDb_temporary.

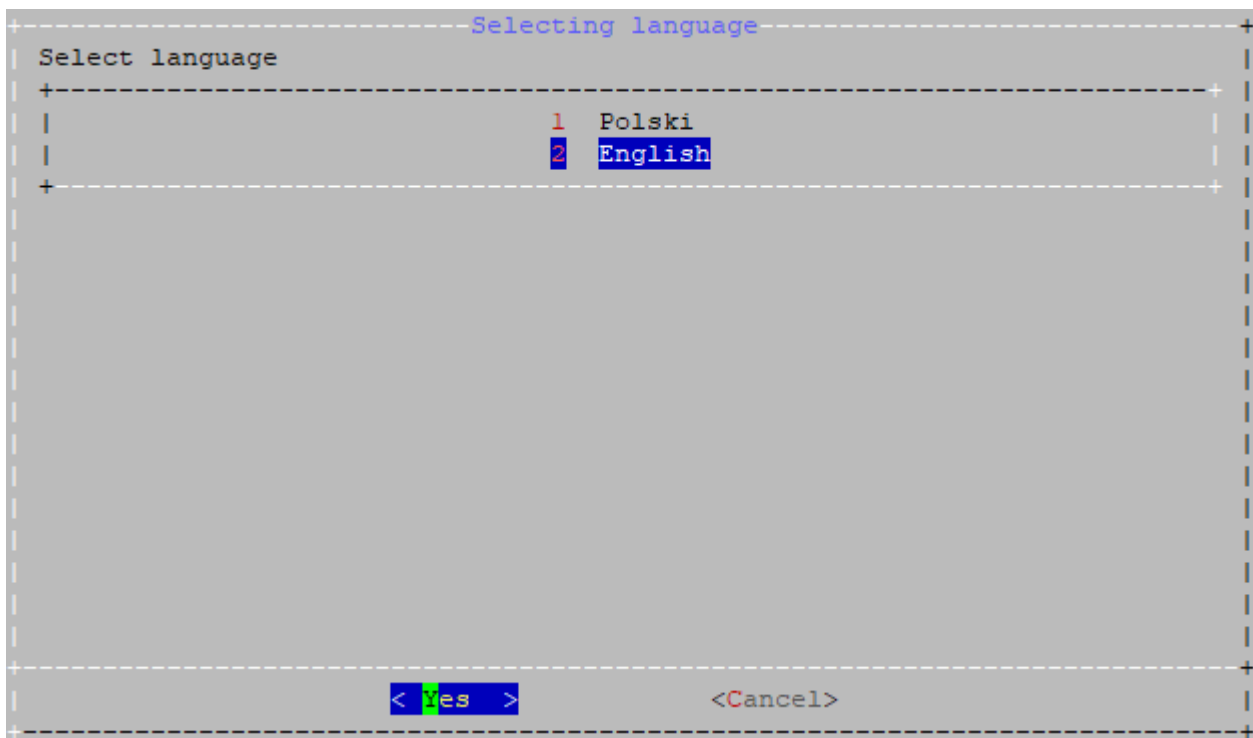
In the console window, on a computer or virtual machine with new versions of Debian and ACCO NET installed:

1. Log in as the root administrator.
2. Run the installation package by using the command:

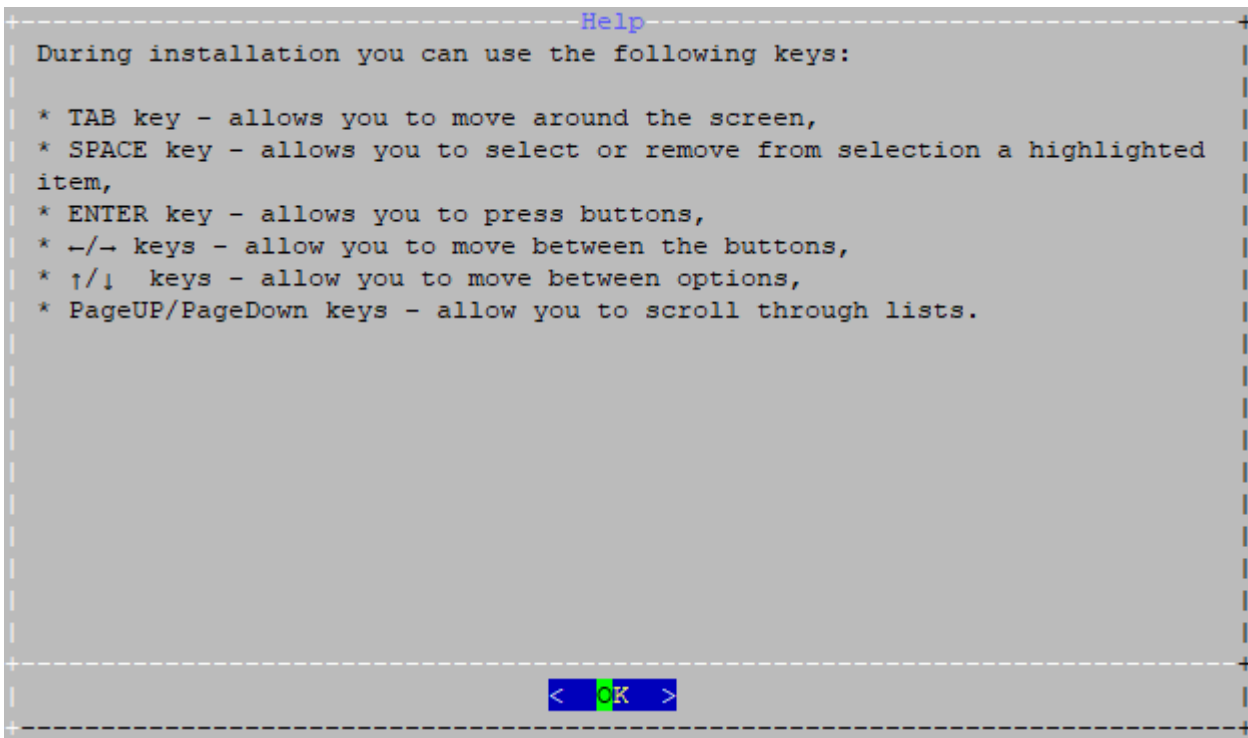
```
./acco-installer-online.sh -m
```

```
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Mon Mar  8 08:32:52 2021 from 192.168.9.11
rjones@acco-server:~$ su -l
Haslo:
root@acco-server:~# ./acco-installer-online.sh -m
```

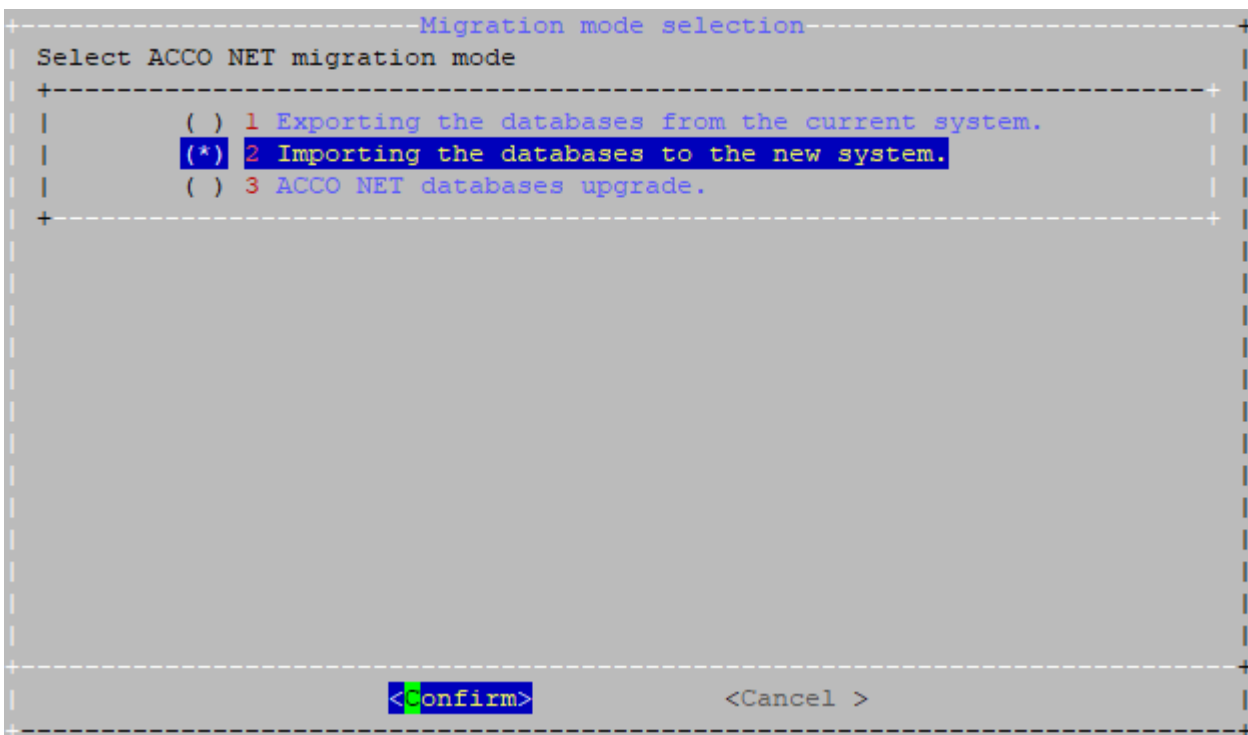
3. Use the arrow keys to select the installation language. Then select “Yes” or press Y.



4. Additional information about which keys to use when importing databases will be displayed. Click "OK" to go to the next window.



5. Select the "Importing the databases to the new system" migration mode and then select "Confirm".




```
----- A method of finding database location -----+
Specify how to find the location of ACCO NET system databases location.
+-----+
| (*) 1 Exported files found automatically: 1.          |
| ( ) 2 Indicate the file location: accodb-export-.tar.gz. |
| ( ) 3 Indicate the folder containing the ACCO NET system databases. |
| ( ) 4 Indicate the folders containing the ACCO NET system databases in turn. |
+-----+

                                     <Confirm>          <Cancel >
```

8. From the files found automatically by the system, select the one which contains the exported databases. Then select "Confirm".

```
----- File selection -----+
Select one file from the last six found:
+-----+
| (*) 1 /home/rjones/accodb-export-20201120-1235.tar.gz |
+-----+

                                     <Confirm>          <Cancel >
```

9. You will be asked if you want to import the selected file. Select "Yes".

```
-----Import confirmation-----
Selected file: accodb-export-20201120-1235.tar.gz (filesize: 18M) in the
following folder: /home/rjones. Do you want to import it?

< Yes > < No >
```

10. When the content of the folder is displayed, select "Yes".

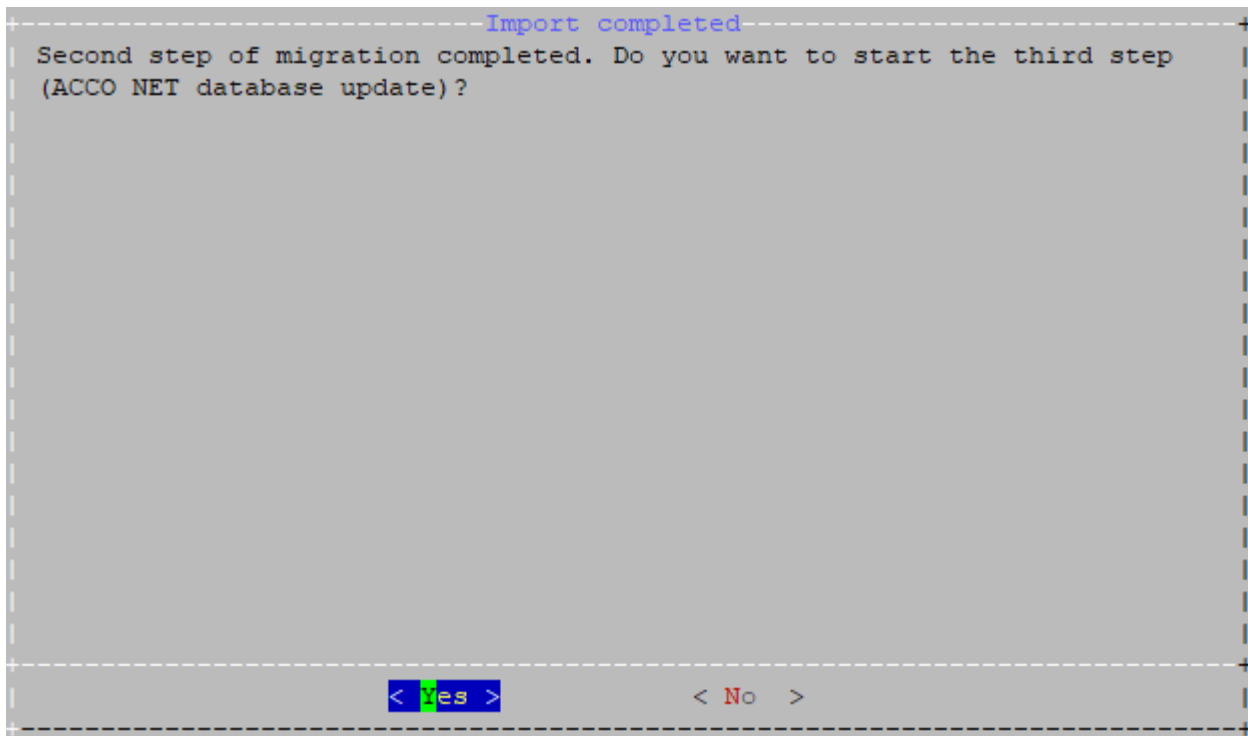
```
-----.sql files import confirmation-----
The selected folder contains the following .sql files:

accodb.sql (filesize: 3,0M).
accodb_temporary.sql (filesize: 1,2M).
essential.sql (filesize: 17M).

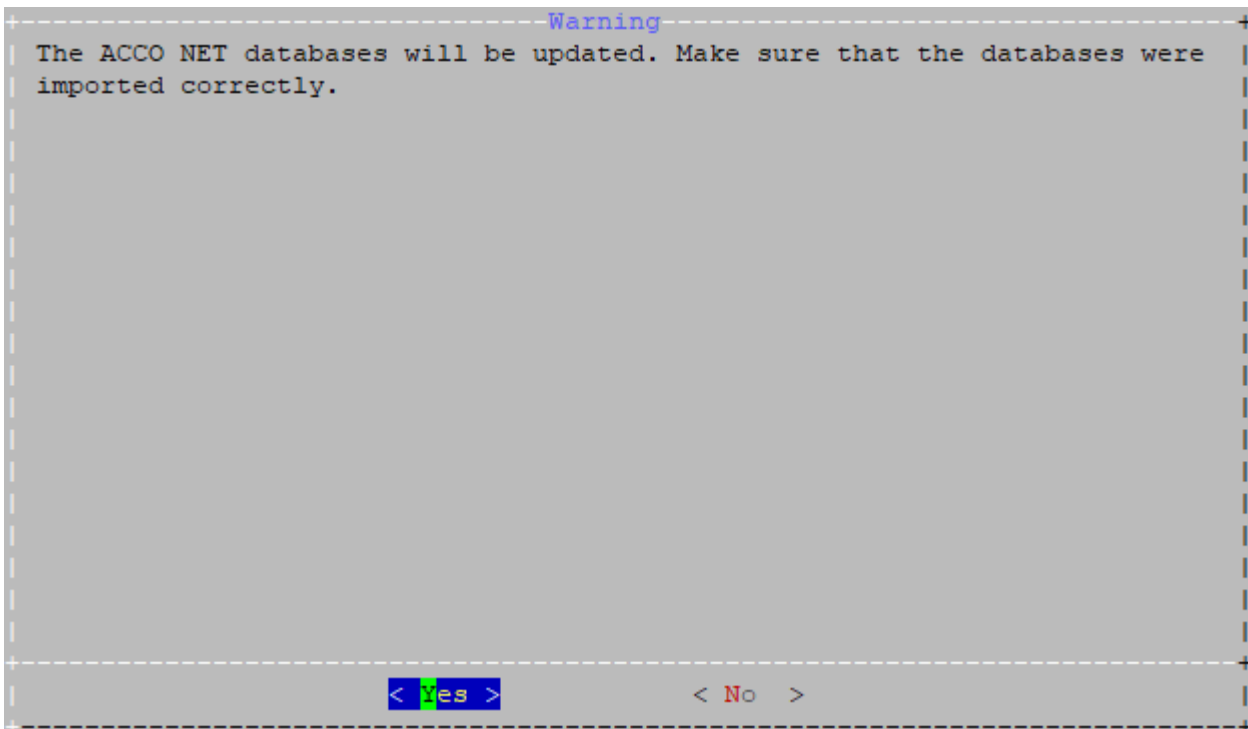
Do you want to import this files?

< Yes > < No >
```

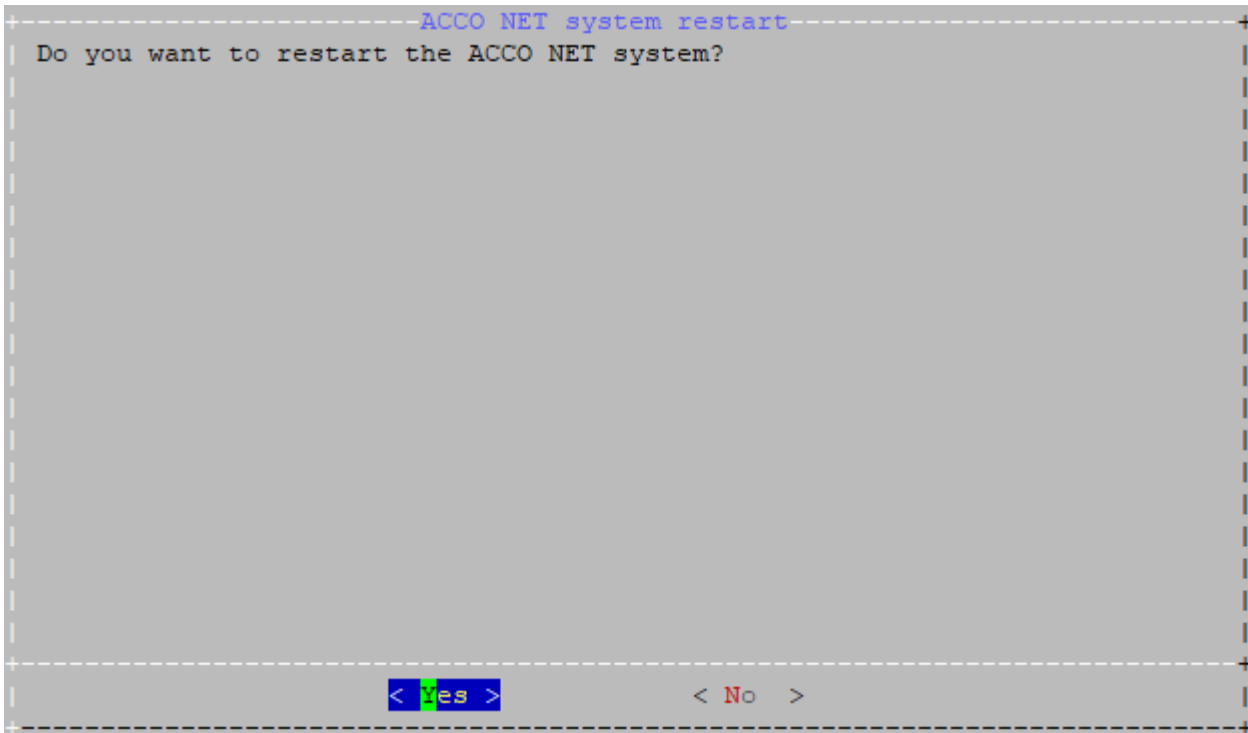

14. A sequence of windows will be displayed with information about the progress of the database import. Importing the databases can take several hours, depending on the size of the imported files.
15. When the database import is completed, you will be asked if you want to start the database update. Select "Yes".



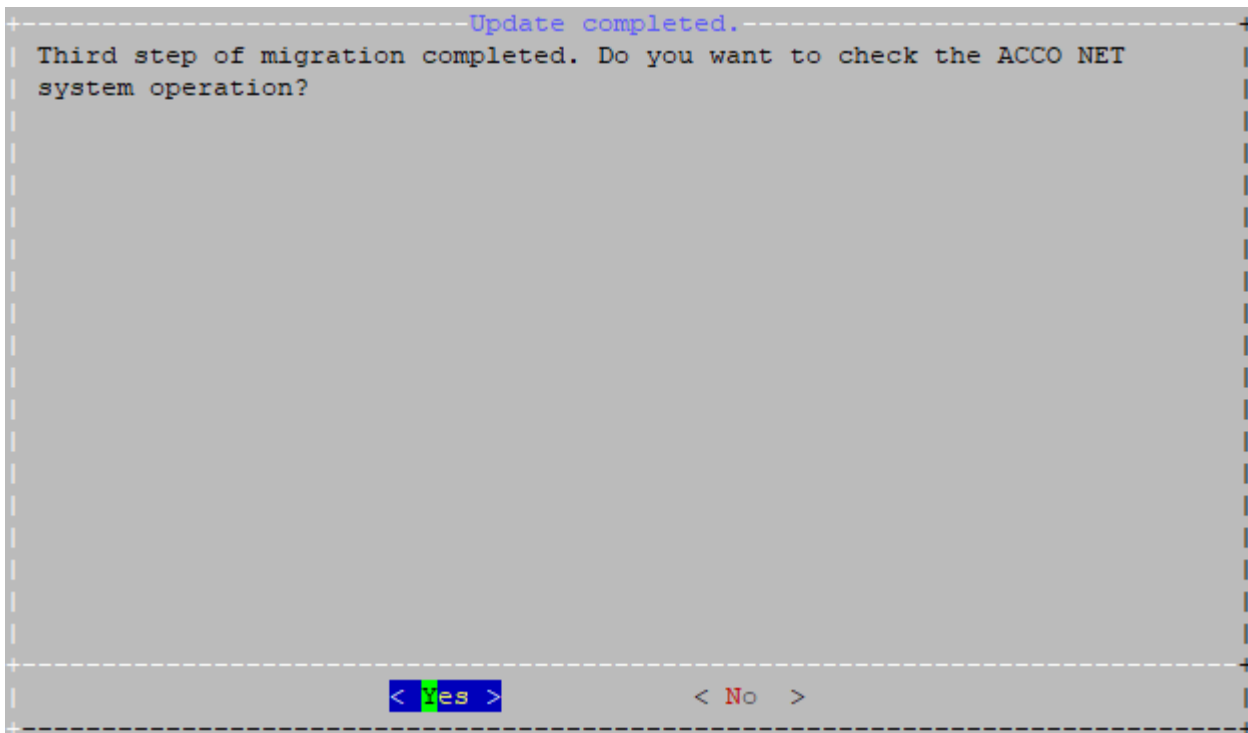
16. You will be informed that the databases will be updated. Select "Yes". Updating the databases can take several hours, depending on the size of the updated files.



17. You will be asked if you want to restart the ACCO NET system. Select "Yes".



18. You will be asked if you want to check the ACCO NET system operation. Select "Yes".



19. When the ACCO NET system status is displayed, click "OK".

```
-----System status-----
ACCO Web version: 1.08.008
ACCO Server version: 1.18.17
ACCO Server service status: is active
ACCO DB database status: OK
ACCO-EE database state: OK
Apache version: Apache/2.4.38 (Debian) 2021-12-21T16:50:43
Apache server status: is running
PHP version: 7.3.31-1~deb10u1
MySQL local database version: 8.0.28-1debian10
MySQL local database status: is running
Local database listening state: listening properly (0.0.0.0:3306)
MySQL database version (local or remote): 8.0.28
JAVA version: 1.8.0_312 (OpenJDK)
WildFly server version: WildFly Full 12.0.0.Final (Core 4.0.0.Final)
WildFly server status: is running
ACCO-EE status: J2EE necessary files of ACCO-EE software were deployed
successfully

< OK >
```

20. The last screen will inform you that the database import and update has been completed.

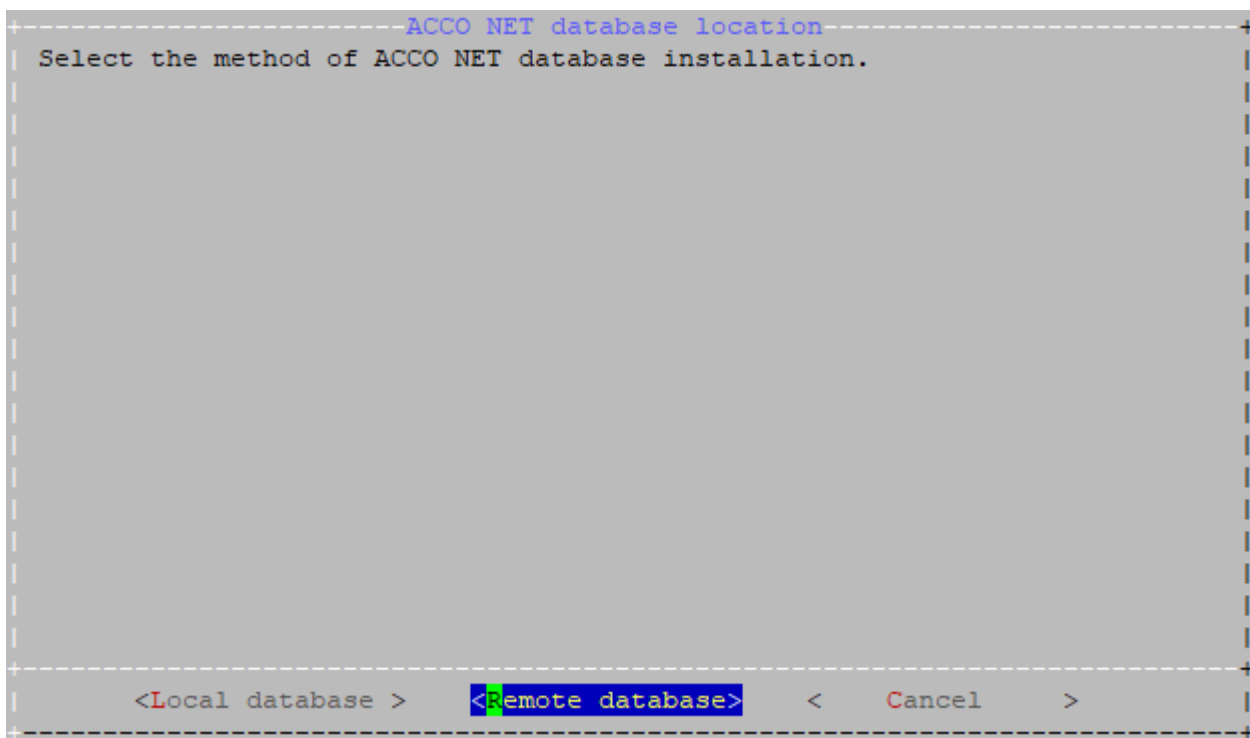
```
-----End [ ***** ]-----
_2_67.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_68.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_69.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_70.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_71.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_72.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_73.sql).
[√] Updating the essential database.
[√] Awaiting the WildFly server start.
[√] Starting the ACCO Server service.
[√] Starting the ACCO WEB.
[√] Checking whether the ACCO NET is working properly.
[√] Removing the temporary files.
[√] End
```

21. Start the web browser.
22. Enter in the address bar: https://[address of the device on which the ACCO Server is installed].
23. Log into the ACCO Web application as the Administrator of the previous system.
24. Click on the “Programs” command in the menu on the left side of the screen. Links to the installation files will be displayed.
25. Download the installation files and install the new versions of the programs.
26. Update firmware for the devices in the system: the ACCO-NT control panel and all of the access control modules.

Importing and updating remote databases

If you decided to use a remote database in the ACCO NET system, follow the steps below when importing and updating the database:

1. Select “Remote database”.



2. Configure the following settings in order to be able to connect to the database:
 - **Host** – IP address of the device on which the remote database is installed;
 - **Port** – port number for communication between ACCO Server and database (DB port);
 - **Login** – login for the MySQL database administrator (root);
 - **Password** – password for the MySQL database administrator.

and select "Confirm".

```
-----Configuring the database connection settings-----+
Enter the following settings (administration account):
+-----+
|Host:    192.168.11.80
|Port:    3306
|Login:   root
|Password:
+-----+

                                     <Confirm>          <Cancel >
```

3. Specify if you want to use the database names from the new system (option "Copy database names from configuration file") or the old system (option "Copy database names from .sql files"). Then select "Confirm".

```
-----Database import method-----+
Specify how to import the .sql files to the new database
+-----+
|      ( ) 1 Copy database names from .sql files
|      (*) 2 Copy database names from configuration file
+-----+

                                     <Confirm>          <Cancel >
```

4. You will be informed that the databases of the new ACCO NET system will be dropped. Click "OK" to continue.

```
-----Confirmation of dropping ACCO NET databases.-----+
In the next step the databases of the new ACCO NET system will be dropped.
Do you want to continue?

<OK> <Interrupt>
```

5. Configure settings for the remote access to databases:
- **Host** – IP address of the device from which you will connect to databases (enter "%" if you will connect to databases from several devices);
 - **Login** – name of the MySQL database administrator and select "Confirm".

```
-----Remote database connection settings-----+
The below parameters are required to remotely manage the database. In the
"Host" field you can enter: the IP address of the device (only this device
can be used to connect to database) or "%" (any device can be used to
connect to database).
+-----+
|Host: 192.168.11.55
|Login: root
+-----+

<Confirm> <Cancel >
```


11. When the ACCO NET system status is displayed, click "OK".

```
-----System status-----
ACCO Web version: 1.08.008
ACCO Server version: 1.18.17
ACCO Server service status: is active
ACCO DB database status: OK
ACCO-EE database state: OK
Apache version: Apache/2.4.38 (Debian) 2021-12-21T16:50:43
Apache server status: is running
PHP version: 7.3.31-1~deb10u1
Remote database connection status (accoweb account): OK
MySQL database version (local or remote): 8.0.28
JAVA version: 1.8.0_312 (OpenJDK)
WildFly server version: WildFly Full 12.0.0.Final (Core 4.0.0.Final)
WildFly server status: is running
ACCO-EE status: J2EE necessary files of ACCO-EE software were deployed
successfully

< OK >
```

12. The last screen will inform you that the database import and update has been completed.

```
-----End [ ***** ]-----
_2_67.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_68.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_69.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_70.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_71.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_72.sql).
[√] Creating the ACCO DB database schema - .sql part (update
_2_73.sql).
[√] Updating the essential database.
[√] Awaiting the WildFly server start.
[√] Starting the ACCO Server service.
[√] Starting the ACCO WEB.
[√] Checking whether the ACCO NET is working properly.
[√] Removing the temporary files.
[√] End
```

13. Start the web browser.
14. Enter in the address bar: [https://\[address of the device on which the ACCO Server is installed\]](https://[address of the device on which the ACCO Server is installed]).
15. Log into the ACCO Web application as the Administrator of the previous system.
16. Click on the "Programs" command in the menu on the left side of the screen. Links to the installation files will be displayed.
17. Download the installation files and install the new versions of the programs.
18. Update firmware for the devices in the system: the ACCO-NT control panel and all of the access control modules.