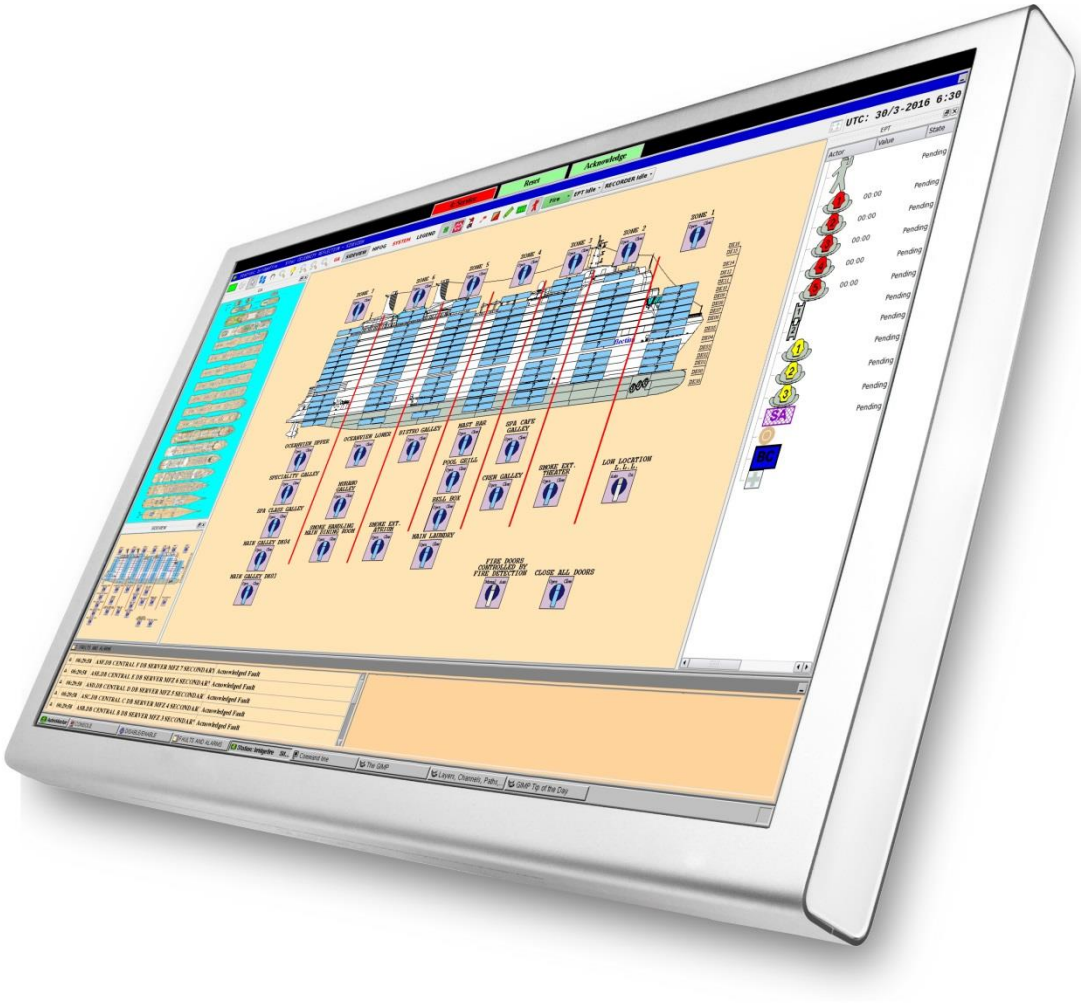


Installation and Commissioning Handbook

AutroMaster 4

Integrated Safety and Emergency Management System for Ubuntu®

116-P-AM4UB-INSTCOMM/IGB, 2019-09-11, Autronica Fire And Security AS

CE

Table of Contents

1. Introduction

1.1 About the Handbook

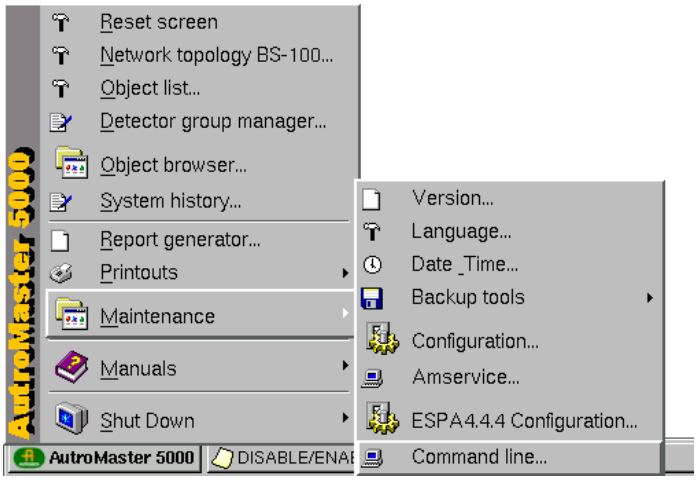
This handbook is intended to provide the necessary information for *basic configuration* of the AutroMaster 4 Integrated Safety and Emergency Management System (AutroMaster ISEMS) running on the Ubuntu® operative system.

The majority of configuring is performed by using a normal editor. Ubuntu® has a number of different editors that may be used, for example, vi, emacs, gedit, nedit, etc.

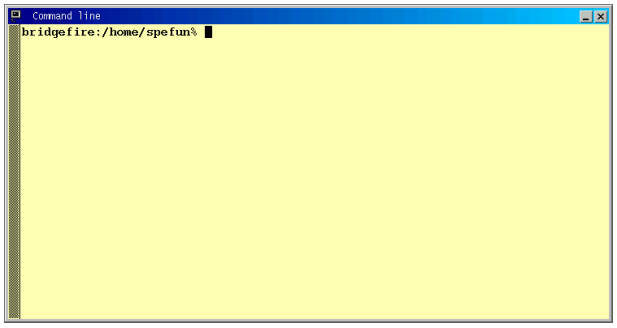
gedit is recommended and is to be used in graphic mode.

All editing is performed in *Command line window*. Security level 4 (Service) is required to gain access to Command line.

- To open the pull-down menu, click *Menu* using the left mouse button.



- Select the desired submenu (Command line is selected in this example) and then click the left mouse button (shaded black above).



1.2 About the Handbook

This handbook provides all necessary information for the installation and commissioning of the AutroMaster 4 Integrated Safety and Emergency Management System (ISEMS) running on the Ubuntu® operative system.

1.3 The Reader

The handbook is intended to be used by personnel who are responsible for the installation, commissioning and startup of the communication with fire alarm panels, of type BS-100, AutroSafe and Autroprime or other safety equipment.

We assume that the reader has basic knowledge of the Linux Operating System, plus the equipment and systems that are used.

1.4 Reference Documentation

The AutroMaster 4 ISEMS documentation consists of the following documents:

Document Name	Part number	File name
System Description	116-AM4UB-SYSTEM/XGB	am4ubsystem_xgb
Basic Configuration Handbook	116-AM4UB-BASICCONF/EGB	am4ubbasicconf_egb
Advanced Configuration Handbook	116-AM4UB-ADVCONF/EGB	am4ubadvconf_egb
Installation and Commissioning Handbook	116-AM4UB-INSTCOMM/IGB	am4ubinstcomm_igb
Operator's Handbook	116-AM4UB-OPERATE/FGB	am4uboperate_fgb
Shortform User Guide	116-AMASTER-USERGUI/LGB	amasterusergui_lgb
AutroBrowser, Installation	116-AUTROBROWIN/DGB	autrobrowin_dgb
Datasheet: AutroMaster 4 ISEMS	116-AM4UB-ISEMS/CGB	am4ubisems_cgb
Datasheet: AutroMaster PC12	116-AM4UB-PC12/CGB	am4ubpc12_cgb
Datasheet: AutroMaster PC13M	116-AM4UB-PC13M/CGB	am4ubpc13m_cgb

2. About AutroMaster ISEMS

2.1 Overview

AutroMaster 4 ISEMS is an Integrated Safety and Emergency Management System which can be used together with fire alarm panels, of type BS-100, AutroSafe and Autroprime or other safety equipment.

The system can be connected to a large number of fire alarm panels of different types (such as operator, control or repeater panels) via a serial connection or an ethernet network.

AutroMaster 4 ISEMS for Ubuntu® uses Ubuntu as an operating system.

Computer platform	Operating system
PC	Ubuntu 18.04 AFS

2.2 AutroMaster Functionality

AutroMaster 4 ISEMS for Ubuntu® includes the following functionality:

Basic functionality
Fire management basic functions (AutroSafe, Autroprime 2 and BS-100 interface)
MultiSensor control
Report generator
Control and monitoring of emergency lights/LLL
Extended functionality
AutroSafe IFG unit support
Dual Safety (AutroSafe 4.3 or later)
Touch screen support
Decision support system/incident manager
Electronic plotting table
Training/simulation module
Event record and replay module
Remote connect function
Message center module
AutroBrowser for Windows
Interfaces
NMEA interface
VDR output
Modbus interface
ESPA 4.4.4 interface
Gessler
Saia PLC

3. Installing Ubuntu Operating System

3.1 Preparing to Install the System

3.1.1 Hardware Requirements

AutroMaster 4 ISEMS uses Ubuntu 18.04 AFS as an operating system.

For information on hardware requirements and other technical specifications, refer to datasheets for computers PC12 and PC13M.

3.1.2 Software Requirements

Autronica provides a USB Memory Stick with Linux Ubuntu image for AutroMaster 4.

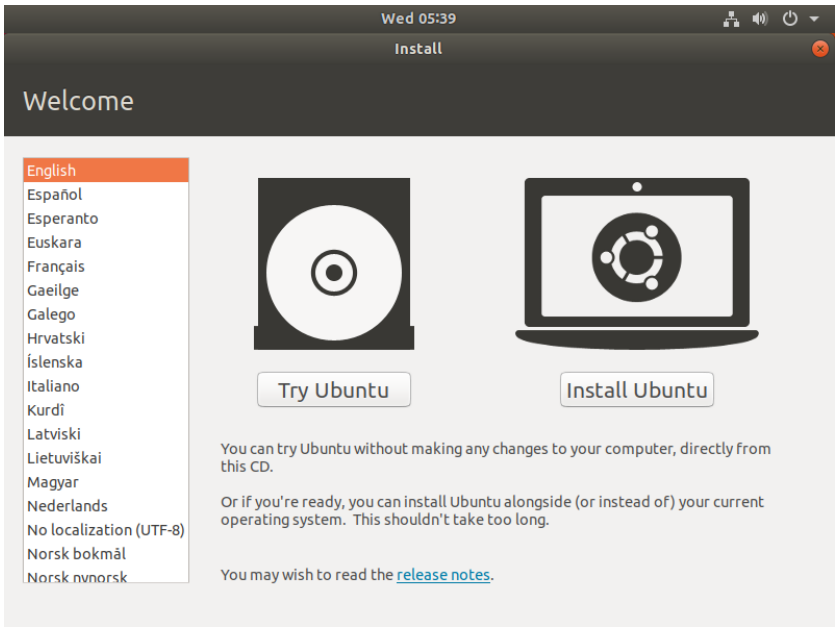
The Ubuntu image on the USB memory stick includes Debian packages specifically prepared for AutroMaster 4.

3.2 Installation Procedure

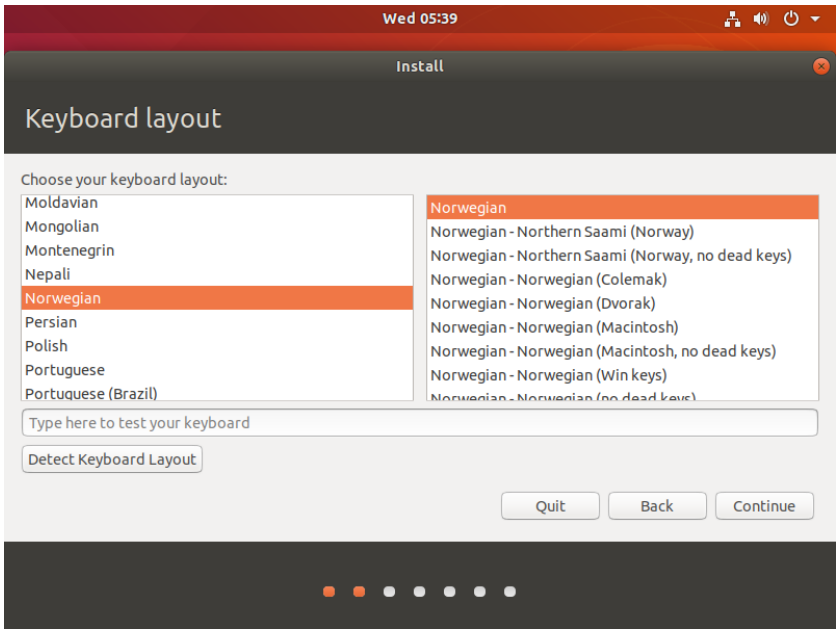
3.2.1 Preparing to Install the System

- Insert the USB memory stick with the Linux Ubuntu image into your computer
- Turn on or reboot the computer
- Early in the boot sequence, press the function key to enter the computer's boot menu (the function key may differ depending on the computer type)
- In the boot menu, select the USB memory stick as Boot Device

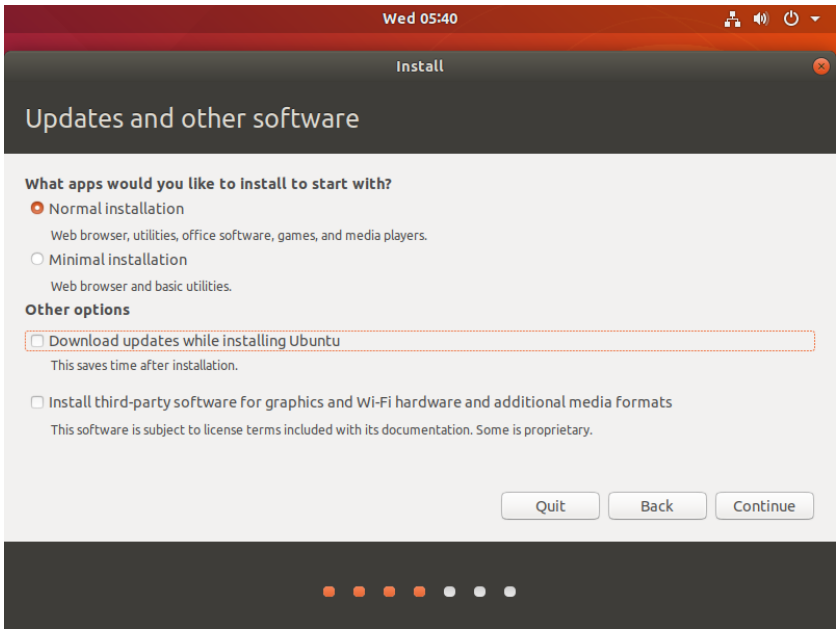
A welcome window will appear showing a list of all available languages as shown below.



- Select the desired language (in this example, English)
- Click Install Ubuntu



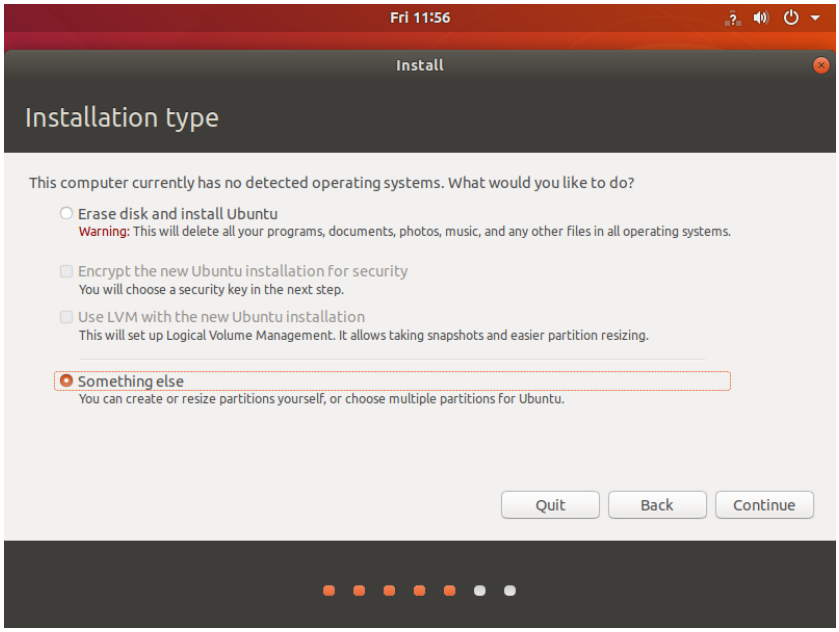
- Select the language for the keyboard layout (in this example, Norwegian is used), then click Continue



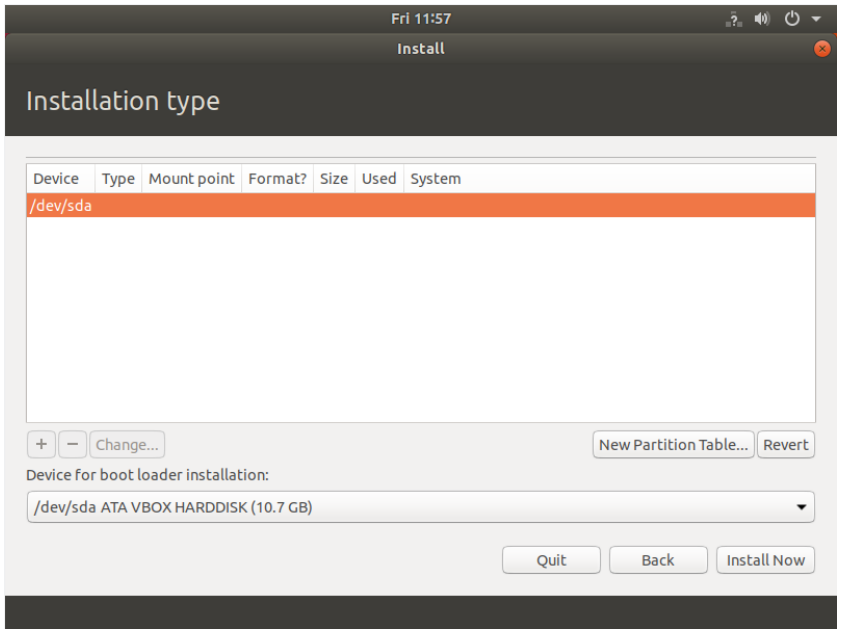
- Select Normal Installation, then click Continue

3.2.2 Partitioning the Disk

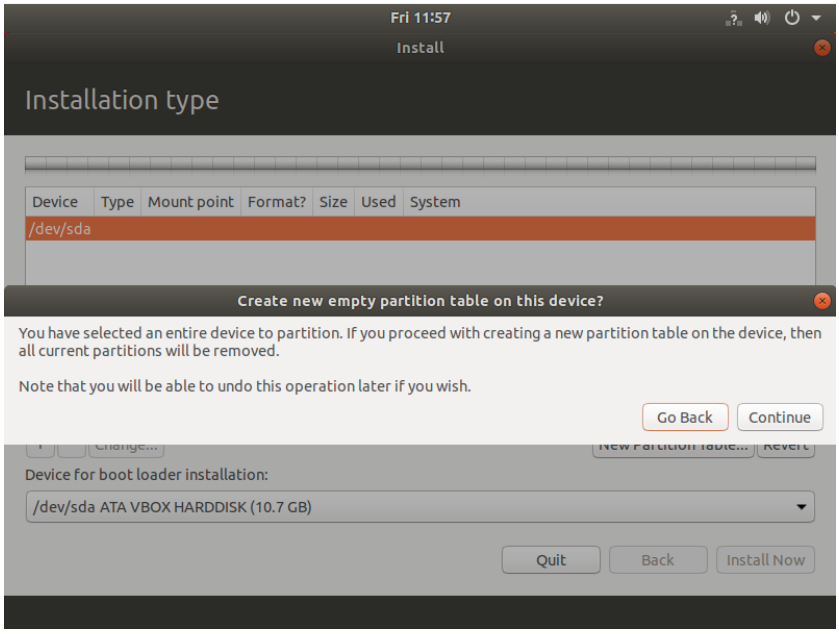
Name	Size
SWAP	2 GB
/	30 GB
/ VAR	Remaining space



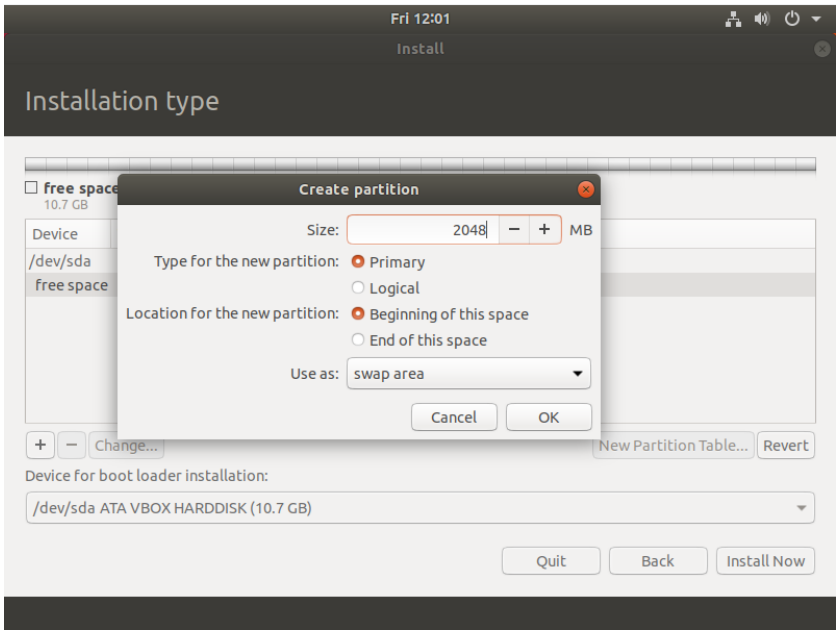
- Select Something else, then click Continue



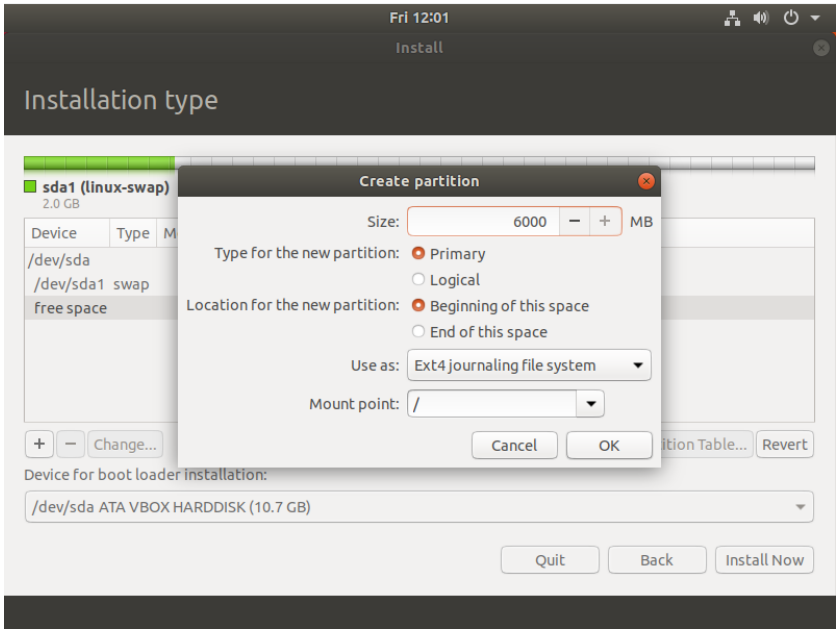
- Select the harddrive as show in the example above, then click New Partition Table



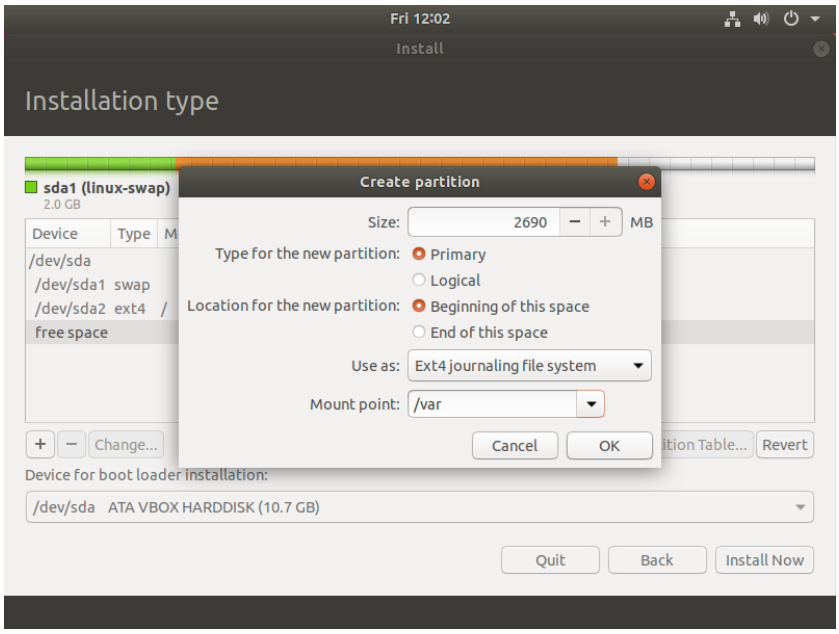
- Click Continue



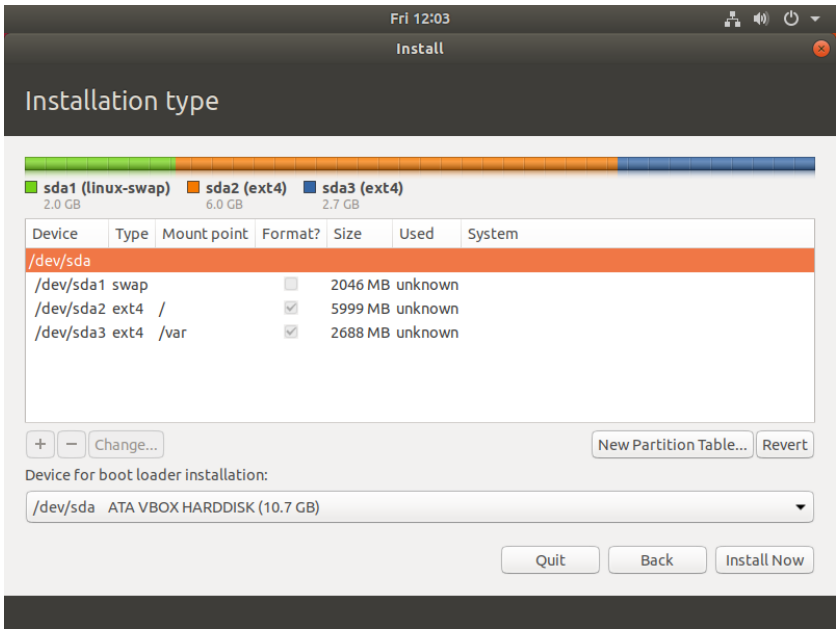
- Enter the size of the first partition and use the settings as shown in the example above, then click OK
  (The given size is an example)



- Enter the size of the second partition and use the settings as shown in the example above, then click OK
  (The given size is an example)

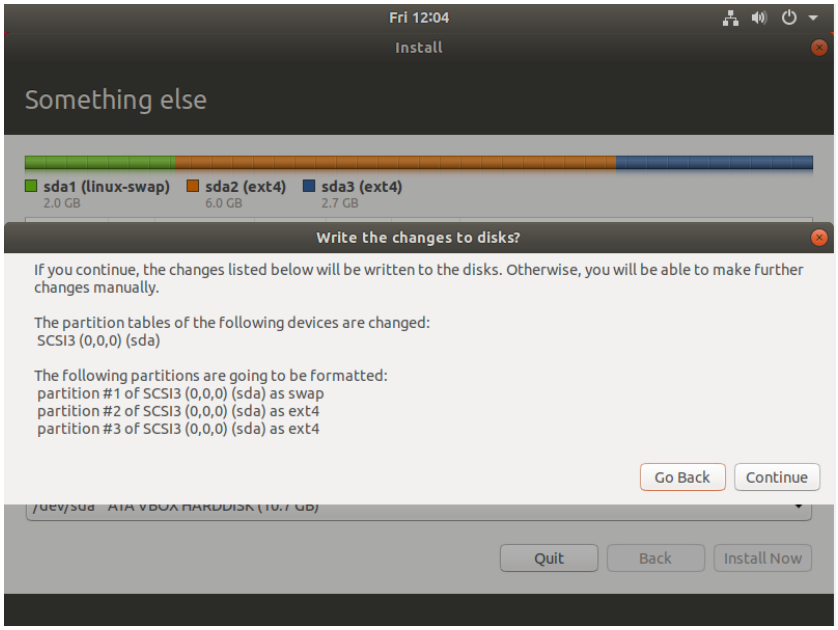


- Enter the size of the second partition and use the settings as shown in the example above, then click OK
  (The given size is an example)

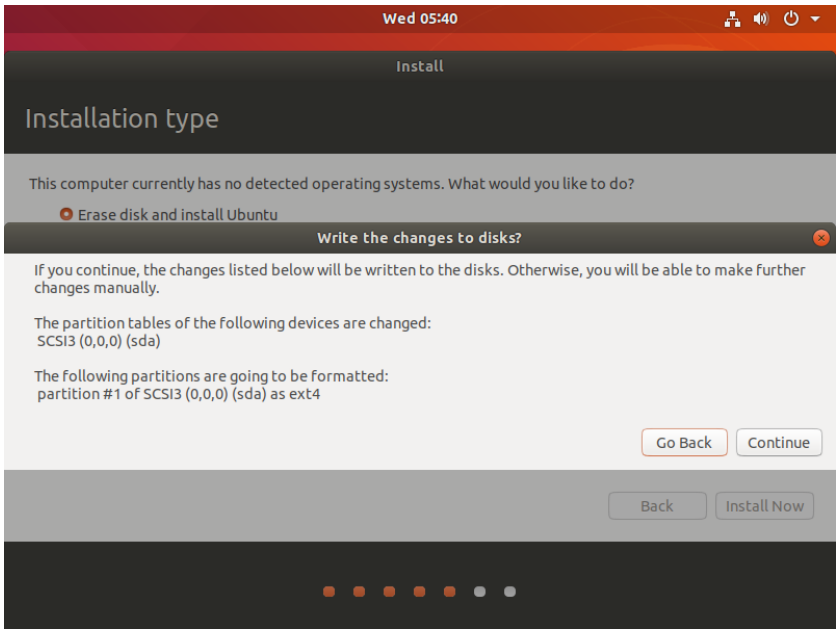


(The given size is an example)

- Click Install Now

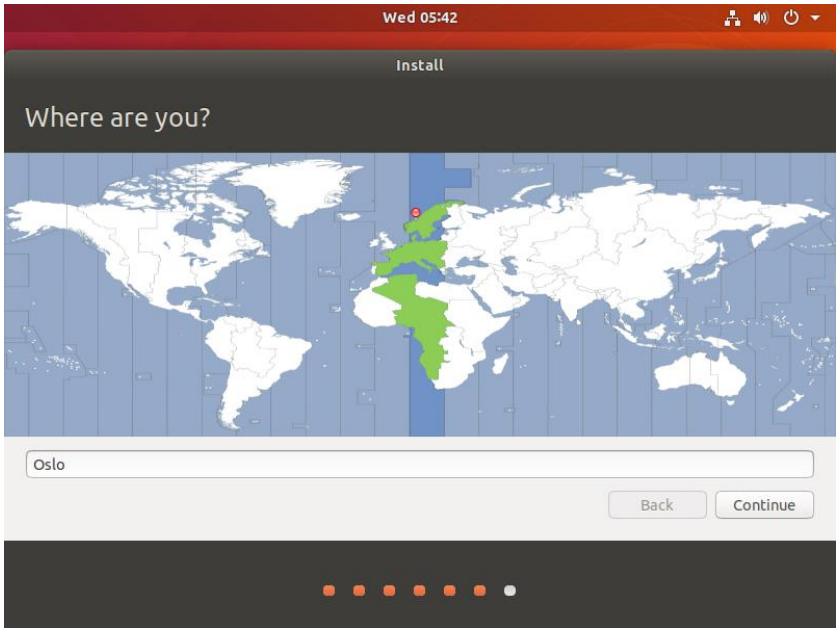


- Click Continue

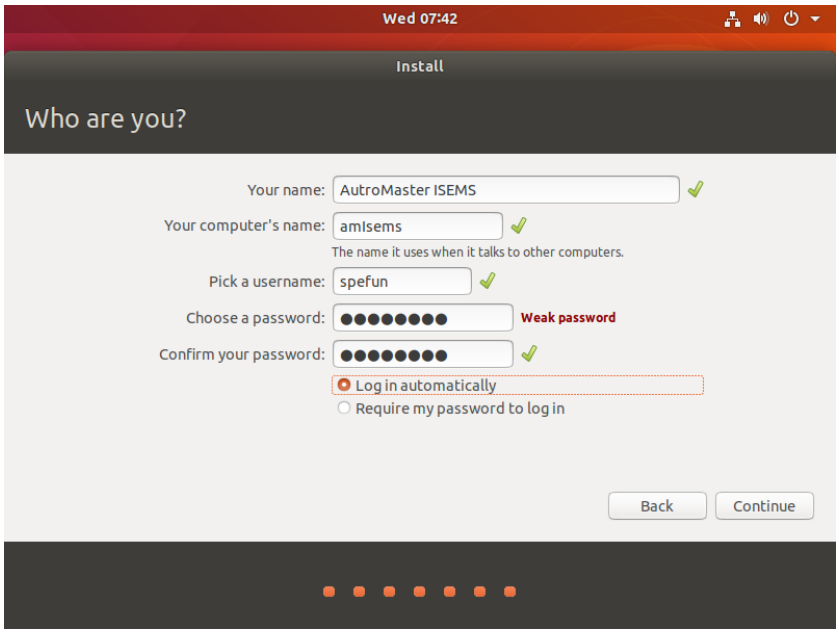


- Verify that the changes that are to be written to the disk are correct, then click Continue

3.2.3 Defining Time Zone

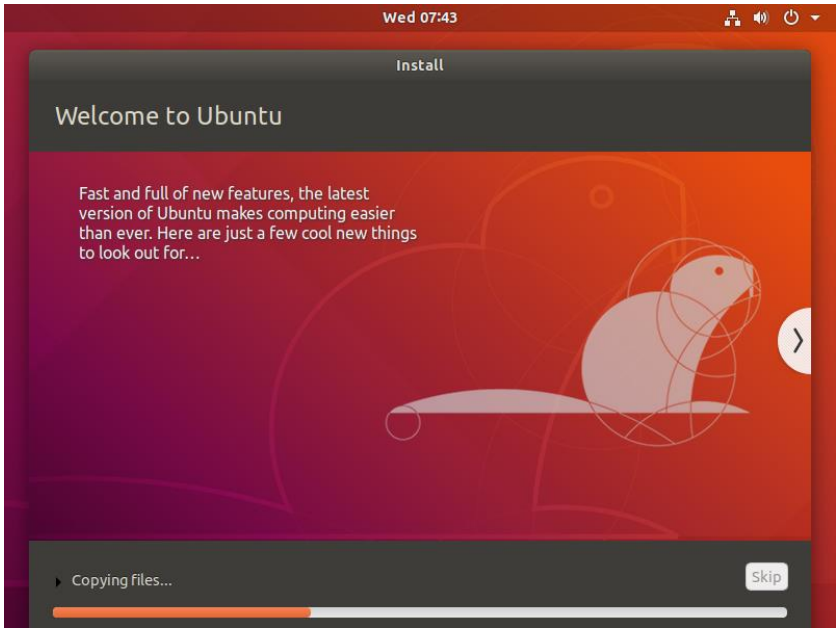


- Select your time zone, then click Continue

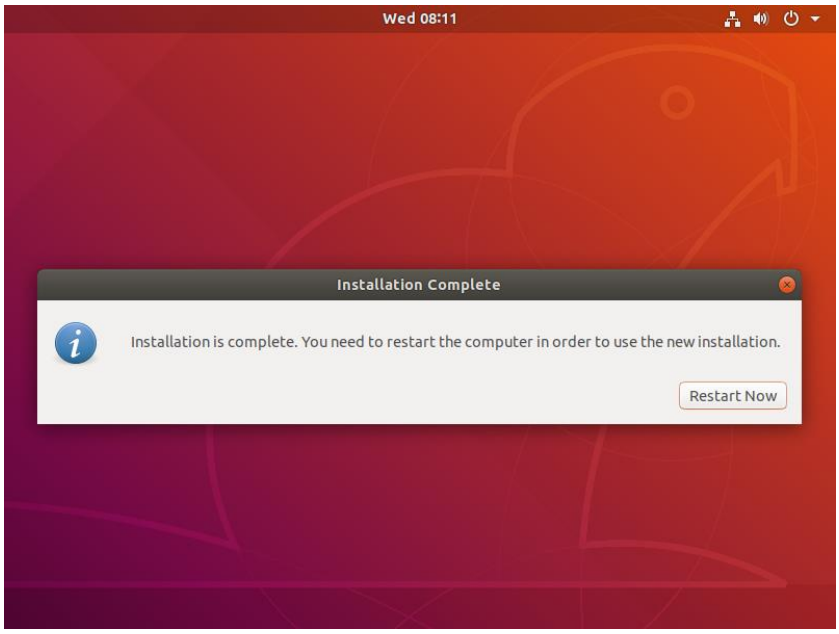


For user (account) information, specify as stated below:

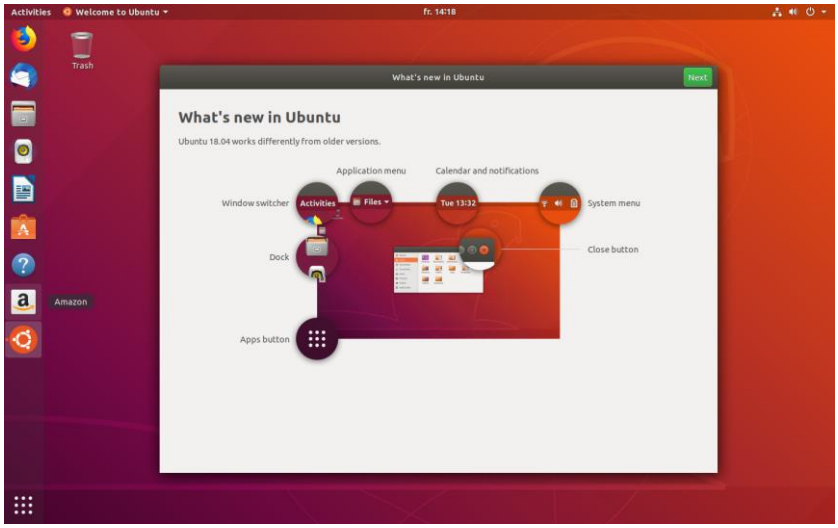
- Your name: Enter a freely selected name
- Your computer's name: This information will be filled in automatically, but we recommend that it is changed to a useful name
  (Note that this will be the computer's host name. The computer's hostname must be unique for all computers installed in the same network).
- Pick a username: The username must be spefun (written in lower case letters)
- Choose a password: choose a freely selected password
- Confirm your password: repeat the password you have chosen
- Select Log in automatically
- When all information is entered, click Continue



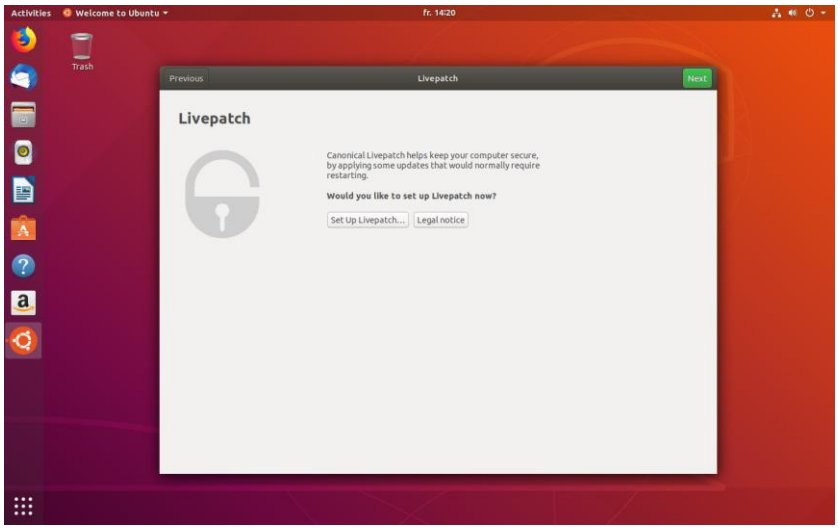
Installation in progress, please wait until installation finished.



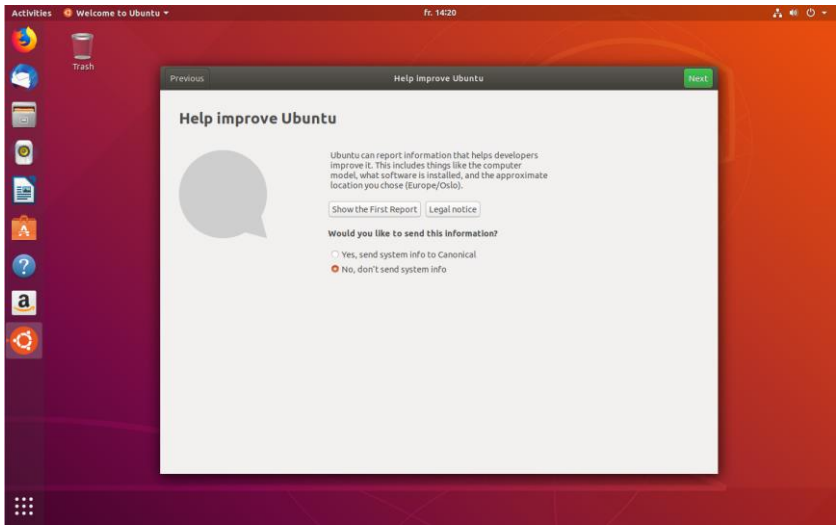
- When the installation is complete, click "Restart now" to reboot the computer
- Remove the USB memory stick, then press Enter
- After reboot, if required, click on AutroMaster and enter the password (only after reboot)



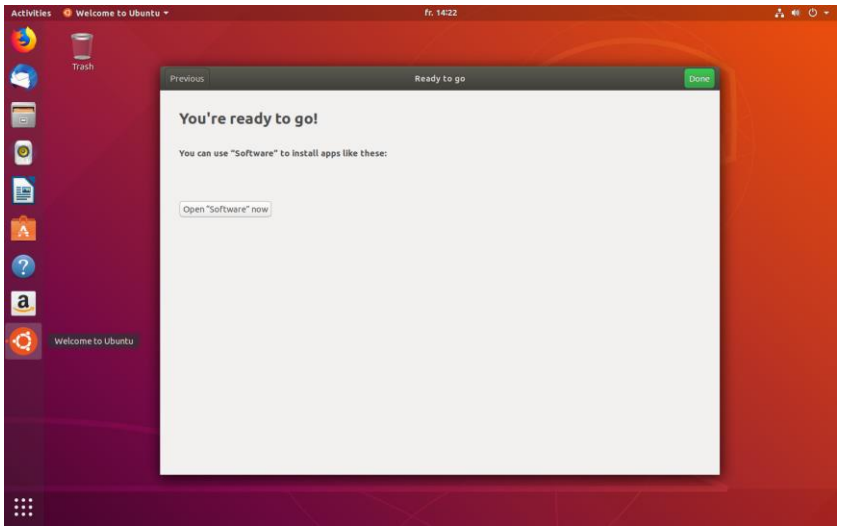
- After startup the screen will look like the image above.
- Click Next



- Click Next



- Click Next

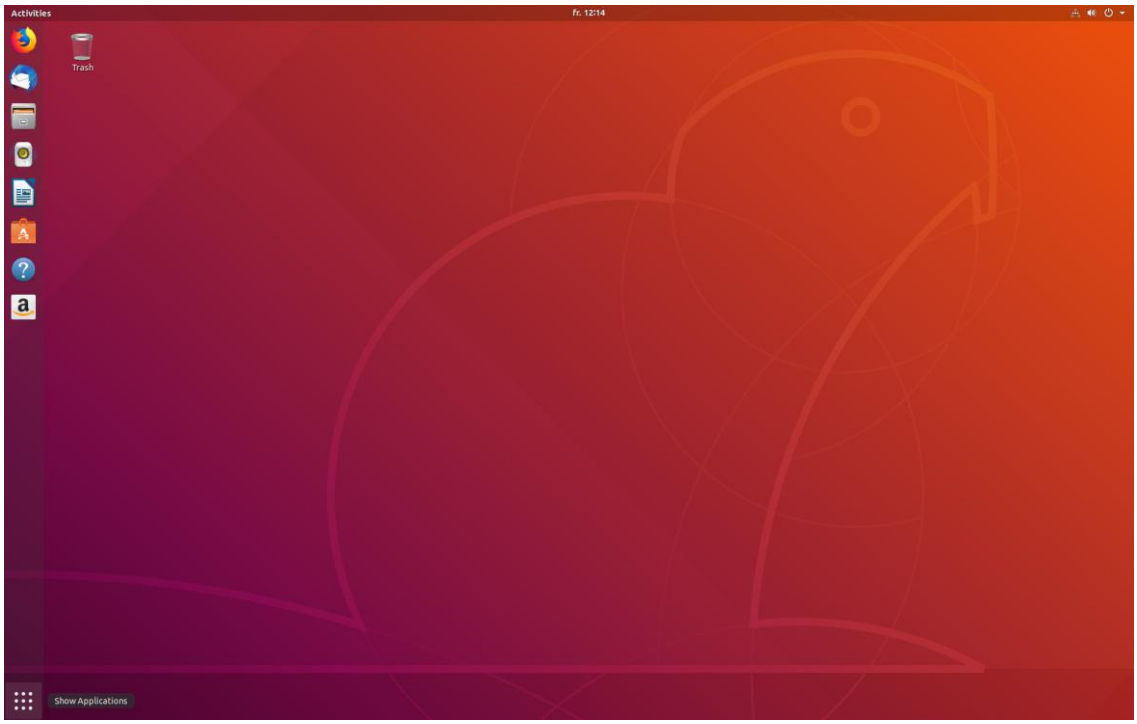


- Click Done

- If other windows appear, close them.

3.3 System Settings

3.3.1 Accessing the Settings Menu

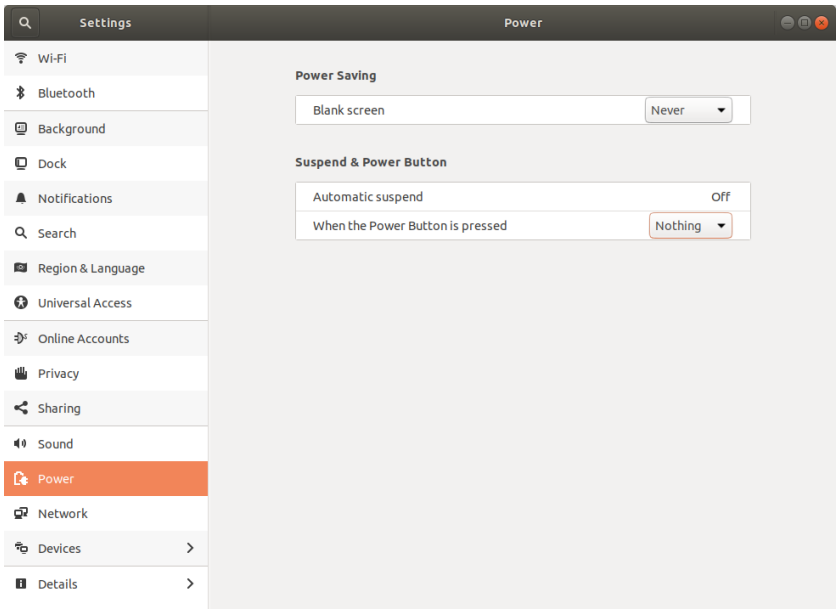


- To access the available applications, click the Activities menu, then click the “Show Applications” icon  (see arrow in bottom left corner)

- Locate and click the Settings icon to configure the operating system

Applications in the “Settings” window are self-explanatory, the most common ones will be described here.

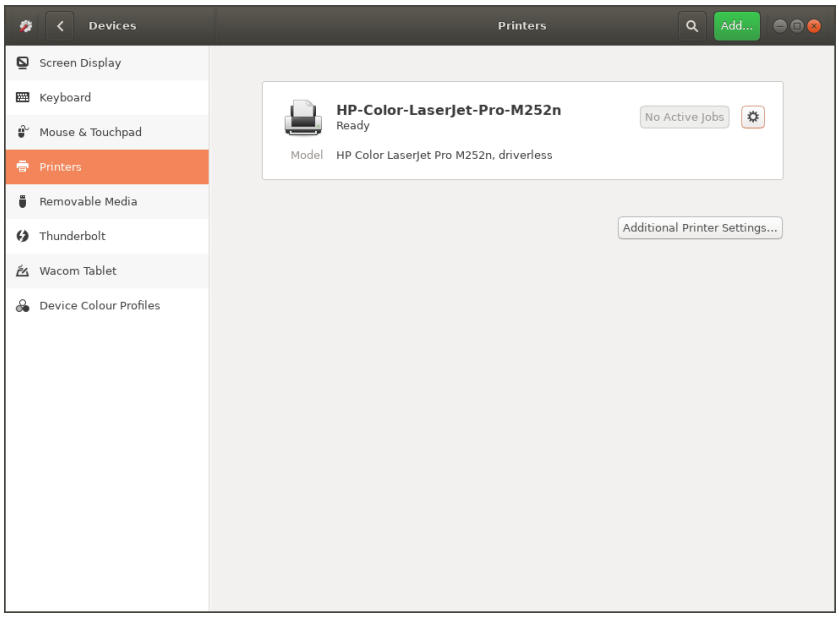
3.3.2 Settings/Power

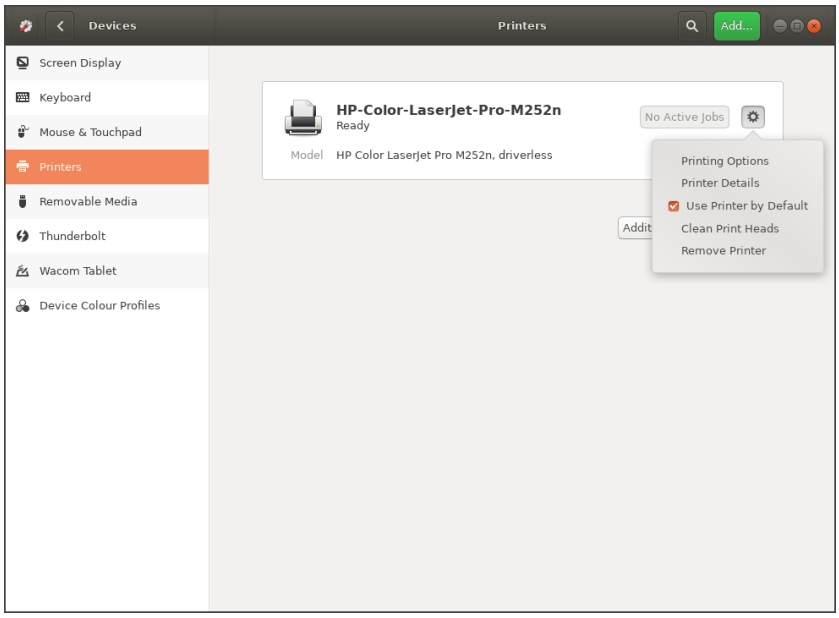


- Click Power and enter the settings as shown in the screenshot

3.3.3 Settings/Devices/Printers

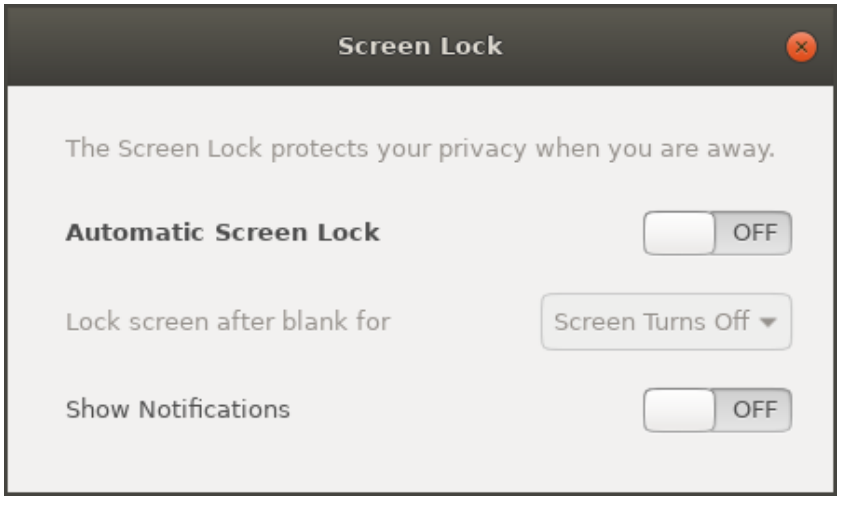
The available network printers will appear. If the printer is not listed, select Generic Driver, and select the printer language the printer supports. For printer language, consult the printer's documentation.





- Right-click the Printer and set it as default if this is not already done
- To test the printer, print a screen dump from the AutroMaster menu.

3.3.4 Privacy

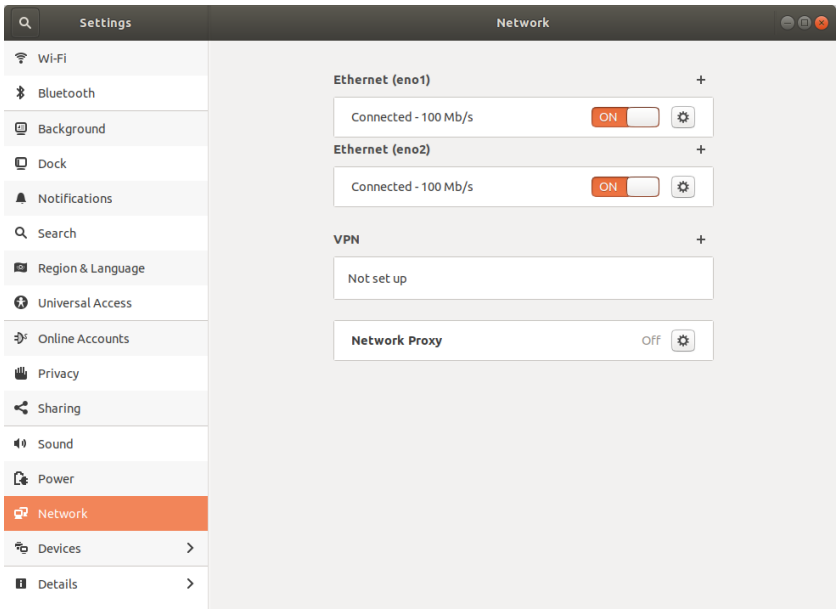


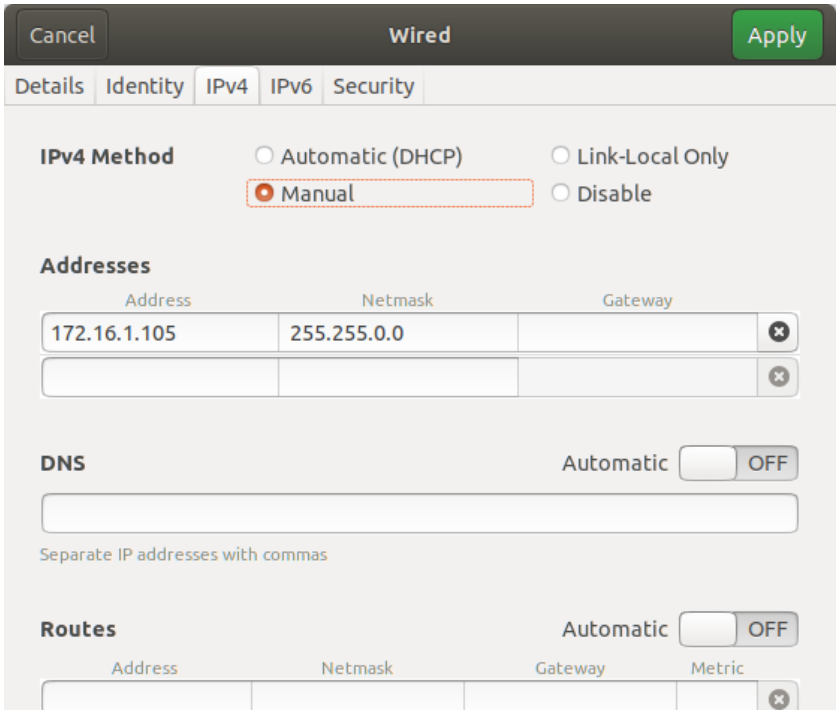
- Click Privacy
- Click Screen Lock, then select OFF for Screen Lock and Off for Show Notifications
- Click Connectivity Checking, then select OFF

3.3.5 Settings/Sound

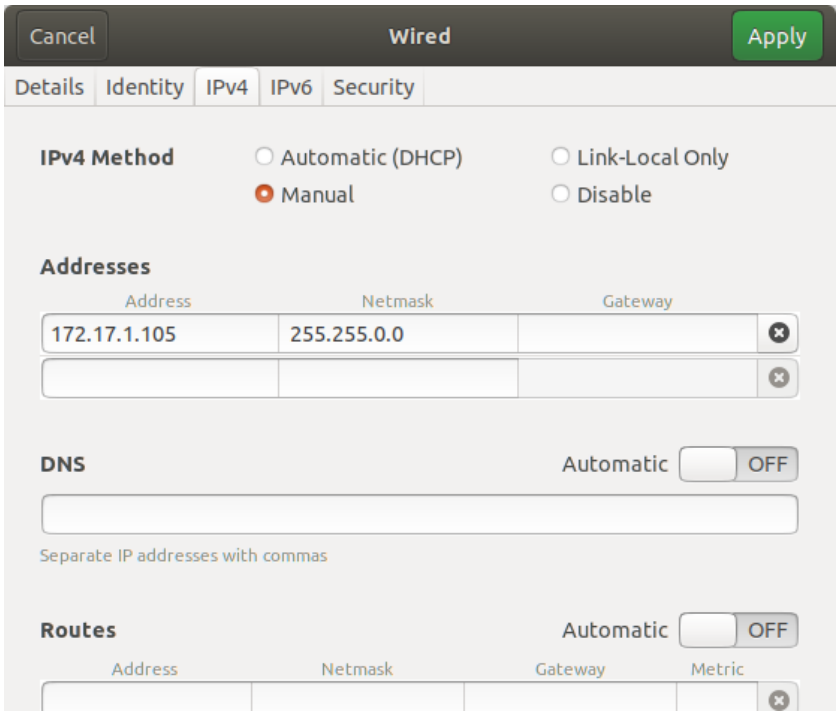
- Test the sound and adjust the volume.

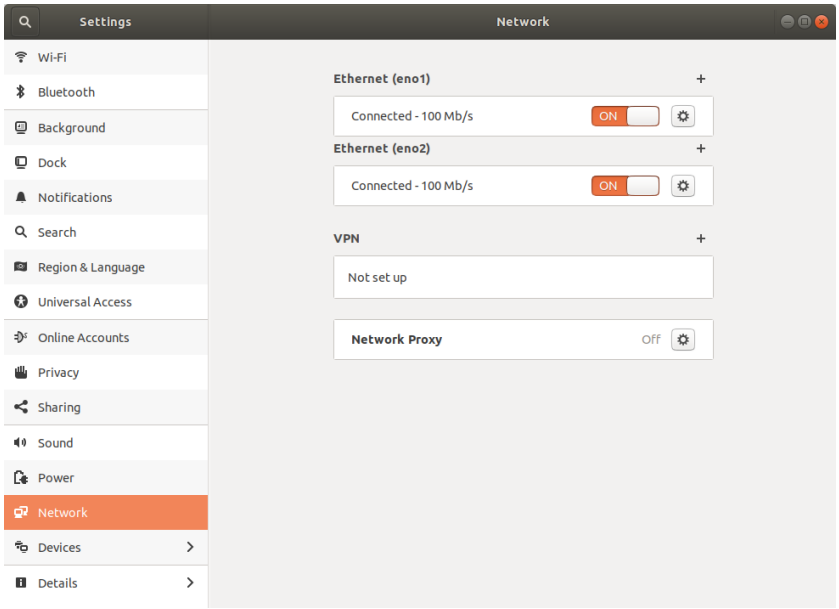
3.3.6 Settings/Network/Wired





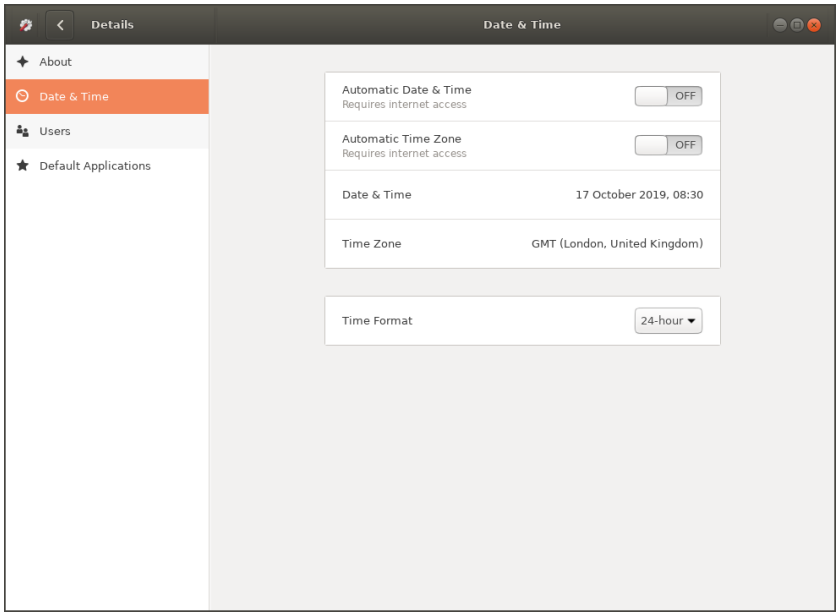
- Select Manual IPv4 Method (manual IP setting)
- Enter the IP Address and Netmask
- Enter the Gateway, if necessary





- Make sure that the network you want to use is turned on

3.3.7 Settings/Details/Date and Time



The automatic date & time must be turned off (clock synchronization is configured manually)

4. Installing AutroMaster_4 ISEMS

4.1.1 Creating an SSH Key

An SSH key has to be created in order to use secure protocols (ssh, sffp, scp, etc.) between AutroMasters without passwords.

The same keypairs are used on all AutroMaster.

To generate a keypair do the following:

- From "/home/spefun", delete the directory .ssh with all the content if any.

Step 1

- Generate a pair of keys with the following command: ssh-keygen
- Press enter when prompted for file to save the key
- Press enter when prompted for passphrase (twice)

Two keys are generated. A public and a private key as shown in the example below.

```
autromaster@autrmaster-V:~$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/autromaster/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/autromaster/.ssh/id_rsa.
Your public key has been saved in /home/autromaster/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:1XDAomD6vqdsZ2ymo/KI7A3bOsulcIGzMwsMPJA5ZMs autromaster@autrmaster-V
The key's randomart image is:
+---[RSA 2048]----+
| o       .o..    |
|+o. o   . .+     |
|=E o . . .. .    |
|oo.   .  .       |
|+o..    S        |
|oo...            |
|*o.o .           |
|BBB.+ B          |
|=@*==@           |
+----[SHA256]-----+
autromaster@autrmaster-V:~$ l .ssh
total 8
-rw------- 1 autromaster autromaster 1679 okt.   7 08:49 id_rsa
-rw-r--r-- 1 autromaster autromaster  406 okt.   7 08:49 id_rsa.pub
autromaster@autrmaster-V:~$
```

Step 2

Since all AutroMasters are to use the same pair of keys, the public key will also be included in authorized_keys.

- Copy the public key to authorized_keys with the following command cp .ssh/id_rsa.pub .ssh/authorized_keys

Note:

Access Level 3 and 4 requires a password.

Step 3
The three files in the .ssh directory must be copied to all AutroMasters.

(This requires that all AutroMasters are configured with a hostname and ip-address in the hosts file)

In the example below, "amslave" is used as the name of an AutroMaster.

- Enter password when prompted
- Replace this name with the name of your computers
- Create .ssh directory with the command ssh amslave mkdir .ssh
- Change permissions on the .ssh directory ssh amslave chmod 700 .ssh
- Copy the keys scp .ssh/* amslave:.ssh

- Repeat this procedure until the pair of keys are copied to all AutroMasters.

Step 4
Before secure commands without password will work, the file known_hosts must be updated.

To update this file you must login to all AutroMasters from all AutroMasters.

The command for login in is as follows:
- ssh amslave (amslave is used in the example, replace it with your hostnames)

The first time, you will be promtet for a password, but later logins will not require password.
- Repeat this command to login on all AutroMasters from all AutroMasters.

4.1.2 Managing SSH Keys

If there are many AutroMasters in a network, it can be convenient to use a program called *SSHKeyManager* to simplify the distribution of SSH keys and approved AutroMasters.

The program SSHKeyManager will install SSH keys and a list of approved hosts on all AutroMasters defined in the list. The program requires a file with a list of all AutroMasters with corresponding IP addresses.

The format of the list is
<Ip address> <hostname>
<Ip address> <hostname>
<Ip address> <hostname>

Example
172.16.1.1 am4pc1
172.16.1.2 am4pc2
172.16.1.3 am4pc3

The command to distribute SSH keys and a list of approved hosts is SSHKeyManager <amlist> <password>.

When promted, answer Yes to install files.

The <amlist> must be the name of the file containing a list of all AutroMasters with corresponding IP addresses, and the <password> is the password defined for the AutroMaster user (spefun).

4.1.3 Installing AutroMaster ISEMS

Part number	Description
116-PROG-AUTROMASTERISEMS	AutroMaster 4 ISEMS– Provides the full range of functionality – every possible add-on module is included in this package, making it the perfect choice for demanding applications and professional customers for all markets.

- If a standard Ubuntu distribution is installed (i.e. not a Ununtu version provided by Autronica Fire and Security), additional packages must be installed.
- Run the two commands:
  sudo opt-get update
  install-required-deb-packages

- Copy the AutroMaster zip file to the /tmp directory
- Unzip the zip file in the /tmp directory
- Run the installation file; install-AM4.ubuntu (sudo rights required)
- Reboot the computer by typing reboot

4.2 Upgrading an Existing AutroMaster System

Existing AutroMaster versions can be upgraded to the most recent version.

The upgrade will provide you the information you need in order to register (Serial Number and the Unlock key).

- To upgrade an existing AutroMaster, use the same procedure as a new installation of AutroMaster. Refer to chapter 4.1.2
- Note that an upgrade requires that the existing operative system supports the new version of AutroMaster.

Example: You cannot upgrade an AutroMaster for CentoOs with AutroMaster for Ubuntu.

5. AutroMaster ISEMS

5.1 Modifying the hosts-file

Before registering the software, the network has to be configured.

The hostname defined during installation of LINUX is assigned to the loopback interface (127.0.1.1) by default. See the example below.

Host file before:

```
127.0.0.1       localhost
127.0.1.1       am5000

# The following lines are desirable for IPv6 capable hosts
::1     ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

To achieve a proper communication between, for example, Master and Slave AutroMaster, the hostname must be assigned to the computer's IP-address. This is done by removing the hostname from the Loopback interface and then adding the hostname on the next line together with the computer's IP-address. See the example below.

Host file after:

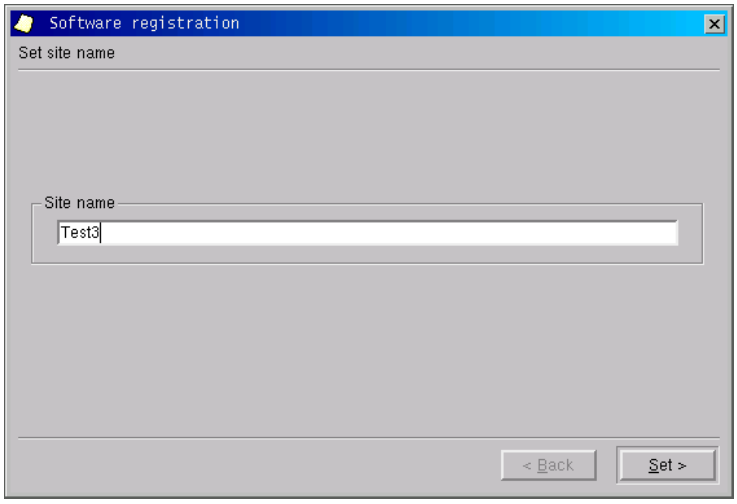
```
127.0.0.1       localhost
192.168.1.1     am5000

# The following lines are desirable for IPv6 capable hosts
::1     ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

When more computers are connected in a network, add the IP-address and the hostname for each computer.

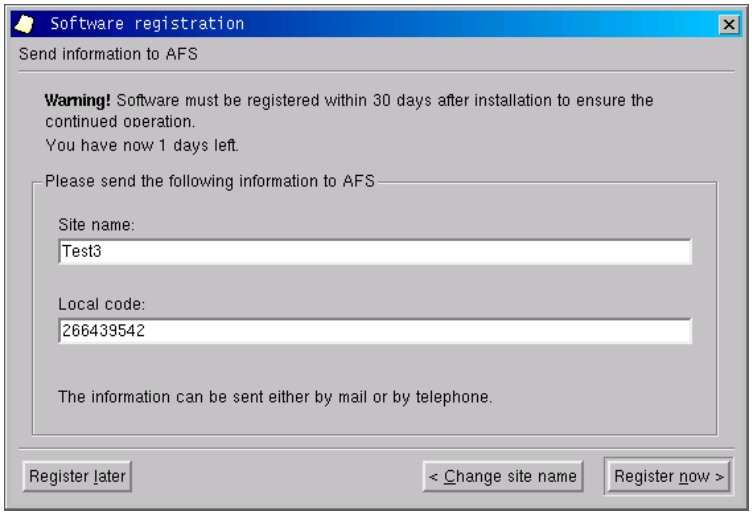
5.2 Registration of AutroMaster ISEMS

During the very first start-up of an AutroMaster ISEMS installation, the AutroMaster software has to be registered at Autronica Fire and Security. Before registering the software, make sure that the network configuration is completed.

- Type the site name (Test3 is used in the example below), click *Set*.

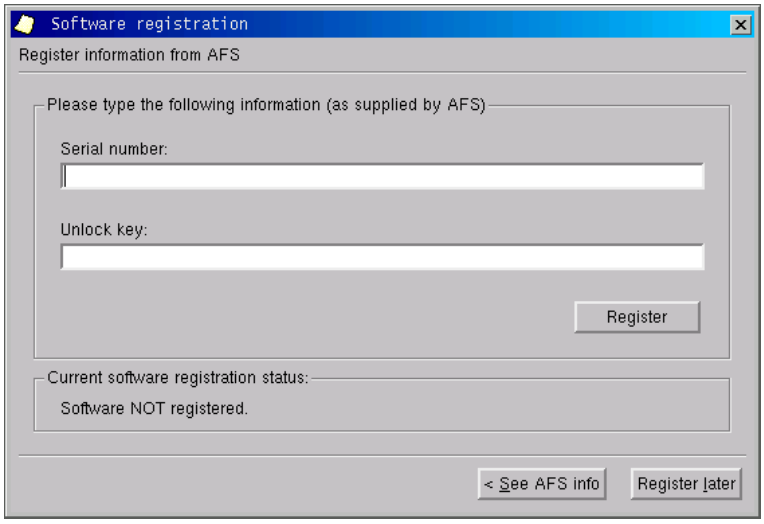


- The *Site name* and *Local code* will appear automatically (Test3 and 266439542 are used in the example below).

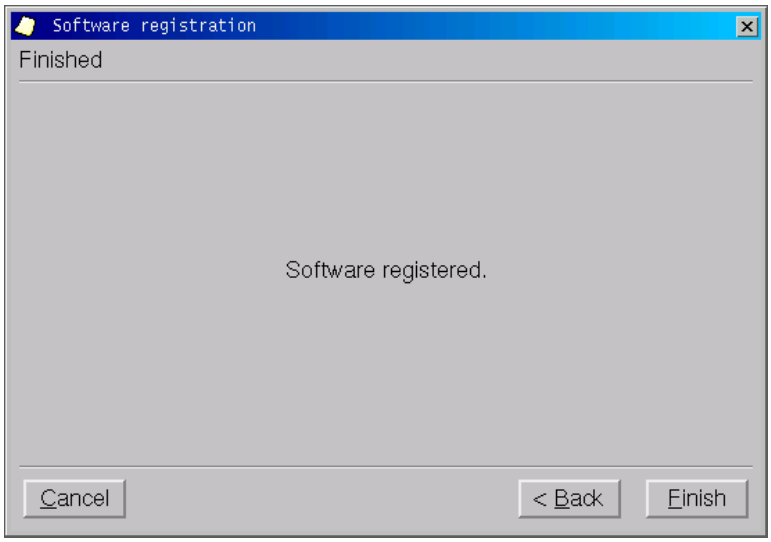


- Contact Autronica Fire and Security, and they will provide you the information you need in order to register (Serial Number and the Unlock key).
  E-mail address afs.support@carrier.com
  Autronica Fire and Security Support telephone +47 815 20 300.
- If you want to register later, click Register later.
  Note that the software must be registered within 30 days after installation to ensure the continued operation. A text in the dialogue box will inform you how many days are left until you have to register.
- If you want to register now, click Register now, and continue.

- Type the Serial Number and the Unlock key provided by Autronica Fire and Security, then click *Register.*
  (If you want to register later, click *Register later).*



- When the software is registered, click *Finish* and reboot the computer.



5.3 Registration After Reconfiguration

If the network configuration for the AutroMaster ISEMS installation (PC) is changed, the AutroMaster must be registered again.

Set a new "Site name" in order to generate a new "local code". This “local code” must be sent to Autronica Fire and Security. A new "unlock code" will then be generated (refer to chapter 5.2).

6. Network Time Protocol

6.1 Introduction

The Network Time Protocol (NTP) is a standard protocol that synchronizes all real time clocks on computers and other equipment in a network connection. If an external NTP-server does not exist, one of the AutroMaster computers can be configured as an NTP-server, and the other computers in the network can synchronize the clocks with this computer. When synchonizing with an NTP-server, the real time clock on the computer must be configured as UTC and show UTC time.

If no NTP-server is available, one of the AutroMasters in the network can be configured as the NTP-server, allowing the remaining AutroMaster ISEMSs to sychronize to this system.

Note: When using Master/Slave network communication in the AutroMaster system, NTP real time clock synchronization must be configured.

6.2 Configuring an NTP-server

- Open a UNIX-window.
- Change the directory to the /etc.-folder.
- To configure a computer as an NTP-server, copy the file ntp.master to the file ntp.conf as superuser.

6.3 Configuring an NTP-client

- Open a UNIX-window.
- Change the directory to the /etc.-folder.
- To configure a computer as an NTP-client, copy the file ntp.slave to the file ntp.conf.
- Open the file ntp.conf in an editor and replace the keyword after "server" with the hostname or the IP-address of the NTP-server.

If the real time clocks in AutroMaster computers connected in a network are to be synchronzed against an external NTP-server, all computers must be defined as NTP-clients.

6.4 Giving AutroMaster Access to Devices

When an installation is completed, only the system administrator (root) will have access to devices.

A device is a physical file on the harddisk found in the /dev-directory. All access to computer hardware is possible by reading or writing to a specific device-file.

An example of a device-file is /dev/ttyS0, which represents serial port 1.

> _(underscore) is included in the command below to indicate the *space* character. Therefore, when typing the command, use the space key instead of underscore.

AutroMaster must be given the necessary access to these devices, which is done in the following way:

- Open a UNIX-window.
- Execute the command **chmod_777** followed by the name of the device.

Depending on the configuration of the system, AutroMaster must be given access to the following devices.

Device	Explanation
device-file is /dev/ttyS0	Serial Port 1
device-file is /dev/ttyS1	Serial Port 2
device-file is /dev/ttyS4	Serial Port 5 (if installed)
device-file is /dev/ttyS5	Serial Port 6 (if installed)
device-file is /dev/ttyS6	Serial Port 7 (if installed)
device-file is /dev/ttyS7	Serial Port 8 (if installed)

When using our standard PCI serial board no additional software drivers are needed, but the configuration has to be updated in order to use the extra serial ports.

- Change the directory:

cd /home/spefun/konfigurasjon

- Edit the file muligelinjer in a text editor, for example:

nedit muligelinjer (or, emacs muligelinjer)

(Other editors to be used can be gedit, kedit, kate, etc.)

- Add the following lines to the file:

/dev/ttyS4
/dev/ttyS5
/dev/ttyS6
/dev/ttyS7

- Save and quit.

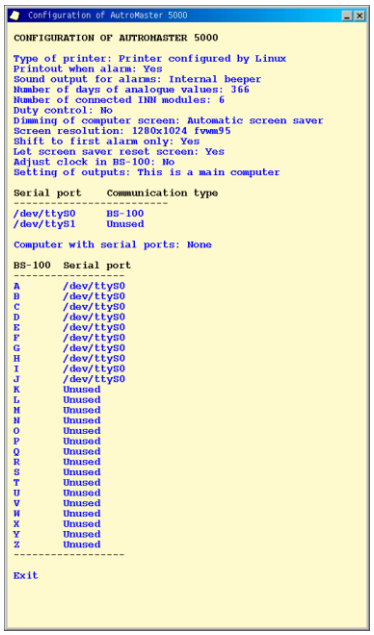
7. Startup

7.1 General

All configuration options are found under Menu --- Configuration. Password security level 3 (Configuration) is required for access to Configuration.

- Select *Configuration* from Maintenance in the main menu.

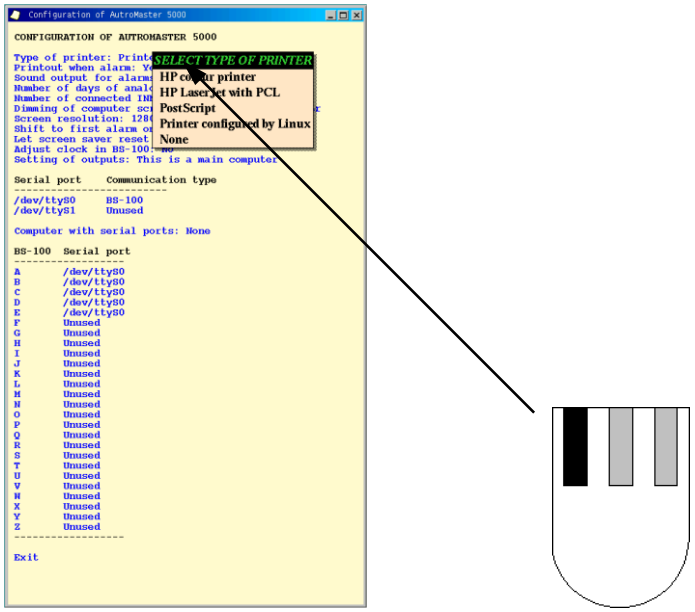
A window will appear showing all configurable data.



Note: The window will close automatically after 10 seconds, if no selection is made.

7.2 Printer Type

- To define the type of printer connected to the machine, click and hold down the left mouse button and select *Type of printer.*



Printer selection

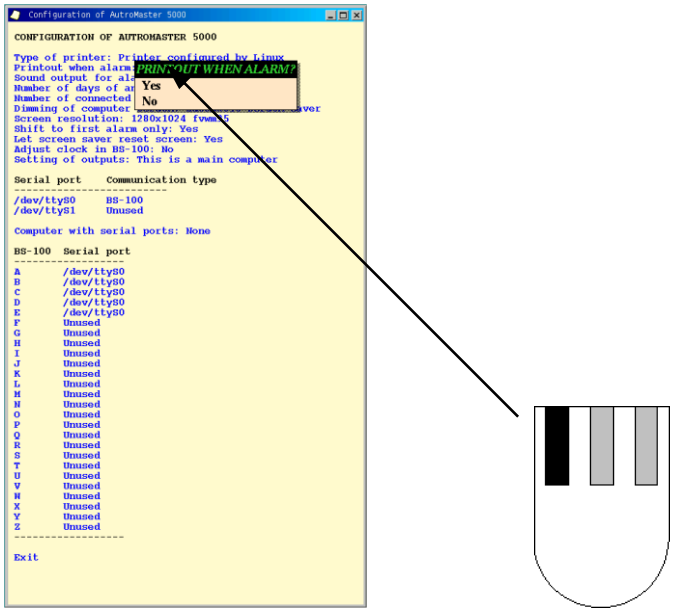
Selection	Printer	Obsolete
HP colour printer	Colour printer, e.g. HP Deskjet 1600C	x
HP Laserjet with PCL	Laser printer, e.g. HP Laserjet 5M	x
Postscript	Postscript Laser printer, e.g. HP Laserjet 5MP	x
Printer configured by Linux	Printer type depends on printer type defined in Linux.	
None	No printer connected	

7.3 Alarm Printout

Alarm printout is defined only for the old graphical interface.

Note that the configuration described below applies to the old graphical interface (visrep).

- To configure Automatic alarm printout, click and hold down the left mouse button and select *Print-out when alarm.*

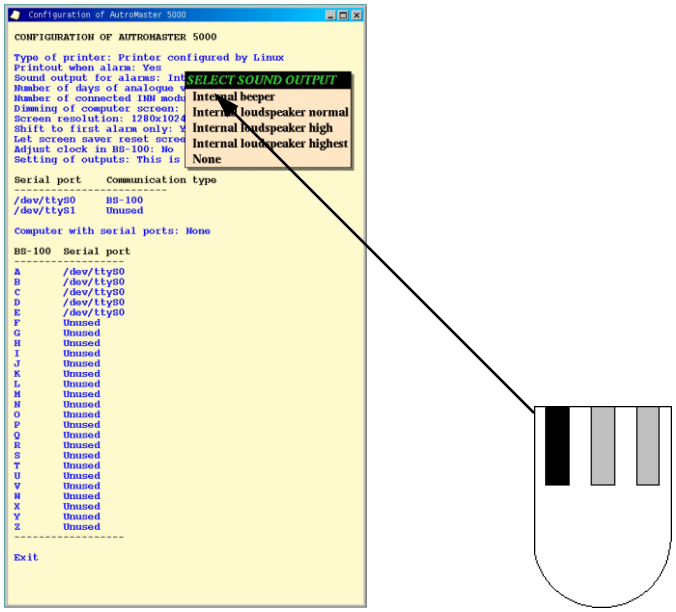


Print-out when alarm.

Selection	Print-out
Yes	Print-out when alarms occurs
No	No print-out when alarms occurs

7.4 Sound Output

- To configure an Audio signal for an alarm, click and hold down the left mouse button and select *Sound output for faults and alarms.*



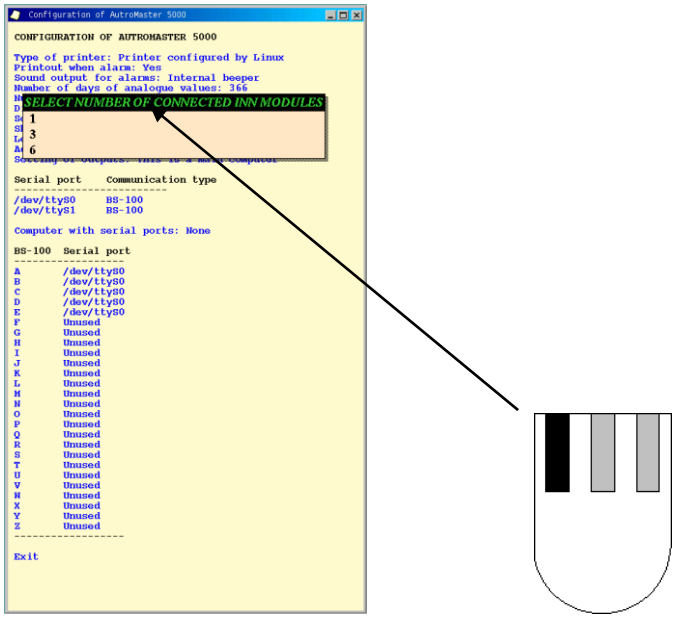
Sound output for faults and alarms.

Selection	Sound source
Internal beeper	Internal speakers in the machine
Internal loudspeaker normal	Internal speakers in the machine with normal sound level.
Internal loudspeaker high	Internal speakers in the machine with high sound level.
Internal loudspeaker highest	Internal speakers in the machine with highest sound level.
None	No audio signal when alarm is given

The *internal loudspeaker* referred to in the table means the output from the sound card.

7.5 Number of Input Modules Connected

Number of input modules connected defines the number of RE-4/RE-10 type modules that can be connected together.



Total number of input modules.

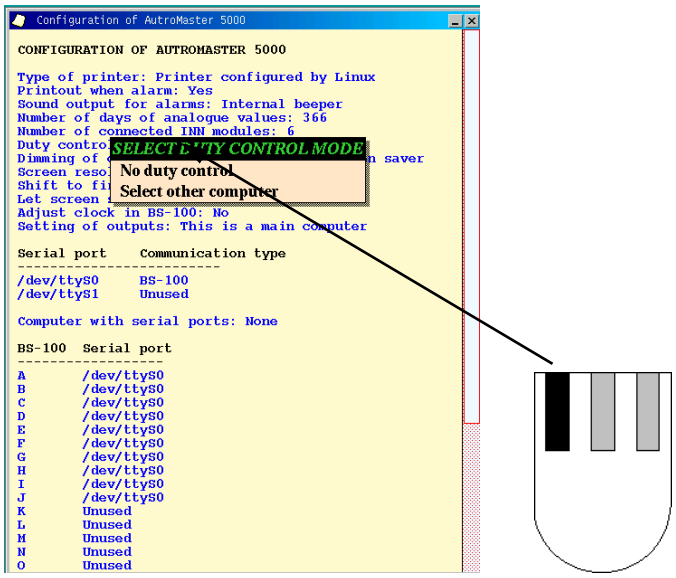
Selection	Total input modules
1	1 connected module
3	3 connected modules
6	6 connected modules

”Inmodules” type RE-4/RE-10 is used for maritime installations only.

7.6 Duty Control

If you have two machines in network, these can be configured for transference of duty control.

- Click and hold down the left mouse button and select *Duty control.*
- If another machine is chosen, select the machine name which is defined for the other machine in the pop-up window.



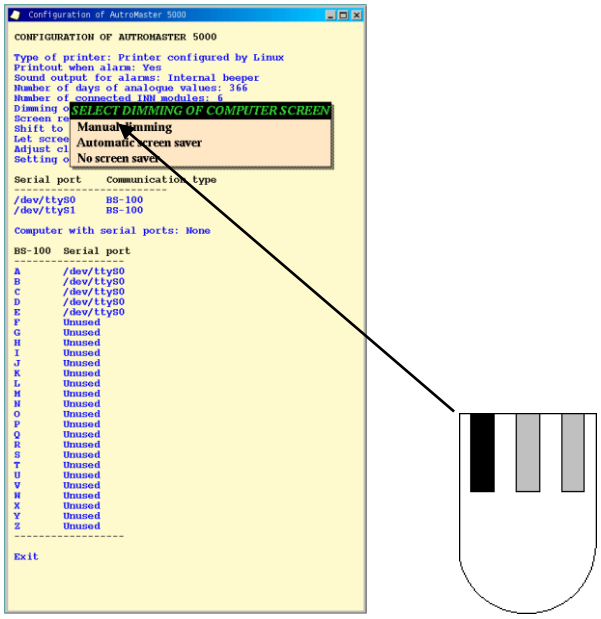
Defining duty control.

Selection	Duty control
No duty control	Duty control not in use
Select other computer	Choose machine to share duty control

7.7 Dimming of Computer Screen

Manual monitor brightness adjustment or screen saver can be defined.

- Click and hold down the left mouse button and select *Dimming of computer screen.*



Defining monitor brightness adjustment.

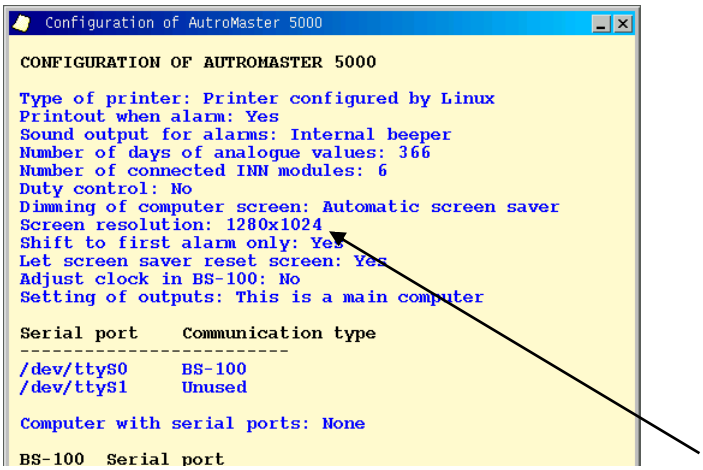
Selection	Adjustment
Manual dimming	Enables manual adjustment of screen brightness
Automatic Screen saver	Automatic screen saver activated
No Screen saver	No Screen saver

7.8 Screen Resolution

Screen resolution indicates the value already defined in the Linux graphical system. The screen resolution is automatically detected by AutroMaster and not selectable.

If the screen resolution is changed in Linux, or AutroMaster does not fit the screen (too large or too small), the new screen resolution must be saved in order to update the AutroMaster.

To save the screen resolution, see chapter 7.16 (Saving Changes).

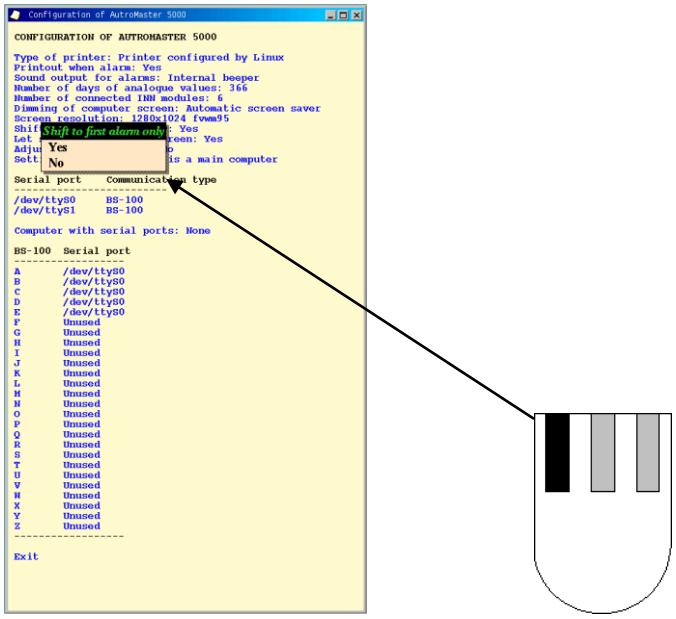


7.9 Shift to First Alarm Only

It is possible to define whether the machine is to provide a graphic display for the first alarm only, or show graphic displays for all alarms as they are received.

Note that the configuration described below applies to the old graphical interface (visrep).

- Click and hold down the left mouse button and select *Yes* or *No*.



Showing alarms.

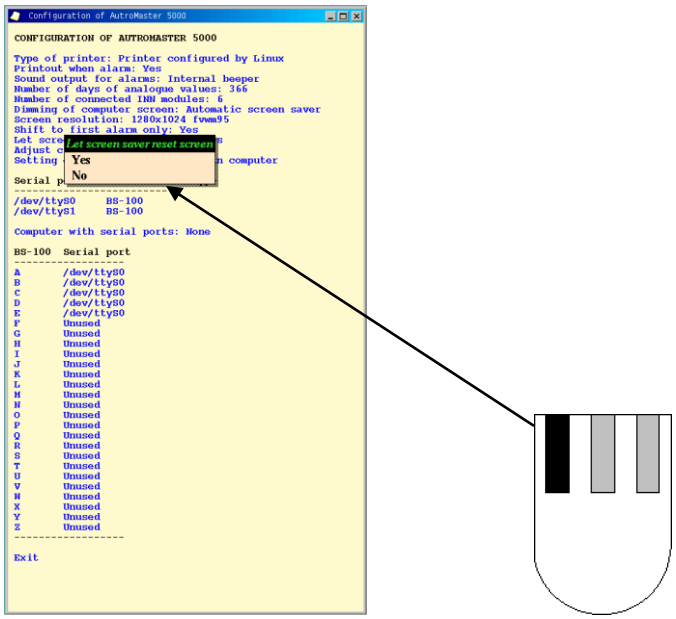
Selection	Description
Yes	Only the first alarm will be shown, requiring manual changing to the next alarms.
No	All alarms will be shown consecutively as they occur.

7.10 Screensaver/Restore Screen

It is possible to define whether the *Reset screen* command (first option in the menu) is to be executed when the screen saver is activated.

- Click and hold down the left mouse button and select *Yes* or *No*.

Reset screen normalises all windows, and restores the security level to 1 (Observe).



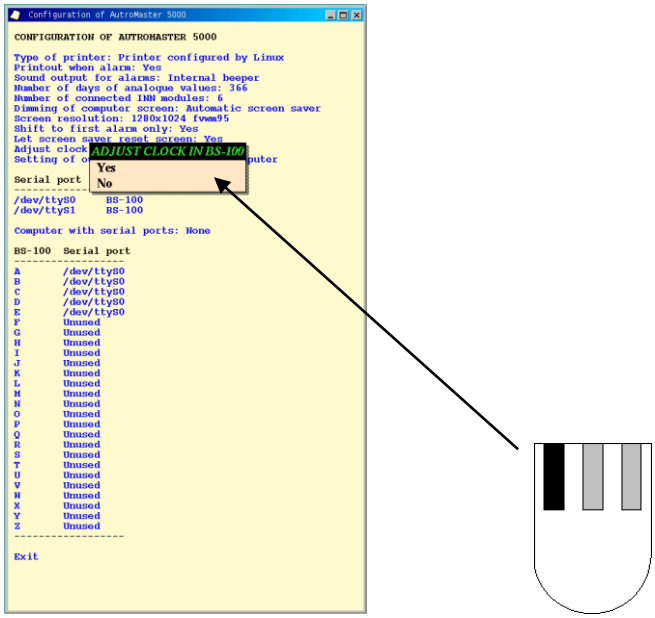
Screen saver/clear screen.

Selection	Description
Yes	Screen saver will activate "Reset screen".
No	Screen saver will not activate "Reset screen".

7.11 Adjust Clock in BS-100

It is possible to define whether the clock in BS-100 will be automatically adjusted when the AutroMaster clock is changed.

- Click and hold down the left mouse button and select *Yes* or *No*.



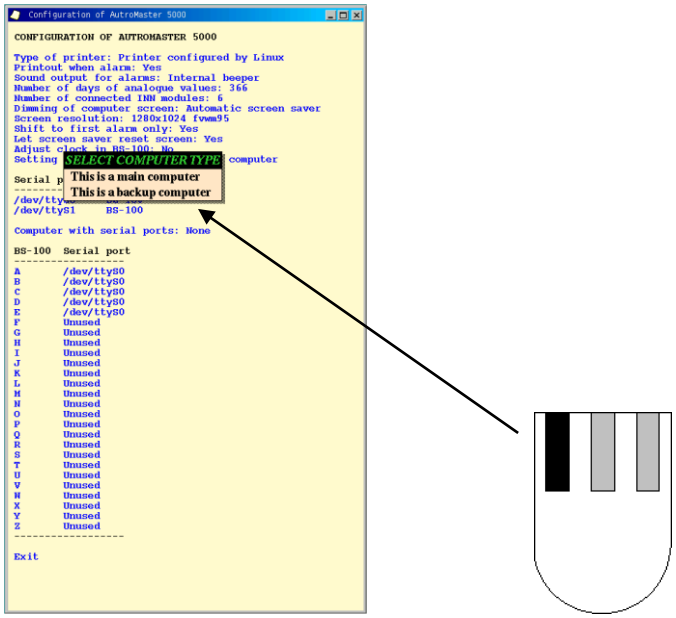
Defining time adjustment in BS-100.

Selection	Time adjustment
Yes	BS-100 clock to be automatically set when AutroMaster clock is adjusted
No	BS-100 clock will not be set automatically when AutroMaster clock is adjusted

7.12 Output Control

It is possible to define whether the machine is the main computer or back-up computer for activating digital I/O.

- Click and hold down the left mouse button and select *This is the main computer* or *This is a backup computer*.



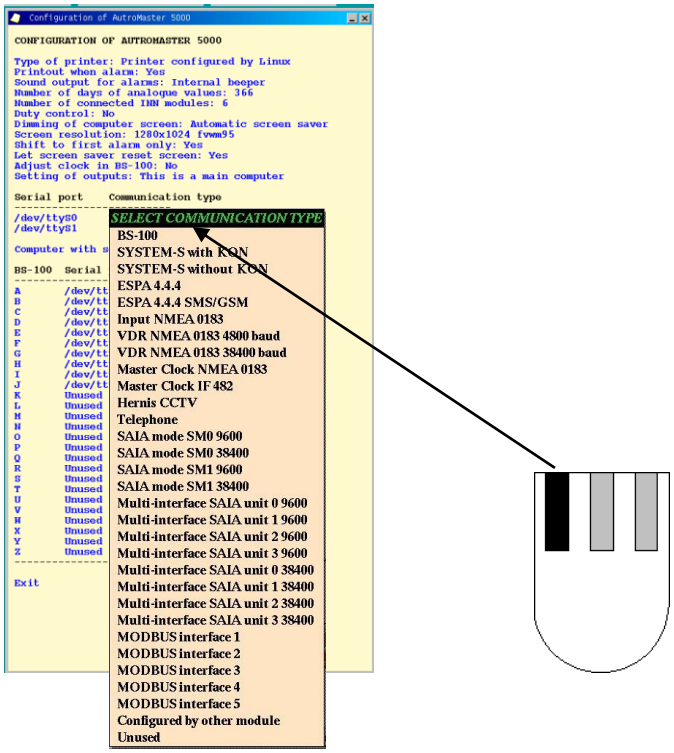
Defining computer control.

Selection	Control function
This is a Main computer	Primary computer for controlling digital I/O
This is a backup computer	Back-up computer for controlling digital I/O

7.13 Connected Units

- To define Unit devices connected to the various serial lines, click and hold down the left mouse button and select "**/dev/ttyS0**"(or /dev/ttyS1).

Serial port A is /dev/ttyS0 and serial port B is /dev/ttyS1.



Defining units connected to the machine.

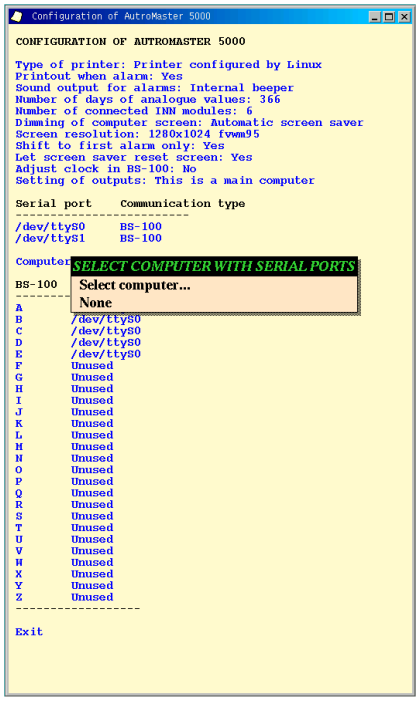
Selection	Serial port connection
BS-100	BS-100/BS-30 type fire alarm control panels
System-S with KON	System-S with concentrator
System-S without KON	System-S without concentrator
ESPA 4.4.4	Espa 4.4.4. personnel pager protocol
ESPA 4.4.4 SMS/GSM	Espa 4.4.4. personnel pager protocol, SMS/GSM
Input NMEA 0183	Communication with 3rd party NMEA compatible systems
VDR NMEA 0183 4800 baud	Output to Voyage Data Recorder, NMEA 0183 4800 baud
VDR NMEA 0183 38400 baud	Output to Voyage Data Recorder, NMEA 0183 38400 baud
Master Clock NMEA 0183	Input for Master Clock
Master Clock IF482	Input for Master Clock
Telephone	Communication with telephone central
Hernis CCTV	Hernis CCTV
SAIA mode SM0 9600	SAIA PLC communication mode SM0 9600
SAIA mode SM0 38400	SAIA PLC communication mode SM0 38400
SAIA mode SM1 9600	SAIA PLC communication mode SM1 9600
SAIA mode SM1 38400	SAIA PLC communication mode SM1 38400
Multi-interface SAIA unit 0 9600	SAIA PLC, 9600
Multi-interface SAIA unit 1 9600	SAIA PLC, 9600
Multi-interface SAIA unit 2 9600	SAIA PLC, 9600
Multi-interface SAIA unit 3 9600	SAIA PLC, 9600
Multi-interface SAIA unit 0 38400	SAIA PLC, 38400

Selection	Serial port connection
Multi-interface SAIA unit 1 38400	SAIA PLC, 38400
Multi-interface SAIA unit 2 38400	SAIA PLC, 38400
Multi-interface SAIA unit 3 38400	SAIA PLC, 38400
MODBUS interface 1	MODBUS protocol
MODBUS interface 2	MODBUS protocol
MODBUS interface 3	MODBUS protocol
MODBUS interface 4	MODBUS protocol
MODBUS interface 5	MODBUS protocol
MODBUS interface 6	MODBUS protocol
Configured by other module	Configured by other module
Unused	The serial port is not in use

7.14 Main Computer in Master / Slave Configuration

It is possible to define the main computer in a Master / Slave configuration. This selection is for configurations using the Master / Slave communication in AutroMaster version 3.

- Click and hold down the left mouse button and select *Select computer* or *None*.

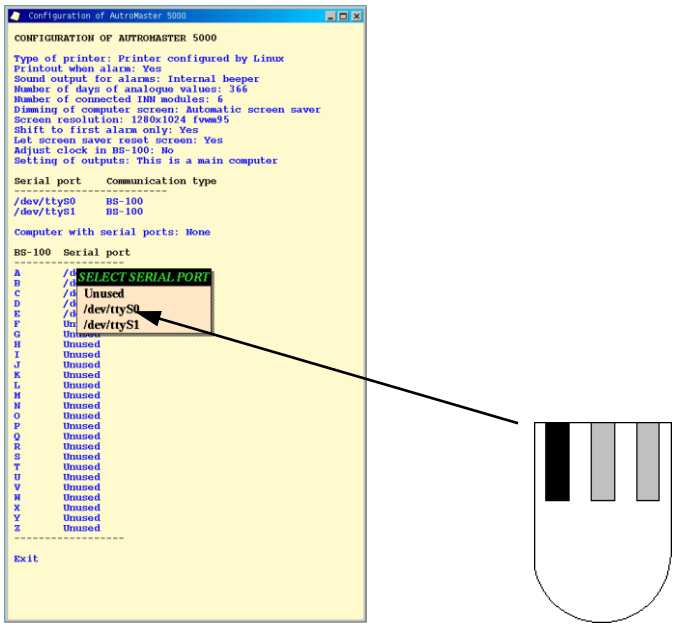


The Master/Slave is replaced by Amdist and quereplicate, but the menu choice exists for backward compatibility.

7.15 BS-100 Addresses

- To configure the BS-100 address and the serial line to which it is connected, click and hold down the left mouse button on one of the designated addresses to BS-100.

This configures a line address for all the BS-100 fire alarm control panels connected to AutroMaster ISEMS. Control panels that are not in use are marked "unused".



Defining control panel addresses connected to AutroMaster.

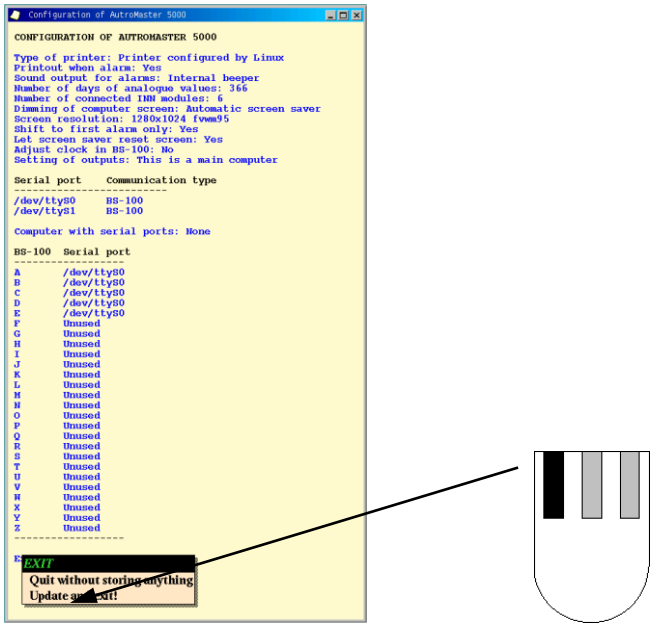
Selection	Serial port and corresponding BS-100 address
ttyS0	Serial port A is connected to the selected BS-100 address
ttyS1	Serial port B is connected to the selected BS-100 address
Unused	No serial port is connected to the selected BS-100 address

Note: This menu is dynamic and the current serial ports are the serial port addresses defined as BS-100 in 7.13.

7.16 Saving Changes

- To save changes in data, select the option *Update and close*.

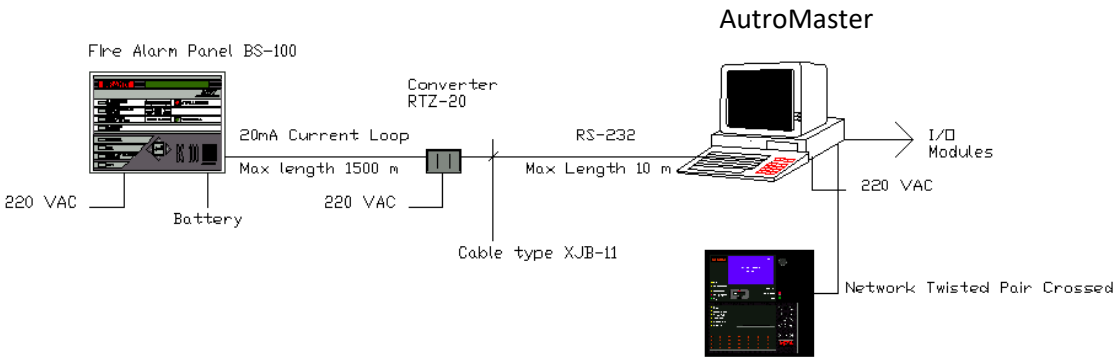
NB: After the data is saved the computer will automatically reboot after 10 seconds.



Saving changes.

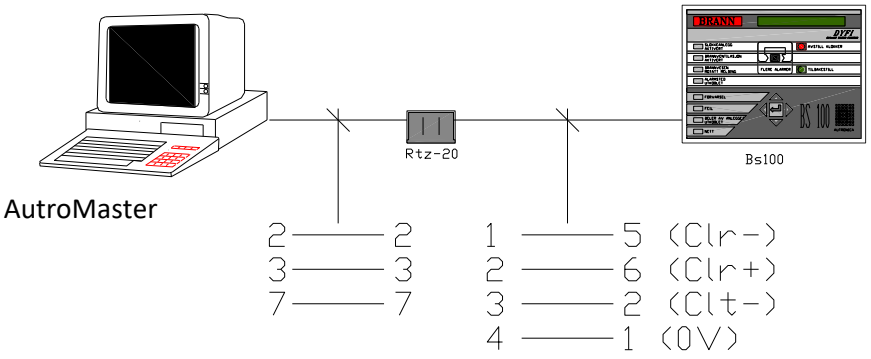
Selection	Description
Quit without storing anything	Do not save changes.
Update and exit	Save changes and re-boot the computer.

8. Connections Between Fire Detection Systems and AutroMaster ISEMS



8.1 Connections Between AutroMaster and BS-100

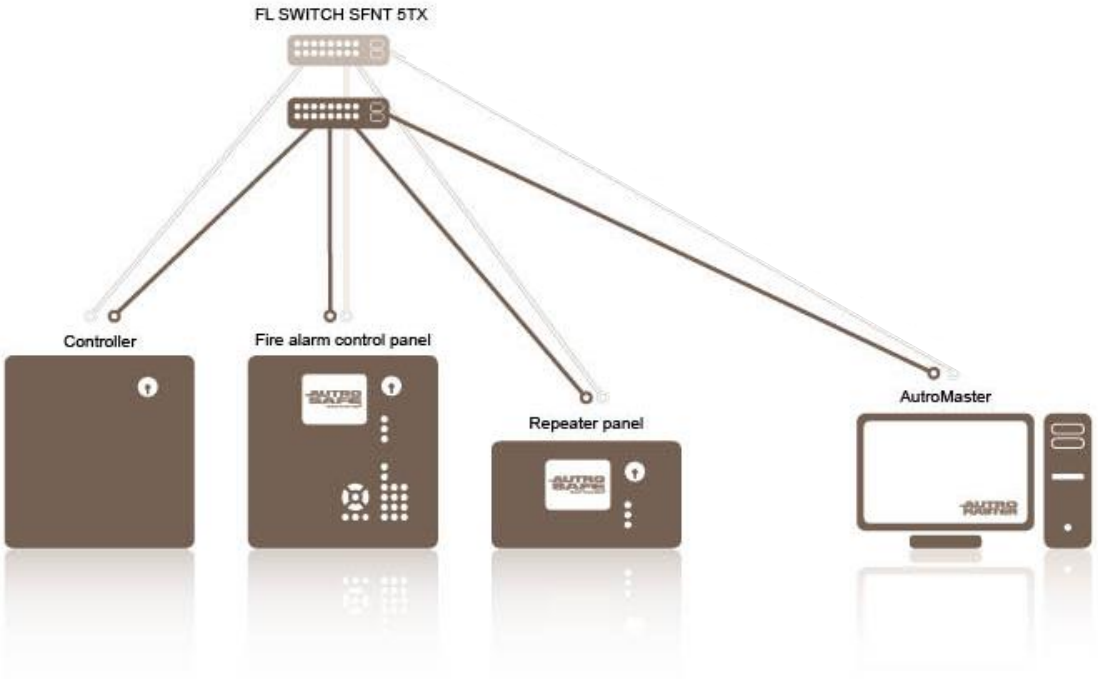
One RTZ-20 must be used to convert the signals from RS-232 to 20 mA: current loop. In the panel a BSL-100 must be installed and configured as channel 2A or 2B.



Cable	Maximum distance
AutroMaster – BS100	10 Meters
RTZ-20- BS100	1500 Meters

8.2 Connections Between AutroMaster ISEMS and AutroSafe 4

All AutroSafe 4 panels within a system are linked together using an internal Ethernet network. The AutroSafe 4 system uses the same network to communicate with AutroMaster ISEMS (Integrated Safety and Emergency Management System).

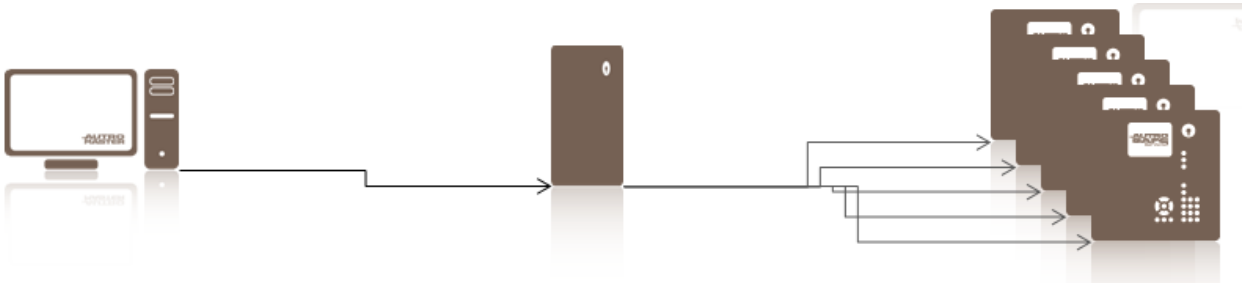


8.3 Connections Between AutroMaster ISEMS and Autroprime

Autroprime can be configured to act as a TCP/IP network node, allowing Autroprime to communicate with an AutroMaster Integrated Safety and Emergency Management System.

Autroprime can be configured to both receive information from and transmit information to AutroMaster ISEMS.

The figure below shows AutroMaster connected to a Proxy server and several Autroprime systems.



8.4 Cable Specifications

This chapter deals with cable specification for AutroSafe (version 4 and earlier versions), Autroprime 2.0 and AutroMaster ISEMS.

Twisted pair cable is of type Category 5 or better with RJ-45 connectors. This cable is also called a “patch cable”.

The cable exists in two versions, either one-to-one cable or crossed cable.

Crossed cable must be used for direct communication between AutroMaster and AutroSafe/Autroprime.

One-to-one cable must be used if AutroMaster is connected to one or several AutroSafe systems through a switch.

The length of one twisted pair cable must not exceed 90 meters.

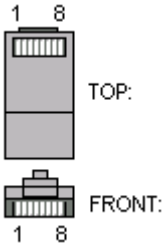
If the communication distance exceeds 90 meters an amplifier or a switch must be installed. The maximum distance when using a switch is 180 meters. (Each twisted pair cable is 90 meters).

Connections twisted pair cable.

Crossed Cable		**One-to-one cable**	
AutroMaster	**AutroSafe/Autroprime**	**AutroMaster**	**Hub**
1	3	1	1
2	6	2	2
3	1	3	3
4*	4*	4	4
5*	5*	5	5
6	2	6	6
7*	7*	7	7
8*	8*	8	8

* Can be connected, but not necessary.

RJ-45 Connector



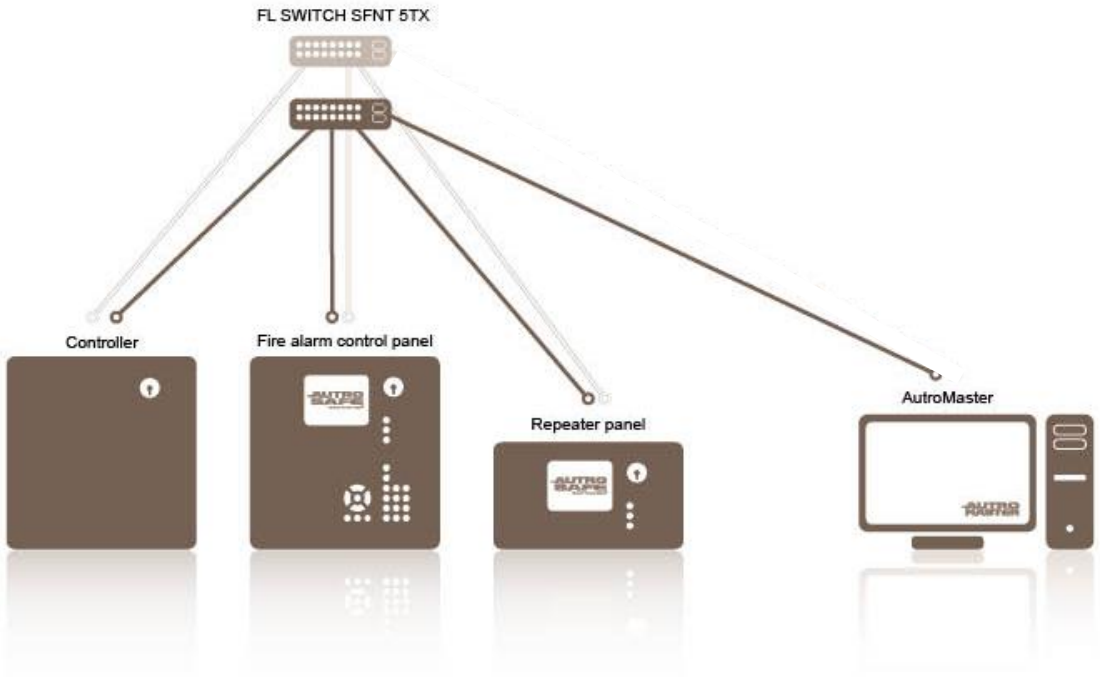
9. Assigning IP Addresses

To ensure communication, all IP addresses must be defined in the same series, since communication is not possible between different network segments by means of routers or gateways.

IP addresses within the same series means that the 3 first digits in the 4 number notation must be identical and the last digit must be different. This assumes that the netmask is defined as 255.255.255.0, which is standard in AutroSafe.

9.1 AutroMaster Connected to AutroSafe 4

When connecting AutroMaster to an AutroSafe 4 system, it is recommended that another subnet is used for the connection between AutroMaster and AutroSafe than the one that is used for the internal communication within the AutroSafe system.



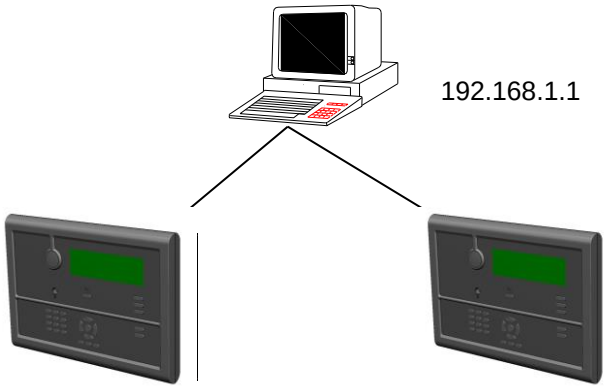
9.2 AutroMaster Connected to Autroprime

When connecting AutroMaster to Autroprime 2.0, the same subnet (IP number series) can be used.

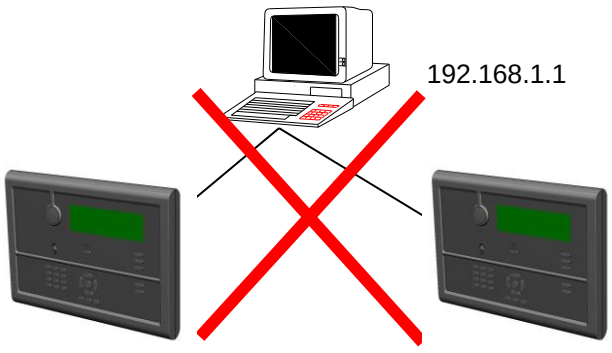
Routing is allowed.

When connecting AutroMaster to Autroprime, the same subnet (IP number series) must be used.

Example of valid configuration



Example invalid configuration



10. Other Configurations

10.1 Configuring Automatic Summer/Wintertime Adjustment

The LINUX real time clock always shows UTC time, while the built-in clock in AutroMaster shows the local time with one or two hours offset from the UTC time.

To configure automatic change of summer and winter time for the AutroMaster clock, proceed as follows:

- Use the editor to create a file named *.crontab* in the /home/spefun.
- # Summer time adjustment
  0 1 * 3,10 0 /usr/local/amtimeadjust
- Save the file.
- Run the command *crontab .crontab*
- Open the file “grafikkstart”-file in the editor.
- Add the line *amtimeadjust* at the end of the file.
- Save the file.