

Fortress 1120

User's guide

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User's guide

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Notices

CE notice

The shipped version of this device complies with the requirements of the EEC directives 89/336/EEC "Electromagnetic compatibility" and 73/23/EEC "Low voltage directive". The device therefore qualifies for the CE certificate (CE=Communauté Européenne).

FCC notice

If there is an FCC statement on the device, then:

The following statement applies to the products covered in this manual, unless otherwise specified herein. The statement for other products will appear in the accompanying documentation.

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 and meets all requirements of the Canadian Interference-Causing Equipment Regulations. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in strict accordance with the instructions, may cause harmful interference to radio communications. However, there is no warranty that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

AOpen Incorporated is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by AOpen Incorporated. The correction of interferences caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

Notice: Shield cables

All connections to other computing devices must be made using shielded cables to maintain compliance with FCC regulations.

Notice: Peripheral devices

Only peripherals (input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this equipment. Operation with noncertified peripherals is likely to result in interference to radio and TV reception.



Caution: Changes or modifications not expressly approved by the manufacturer could void the user's authority, which is granted by the Federal Communications Commission, to operate this server.

Use conditions

This part complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Notice: Canadian users

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Laser compliance statement

The CD-ROM drive contains a laser diode classified according to IEC 825-1:1993:LASER CLASS 1.

Important safety instructions



Caution: This server is not designed for office use as a workstation.

Read these instructions carefully. Save these instructions for future reference.

- 1 Follow all warnings and instructions marked on the product.
- 2 Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- 3 Do not use this product near water.
- 4 Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
- 5 Slots and openings in the cabinet and the back or bottom are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.
- 6 This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
- 7 Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.
- 8 If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet does not exceed the fuse rating.
- 9 Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out

parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

- 10 Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Refer all servicing to qualified service personnel.
- 11 Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a When the power cord or plug is damaged or frayed
 - b If liquid has been spilled into the product
 - c If the product has been exposed to rain or water
 - d If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition.
 - e If the product has been dropped or the cabinet has been damaged
 - f If the product exhibits a distinct change in performance, indicating a need for service.
- 12 Replace the battery with the same type as the product's battery we recommend. Use of another battery may present a risk of fire or explosion. Refer battery replacement to a qualified serviceman.
- 13 **Warning!** Batteries may explode if not handled properly. Do not disassemble or dispose of them in fire. Keep them away from children and dispose of used batteries promptly.
- 14 Use only the proper type of power supply cord set (provided in your accessories box) for this unit. It should be a detachable type: UL listed/CSA certified, type SJT, rated 7A 125V minimum, VDE approved or its equivalent. Maximum length is 15 feet (4.6 meters).

Safety information

This device complies with the relevant safety regulations for data processing equipment, including electronic office machines for use in an office environment.

If you have any questions, contact your sales outlet or an AOpen customer service centre.



Caution: The actions described in these instructions should only be performed by technicians, service personnel or technical specialists. Equipment repairs should only be performed by qualified staff. Any failure to observe the guidelines in this manual could expose the user to risks (electric shock, fire hazards) and could also damage the equipment. Note that any unauthorized opening of the device will result in the invalidation of the warranty and exclusion from all liability.

Before setting up

- During installation and before operating the device, observe the instructions on environmental conditions for you device (refer to page 7).
- If the device is brought in from a cold environment, condensation may form both inside and on the outside of the machine.

Before operating the device, wait until it is absolutely dry and has reached approximately the same temperature as the installation site. Failure to observe these guidelines can lead to material damage of the device.

- Transport the device only in the original packaging or in a packaging which protects it from knocks and jolts.

Installation and operation

- The server automatically adjusts to a mains voltage between 100 V to 127 V and/or 200 V to 240 V. The server may be place in operation only, if the mains voltage range set on the server corresponds to the local mains voltage.
- This device has a safety tested power cable and must only be connected to a properly grounded power socket.

- Ensure that the power socket on the device or the grounded mains outlet is freely accessible.
- The power switch does not disconnect the device from the mains voltage. To completely disconnect it from the mains voltage, remove the power plug from the power socket.
- Always connect the device and the attached peripherals to the same power circuit. Otherwise you run the risk of losing data if, for example, the central processing unit is still running but the peripheral device (e.g. storage subsystem) has failed during a power outage.
- Data cables for peripherals must be adequately shielded to avoid interference.
- Route the cables in such a way that they do not form a potential hazard (make sure no-one can trip over them) and that they cannot be damaged.
- No data transmission cable should be connected or disconnected during a thunderstorm (lightning hazard).

Otherwise you run the risk of losing data if, for example, the central processing unit is still running but the peripheral device (e.g. storage subsystem) has failed during a power outage.

- In emergencies (e.g. damaged casing, elements, or cables, penetration of liquids or foreign matter), switch off the device immediately, remove the power connector from the grounded power socket, and contact your customer service centre.
- Proper operation of the device (in accordance with IEC 60950/DIN EN 60950) is only ensured if the casing is completely assembled and the rear covers for the installation openings have been put in place (electric shock, cooling, fire protection, interference suppression).
- Install only system expansions that satisfy the requirements and rules governing safety and electromagnetic compatibility and relating to telecommunications terminal equipment. If you install other expansions, you may damage the system or violate the safety regulations and regulations governing RFI suppression. Information on which system expansions are suitable can be obtained from the customer service centre or your sales outlet.
- Components marked with a warning label (e.g. lightning symbol) may only be opened, removed, or exchanged by authorized, qualified personnel. The hot-swap or hot-plug components are exceptions to this rule.
- The warranty is invalidated if the device is damaged during the

installation or replacement of system expansions.

- You may set only those resolutions and refresh rates specified in the documentation accompanying the monitor. Otherwise, you may damage your monitor. If you are in any doubt, contact your sales outlet or customer service centre.

Batteries

- Incorrect replacement of batteries may lead to a risk of explosion. The batteries may only be replaced with identical batteries or with a type recommended by the manufacturer.
- Do not throw batteries into the trash can. They must be disposed of in accordance with local regulations concerning special waste.
- Replace the lithium battery on the mainboard in accordance with the instructions given by the manufacturer.
- All batteries containing pollutants are marked with a symbol (a crossed-out garbage can). In addition, the marking is provided with the chemical symbol of the heavy metal decisive for the classification as a pollutant:

Cd Cadmium

Hg Mercury

Pb Lead

Environmental protection

Environmentally friendly product design and development

This product has been designed in accordance with standards for "environmentally friendly product design and development". This means that the designers have taken into account important criteria such as durability, selection of materials and coding, emissions, packaging, the ease with which the product can be dismantled and the extent to which it can be recycled. This saves resources and thus reduces the harm done to the environment.

Notes on saving energy

Devices that do not have to be on permanently should not be switched on until they need to be used and should be switched off during long breaks and on completion of work

Notes on packaging

Please do not throw away the packaging. We recommend that you do not throw away the original packaging in case you need it later for transporting your system unit. If possible, devices should be transported in their original packaging.

Notes on dealing with consumables

Please dispose of printer consumables and batteries in accordance with local government regulations.

Do not throw lithium batteries into the household waste. They must be disposed of in accordance with local regulations concerning special waste.

Notes on labeling plastic housing parts

Please avoid attaching your own labels to plastic housing parts wherever possible, since this makes it difficult to recycle them.

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1 System tour

This chapter discusses the key features and components of your system.

Introduction

The Fortress 1120 server is an Intel-based server for small and medium-sized networks and can be used as stand-alone or in a rack-mounted manner. A stand-alone model can be converted into a rack model using an optional conversion kit (refer to “Appendix A — System rack installation” on page 35).

The Fortress 1120 server offers a high level of reliability and availability through highly developed hardware and software components. These include the following:

- IPMI 1.5-compliant
- Prefailure Detection and Analyzing technology
- System Event Log (SEL) viewer

Security functions in the *BIOS Setup* menu and on the mainboard protect the data on the server against manipulation. Additional security is provided by the lockable rack door on the rack model (optional feature).

System features

Hardware

- Mainboard features
 - Form factor: 6-layer, 310 mm x 215 mm
 - Intel® Pentium® 4 processor (400/533 Mhz, 512 KB L2 up to 3.06 Ghz)
 - ServerWorks® CMIC-SL (north bridge) + CSB6 (south bridge) chipset
 - Onboard Ethernet chipsets
 - Intel® 82550PM Server Ethernet controller chipset
 - Intel® 82540EM Gigabit Ethernet controller chipset
 - Onboard Promise PDC20270 IDE RAID controller
 - Onboard ATI Rage XL 8-MB VRAM
 - Three (3) DIMM slots that accept registered ECC DDR PC1600/PC2100 memory modules for a maximum capacity of 3.0 GB
 - Two (2) 64-bit/33 MHz PCI slots
- Fixed 200W standard power supply unit with fan (adjusts automatically to a power voltage in the range from 100 V-127 V and 200 V-240 V).
- Cooling system includes three (3) system fans, one (1) system blower, and one (1) CPU heatsink assembly
- Media drives
 - The server has two hard disk drives with IDE interface.
The hard disk drives can be accessed as single drives or as disk array in a RAID configuration.
 - 1.44-MB, 3.5-inch, slim type floppy disk drive
 - Slim type CD-ROM drive
- I/O ports
 - Three USB ports (two in the front, one in the rear)
 - One PS/2 mouse port
 - One PS/2 keyboard port

- One monitor/VGA port
- Two LAN ports
- One serial (COM) port

Software

- Operating system support include Windows 2000 Server or Red Hat Linux 8.0
- Server management support include IPMI 1.5 and OSM 2.0
- Easy configuration

You can configure the server quickly and precisely using the Fortress 1120 Driver CD.

- High-level availability and reliability features

When memory data are accessed, 1-bit errors in the main memory are recognized and automatically corrected with the ECC method.

The PDA (Prefailure Detection and Analyzing) technology analyzes and monitors all components important for system reliability.

- Service and support

The Fortress 1120 server is service-friendly and modular, thus enabling quick and simple maintenance. The flash EEPROM (Electrically Erasable Programmable Read-Only Memory) program supports fast BIOS Update.

Physical specifications

Electrical data

| | |
|--------------------------------------|------------------------|
| Rated voltage range | 100V -127V / 200V-240V |
| Rated frequency | 50 Hz - 60 Hz |
| Rated current in basic configuration | 100 V - 127 V / 5.5 A |
| Maximum rated current | 200 V - 240 V / 2.75 A |
| Active power | 203W |
| Apparent power | 253.75 VA |
| Thermal dissipation | 0.169 kJ/h |
| Main power fuse | 16 A (6.3A) |
| Protection class | I |

Compliance standards

| | |
|--|---|
| Product safety and ergonomics | IEC 60950 / EN 60950 UL 1950, CSA 22.2 No. 950 |
| Electromagnetic Compatibility (standard power supply) | FCC class A VCCI class A AS/ NZS 3548 class A |
| Emitted interference | EN 55022 |
| Harmonic current | EN 61000-3-2 |
| Flicker | EN 61000-3-3 |
| Noise immunity | EN 55024 |
| CE label according to EU directives | Low-Voltage Directive 73/23/EWG Electromagnetic Compatibility 89/336/EEC |

Mechanical values

| | Stand-alone model | Rack model |
|-------------|--------------------------|-------------------|
| Width | 430 mm | 480 mm |
| Depth | 400 mm | 400 mm |
| Height | 43 mm or 1U | 43 mm or 1U |
| Depth Cable | -- | 200 mm |

Weight

Approximately 7-12 kg (depending on the configuration)

Ventilation clearance

At least 200 mm on the front and on the rear side

Environmental conditions

| | |
|--|---|
| Environment class 3K2 Environment class 2K2 | DIN IEC 721 section 3-3 DIN IEC 721section 3-2 |
| Temperature: Operation (3K2) Transport (2K2) | 10°C 35°C -25°C60°C |
| Relative humidity | 10%...85% |



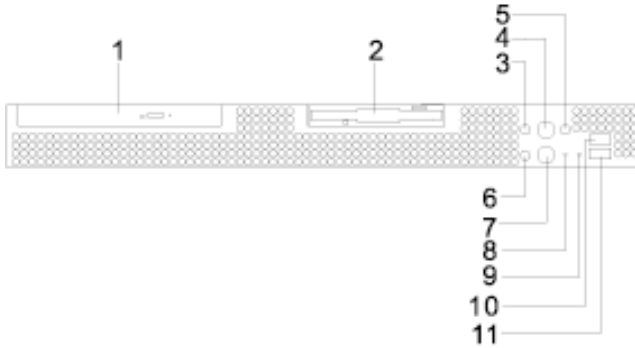
.....
Note: Condensation during operation must be avoided.






Noise level

| | |
|---|--|
| Sound power level $L_{WA,d}$ (ISO 9296) | ≤ 6.5 B (standby) ≤ 6.5 B (operation) |
| Sound pressure level at bystander position L_{pA} (ISO 9296) | ≤ 50 dB(A) (standby) ≤ 58.3 dB(A) (operation) |

External and internal structure

Front panel

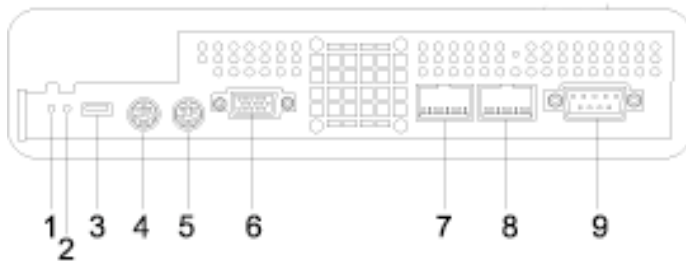








| No. | Icon | Component |
|---------|---|---|
| 1 | | CD-ROM drive with power on indicator |
| 2 | | Floppy disk drive with power-on indicator |
| 3 |  | IDE busy indicator |
| 4 | | Service button and indicator |
| 5 |  | Health indicator |
| 6 |  | Power indicator |
| 7 |  | Power button |
| 8 | | Reset switch |
| 9 | | NMI switch |
| 10 - 11 |  | Front USB ports |

Rear panel

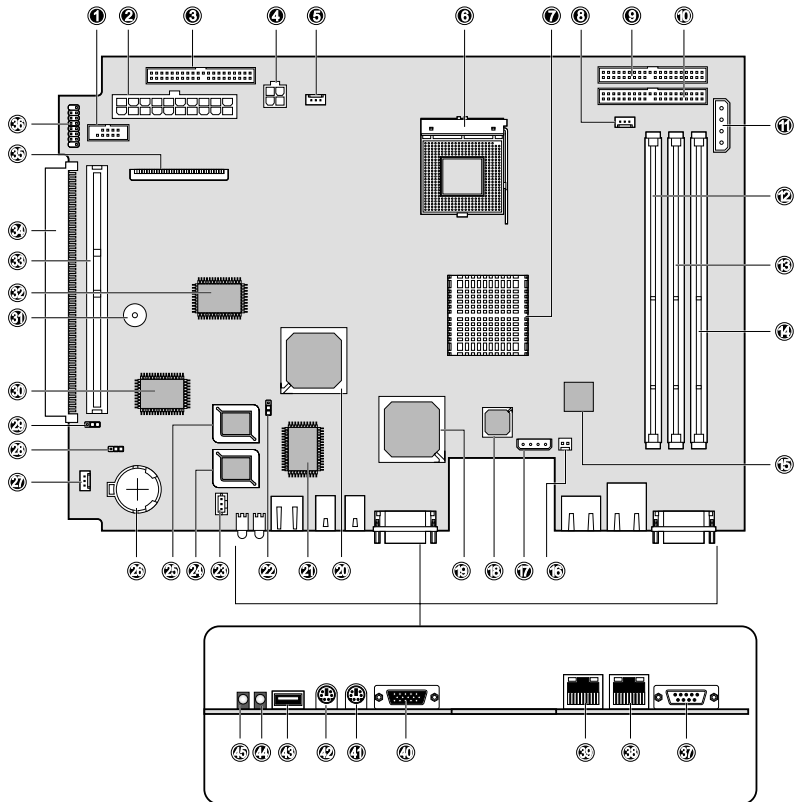
The ports for external devices are on the front and on the rear of the server. Which additional ports are available on your server depends on the PCI boards installed.

The standard ports on the rear panel are marked with symbols, and some are color-coded.



| No. | Icon | Description |
|-------|---|-----------------------------|
| 1 | | Service indicator |
| 2 | | Health indicator |
| 3 |  | Rear USB port |
| 4 |  | PS/2 mouse port (green) |
| 5 |  | PS/2 keyboard port (purple) |
| 6 |  | Monitor/VGA port |
| 7 - 8 |  | LAN ports |
| 9 |  | Serial port |

Mainboard layout



| No. | Description |
|-----|------------------------------|
| 1 | Front USB connector |
| 2 | 20-pin ATX power connector |
| 3 | Secondary IDE RAID connector |
| 4 | 4-pin ATX power connector |

| No. | Description |
|--------|---|
| 5 | CPU fan connector (CPU FAN2) |
| 6 | CPU socket |
| 7 | ServerWorks® CMIC-SL (north bridge) |
| 8 | CPU fan connector (CPU FAN1) |
| 9 | Primary IDE RAID connector |
| 10 | Primary IDE connector |
| 11 | CD-ROM and HDD power jumper (JP4) |
| 12 -14 | DIMM slots |
| 15 | Intel® 82540EM Gigabit Ethernet controller chipset |
| 16 | Power connector for Server Management Card |
| 17 | IPMB (Intelligent Platform Management Bus) signal connector |
| 18 | Intel® 82550PM Server Ethernet controller chipset |
| 19 | ATI Rage XL VGA chipset |
| 20 | ServerWorks® CSB6 (south bridge) |
| 21 | NS 87414 Super I/O chipset |
| 22 | Boot block jumper (JP3) |
| 23 | System fan connector (SYSFAN1) |
| 24 | IPMI BIOS |
| 25 | System BIOS |
| 26 | Battery |
| 27 | System fan connector (SYSFAN2) |
| 28 | Clear CMOS jumper (JP1) |

| No. | Description |
|-----|--|
| 29 | Power-on circuit jumper (JP2) |
| 30 | IPMI chipset |
| 31 | Buzzer |
| 32 | Promise PDC20270 IDE RAID controller |
| 33 | 64-bit/33 MHz PCI bus slot with riser card (PCI 1) |
| 34 | 64-bit/33 MHz PCI bus slot with low-profile card (PCI 2) |
| 35 | Floppy disk drive connector |
| 36 | Front LED board connector |
| 37 | Serial port (COM1) |
| 38 | 1-GbE LAN port |
| 39 | 10/100 Mbit LAN port |
| 40 | Monitor/VGA port |
| 41 | PS/2 keyboard port |
| 42 | PS/2 mouse port |
| 43 | Rear USB port |
| 44 | Health indicator |
| 45 | Service indicator |

Jumper setting

| Label | Setting | Function |
|-------|---------|------------------------|
| JP1 | | Clear CMOS |
| | 1-2 | Standard CMOS settings |
| | 2-3 | Clear CMOS settings |

| Label | Setting | Function |
|--------------|----------------|--|
| JP2 | | Power on circuit |
| | 1-2 | Control system power via IPMI (standard) |
| | 2-3 | Control system power via south bridge |
| JP3 | | Boot block (BIOS recovery) |
| | 1-2 | Disable boot block (standard) |
| | 2-3 | Enable boot block |
| JP4 | | Power connector for CD-ROM and HDD |

2 System setup

This chapter gives you instructions on how to set up the system. Procedures on how to connect the monitor is also explained.

Pre-setup reminders

Transporting the server

Transport the server only in its original packaging or in a packaging which protects it from knocks and jolts. If you need to lift or transport the server, ask other people to help you. Do not unpack the server until you are done transporting.

Target group

The operating instructions are intended for the person responsible for installing the hardware and correctly operating the system. This User's guide contains all the information required for installing and operating the Fortress 1120 server.

For installing the hardware and correctly operating the system it is necessary to have a knowledge of hardware and data transmission, as well as basic knowledge of the operating system used. You should also have a good working knowledge of the English language.

Setup precautions

- Please note the safety instructions on page vii.
- Do not expose the server to extreme environmental conditions (refer to "Environmental conditions" on page 7). Protect it from dust, moisture, and heat.
- The server must be acclimatized in its operating environment for an acclimatization time.

| Temperature difference (°C) (operating environment/ outside) | Minimum acclimatization time (hours) |
|--|---|
| 5 | 3 |
| 10 | 5 |
| 15 | 7 |
| 20 | 8 |

| Temperature difference (°C) (operating environment/ outside) | Minimum acclimatization time (hours) |
|--|---|
| 25 | 9 |
| 30 | 10 |

ESD precautions

Electrostatic discharge (ESD) can damage your processor, disk drives, and other components. Electrostatic-sensitive components may be identified by the following sticker:



Always observe the following precautions before you install a server component labelled as an ESD:

- You must always discharge static build up by wearing a wrist grounding strap and attach it to a metal part of the server before handling components or by touching a grounded object before working .
If a wrist strap is not available, maintain contact with the server throughout any procedure requiring ESD protection.
- The equipment and tools you use must be free of static charge.
- Remove the power plug from the power socket before inserting or removing components containing ESDs.
- Always hold components with ESDs by their edges.
- Do not touch any exposed pins or conductors on a component.
- Use a grounding cable designed for this purpose to connect yourself to the system unit as you install components.
- Do not remove a component from its protective packaging until you are ready to install it.
- Place all components on a static-safe base.

System setup

The following setup installation steps are described in detail in other sections of this chapter:



.....

Important! DO NOT attempt the procedures in the following sections unless you are confident of your capability to perform them. Otherwise, ask a service technician for assistance.

- 1 Unpack the server.
Refer to the succeeding “Unpacking the server” section.
- 2 Set up the server as a stand-alone unit (refer to page 20).
- or -
Mount the server into the rack (go to page 35).
- 3 Connect the server cables (see page 21).
- 4 Connect the monitor and other peripheral devices (refer to page 21).
- 5 Connect the server to the power supply (go to page 22).
- 6 Turn on the server (refer to page 23).
- 7 Configure the server (see page 25).

Unpacking the server



.....

Important! Please note the safety instructions on page vii and the pre-setup reminders on page 17.

- 1 Transport the server to the place where you want to set it up. Do not unpack the server until you are done transporting.
- 2 Unpack all the individual parts. The Fortress 1120 package contents include the following:
 - Fortress 1120 system
 - CPU heatsink assembly
 - System cables and screws package
 - Rubber foot (for stand-alone model only)

- Fortress 1120 User's guide
 - Fortress 1120 Driver CD
 - Fortress 1120 Anti-virus CD
- 3 Check the contents of the package for visible transport damage.
 - 4 Check whether the delivery agrees with the details in the delivery note.

The identification rating plate is located on the front area on the server.

If you find transport damage or inconsistencies between the contents of the package and the delivery note, inform your supplier immediately!
 - 5 It is recommended not to throw away the original packaging material as it may be required for transportation at some later date.

Setting up the stand-alone model

Position the stand-alone model at the intended location.

Note the following:

- The device must be protected from direct sunlight.
- The required minimum distances for operation and maintenance areas must be adhered to.
- In order to connect other devices (e. g.: storage subsystem) the rear of the server must be accessible.
- The mains plug must be accessible easily and safely.
- There must be a clearance of at least 200 mm in front of and behind the server to ensure adequate ventilation.
- The delivered rubber feet must be glued on the bottom of the device. You find corresponding square reliefs at the bottom of the device.

Connecting the server cables

Cable connection guideline

- 1 Be sure to read the documentation for all peripheral devices before connecting them.
- 2 Do not connect or disconnect data cables during a thunderstorm.
- 3 When removing a cable, always hold it by the plug.
- 4 Connect and disconnect the cables in the order described below.

To connect cables

- 1 Turn off all power and equipment switches.
- 2 Pull all power plugs out of grounded power sockets.
- 3 Plug all cables into the server and peripherals. Secure the data transmission cable connections (e. g. nut retention).
- 4 Plug all data communication cables into the utility sockets.
- 5 Plug all power cables into the grounded power sockets.

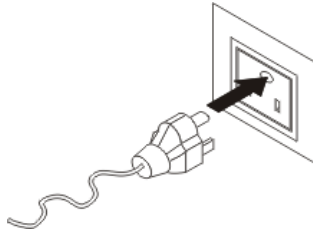
To disconnect cables

- 1 Turn off all power and equipment switches.
- 2 Pull all power plugs out of grounded power sockets.
- 3 Unplug all data communication cables from the utility sockets.
- 4 Loosen the nut retentions on the connector housings and pull the corresponding cables out from the server and from the peripherals.

Connecting the monitor

- 1 Plug the data cable of the monitor into the monitor port.
For the location of the monitor port, refer to page 9.

- 2 Connect the power cable of the monitor to a grounded mains outlet of the in-house mains and/or into the mains socket strip of the rack.



Note: The rated current for the monitor can be found on the technical data label on the monitor or in the operating manual for the monitor.

Connecting options

Aside from the monitor, other peripheral devices (e.g., mouse, keyboard) can also be connected to the server. Some of these devices may require special driver software; if this is the case you will need to refer to the documentation that accompanies that device.

To connect a peripheral device, plug in the device's data cable to its corresponding port on the server. Refer to "Rear panel" on page 9 for a list of standard ports available for Fortress 1120.

Connecting the server to the mains

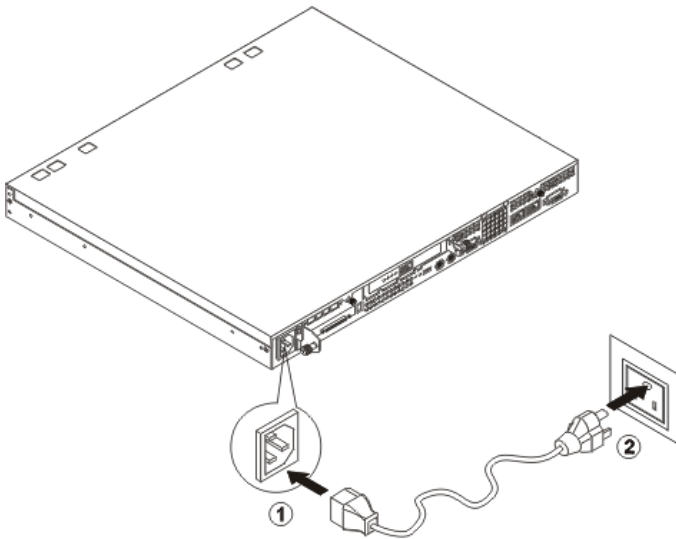
The server has a fixed power supply unit.

The server automatically adjusts to a mains voltage between 100 V to 127 V and/or 200 V to 240 V. The server may be placed in operation only, if the mains voltage range set on the server corresponds to the local mains voltage.

To connect the server to the mains

- 1 Connect the insulated connector of the power cable to power supply unit of the server.

- 2 Connect the server power plug to a grounded mains outlet of the in-house mains (for the rack model, into the mains socket strip of the rack).



Turning on the server

After making sure that server has been properly set up and all the required cables are connected, the server can now be turned on.

To switch on the system, press the power button on the front panel. The server performs a system test and boots the operating system.

If after switching on the server there is nothing but flickering stripes on the screen, turn off the server immediately (see page 32).



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Note: The power button does not disconnect the server from the mains voltage. To completely disconnect it from the mains voltage, remove the power plug from the socket.

Server power status

| Power status. | Description |
|------------------------|--|
| Server is switched off | The power indicator color is solid amber. |
| Server is switched on | The power indicator color is solid green. To shut down the server, press the power button and/or send a corresponding controlling signal (refer to the next section on "Other ON/OFF possibilities"). |
| Server in suspend mode | The power indicator color is flashing green. System fans speed slows down based on IPMI setting and all RGB displays are shut down. To resume normal operation, press any button. |

Other ON/OFF possibilities

In addition to the power button, the server can be switched on and off in the following ways:

- Specified switch-on time/switch-off time
The server is switched on or off at a time specified in the *BIOS Setup* menu.
- Ring indicator
The server is switched on via an internal or external modem.
- Wakeup On LAN (WOL)
The server is switched on by a command via the LAN.
- After power failure
The server automatically switches on following a power failure (depending of the settings in the BIOS).
- Intelligent Platform Management Interface (IPMI)
The server is switched on by an IPMI console via COM1 or RJ-45.

Configuring the server

This section contains information about configuring the server and installing the operating system.

To configure the RAID controller

If your server is fitted with a RAID controller, you must configure it as described in the related documentation.

To configure the PCI-SCSI controller

Configure the PCI-SCSI controller as described in the manufacturer's documentation. Further information is available on the driver diskettes provided.

To install the operating system



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Note: If your server is equipped with a RAID controller, refer how to install the desired operating system in the related manual.

- 1 Insert the installation disk and the CD of the operating system you want to install.
- 2 Reboot the server.
- 3 Follow the instructions on the screen and in the manual for the operating system.

3 System maintenance and protection

This chapter describes the proper way of cleaning the server and protecting it from unauthorized access. A list of troubleshooting tips are also given.

Server maintenance

Follow the steps to clean the server.

- 1 Switch the server off, and pull the power plug out of the grounded-contact power socket.
- 2 Make sure that the ventilation areas of the server and the monitor are free from any obstruction.
- 3 Wipe the server and monitor casing with a dry cloth. If particularly dirty, use a cloth that has been moistened in a mild domestic detergent and then carefully wrung out.
- 4 Use a cloth for disinfection to clean the keyboard and the mouse.

Important reminders in cleaning the server

- Do not clean any interior parts yourself; leave this job to a service technician.
- Do not use any cleaning agents that contain abrasives or may corrode plastic.
- Ensure that no liquid enters the system.

Property and data protection

The rack model is protected against unauthorized access by means of a lockable rack door (optional feature).

To protect your system and data internally against unauthorized access, use the *BIOS Setup* menu's security functions.

BIOS Setup security functions

The System Security menu in *BIOS Setup* offers you various options for protecting your data from unauthorized access. By combining these options, you can achieve optimum protection for your system.

Preventing unauthorized BIOS Setup calls

You can activate this protection by setting a supervisor password in the System Security menu.

Preventing unauthorized system access

You can activate this protection by setting a user password in the System Security menu.

Preventing unauthorized writing of diskettes and/or of hard disk drives

To activate this protection, select the value Write Protect All Sectors or Write Protect Boot Sector for the Floppy Drive and/or Hard Disk Drive in the System Security menu.

System troubleshooting

If you encounter a problem with your Fortress 1120 server, try to resolve it as described:

- in this chapter,
- in the documentation for the attached devices, or
- in the help systems of the software used.

If the problem still persists, proceed as follows:

- 1 Make a note of the steps and the circumstances that led to the fault. Note also any error message which may have been displayed.
- 2 Switch the server OFF.
- 3 Go to <http://english.aopen.com.tw/tech/contact/> for information on how to contact the AOpen technical support.

FAQs

Below are possible situations that may arise during the use of the server with corresponding easy troubleshooting solutions.



Caution: Always observe the safety information described on page vii in performing any of the troubleshooting procedures described in this section.

The power indicator remains dark after switching the server on.

Power cable not connected correctly

- Make sure that the power cable is correctly connected to the server and to the grounded power socket.

Power supply overloaded

- 1 Pull the server power plug out of the power socket.
- 2 Wait a few seconds and plug the power plug into the power socket again.
- 3 Switch the server back on.

The server switches itself off.

Server management has detected an error

- Check the error list or the ErrorLog file in the BIOS Event Log viewer, and attempt to eliminate the error.

The monitor remains dark.

Monitor is switched off

- Switch on the monitor.

Power saving has been activated (screen is blank)

- Press any key on the keyboard.
- Deactivate the screen saver (a password maybe required).

Brightness control is set too dark

- Adjust the brightness control to increase the brightness. For detailed information, please refer to the operating manual supplied with your monitor.

Power cable or monitor cable not connected

- 1 Switch off the monitor and the server.
- 2 Check whether the power cable is properly connected to the monitor and to the power socket.
- 3 Check whether the monitor cable is properly connected to the server and monitor (if it is connected with a plug). If a separate graphics card is installed in the server, then the monitor cable must be connected to the connection on this graphics card.
- 4 Switch the monitor and the server back on.

There are flickering stripes across the monitor.



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Caution: Switch off the server immediately. Risk of damaging the server.

Monitor does not support the set horizontal frequency

- 1 Find out which horizontal frequency the monitor supports. You will find the horizontal frequency (also known as line frequency or horizontal deflection frequency) in the documentation accompanying the monitor.

- 2 Refer to the documentation of the server's operating system or to the corresponding software for the monitor controller for instructions on how to set the correct horizontal frequency for the monitor, and follow the procedures accordingly.

There's no monitor display or the display drifts.

The wrong horizontal frequency and/or resolution has been selected for the monitor or for the application program.

- 1 Find out which horizontal frequency the monitor supports. You will find the horizontal frequency (also known as line frequency or horizontal deflection frequency) in the documentation accompanying the monitor.
- 2 Refer to the documentation of the server's operating system or to the corresponding software for the monitor controller for instructions on how to set the correct horizontal frequency for the monitor, and follow the procedures accordingly.

There's no mouse pointer displayed on the monitor.

Mouse driver not loaded

- Check whether the mouse driver is properly installed and is present when the application program is started. Detailed information can be found in the documentation for the mouse, the operating system, or the application program.

Mouse controller disabled

- The mouse controller on the mainboard must be enabled if you use the supplied mouse. Check *BIOS Setup* to make sure the mouse controller is enabled.

The floppy disk cannot be read or written.

- Make sure that the floppy disk is not write-protected (the write-protect tab is in the not-write protected position)
- Check the entry for the floppy disk drive in *BIOS Setup*.
- Check *BIOS Setup* whether the floppy disk drive controller and write permission are enabled.

The system time and/or date are incorrect.

- Set the time and/or date in the operating system or in *BIOS Setup*.
- If the wrong time and date is repeatedly displayed when you switch on your server, you must change the lithium battery. Go to <http://english.aopen.com.tw/tech/contact/> for information on how to contact the AOpen technical support.

The system fails to boot.

The system will not boot after installing a new hard disk drive.

- Reboot the system with the operating system CD or with a boot diskette and reconfigure the server. For details, refer to “Configuring the server” on page 25.

Appendix A — System rack installation

This appendix describes the procedures for configuring the system in a rack-mount fashion.

Guidelines in rack installation

The Fortress 1120 server occupies 1U in the rack. Count the U positions and hole numbers from the bottom up.



Note: The unit of measurement used in this document is "U" (1U = 1.75 inches or 44.45 mm). The total sum of the heights of all components in the rack measured in "U" cannot exceed the height of the rack. For more information, refer to the documentation that came with the system rack.

The distance from the center of two holes with closer spacing to the center of the next pair is equivalent to 1U.

When installing components, you must start your measurement from the center of the two holes with closer spacing. Otherwise, the screw holes on the component may not match those on the rack.

Rack installation precautions

Observe the following precautions when you install the server in the rack:

- When connecting and disconnecting cables, observe the relevant notes in the documentation of the corresponding rack.
- If necessary, the cables are routed directly on the rack support uprights.
- Ensure that the anti-tilt bracket is correctly mounted when you set up the rack.
- For safety reasons, only one unit should be withdrawn from the rack at any one time. If several units are withdrawn at the same time from the rack there is a danger that the rack will tilt forward.
- The power connection for the rack must be installed by an authorized technician (electrician).
- Observe the ESD precautions indicated on page 18 when installing the server in a rack model fashion.

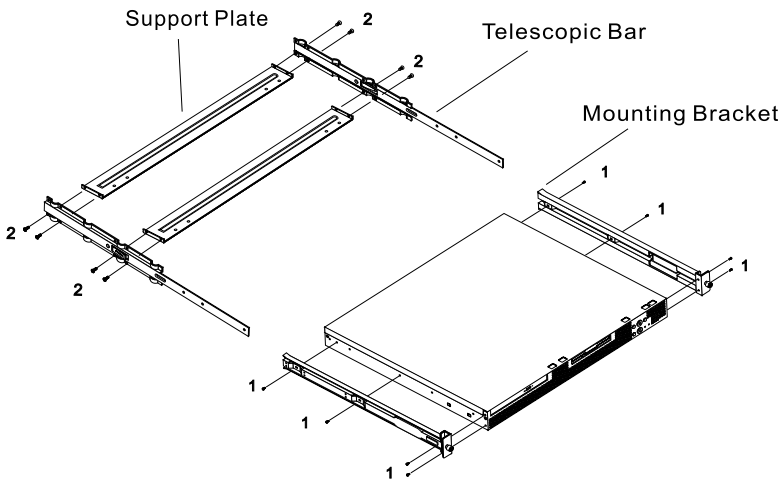
System rack installation



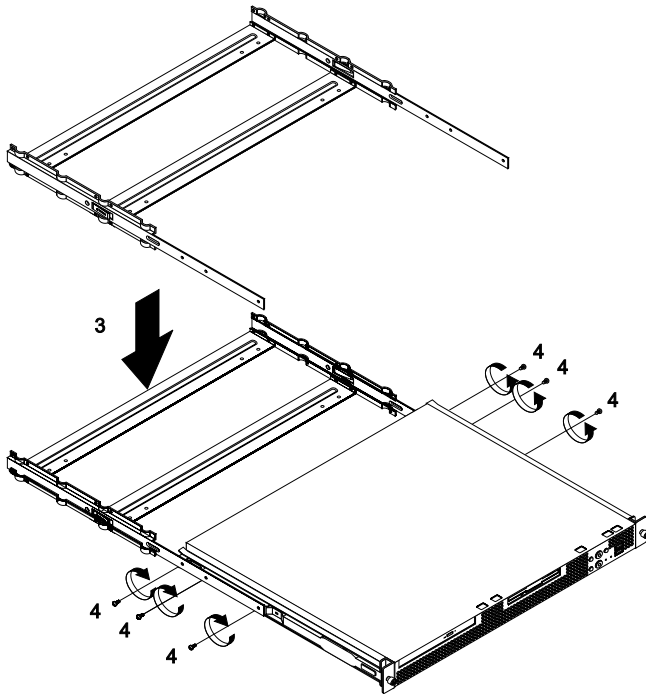
Important! Do not attempt the procedures described in the following sections unless you are a qualified service technician.

Preparing the server

- 1 Screw the front mounting brackets (left and right) to the server with the eight screws.
- 2 Mount the two support plates between the left and right telescopic bars with the eight screws .



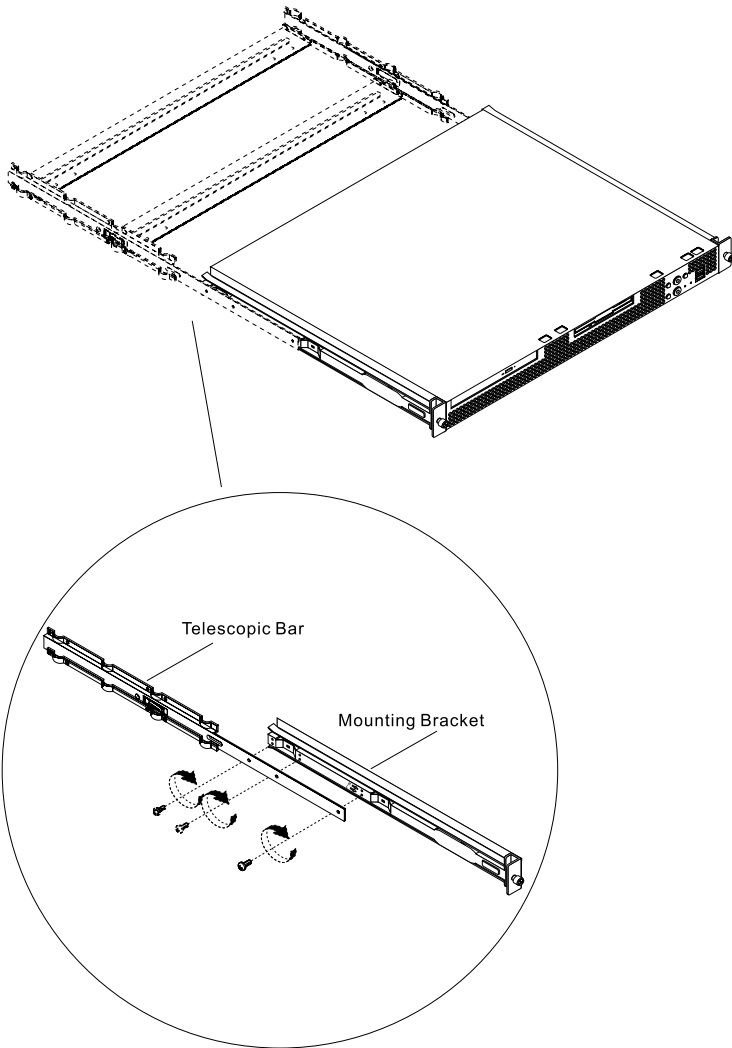
- 3 Align the telescopic bars with the two support plates to the front mounting brackets attached to the server.
- 4 Secure the telescopic bars to the front mounting brackets with the six screws. For more information on this steps, refer to page 39.



Note: If two Fortress 1120 servers are installed directly on top of each other in the rack, the support plates in the bottom server will be mounted into the bottom row of holes, and in the upper server into the upper row of holes. This guarantees that enough free space is available between the servers for the leads that are to be routed.

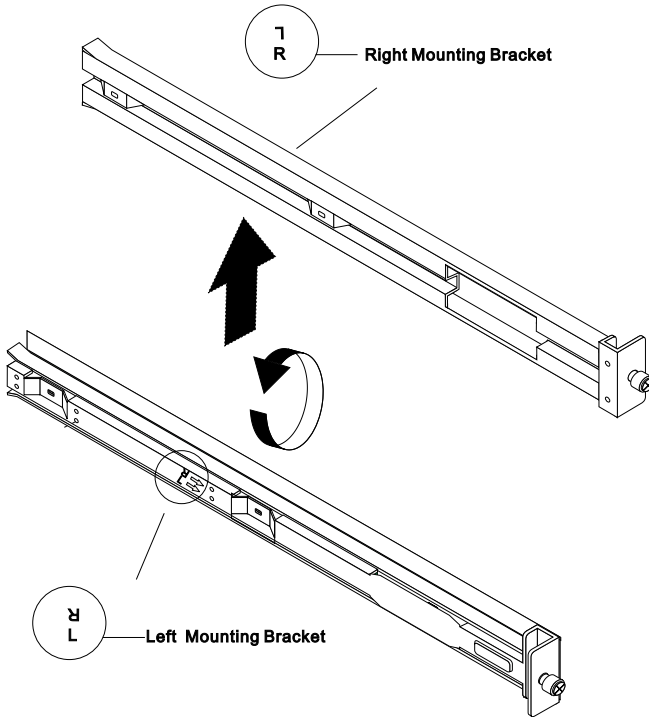
To secure the telescopic bars to the server

- 1 Screw the telescopic bar to the front mounting bracket and make sure the screws go through the three screw holes on the lower part of the bracket.



- 2 The left and right mounting bracket share a common part. Thus, a mounting bracket could be used as either a left or right mounting bracket depending on how you turn it around.

Pay attention to the two letters, L and R, circled in figure below. When the frontal mounting bracket is placed with the letter L in an upright position and R upside down, it should be used as a left mounting bracket, and vice versa.



Mounting the assembly kit

The Fortress 1120 server can be set up in rack mount fashion using either the DataCenter Rack or a standard rack assembly kit.

DataCenter Rack

For mounting the rack model in the DataCenter Rack, a support bracket must first be mounted on the rear left support upright of the rack.

This support bracket must be mounted level with the lower edge of the device. The support bracket is used for the rear fixing of the left carrier rail.

- 1 Review the installation instructions in the DataCenter Rack documentation.
- 2 Mark the position of the attachment points of the server on the support uprights (1 HU).
- 3 Mount the support bracket using two screws and cage nuts at the appropriate height on the rear left support upright.



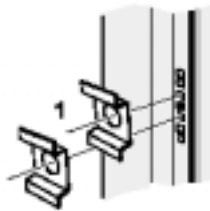
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Note: If required, you can mount one additional cable clip for vertical cable routing.

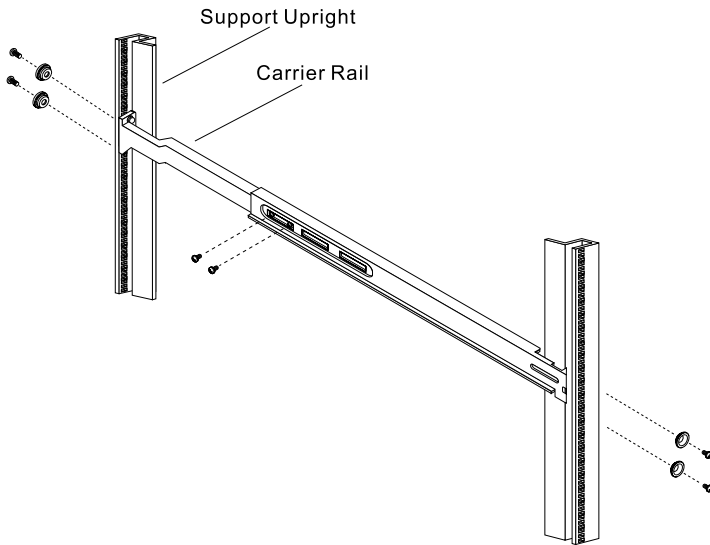
To fasten the carrier rails, no cage nuts are necessary since the rails are equipped with threaded holes.

To mount the carrier rails, mounting brackets must be installed in the support uprights and/or in the support bracket. To do this:

- a Place the mounting brackets in the holes of the support uprights and/or of the support bracket at the marked attachment points.



- b Secure the two carrier rails in the rack at the left and right support uprights or at the support bracket.

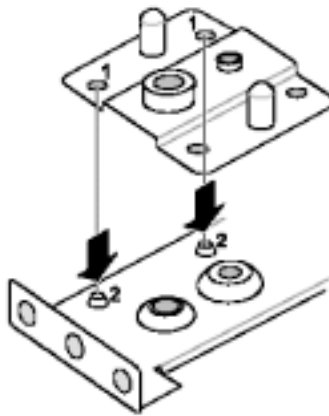
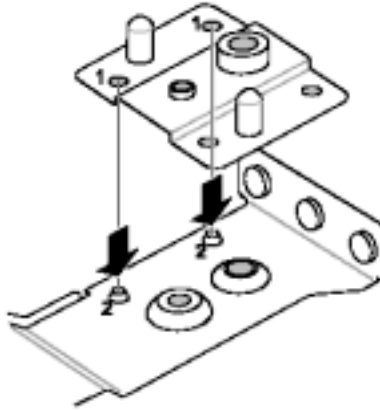


Standard rack

For mounting the rack model in the standard rack, two fitting brackets must first be mounted at the carrier rails. Spring nuts must also be inserted in the support uprights. The spring nuts are used for fixing the carrier rails and securing the server at the front.

- 1 Review the installation instructions in the standard rack documentation.
- 2 Mark the position of the attachment points of the server on the support uprights (1 HU).
- 3 Place the spring nuts in the groove of the support uprights at the marked attachment points.
- 4 If necessary, adjust the position of the nuts in the groove until they lock into the correct position.

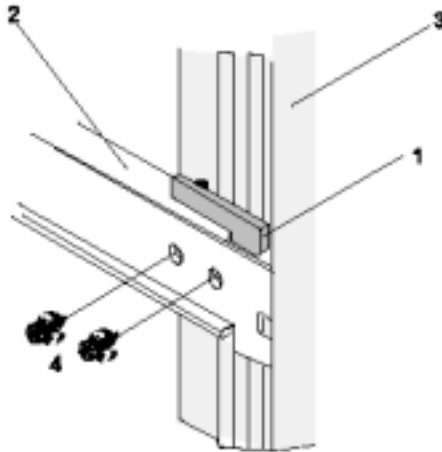
- 5 Place on both ends of the carrier rails one fitting bracket. Please note that the holes (1) must fit onto the guide nubs (2) of the carrier rails.



- 6 Place the prepared carrier rails at the marked attachment points on the support uprights. Refer to the figure on the next page.

The fitting bracket (1) is located between the carrier rail (2) and the support upright (3). Please note that the guide nubs of the fitting bracket must fit into a hole in the support upright next to the spring nut.

- 7 Secure the two carrier rails in the rack at the left and right support uprights (4).

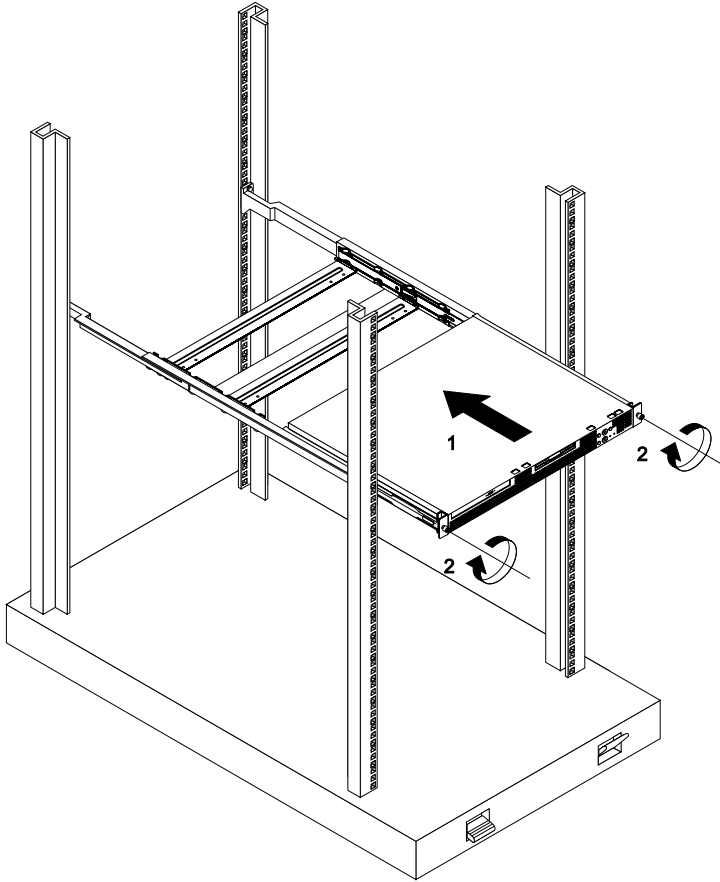


Mounting/removing the server in the rack

To finish setting up the Fortress 1120 server in rack mount fashion, mount the prepared server into the assembled rack model.

To mount the server in the rack

- 1 Lift the server onto the two carrier rails.
- 2 To mount the server into the rack:
 - a Slide the server into the rack (1).
 - b Secure the server in the rack using the two knurled screws (2)Refer to the figure on the next page.



To remove the server from the rack

- 1 Press in the safety springs on both telescopic bars.
- 2 Carefully slide out the server from the rack.

