ibaRackline-PC CAM/HD

iba Industrial Computer

Manual

Issue 1.1

Measurement Systems for Industry and Energy

www.iba-ag.com

Manufacturer

iba AG

Königswarterstr. 44

90762 Fürth

Germany

Contacts

Main office	+49 911 97282-0
Fax	+49 911 97282-33
Support	+49 911 97282-14
Engineering	+49 911 97282-13

E-Mail: iba@iba-ag.com

Web: www.iba-ag.com

The content of this publication has been checked for compliance with the described hardware and software. Nevertheless, deviations cannot be excluded completely so that the full compliance is not guaranteed. However, the information in this publication is updated regularly. Required corrections are contained in the following regulations or can be downloaded on the Internet.

The current version is available for download on our web site http://www.iba-ag.com.

Certification

The device is certified according to the European standards and directives. This device corresponds to the general safety and health requirements. Further international customary standards and directives have been observed.

CE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual may cause harmful interference to radio communications. Operation of this equipment in residential area is likely to cause harmfulinterference in which case the user will be required to correct the interference at his own expense.

Issue	Date	Revision	Chapter	Author	Version HW / FW
V 1.1	08/05/2020	New motherboard			

Table of contents

1 About this manual

This manual describes operation of the industrial PCs ibaRackline-PC CAM and ibaRackline-PC HD.

1.1 Target group

This manual addresses in particular the qualified professionals who are familiar with handling electrical and electronic modules as well as communication and measurement technology. A person is regarded to as professional if he/she is capable of assessing safety and recognizing possible consequences and risks on the basis of his/her specialist training, knowledge and experience and knowledge of the standard regulations.

1.2 Designations

The following designations are used in this manual:

Action	Designations
Menu command	Menu *Logic diagram*
Call of menu command	*Step 1 – Step 2 – Step 3 – Step x* Example: *Select menu „Logic diagram – Add – New logic diagram*
Keys	<Key name> Example: <Alt>; <F1>
Press keys simultaneously	<Key name> + <Key name> Example: <Alt> + <Ctrl>
Buttons	<Button name> Example: <OK>; <Cancel>
File names, Paths	„File name“, „Path” Example: „Test.doc“

1.3 Symbols used

If safety instructions or other information are used in this manual, they mean:

⚠ DANGER

The non-observance of this safety information may result in an imminent risk of death or severe injury:

- By an electric shock!

- Due to the improper handling of iba software products which are coupled to input and output procedures with control function!

If you do not observe the safety instructions regarding the process and the system or machine to be controlled, there is a risk of death or severe injury!

⚠ WARNING

The non-observance of this safety information may result in a potential risk of death or severe injury!

⚠ CAUTION

The non-observance of this safety information may result in a potential risk of injury or material damage!

Note

An information indicates special requirements or actions to be observed.

Important Note

Information that a special indication has to be observed, e.g. exceptions from the general rule.

Tip

Tip or example which serves as helpful information or a trick to facilitate the work.

Other documentation

Reference to supplementary documentation or further literature.

2 Scope of delivery

After unpacking check the completeness and intactness of the delivery.

The scope of delivery includes:

- ❑ Industrial computer ibaRackline-PC CAM or ibaRackline-PC HD
- ❑ Keyboard
- ❑ Mouse
- ❑ Mains cable
- ❑ Documentation (on DVD)
- ❑ External DVD drive

The documentation contains:

- ❑ Manual (pdf)
- ❑ Third party documentation (pdf)
- ❑ Windows 10 Enterprise Long-Term-Servicing Version or Windows Server Version
- ❑ Recovery medium (for the respective Windows version and all associated operating system settings)
- ❑ iba software, optional order
- ❑ Hardware driver (motherboard, graphics card)
- ❑ 1 iba software license key (dongle), optional with iba software product and installed inside of the device on request of the client
- ❑ Serial number (iba-S/N)

3 Versions

- ibaRackline-PC CAM: RAID 5 system with 5 3,5“ SAS hard disks, 1 redundant power supply unit, 1 RAID controller, external DVD drive
- ibaRackline-PC HD: RAID 5 system with 5 3,5“ SAS hard disks, 1 NVMe-SSD, 1 redundant power supply unit, 1 RAID controller, external DVD drive

Upgrade options:

- Server system with Windows Server 2016 or higher
- Hard disc extension from 5x 4 TB to 5x 8 TB SAS or to 5x 12 TB SAS
- Additional graphics card

3.1 Factory setting

In delivery state, 2 users with or without password are configured:

User	Password
pda	-
Administrator	xadmin

Important note

Change the default passwords after you have put the PC into operation! This way, unauthorized usage will be impeded.

4 Safety instructions

4.1 Designated use

The device may be used only for the following applications:

- ❑ Machine test and commissioning of industrial systems
- ❑ Measurement data logging and analysis
- ❑ Applications of iba software products (ibaPDA, ibaLogic etc.)

4.2 Proper installation site

The device can be installed only according to manufacturer's specifications:

- ❑ 19“ cabinet
- ❑ 19“ rack line

⚠ DANGER

Electric Shock!

Before opening the device disconnect it from the mains and pull out the mains plug from the socket equipped with earth contact!

Never use the device with a damaged mains cable!

⚠ WARNING

Before opening the device disconnect it from the mains by unplugging the mains cable from the socket equipped with an earth contact and wait for several minutes until the components have cooled down! This will prevent injuries due to the electric shock or burns!

Connect the device to one supply voltage only according to specifications on the built-in power supply unit!

Always use a socket equipped with earth contact! Use a terminal strip with overvoltage protection or an uninterruptible power supply (UPS)!

Always connect the device to earthed power networks (TN-networks according to VDE 0100 Part 300 and IEC 60364-3)! The operation via ungrounded networks or networks (IT networks) earthed via impedance is not permitted!

In case of faults, a defective device or a possible defect pull out the mains plug from the socket equipped with earth contact!

Never put a damaged device into operation!

Pay attention to sharp edges in the housing!

Never switch off the device by means of the mains switch before you have shut down the device.

Electrostatic discharge!

Touch the components only in electrostatically discharged state!

5 Description

5.1 Front view

(Image without cover panels)

1 Fan, can be replaced from the front

2 USB interface for hidden dongle mounting

3 USB interface

4 LEDs (hard disk indicators)

5 Reset button

6 Power button

7 Plug-in slots for hard disks

Note

On delivery of the device the iba software license key is in the documentation or on client's request plugged-in in the device.

Display elements

The display consists of 2 LEDs:

LED 1: HDD1 (hard disk 1)

LED 2: HDD2 (hard disk 2)

The hard disk controller is connected to the LED 1 and lights up green in case of hard disk activity.

5.2 Rear view

1 2x Power supply with switch and plug for non-heating appliances, replaceable

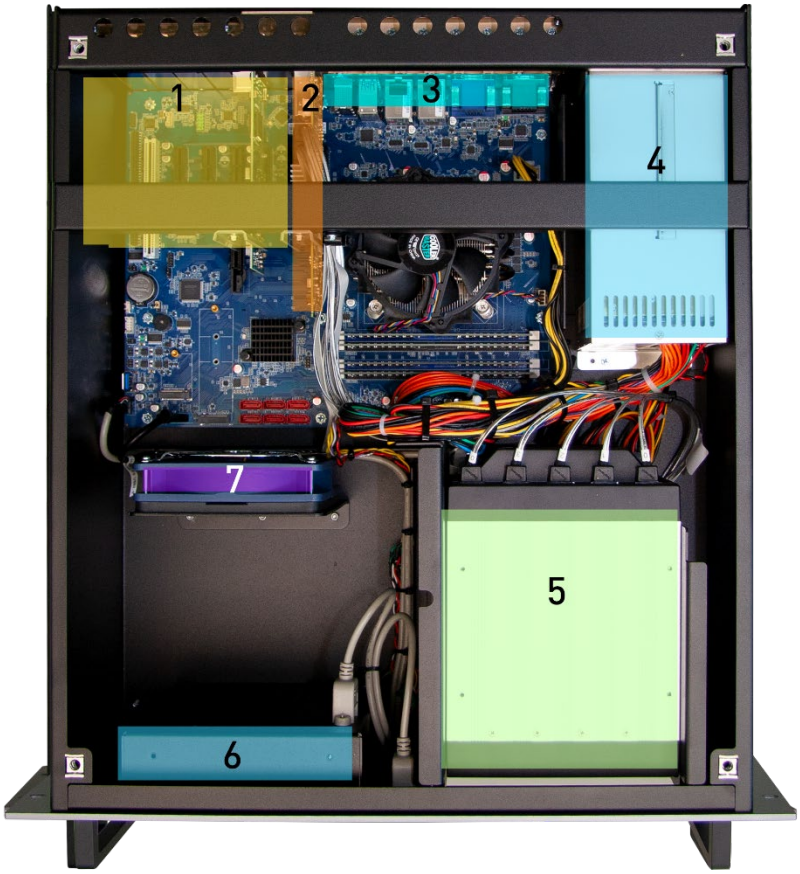
2 Slots X20 to X26 (iba-cards for rackline slot)

3 Connections for external devices (keyboard, mouse, network etc.)

4 Slot for controller

5 Free slots X3 to X7 (PCIe), X8 (PCI)

5.3 Internal view



1 PCI Express slots

2 Controller

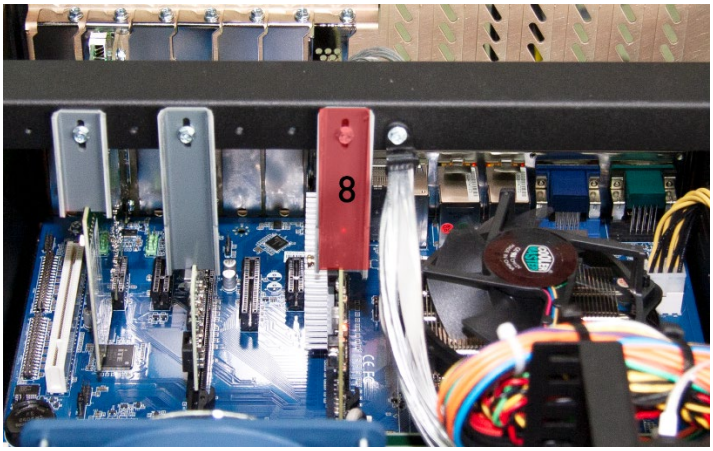
3 Slots for iba-cards for rackline slot

4 Power supply unit (for RAID systems redundant)

5 Drive frame

6 Fan (Ø 12 cm), mounting angle for redundant power supply unit

7 Additional fan (as option)



8 Hold-down clamp

5.4 Error monitoring

ibaOut-Temp card installed illustrated by ibaRackline-PC

The temperature and the status of the power supply unit can be monitored with the slot cards ibaOut-Temp and ibaOut-State. The cards can be ordered separately. If one of the cards is ordered with a PC, it is installed by default in slot X20. If you want to install the card later on, refer to chapter 7.4.

The status of temperature and power supply unit are indicated each with a bicolored LED on the cards.

LED	Status	Description
TEMP	green red	Temperature OK Overtemperature
POWER	green red	Power supply OK Power supply error Redundant power supply: error in one of the two power supply units

5.4.1 ibaOut-Temp

ibaOut-Temp provides two relay outputs for temperature and power supply (2-pin connector), which can be used to indicate errors. Both error types are indicated separately.

The switch position of the outputs is as follows:

Status	Switch POWER	Switch TEMP
Power off or power error	closed	open
Power OK, temperature OK	open	open
Power OK, overtemperature	open	closed

Contact loading capacity

Nominal current: 400 mA

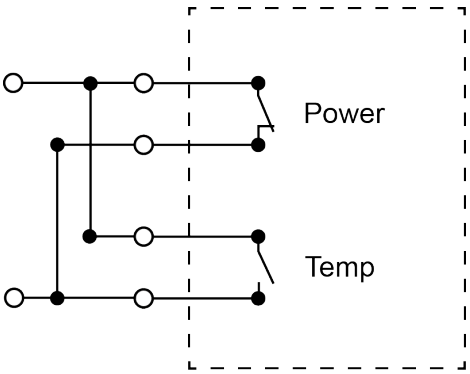
Nominal voltage: 60 V

Compatibility to previous models

ibaRackline computers of older series only provide one relay output for error indication. The relay contact is closed when an error occurs, without differentiating between overtemperature or a power supply error.

ibaOut-Temp can be used in the same way, when both outputs are connected to one output (parallel circuit).

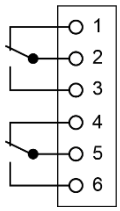
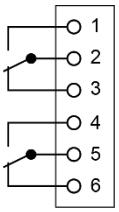
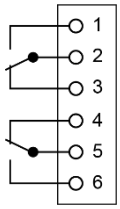
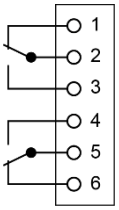
Wiring diagram of the parallel circuit:



5.4.2 ibaOut-State

ibaOut-State provides an output (6-pin connector) which can be used to indicate errors. Both error types are indicated separately.

These are the switch positions:

Switch	state	switch	state
	Power OK, temperature OK		Power off or Power error and overtemperature
	Power error, temperature OK		Power OK, overtemperature

Contact loading capacity

Nominal current: 300 mA

Nominal voltage: 220 V DC

Compatibility to previous models

The behavior of ibaOut-State is identical with the previous models with a relay output, if pin 5 and 6 are used. The relay contact of the previous ibaRackline models is closed when an error occurs, without differentiating between overtemperature or a power supply error.

5.5 Default installation position for cards

On delivery, the data acquisition cards and additional cards are installed by default in the slots described below.

Backview ibaRackline-PC CAM/HD

Specfic slots for the mainboards

- ❑ Slot X2: controller

Installation slots for data acquisition cards (X3 - X7)

- ❑ The cards are installed starting with slot X7 to slot X3 (X7 corresponds to the first card, card no. 0)

Installation slots for cards with rackline slots (X20 - X26)

- ❑ ibaOut-Temp or ibaOut-State is installed in slot X20
- ❑ ibaFOB-4o-D rackline-slot is installed starting with X25 and connected to X7 downwards.
- ❑ ibaFOB-4o-D rackline-slot as sync-out (mirroring output) is installed in X26 and connected to X7

Connections of ibaFOB-4o-D with ibaFOB-D input cards:

- X25 - X7
- X24 - X6
- X23 - X5
- X22 - X4
- X21 - X3

Installation slots for additional network cards

- ❑ Additional network cards are installed starting with slot X3
- ❑ GigE cards are installed in the slots X4 and X6
- ❑ A PCI card is installed in slot X8 (e.g. CP1616)

6 Installation, connection and first switching on

6.1 Safety instructions

⚠ DANGER

Electric Shock!

Never use the device with a damaged mains cable!

⚠ WARNING

Connect the device to one supply voltage only according to specifications on the built-in power supply unit!

Always use a socket equipped with earthing contact! Use a terminal strip with overvoltage protection or an uninterruptible power supply (UPS)!

Connect the device only to earthed power networks (TN-networks according to VDE 0100 Part 300 or IEC 60364-3)!

The operation via ungrounded networks or networks (IT networks) earthed via impedance is not permitted!

Never put a damaged device into operation!

6.2 Installation

Note

If you install the device into a 19" cabinet with rotating rack, consider the depth of the device. Observe the minimum bending radii of the cables.

1. Place the device from the front onto the 19" rack line.
2. Fasten the device using 4 screws at the 19" rack line.
3. Plug in the mains cable of the device into a socket.

6.3 Connection and first switching on

Note

Before switching on the device for the first time check if the power supply is properly connected and the connecting cable (fiber optic and copper data cable) are plugged in. The device is delivered pre-installed and configured. Refer to the relevant manuals or online help for the settings of the operating system and the iba software.

1. Connect all cables.
2. Switch on the device using the mains switch.
3. Boot the device. Press the power button.
   The computer is booted automatically with Windows.
4. Finally, start all iba software applications.

7 Installation of measuring or additional boards

7.1 Safety instructions and notes

⚠ DANGER

Electric Shock!

Before opening shut down the device! After that disconnect it from the mains and pull out the mains plug from the socket equipped with earthing contact!

⚠ WARNING

Wait for several minutes after switching off until the components have cooled down! Thus you will avoid injuries due to the electric shock or burns!

Pay attention to sharp edges in the housing!

Electrostatic discharge!

Touch the components only in electrostatically discharged state!

Note

If you upgrade the device, observe the instructions in the third party documentation.

Back up all data on an external storage medium.

7.2 Basic procedure

If you carry out any work at the device, always proceed in the following way:

1. Remove all mobile data carriers (DVD, memory cards and so on).
2. Shut down the device.
3. Switch off the device.
4. Unplug the mains cable from the socket.
5. Remove the cover.
6. Carry out upgrade operations.
7. Attach the cover again.
8. Put the device into operation again.

7.3 Opening the device

1. Turn the screws located on the upper side of the cover a quarter of a turn counter-clockwise.
2. Lift the housing cover.

7.4 Installing ibaOut-Temp/ibaOut-State

The temperature and the status of the power supply unit can be monitored with the slot cards ibaOut-Temp and ibaOut-State, see also chapter 5.4.

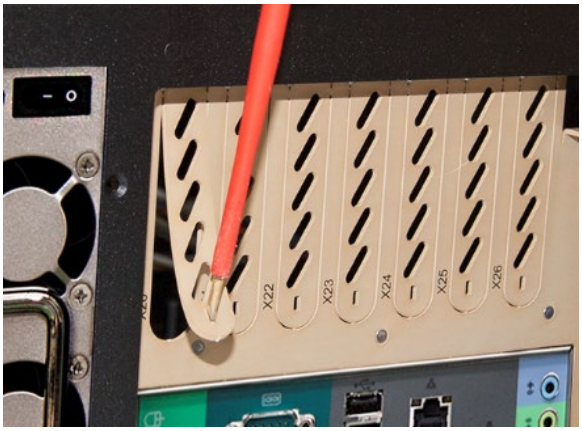
The installation procedure is identical for both cards. The installation is described below using the example of ibaOut-Temp in an ibaRackline system.

ibaOut-Temp
Order no. 11.110001

ibaOut-State
Order no. 11.110002

After having opened the housing cover proceed as follows:

1. ibaOut-Temp can be installed in one of the slots X20 to X26 (X20 is recommended).
2. Break out the cover plate of the intended slot on the back of the device using a screwdriver.

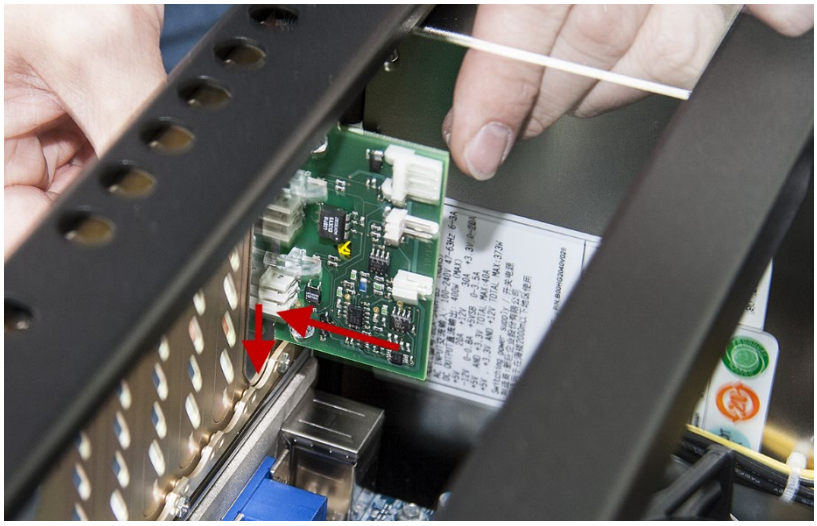


3. Above the slot, there is a screw in an opening, which is used to fix the card later. Loosen the screw and remove it.

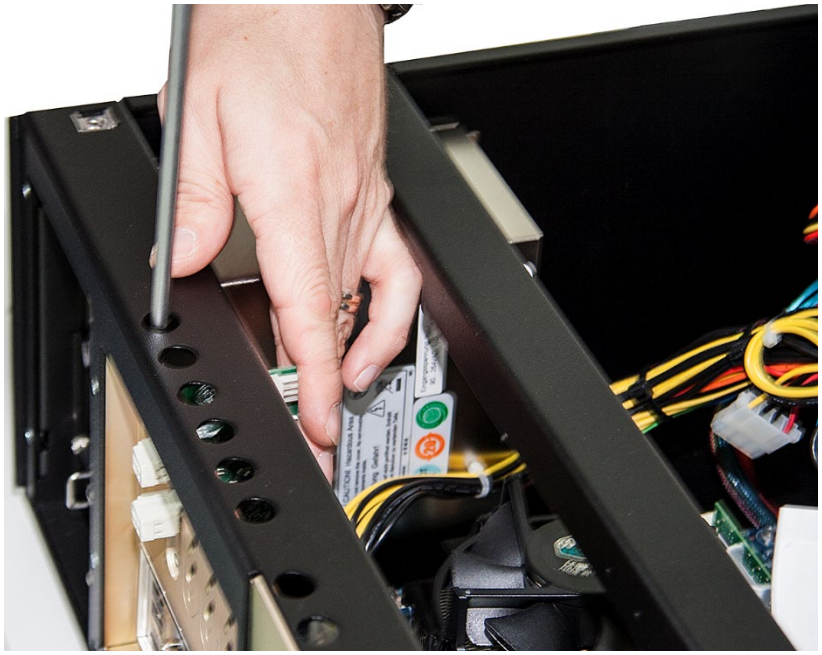
Electrostatic discharge!

Touch the components only in electrostatically discharged state! Hold the card cautiously at the edges and at the slot bracket.

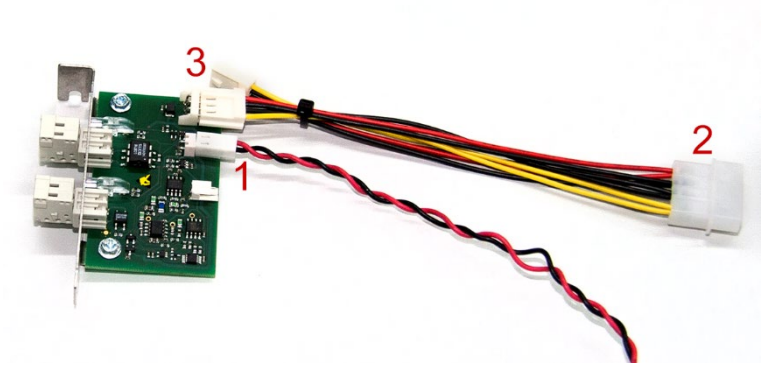
4. Insert the card in the respective slot. The bar at the bottom is used to fix the card.



5. Fasten the card with the previously loosened screw.



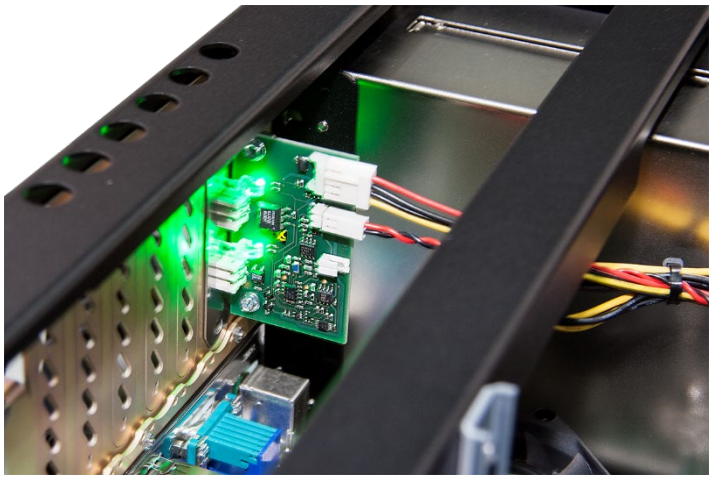
6. Connect the cables as follows:



(1): Connection of redundant power supply unit: If a redundant power supply unit is to be monitored, connect the twisted cable (black/red) of the power supply unit (1 – picture above) to the 2-pin connector (1 – picture below) of the card. This connection is not necessary, when a standard power supply unit is used.

(2): Power supply connection: Use the cable included in delivery. Connect the connector of the power supply cable from the power supply unit (2 – picture above) with the wide connector of the cable included in delivery (2 – picture below). Make sure that the cables of the same color are connected. Plug one of the two narrow connectors to the 4-pin connector (3) of the card, the second narrow connector is not used.

7. Properly installed card:



8. Fix the cable with a cable tie and close the housing cover.

8 Maintenance work

8.1 Basic procedure

If you carry out any maintenance work at the device, always proceed in the following way:

1. Remove all mobile data carriers (DVD, USB sticks, memory cards, and so on).
2. Shut down the device.
3. Switch off the device.
4. Unplug the mains cable from the socket.
5. Remove the housing cover.
6. Carry out the maintenance work.
7. Attach the housing cover again.
8. Put the device into operation again.

8.2 Cleaning or replacing the dust filter

Depending on the installation site it is necessary to clean or replace the dust filter in both grids. The dust filter should be replaced every 6 months.

1. Loosen the fastening screw which is used to fix the grid and open the grid.

2. Take the dust filter out of the grid.
3. Clean the dust filter or insert a new one (iba filter mat: Order number 43.000360).
4. Close the grid again and fasten the screw.

8.3 Cleaning and replacing the fan

Depending on the installation site it is necessary to clean or replace the fan. First, remove the grid as described above and proceed as follows:

1. Loosen all 4 fastening screws which are used to fix the fan.

2. Remove the fan forwards.
3. Unplug the cable connection
4. Clean the fan or insert a new one.
5. Connect the cables of the fan and the cables of the computer with the cable connector.
6. Insert the fan again.
7. Fasten the fan with the 4 srews at the housing.

8.4 Replacing the power supply unit

If it is necessary to exchange the redundant power supply unit, observe the following instructions and safety instructions.

DANGER

Electric Shock!

Only qualified professionals are allowed to replace a power supply unit during operation!

Electrostatic discharge!

Touch the components only in electrostatically discharged state!

8.4.1 Power supply slide-in module for replacement of redundant power supply unit

If the green lamp of a switched-on power supply unit does not light up during operation, the appropriate power supply slide-in module must be replaced.

1 Fastening screw

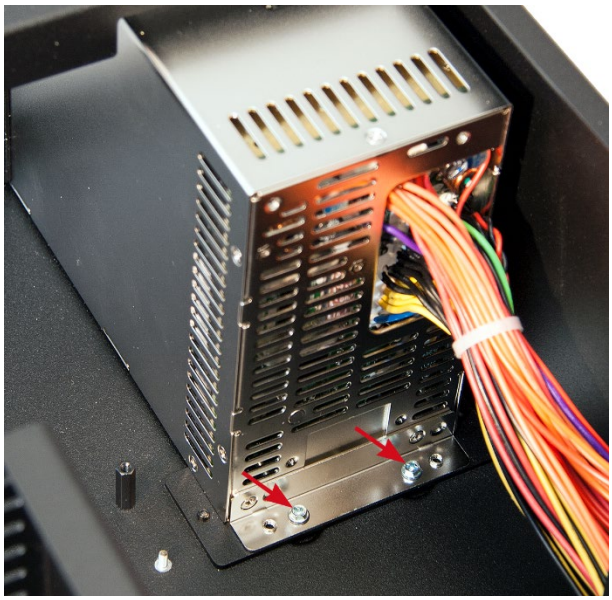
1. Loosen the fastening screw which is used to secure the power supply slide-in module at the frame.
2. Pull out the power supply slide-in module.

   Replace the power supply slide-in module with the module of the same type (available at iba).

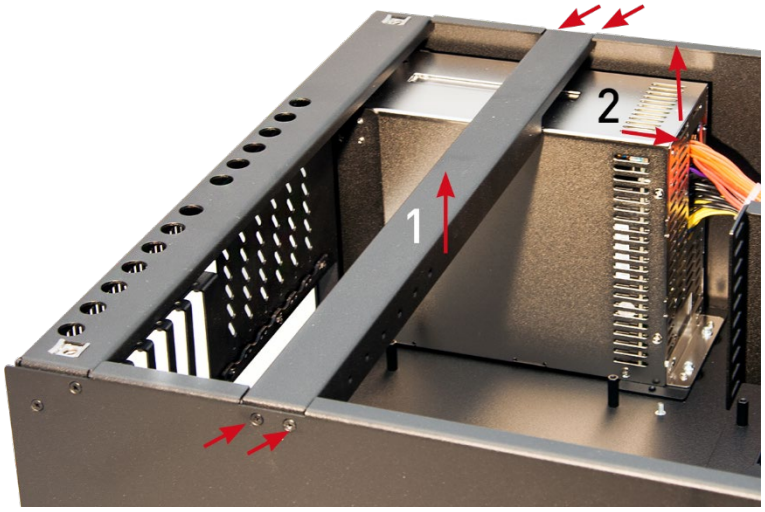
8.4.2 Replacing the complete redundant power supply unit

1. First remove the power supply slide-in module, as described above.
2. Loosen the 4 fastening screws on the backside, which are used to fix the power supply unit at the housing.

3. Loosen both screws inside, which are used to fix the power supply unit inside the housing.



4. Loosen 2 screws each on the left and the right side, which are used to fix the bar (1) and remove the bar.



5. Disconnect all cable connections to the mainboard and the drives.
6. Remove the power supply unit (2) from the housing, by pulling it backwards and lifting it out.

7. Remove the mounting angles on the left and right side from the power supply unit by loosening 2 screws from the inner side.

8. In order to install a new power supply unit, proceed in reversed order.

8.5 Restoring of a RAID system during operation

DANGER

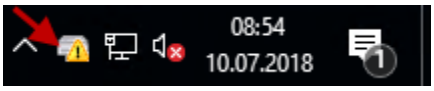
Only qualified professionals are allowed to replace a hard disk unit during operation!

Electrostatic discharge!

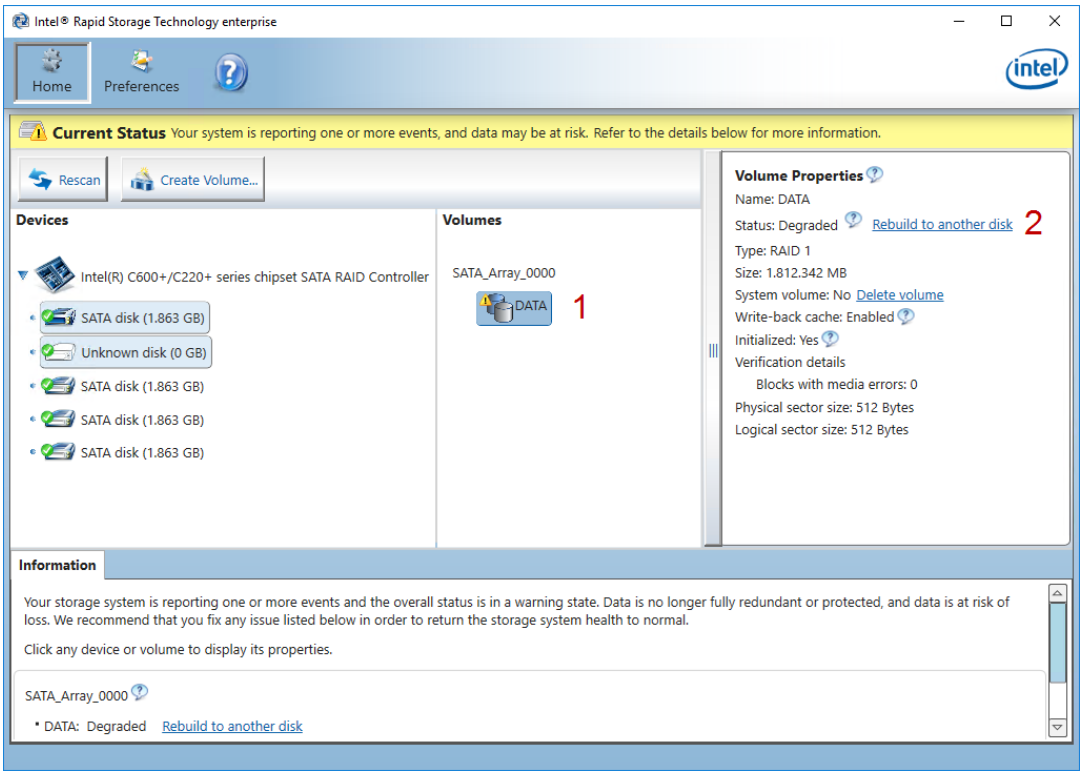
Touch the components only in electrostatically discharged state!

8.5.1 System with Onboard RAID

Open the Intel® Rapid Storage Technology enterprise console by double-clicking the icon in the task bar.



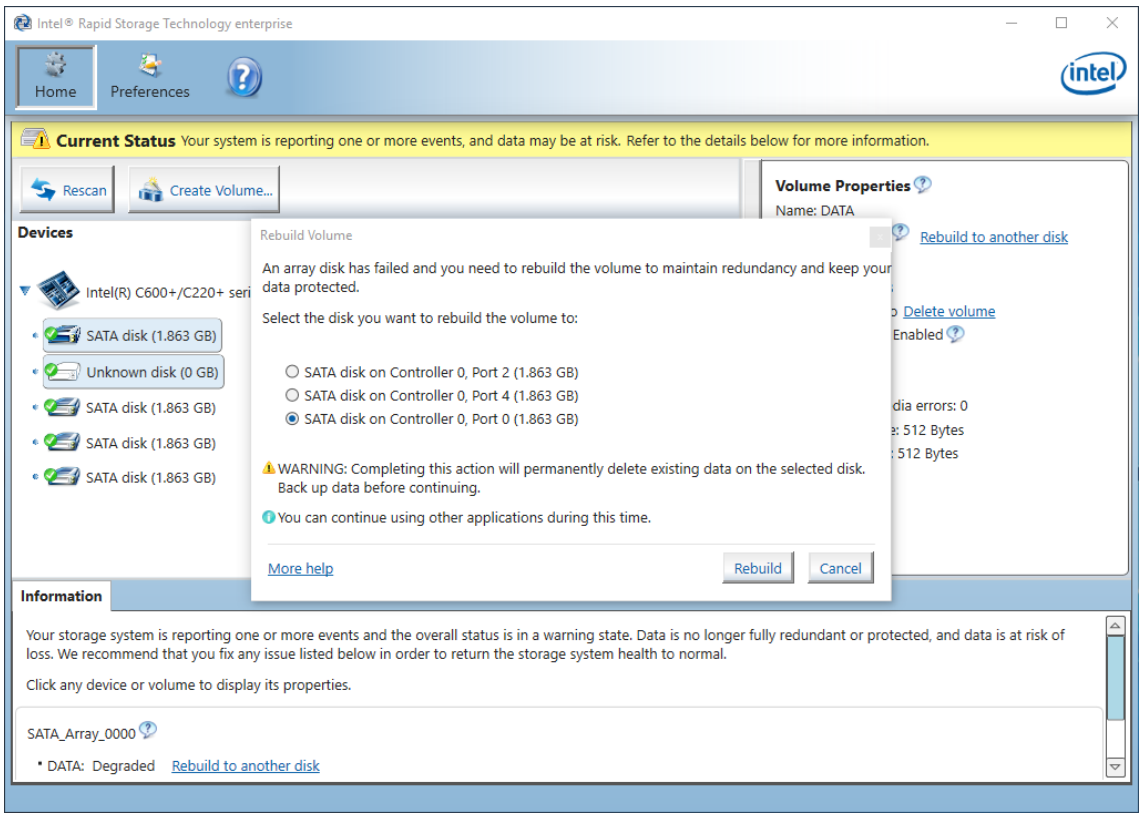
Now select the corresponding RAID array with the status "Degraded" (1) and click on "Rebuild to another disk" (2) in the volume properties.



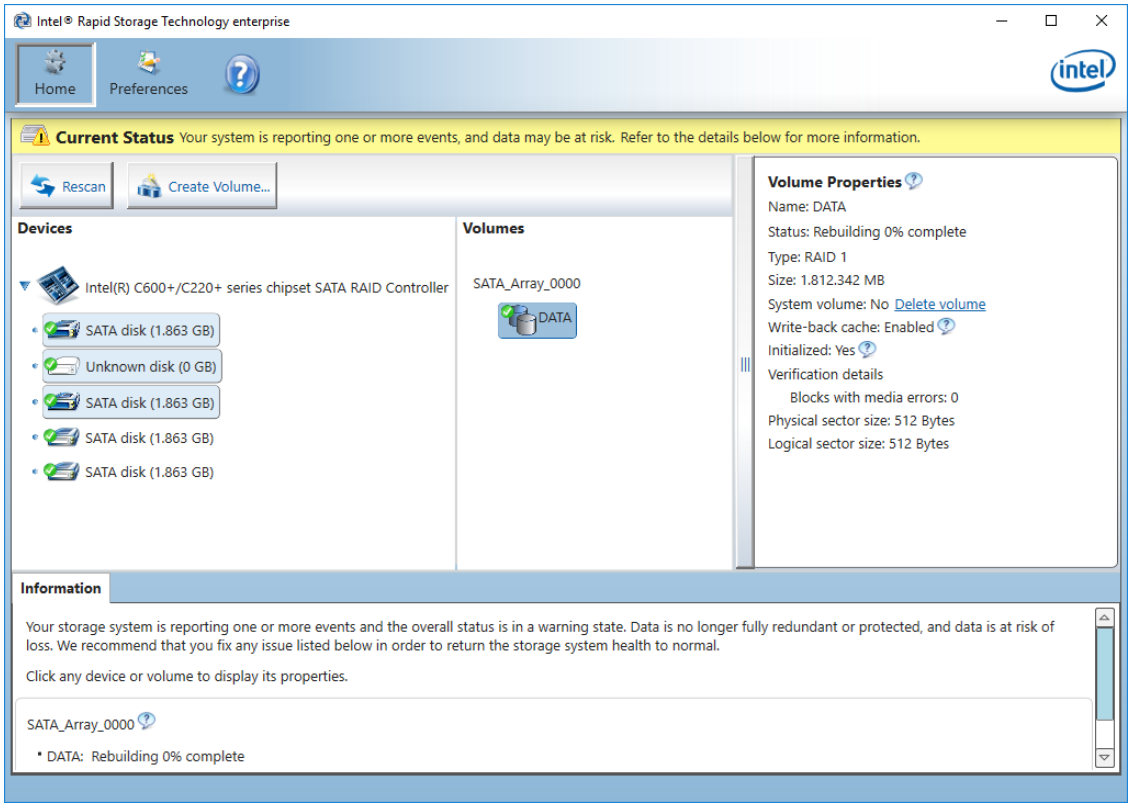
In the following dialog select the hard disk that you want to use to restore the redundancy of the RAID array.

Important note

Make sure you have selected the correct drive, because this operation will erase all existing data on the selected drive.



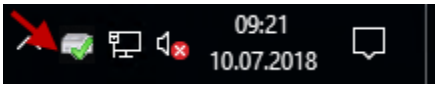
Click on "Rebuild" to start the process. The duration of the process varies depending on the hard disk capacity.



Note

System performance may be affected during the rebuild process.

After the process is complete, the status in the volume properties must be "normal" again and the icon in the task bar must look like this:



8.5.2 System with RAID controller plugged in

Important Note

The RAID system is not automatically restored after having changed the hard disk. Use the program "maxView Storage Manager".

Note

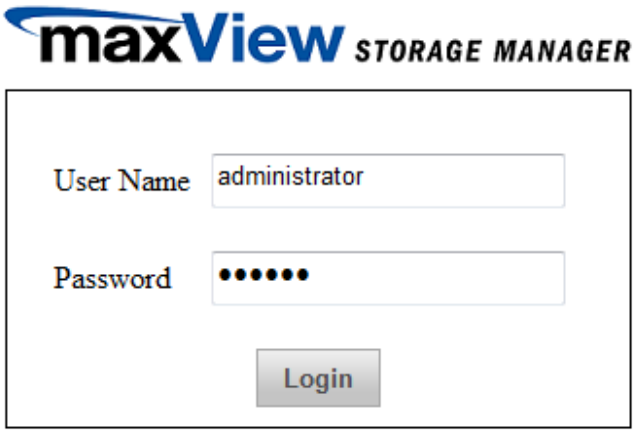
The program "maxView Storage Manager" is included on the DVD „Drivers and Manuals“. "maxView Storage Manager" is a web application which requires a web browser, e.g. Internet Explorer.

Note

The program "maxView Storage Manager" may be configured that the administrator will be informed by e-mail in case of an error.

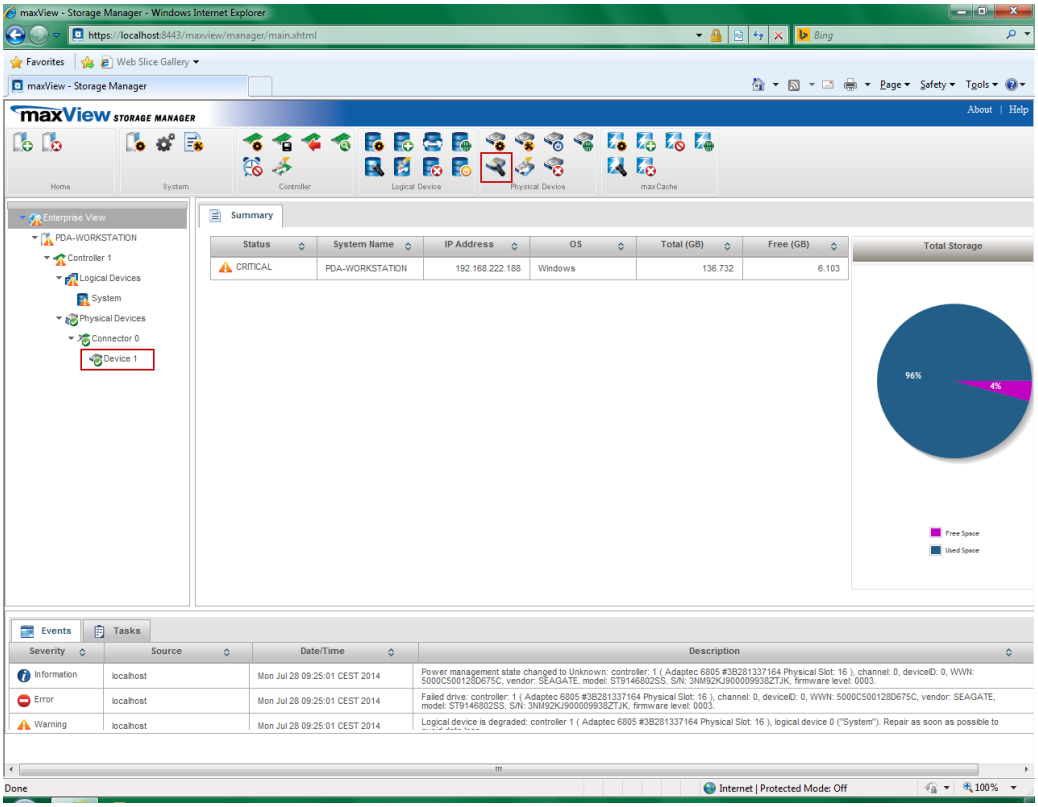
If the buzzer sound can be heard, it is possible that a hard disk in the RAID system is defective. To restore the RAID system, proceed as follows:

1. Start the program " maxView Storage Manager ". The "Log in" window is displayed.



2. Log in as follows:
   User Name: administrator
   Password: xadmin

3. A click on <Login> opens the program window of the manager.
   The defective hard disk is not indicated.

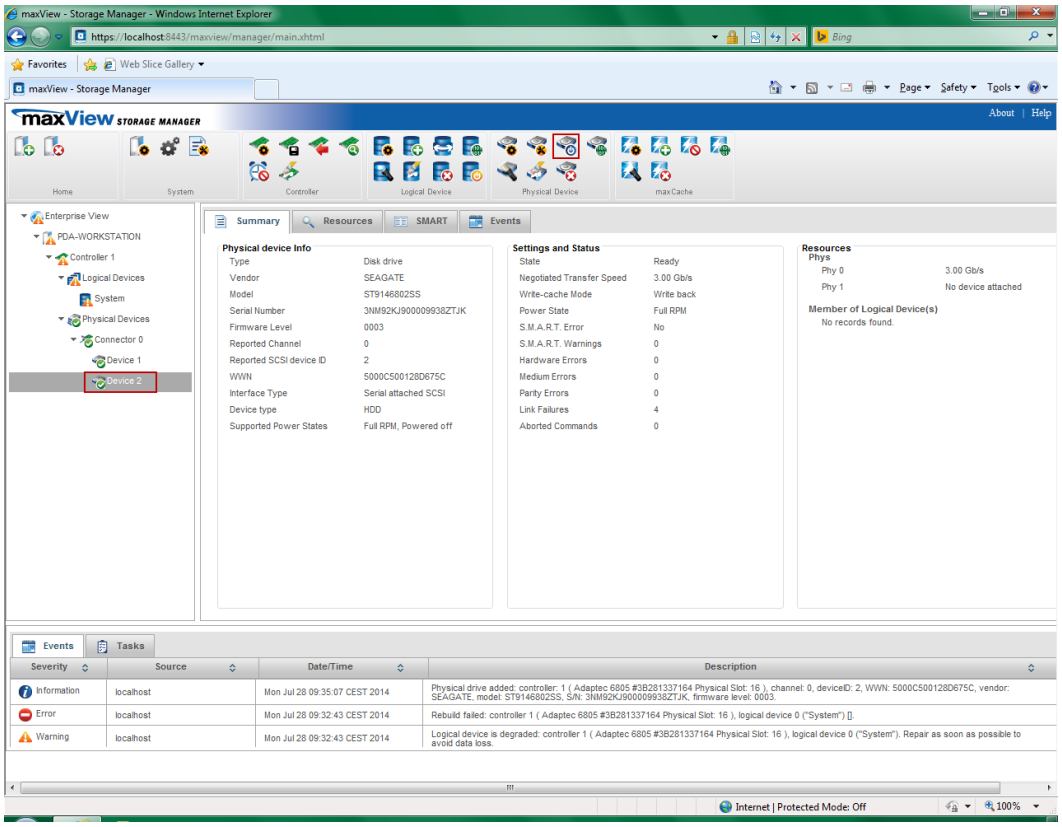


4. Mark the hard disk, which is available (“Device 1” in the example above) and click on the „Locate“ icon  in the “Physical device” section. The available hard disk blinks in the drive frame.
5. Replace the defective hard disk.

Note

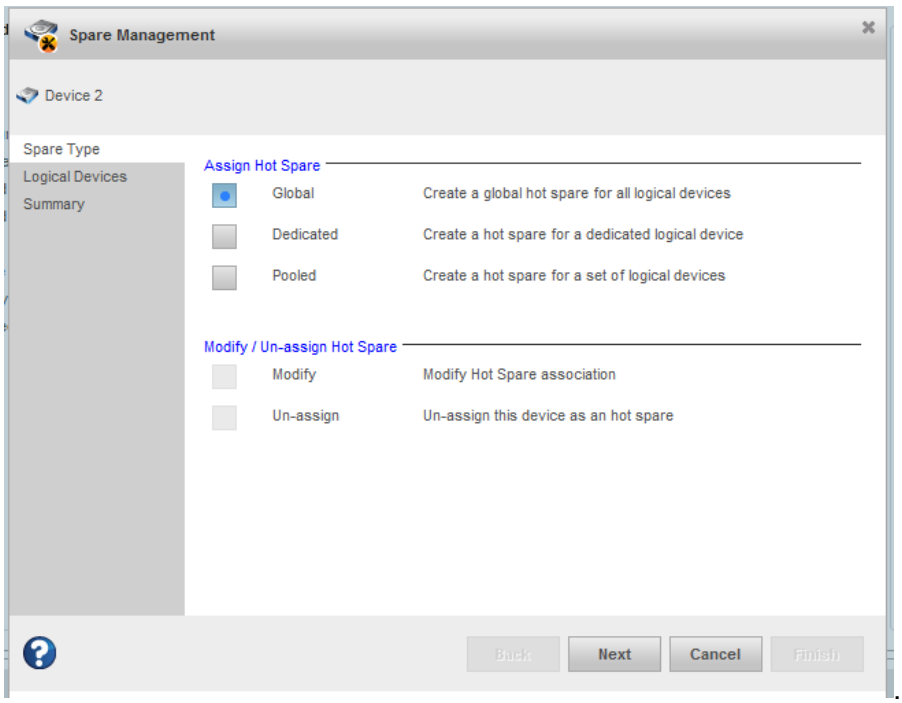
The removal and installation is described in the documentation of the hard disk manufacturer.

6. The new hard disk is indicated in the „maxView Storage Manager“. But the hard disk has not been registered in the system.



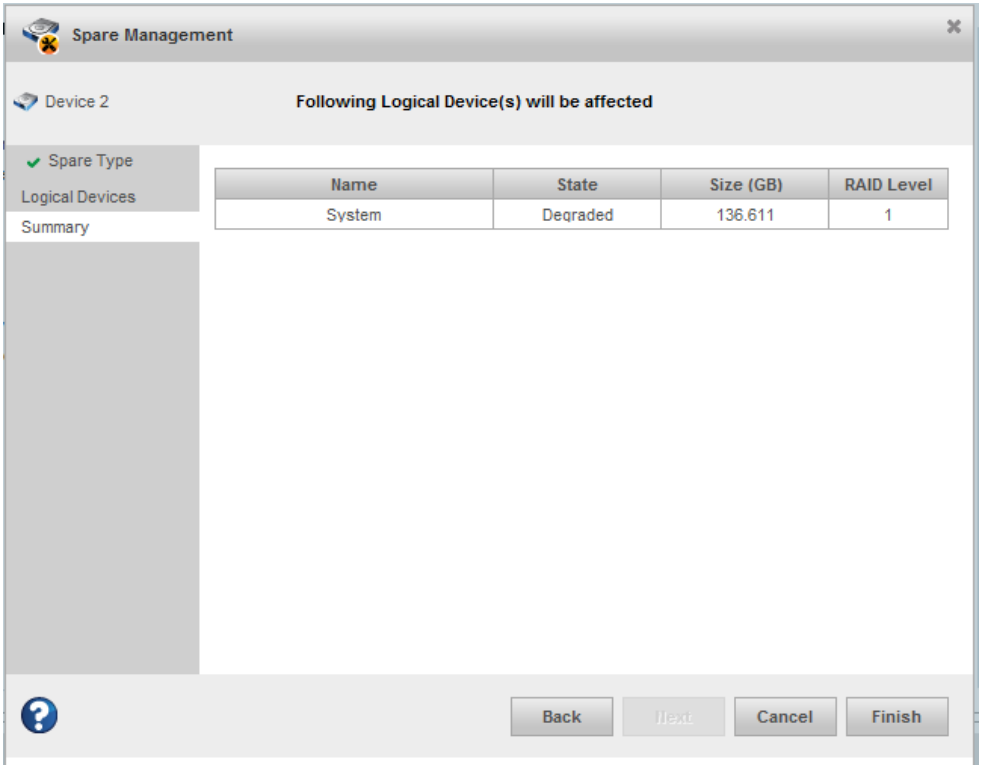
7. Mark the new hard disk („Device 2“ in the example above) and click on the „Initialize“ icon  in the „Physical Device“ section.

8. Then, click on the „Spare Management“ icon  in the „Physical Device“ section.

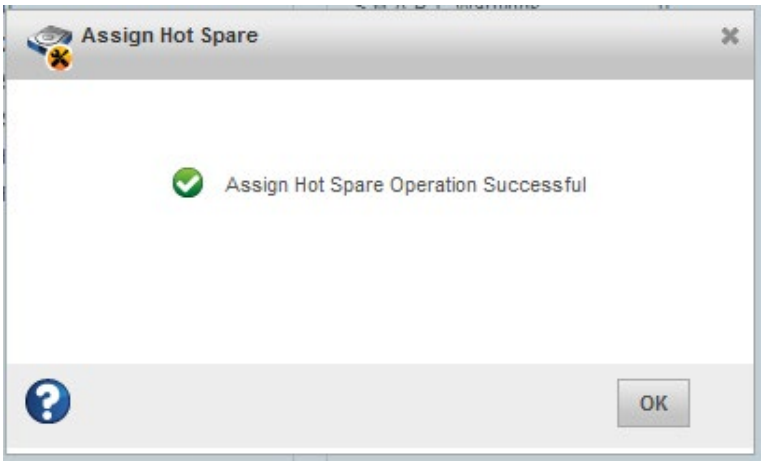


9. Select the option “Global” and click on the <Next> button.

10. Confirm the following overview with <Finish>.

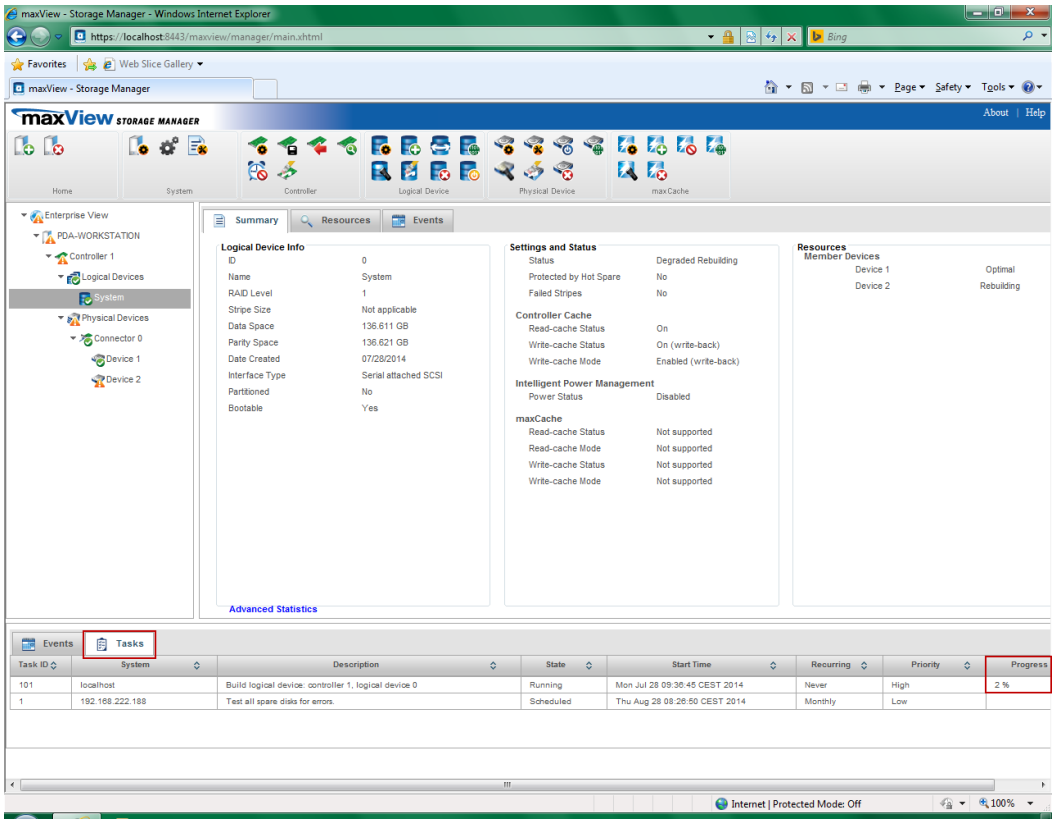


11. The following message appears when the operation was successful.

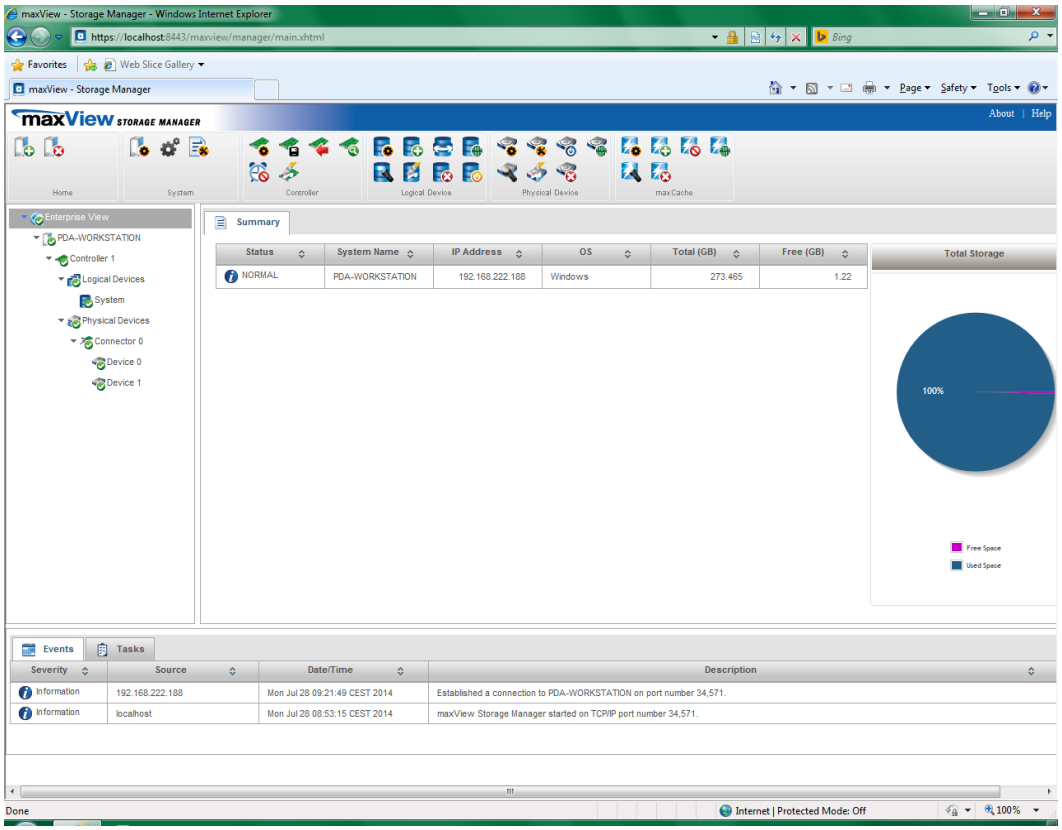


Otherwise an error message appears.

12. The progress of the rebuild process is displayed under “Tasks”.



13. As soon as the hard disk has been successfully registered in the system, the program can be closed.



9 Installing operating system and iba software

9.1 Installation

For the installation of the operating system and the iba software there are 2 possible ways:

- ❑ Install the Windows operating system and the required device drivers (graphic card, hard disk controller etc.).
- ❑ Install the operating system using the Recovery medium.
  Compared to the common installation of the operating system the method named above is advantageous because all required settings and configurations of the device hardware (e.g. drivers) have already been performed on the Recovery medium.
  The delivery includes the Recovery medium for the operating system stated in your order.

Note

If you install the operating system with the Recovery medium, all settings and configurations of the device hardware (e.g. drivers) will be installed.

Do not change the basic configuration of the device components (e.g. motherboard)!

If you modify the device components, it may happen that the installation with the Recovery medium is not possible.

9.2 Installing Windows with the Recovery medium

Important note

The Windows 10 Enterprise license is bound to the computer where the iba software is installed. The license must not be used on another computer.

9.2.1 General

- ❑ If you install the operating system from the Recovery medium or DVD, the computer must be started from the DVD. Make sure, that the required settings in the BIOS are correct. When „PRESS ANY KEY TO BOOT FROM DVD“ appears on the screen, press any key.
- ❑ The recovery procedure is only available in English.
- ❑ The setup routine of Microsoft is used.
- ❑ When the recovery procedure is finished, install a Windows update to have the latest safety related version.
- ❑ 6 pre-installed languages can be chosen as system language: English, French, German, Italian, Spanish, Russian (additional languages optionally).

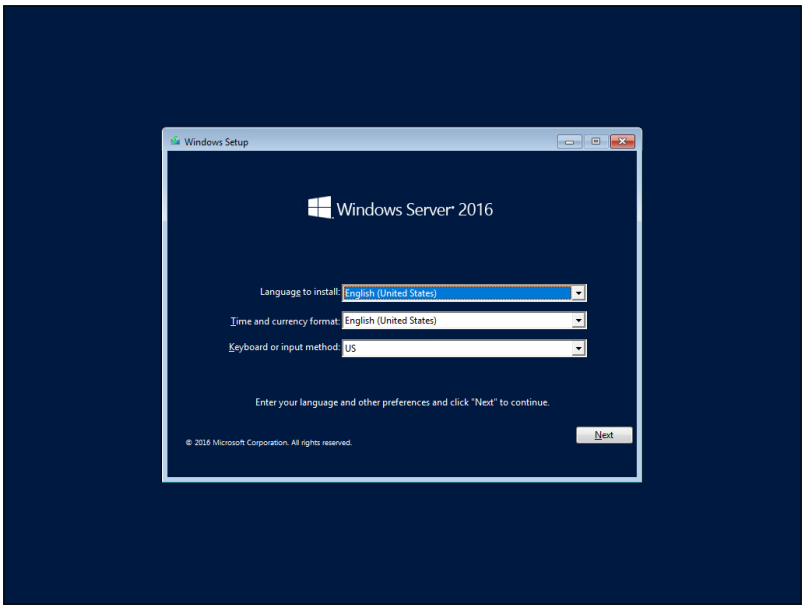
Important note

No liability is assumed for the loss of data due to incorrect handling. Always make sure, that you select the correct drives and partitions.

Note

The recovery process takes approx. 50 minutes. It is possible that only a black or green screen is visible during the process.

9.2.2 Select the language

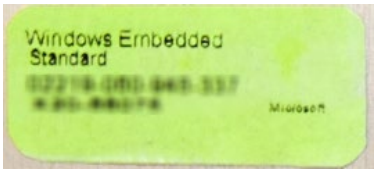


When the installation has started, you can select the sytem language to be installed. When using Windows 10 Enterprise x64 and Windows Server 2016 the language can be changed subsequently.

9.2.3 Enter the product key

(only with Windows Server 2016 or higher)

For Windows Server, a product key must be entered subsequently. This is attached to the back of the housing.



Note

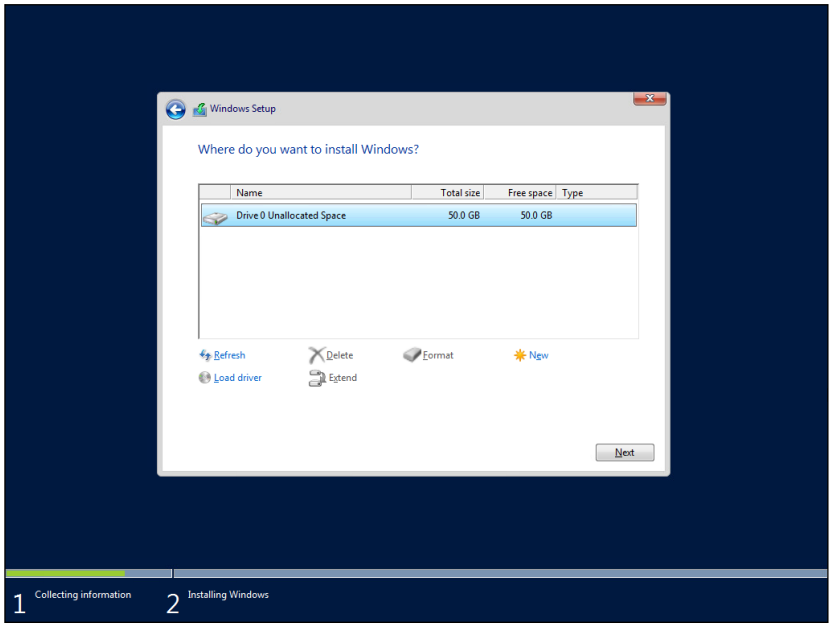
When using Windows 10 Enterprise, it is not necessary to enter the product key or activate the Windows license.

9.2.4 Partitioning

There are several possibilities to set up partitions:

- ❑ Set up a new drive completey as system drive
- ❑ Set up partitions on a new drive
- ❑ Install an operating system on a drive already used (Windows 10 Enterprise or Windows Server)
- ❑ Substitute the operating system on a drive already used (substitute Windows 10 Enterprise with Windows Server or vice versa)

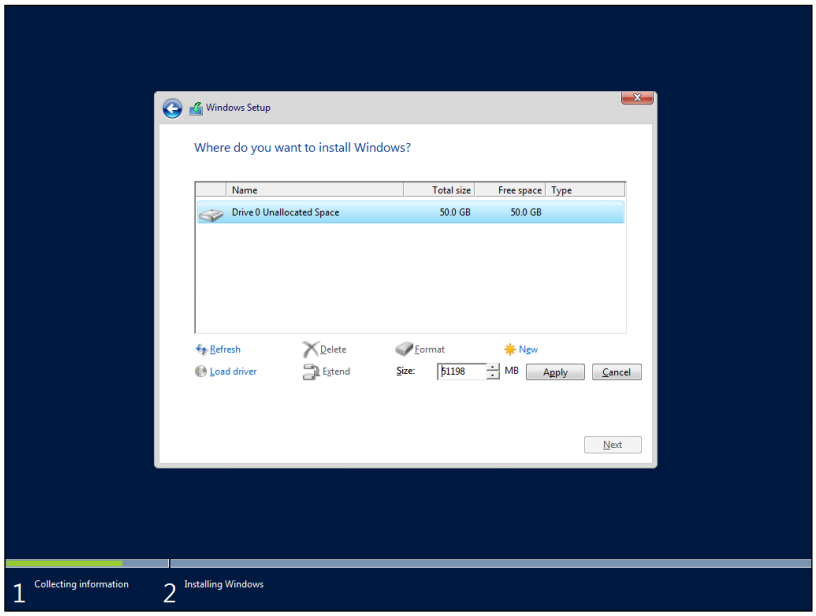
Possibility 1: New drive



You use a new drive and want to use it completely as system drive.

Click <Next> and continue with chapter 9.2.5 „Completing installation“.

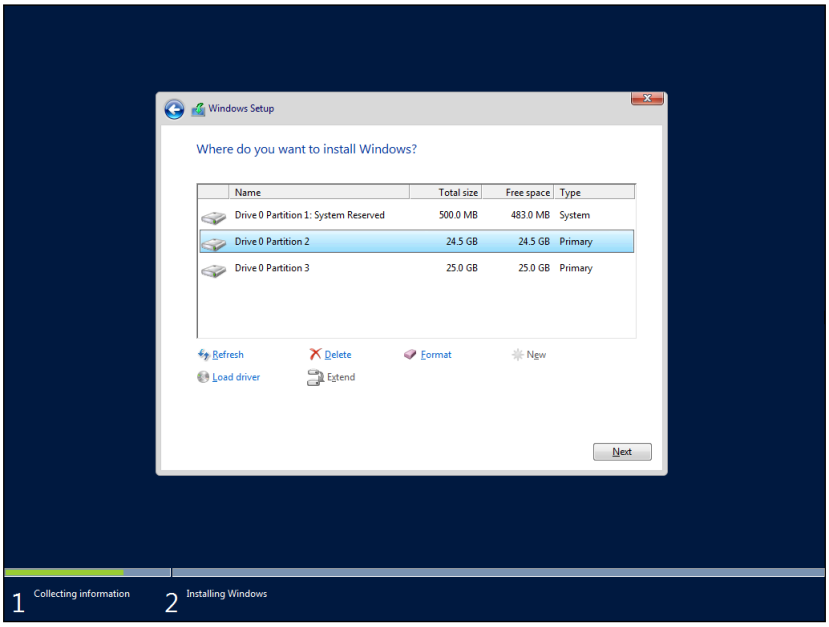
Possibility 2: Partitioning the new drive



You use a new drive and want to set up partitions.

1. Click <New>
2. Enter the partition size
3. Confirm with <Apply>
4. Confirm the next dialog with <OK>
5. Mark the partition, where the operating system should be installed.
6. Click <Next> and continue with chapter 9.2.5 „Completing installation“.

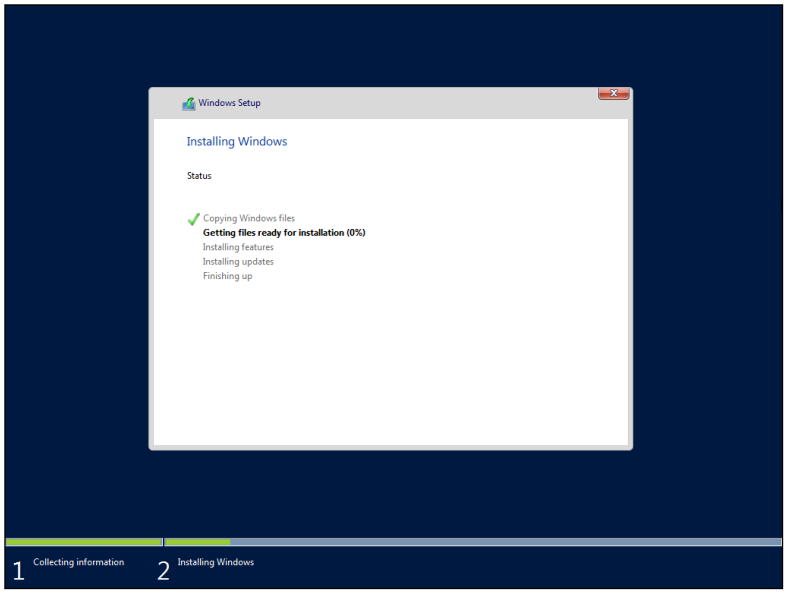
Possibility 3: Restore or replace the operating system



The drive is already in use and you want to install the operating system.

1. Mark the system partition (usually 500 MB in size)
2. Click <Format>
3. Confirm with <OK>
4. Mark the primary partition (normally the smaller one)
5. Click <Format>
6. Confirm with <OK>
7. Click <Next> and continue with chapter 9.2.5 „Completing installation“.

9.2.5 Completing installation



The system files are copied to the drive and additional software is installed.

The computer will restart twice.

The procedure takes 30-40 min. depending on the hardware.

9.3 Windows Updates

The automatic search for updates is deactivated by default on iba systems, as iba does not know which Windows update policies apply in your company.

Please adjust the settings according to the update policies in your company. Consult your IT department if necessary.

9.4 Antivirus Software

There is no antivirus software installed on iba systems in delivery state.

Please install the antivirus software package which is used in your company by default. Consult your IT department if necessary.

9.5 Installing iba software

The installation of iba software is described in the manuals included in the delivery.

10 Technical data

10.1 Main data

Manufacturer	iba AG, Germany
Working temperature range	32 °F to 131 °F (0 ˚C to 55 ˚C)
Storage temperature range	-13 °F to 158 °F (-25 ˚C to 70 ˚C)
Transport temperature range	-13 °F to 158 °F (-25 ˚C to 70 ˚C)
Cooling	Fan cooling
Fan current	40 mA to 400 mA
Assembly	19” rack mount
Humidity class	F, no condensation
Protection class	IP20
Power supply	
Redundant power supply unit with changeable frame	AC 100 V to 240 V; 8 A/4 A 47 Hz to 63 Hz
Power output	Max. 500 W
Mechanical data	
Dimensions (Height x Width x Depth)	7.09 in (4 HU) x 19.02 in x 21.42 in (178 mm (4 HU) x 483 mm x 544 mm) installation depth 19.69 in (500 mm)
Weight (incl. packaging and documentation)	Approx. 48.5 lb (22 kg)

10.2 Electronic components and interfaces

Processor	Intel® Xeon E 2146G, 3.5 GHz
Mainboard	Industrial mainboard with C246 chipset and LGA1151 socket
Graphic on board	Integrated Intel UHD graphics
Ethernet on board	2x 10 Mbps/100 Mbps/1000 Mbps
HD audio on board	Realtek ALC892
Main memory	32 GB DDR4
PCI Express x16: SAS controller	Microsemi Adaptec SmartRAID 3102-8i
PCI Express, free	5x for iba measuring cards
PCI, free	1x

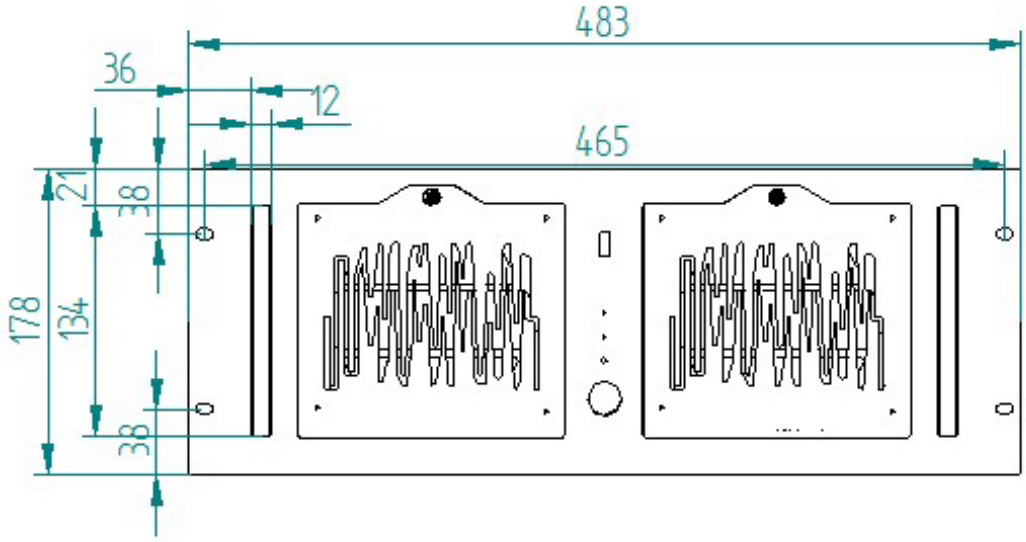
M.2	1x M-Key (2242/2260/2280), PCI-e 4 1x A-Key (2230), supports WiFi module
USB 2.0 USB 3.0	2x frontside (1x dongle, 1x frontside) 8x backside
LAN	2x backside
Graphic	1x VGA, 1x HDMI, 1x DP
HD frame	5x 3,5“ SAS
Hard disk	5x 4 TB SAS HDD (approx. 16 TB net capacity) 1x 256 GB NVMe SSD (as buffer for the HD data*)
DVD drive	External DVD drive (USB connection, included in delivery)

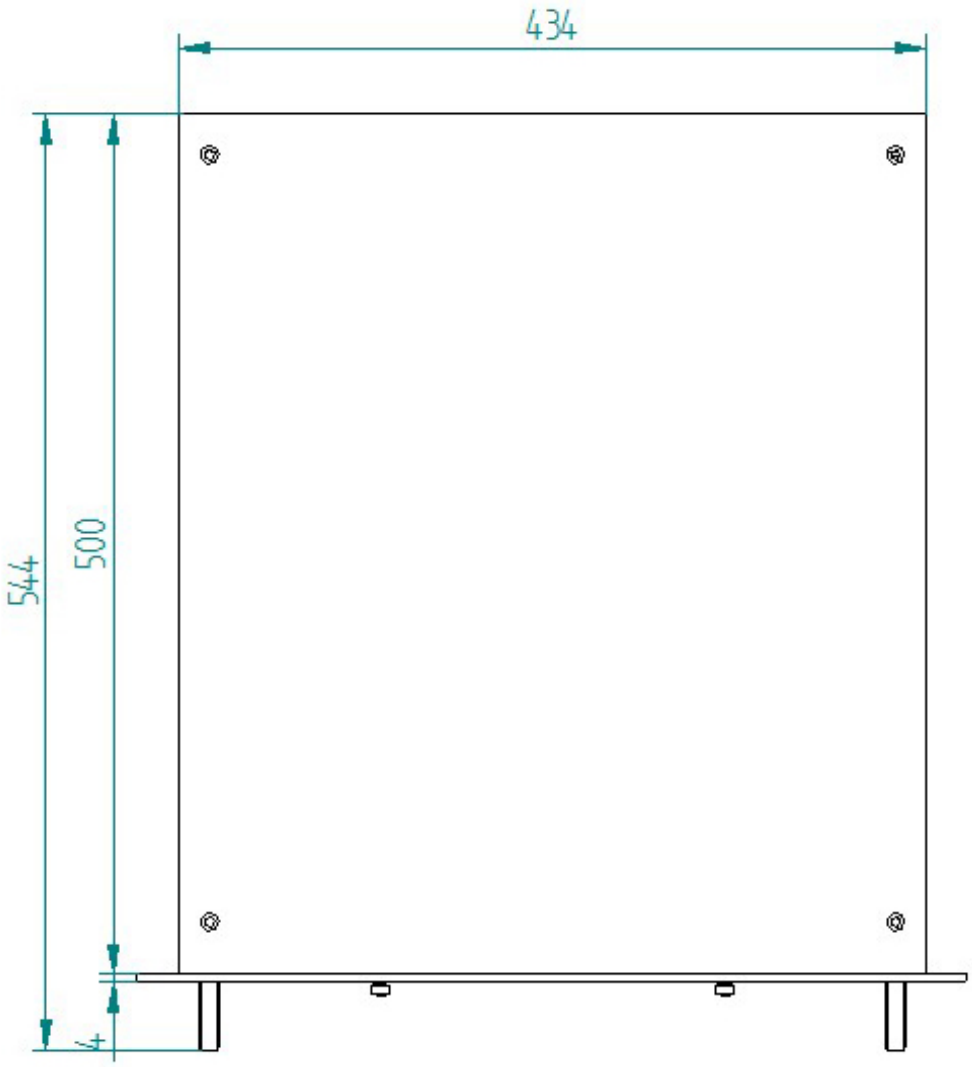
* only included in ibaRackline-PC HD

10.3 Products

PC systems	**Order number**
ibaRackline-PC CAM, XEON E, Win 10	40.005021
ibaRackline-PC HD, XEON E, Win10	40.005031
Enhancement options	
Upgrade to Server Operating System	43.000380
Upgrade ibaRackline-PC HD/CAM with Graphic Card	43.001001
Upgrade ibaRackline-PC CAM with NVME-SSD	43.001002
Upgrade HD 5x4TB to 5x8TB SAS (hard disc extension)	43.001020
Upgrade HD 5x4TB to 5x12TB SAS (hard disc extension)	43.001021
Accessories	
ibaOut-Temp	11.110001
ibaOut-State	11.110002
DVD RW external, via USB	43.000631
Intel PCIe 10/100/1000 Mbit network card, single port	43.000525
Intel GigE-Network Card PCI Express (Dual-port Gigabit Ethernet, I350 T2)	19.116012
Intel GigE-Network Card PCI Express (Quad-port Gigabit Ethernet, I350 T4 V2 SVR)	19.116011

10.4 Device dimensions





(Dimensions given in mm)

11 Support and contact

Support

Phone: +49 911 97282-14

Fax: +49 911 97282-33

E-Mail: support@iba-ag.com

Note

If you require support, specify the serial number (iba-S/N) of the product.

Contact

Headquarters

iba AG

Koenigswarterstrasse 44
D-90762 Fuerth
Germany

Phone.: +49 911 97282-0
Fax: +49 911 97282-33
E-mail: iba@iba-ag.com

Mailing address

iba AG
Postbox 1828
D-90708 Fuerth
Germany

Delivery address

iba AG
Gebhardtstrasse 10
DE-90762 Fuerth
Germany

Regional and Worldwide

For contact data of your regional iba office or representative please refer to our web site **www.iba-ag.com.**