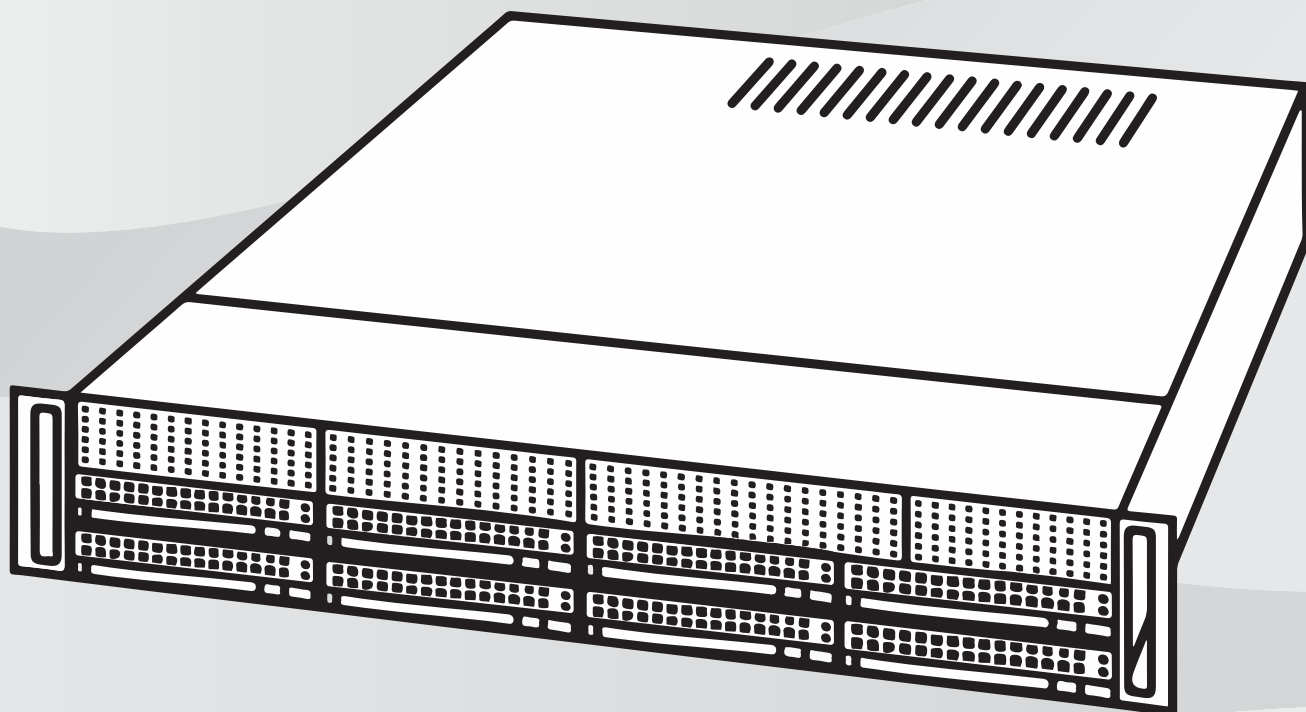




BOSCH

DIVAR IP all-in-one 7000 2U

DIP-7380-00N | DIP-7384-8HD | DIP-7388-8HD | DIP-738C-8HD



en

Installation manual

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1 Safety

Observe the safety precautions in this chapter.

1.1 Safety message explanation

**Warning!**

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

**Caution!**

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**Notice!**

Indicates a situation which, if not avoided, could result in damage to the equipment or environment, or data loss.

1.2 General safety precautions

Follow these rules to ensure general safety:

- Keep the area around the system clean and free of clutter.
- Place the chassis top cover and any system components that have been removed away from the system on a table so that they won't accidentally be stepped on.
- While working on the system, do not wear loose clothing such as neckties and unbuttoned shirt sleeves, which can come into contact with electrical circuits or be pulled into a cooling fan.
- Remove any jewelry or metal objects from your body, which are excellent metal conductors that can create short circuits and harm you if they come into contact with printed circuit boards or areas where power is present.
- After accessing the inside of the system, close the system back up and secure it to the rack unit after ensuring that all connections have been made.
- The system is heavy when fully loaded. When lifting the system, two people at either end should lift slowly with their feet spread out to distribute the weight. Always keep your back straight and lift with your legs.

**Caution!**

Installation should only be performed by qualified service personnel in accordance with applicable local codes.

**Caution!**

The Low Voltage power supply unit must comply with EN/UL 60950. The power supply must be a SELV-LPS unit or a SELV - Class 2 unit (Safety Extra Low Voltage - Limited Power Source).

**Warning!**

Interruption of mains supply:

Voltage is applied as soon as the mains plug is inserted into the mains socket.

However, for devices with a mains switch, the device is only ready for operation when the mains switch (ON/OFF) is in the ON position. When the mains plug is pulled out of the socket, the supply of power to the device is completely interrupted.

**Warning!**

Removing the housing:

To avoid electric shock, the housing must only be removed by qualified service personnel.

Before removing the housing, the plug must always be removed from the mains socket and remain disconnected while the housing is removed. Servicing must only be carried out by qualified service personnel. The user must not carry out any repairs.

**Warning!**

Power cable and AC adapter:

When installing the product, use the provided or designated connection cables, power cables and AC adapters. Using any other cables and adapters could cause a malfunction or a fire.

Electrical Appliance and Material Safety Law prohibits the use of UL or CSA-certified cables (that have UL/CSA shown on the code) for any other electrical devices.

**Warning!**

Lithium battery:

Batteries that have been inserted wrongly can cause an explosion. Always replace empty batteries with batteries of the same type or a similar type recommended by the manufacturer. Handle used batteries carefully. Do not damage the battery in any way. A damaged battery may release hazardous materials into the environment.

Dispose of empty batteries according to the manufacturer's instructions, or local directives.

**Warning!**

Handling of lead solder materials used in this product may expose you to lead, a chemical known to the State of California to cause birth defects and other reproductive harm.

**Notice!**

Electrostatically sensitive device:

To avoid electrostatic discharges, the CMOS/MOSFET protection measures must be carried out correctly.

When handling electrostatically sensitive printed circuits, grounded anti-static wrist bands must be worn and the ESD safety precautions observed.

**Notice!**

Installation should only be carried out by qualified customer service personnel in accordance with the applicable electrical regulations.

Read, follow, and retain for future reference all of the following safety instructions. Follow all warnings before operating the device.

- Clean only with a dry cloth. Do not use liquid cleaners or aerosol cleaners.
- Do not install device near any heat sources such as radiators, heaters, stoves, or other equipment (including amplifiers) that produce heat.

- Never spill liquid of any kind on the device.
- Take precautions to protect the device from power and lightning surges.
- Unless qualified, do not attempt to service a damaged device yourself. Refer all servicing to qualified service personnel.
- Install in accordance with the manufacturer's instructions in accordance with applicable local codes.
- Use only attachments/accessories specified by the manufacturer.
- Protect all connection cables from possible damage, particularly at connection points.
- Do not defeat the safety purpose of a polarized or ground-type plug.
- Permanently connected devices must have an external, readily operable mains plug or all-pole mains switch in accordance with installation rules.
- Pluggable devices must have an easily accessible socket-outlet installed near the equipment.
- Unplug the unit from the outlet before cleaning. Follow any instructions provided with the unit.
- Any openings in the unit enclosure are provided for ventilation to prevent overheating and ensure reliable operation. Do not block or cover these openings.
- Do not place the unit in an enclosure unless proper ventilation is provided, or the manufacturer's instructions have been adhered to.
- Install the unit only in a dry, weather-protected location.
- Do not use this unit near water, for example near a bathtub, washbowl, sink, laundry basket, in a damp or wet basement, near a swimming pool, in an outdoor installation, or in any area classified as a wet location.
- To reduce the risk of fire or electrical shock, do not expose this unit to rain or moisture.
- Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electrical shock.
- Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.
- Operate the unit only from the type of power source indicated on the label. Use only the power supply provided or power supply units with UL approval and a power output according to LPS or NEC Class 2.
- Do not open or remove the cover to service this unit yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
- Be sure the service technician uses replacement parts specified by the manufacturer. Unauthorized substitutions could void the warranty and cause fire, electrical shock, or other hazards.
- Safety checks should be performed upon completion of service or repairs to the unit to ensure proper operating condition.
- Observe the relevant electrical engineering regulations.
- When installing in a switch cabinet, ensure that the unit and the power supply units have sufficient grounding.
- Connect the unit to an earthed mains socket.
- Use proper CMOS/MOS-FET handling precautions to avoid electrostatic discharge (ESD).
- For protection of the device, the branch circuit protection must be secured with a maximum fuse rating of 16 A. This must be in accordance with NEC800 (CEC Section 60).
- Disconnect the power before moving the unit. Move the unit with care. Excessive force or shock may damage the unit and the hard disk drives.

- All the input/output ports are Safety Extra Low Voltage (SELV) circuits. SELV circuits should only be connected to other SELV circuits.
- If safe operation of the unit cannot be ensured, remove it from service and secure it to prevent unauthorized operation. In such cases, have the unit checked by Bosch Security Systems.
- Disconnect power supply and arrange for the device to be serviced by qualified personnel in the following cases, because safe operation is no longer possible:
 - The power cable/plug is damaged.
 - Liquids or foreign bodies have entered the device.
 - The device has been exposed to water or extreme environmental conditions.
 - The device is faulty despite correct installation/operation.
 - The device has fallen from a height, or the housing has been damaged.
 - The device was stored over a long period under adverse conditions.
 - The device performance is noticeably changed.

1.3 Electrical safety precautions

Basic electrical safety precautions should be followed to protect you from harm and the system from damage:

- Be aware of the locations of the power on/off switch on the chassis as well as the room's emergency power-off switch, disconnection switch or electrical outlet. If an electrical accident occurs, you can then quickly remove power from the system.
- Do not work alone when working with high voltage components.
- Disconnect the power cables before installing or removing any components from the computer, including the backplane. When disconnecting power, you should first turn off the system and then unplug the power cords from all the power supply modules in the system.
- Disconnect the power cable before installing or removing any cables from the backplane.
- When working around exposed electrical circuits, another person who is familiar with the power-off controls should be nearby to switch off the power if necessary.
- Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage any electrical components or circuit boards they come into contact with.
- The power supply power cords must include a grounding plug and must be plugged into grounded electrical outlets. The unit has more than one power supply cord. Disconnect both power supply cords before servicing to avoid electrical shock.
- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.
- Mainboard replaceable soldered-in fuses: Self-resetting PTC (Positive Temperature Coefficient) fuses on the mainboard must be replaced by trained service technicians only. The new fuse must be the same or equivalent as the one replaced. Contact technical support for details and support.



Caution!

Replaceable batteries

Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the manufacturer's instructions.

**Caution!**

DVD-ROM Laser: To prevent direct exposure to the laser beam and hazardous radiation exposure, do not open the enclosure or use the unit in any unconventional way.

1.4 ESD precautions

**Notice!**

Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle the electronic components very carefully.

Electrostatic Discharge (ESD) is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. The following measures are generally sufficient to neutralize this difference before contact is made to protect your equipment from ESD:

- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- Use a grounded wrist strap designed to prevent static discharge.
- Keep all components and printed circuit boards (PCBs) in their antistatic bags until ready for use.
- Touch a grounded metal object before removing the board from the antistatic bag.
- Do not let components or printed circuits boards come into contact with your clothing, which may retain a charge even if you are wearing a wrist strap.
- Handle a board by its edges only. Do not touch its components, peripheral chips, memory modules or contacts.
- When handling chips or modules, avoid touching their pins.
- Put the mainboard and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the mainboard.

1.5 Operating precautions

The chassis cover must be in place when the system is operating to assure proper cooling. Out of warranty damage to the system can occur if this practice is not strictly followed.

1.6 Notices

**Notice!**

This is a **class A** product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

**Notice!**

Video loss is inherent to digital video recording; therefore, Bosch Security Systems cannot be held liable for any damage that results from missing video information. To minimize the risk of losing information, we recommend multiple, redundant recording systems, and a procedure to back up all analog and digital information.



Disposal

Your Bosch product has been developed and manufactured using high-quality materials and components that can be reused.

This symbol means that electronic and electrical devices that have reached the end of their working life must be disposed of separately from household waste.

In the EU, separate collecting systems are already in place for used electrical and electronic products. Please dispose of these devices at your local communal waste collection point or at a recycling center.



Notice!

Do not dispose batteries in household waste. Dispose of batteries only at suitable collection points and, in the case of lithium batteries, mask the poles.



Caution!

Battery replacement - For qualified service personnel only

A lithium battery is located inside the unit enclosure. To avoid danger of explosion, replace the battery as per instructions. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of the replaced battery in an environmentally friendly way and not with other solid waste. Refer all servicing to qualified service personnel.



Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury and/or serious damage to the unit.

Information on sales, delivery, storage, and working life period

No restrictions or conditions apply for the sale or delivery of this product.

If stored under the specified conditions, the storage period is not restricted.

If used for the specified purpose in compliance with the safety instructions and technical specifications, the working life period of the product is in accordance with normal expectations for this type of product.

Information on equipment use

Device is for professional installation only. Operation of the devices is not intended for personal or household use. There are no restrictions to use the device in commercial and industrial areas, except those mentioned in the Safety information.

1.7

FCC and ICES compliance

(only for U.S.A. and Canada)

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 manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

1.8

Data security precautions

For data security reasons observe the following:

- Physical access to the system shall be restricted to authorized personnel only. It is strongly suggested to place the system in an access control protected area, in order to avoid physical manipulation of the system.
- Windows online update functionality or the corresponding monthly roll-up patches for offline installation can be used to install OS security updates.
- Limiting local network access to trusted devices is strongly suggested. Details are described in the Technical note Network Authentication 802.1X and in the Bosch IP Video and Data Security Guidebook, available in the online product catalog.
- For access via public networks only use the secure (encrypted) communication channels.

2 **About this manual**

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the chassis. Installation and maintenance should be performed by experienced and qualified technicians only.

3 System overview

3.1 Chassis components

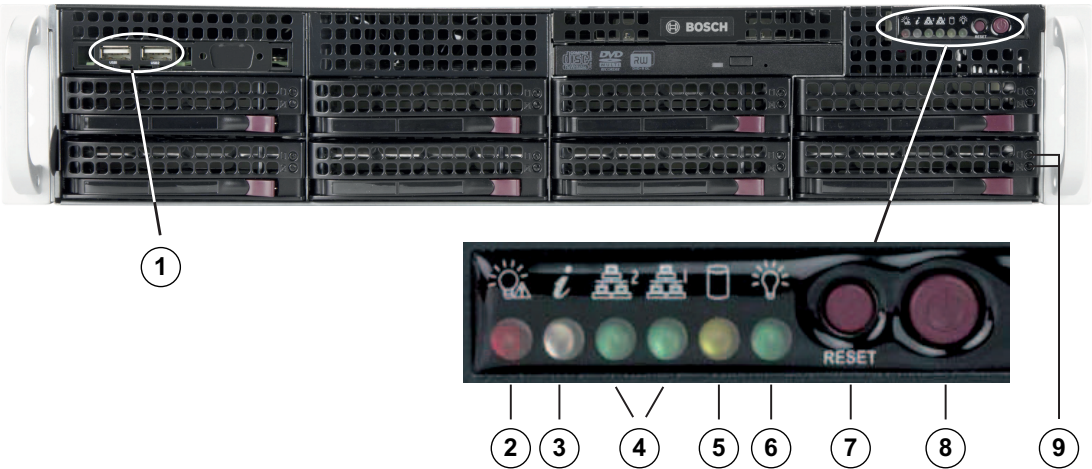
This chapter describes the most common components included with your chassis. For more information, see the installation instructions detailed later in this manual.

Component	Description
Hard drives	The chassis includes 8 hard drive bays for SATA hard drives. These hard drives are hot swappable. Once setup correctly, these drives can be removed without turning off the system. In addition, these drives support SES2 (SATA). Note: For empty chassis, the hard drives must be purchased separately. For the latest shipping lists, see the datasheet in the online product catalog.
DVD-ROM drive	This drive allows you to quickly install or save data.
Fans	The system fans provide cooling for the chassis. These fans circulate air through the chassis as a means of lowering the chassis internal temperature. The system fans are powered from the motherboard. The fans are 2U high.
Air shroud	Air shrouds are shields, usually plastic, which conduct the airflow directly to where it is needed to maximize fan efficiency. Always use the air shroud included with your chassis.
Power supply	The chassis has redundant power supplies. Redundant power supplies are hot-swappable, and can be changed without turning off the system. Each power supply is auto-switching capable. This enables the power to automatically sense and operate at a 100 V to 240 V input voltage. An amber light will be illuminated on the power supply when the power is off. An illuminated green light indicates that the power supply is operating.
I/O expansion slots	The chassis includes 7 low profile expansion slots.
Mounting rails	The unit can be placed in a rack for secure storage and use. To set up your rack, follow the instructions included in this manual.
Control panel	The control panel provides a monitoring and control interface. LEDs indicate system status and buttons control system power.

3.2 Device views

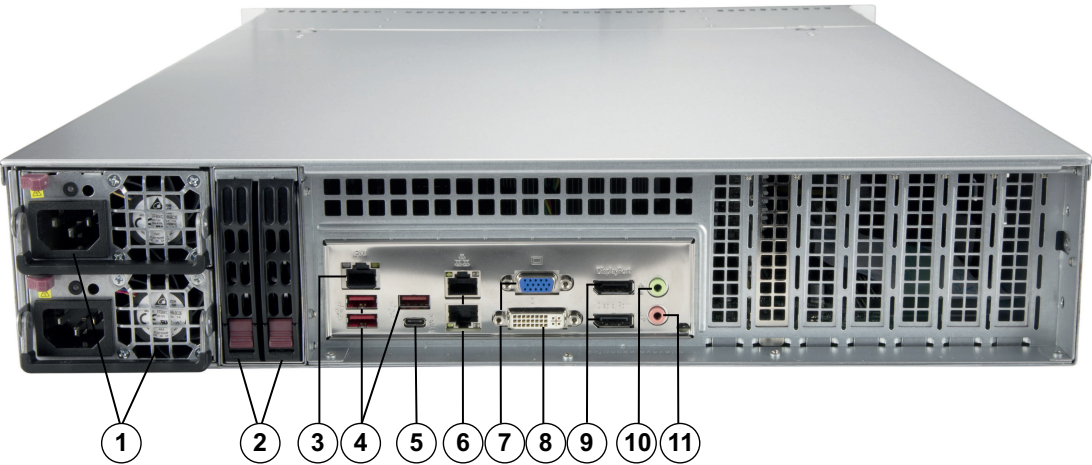
The chassis includes a control panel on the front that features power buttons and status monitoring LEDs. On the rear there are various I/O ports as well as power supply modules.

Front view:



1	2 USB 2.0 ports	2	Power failure LED
3	Information LED	4	NIC1 and NIC2 LEDs
5	HDD (drive activity) LED	6	Power LED
7	Reset button	8	Power button
9	Hard drive carrier LEDs		

Rear view:



1	2 power supply modules	2	2 redundant SSD drives for operating system (RAID1 mirror)
3	IPMI LAN	4	3 USB ports 3.1 Gen 2 (Type A)
5	USB port 3.1 Gen 2 (Type C)	6	2 LAN ports (teamed) Note: Do not change the teaming mode!
7	VGA display output (disabled)	8	DVI-I port
9	2 DisplayPort ports	10	Audio Line out
11	Audio MIC in		

3.3 Control panel elements

The control panel located on the front of the chassis features power buttons and status monitoring LEDs.

Control panel buttons

Button	Description
 Power	The power button is used to apply or remove power from the power supply to the system. Note: Turning off system power with this button removes the main power, but keeps standby power supplied to the system. To remove all power, unplug the system before performing maintenance tasks.
 Reset	The reset button is used to reboot the system.

Control panel LEDs

The control panel LEDs provide status information about the system.

LED	Description	
 Power failure	This LED indicates that a power supply module has failed.	
 Information	This LED indicates the system status.	
	System status	Description
	Continuously on and red	An overheat condition has occurred. (This may be caused by cable congestion.)
	Blinking red (1 Hz)	Fan failure: check for an inoperative fan.
	Blinking red (0.25 Hz)	Power failure: check for an inoperative power supply.
	Solid blue	Local UID has been activated. Use this function to locate the unit in a rack environment.
	Blinking blue (300 msec)	Remote UID has been activated. Use this function to locate the unit from a remote location.
 NIC2	This LED indicates network activity on GLAN2 when flashing.	
 NIC1	This LED indicates network activity on GLAN1 when flashing.	

LED	Description
 HDD	This LED indicates activity on the HDDs or peripheral drives when flashing.
 Power	This LED indicates that power is being supplied to the system's power supply units. This LED should normally be illuminated when the system is operating.

3.4 Hard drive carrier LEDs

The chassis supports hot-swappable SAS/SATA hard drives in hard drive carriers. Each hard drive carrier has two LEDs on the front of the carrier: one activity LED and one status LED.

Note: For non-RAID configurations, some LED indications are not supported, for example hot spare.

	LED color	LED state	Description
Activity LED	Blue	Solid On	Hard drive is installed.
	Blue	Blinking	I/O activity.
Status LED	Red	Solid On	Failed hard drive with RSTe support.
	Red	Blinking at 1 Hz	Rebuild hard drive with RSTe support.
	Red	Blinking with two blinks and one stop at 1 Hz	Hot spare for hard drive with RSTe support.
	Red	On for five seconds, then off	Power on for hard drive with RSTe support.
	Red	Blinking at 4 Hz	Identify hard drive with RSTe support.

3.5 Power supply LEDs

On the rear of the power supply module, an LED displays the status.

LED color	LED state	Description
Green	Solid On	Power supply is on.
Amber	Solid On	The power supply is plugged in and turned off or The system is off but in an abnormal state.
	Blinking	The system power supply temperature has reached 63 °C. The system will automatically turn off when the power supply temperature reaches 70 °C and restart when the power supply temperature goes below 60 °C.

4 Preparing for installation

Read this section in its entirety before you begin the installation.

4.1 Choosing the installation location

- Place the system near at least one grounded power outlet.
- Place the system in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.
- Leave approximately 25 inches clearance in front of the rack to be able to open the front door completely.
- Leave approximately 30 inches of clearance in the back of the rack to allow for sufficient airflow and ease in servicing.

**Notice!**

This equipment is intended for installation in Restricted Access Location or equivalent.

**Notice!**

This product is not suitable for use with visual display work place devices according to §2 of the German Ordinance for Work with Visual Display Units.

4.2 Rack precautions

**Warning!**

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them.
- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- In single rack installations, attach stabilizers to the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.
- In multiple rack installations, couple the racks together.
- Always make sure the rack is stable before extending a component from the rack.
- Extend only one component at a time - extending two or more simultaneously may cause the rack to become unstable.

4.3 General system precautions

- Review the electrical and general safety precautions that came with the components you are adding to your chassis.
- Determine the placement of each component in the rack before installing the rails.
- Install the heaviest components on the bottom of the rack first, and then work up.
- Use a regulating uninterruptible power supply (UPS) to protect the system from power surges and voltage spikes if you want to keep your system operating in case of a power failure.
- Allow the hard drives and power supply modules to cool before touching them.

- Always keep the rack's front door and all panels and components on the system closed when not servicing to maintain proper cooling.

4.4 Installation considerations

Ambient operating temperature

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the ambient temperature of the room. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (T_{mra}).

Reduced airflow

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

Mechanical loading

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

Circuit overloading

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable ground

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (i.e. the use of power strips, etc.).

5 Rack installation

This section provides information on installing the chassis into a rack unit. There are a variety of rack units on the market, which may mean the assembly procedure will differ slightly. Also refer to the installation instructions that came with the rack unit you are using.

**Notice!**

This rail will fit a rack between 26" and 33.5" deep.

5.1

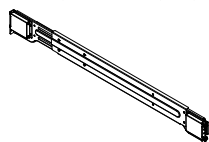
Separating the sections of the rack rails

The chassis package includes two rail assemblies in the rack mounting kit. Each assembly consists of two sections:

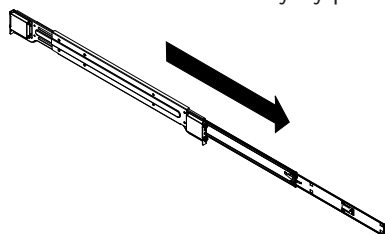
- an inner fixed chassis rail that secures directly to the chassis
- an outer fixed rack rail that secures directly to the rack itself.

To separate the inner and outer rails:

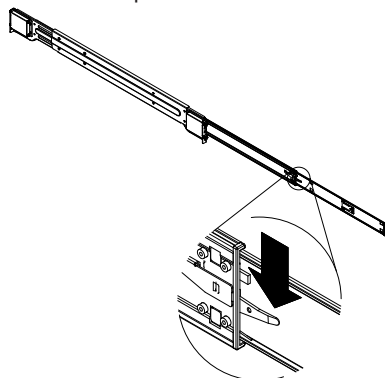
1. Locate the rail assembly in the chassis packaging.



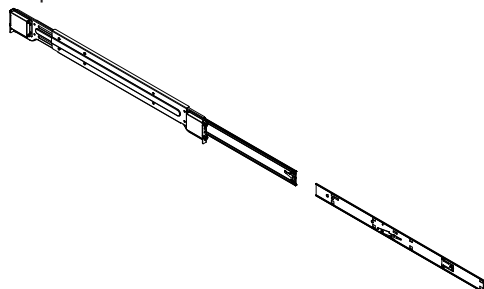
2. Extend the rail assembly by pulling it outward.



3. Press the quick-release tab.



4. Separate the inner rail extension from the outer rail assembly.



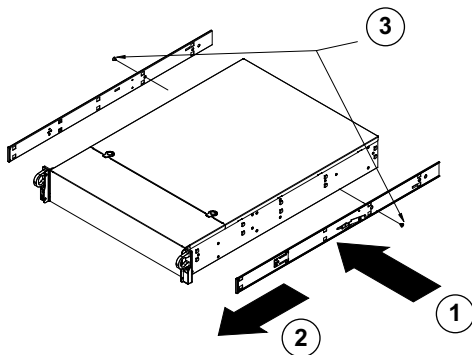
5.2 Installing the inner rails on the chassis

The chassis includes a set of inner rails in two sections: inner rails and inner rail extensions. The inner rails are pre-attached to the chassis, and do not interfere with normal use of the chassis if you decide not to use a server rack. The inner rail extension is attached to the inner rail to mount the chassis in the rack.



Caution!

Do not pick up the chassis with the front handles. They are designed to pull the system from a rack only.

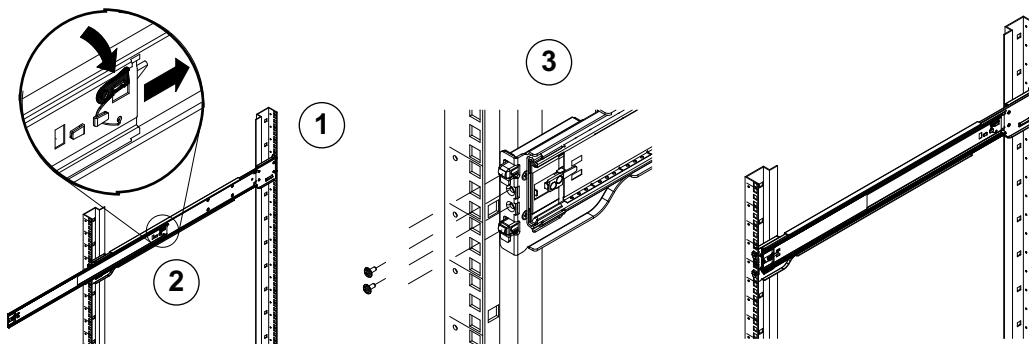


To install the inner rails:

1. Place the inner rail extensions on the side of the chassis aligning the hooks of the chassis with the rail extension holes. Make sure the extension faces "outward" just like the pre-attached inner rail.
2. Slide the extension toward the front of the chassis.
3. Secure the chassis with 2 screws as illustrated.
4. Repeat steps 1-3 for the other inner rail extension.

5.3 Installing the outer rails to the rack

Outer rails attach to the rack and hold the chassis in place. The outer rails for the chassis extend between 30 inches and 33 inches.



To install the outer rails to the rack:

1. Secure the back end of the outer rail to the rack, using the screws provided.
2. Press the button where the two outer rails are joined to retract the smaller outer rail.
3. Hang the hooks of the rails onto the rack holes and if desired, use screws to secure the front of the outer rail onto the rack.
4. Repeat steps 1-3 for the remaining outer rail.

Locking Tabs

Both chassis rails have a locking tab, which serves two functions. The first is to lock the system into place when installed and pushed fully into the rack, which is its normal position. Secondly, these tabs also lock the system in place when fully extended from the rack. This prevents the system from coming completely out of the rack when you pull it out for servicing.

5.4**Installing the chassis in the rack**

You can install the chassis in a standard rack or in a Telco type rack.

**Warning!**

Stability hazard

Before sliding the unit out for servicing make sure that the rack stabilizing mechanism is in place, or the rack is bolted to the floor. Failure to stabilize the rack can cause the rack to tip over.

**Warning!**

Do not pick up the unit with the front handles. The handles are designed to pull the system from a rack only.

**Notice!**

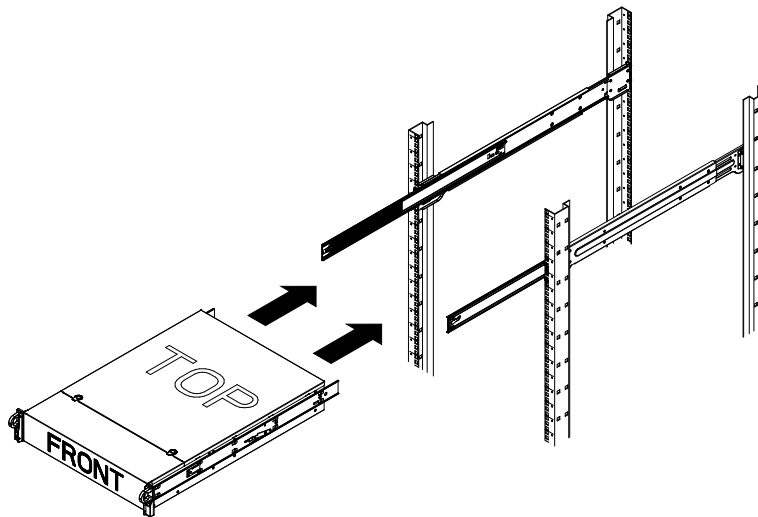
Mounting the chassis into the rack requires at least two people to support the chassis during installation. Please follow safety recommendations printed on the rails.

**Notice!**

Always install chassis into racks from the bottom up.

Installing the chassis in a standard rack**To install the chassis in a standard rack:**

1. Extend the outer rails.
2. Align the inner rails of the chassis with the outer rails on the rack.
3. Slide the inner rails into the outer rails, keeping the pressure even on both sides.
4. Push the chassis completely into the rack and make sure that it clicks into the locked position.
5. Optionally, use screws to secure the front of the chassis to the rack.



Installing the chassis in a Telco type rack



Notice!

Do not use a two post "Telco" type rack.

To install the chassis in a Telco type rack:

1. Determine how far the chassis will extend out the front of the rack.
Put larger chassis so that the weight between front and back is balanced.
If a bezel is included on the chassis, remove it.
2. Attach one L-shaped bracket to each side of the chassis front and one L-shaped bracket to each side of the chassis rear.
3. Make sure that the brackets are positioned with just enough space to fit the width of the Telco rack.
4. Slide the chassis into the rack and tighten the brackets to the rack.

6 Installing a SATA hard drive

The unit has hot-swappable hard drives, which can be removed without turning off the system. The hard drives are mounted in hard drive carriers to simplify their installation and removal from the chassis. These hard drive carriers also help promote proper airflow for the hard drive bays.

Procedure

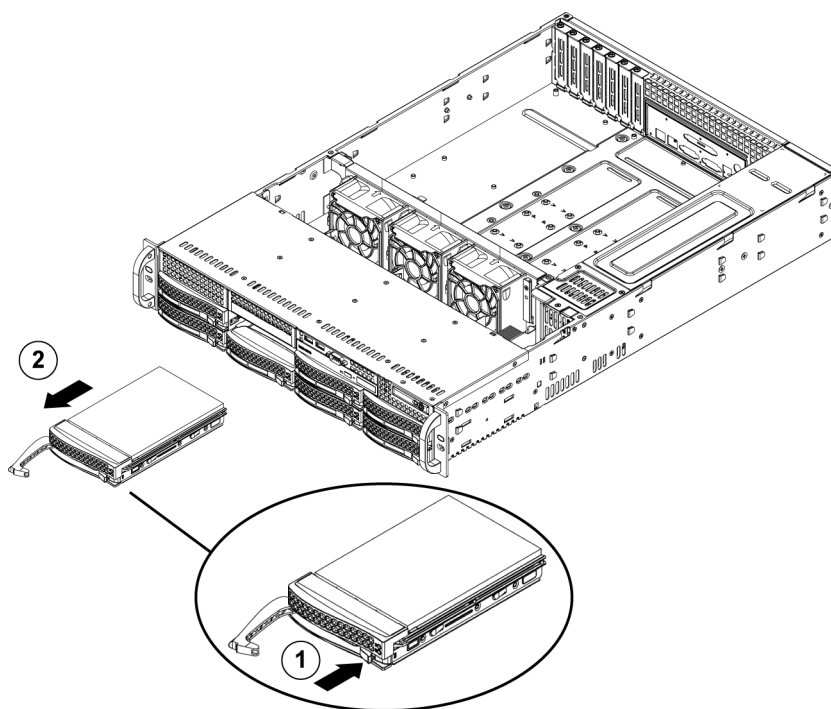
To install a hard drive, you have to do following steps:

1. *Removing a hard drive carrier from a hard drive bay, page 23.*
2. *Installing a hard drive into a hard drive carrier, page 23.*
3. *Installing a hard drive carrier into a front drive bay, page 25.*

6.1 Removing a hard drive carrier from a hard drive bay

To remove a hard drive carrier from a hard drive bay:

1. Press the release button to the right of the hard drive carrier. This extends the hard drive carrier handle.
2. Use the handle to pull the hard drive carrier out of the chassis.



1	Release button	2	Hard drive carrier handle
---	----------------	---	---------------------------



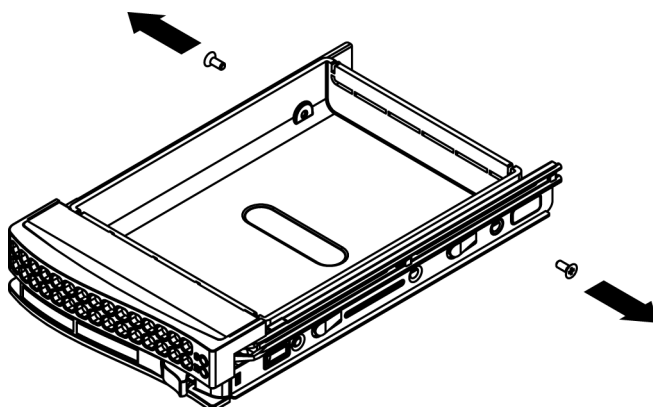
Notice!

Except for short periods of time (swapping hard drives), do not operate the unit with the hard drives removed from the bays.

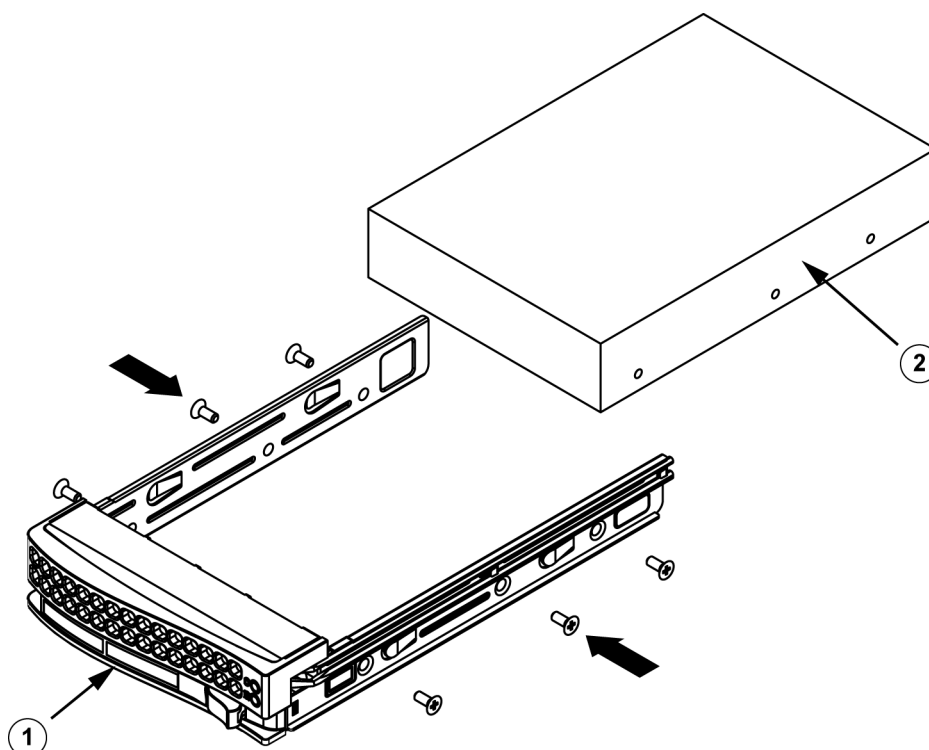
6.2 Installing a hard drive into a hard drive carrier

To install a hard drive into a hard drive carrier:

1. Remove the screws which secure the dummy drive to the hard drive carrier.



2. Remove the dummy drive from the hard drive carrier and place the hard drive carrier on a flat surface.
3. Slide a new hard drive into the hard drive carrier with the printed circuit board side facing down.
4. Align the mounting holes in both, the hard drive carrier and the hard drive.
5. Secure the hard drive to the hard drive carrier with the six screws.



1	Hard drive carrier	2	SATA hard drive
---	--------------------	---	-----------------

Notice!

Bosch recommends using the respective Bosch hard disk drives. The hard disk drives as one of the critical component are carefully selected by Bosch based on available failure rates. Hard disk drives not delivered from Bosch are not supported.

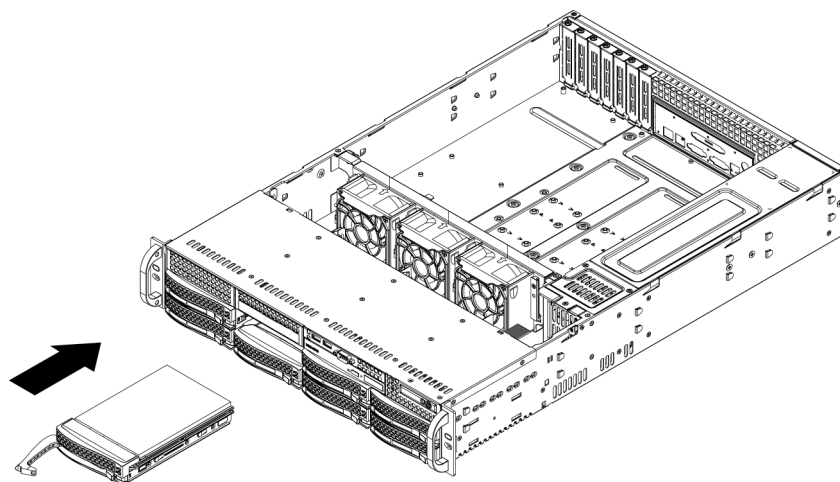
For more information about supported hard disk drives, see the datasheet in the Bosch Online Product Catalog at:
www.boschsecurity.com



6.3 Installing a hard drive carrier into a front drive bay

To install a hard drive carrier into a hard drive bay:

1. Insert the hard drive carrier horizontally into the hard drive bay, orienting the hard drive carrier so that the release button is on the right.
2. Push the hard drive carrier into the bay until the handle retracts and the hard drive clicks into the locked position.



7 Turning on the system

To turn on the system:

1. Plug the power cord from the power supply unit into a high-quality power strip that offers protection from electrical noise and power surges.
Bosch recommends to use an uninterruptible power supply (UPS).
2. Push the power button on the control panel to turn on the system.

8 System setup

The DIVAR IP all-in-one 7000 systems are based on the operating system Microsoft Windows Server IoT 2019 for Storage Standard. The operating system provides an user interface for initial server configuration, unified storage appliance management, simplified setup and storage management, and support for Microsoft iSCSI Software Target.

It is specially tuned to provide optimal performance for network-attached storage. The Microsoft Windows Server IoT 2019 for Storage Standard operating system provides significant enhancements in storage management scenarios, as well as integration of storage appliance management components and functionality.



Notice!

This chapter is valid for DIVAR IP all-in-one 7000 models that come with pre-installed hard drives.

The operating system of empty units loaded with third party hard drives will start normally, but the added hard drives must be configured with the RAID utility prior to initial software setup.

Refer to

- *Configuring hard drives using the RAID setup, page 28*

8.1 Default settings

DIVAR IP systems are shipped with a pre-installed Configuration Wizard from factory.

All DIVAR IP systems are preconfigured with a default IP address and with default iSCSI settings:

- IP Address: automatically assigned by DHCP (fallback IP address: 192.168.0.200).
- Subnet mask: automatically assigned by DHCP (fallback subnet mask: 255.255.255.0).

Default user settings for administrator account

- User: BVRAdmin
- Password: to be set at first logon.

8.2 Prerequisites

Observe the following:

- DIVAR IP needs to have an active network link during installation. Make sure that the network switch you are connecting to is powered on.
- The default IP address must not be occupied by any other device in the network. Make sure that the default IP addresses of existing DIVAR IP systems in the network are changed before adding another DIVAR IP.

8.3 Operating modes

Operating modes

The DIVAR IP all-in-one systems can operate in three different modes:

- Full video recording and management system, utilizing the BVMS and VRM core components and services: This mode allows for advanced video management features such as event and alarm handling.
- Pure video recording system, utilizing the VRM core components and services.
- iSCSI storage expansion for a BVMS or VRM system, which runs on a different hardware.

**Notice!**

Recorded video streams need to be configured in a way that the maximum bandwidth of the system (BVMS/VRM base system plus iSCSI storage expansions) is not exceeded.

**Notice!**

For further details, refer to the User manual.

8.4

Preparing hard drives for video recording

Systems that come pre-equipped with hard drives from factory are ready to record out-of-the-box.

Hard drives that have been added to an empty system need to be prepared before using them for video recording.

To prepare the hard drives for video recording, you have to do following steps:

1. *Configuring hard drives using the RAID setup, page 28.*
2. *Recovering the unit, page 28.*

8.4.1

Configuring hard drives using the RAID setup

If you have added third party hard drives to empty units, you must configure the hard drives using the RAID setup utility.

**Notice!**

The RAID setup process is not necessary for units with pre-installed hard drives. These units are delivered with a default configuration.

To configure the hard drive using RAID BIOS:

1. Install all hard drives.
2. Turn on the system and press Ctrl+R when **MegaRAID Configuration Utility** is displayed on the screen. The display appears before Windows starts.
3. In the **MegaRAID Configuration Utility** program, select **Create Virtual Drive**.
4. Apply the following settings:
 - **RAID Level:** RAID-5 (alternatively RAID-6 or RAID-5 plus hot spare)
 - Under **Advanced settings:**
 - Strip Size:** 64KB
 - Write Policy:** Write Back
 - Note:** All other settings remain unchanged.
5. Select all hard drives that are part of the RAID group.
6. Start the virtual drive initialization.
7. Exit the **MegaRAID Configuration Utility** program.
8. Perform a complete system recovery (Initial Factory Setup).

8.4.2

Recovering the unit

Following procedure describes how to restore the factory default image.

To restore the unit to factory default image:

1. Start the unit and press **F7** during the BIOS power-on-self-test.
The Recovery menu is displayed.
2. Select one of the following:

- **Initial factory setup:** restores to factory default image and deletes all data on the HDDs.
or
- **System Recovery (back to Factory Defaults):** restores to factory default image; data on the HDDs will not be deleted.

Note:

While the **System Recovery** option doesn't delete video footage stored on the data HDDs, it still replaces the complete OS partition (including VMS settings) with a default configuration. In order to access existing video footage after recovery, the VMS configuration needs to be exported before System Recovery and re-imported afterwards.



Notice!

Do not turn off the unit during the process. This will damage the Recovery media.

3. The unit starts from the Recovery media. If the setup is successful, press **Yes** to restart the system.
4. Windows performs the initial setup of the operating system. The unit restarts after Windows has completed the setup.
5. After the restart of the unit, the factory settings are installed.

9 Troubleshooting

9.1 Overheating

Problem	Solution
An overheating condition has occurred. The system status LED  is continuously on.	– Make sure that no cables obstruct the airflow in the system. – Make sure that all fans are present and operating normally. – Make sure that the chassis covers are installed. – Make sure that the heat sinks are installed properly. – Make sure that the ambient room temperature is not too high.

10 Maintenance

This chapter covers the steps required to install components and perform maintenance on the chassis.

**Notice!**

Installation should only be carried out by qualified customer service personnel in accordance with the applicable electrical regulations.

**Caution!**

Review the warnings and precautions listed in the manual before setting up or servicing this chassis.

10.1 Replacement components

Although not frequently, you may need replacement parts for your system. To ensure the highest level of professional service and technical support, you must register the systems according to the instructions available as part of the shipment as well as online from the Bosch product catalog.

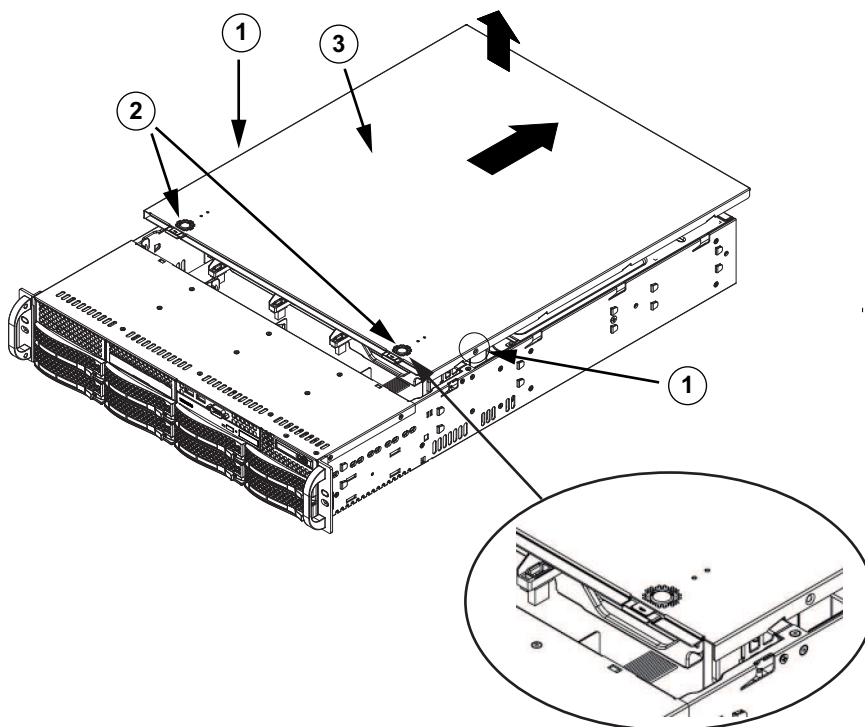
10.2 Removing power from the system

Before performing some setup or maintenance tasks, use the following procedure to ensure that power has been removed from the system.

To remove the power:

1. Shut down the system.
2. Remove the power cords from the power supplies.
3. Disconnect the cord from the power strip or wall outlet.

10.3 Removing the chassis cover



1	Fixing screws	2	Release tabs
3	Chassis cover		

To remove the chassis cover:

1. Disconnect the power supply, lay the chassis on a flat surface.
2. Remove the two screws on each side of the cover, which secure the cover to the chassis.
3. Press the release tabs to remove the cover from the locked position. Press both tabs at the same time.
4. Once the top cover is released from the locked position, slide the cover toward the rear of the chassis and lift the cover off the chassis.



Notice!

Except for short periods of time, do NOT operate the server without the cover in place. The chassis cover must be in place to allow proper airflow and prevent overheating.

10.4

Identifying a faulty SSD drive

The system provides tools for hard drive monitoring that are pre-installed on the system. Use the Intel Rapid Storage tool to identify a faulty SSD drive, if the RAID 1 mirror that holds the operation system partition is running in degraded mode.

To identify and replace SSD drives:

1. Turn on the unit and log on as user BVRAdmin. The default screen is displayed.
2. Double-click the **Intel Rapid Storage** icon on the screen.
3. Check the status of the listed SSD drives and note the port numbers.
 - SATA port 1: refers to the SSD located in the left tray
 - SATA port 2: refers to the SSD located in the right tray
4. After you have identified the faulty SSD drive, open the corresponding tray on the back of the system and replace the SSD drive.

10.5 Installing a SSD hard drive into a rear drive bay

The unit features two hot-swappable hard drives on the rear side which can be removed without powering down the system.

The hard drives are mounted in hard drive carriers to simplify their installation and removal from the chassis. These hard drive carriers also help promote proper airflow for the hard drive bays.

Procedure

To install a SSD hard drive into the rear drive bay, you have to perform following steps:

1. *Removing a hard drive carrier from a rear hard drive bay, page 33.*
2. *Installing a hard drive into a rear hard drive carrier, page 33.*
3. *Installing a hard drive carrier into a rear hard drive bay, page 34.*

10.5.1 Removing a hard drive carrier from a rear hard drive bay

To remove a hard drive carrier from a hard drive bay:

1. Press the release button to the right of the hard drive carrier. This extends the hard drive carrier handle.
2. Use the handle to pull the hard drive carrier out of the chassis.



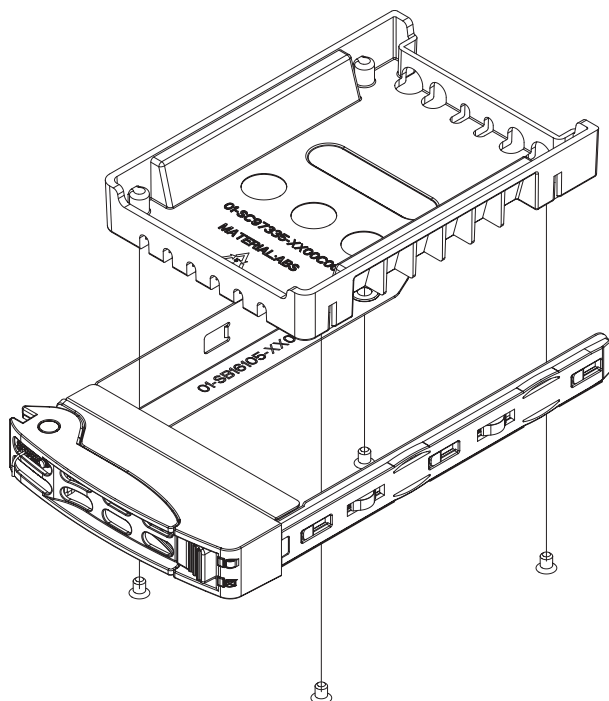
Notice!

Except for short periods of time (swapping hard drives), do not operate the unit with the hard drives removed from the bays.

10.5.2 Installing a hard drive into a rear hard drive carrier

To install a hard drive into the rear hard drive carrier:

1. Remove the screws securing the dummy drive to the hard drive carrier.
2. Remove the dummy drive from the hard drive carrier.
3. Insert a hard drive into the hard drive carrier with the printed circuit board side facing down and the connector end toward the rear of the carrier.
4. Align the mounting holes in both, the hard drive carrier and the hard drive.
Note: There are mounting holes in the hard drive carrier marked "SAS" or "SATA" to aid in correct installation.
5. Secure the hard drive to the hard drive carrier with four screws. Use the four M3 flat-head screws included in the hard disk bag of your accessory box.
Note: To secure the hard drive, you cannot reuse the screws that are used to secure the dummy drive to the tray.



Notice!



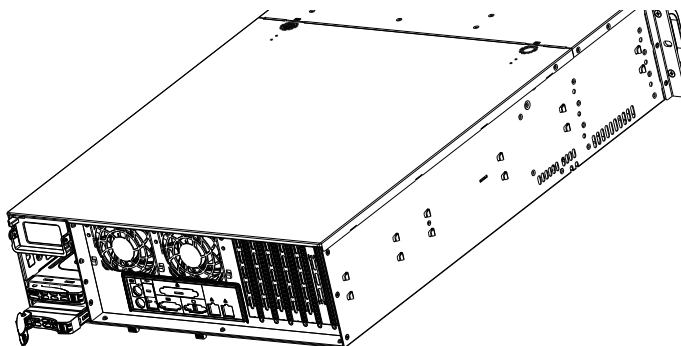
Bosch recommends using the respective Bosch hard disk drives. The hard disk drives as one of the critical component are carefully selected by Bosch based on available failure rates. Hard disk drives not delivered from Bosch are not supported. For more information about supported hard disk drives, see the datasheet in the Bosch Online Product Catalog at: www.boschsecurity.com

10.5.3

Installing a hard drive carrier into a rear hard drive bay

To install a hard drive carrier into a hard drive bay:

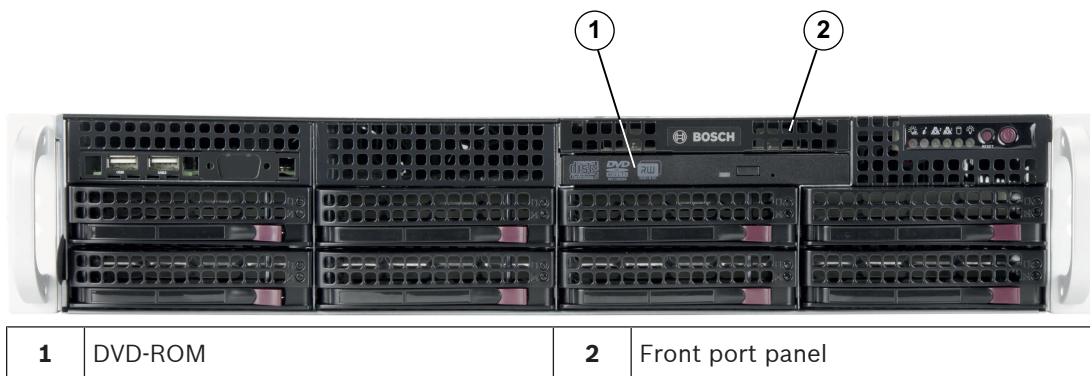
1. Insert the hard drive carrier horizontally into the hard drive bay, orienting the hard drive carrier so that the release button is on the right.
2. Push the hard drive carrier into the bay until the handle retracts and the hard drive clicks into the locked position.



10.6

Replacing the DVD ROM drive

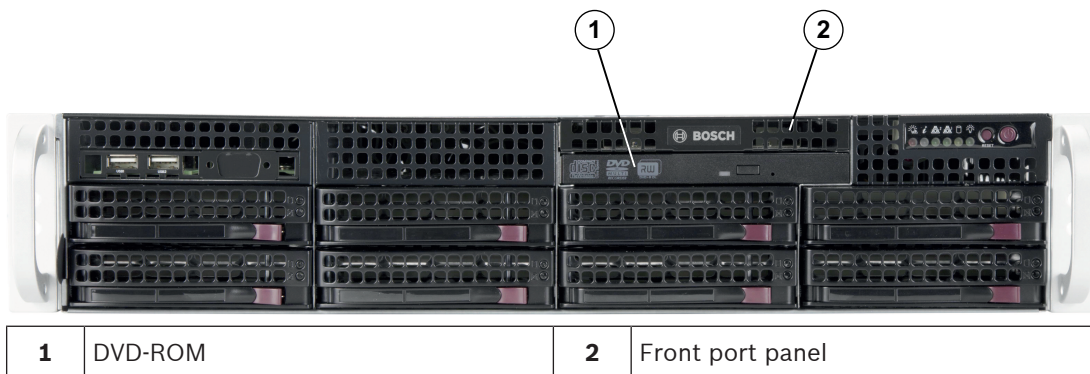
The unit includes a DVD-ROM which is pre-installed.

**To replace the DVD-ROM drive:**

1. Turn off the unit and if necessary, remove the unit from the rack.
2. Remove the chassis cover.
3. Unplug the drives power and data cables from the motherboard and/or backplane.
4. Locate the locking tab at the rear (on the left when viewed from front) of the DVD-ROM drive. Push the tab toward the drive and push the drive unit out the front of the chassis.
5. Insert the new drive unit in the slot until the tab locks in place.
6. Reconnect the data and power cables.
7. Replace the chassis cover. replace the unit in the rack, if necessary, then turn on the system.

10.7**Replacing the front port panel**

If you must install a new or replace a damaged front port panel, observe the following instructions.

**To replace the front port panel:**

1. Turn off and unplug the unit.
2. Remove the chassis cover.
3. Disconnect the power and data cables from the front port panel to other chassis components including the motherboard and backplane.
4. Remove the old port panel by depressing the release tab, then pulling the unit out of the chassis.
5. Insert the new front port panel unit in the slot until the tab locks into place.
6. Connect the data and power cables to the backplane and motherboard.

10.8**Installing the motherboard**

Motherboard problems will be handled by trained support people only.

10.9 Installing the air shroud

The air shroud does not require screws for its installation.

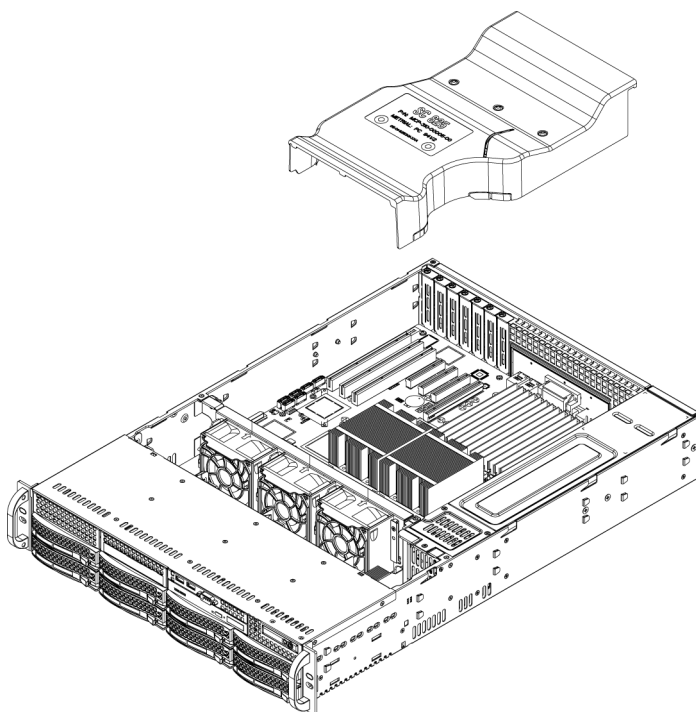


Notice!

If a 16 DIMM (13.68" x 13") motherboard is used, it is necessary to use the optional MCP-310-82502-0N air shroud.

To install the air shroud:

1. Make sure that your air shroud matches your chassis model.
2. Turn off the system and remove the cover.
3. Place the air shroud in the chassis. The air shroud fits behind the two fans closest to the power supply.



To check the air flow:

1. Make sure there are no objects to obstruct airflow in and out of the chassis. In addition, if you are using a front bezel, make sure the bezel's filter is replaced periodically.
2. Do not operate the system without drives or drive trays in the drive bays. Use only recommended material.
3. Make sure no wires or foreign objects obstruct air flow through the chassis. Pull all excess cabling out of the airflow path or use shorter cables. The control panel LEDs inform you about system status.

10.10 Replacing a system fan

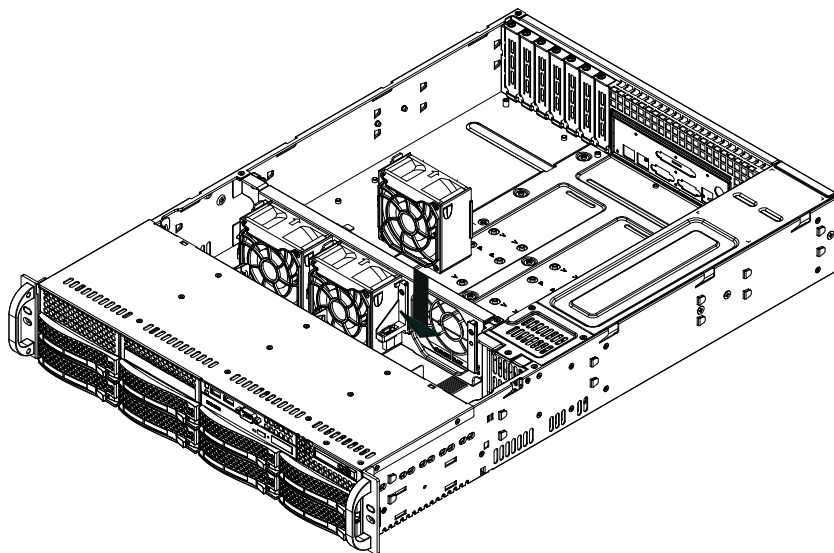


Caution!

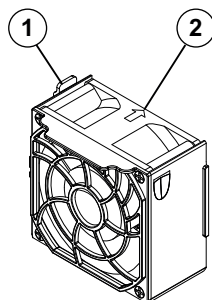
Hazardous moving parts

Keep away from moving fan blades.

The fans might still be turning when you remove the fan assembly from the chassis. Keep fingers, screwdrivers, and other objects away from the openings in the fan assembly's housing.

**To replace a system fan:**

1. If necessary, open the chassis while the power is running to determine which fan has failed.
Note: Never run the system for an extended period of time with the chassis open.
2. Turn off the power to the system and unplug the power cord from the outlet.
3. Remove the failed fan's power cord from the motherboard.
4. Press the fan release tab to lift the failed fan from the chassis and pull it completely from the chassis.



1 - Release tab

2 - Airflow direction indicator

5. Place the new fan into the vacant space in the housing while making sure the arrows on the top of the fan (indicating the airflow direction) point in the same direction as the arrows on the other fans.
6. Reconnect the power cord, turn on the system and make sure that the fan is working properly before replacing the chassis cover.
7. Replace the chassis cover.

10.11

Replacing the power supply

**Warning!**

Redundant power supplies

This unit might have more than one power supply connection. To de-energize the unit, remove all connections.

LED status:

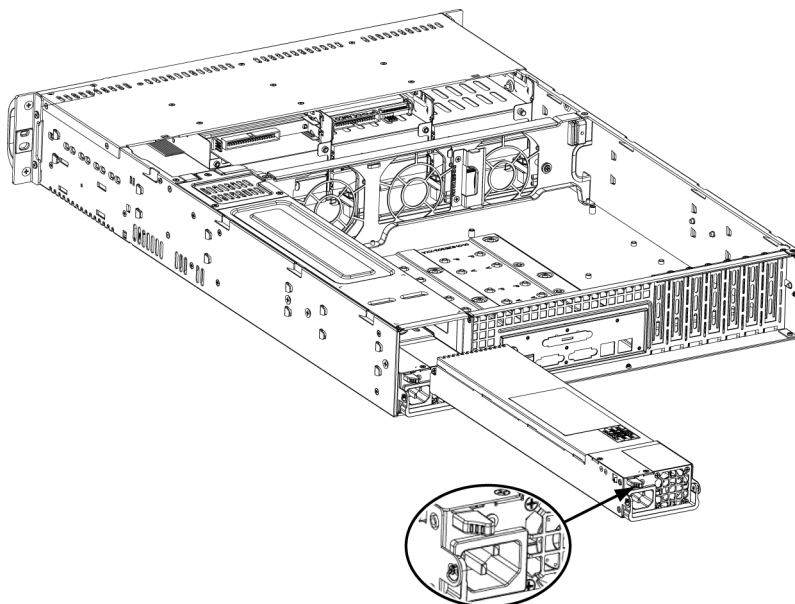
- Amber lighted LED: The power supply is off.
- Green lighted LED: The power supply is operating.

The power supply can be replaced without turning off the system if a redundant power supply is available.

Replacement units can be ordered directly from Bosch RMA desk.

To replace the power supply:

1. Unplug the AC power cord of the failed power supply.
2. Push the release tab on the back of the power supply.

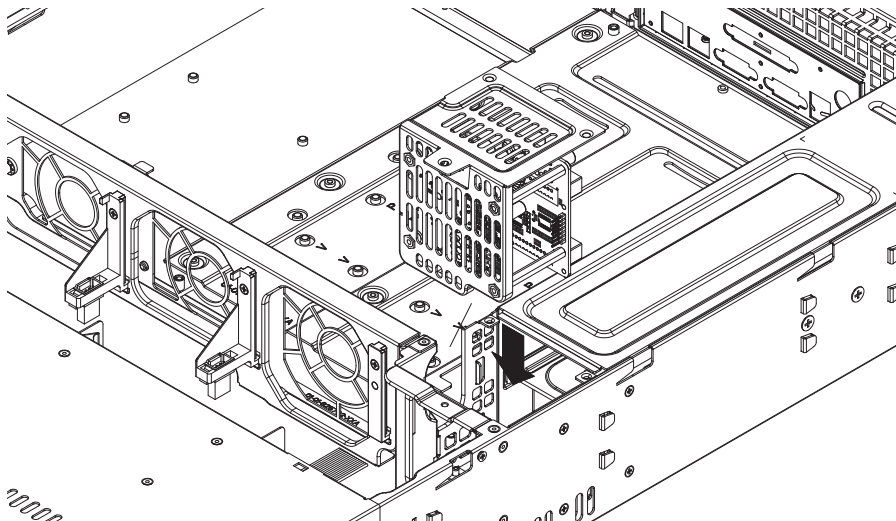


3. Pull the power supply out using the handle provided.
4. Replace the failed power supply with the same model.
5. Push the new power supply into the power bay until you hear a click.
6. Plug the AC power cord back into the power supply and turn on the unit.

10.12

Replacing the power distributor

Redundant chassis that are 2U or greater require a power distributor. The power distributor provides failover and power supply redundancy.



To replace the power distributor:

1. Turn off the unit and remove the plug from the wall socket or power strip.

2. Remove all cable connections to the power supply from the motherboard, backplane, and other components. Also, remove both power supplies.
3. Locate the power distributor between the power supply and the fan row.
4. Remove the three screws securing the power supply.
5. Gently pull the power distributor from the chassis. Gently guide all the cables through the power distributor housing.
6. Slide the new power distributor module into the power distributor housing. Make that you slide the cables through the bottom of the housing.
7. Reconnect all the power cables, replace the power supply, and insert the plug into the wall.

10.13 Service and repair

The storage system is backed by a 3-year warranty. Issues will be handled according to Bosch Service and Support guidelines.

The storage equipment is shipped with an original manufacturer Service and Support agreement.

The Bosch Technical Support is the Single Point of Contact in case of failure but the Service and Support obligations are fulfilled by the manufacturer or a partner.

In order to enable the manufacturer's Service and Support organization to fulfill the defined Service Levels, the system must be re-registered. Otherwise, the defined service level cannot be provided but only best effort.

A description what information is required and where to send is included in each shipment as paper work. The description is also electronically available in the Bosch online product catalog.

11 Additional information

11.1 Additional documentation and client software

For more information, software downloads, and documentation, visit <http://www.boschsecurity.com> and go to the respective product page in the product catalog. You can find the latest software and available upgrade packages in the **Download Area** of Bosch Security and Safety Systems under: <https://downloadstore.boschsecurity.com/>

11.2 Support services and Bosch Academy



Support

Access our **support services** at www.boschsecurity.com/xc/en/support/.

Bosch Security and Safety Systems offers support in these areas:

- [Apps & Tools](#)
- [Building Information Modeling](#)
- [Commissioning](#)
- [Warranty](#)
- [Troubleshooting](#)
- [Repair & Exchange](#)
- [Product Security](#)



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